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Alabagrus Enderlein (Hymenoptera, Braconidae, Agathidinae) Species of Costa Rica, with an Emphasis on Specimens Reared from Caterpillars in Área de Conservación Guanacaste[1]

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ABSTRACT. Eighty-six species of Costa Rican *Alabagrus* are treated; these include species reared from lepidopteran larvae in Área de Conservación Guanacaste, Costa Rica, over 32 years of caterpillar inventory. Sixty-five new species are described, that is, *A. almasolisae*, *A. andresfreitasi*, *A. andywarreni*, *A. axelhausmanni*, *A. barbsharanowskiae*, *A. bernardoespinozai*, *A. bobpoolei*, *A. bobrobbinsi*, *A. bobwhartoni*, *A. brendameierottoae*, *A. brianbrowni*, *A. brianharrisi*, *A. craigevansi*, *A. donharveyi*, *A. donlafontainei*, *A. fernandezi*, *A. fernandodiasi*, *A. genemonroei*, *A. hansoni*, *A. hespenheidei*, *A. iankitchingi*, *A. ilgookangi*, *A. isidrochaconi*, *A. jackiemillerae*, *A. jeanfrancoislandryi*, *A. jeanmariecadioui*, *A. jennyphillipsae*, *A. jimmilleri*, *A. johnbrowni*, *A. johnburnsi*, *A. johnobryckii*, *A. johnsharkeyi*, *A. kaciejoae*, *A. karensharkeyae*, *A. kaydodgeae*, *A. keithwillmotti*, *A. leedyeri*, *A. lindapitkinae*, *A. longinoi*, *A. malcolmscoblei*, *A. marcepsteini*, *A. mariaheikkilae*, *A. markmetzi*, *A. mattottoi*, *A. nickgrishini*, *A. patsharkeyi*, *A. paulgoldsteini*, *A. paulheberti*, *A. paulsharkeyi*, *A. paulthiaucourti*, *A. quickei*, *A. ramyamanjunathae*, *A. reddypallii*, *A. rudolfmeieri*, *A. sarahmeierottoae*, *A. sarahsharkeyae*, *A. scottmilleri*, *A. scottshawi*, *A. semihespenheidei*, *A. stiremani*, *A. tanyadapkeyae*, *A. tommyersi*, *A. victoriapookae*, *A. yuanmaofangi*, and *A. yuchinkengae*.

Species limits primarily based on cytochrome *c* oxidase subunit I mitochondrial DNA sequence data greatly differed from previous morphological attempts to delimit species of *Alabagrus*. As a result, 17 species reported to occur in Costa Rica are no longer considered to be present in the country, that is, *A. albispina*, *A. imitatus*, *A. juchuy*, *A. kagaba*, *A. latisoma*, *A. latreillei*, *A. maya*, *A. mojos*, *A. nahuatl*, *A. nigrilitus*, *A. pachamama*, *A. paruyana*, *A. parvifaciatus*, *A. semialbus*, *A. tricarainatus*, *A. tripartitus*, and *A. warrau*. Furthermore, five species have been found to be composed of species complexes, that is, *A. cocto*, *A. englishi*, *A. pecki*, *A. roibasi*, and *A. yaruro*. These difficulties point to the impossible task of delimiting species of Agathidinae solely with morphological evidence.

An illustrated key to species, and a plate of color photos of each species are provided.

INTRODUCTION

This article is the third in a series revising the species of Agathidinae reared from lepidopteran caterpillars as part of the inventory of the caterpillars and their parasitoids of Área de Conservación Guanacaste (ACG), northwestern Costa Rica (http://janzen.sas.upenn.edu; http://www.acguanacaste.ac.cr; Janzen et al., 2009). It includes a key to 87 species of *Alabagrus* Enderlein, of which 65 are newly described. This is not meant to be a comprehensive treatment of the Costa Rican fauna of *Alabagrus*. A conservative estimate, based on extensive collections at Instituto Nacional de Biodiversidad (INBio; Costa Rica), the Universidad de Costa Rica, and the Hymenoptera Institute (Lexington, Kentucky), is that about 300 species occur in the country.

New World members of *Alabagrus* may be distinguished from other agathidines by the following combination of character states: simple claws with a basal lobe, frons bordered laterally by carinae; first metasomal median tergite distinctly convex and/or with a median ridge, gena not elongate. All are presumed to be koinobiont endoparasitoids of concealed larvae of Crambidae. *Pharpa* Sharkey, 1988, is the sister group to *Alabagrus* (Sharkey, 1988) and is used here as the outgroup for the phylogenetic analyses. Both genera are restricted to the New World.

We include a molecular data set consisting of 680 *Alabagrus* operational taxonomic units (OTUs) sequenced for cytochrome *c* oxidase subunit I (*COI*) for approximately 60 species. The majority of specimens (624) were reared from caterpillars (those with specimen numbers beginning with DHJPAR).

Alabagrus was first revised by Sharkey (1988), who included 104 species. Leathers and Sharkey (2003) revised the species of *Alabagrus* of La Selva, and included previously described species known to occur in Costa Rica. They treated 39 putative species, including six new species. These two revisions relied solely on morphological evidence. The species concepts in the present treatment were formulated with the assistance of *COI* sequence data and a plethora of host data as the result of rearings in Área de Conservación de Guanacaste. These data have had a profound effect. There are many more cryptic species than previously thought, and many species with presumed wide distributions are more likely to be species complexes whose component species have relatively restricted distributions. As a result, 17 species, reported to occur in Costa Rica by Leathers and Sharkey (2003), are no longer considered to be present in the country, these are *Alabagrus albispina*, *A. imitatus*, *A. juchuy*, *A. kagaba*, *A. latisoma*, *A. latreillei*, *A. maya*, *A. mojos*, *A. nahuatl*, *A. nigrilitus*, *A. pachamama*, *A. paruyana*, *A. parvifaciatus*, *A. semialbus*, *A. tricarainatus*, *A. tripartitus*, and *A. warrau*. Furthermore, five of the species reported by Leathers and Sharkey (2003) have been found to be composed of species complexes, that is, *Alabagrus cocto*, *A. englishi*, *A. pecki*, *A. roibasi*, and *A. yaruro*. These difficulties point to the impossible task of delimiting species of Agathidinae solely with morphological evidence.

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METHODS

SPECIMEN INFORMATION

Most specimens used in this study are deposited in the Entomology Museum of Utah State University and the Hymenoptera Institute Collection, with the exception of specimens with numbers beginning with "BIOUG," which are deposited at the University of Guelph, Centre for Biodiversity Genomics, Ontario, Canada. Source files for the keys, descriptions, illustrations, DNA sequences and distributional data are all freely available to future researchers who may wish to build on these records. The detailed specimen records are available by search of the individual specimen DHJPARxxxxxxx voucher codes at the Janzen database (http://janzen.bio.upenn.edu/caterpillars/database.lasso). Some of the Lepidoptera hosts are incompletely identified; however, they also have unique names, such as *Desmia* Solis19 (which is an interim name for *Desmia* species 19 as determined by M. Alma Solis of the U.S. Department of Agriculture Systematic Entomology Laboratory, Washington, D.C.). These names will be updated in the Janzen database when the species is baptized with a formal scientific name, but the interim name, in this case *Desmia* Solis19, will remain searchable in that database. Host caterpillars are uniquely identified by their own voucher code system, which is recognizable by YY-SRNP-XXXXX, where YY is the two-digit year and XXXXX is a unique number within that year.

DNA trace files and primer information are available through the Barcode of Life Data Systems (BOLD, http://www.boldsystems.org; Ratnasingham and Hebert, 2007), as is specimen information for specimen numbers INBxxxxxxxxxx, INBIOCRIxxxxxxxxx, and BIOUGxxxxx-xxx. Specimen information for specimens with numbers beginning with the letter "H" are stored in the Symbiota database (Gries et al., 2014; Symbiota Collections of Arthropods Network, http://symbiota4.acis.ufl.edu/scan/portal/) under the Hymenoptera Institute Collection (HIC). To search for a specimen in the database, do the following: Under the *Search* tab (upper left of the screen), select *Search Collections*. Deselect all collections, and scroll down the Southeast section, put a check in the box next to *Hymenoptera Institute Collection*, scroll back up and hit the *Search* button (right side of screen). H-numbered specimens are stored with a four-letter prefix (HICH) followed by a six-digit number. Therefore, H369, as it appears in this publication, is stored as HICH000369. To search for this specimen, scroll down to the Specimen Criteria section, type this number in the box next to *Catalog Number* and hit the search button. This displays a page with a summary of the specimen information. Clicking on *Full Record Details* opens a new window with the full specimen record, including all available images.

Each species is diagnosed and described or redescribed, and a plate of images with a chronogram of occurrence is included for each.

SPECIES CONCEPTS

The biological species concept is used with evidence drawn from *COI* sequences, morphology, and host use as indirect evidence for species integrity. *COI* was the primary source of evidence with no particular percent divergence employed as a cut-off. The sequence data were checked against morphological and host-use data, and these corroborated or (rarely) refuted the sequence data.

TAXON SAMPLING

For molecular analyses, we used all *Alabagrus* sequences available to us on the BOLD database from Costa Rica. Once we removed a few sequences that were contaminated in some way, this amounted to 636 sequences. To this, we added 44 *Alabagrus* sequences generated by the Sharkey lab from Costa Rica, Honduras, Mexico, and USA.

MORPHOLOGICAL TERMS

Morphological terms are from Sharkey and Wharton (1997). The reader is advised to search for any morphological term that is not understood on the Hymenoptera Anatomy Ontology website (http://portal.hymao.org/projects/32/public/ontology/; Yoder et al., 2010). To do this, enter the term in the search box, select the best match from the list that pops up, and click on the *show* button.

MUSEUM ACRONYMS

CNCI Canadian National Collection of Insects, Ottawa, Canada
EMUS Utah State University, Department of Biology, Entomology Museum, Logan, Utah, USA
HIC University of Kentucky, Department of Entomology, Hymenoptera Institute Collection, Lexington, Kentucky, USA
INBio Instituto Nacional de Biodiversidad, Santo Domingo de Heredia, Costa Rica
MUCR Ciudad Universitaria, Universidad de Costa Rica, Museo de Insectos, Costa Rica

DNA EXTRACTION, PCR, AND SEQUENCING

Specimens sequenced in this study are from a variety of sources. Specimens with numbers beginning with DHJPAR, INB, INBIOCRI, or BIOUG were extracted and sequenced for *COI* at the University of Guelph following the methods outlined in Hebert et al. (2004).

Specimens with numbers beginning with the letter "H" were extracted from individual legs with the QIAGEN DNeasy Blood and Tissue Kit using the animal tissue protocol (QIAGEN Inc., Chatsworth, California, USA). The mitochondrial *COI* (~658 bp) gene was amplified with the primer pair LepF1 and LepR1 (Hebert et al., 2004). Polymerase chain reaction (PCR) was conducted using TaKaRa reagents, with each reaction consisting of 1× buffer, 0.3 mM nucleotides, 0.4 μM of each primer, 0.625 U TaKaRa *Ex Taq*, double-distilled water, and 1–3 μL template DNA in a total reaction volume of 25 μL. The thermal cycling protocol had an initial denaturation period at 95 °C for 2.5 min, followed by 40 cycling steps which denatured at 95 °C for 30 s, annealed at 44 °C for 30 s and extended at 68 °C for 45 s, with a final extension step of 72 °C for 7 min. To determine reaction success, PCR products were electrophoresed in 1% agarose stained with ethidium bromide. PCR products were outsourced for Sanger sequencing either by the Advanced Genetic Technologies Center (University of Kentucky, Lexington, Kentucky, USA) or Beckman Coulter Genomics (Danvers, Massachusetts, USA) using labeled dideoxy-nucleotides with ABI 3730, Big-Dye Terminator mix v. 3.0, or with ABI PRISM 3730xl, BigDye Terminator mix v. 3.1 (Applied Biosystems, Foster City, California, USA).

DNA ASSEMBLY AND PHYLOGENETIC ANALYSIS

Bidirectional sequences were aligned and edited using Geneious Pro (v. 6.1.5; Drummond et al., 2009) and multiple alignments were assembled using MAFFT (v. 5; Katoh et al., 2006) using the default settings and refined by eye using MacClade v. 4.08 (Maddison and Maddison, 2005). Maximum likelihood (ML) phylogenetic analyses were conducted on the *COI* data set using Garli (v. 2.01; Zwickl, 2006). The data set consisted of 680 *Alabagrus* OTUs and one sequence from a species of *Pharpa* Sharkey, which was shown to be sister to *Alabagrus* in the most comprehensive molecular agathidine phylogeny to date (Sharkey and Chapman, 2017) for outgroup rooting. The data were partitioned by codon position (three partitions). We applied the most complex model available (GTR+I+G; Rodriguez et al., 1990) to each partition as per recommendations of Huelsenbeck and Rannala (2004) for likelihood-

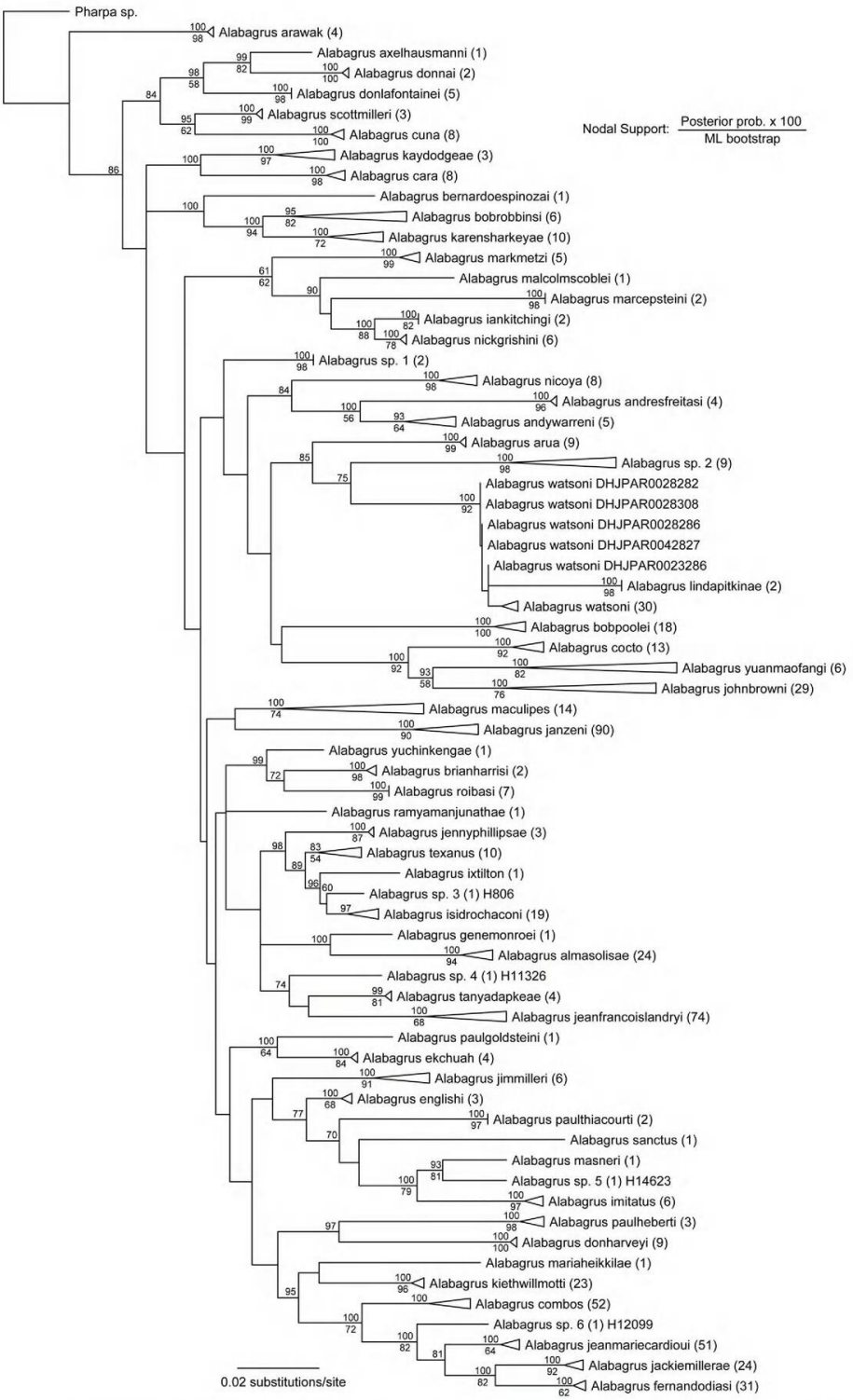


Figure 1 Tree of highest posterior probability from a 10 million–generation Bayes analysis of *COI*. Species are collapsed (when possible) into single terminals (terminal triangles), with the number of OTUs for each collapsed species in parentheses. The length of the triangles represents the branch length from the node to the tip of the longest branch.

based analyses. We conducted a 50-replicate ML search for the tree of highest log-likelihood and a 200-replicate ML bootstrap analysis (Felsenstein, 1985). Both analyses used the default settings.

A Bayesian inference (BI) phylogenetic analysis was also conducted on the *COI* data set with MrBayes (v. 3.1.2; Huelsenbeck and Ronquist 2001; Ronquist and Huelsenbeck 2003). As in the ML analyses, the data were partitioned by codon position. To allow each partition to have its own set of parameter estimates, *revmat*, *tratio*, *statefreq*, *shape*, and *pinvar* were all unlinked during the analyses. To obtain the most accurate branch length estimates possible, the option *prset ratepr=variable* (which assigns a separate branch length parameter for each partition) was employed as per the recommendations of Marshall et al. (2006). A temperature (t) setting of 0.01 was used because there was insufficient chain swapping in a pilot run with the default value t=0.1. With t=0.01, the average chain swapping value was 55%. Two independent, simultaneous BI searches were run for 10 million generations, saving a tree every 1000 generations, with four search chains each. The average standard deviation of split frequencies was 0.0235 at the completion of 10 million generations. The log-likelihood values of the chains in both analyses plateaued just above −10,000 by 3 million generations and did not go any lower by the completion of the run. The likelihood of best state for the "cold" chain of run 1 was −9911.85 and that for the "cold" chain of run 2 was −9912.76. The 5000 post–burn-in trees from each run (10,000 total), using a 50% burn-in were used to calculate the majority rule consensus tree using PAUP* (v. 4.0β10; Swofford, 2003). The data set analyzed herein, including the MrBayes command block and Garli configuration files are available from the authors upon request.

RESULTS

PHYLOGENETIC TREES

The tree of highest posterior probability from the Bayesian analysis with species collapsed into single terminals (when possible) is shown in Figure 1, including nodal support values from the Bayes and ML analyses. We also present four supplemental trees: Bayesian tree of highest posterior probability (Supplemental Figure 1), Bayesian consensus tree (Supplemental Figure 2), tree of highest log-likelihood (Supplemental Figure 3), and ML bootstrap consensus tree (Supplemental Figure 4).

PHYLOGENETIC CONSIDERATIONS

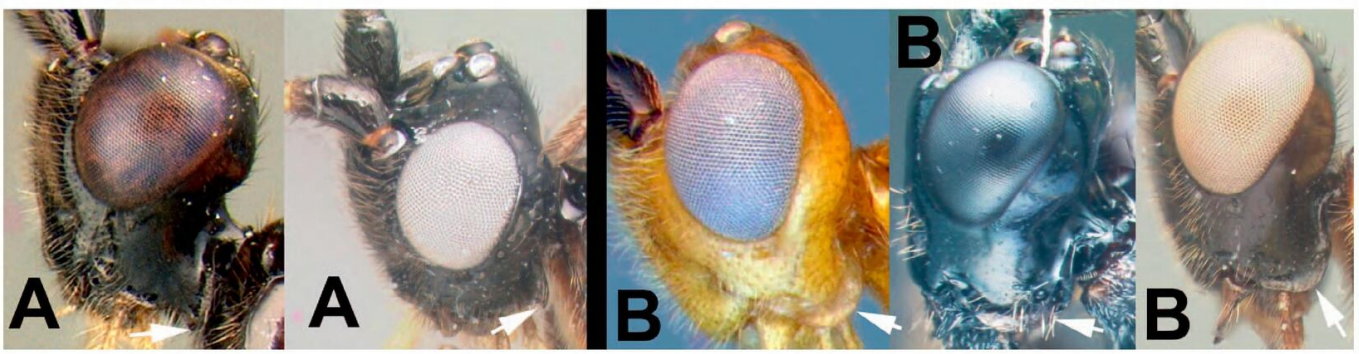
The phylogenetic tree in Figure 1 does not have well-supported basal branches. Its primary purpose was as a source of evidence to delineate species. Nonetheless, several lineages are worth noting. *Alabagrus fernandodiasi*, *A. jackiemillerae*, and *A. jeanmariecadioui* form a clade, and all members are similar in color and morphology (BIPP=81, MLBS<50). None are represented by males, which is unusual considering each is represented by 24 or more specimens. It may represent a parthenogenetic clade. Three species, *Alabagrus donlafontainei*, *A. cuna*, and *A. scottmilleri*, are distinctly sexually dichromatic, and all are found in a clade composed of five species (BIP=84, MLBS<50). One of the other species, *A. axelhausmanni*, is represented by a male only as the holotype, and the other member of the clade, *A. donnai*, have males that are darker (orange rather than yellow) than females (BIPP=99, MLBS=82). Overall it is common to have structural sexual dimorphism in members of *Alabagrus*. In particular, sculpture of the propodeum is often much more pronounced in males than females.

KEY TO COSTA RICAN *ALABAGRUS*

If you know the species of the host caterpillar it might be best to use the search function on electronic versions of this publication and find the species of *Alabagrus* that is (are) on the host, and check your specimen against the images and description. It is doubtful that this key will be very useful outside of Costa Rica and adjacent countries.

1A. Gena right angled or acute posteroventrally 2

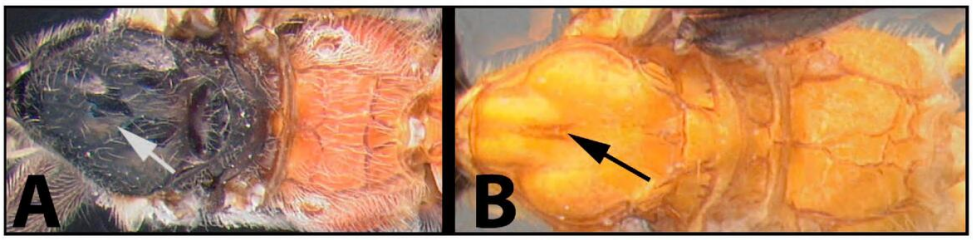
1B. Gena rounded or with an obtuse angle posteroventrally 78



Couplet 1

2(1)A. Mesoscutum mostly or entirely melanic.....3

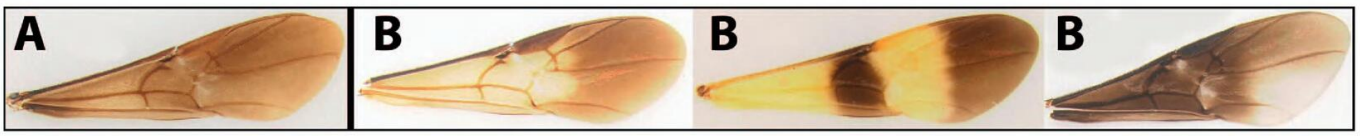
2(1)B. Mesoscutum mostly or entirely pale 63



Couplet 2

3(2)A. Forewing almost entirely infuscate, ignore small clear patches posteriad stigma 4

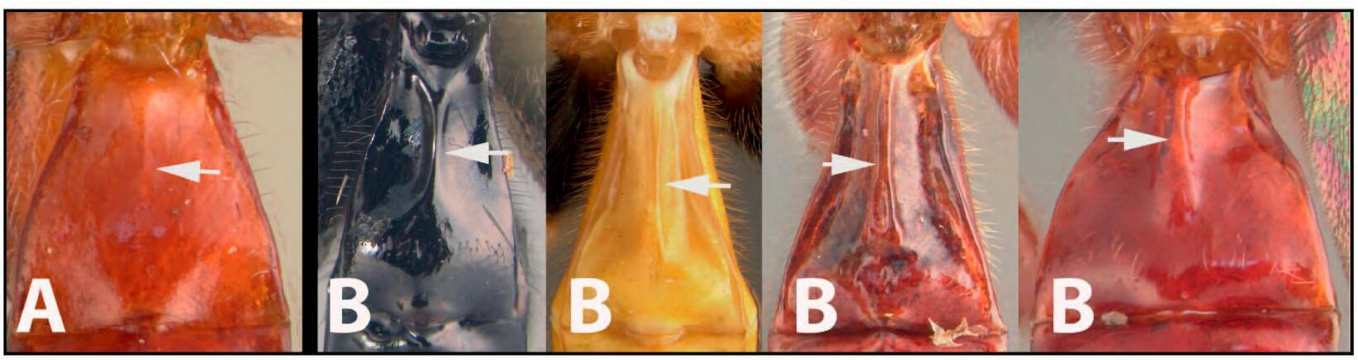
3(2)B. Forewing patterned with large clear, white, or yellow areas.....18



Couplet 3

4(3)A. First tergum varying from weakly convex to with a rounded longitudinal bulge.....5

4(3)B. First tergum with well-defined median longitudinal carina 14



Couplet 4

5(4)A. Propodeum melanic 6

5(4)B. Propodeum pale 8

5(4)C. Propodeum melanic anteriorly, pale posteriorly .....*A. combos*

Couplet 5

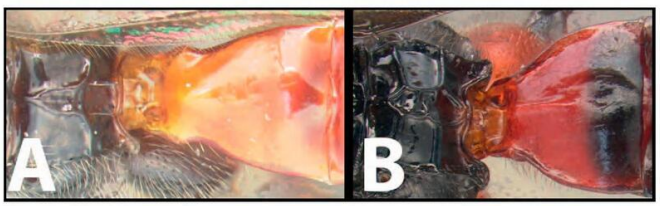
6(5)A. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface 7

6(5)B. Hind femur heavily sculptured ventrally with aciculations or rugosities, distinctly more heavily sculptured than dorsal surface ..... ***A. donharveyi* n. sp.**

Couplet 6

7(6)A. Median tergite 1 narrower ..... ***A. leedyeri* n. sp.**

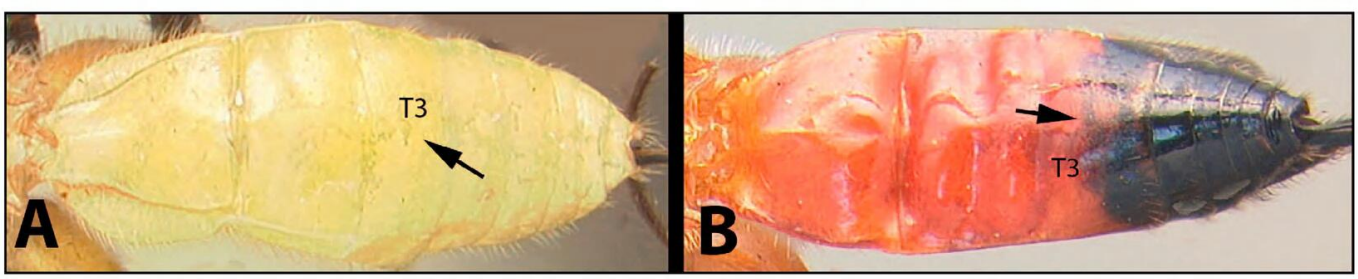
7(6)B. Median tergite 1 wider ..... ***A. johnsharkeyi* n. sp.**



Couplet 7

8(5)A. Median tergite 3 pale 9

8(5)B. Median tergite 3 pale anteriorly, melanic posteriorly ..... *A. watsoni*



Couplet 8

9(8)A. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface 10

9(8)B. Hind femur heavily sculptured ventrally with aciculations or rugosities, distinctly more heavily sculptured than dorsal surface 12

Couplet 9

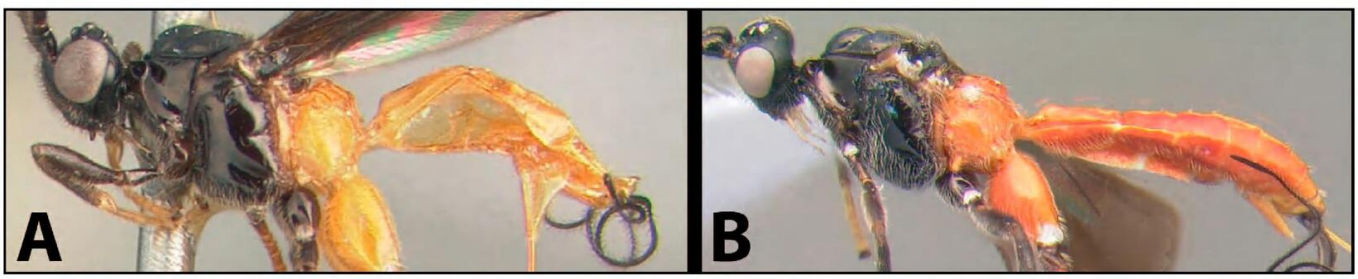
10(9)A. Hind coxa entirely pale 11

10(9)B. Hind coxa pale medially with a large melanic patch or vertical stripe laterally ..... *A. sarapiqui*

Couplet 10

11(10)A. Body black and yellow ..... *A. donnai*

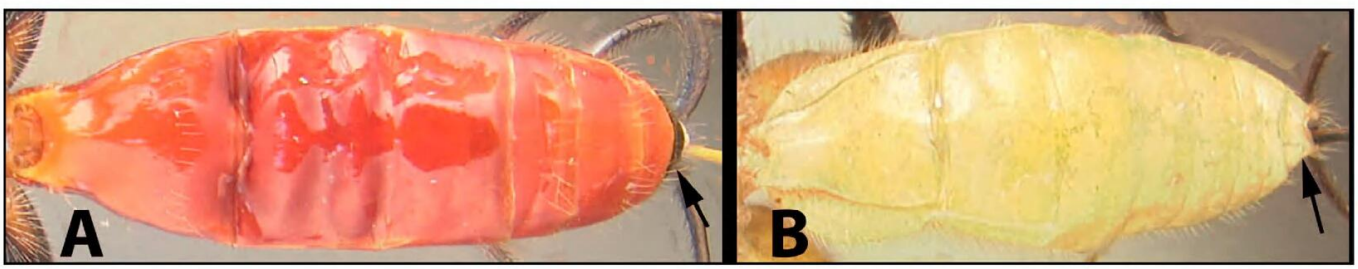
11(10)B. Body black and red to black and orange ..... ***A. jimmilleri* n. sp.**



Couplet 11

12(9)A. Penultimate metasomal tergum (often more terga) melanic ..... *A. combos*

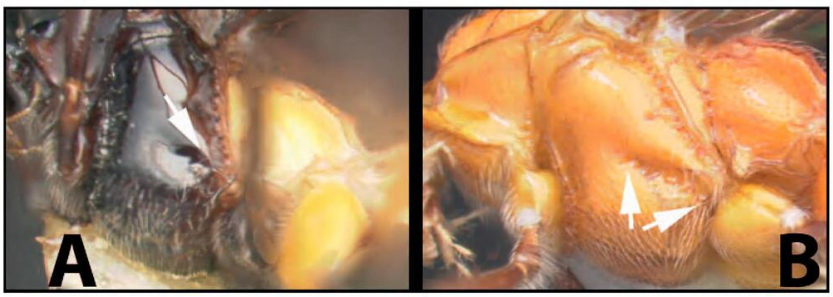
12(9)B. Penultimate metasomal tergum pale, reddish orange to yellow 13



Couplet 12

13(12)A. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly; pale parts of body yellow ..... *A. donnai*

13(12)B. Precoxal sulcus distinct and foveolate ½ or more length of mesopleuron; pale parts of body orange ..... *A. arawak*



Couplet 13

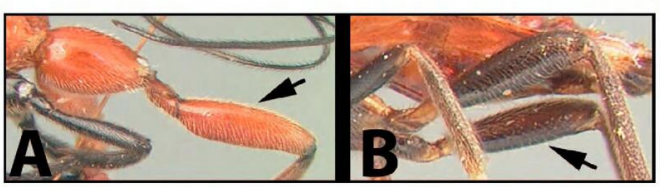
14(4)A. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface 15

14(4)B. Hind femur heavily sculptured ventrally with aciculations or rugosities, distinctly more heavily sculptured than dorsal surface ..... ***A. axelhausmanni* n. sp.**

Couplet 14

15(14)A. Hind femur mostly or entirely pale ..... ***A. bernardoespinozai* n. sp.**

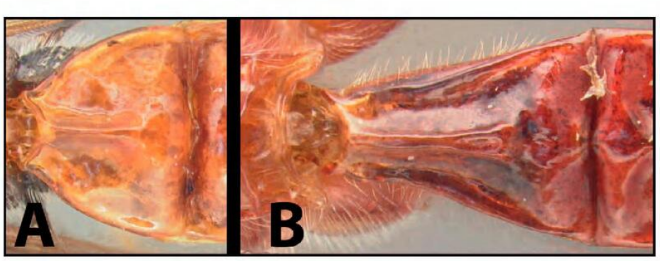
15(14)B. Hind femur mostly or entirely melanic 16



Couplet 15

16(15)A. Median tergite 1 wider than long. ..... *A. miqa*

16(15)B. Median tergite 1 longer than wide 17



Couplet 16

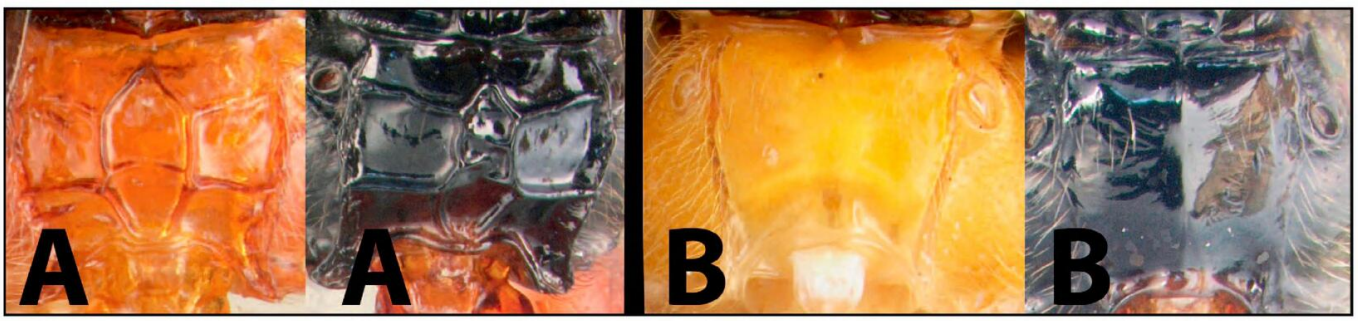
17(16,31,32)A. Median tergite 2 black ..... ***A. bobrobbinsi* n. sp.**

17(16,31,32)B. Median tergite 2 red/orange ..... ***A. karensharkeyae* n. sp.**

Couplet 17

18(3)A. Propodeum areolate, with at least one closed areola 19

18(3)B. Propodeum lacking complete areolae, usually mostly or completely smooth 41



Couplet 18

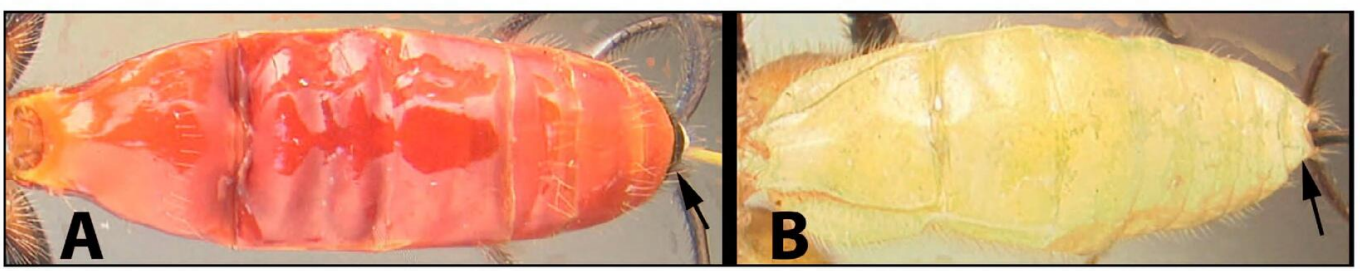
19(18)A. Head entirely melanic 20

19(18)B. Head with at least some traces of pale color ..... ***A. kaydodgeae* n. sp.**

Couplet 19

20(19)A. Penultimate metasomal tergum (or more) melanic 21

20(19)B. Penultimate metasomal tergum pale, reddish orange to yellow ..... ***A. paulsharkeyi* n. sp.**



Couplet 20

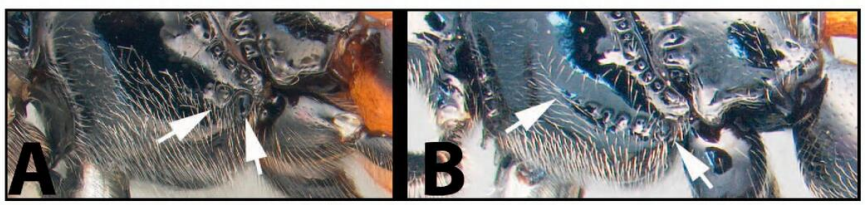
21(20)A. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface 22

21(20)B. Hind femur heavily sculptured ventrally with aciculations or rugosities, distinctly more heavily sculptured than dorsal surface 38

Couplet 21

22(21)A. Precoxal sulcus with one or several foveae posteroventrally, with or without a smooth groove extending anteriorly 23

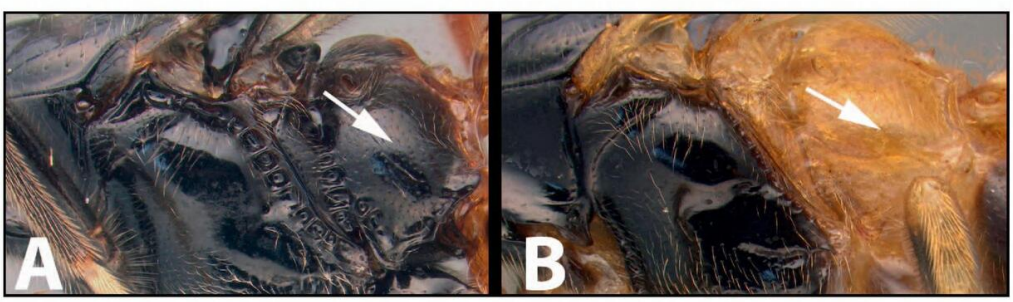
22(21)B. Precoxal sulcus longer, distinct and foveolate ½ or more length of mesopleuron 33



Couplet 22

23(22)A. Metapleuron mostly or entirely melanic 24

23(22)B. Metapleuron mostly or entirely pale 30



Couplet 23

24(23)A. Propodeum melanic 25

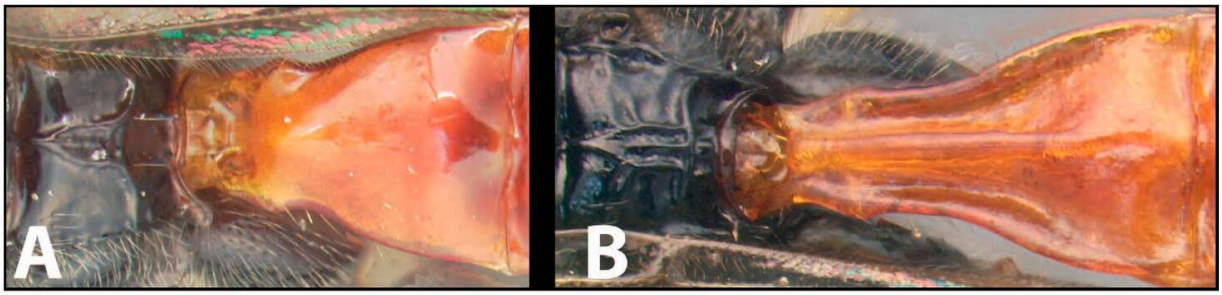
24(23)B. Propodeum pale 28

24(23)C. Propodeum melanic anteriorly, pale posteriorly ..... ***A. almasolisae* n. sp.**

Couplet 24

25(24)A. First tergum varying from weakly convex to with a rounded longitudinal bulge 26

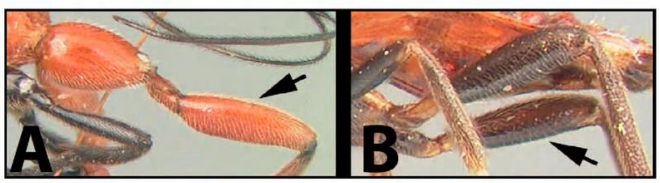
25(24)B. First tergum with well-defined median longitudinal carina 27



Couplet 25

26(25)A. Hind femur mostly or entirely pale .....***A. almasolisae* n. sp.** males

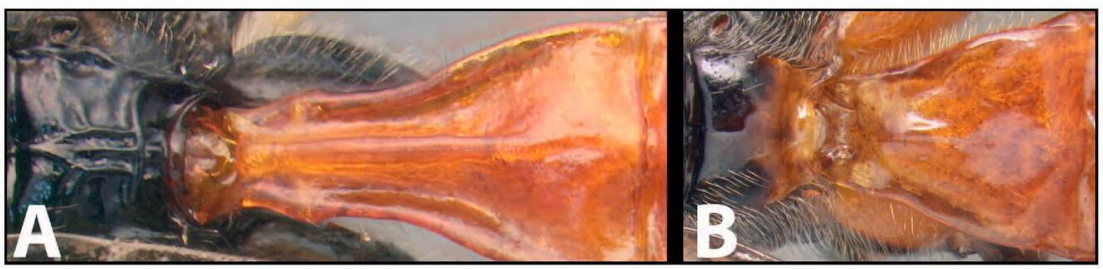
26(25)B. Hind femur mostly or entirely melanic .....***A. leedyeri* n. sp.**



Couplet 26

27(25)A. Median tergite 1 narrower with a stronger median ridge .....***A. bobpoolei* n. sp.** males

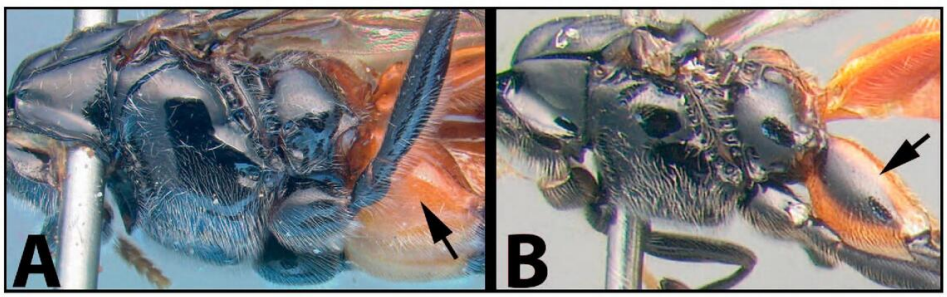
27(25)B. Median tergite wider with a weak longitudinal ridge or anteromedial bulge .....***A. almasolisae* n. sp.** males



Couplet 27

28(24)A. Hind coxa entirely pale; third tergum with deep transverse depression.....***A. tommyersi* n. sp.**

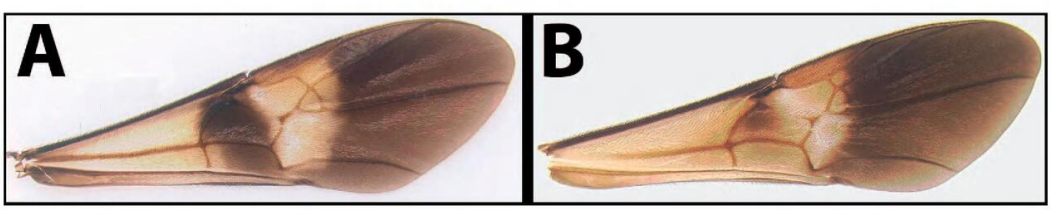
28(24)B. Hind coxa mostly pale with a vertical melanic stripe; third tergum lacking transverse depression or depression barely indicated ...29



Couplet 28

29(28)A. Forewing with two distinct pale areas, one basally and one below stigma .....***A. almasolisae* n. sp.** males

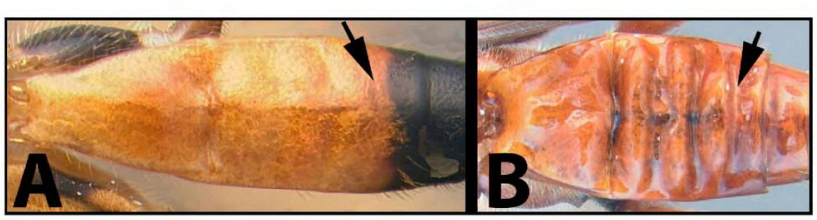
29(28)B. Forewing lacking two distinct pale areas; base of the wing pale with some melanic color behind parastigma..***A. marcepsteini* n. sp.**



Couplet 29

30(23)A. Third tergum lacking transverse depression or depression barely indicated.....31

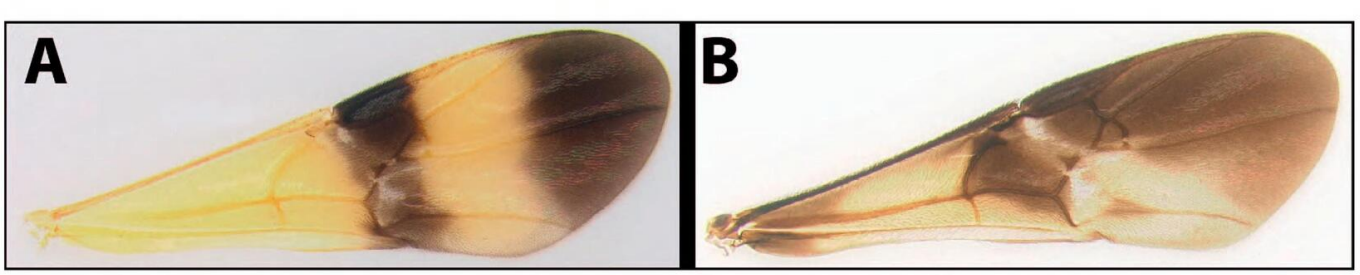
30(23)B. Third tergum with deep transverse depression.....32



Couplet 30

31(30)A. Forewing banded from base: yellow, melanic, yellow, melanic.....***A. genemonroei* n. sp.**

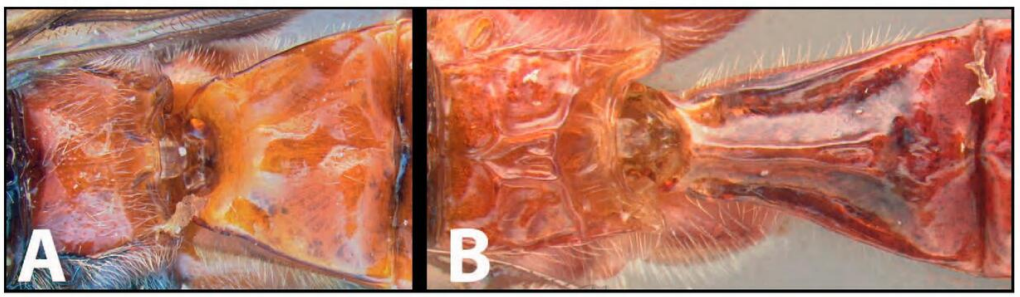
31(30)B. Forewing mostly or entirely infuscate often with pale patches that do not form discrete bands.....17



Couplet 31

32(30)A. First tergum varying from weakly convex to with a rounded longitudinal bulge ..... ***A. tommyersi* n. sp.**

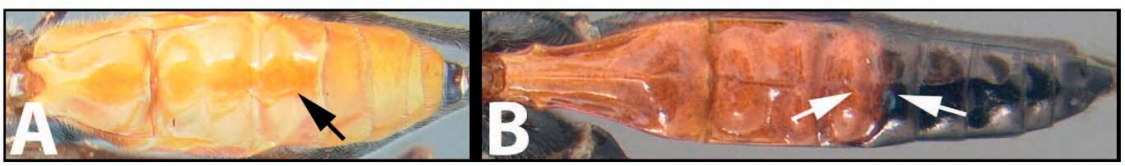
32(30)B. First tergum with well-defined median longitudinal carina 17



Couplet 32

33(22)A. Median tergite 3 pale 34

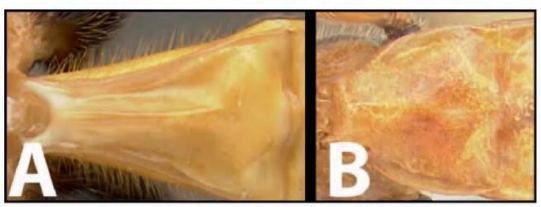
33(22)B. Median tergite 3 pale anteriorly, melanic posteriorly 36



Couplet 33

34(33)A. Median tergite 1 narrower with a stronger median ridge 35

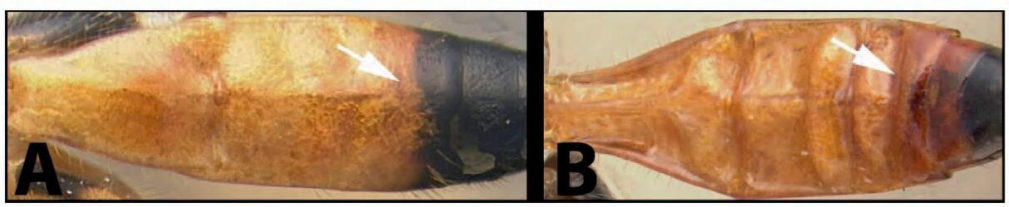
34(33)B. Median tergite wider with a weak longitudinal ridge or anteromedial bulge ..... ***A. andywarreni* n. sp.** males



Couplet 34

35(34)A. Third tergum lacking transverse depression or depression barely indicated ..... ***A. genemonroei* n. sp.**

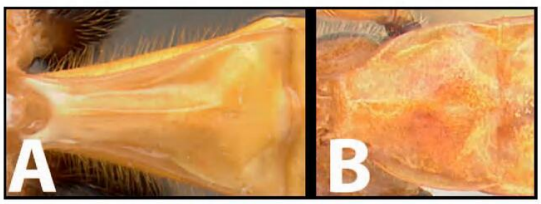
35(34)B. Third tergum with deep transverse depression ..... *A. janzeni* males



Couplet 35

36(33)A. First tergum with well-defined median longitudinal carina 37

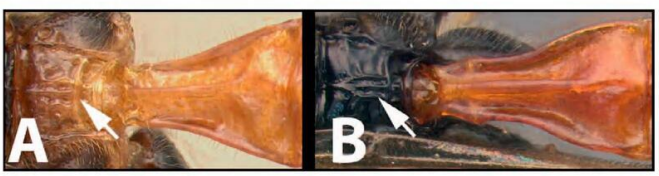
36(33)B. First tergum varying from weakly convex to with a rounded longitudinal bulge ..... ***A. lindapitkinae* n. sp.**



Couplet 36

37(36)A. Propodeum mostly or entirely pale ..... *A. janzeni* males

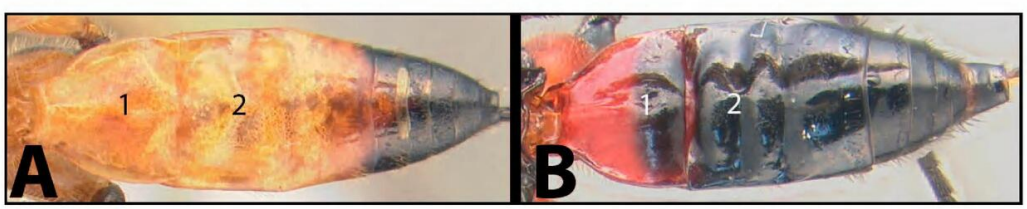
37(36)B. Propodeum entirely melanic ..... ***A. bobpoolei* n. sp.** males



Couplet 37

38(21)A. Median tergite 1 pale; median tergite 2 pale 39

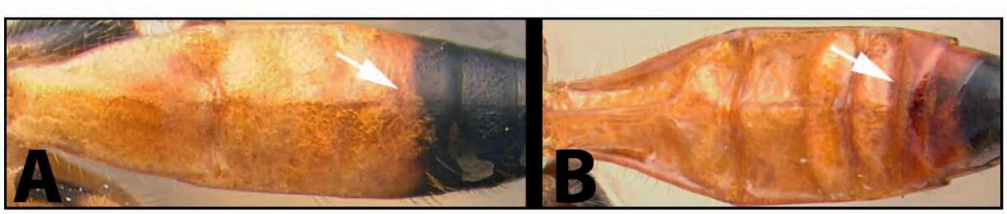
38(21)B. Median tergite 1 partly melanic but pale at base; median tergite 2 melanic ..... ***A. donharveyi* n. sp.**



Couplet 38

39(38)A. Third tergum lacking transverse depression or depression barely indicated 40

39(38)B. Third tergum with deep transverse depression ..... *A. janzeni* males

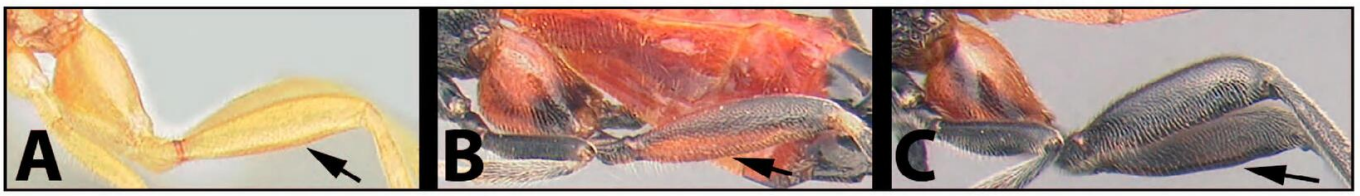


Couplet 39

40(39)A. Hind femur entirely pale ..... ***A. andywarreni* n. sp.** males

40(39)B. Hind femur melanic dorsally, pale ventrally ..... ***A. paulgoldsteini* n. sp.**

40(39)C. Hind femur entirely melanic, sometimes with a hint of reddish color ventrally but much darker than *A. paulgoldsteini* ..... ***A. ramyamanjunathae* n. sp.**



Couplet 40

41(18)A. Forefemur entirely melanic or only with a spot of pale color apically 42

41(18)B. Forefemur entirely pale 57

41(18)C. Forefemur melanic bicolored, pale and melanic 61

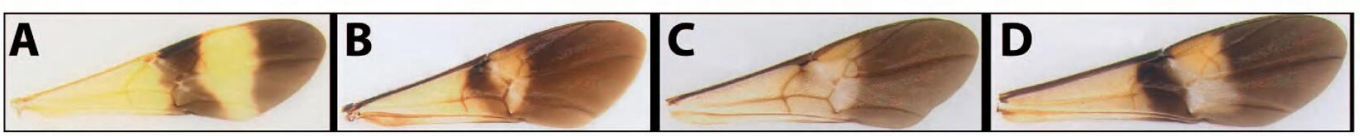
Couplet 41

42(41)A. Forewing with two distinct yellow bands, one basal to and the other apical to stigma 43

42(41)B. Forewing with two yellow bands, one distinct basal band and a weaker triangular band directly below (posterior to) stigma 46

42(41)C. Forewing lacking two distinct bands; pale basally to near level of apex of stigma with a small darkening near parastigma 50

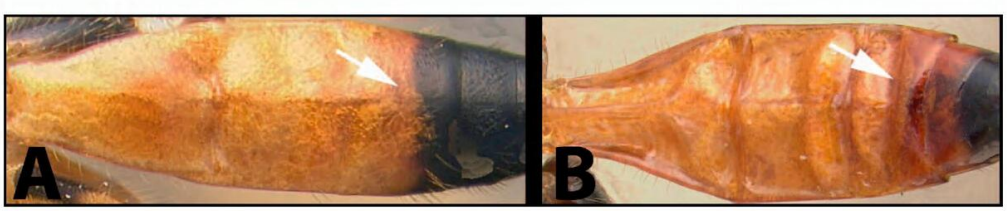
42(41)D. Forewing with two distinct yellow bands, one basal to and the other directly below (posterior to) stigma 54



Couplet 42

43(42)A. Third tergum lacking transverse depression or depression barely indicated 44

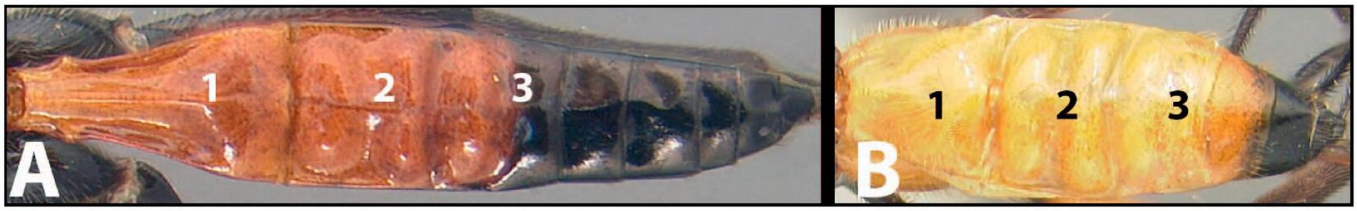
43(42)B. Third tergum with deep transverse depression 45



Couplet 43

44(43)A. Median tergite 3 partly or entirely melanic ..... ***A. bobpoolei* n. sp.** females

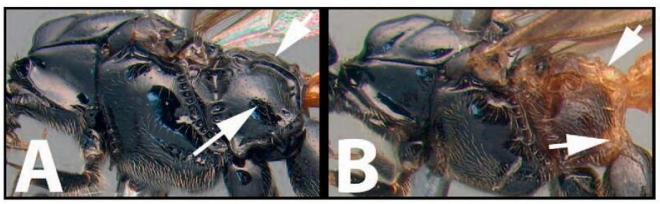
44(43)B. Median tergite 3 entirely pale ..... ***A. andywarreni* n. sp.** females



Couplet 44

45(43)A. Metapleuron and propodeum both entirely black ..... ***A. bobpoolei* n. sp.** females

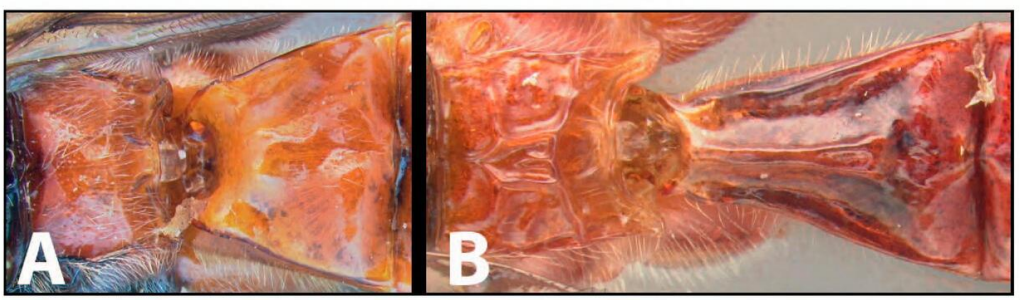
45(43)B. Metapleuron and propodeum from mostly black to entirely yellow, one or the other always with some yellow/orange color ..... *A. janzeni* males



Couplet 45

46(42)A. First tergum varying from weakly convex to with a rounded longitudinal bulge 47

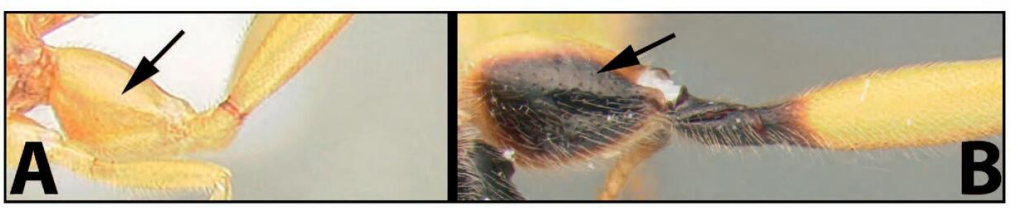
46(42)B. First tergum with well-defined median longitudinal carina 49



Couplet 46

47(46)A. Hind coxa entirely pale 48

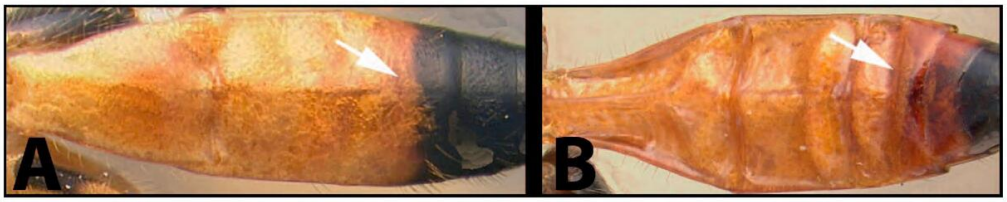
47(46)B. Hind coxa mostly pale with a melanic patch laterally or a vertical melanic stripe ..... ***A. almasolisae* n. sp.** females



Couplet 47

48(47)A. Third tergum lacking transverse depression or depression barely indicated; metapleuron entirely pale .....***A. iankitchingi* n. sp.**

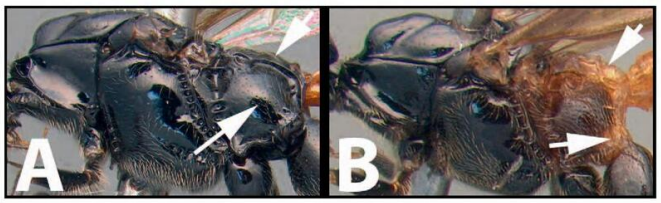
48(47)B. Third tergum with deep transverse depression; metapleuron partly or entirely melanic.....***A. tommyersi* n. sp.**



Couplet 48

49(46)A. Metapleuron and propodeum both entirely black .....***A. bobpoolei* n. sp.** females

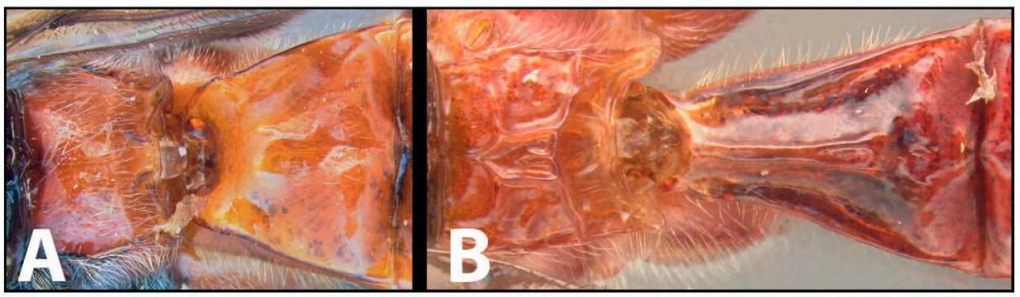
49(46)B. Metapleuron and propodeum from mostly black to entirely yellow, one or the other always with some yellow color ....*A. janzeni* males



Couplet 49

50(42)A. First tergum varying from weakly convex to with a rounded longitudinal bulge 51

50(42)B. First tergum with well-defined median longitudinal carina 53



Couplet 50

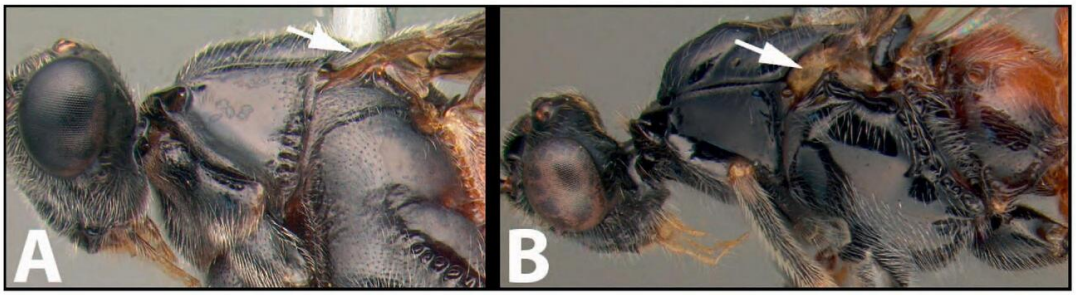
51(50)A. Hind coxa entirely pale.....52

51(50)B. Hind coxa mostly pale with a vertical melanic stripe .....***A. marcepsteini* n. sp.**

Couplet 51

52(51)A. Tegula black ..... ***A. malcolmscoblei* n. sp.**

52(51)B. Tegula pale, yellow to orange ..... ***A. nickgrishini* n. sp.**



Couplet 52

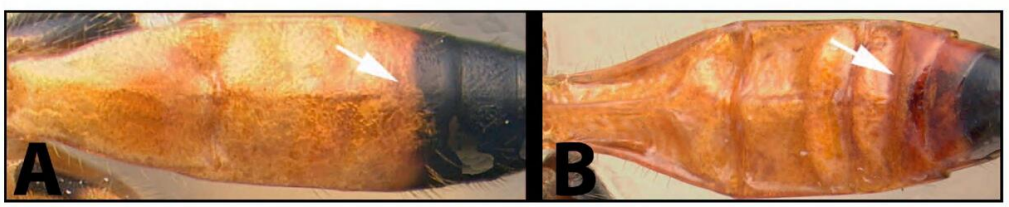
53(50)A. Metapleuron and propodeum both entirely black ..... ***A. bobpoolei* n. sp.** females

53(50)B. Metapleuron and propodeum from mostly black to entirely yellow, one or the other always with some yellow color ..... *A. janzeni* males

Couplet 53

54(42)A. Third tergum lacking transverse depression or depression barely indicated 55

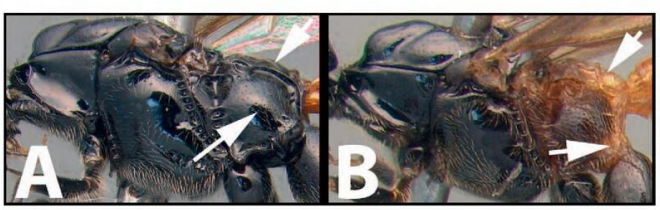
54(42)B. Third tergum with deep transverse depression 56



Couplet 54

55(54)A. Metapleuron mostly or entirely melanic; propodeum melanic ..... ***A. bobpoolei* n. sp.** females

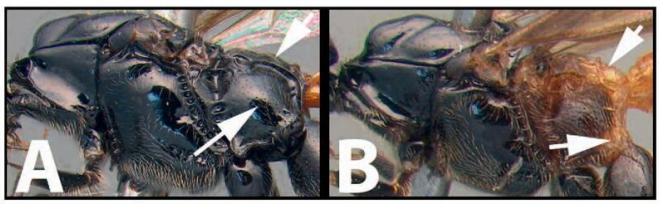
55(54)B. Metapleuron mostly or entirely pale; propodeum pale ..... ***A. genemonroei* n. sp.**



Couplet 55

56(54)A. Metapleuron and propodeum both entirely black ..... ***A. bobpoolei* n. sp.** females

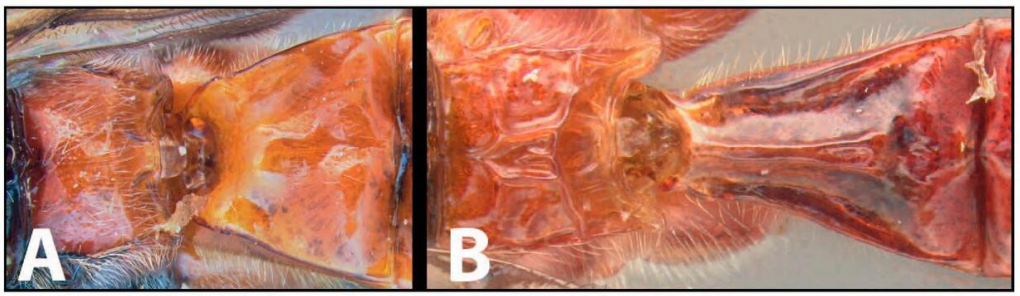
56(54)B. Metapleuron and propodeum from mostly black to entirely yellow, one or the other always with some yellow color ..... *A. janzeni* males



Couplet 56

57(41)A. First tergum varying from weakly convex to with a rounded longitudinal bulge 58

57(41)B. First tergum with well-defined median longitudinal carina ..... *A. janzeni*

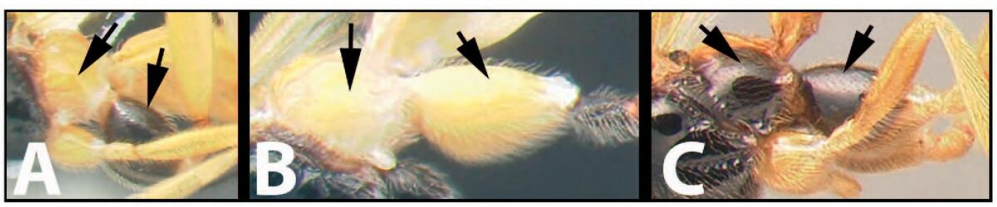


Couplet 57

58(57)A. Metapleuron mostly or entirely pale; hind coxa partly or entirely melanic ..... ***A. longinoi* n. sp.**

58(57)B. Metapleuron mostly or entirely pale; hind coxa entirely pale 59

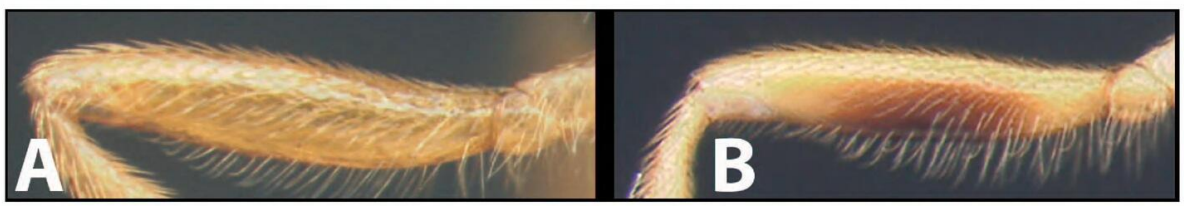
58(57)C. Metapleuron mostly or entirely melanic; hind coxa partly or entirely melanic ..... ***A. jeanmariecadioui* n. sp.**



Couplet 58

59(58)A. Femur of midleg entirely yellow 60

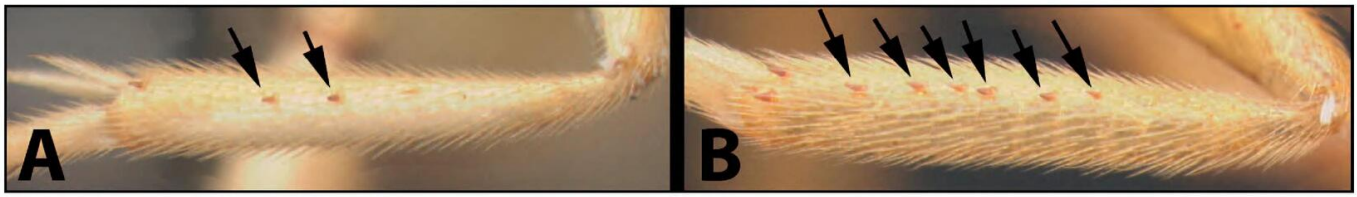
59(58)B. Femur of midleg mostly yellow but melanic at midlength, sometimes only ventrally ..... ***A. fernandodiasi* n. sp.**



Couplet 59

60(59)A. Midtibia with 0–3 nonapical spines, precoxal sulcus shorter with fewer crenulae ..... ***A. fernandezi* n. sp.**

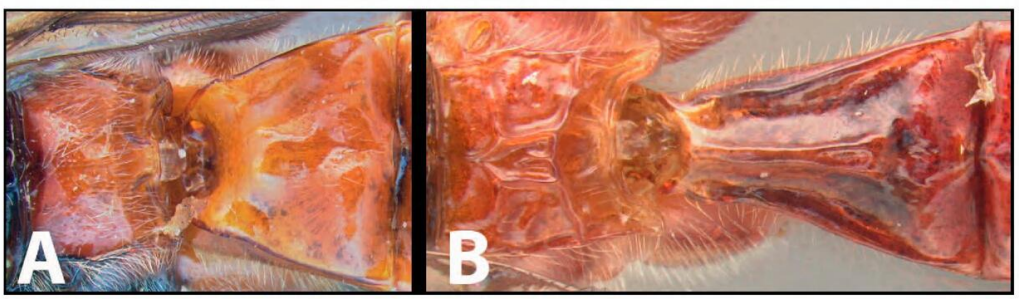
60(59)B. Midtibia with 5 or more nonapical spines; precoxal sulcus longer with more crenulae ..... ***A. andresfreitasi* n. sp.**



Couplet 60

61(41)A. First tergum varying from weakly convex to with a rounded longitudinal bulge 62

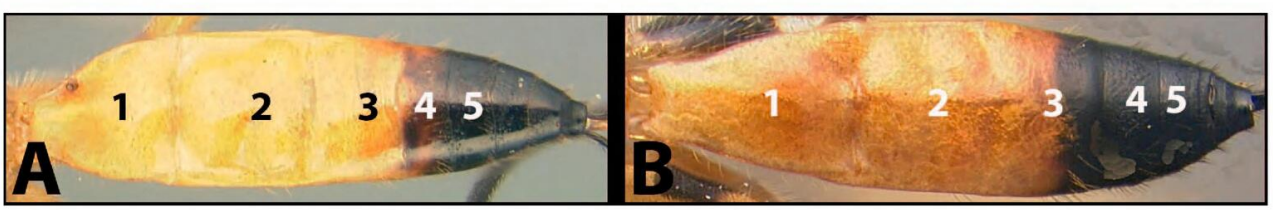
61(41)B. First tergum with well-defined median longitudinal carina ..... *A. janzeni* males



Couplet 61

62(61)A. Median tergite 3 pale ..... ***A. scottshawi* n. sp.**

62(61)B. Median tergite 3 pale anteriorly, melanic posteriorly ..... ***A. jackiemillerae* n. sp.**



Couplet 62

63(2)A. Midfemur melanic 64

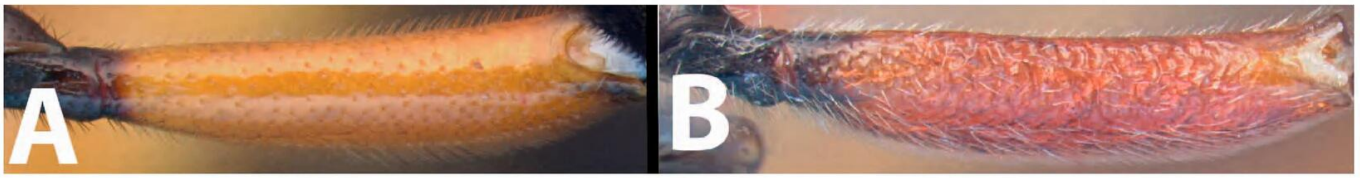
63(2)B. Midfemur pale 71

63(2)C. Midfemur bicolored, melanic and pale 77

Couplet 63

64(63)A. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface.....65

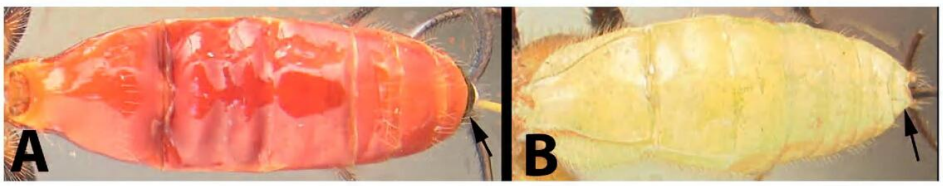
64(63)B. Hind femur heavily sculptured ventrally with aciculations or rugosities, distinctly more heavily sculptured than dorsal surface 69



Couplet 64

65(64)A. Penultimate metasomal tergum (and often more terga) melanic.....66

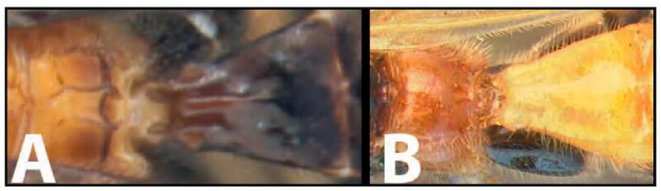
65(64)B. Penultimate metasomal tergum pale, reddish orange to yellow.....67



Couplet 65

66(65)A. Propodeum areolate, with at least one closed areola; first tergum with well-defined median longitudinal carina.....*A. cuna* male

66(65)B. Propodeum lacking complete areolae, smooth; first tergum weakly convex to with a rounded longitudinal bulge .....*A. varius*



Couplet 66

67(65)A. Hind coxa entirely pale.....***A. yuanmaofangi* n. sp.**

67(65)B. Hind coxa with a black patch laterally (may only be present near apex) 68

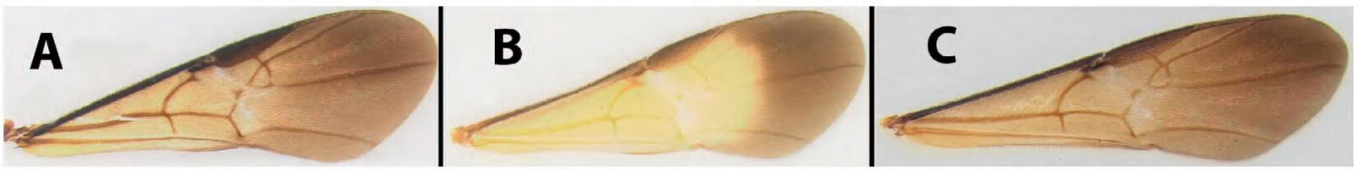
Couplet 67

68(67) These three species are very difficult to separate and this couplet has limited accuracy.

68(67)A. Forewing distinctly yellow in basal ⅓ but lacking a distinct margin between pale and dark areas. ..... ***A. johnbrowni* n. sp.**

68(67)B. Forewing distinctly yellow in basal ⅓ and with a distinct margin between pale and dark areas ..... *A. cocto*

68(67)C. Forewing with only a hint of yellow basally ..... ***A. mariaheikkilae* n. sp.**



Couplet 68

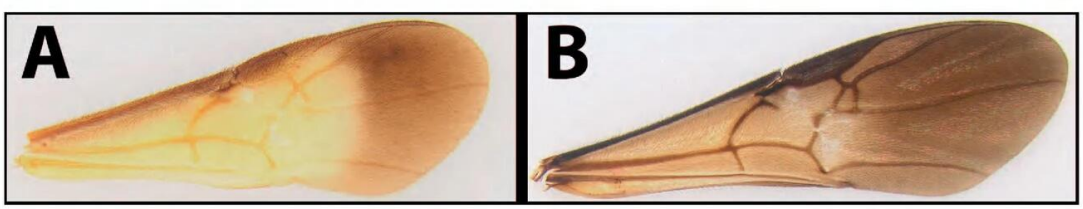
69(64)A. Hind coxa entirely pale ..... *A. arawak*

69(64)B. Hind coxa with a black patch laterally (may only be present near apex) 70

Couplet 69

70(69)A. Forewing with a well-defined margin between apical infuscate area and basal yellow area ..... ***A. brendameierottoae* n. sp.**

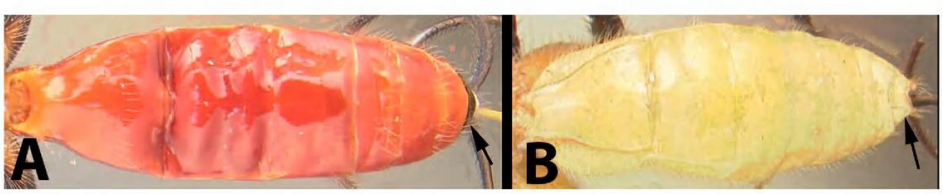
70(69)B. Forewing lacking a well-defined margin between apical infuscate area and basal pale area ..... ***A. paulheberti* n. sp.**



Couplet 70

71(63)A. Penultimate metasomal tergum melanic 72

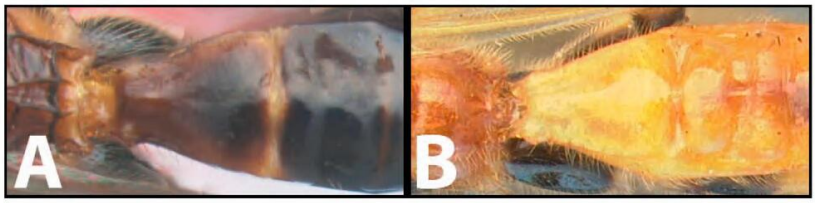
71(63)B. Penultimate metasomal tergum pale, reddish orange to yellow 74



Couplet 71

72(71)A. Median tergites 1 and 2 mostly or entirely melanic ..... ***A. scottmilleri* n. sp.** male

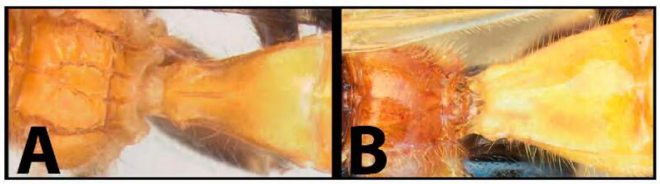
72(71)B. Median tergites 1 and 2 pale 73



Couplet 72

73(72)A. Propodeum areolate, with at least one closed areola ..... ***A. kaydodgeae* n. sp.**

73(72)B. Propodeum lacking complete areolae, mostly or completely smooth ..... *A. varius*



Couplet 73

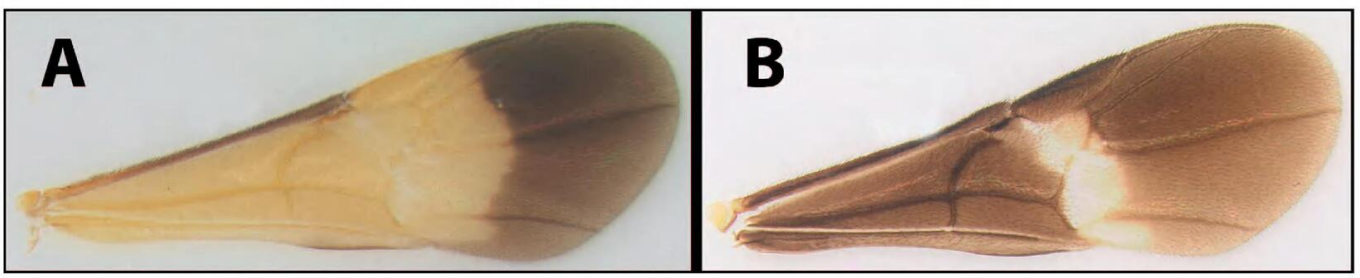
74(71)A. Hind coxa entirely pale 75

74(71)B. Hind coxa with a black patch laterally or near apex 76

Couplet 74

75(74)A. Forewing yellow in basal ⅔, melanic apically ..... *A. cuna* female

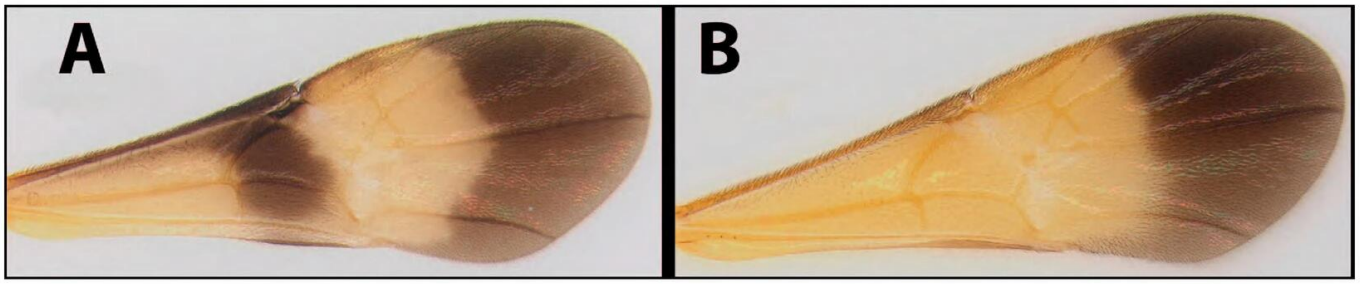
75(74)B. Forewing mostly melanic with a clear vertical band near stigma ..... ***A. donlafontainei* female**



Couplet 75

76(73)A. Forewing banded from base: yellow, infuscate, yellow, infuscate.....***A. scottmilleri* n. sp.** female

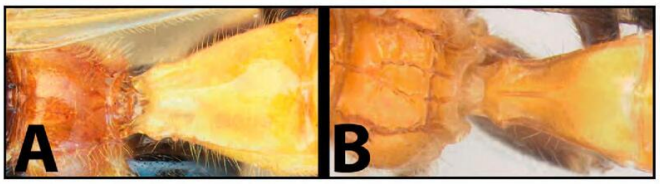
76(73)B. Forewing yellow basally, infuscate apically.....*A. cara*



Couplet 76

77(63)A. Propodeum lacking complete areolae, mostly or completely smooth .....*A. varius*

77(63)B. Propodeum areolate, with at least one closed areola.....***A. donlafontainei* n. sp.** male



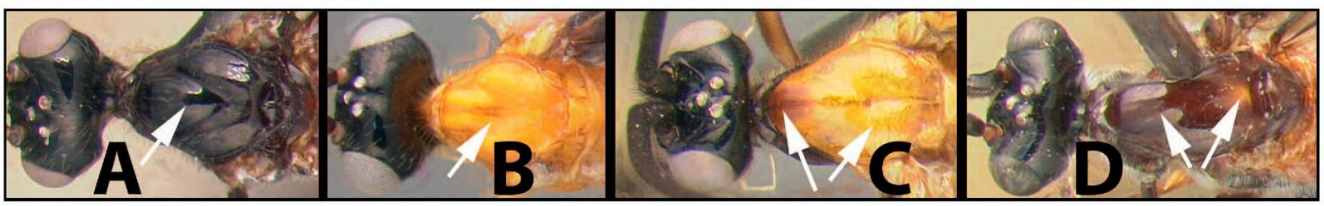
Couplet 77

78(1)A. Mesoscutum entirely melanic.....79

78(1)B. Mesoscutum entirely pale.....111

78(1)C. Mesoscutum mostly pale with some melanic infusions 142

78(1)D. Mesoscutum mostly melanic with some pale infusions.....144



Couplet 78

79(78)A. Median tergite 3 melanic 80

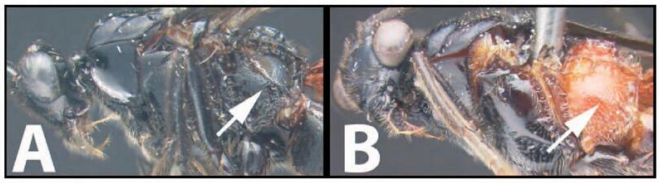
79(78)B. Median tergite 3 pale 83

79(78)C. Median tergite 3 pale anteriorly, melanic posteriorly .....***A. yuchinkengae* n. sp.**

Couplet 79

80(79)A. Metapleuron mostly or entirely melanic 81

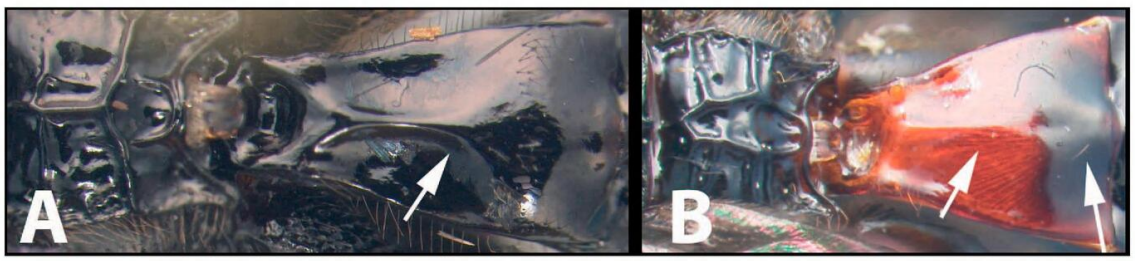
80(79)B. Metapleuron mostly or entirely pale ..... ***A. semihespenheidei* n. sp.**



Couplet 80

81(80)A. Median tergite 1 entirely melanic 82

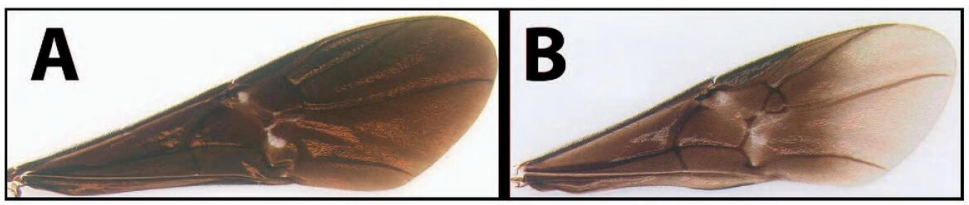
81(80)B. Median tergite 1 partly or completely pale (reddish) ..... ***A. hespenheidei* n. sp.**



Couplet 81

82(81)A. Forewing almost entirely infuscate, ignore small clear patches posteriad stigma ..... *A. ekchuah*

82(81)B. Forewing patterned with a clear or white area apically ..... ***A. tanyadapkeyae* n. sp.**

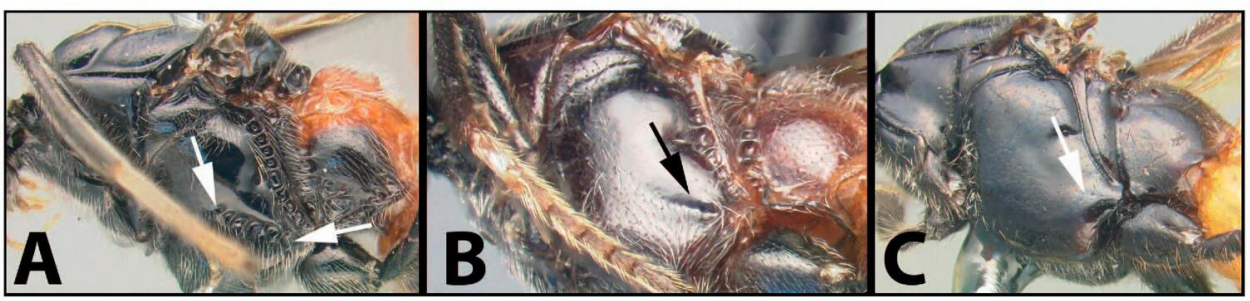


Couplet 82

83(79)A. Precoxal sulcus distinct and foveolate ½ or more length of mesopleuron 96

83(79)B. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly 84

83(79)C. Precoxal sulcus absent or mostly absent, represented at most by small, shallow depression, usually posteriorly, crenulae always lacking 105

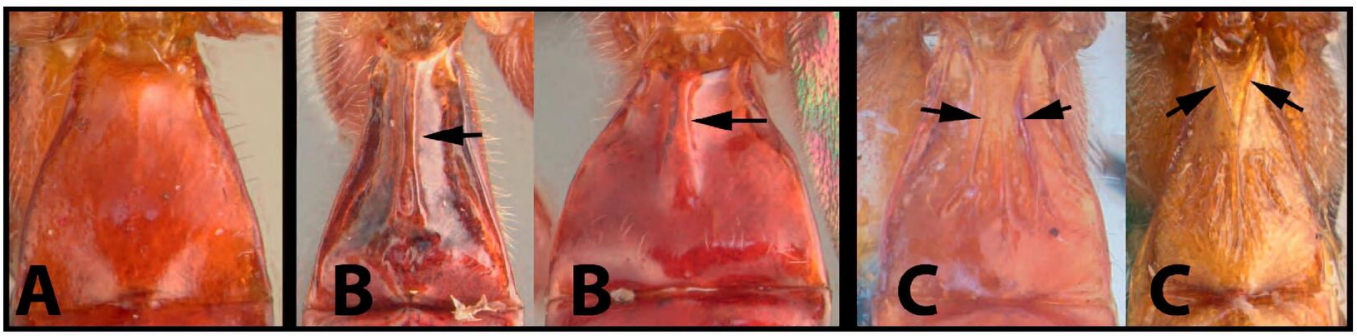


Couplet 83

84(83)A. First tergum varying from weakly convex to with a rounded longitudinal bulge 85

84(83)B. First tergum with well-defined median longitudinal carina 92

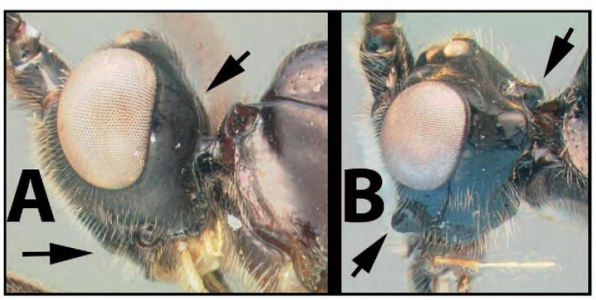
84(83)C. First tergum with two converging longitudinal carinae 95



Couplet 84

85(84)A. Occiput dorsolaterally rounded; clypeus unmodified, lacking protuberances 86

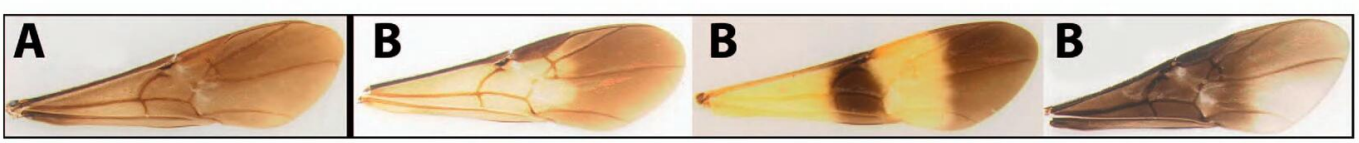
85(84)B. Occiput dorsolaterally with squared protuberances; clypeus with lateral protuberances ..... ***A. victoriapookae* n. sp.**



Couplet 85

86(85)A. Forewing almost entirely infuscate, ignore small clear patches posteriad stigma 87

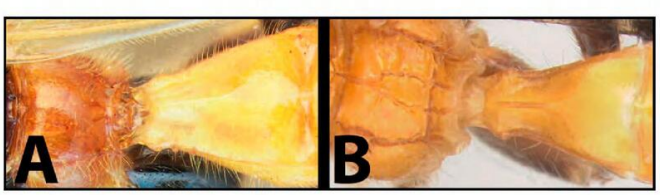
86(85)B. Forewing patterned with large clear, white, or yellow areas 90



Couplet 86

87(86)A. Propodeum smooth 89

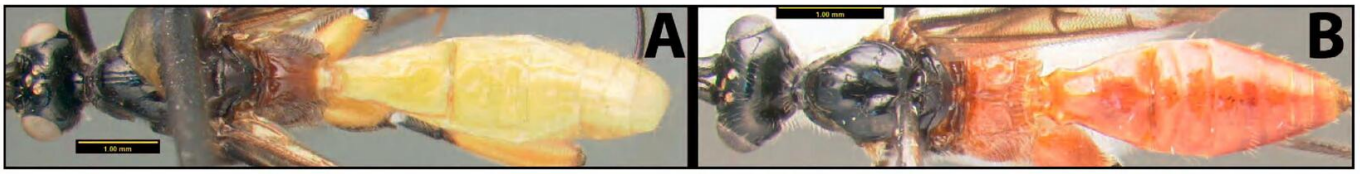
87(86)B. Propodeum sculptured 88



Couplet 87

88(87)A. Body color black and yellow ..... ***A. johnburnsi* n. sp.**

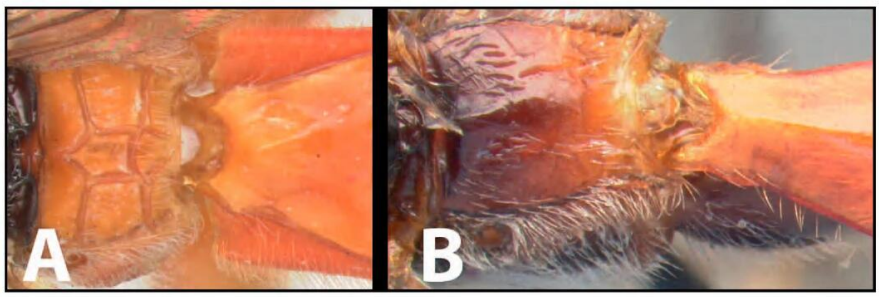
88(87)B. Body color black and orange to black and red ..... ***A. markmetzi* n. sp.**



Couplet 88

89(87)A. Propodeum areolate, with several closed areolae ..... ***A. markmetzi* n. sp.**

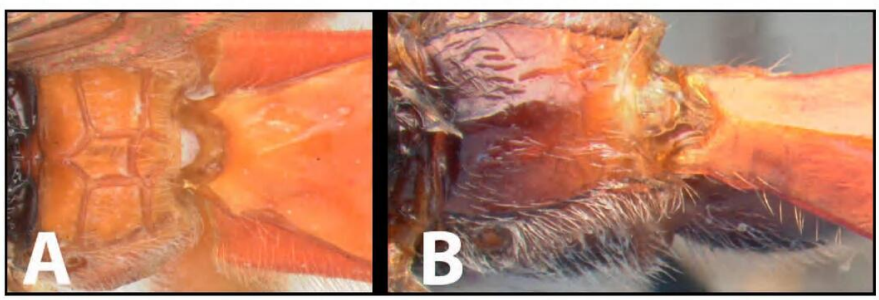
89(87)B. Propodeum lacking, complete areolae, mostly or completely smooth ..... ***A. johnobryckii* n. sp.**



Couplet 89

90(86)A. Propodeum areolate, with at least one closed areola ..... ***A. markmetzi* n. sp.**

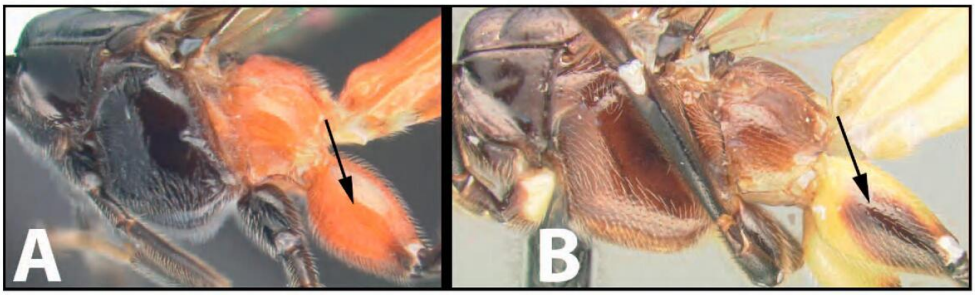
90(86)B. Propodeum lacking complete areolae, usually mostly or completely smooth 91



Couplet 90

91(90)A. Hind coxa entirely or almost entirely pale; hind femur mostly or entirely melanic ..... *A. englishi*

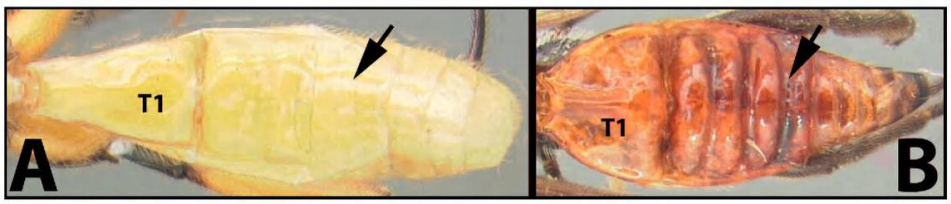
91(90)B. Hind coxa pale with a large melanic patch laterally; hind femur mostly or entirely pale ..... ***A. johnburnsi* n. sp.**



Couplet 91

92(84)A. First median tergite longer than wide; third tergum lacking transverse depression or depression barely indicated 93

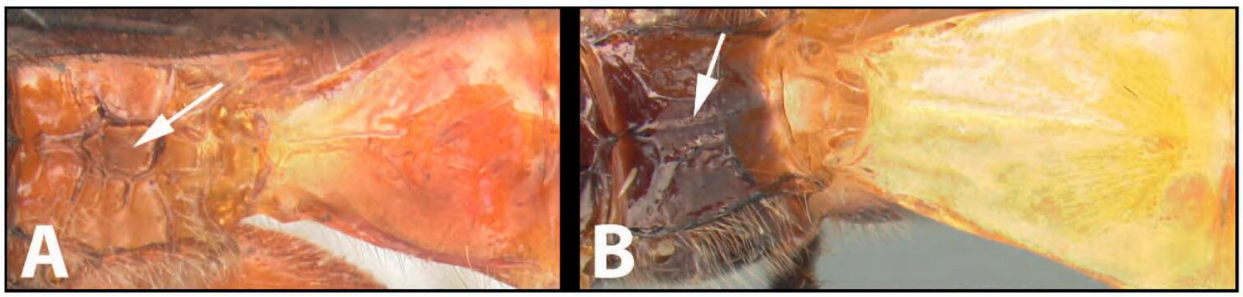
92(84)B. First median tergite wider than long; third tergum with deep transverse depression ..... *A. miqa*



Couplet 92

93(92)A. Propodeum with more defined and complete sculpture; first median tergite mostly orange 94

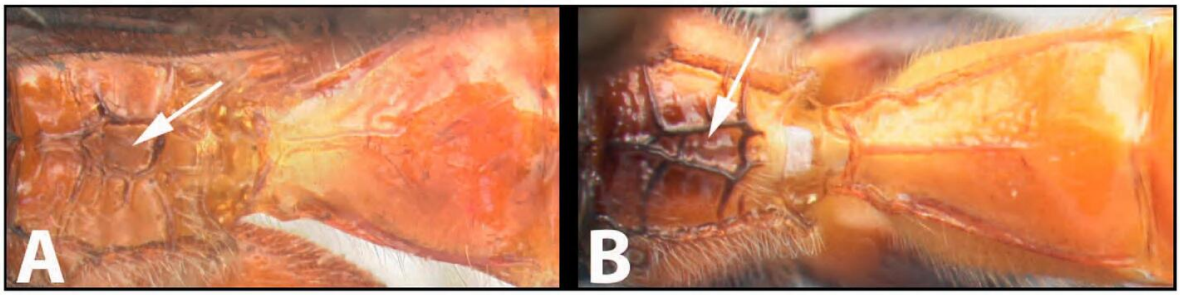
93(92)B. Propodeum with less defined and complete sculpture; first median tergite yellow ..... ***A. johnburnsi* n. sp.**



Couplet 93

94(93)A. Propodeum and metapleuron entirely pale ..... ***A. sarahmeierottoae* n. sp.** male

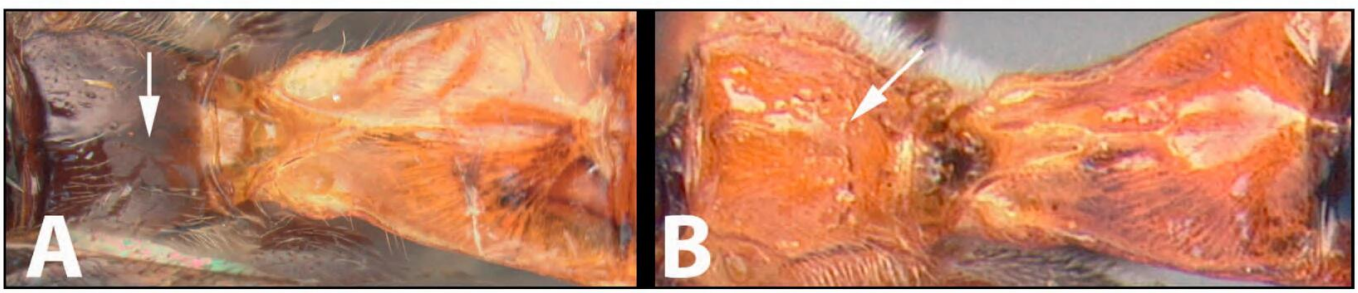
94(93)B. Propodeum and metapleuron with melanic color ..... ***A. johnobryckii* n. sp.**



Couplet 94

95(84)A. Propodeum smooth, melanic ..... ***A. barbsharanowskiae* n. sp.** female

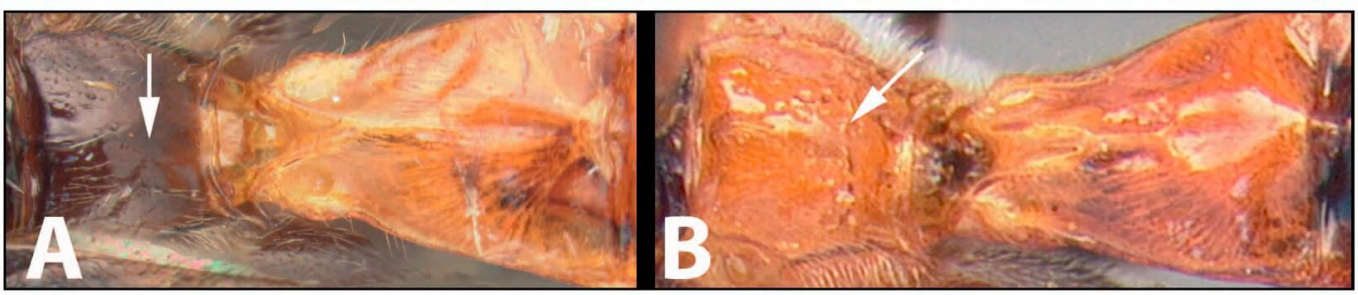
95(84)B. Propodeum sculptured, pale ..... ***A. kaciejoae* n. sp.**



Couplet 95

96(83)A. Propodeum melanic 97

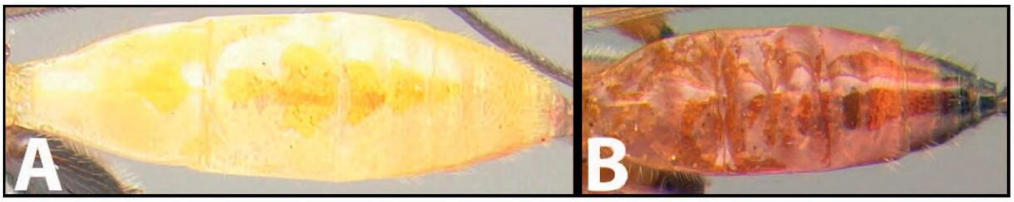
96(83)B. Propodeum pale 99



Couplet 96

97(95)A. Metasoma mostly or entirely yellow ..... ***A. keithwillmotti* n. sp.**

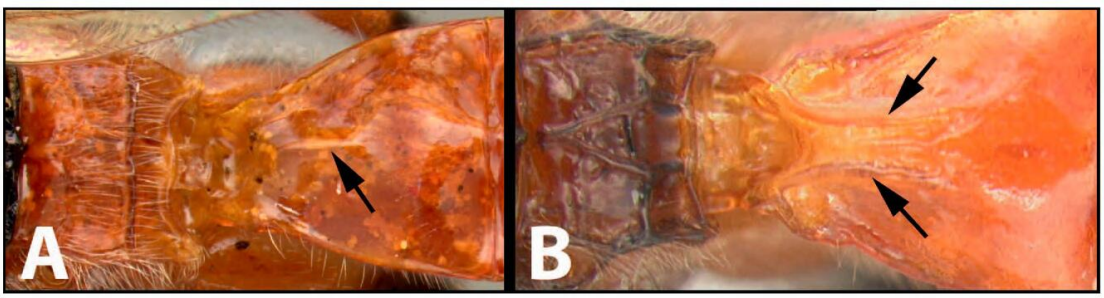
97(95)B. Metasoma mostly or entirely orange 98



Couplet 97

98(97)A. First tergum with a single rounded longitudinal bulge ..... ***A. brianharrisi* n. sp.**

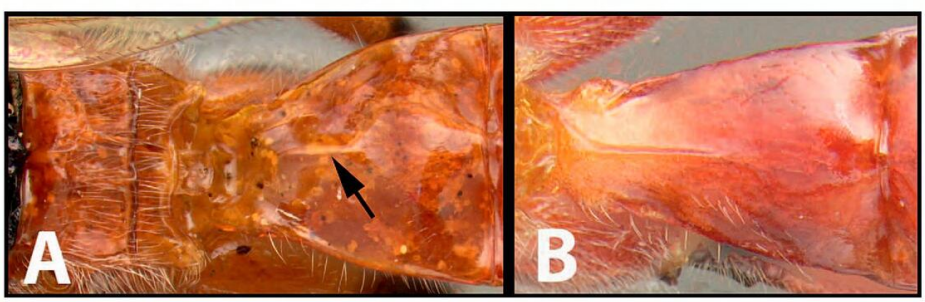
98(97)B. First tergum with two converging longitudinal carinae ..... ***A. kaciejoae* n. sp.** male



Couplet 98

99(96)A. First tergum varying from weakly convex to with a rounded longitudinal bulge 100

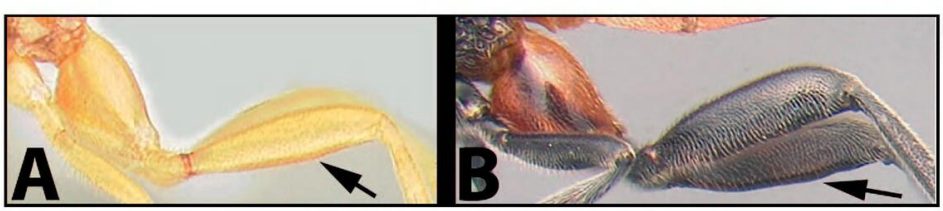
99(96)B. First tergum with well-defined median longitudinal carina 104



Couplet 99

100(99)A. Hind femur mostly or entirely pale 101

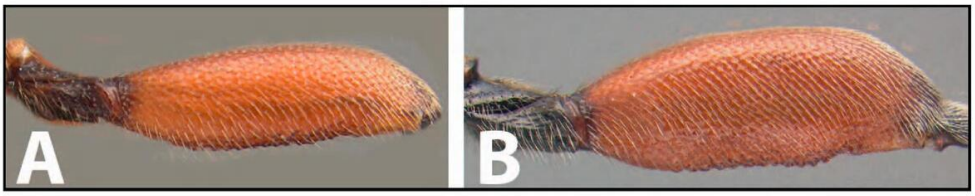
100(99)B. Hind femur mostly or entirely melanic 103



Couplet 100

101(100)A. Hind femur narrower 102

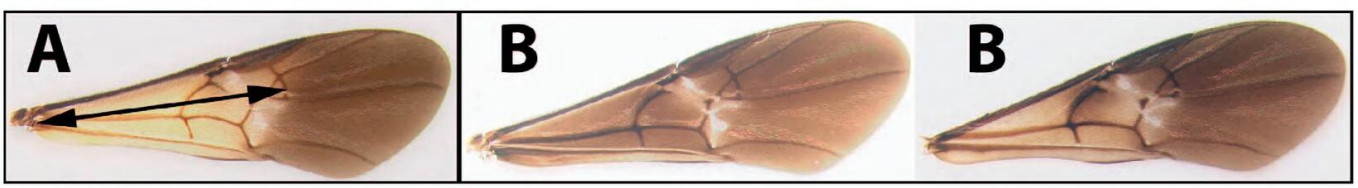
101(100)B. Hind femur wider ..... *A. nicoya*



Couplet 101

102(101)A. Forewing with yellowish or clear area extending to the second submarginal cell ..... *A. roibasi*

102(101)B. Forewing entirely infuscate or, if with yellowish or clear area basally, it does not extend to second submarginal cell (we cannot distinguish the following three species morphologically) ..... ***A. jennyphillipsae* n. sp.**, ***A. isidrochaconi* n. sp.**, ***A. jeanfrancoislandryi* n. sp.**

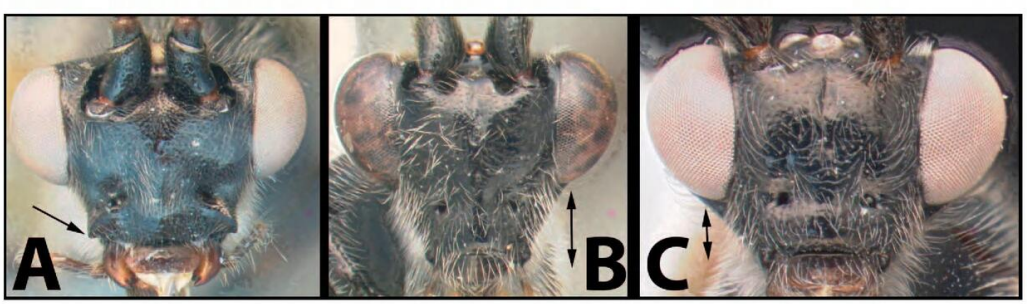


Couplet 102

103(100)A. Protuberance present lateral to clypeus; gena not elongate ..... ***A. victoriapookae* n. sp.**

103(100)B. Protuberance absent lateral to clypeus; gena elongate ..... *A. arua*

103(100)C. Protuberance absent lateral to clypeus; gena not elongate (the common state for *Alabagrus* species) ..... ***A. jeanfrancoislandryi* n. sp.** males



Couplet 103

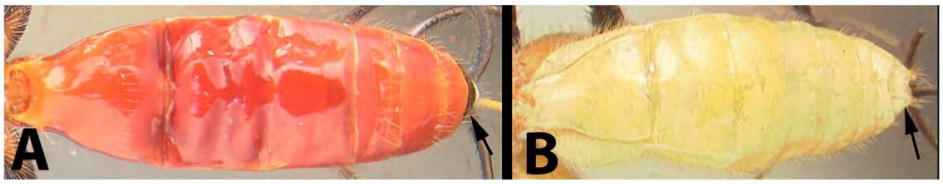
104(99)A. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface ..... ***A. sarahmeierottoae*** **n. sp.** male

104(99)B. Hind femur heavily sculptured ventrally with aciculations or rugosities, distinctly more heavily sculptured than dorsal surface ..... ***A. paulthiaucourti*** **n. sp.**

Couplet 104

105(82)A. Penultimate metasomal tergum (or more) melanic 106

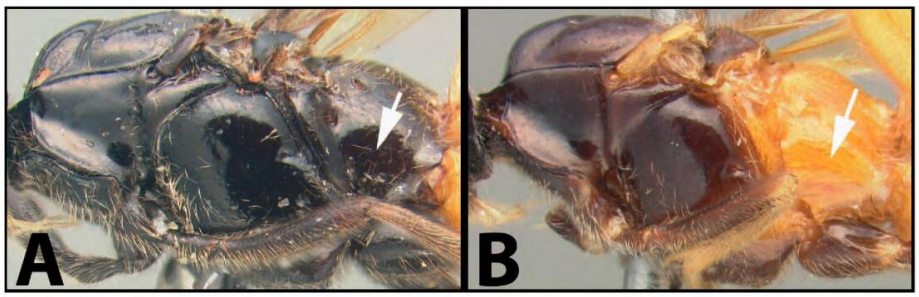
105(82)B. Penultimate metasomal tergum pale, reddish orange to yellow 107



Couplet 105

106(105)A. Metapleuron mostly or entirely melanic; propodeum melanic ..... ***A. stiremani*** **n. sp.**

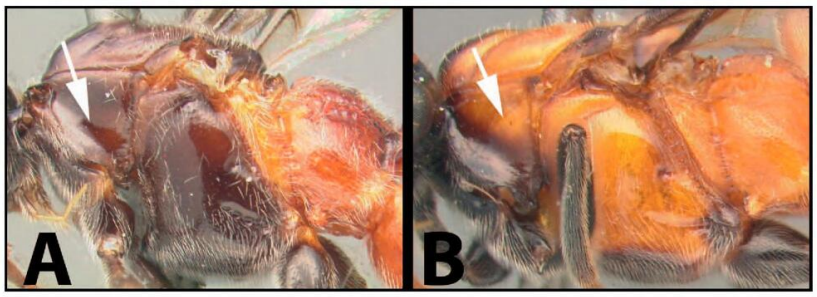
106(105)B. Metapleuron mostly or entirely pale; propodeum pale ..... ***A. quickei*** **n. sp.**



Couplet 106

107(104)A. Pronotum entirely melanic 108

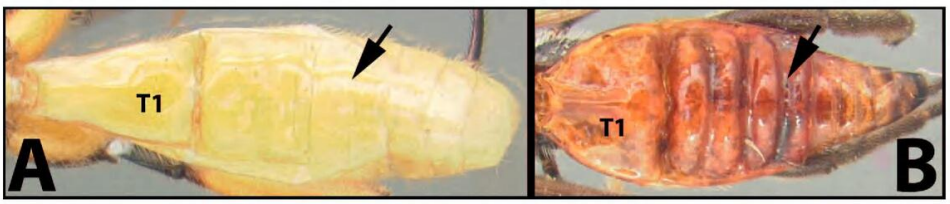
107(104)B. Pronotum partly or completely pale ..... ***A. sarahsharkeyae*** **n. sp.**



Couplet 107

108(107)A. Third tergum lacking transverse depression or depression barely indicated; first tergum varying from weakly convex to with a rounded longitudinal bulge 109

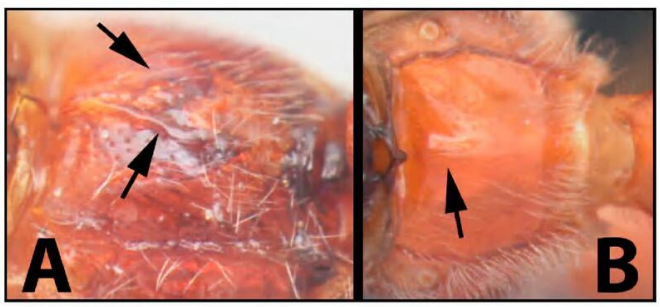
108(107)B. Third tergum with deep transverse depression; first tergum with well-defined median longitudinal carina ..... *A. miqa*



Couplet 108

109(108)A. Propodeum sculptured, minimally with two diverging carinae anteriorly ..... ***A. sarahmeierottoae* n. sp.** female

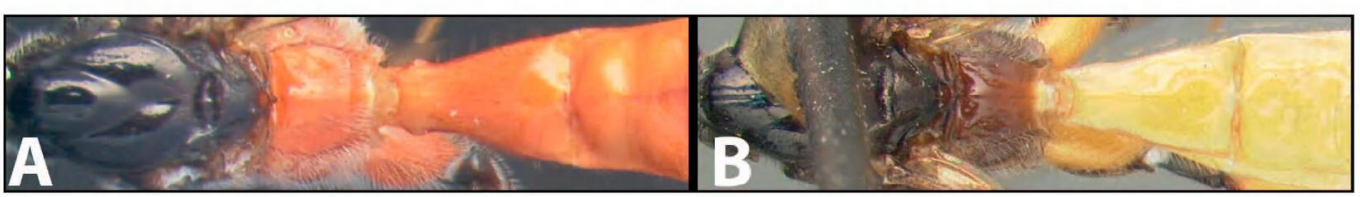
109(108)B. Propodeum completely smooth or with a slight bulge anteromedially 110



Couplet 109

110(109)A. Body melanic and orange ..... *A. englishi*

110(109)B. Body melanic and yellow ..... ***A. johnburnsi* n. sp.**

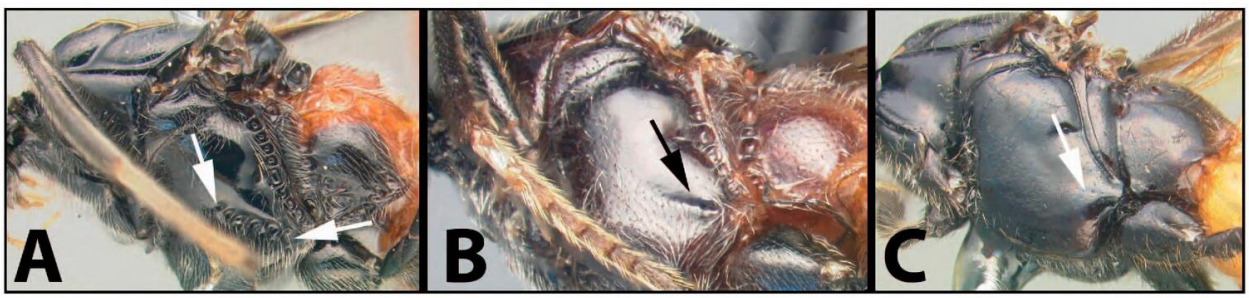


Couplet 110

111(78)A. Precoxal sulcus distinct and foveolate ½ or more length of mesopleuron 125

111(78)B. Precoxal sulcus with one or several distinct foveae posteroventrally with or without a smooth groove extending anteriorly, fovea not extending ½ length of mesopleuron 112

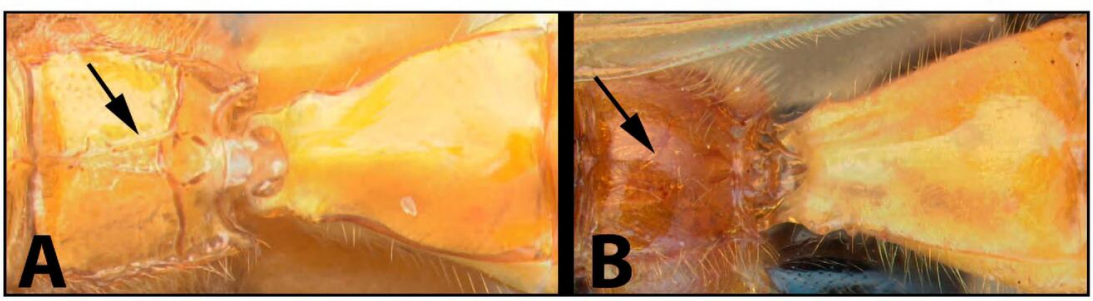
111(78)C. Precoxal sulcus absent or mostly absent, represented at most by small, shallow depression, usually posteriorly, crenulae always lacking 133



Couplet 111

112(110)A. Propodeum areolate, with at least one closed areola 113

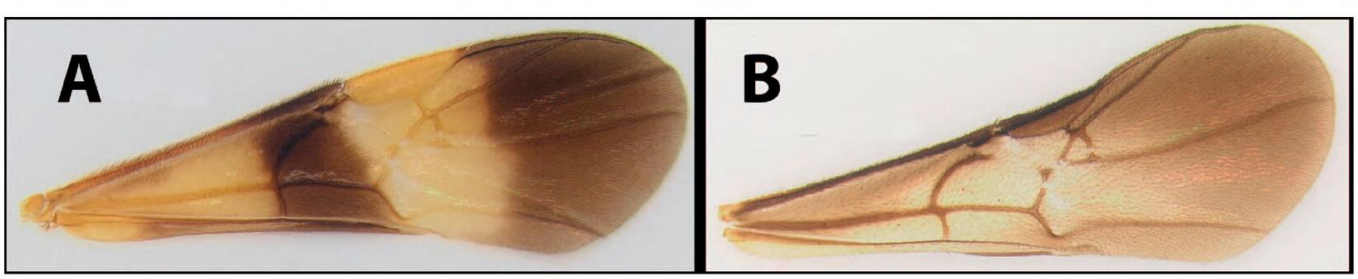
112(110)B. Propodeum lacking complete areolae, mostly smooth 117



Couplet 112

113(112)A. Forewing with 2 distinct yellow bands ..... *A. voto*

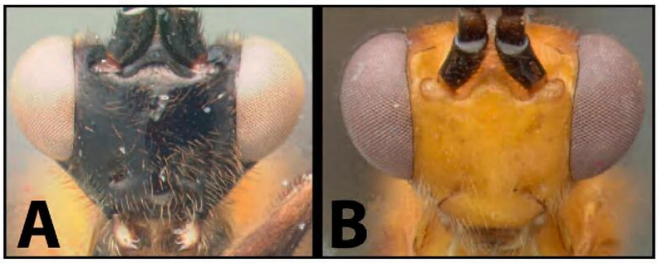
113(112)B. Forewing lacking 2 distinct yellow bands 114



Couplet 113

114(113)A. Head entirely melanic 115

114(113)B. Head partly or entirely pale ..... *A. maculipes*



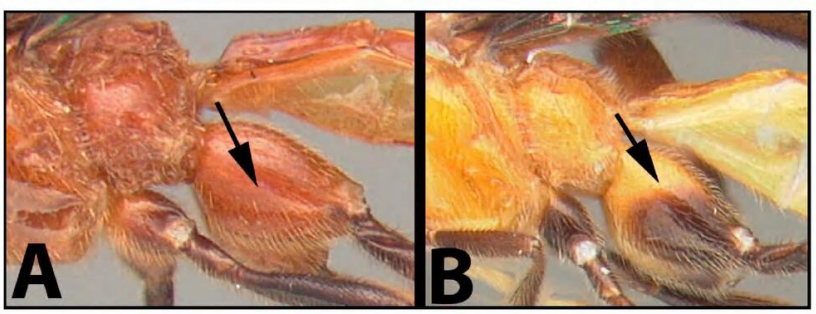
Couplet 114

115(114)A. Males 116

115(114)B. Females (see Figure 62) ..... ***A. patsharkeyi* n. sp.**

116(115)A. Body orange and melanic; hind coxa entirely pale ..... *A. derailersi* male

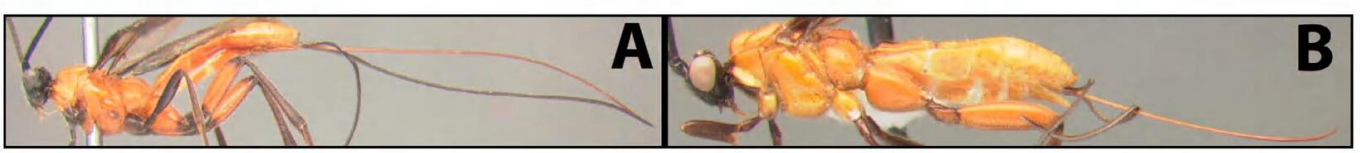
116(115)B. Body yellow and melanic; hind coxa partly melanic ..... *A. masneri* male



Couplet 116

117(112)A. Ovipositor distinctly longer than body 120

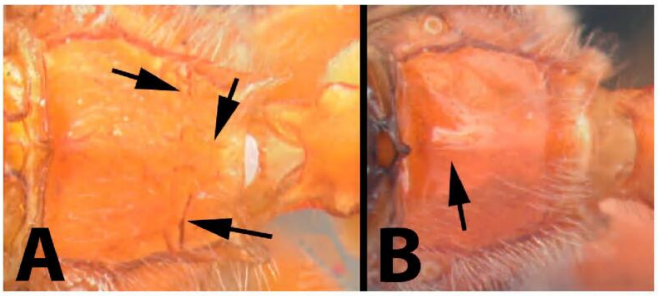
117(112)B. Ovipositor longer than metasoma but not distinctly longer than body 118



Couplet 117

118(117)A. Propodeum sculptured ..... ***A. reddypallii* n. sp.**

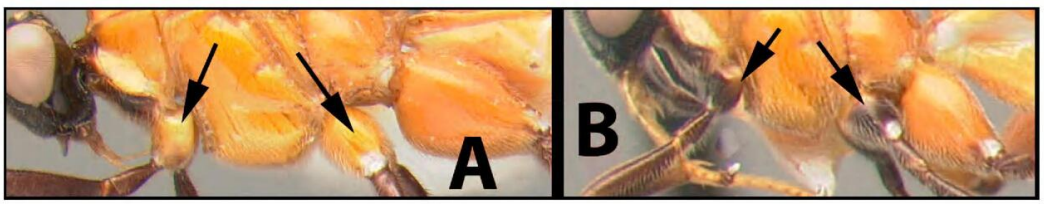
118(117)B. Propodeum smooth, at most with a smooth bulge anteromedially 119



Couplet 118

119(118)A. Fore- and midcoxae entirely pale ..... *A. derailersi* female

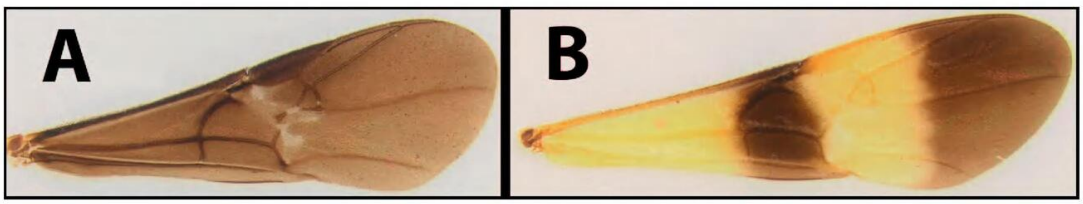
119(118)B. Fore- and midcoxae both partly or entirely melanic ..... *A. masneri* female



Couplet 119

120(117)A. Forewing almost entirely infuscate 121

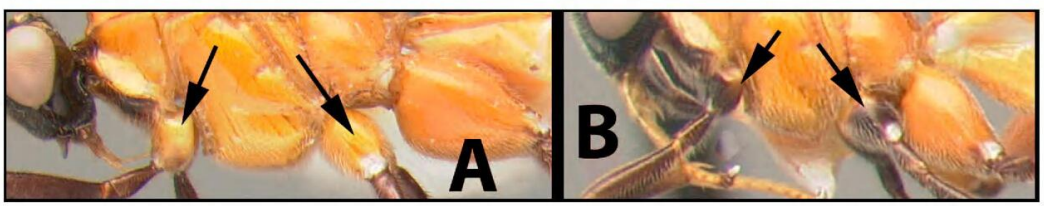
120(117)B. Forewing patterned with two yellow stripes ..... *A. varius*



Couplet 120

121(120)A. Fore- and midcoxae entirely pale 122

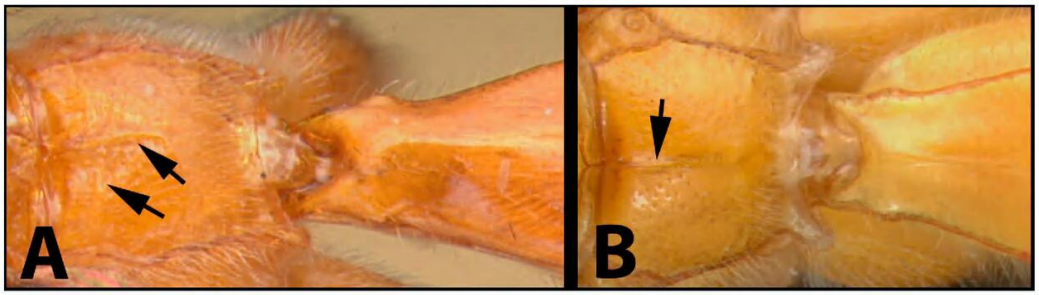
121(120)B. Fore- and midcoxae both partly or entirely melanic 123



Couplet 121

122(121)A. Propodeum with irregular sculpture anteromedially ..... ***A. mattottoi* n. sp.**

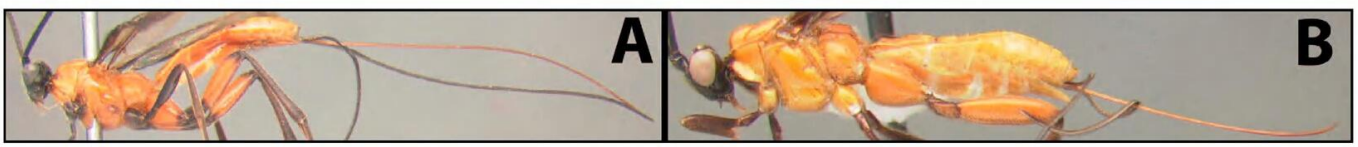
122(121)B. Propodeum entirely smooth except for a weak, rounded median longitudinal ridge ..... ***A. craigevansi* n. sp.**



Couplet 122

123(121)A. Longer specimens, more than 7 mm, and ovipositor longer, clearly longer than body..... 124

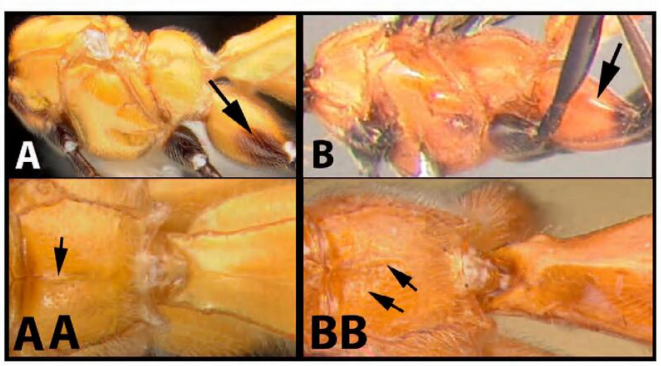
123(121)B. Shorter specimens, less than 6 mm, and ovipositor relatively shorter, about as long as body..... *A. masneri* female



Couplet 123

124(123)A. Hind coxa with a melanic patch laterally; AA. Propodeum entirely smooth except for a weak, rounded median longitudinal ridge ..... ***A. craigevansi* n. sp.**

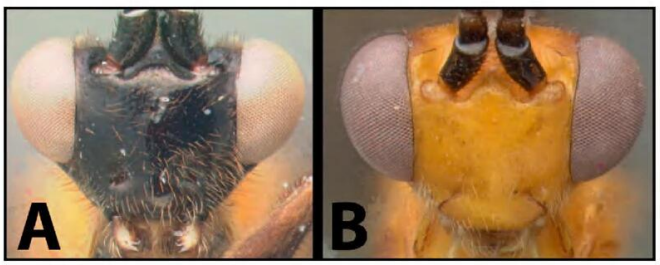
124(123)B. Hind coxa entirely pale or almost entirely pale with melanic color restricted to apex; BB. Propodeum with more sculpture ..... ***A. patsharkeyi* n. sp.**



Couplet 124

125(111)A. Head entirely melanic 126

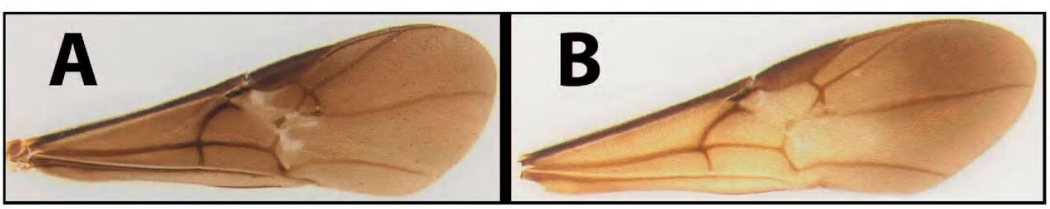
125(111)B. Head partly or entirely pale ..... *A. maculipes*



Couplet 125

126(125)A. Forewing almost entirely infuscate, ignore small clear patches posteriad stigma 127

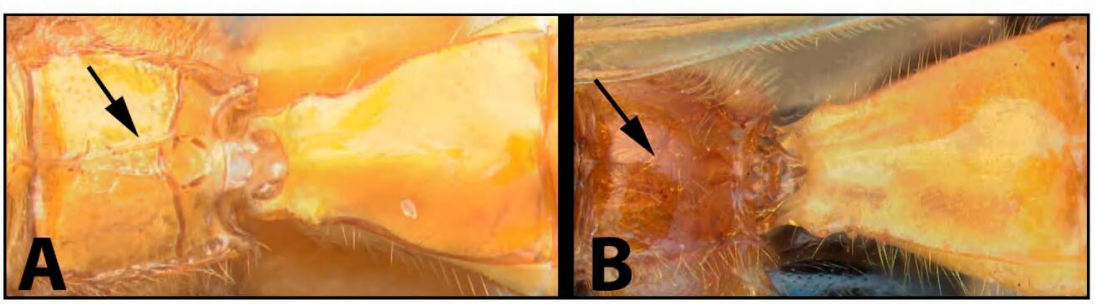
126(125)B. Forewing patterned with large clear, white, or yellow areas 131



Couplet 126

127(126)A. Propodeum areolate, with at least one closed areola 128

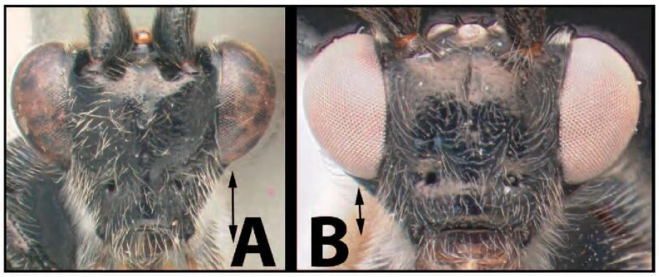
127(126)B. Propodeum lacking complete areolae, usually mostly or completely smooth 130



Couplet 127

128(127)A. Gena longer ..... *A. arua*

128(127)B. Gena shorter (normal condition) 129



Couplet 128

129(128)A. Females (see Figure 62) ..... ***A. patsharkeyi* n. sp.**

129(128)B. Males (see Figure 57) ..... *A. masneri* male

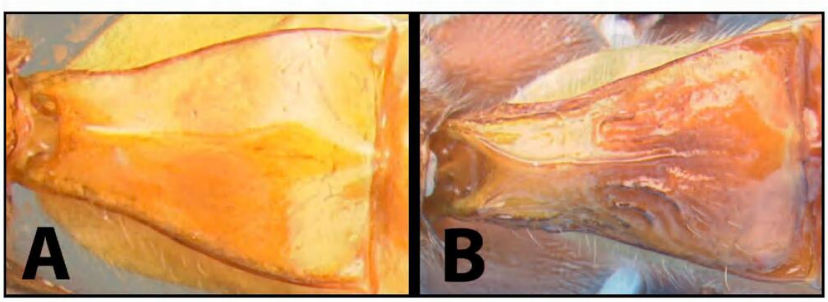
130(127)A. Ovipositor less than 2× length of metasoma ..... *A. pecki*

130(127)B. Ovipositor 2× or more length of metasoma ..... ***A. patsharkeyi* n. sp.**

Couplet 130

131(126)A. First tergum varying from weakly convex to with a rounded longitudinal bulge 132

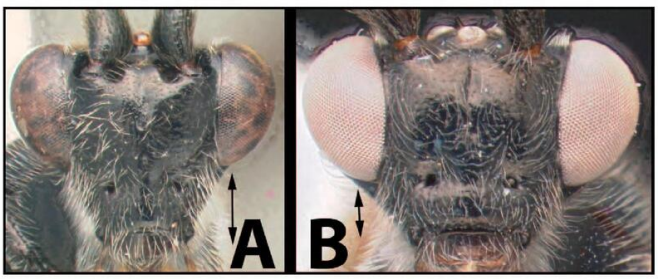
131(126)B. First tergum with well-defined median longitudinal carina ..... *A. stigma*



Couplet 131

132(131)A. Gena longer ..... *A. arua*

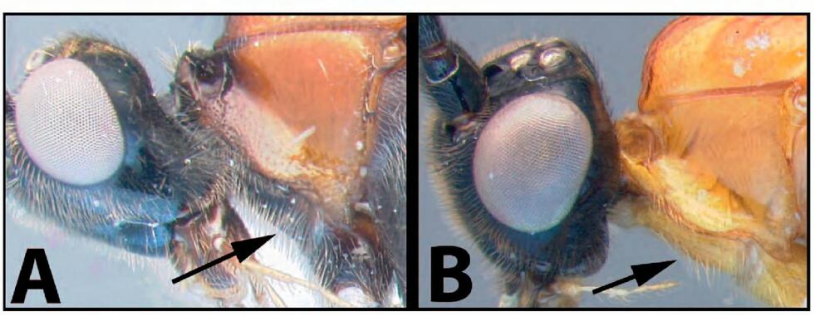
132(131)B. Gena shorter (normal condition) ..... ***A. ilgookangi* n. sp.**



Couplet 132

133(111)A. Propleuron melanic 134

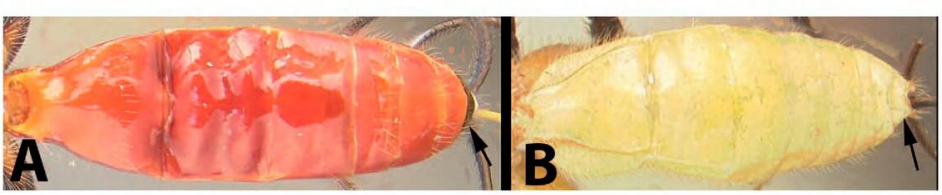
133(111)B. Propleuron pale 138



Couplet 133

134(133)A. Penultimate metasomal tergum (or more) melanic ..... ***A. brianbrowni* n. sp.**

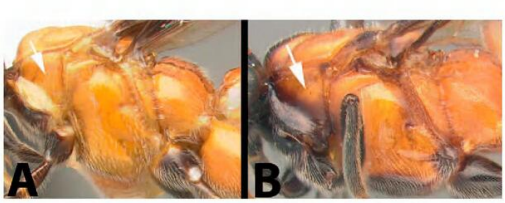
134(133)B. Penultimate metasomal tergum pale, reddish orange to yellow 135



Couplet 134

135(134)A. Pronotum entirely pale 136

135(134)B. Pronotum melanic anteriorly, pale posteriorly 137



Couplet 135

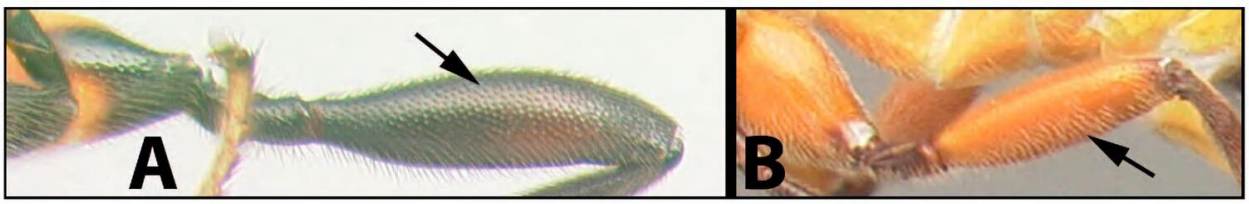
136(135)A. Ovipositor less than 2× longer than metasoma ..... *A. masneri* female

136(135)B. Ovipositor more than 2× longer than metasoma..... ***A. sarahsharkeyae* n. sp.**

Couplet 136

137(135)A. Hind femur mostly or entirely melanic ..... ***A. rudolfmeieri* n. sp.**

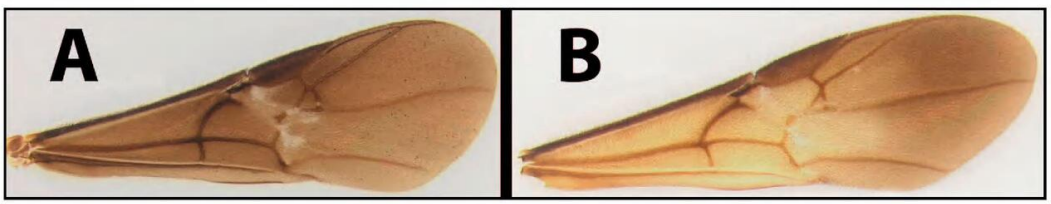
137(135)B. Hind femur mostly or entirely pale ..... ***A. sarahsharkeyae* n. sp.**



Couplet 137

138(133)A. Forewing almost entirely infuscate, ignore small clear patches posteriad stigma 139

138(133)B. Forewing patterned with large clear, white, or yellow areas..... 140



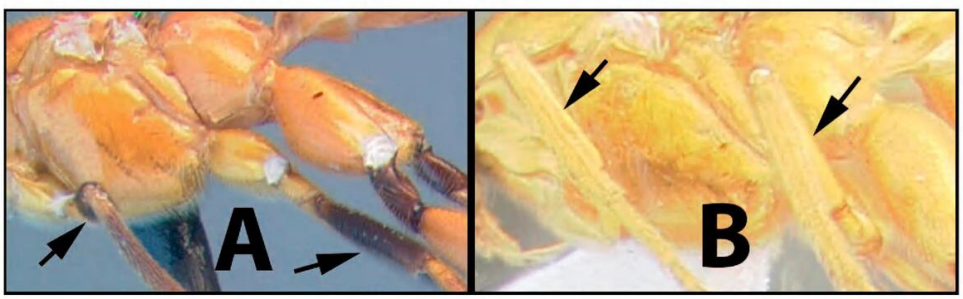
Couplet 138

139(138)A. Males (see Figure 67)..... *A. pecki*

139(138)B. Females (see Figure 57)..... *A. masneri*

140(138)A. Fore- and midfemora mostly or entirely melanic..... 141

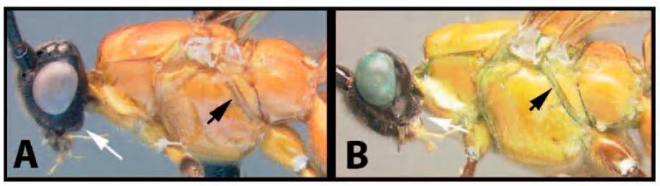
140(138)B. Fore- and midfemora mostly or entirely pale ..... *A. bobwhartoni*



Couplet 140

141(140)A. Margins of mesopleuron without a greenish tinge, concolorous with remainder of pleuron; gena smoothly rounded ..... *A. pecki* female

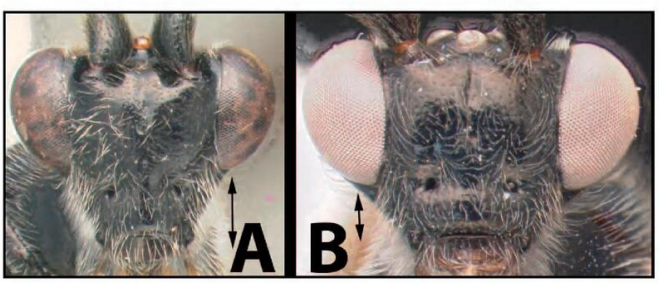
141(140)B. Margins of mesopleuron with a greenish tinge; gena more angulate ..... *A. hansoni*



Couplet 141

142(78)A. Gena longer ..... *A. arua*

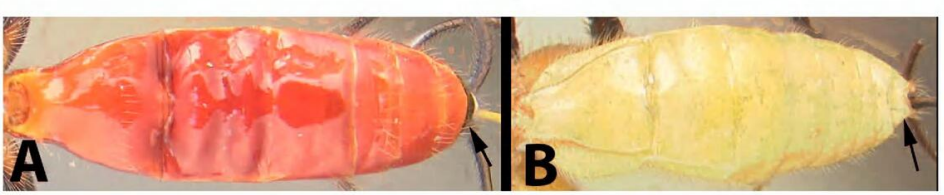
142(78)B. Gena shorter (normal condition) 143



Couplet 142

143(142)A. Penultimate metasomal tergum (or more) melanic ..... ***A. brianbrowni* n. sp.**

143(142)B. Penultimate metasomal tergum pale, reddish orange to yellow ..... ***A. sarahsharkeyae* n. sp.**

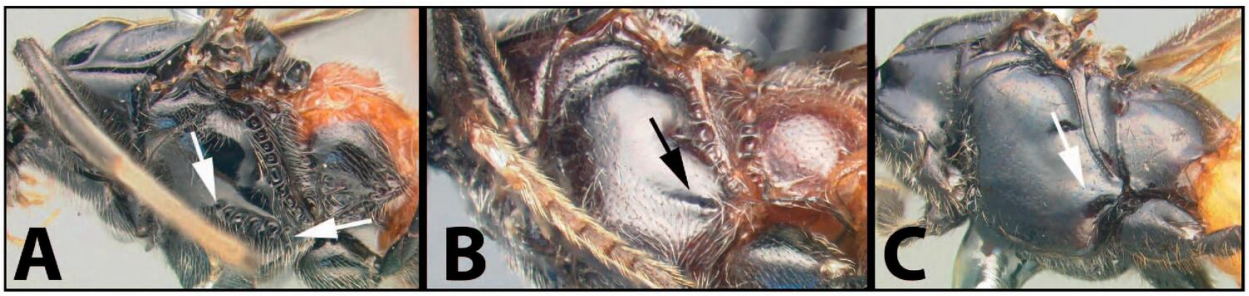


Couplet 143

144(78)A. Precoxal sulcus distinct and foveolate ½ or more length of mesopleuron 145

144(78)B. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly..... ..... ***A. sarahmeierottoae*** **n. sp.** male

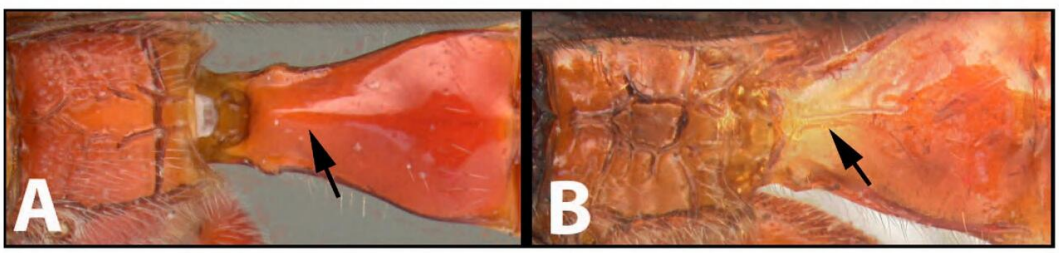
144(78)C. Precoxal sulcus absent or mostly absent, represented at most by small, shallow depression, usually posteriorly, crenulae always lacking..... 146



Couplet 144

145(144)A. First tergum varying from weakly convex to with a rounded longitudinal bulge ..... *A. arua*

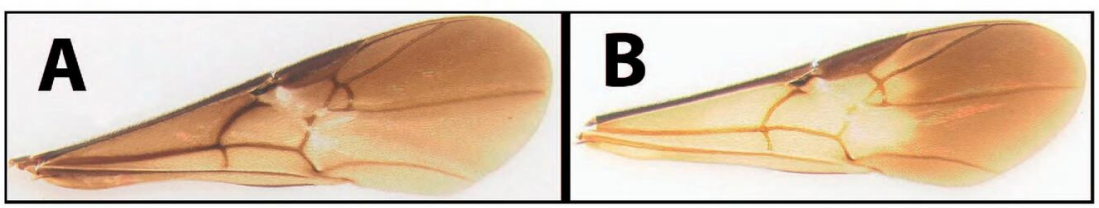
145(144)B. First tergum with well-defined median longitudinal carina ..... ***A. sarahmeierottoae*** **n. sp.** male



Couplet 145

146(144)A. Forewing mostly or entirely infuscate, lacking basal pale area ..... ***A. sarahmeierottoae*** **n. sp.** female

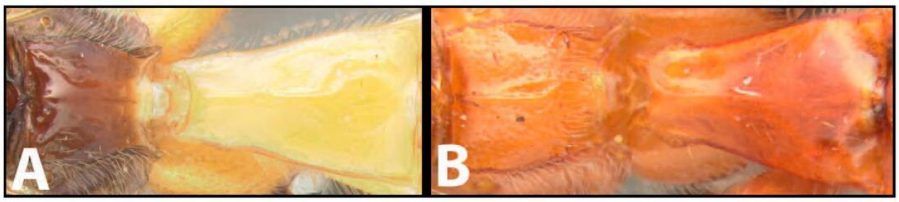
146(144)B. Forewing pale (clear or yellow) basally, infuscate apically 147



Couplet 146

147(146)A. Propodeum mostly or entirely melanic; first median tergite yellow.....***A. johnburnsi* n. sp.**

147(146)B. Propodeum mostly or entirely pale; first median tergite orange.....***A. sarahmeierottoae* n. sp.** female



Couplet 147

SYSTEMATICS

Alabagrus almasolisae Sharkey n. sp.

Figure 2

DIAGNOSIS. Gena acute posteroventrally. Forewing with two distinct yellow bands, one basal and the other directly below (posterior to) stigma, the latter incomplete posteriorly. Metapleuron completely melanic or with posterior and dorsal margins pale. Propodeum completely smooth in female, completely areolate in male. First median tergite with a short anteromedial, rounded, longitudinal bulge.

DESCRIPTION. Body length 9 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 0.9× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Propodeum with more sculpture, always with at least one closed areola; some males with a weak, short, median, longitudinal carina on first median tergite.

Variation. Propodeum from completely smooth to mostly smooth with a weak transverse ridge; propodeum almost all black to half pale in posterior half—posterior to transverse ridge.

HOST INFORMATION. *Neea psychotrioides*.

ETYMOLOGY. Named in honor of Dr. Alma Solis of the Systematic Entomology Laboratory in the U.S. National Museum of

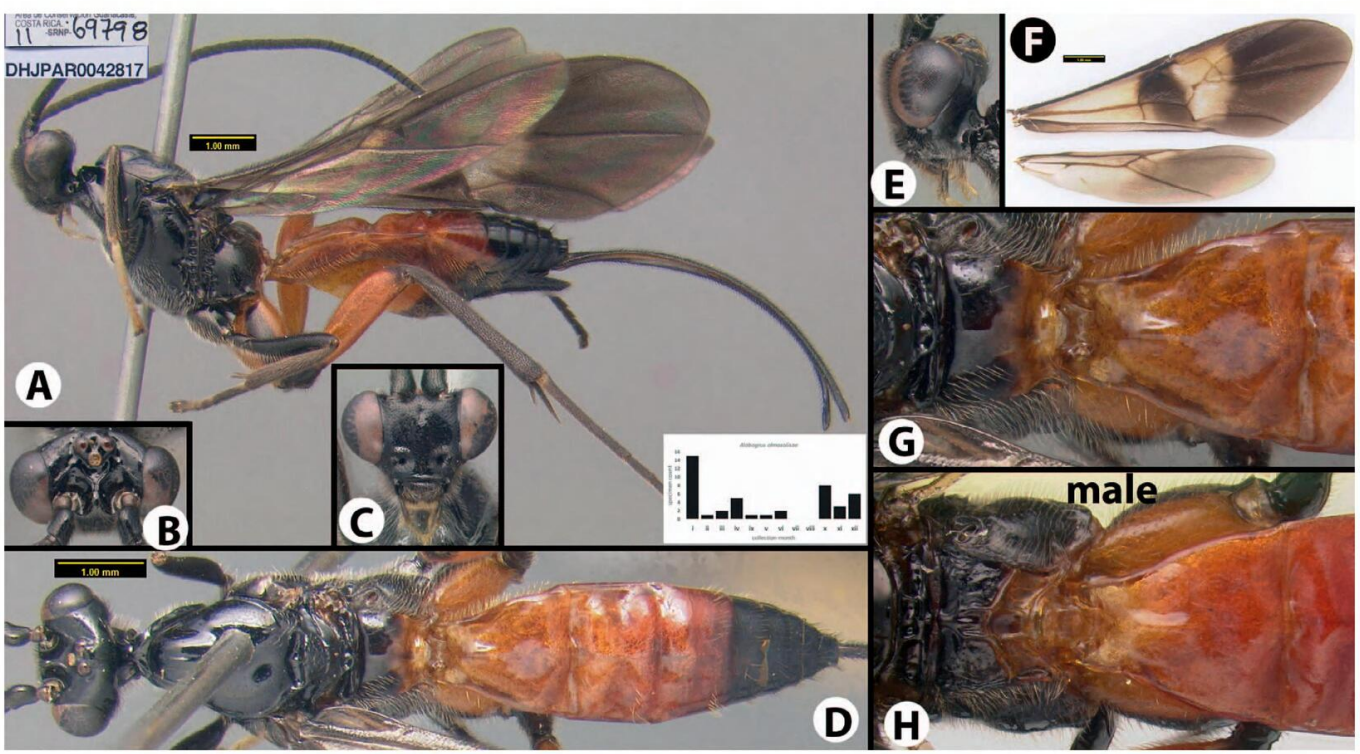


Figure 2 *Alabagrus almasolisae* n. sp., **A–G** holotype; **H** paratype male: **A**. lateral habitus, **B**. dorsal head, **C**. anterior head, **D**. dorsal habitus, **E**. lateral head, **F**. wings, **G**. propodeum and tergum 1, **H**. propodeum and tergum 1.

Natural History, the taxonomist who has, along with Dr. Eugene Munroe (deceased), diligently carried out the taxonomy of the naming and identification of the *Alabagrus* host species of Crambidae and supported the ACG biodiversity inventory in many other ways.

MATERIAL EXAMINED. HOLOTYPE ♀, host=*Neea psychotrioides* on *Ceratocilia sixolalis*, 10.94076°N, 85.3177°W, 461 m, 17.iii–8.iv.2011, DHJPAR0042817 (EMUS). PARATYPES: hosts all from *Neea psychotrioides* on *Ceratocilia sixolalis*. 2♀, 1♂, 10.9163°N, 85.37869°W, 460 m, 27.ix–20.x.2008, DHJPAR0028269, DHJPAR0028270, DHJPAR0028271. 2♀, 27.ix–21.x.2008, DHJPAR0028272, DHJPAR0028273. 1♀, 27.ix–22.x.2008, DHJPAR0030384. 1♂, 10.9305°N, 85.37223°W, 527 m, 6–30.xi.2009, DHJPAR0037924. 2♀, 1♂, 6.xi–2.xii.2009, DHJPAR0037932, DHJPAR0037933, DHJPAR0037935. 1♂, 6.xi–3.xii.2009, DHJPAR0037931. 1♂, 10.89666°N, 85.29003°W, 400 m, 1–19.x.2010, DHJPAR0041205. 1♀, 27.x–14.xi.2010, DHJPAR0041578. 1♀, 27.x–16.xi.2010, DHJPAR0041171. 1♀, 1♂, same data as holotype, DHJPAR0042816, DHJPAR0042818. 1♂, 10.9301°N, 85.25205°W, 109 m, 26.viii–14.ix.2013, DHJPAR0053625. 1♀, 10.94076°N, 85.3177°W, 461 m, 4–30.x.2013, DHJPAR0054493. 1♂, 10.96187°N, 85.28045°W, 96 m, 28.xii.2013–17.i.2014, DHJPAR0054507. 1♀, 28.xii.2013–20.i.2014, DHJPAR0054508. 1♀, 28.xii.2013–21.i.2014, DHJPAR0054510. 1♀, 10.93010°N, 85.25205°W, 109 m, 22.i–10.ii.2014, DHJPAR0055101. 1♀, 3♂, 10.94741°N, 85.31501°W, 491 m, 26.xii.2014–21.i.2015, DHJPAR0057420, DHJPAR0057422, DHJPAR0057421, DHJPAR0057423. 1♂, 10.97073°N, 85.31434°W, 326 m, 11–30.xii.2015, DHJPAR0058545. 1♀, 11–31.xii.2015, DHJPAR0058544. 1♀, 11.xii.2015–2.i.2016, DHJPAR0058540. ♀, 11.xii.2015–3.i.2016, DHJPAR0058543 (EMUS, HIC).

Alabagrus andresfreitasi Sharkey n. sp.

Figure 3

DIAGNOSIS. Gena acute posteroventrally. Forefemur pale. Midfemur entirely yellow. Hind coxa entirely pale. Mesoscutum black. Metapleuron entirely pale. Propodeum completely smooth. First tergum varying from weakly convex to with a rounded longitudinal bulge. Midtibia with five or more nonapical spines; precoxal sulcus crenulate ½ length of mesopleuron.

DESCRIPTION. Body length 10 mm. Gena right angled or acute posteroventrally. Precoxal sulcus distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Similar to female.

HOST INFORMATION. *Phostria truncatalis*.

ETYMOLOGY. Named in honor of Dr. Andres Freitas of Universidade Estadual de Campinas, Brazil, who has assisted heavily with the taxonomy and natural history of the ACG Nymphalidae inventory and introduced D.J. and W.H. to Brazilian lepidopterology.

MATERIAL EXAMINED. HOLOTYPE ♀, host=*Phostria truncatalis* on *Alibertia edulis*, 11.03004°N, 85.52699°W, 280 m, 23.ix–18.x.2009, DHJPAR0036714 (EMUS). PARATYPES: all from *Phostria truncatalis* on *Alibertia edulis*. 1♀, 23.ix–26.x.2009, DHJPAR0037959.

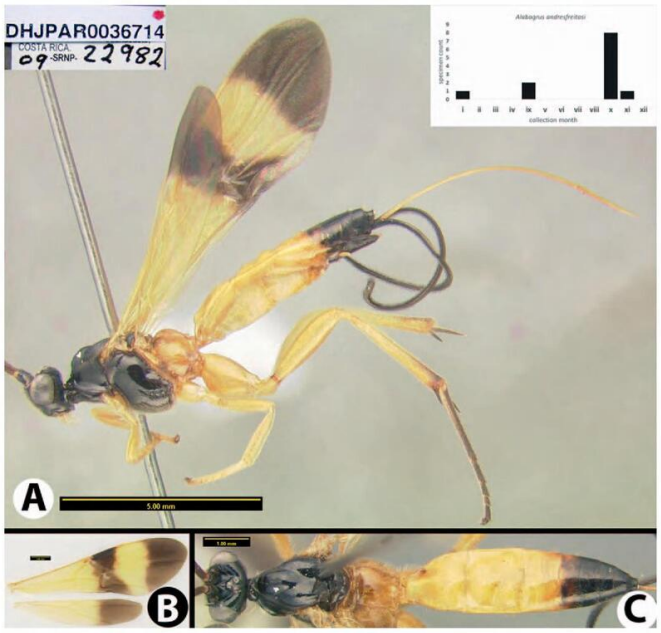


Figure 3 *Alabagrus andresfreitasi* n. sp., holotype: **A**. lateral habitus, **B**. wings, **C**. dorsal habitus.

1♀, 23.ix–1.xi.2009, DHJPAR0037880. 1♀, 1♂, 12.ix–5.x.2004, DHJPAR0015362, DHJPAR0015364. 1♂, 12.ix–19.x.2004, DHJPAR0015365. 1♀, 12.ix–22.x.2004, DHJPAR0015366. 1♂, 28.ix–27.x.2009, DHJPAR0037885. 1♀, 10.77074°N, 85.42874°W, 365 m, 13.viii–19.ix.2012, DHJPAR0050365. 1♂, 10.7709°N, 85.42455°W, 375 m, 4.xii.2013–4.i.2014,4 DHJPAR0054471. 1♂, 11.03226°N, 85.52776°W, 290 m, 18.ix–16.x.2004, DHJPAR0015352 (EMUS, HIC).

Alabagrus andywarreni Sharkey n. sp.

Figure 4

DIAGNOSIS. Gena acute posteroventrally. Precoxal sulcus crenulate 1/2 or more length of mesopleuron. Forefemur melanic. Distal yellow band in forewing not reaching posterior margin. Propodeum melanic, completely smooth in females, areolate in males. First median tergite as wide posteriorly as long with a weak rounded anteromedial longitudinal ridge. Median tergite 3 yellow.

NOTES. This species has two hosts, its sister species, *A. andresfreitasi*, shares one of the same hosts. The host data suggest that they may be the same species, but *COI* and color data suggest that they are separate species.

DESCRIPTION. Body length 10 mm. Gena right angled or acute posteroventrally. Precoxal sulcus distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.1× longer than wide; varying from weakly convex to with a rounded longitudinal bulge, or with well-defined median longitudinal carina. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

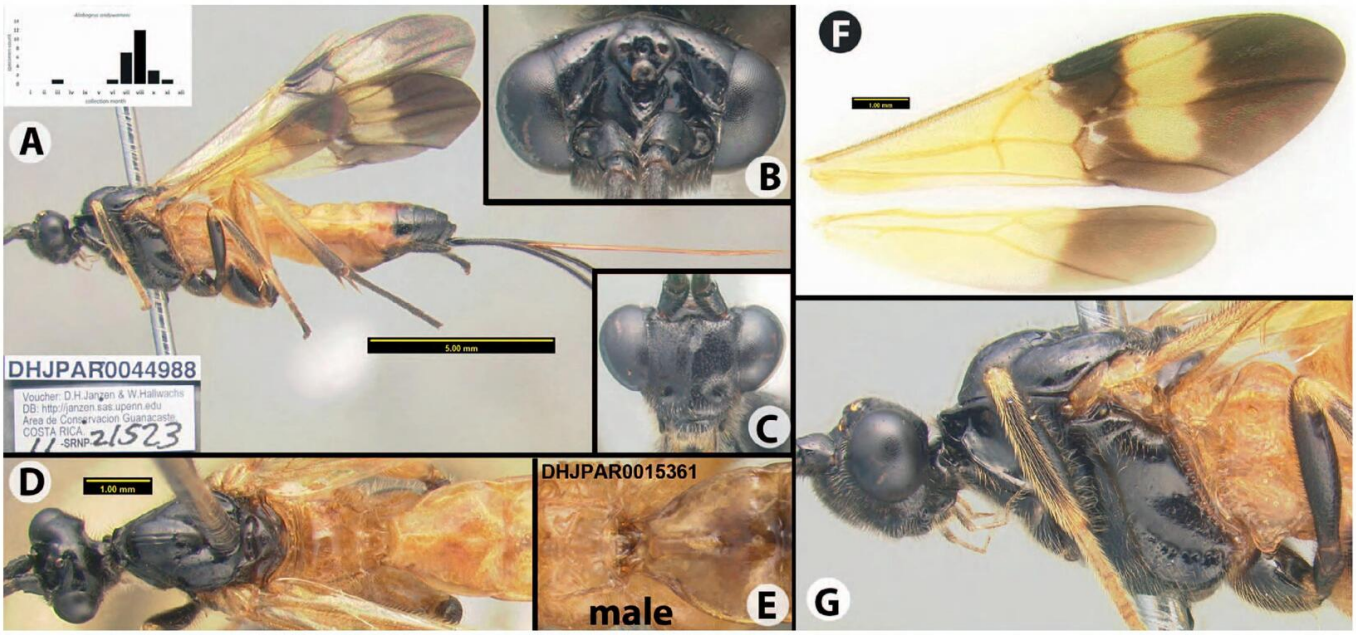


Figure 4 *Alabagrus andywarreni* n. sp., holotype: **A**. lateral habitus, **B**. dorsal head, **C**. anterior head, **D**. dorsal habitus, **E**. propodeum and tergum 1, **F**. wings, **G**. lateral head and mesosoma.

Males. Some propodea with more sculpture; some hind femora with weak rugose sculpture ventrally.

HOST INFORMATION. *Phostria metalobalis*, *Phostria truncatalis*.

ETYMOLOGY. Named in honor of Dr. Andy Warren of the McGuire Center for Lepidoptera and Biodiversity, University of Florida, Gainesville, Florida, USA, who has both straightened out the ACG Hesperiidae higher taxonomy and aided with ACG Hesperiinae identifications.

MATERIAL EXAMINED. HOLOTYPE ♀, host=*Phostria metalobalis* on *Genipa americana*, 11.03226°N, 85.52776°W, 290 m, 7–29.vii.2011, DHJPAR0044988 (EMUS). PARATYPES: The following are from *Phostria metalobalis* on *Genipa Americana*. 1♀, 10.7416°N, 85.42734°W, 420 m, 20.ix–16.x.2010, DHJPAR0041199. 1♂, 10.83764°N, 85.61871°W, 295 m, 18.vii–12.viii.2000, DHJPAR0015359. 1♂, 18.vii–19.viii.2000, DHJPAR0015360. 1♂, 18.vii–21.viii.2000, DHJPAR0015358. 1♂, 18.vii–22.viii.2000, DHJPAR0015361. 2♀, 10.84389°N, 85.61384°W, 300 m, 27.vi–7.viii.1980, DHJPAR0015474, 80-SRNP-244.2. 1♀, 10.85145°N, 85.60801°W, 290 m, 18.vi–21.vii.1981, DHJPAR0015473. 2♂, 10.85991°N, 85.65396°W, 340 m, 21.vii–13.viii.2000, DHJPAR0015356, DHJPAR0015357. 1♀, 21.vii–19.viii.2000, DHJPAR0015355. 1♀, 1♂, 22.vii–19.viii.2000, DHJPAR0015354, DHJPAR0015353. 1♂, 10.92291°N, 85.31877°W, 410 m, 19.vi–29.vii.2012, DHJPAR0049653. 1♂, 10.99616°N, 85.45562°W, 560 m, 17.vi–16.vii.2002, 02-SRNP-16081. 1♂, 11.01525°N, 85.39766°W, 415 m, 5.x–13.xi.2009, DHJPAR0037906. 1♀, 11.03004°N, 85.52699°W, 280 m, 17.vii–30.viii.2001, 01-SRNP-9963. 1♀, 11.03239°N, 85.57545°W, 220 m, 13.ix–9.x.2004, DHJPAR0015367. The following are from *Phostria truncatalis* on *Alibertia edulis*: 1♀, 10.94683°N, 85.56702°W, 275 m, 24.vi–14.vii.2000, DHJPAR0015472. 1♀, 24.vi–21.vii.2000, DHJPAR0015471. 1♂, 24.vi–23.vii.2000, 00-SRNP-15421. 1♀, 11.03004°N, 85.52699°W, 280 m, 12.ix–8.x.2004, DHJPAR0015363 (EMUS, HIC).

Alabagrus arawak Sharkey, 1988
Figure 5

Alabagrus arawak Sharkey, 1988:357–8. Holotype ♀, Ecuador (CNCI)

DIAGNOSIS. Gena acute posteroventrally. Hind femur heavily sculptured ventrally with aciculations or rugosities, distinctly more heavily sculptured than dorsal surface. Scutellum pale in females, melanic in males. Midfemur entirely or mostly melanic. Hind coxa entirely pale. Body of mesosoma entirely yellow in females, hind coxa either entirely yellow (females) or entirely melanic (males). Precoxal sulcus distinct and foveolate ½ or more length of mesopleuron in males. Penultimate metasomal tergum pale, reddish orange to yellow.

NOTES. *Alabagrus warrau* does not occur in Costa Rica. Specimens formerly identified as such in Leathers and Sharkey (2003) belong in *A. arawak*. *Alabagrus arawak* and *A. warrau* may be synonyms, but morphologically they differ slightly.

DESCRIPTION. Body length 4.7 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum areolate, with at least one closed areola, or lacking complete areolae, usually mostly or completely smooth. Hind femur heavily sculptured ventrally with large aciculations or rugosities, distinctly more heavily sculptured than dorsal surface. First tergum 1.4× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Scutellum and metacoxa melanic; precoxal sulcus longer with more fovae.

DISTRIBUTION. Widespread from southern Mexico to northern Argentina; common year-round, and widespread in Costa Rica. The

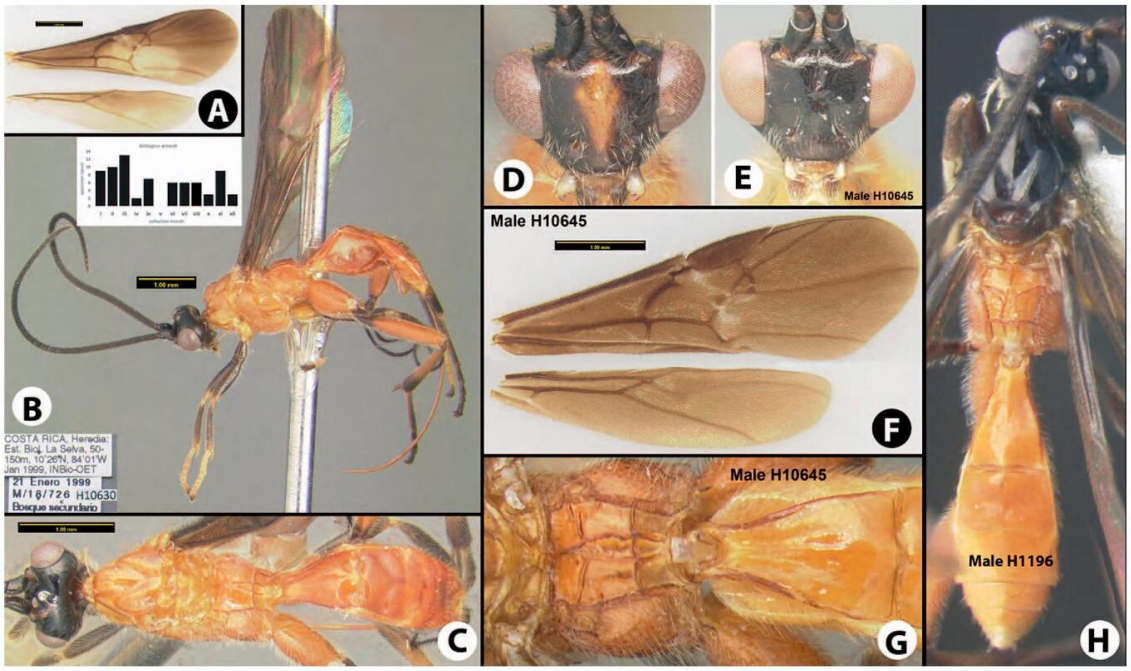


Figure 5 *Alabagrus Arawak*, **A–D** female; **F–H** male: **A**. wings, **B**. lateral habitus, **C**. dorsal habitus, **D**. anterior head, **E**. anterior head, **F**. wings, **G**. propodeum and tergum 1, **H**. dorsal habitus.

holotype is from Ecuador (Sharkey, 1988). No reared specimens (numerous specimens in HIC, INBio, EMUS).

Alabagrus arua Sharkey, 1988
Figure 6

Alabagrus arua Sharkey, 1988:358–9. Holotype ♀, Ecuador (CNCI)

DIAGNOSIS. Gena with an obtuse angle posteroventrally. Head relatively more elongate than any other species of *Alabagrus*. Precoxal sulcus distinct and foveolate ½ or more length of mesopleuron. Pronotum melanic. Metapleuron mostly or entirely pale. First tergum weakly convex with a rounded longitudinal bulge. Median tergite 3 pale.

NOTES. *Alabagrus juchuy* may be a synonym, but contrary to *A. arua*, the type has a yellow stigma. The type of *A. juchuy* is from Trinidad. This may be the best character to separate them until *COI* data is obtained over a wider latitudinal range. The specimens referred to as *A. juchuy* in Leathers and Sharkey (2003) are all *A. arua*.

DESCRIPTION. Body length 6 mm. Gena rounded or with an obtuse angle posteroventrally. Precoxal sulcus distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins, or areolate rugose in ventral quarter or less. Propodeum areolate, with at least one closed areola. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface, or heavily sculptured ventrally with large aciculations or rugosities, distinctly more heavily sculptured than dorsal surface. First tergum 1.5× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Propodeal sculpture slightly stronger and often yellow; median ridge of median tergite 1 more acute.

HOST INFORMATION. *Hyalorista exuvialis*DHJ02.

DISTRIBUTION. The holotype is from Ecuador (Sharkey, 1988). Widespread from Costa Rica south to Amazonian Bolivia.

MATERIAL EXAMINED. Reared specimens: all from *Hyalorista exuvialis*DHJ02. 1♀, on *Hyptis capitata*, 10.94404°N, 85.31738°W, 455 m, 30.viii–13.ix.2010, DHJPAR0041194. 1♂, on *Hyptis obtusifolia*, 10.89666°N, 85.29003°W, 400 m, 6–23.v.2006, DHJPAR0015518. 1♀, 10.90661°N, 85.28784°W, 400 m, 17.v–1.vi.2007, DHJPAR0021202. 1♀, 10.88409°N, 85.25728°W, 460 m, 27.ii–17.iii.2009, DHJPAR0030487. 2♀, 10.9163°N, 85.37869°W, 460 m, 21.iv–13.v.2009, DHJPAR0035224, DHJPAR0035296. 1♂, 10.9305°N, 85.37223°W, 527 m, 13–29.v.2009, DHJPAR0035297. 1♀, 10.90528°N, 85.27882°W, 405 m, 6–23.vi.2012, DHJPAR0049054. 1♀, 10.89678°N, 85.27001°W, 420 m, 2–22.i.2013, DHJPAR0051379 (EMUS, HIC).

***Alabagrus axelhausmanni* Sharkey n. sp.**
Figure 7

DIAGNOSIS. Female unknown. Male first median tergite with a sharp but short median longitudinal carina extending ½ length of tergite. Propleuron pale or melanic and pale. Pronotum melanic.

DESCRIPTION. Body length 5.3 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum areolate, with at least one closed areola. Hind femur heavily sculptured ventrally with large aciculations or rugosities, distinctly more heavily sculptured than dorsal surface. First tergum 1× longer than wide; with well-defined median

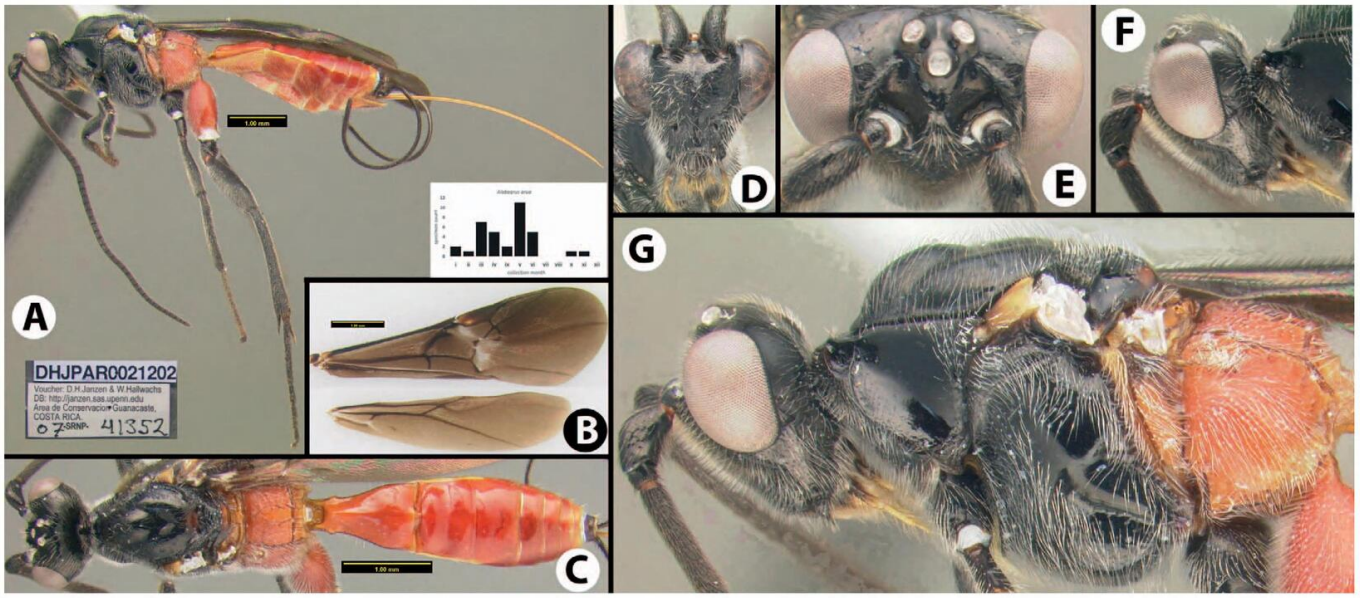


Figure 6 *Alabagrus arua*, female: **A**. lateral habitus, **B**. wings, **C**. dorsal habitus, **D**. anterior head, **E**. dorsal head, **F**. lateral head, **G**. lateral head and mesosoma.

longitudinal carina. Third tergum lacking transverse depression, or depression barely indicated.

HOST INFORMATION. musoBioLep01 BioLep448.

ETYMOLOGY. Named in honor of Dr. Axel Hausmann of the Zoological State Collection Munich, Germany, who has both seriously aided ACG inventory Geometridae identifications and inspired the introduction of DNA barcoding into the European taxasphere.

MATERIAL EXAMINED. HOLOTYPE ♂, host=musoBioLep01 BioLep448 on *Serpocaulon maritimum*, 10.98171°N, 85.42785°W, 740 m, 15–28.iv.2011, DHJPAR0042832 (EMUS).

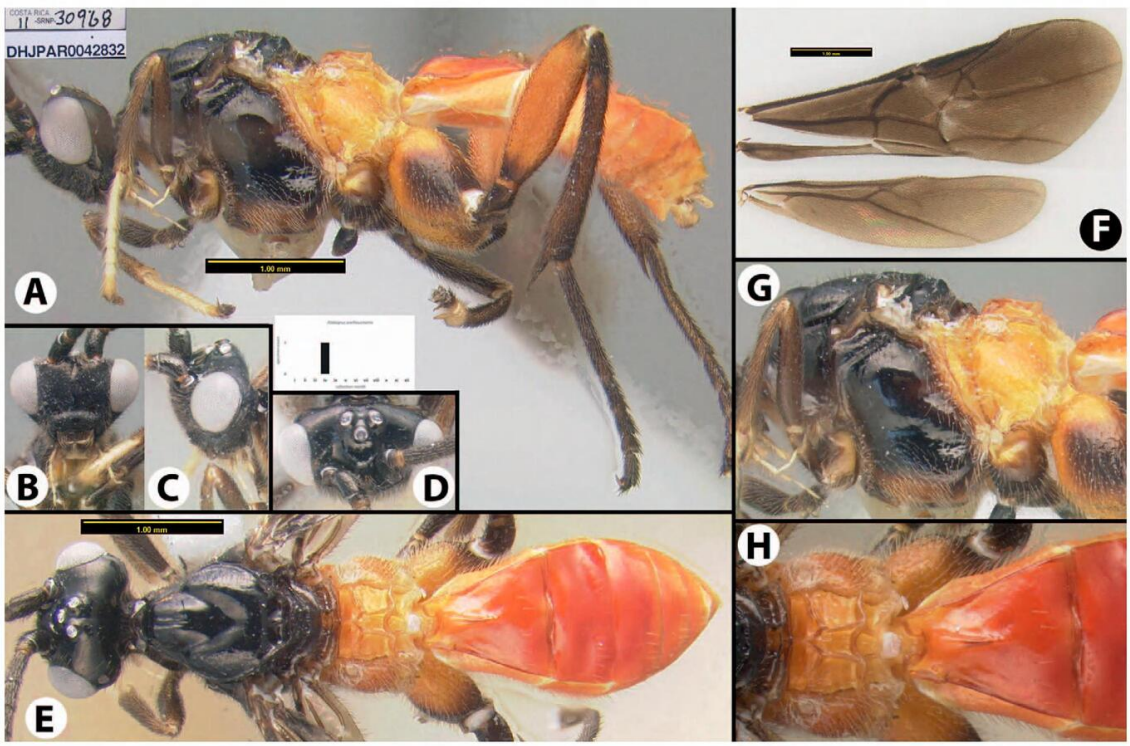


Figure 7 *Alabagrus axelhausmanni* n. sp., holotype: **A**. lateral habitus, **B**. anterior head, **C**. lateral head, **D**. dorsal head, **E**. dorsal habitus, **F**. wings, **G**. lateral mesosoma, **H**. dorsal propodeum and tergum 1.

Alabagrus barbsharanowskiae Sharkey n. sp.
Figure 8

DIAGNOSIS. First tergum with two converging longitudinal carinae. Metapleuron entirely black with a subtle reddish tinge.

NOTES. Formerly considered part of *A. englishi* (Leathers and Sharkey, 2003).

DESCRIPTION. Body length 10 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.2× longer than wide; with two converging longitudinal carinae. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor distinctly longer than body.

Males. Unknown.

ETYMOLOGY. Named in honor of Dr. Barbara Sharanowski, hymenopterist extraordinaire.

MATERIAL EXAMINED. HOLOTYPE ♀, Costa Rica, Ala(juela), 20 km S Upala (10.84°N, 85.07°W), 14–17.viii.1990, F.D. Parker (EMUS). PARATYPES: 2♀, same data as holotype, except dates 22.i.1991 and 11–21.x.1991 (HIC and EMUS).

Alabagrus bernardoespinozai Sharkey n. sp.
Figure 9

DIAGNOSIS. Gena right angled or acute posteroventrally. First tergum wider than long with well-defined median longitudinal carina. Forewing almost entirely infuscate or with some white/clear at apex, ignore small clear patches posterad stigma. Pronotum and propleuron melanic. Hind femur entirely reddish-orange.

NOTES. Formerly considered to belong to *A. latisoma (*Leathers and Sharkey, 2003). Very similar to *A. latisoma*, the holotype of which is from Argentina. Specimens of *A. bernardoespinozai* differ in having about 12 pegs near the apex of the hind tibia, whereas those of the holotype of *A. latisoma* have 25 (Sharkey 1988).

DESCRIPTION. Body length 7.3 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum areolate, with at least one closed areola. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 0.8× longer than wide; with well-defined median longitudinal carina. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor short, not longer than metasoma, or longer than metasoma but not longer than body.

Males. Unknown.

HOST INFORMATION. *Microthyris prolongalis*.

ETYMOLOGY. Named in honor of Sr. Bernardo Espinoza of INBio and the Museo Nacional de Costa Rica, who has long and masterfully taxonomized all of the Erebidae Arctiinae found by the ACG Lepidoptera inventory to date, as well as nearly all for Costa Rica.

DISTRIBUTION. Specimens from Guyana, Ecuador, Colombia, and Venezuela (HIC) appear to fit this species concept, and I have identified them as such but have not included them in the type series.

MATERIAL EXAMINED. HOLOTYPE ♀, host=*Microthyris prolongalis* on *Ipomoea batatas*, 10.93332°N, 85.25331°W, 135 m, 29.vi–16.vii.2009, DHJPAR0036338 (EMUS). PARATYPES: reared specimen: 1♀, same data as holotype, except date 23–29.vii.2012, DHJPAR0049651 (EMUS). Nonreared paratypes: 17♀, from Heredia, Limón (EMUS, HIC, INBio).

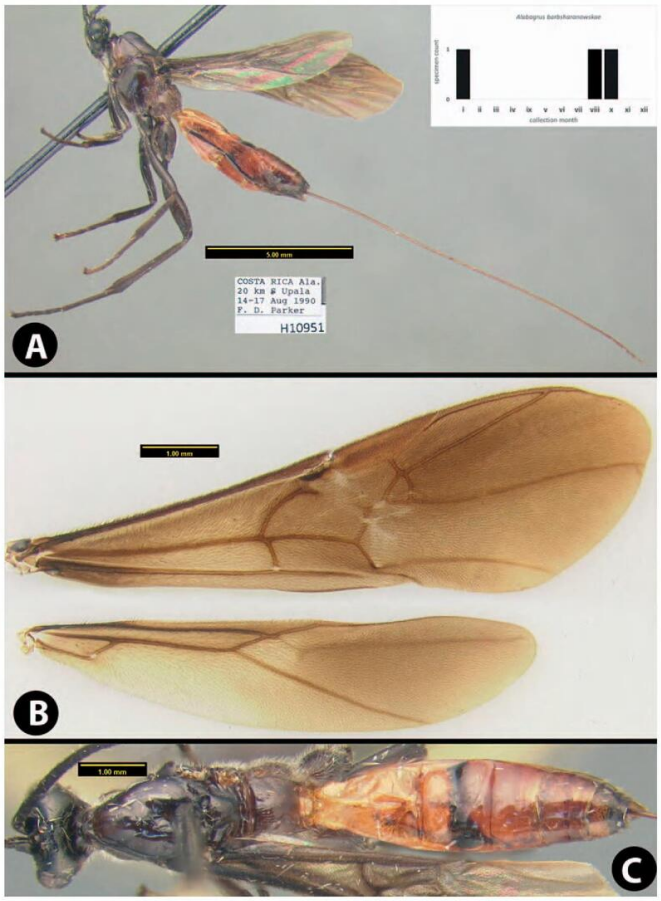


Figure 8 *Alabagrus barbsharanowskiae* n. sp., holotype: **A.** lateral habitus, **B.** wings, **C.** dorsal habitus.

Alabagrus bobpoolei Sharkey n. sp.
Figure 10

DIAGNOSIS. Female propodeum completely smooth, male areolate. First median tergite long and narrow with well-defined median longitudinal carina extending most of the length of the tergite. Forefemur melanic. Metapleuron and propodeum entirely black. Median tergite 3 pale anteriorly, melanic posteriorly.

DESCRIPTION. Body length 9 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly, or distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.6× longer than wide; with well-defined median longitudinal carina. Third tergum lacking transverse depression, or

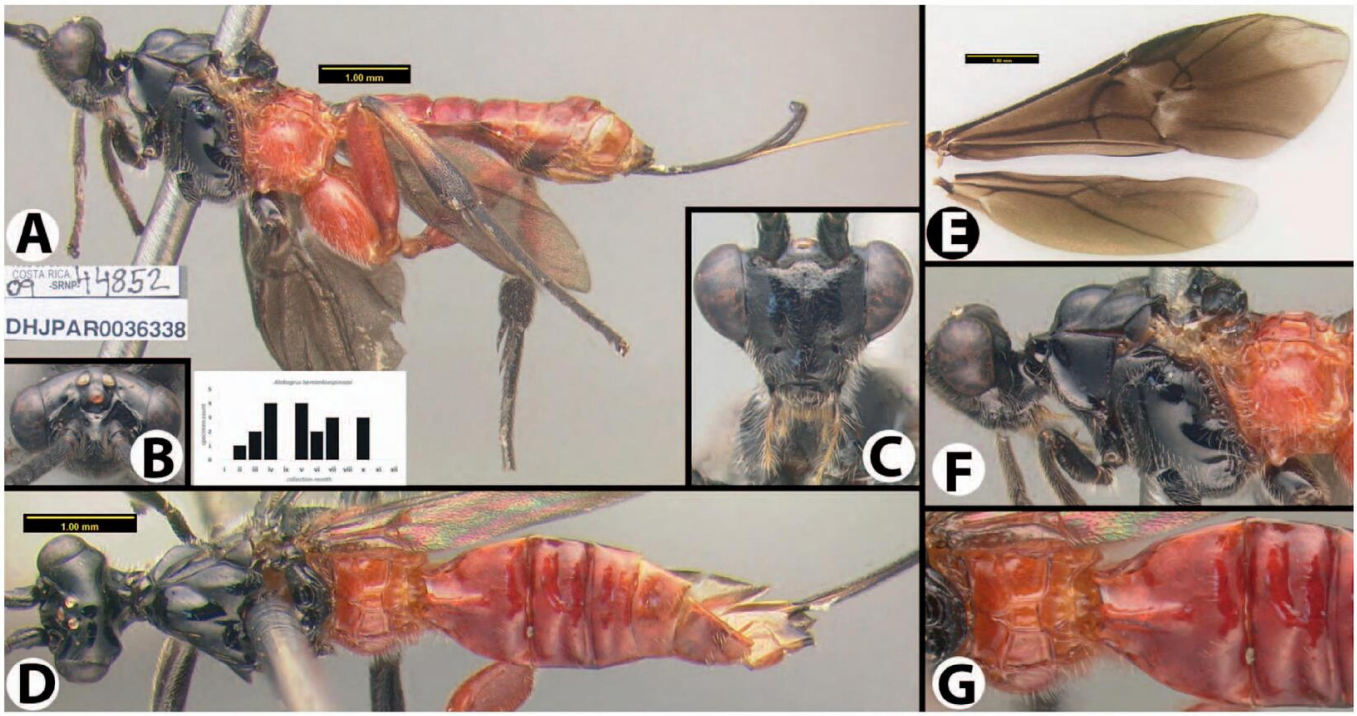


Figure 9 *Alabagrus bernardoespinozai* n. sp., holotype: **A**. lateral habitus, **B**. dorsal head, **C**. anterior head, **D**. dorsal habitus, **E**. wings, **F**. lateral head and mesosoma, **G**. propodeum and tergum 1.

depression barely indicated, or with deep transverse depression. Ovipositor longer than metasoma but not longer than body.

Males. Propodeum areolate.

HOST INFORMATION. *Eulepte concordalis, Eulepte* Janzen06, *Eulepte* Janzen12, *Eulepte* Solis15.

ETYMOLOGY. Named in honor of Dr. Robert Poole of the U.S. National Museum of Natural History of the Smithsonian Institution, who has long rescued the taxonomic possibility of identification of the ACG inventory of Noctuoidea, in collaboration with other noctuoid taxonomists.

MATERIAL EXAMINED. HOLOTYPE ♀, host=*Eulepte* Solis15 on *Jacaranda copaia*, 10.91847°N, 85.30338°W, 320 m, 31.iii–20.iv.2011, DHJPAR0042813 (EMUS). PARATYPES: 1♂, from *Eulepte* Janzen06 on *Vitex cooperi*, 11.01087°N, 85.48817°W, 400 m, 9–26.ix.2009, DHJPAR0036694. 1♀, from *Eulepte* Janzen12 on *V. cooperi*, 10.86472°N, 85.41531°W, 540 m, 18.xii.2010–18.i.2011, DHJPAR0041169. 1♂, from *Eulepte* Solis15 on *Hadroanthus guayacan*, 11.01087°N, 85.48817°W, 400 m, 24.viii–6.ix.2009, DHJPAR0037887. 1♀, 1♂, 11.03226°N, 85.52776°W, 290 m, 18.xi–9.xii.2011, DHJPAR0048725, DHJPAR0048727. 1♂, on *Jacaranda copaia*, 10.9867°N, 85.38503°W, 440 m, 9–29.iii.2010, DHJPAR0038924. 1♀, 1♂, 10.91847°N, 85.30338°W, 320 m, 31.iii–18.iv.2011, DHJPAR0042805, DHJPAR0042814. 1♂, 31.iii–19.iv.2011, DHJPAR0042828. 1♀, 8–26.iv.2011, DHJPAR0042815. 1♂, 16.i–6.ii.2013, DHJPAR0051382. 1♂, 16.i–9.ii.2013, DHJPAR0051380. 1♀, 8–30.i.2014, DHJPAR0054514. 1♂, on *Tabebuia chrysantha*, 10.9888°N, 85.42336°W, 680 m, 28.iii–16.iv.2011, DHJPAR0042811. 1♀, 28.iii–22.iv.2011, DHJPAR0045366. 1♂, on *Vitex cooperi*, 10.94741°N, 85.31501°W, 491 m, 27.viii–15.ix.2011, DHJPAR0045785. 1♀, 10.xi–5.xii.2013, DHJPAR0054495. 1♀, 10.9301°N, 85.25205°W, 109 m, 7–21.viii.2012, DHJPAR0050364 (EMUS, HIC).

Alabagrus bobrobbinsi Sharkey n. sp.

Figure 11

DIAGNOSIS. Similar to *A. karensharkeyae*, distinguished most easily by color. Color almost entirely black except parts of propodeum and metapleuron; forewing infuscate with milky white apex; first median tergite narrow with a strong, long median carina.

NOTES. Formerly considered as part of *A. maya* (Leathers and Sharkey, 2003).

DESCRIPTION. Body length 9.7 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum areolate, with at least one closed areola. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.5× longer than wide; with well-defined median longitudinal carina. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Hind coxa varying from entirely black to entirely red; propodeum, as in the illustrated female, varying to completely red.

HOST INFORMATION. *Microthyris prolongalis*DHJ02, *Microthyris anormalis*DHJ02, *Psara obscuralis*.

ETYMOLOGY. Named in honor of Dr. Robert Robbins of the U.S. National Museum of Natural History of the Smithsonian Institution,

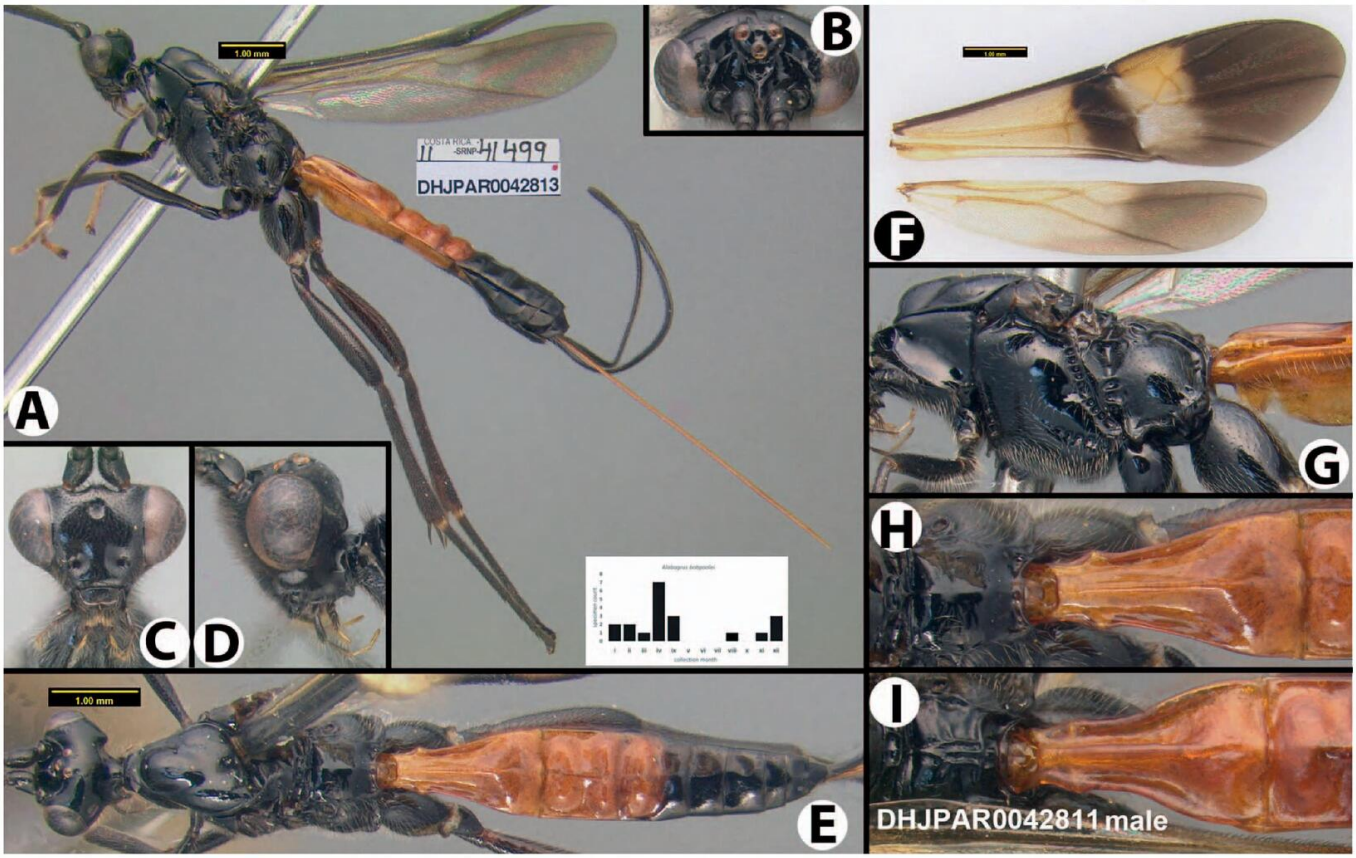


Figure 10 *Alabagrus bobpoolei* n. sp., **A–H** holotype; **I**. paratype male: **A**. lateral habitus, **B**. dorsal head, **C**. anterior head, **D**. lateral head, **E**. dorsal habitus, **F**. wings, **G**. lateral mesosoma and tergum 1, **H**. dorsal propodeum and tergum 1, **I**. dorsal propodeum and tergum 1.

who has long rescued the taxonomic possibility of identification of the ACG inventory of Lycaenidae, in collaboration with other butterfly taxonomists.

MATERIAL EXAMINED. HOLOTYPE ♀, host=*Microthyris prolongalis*DHJ02 on *Ipomoea batatas*, 10.76828°N, 85.42567°W, 480 m, 17.x–9.xi.2011, DHJPAR0046733 (EMUS). 1♂, from *Microthyris prolongalis*DHJ02 on *Ipomoea batatas*, 10.89666°N, 85.29003°W, 400 m, 7–26.vi.2012, DHJPAR0049657. 1♂, from *Microthyris prolongalis*DHJ02 on *Ipomoea trifida*, 10.77175°N, 85.434°W, 305 m, 27.v–14.vi.2011, DHJPAR0045007. 1♂, 27.v–15.vi.2011, DHJPAR0045017. 1♀, 30.v–15.vi.2011, DHJPAR0045008. 1♂, from *Microthyris anormalis*DHJ02 on *Merremia umbellata*, 11.00199°N, 85.46166°W, 590 m, 26.viii–7.ix.2009, DHJPAR0037881. 1♀, from *Psara obscuralis* on *Merremia tuberosa*, 11.016020°N, 85.38053°W, 380 m, 6.ii–6.iii.2014, DHJPAR0055103.

Alabagrus bobwhartoni Sharkey n. sp.

Figure 12

DIAGNOSIS. Gena rounded posteroventrally. Precoxal sulcus absent or almost absent, represented at most by small, shallow depression posteriorly, crenulae always lacking. Body of meso- and metasoma yellow. Fore- and midfemur entirely pale. Midtibia with more than 15 pegs/spines. Forewing with sharply defined infuscate apex.

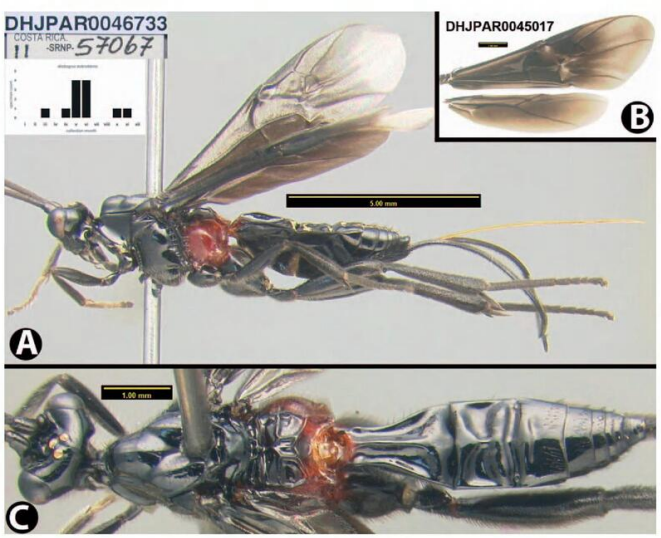


Figure 11 *Alabagrus bobrobbinsi* n. sp., **A**, **C** holotype; **B** paratype male: **A**. lateral habitus, **B**. wings, **C**. dorsal habitus.

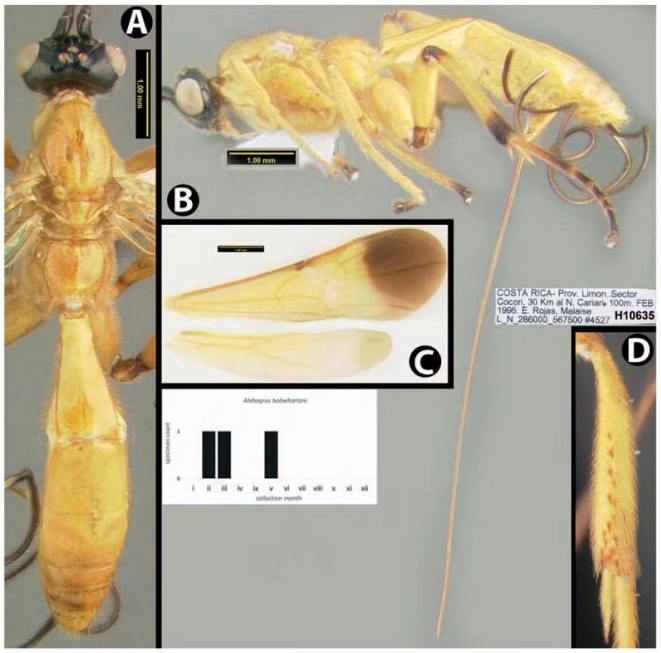


Figure 12 *Alabagrus bobwhartoni* n. sp., holotype: **A**. dorsal habitus, **B**. lateral habitus, **C**. wings, **D**. midtibia.

DESCRIPTION. Body length 7.1 mm. Gena right angled or acute posteroventrally. Precoxal sulcus absent or almost absent, represented at most by small, shallow depression posteriorly, crenulae always lacking. Margin between metepisternum and metepimeron smooth. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 2× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor distinctly longer than body.

Males. Unknown.

ETYMOLOGY. Named in honor of Dr. Bob Wharton, braconologist extraordinaire.

MATERIAL EXAMINED. HOLOTYPE ♀, Limón, Sector Cocori, 30 km N Cariari, 100 m, ii.1995, Malaise, L_N_286000_567500, H10635, E. Rojas (INBio). PARATYPES: 1♀, Limón, Guacimo, 23.v.1987, P. Hanson (MUCR). 1♀, same data as holotype, except date iii.1995 (HIC).

Alabagrus brendameierottoae Sharkey n. sp.

Figure 13

DIAGNOSIS. Hind femur heavily sculptured ventrally with aciculations or rugosities, distinctly more heavily sculptured than dorsal surface. Pronotum mostly yellow. Hind coxa with a black patch laterally. Forewing yellow basally infuscate along costal margin and in apical 1/3.

NOTES. Formerly considered part of *A. warrau* (Leathers and Sharkey, 2003).

DESCRIPTION. Body length 6 mm. Gena right angled or acute posteroventrally. Precoxal sulcus distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum areolate, with at least one closed areola, or lacking complete areolae, usually

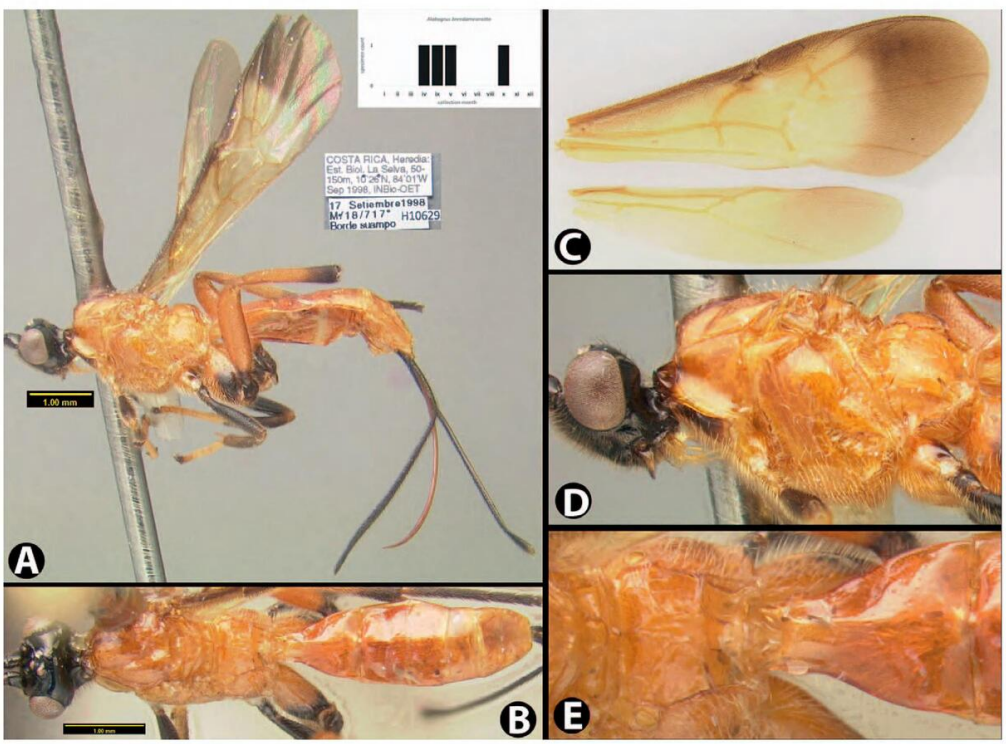


Figure 13 *Alabagrus brendameierottoae* n. sp., holotype: **A**. lateral habitus, **B**. dorsal habitus, **C**. wings, **D**. lateral head and anterior mesosoma, **E**. propodeum.

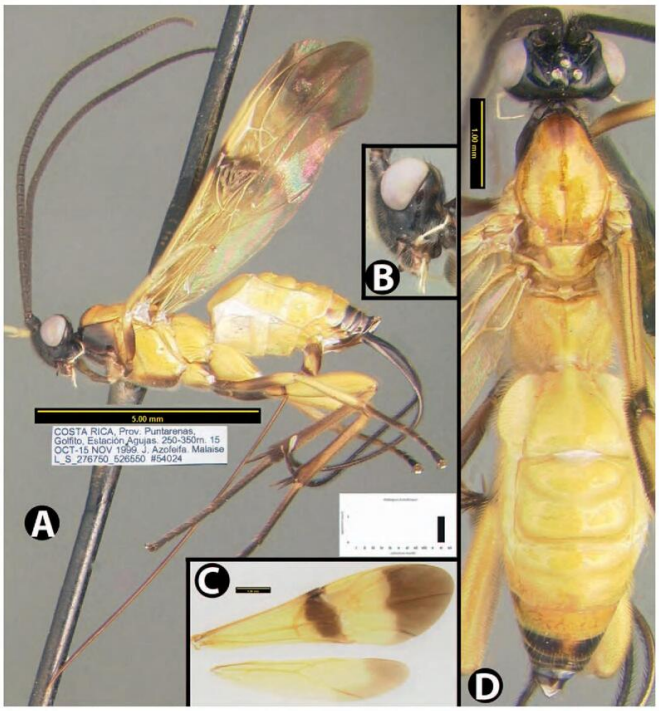


Figure 14 *Alabagrus brianbrowni* n. sp., holotype: **A**. lateral habitus, **B**. lateral head, **C**. wings, **D**. dorsal habitus.

mostly or completely smooth. Hind femur heavily sculptured ventrally with large aciculations or rugosities, distinctly more heavily sculptured than dorsal surface. First tergum 1.1× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Unknown.

ETYMOLOGY. In appreciation of Mrs. Brenda Meierotto, who ran Malaise traps in Alaska for the Sharkey lab and who is the mother of graduate student extraordinaire Sarah Meierotto.

MATERIAL EXAMINED. HOLOTYPE ♀, Heredia, Est. Biol. La Selva, swamp edge, 50–100 m, 10.43°N, 84.02°W, 17.ix.1998, H10629 (INBio). PARATYPES: 3♀, same data as holotype, except dates x.1995, v.1996, and iv.1993 (EMUS, INBio, HIC).

Alabagrus brianbrowni Sharkey n. sp.
Figure 14

DIAGNOSIS. Precoxal sulcus absent, crenulae always lacking. Terga 1–4 yellow, 5 to apex melanic. Forefemur mostly melanic. Scutellum yellow.

DESCRIPTION. Body length 8.8 mm. Gena rounded or with an obtuse angle posteroventrally. Precoxal sulcus absent or almost absent, represented at most by small, shallow depression posteriorly, crenulae always lacking. Margin between metepisternum and metepimeron smooth. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body, or distinctly longer than body.

Males. Unknown.

ETYMOLOGY. Named in honor of Dr. Brian Brown, dipterist extraordinaire and dear friend.

MATERIAL EXAMINED. HOLOTYPE ♀, Puntarenas, Golfito, Estacion Agujas, 250–300 m, 15.x–15.xi.1999, Malaise, L_S_276750_526550, H10631 (HIC).

Alabagrus brianharrisi Sharkey n. sp.
Figure 15

DIAGNOSIS. Gena rounded posteroventrally. Propodeum areolate, with at least one closed areola. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. Forewing pale yellow in basal ⅔, infuscate apically, costal margin melanic. Metapleuron mostly melanic. Propodeum pale.

NOTES. Formerly considered part of *A. roibasi* (Leathers and Sharkey, 2003).

DESCRIPTION. Body length 8.2 mm. Gena right angled or acute posteroventrally. Clypeus unmodified, lacking protrusions. Occiput dorsolaterally rounded. Precoxal sulcus distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins, or areolate rugose in ventral quarter or less. Propodeum areolate, with at least one closed areola. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. First metasomal median tergite wider.

HOST INFORMATION. *Phaedropsis cernalis, Microthyris prolongalis*.

ETYMOLOGY. Named in honor of Brian Harris of the U.S. National Museum of Natural History of the Smithsonian Institution, who has long curated and accessioned the ACG inventory of many families of butterflies and moths, in collaboration with other Lepidoptera taxonomists.

MATERIAL EXAMINED. HOLOTYPE ♀, host=*Phaedropsis cernalis* on *Triplaris melaenodendron*, 10.77175°N, 85.434°W, 305 m, 8.viii–5.ix.2010, DHJPAR0041187 (EMUS). PARATYPES: 1♂, from *Microthyris prolongalis* on *Ipomoea alba*, 10.77175°N, 85.434°W, 305 m, 28.ix–19.x.2011, DHJPAR0046738. 1♂, 10.78506°N, 85.6637°W, 10 m, 17.vii–6.viii.1990, DHJPAR0015477. 1♀, 10.78938°N, 85.55098°W, 85 m, 26.viii–10.ix.2000, DHJPAR0015369. 2♀, 26.viii–20.ix.2000, DHJPAR0015373, DHJPAR0015374. 1♀, 26.viii–27.ix.2000, DHJPAR0015372. 1♀, 26.viii–29.ix.2000, DHJPAR0015371. 1♀, 26.viii–7.ix.2000, DHJPAR0015370. 1♀, 10.81224°N, 85.54438°W, 95 m, 21.viii–5.ix.2000, DHJPAR0015375 (EMUS, HIC).

Alabagrus cara Sharkey, 1988
Figure 16

Alabagrus cara Sharkey, 1988:362. Holotype ♀, Ecuador (CNCI)

DIAGNOSIS. Gena acute posteroventrally. Forefemur and propleuron yellow. Metasoma entirely yellow. Hind coxa with a black patch laterally near apex. Forewing yellow basally, infuscate apicad stigma; costal vein mostly yellow.

DESCRIPTION. Body length 6.5 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae

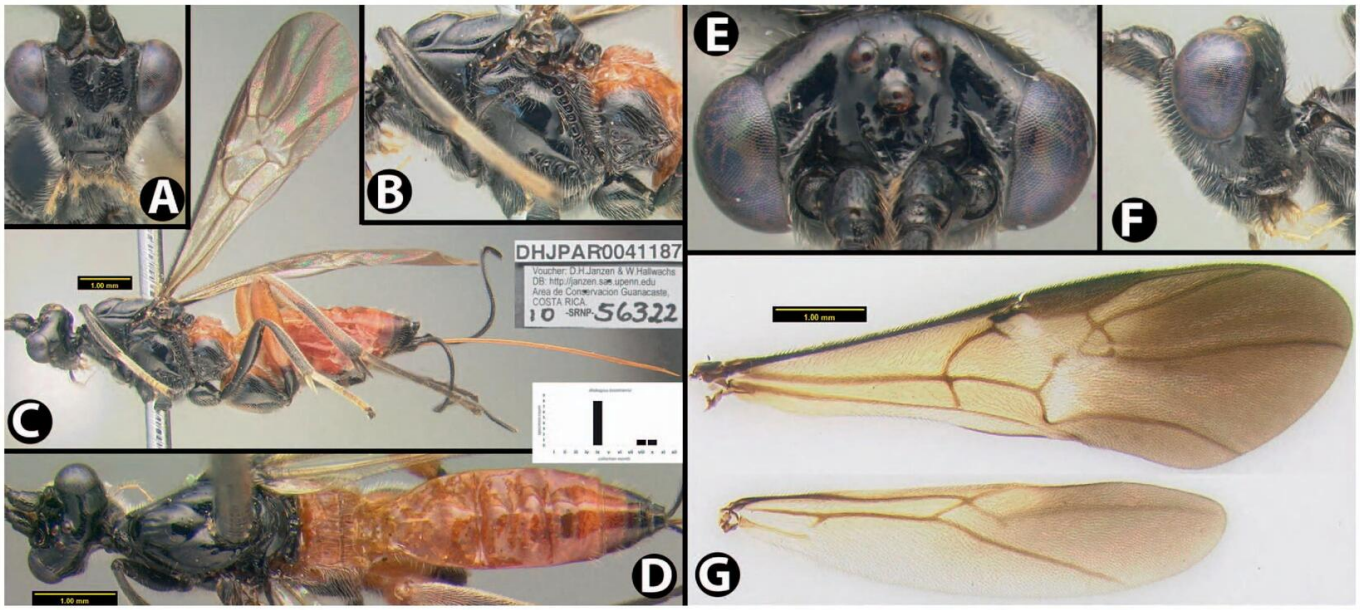


Figure 15 *Alabagrus brianharrisi* n. sp., holotype: **A**. anterior head, **B**. lateral mesosoma, **C**. lateral habitus, **D**. dorsal habitus, **E**. dorsal head, **F**. lateral head, **G**. wings.

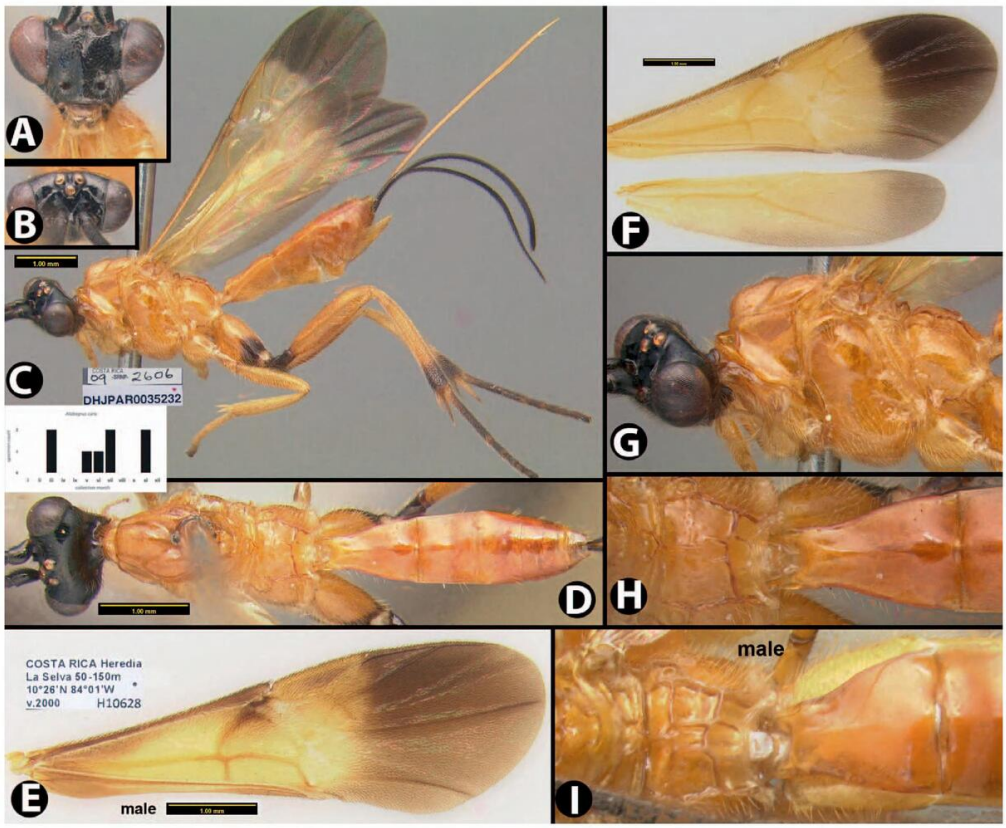


Figure 16 *Alabagrus cara*, **A–D**, **F–H** female; **E**, **I** male: **A**. anterior head, **B**. dorsal head, **C**. lateral habitus, **D**. dorsal habitus, **E**. forewing, **F**. wings, **G**. lateral head and mesosoma, **H**. propodeum and tergum 1, **I**. propodeum and tergum 1.

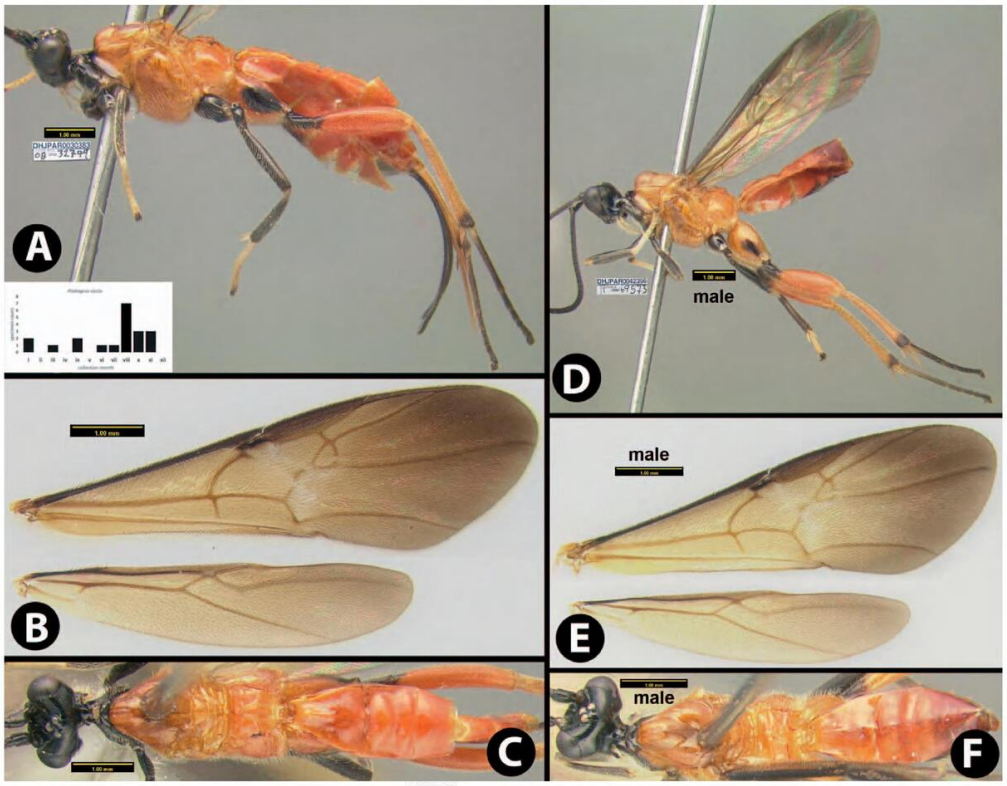


Figure 17 *Alabagrus cocto*, **A–C** female; **D–F** male: **A**. lateral habitus, **B**. wings, **C**. dorsal habitus, **D**. lateral habitus, **E**. wings, **F**. dorsal habitus.

posteroventrally, with or without a smooth groove extending anteriorly, or distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum areolate, with at least one closed areola, or lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.6× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Propodeal sculpture stronger; forewing band not as well defined.

HOST INFORMATION. *Desmia benealis*, *Desmia ufeus*.

DISTRIBUTION. The holotype is from lowland costal Ecuador. Specimens are widespread in Costa Rica through Panama and western lowland Ecuador. Undoubtedly present in western Colombia, as well, but not yet recorded.

MATERIAL EXAMINED. Reared specimens: 1♀, from *Desmia benealis*DHJ03 on *Hamelia patens*, 10.93548°N, 85.25314°W, 123 m, 6–19.vii.2013, DHJPAR0052681. 1♀, from *Desmia ufeus* on *Cissus alata*, 10.90037°N, 85.37254°W, 500 m, 8–24.vi.2009, DHJPAR0035232. 1♀, from *Desmia* BioLep22DHJ02 on *Begonia plebeja*, 10.97073°N, 85.31434°W, 326 m, 9–30.i.20161, DHJPAR0058550. 1♀, from *Diacme* BioLep02 on *Thelypteris nicaraguensis*, 10.89666°N, 85.29003°W, 400 m, 7.x–7.xi.2010, DHJPAR0041579 (EMUS, HIC).

Alabagrus cocto Sharkey, 1988
Figure 17

Alabagrus cocto Sharkey, 1988:362. Holotype ♀, Panama (USNM)

DIAGNOSIS. Gena acute posteroventrally. Propodeum areolate. Pronotum melanic anteriorly, pale posteriorly. Hind coxa with a black patch laterally. Ovipositor slightly longer than metasoma.

DESCRIPTION. Body length 8.1 mm. Gena right angled or acute posteroventrally. Precoxal sulcus distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum areolate, with at least one closed areola. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Forewing with more extensive yellow color; propodeum with more sculpture.

HOST INFORMATION. *Conchylodes arcifera*, *Conchylodes gram-maphora*, *Desmia ploralis*, *Desmia ploralis*DHJ01, *Desmia plora-lis*DHJ03, *Herpetogramma salbialis*, *Phostria vitrifera*, *Salbia cassidalis*, *Salbia haemorrhoidalis*, *Syllepte* Solis22.

DISTRIBUTION. The holotype is from Panama, and specimens are widespread in Costa Rica and Panama.

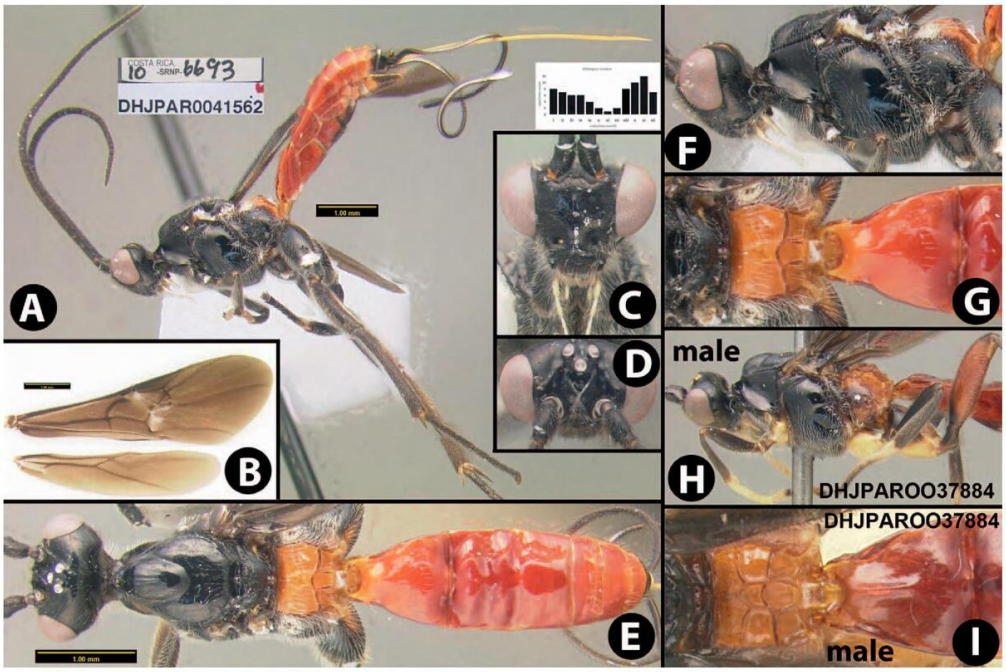


Figure 18 *Alabagrus combos*, **A–G** female; **H**, **I** male: **A**. lateral habitus, **B**. wings, **C**. anterior head, **D**. dorsal head, **E**. dorsal habitus, **F**. lateral head and mesosoma, **G**. propodeum and tergum 1, **H**. lateral head and mesosoma, **I**. propodeum and tergum 1.

MATERIAL EXAMINED. Reared specimens: 1♂, from *Conchylodes arcifera* on *Verbesina gigantea*, 11.03306°N, 85.42876°W, 400 m, 1–16.viii.2007, DHJPAR0021151. 1♂, from *Conchylodes grammaphora* on *Zexmenia virgulta*, 10.90093°N, 85.28915°W, 400 m, 5–22.i.2007, DHJPAR0016927. 1♀, from *Desmia* ploralisDHJ01 on *Psychotria grandis*, 10.93548°N, 85.25314°W, 123 m, 5–18.x.2013, DHJPAR0053603. 1♀, from *D.* ploralisDHJ03 on *Psychotria chagrensis*, 10.9305°N, 85.37223°W, 527 m, 10.v–5.vi.2012, DHJPAR0048715. 1♀, from *Herpetogramma salbialis* on *Zexmenia virgulta*, 11.01926°N, 85.40997°W, 440 m, 28.x–17.xi.2008, DHJPAR0030383. 1♀, from *Phostria vitrifera* on *Psychotria grandis*, 11.01618°N, 85.35902°W, 340 m, 22.viii–9.ix.2013, DHJPAR0053599. 1♂, from *Salbia haemorrhoidalis* on *Lantana camara*, 10.94076°N, 85.3177°W, 461 m, 26.ix–25.x.2011, DHJPAR0045784. 1♀, 10.95991°N, 85.28298°W, 160 m, 6–23.viii.2013, DHJPAR0053598. 1♂, 6–24.viii.2013, DHJPAR0053601. 1♀, 10.9301°N, 85.25205°W, 109 m, 20.x–4.xi.2012, DHJPAR0050945. 1♀, 20.x–6.xi.2012, DHJPAR0050940. 1♂, from *Syllepte* Solis22 on *Psychotria panamensis*, 10.86472°N, 85.41531°W, 540 m, 2–21.vii.2010, DHJPAR0040345. 1♂, 18.vii–5.viii.2010, DHJPAR0041594. 1♂, 10.94076°N, 85.3177°W, 461 m, 19.ii–10.iii.2011, DHJPAR0042356. 1♀, 15.ix–2.x.2012, DHJPAR0050361 (EMUS, HIC).

Alabagrus combos Leathers and Sharkey, 2003
Figure 18

Alabagrus combos Leathers and Sharkey, 2003:23–24. Holotype ♀, Costa Rica (INBio)

DIAGNOSIS. Gena acute posteroventrally. Hind femur heavily sculptured ventrally with aciculations or rugosities, distinctly more heavily sculptured than dorsal surface. First six terga reddish orange, remaining terga black. Forewing almost entirely infuscate, ignore small clear patches posterad stigma.

DESCRIPTION. Body length 6 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly, or distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins, or areolate rugose in ventral quarter or less. Propodeum areolate, with at least one closed areola. Hind femur heavily sculptured ventrally with large aciculations or rugosities, distinctly more heavily sculptured than dorsal surface. First tergum 1.1× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. More sculpture on propodeum and first metasomal median tergite; median ridge of median tergite 1 more acute; most notably the ventral surfaces of all coxae are yellow, whereas those of the female are entirely melanic.

HOST INFORMATION. *Ategumia lotanalis*, *Ategumia lotanalis*DHJ08, *Ategumia lotanalis*DHJ09, *Ategumia matutinalis*, *Ategumia matutinalis*DHJ03, *Conchylodes platinalis*, *Herpetogramma salbialis*, *Herpetogramma* Solis10, *Rhectocraspeda periusalis, Pleuroptya* Solis03, *Pycnarmon* BioLep66, *spilo*Janzen01 Janzen14DHJ02.

DISTRIBUTION. Widespread in Costa Rica; not yet recorded from Panama.

MATERIAL EXAMINED. Reared specimens: 1♀, from *Ategumia lotanalis* on *Conostegia xalapensis*, 10.92291°N, 85.31877°W, 410 m, 25.xii.2014–12.i.2015, DHJPAR0057427. 1♀, 10.94076°N, 85.3177°W, 461 m, 6–21.x.2009, DHJPAR0037897. 1♀, 10.94741°N, 85.31501°W, 491 m, 5–20.x.2009, DHJPAR0037898.

1♂, 10.96331°N, 85.32243°W, 434 m, 13.xii.2015–9.i.2016, DHJPAR0058538. 1♀, 11.01983°N, 85.41342°W, 445 m, 12.ii–3.iii.2004, DHJPAR0015340. 1♀, on *Miconia trinervia*, 10.90424°N, 85.27120°W, 410 m, 6–27.viii.2014, DHJPAR0056358. 1♀, on *Triolena hirsuta*, 10.90528°N, 85.27882°W, 405 m, 19.xi–10.xii.2013, DHJPAR0054498. 1♂, from *Ategumia lotanalis*DHJ08 on *Arthrostemma ciliatum*, 10.94404°N, 85.31738°W, 455 m, 29.iv–15.v.2011, DHJPAR0042819. 1♂, from *Ategumia lotanalis*DHJ09 on *Conostegia xalapensis*, 10.93548°N, 85.25314°W, 123 m, 23.vii–12.viii.2009, DHJPAR0036376. 1♀, 10.9555°N, 85.28381°W, 221 m, 1–21.viii.2012, DHJPAR0050372. 1♀, on *Miconia lacera*, 10.93332°N, 85.25331°W, 135 m, 27.vi–11.vii.2009, DHJPAR0036341. 1♀, 3–18.vi.2009, DHJPAR0035295. 1♀, 10.93548°N, 85.25314°W, 123 m, 23.vii–14.viii.2009, DHJPAR0036377. 1♂, 10.94404°N, 85.31738°W, 455 m, 30.xii.2011–14.i.2012, DHJPAR0046735. 2♀, from *Ategumia matutinalis* on *Miconia lacera*, 10.89678°N, 85.270010°W, 420 m, 16.vii–4.viii.2014, DHJPAR0055974, DHJPAR0055975. 1♂, from *Ategumia matutinalis*DHJ03 on *Miconia lacera*, 10.93332°N, 85.25331°W, 135 m, 9–25.x.2009, DHJPAR0037955. 1♂, 10.94741°N, 85.31501°W, 491 m, 15–27.ix.2009, DHJPAR0037896. 1♀, 10.98931°N, 85.42581°W, 675 m, 9.x–9.xi.2009, DHJPAR0037914. 1♀, from *Conchylodes platinalis* on *Verbesina turbacensis*, 11.00891°N, 85.40977°W, 500 m, 7–24.ii.2007, DHJPAR0017276. 1♀, from *Herpetogramma salbialis* on *Baltimora recta*, 11.00199°N, 85.46166°W, 590 m, 31.viii–14.ix.2009, DHJPAR0037891. 1♂, on *Clibadium leiocarpum*, 10.94404°N, 85.31738°W, 455 m, 27.viii–8.ix.2010, DHJPAR0041185. 1♀, 10.94741°N, 85.31501°W, 491 m, 20.x–10.xi.2012, DHJPAR0053607. 1♂, 11.0006°N, 85.438°W, 620 m, 26.x–11.xi.2009, DHJPAR0037879. 2♂, 26.x–13.xi.2009, DHJPAR0037884, DHJPAR0037958. 1♂, 26.x–7.xi.2009, DHJPAR0037878. 1♀, 26.x–9.xi.2009, DHJPAR0037877. 1♀, on *Clibadium pittieri*, 10.91589°N, 85.26631°W, 420 m, 14.x–4.xi.2009, DHJPAR0037929. 1♀, on *Melanthera aspera*, 10.96187°N, 85.28045°W, 96 m, 16.ix–1.x.2013, DHJPAR0053635. 1♀, 29.ii–11.iii.2012, DHJPAR0050368. 2♂, *Melanthera nivea*, 10.961870°N, 85.28045°W, 96 m, 4–18.xi.2014, DHJPAR0057437, DHJPAR0057438. 1♂, on *Verbesina turbacensis*, 11.01355°N, 85.42406°W, 510 m, 16.i–5.ii.2013, DHJPAR0057419. 1♀, 16.i–9.ii.2013, DHJPAR0050929. 1♀, on *Zexmenia virgulta*, 10.87741°N, 85.32363°W, 560 m, 10.xi–2.xii.2010, DHJPAR0041562. 1♂, 10.90661°N, 85.28784°W, 400 m, 17.xi–6.xii.2010, DHJPAR0041583. 1♂, 10.91847°N, 85.30338°W, 320 m, 3–20.viii.2010, DHJPAR0041598. 1♂, 3–22.viii.2010, DHJPAR0041596. 1♂, from *Herpetogramma* Solis10 on *Solanum hazenii*, 10.89678°N, 85.27001°W, 420 m, 22.xii.2011–6.i.2012, DHJPAR0046739. 1♀, 22.xii.2011–8.i.2012, DHJPAR0046734. 1♀, from *Pleuroptya* Solis03 on *Laportea aestuans*, 10.96187°N, 85.28045°W, 96 m, 14.iii–1.iv.2012, DHJPAR0049475. 1♀, 11.02681°N, 85.49547°W, 290 m, 23.x–8.xi.2004, DHJPAR0009361. 1♂, on *Urera caracasana*, 10.87766°N, 85.39343°W, 645 m, 5–19.xii.2012, DHJPAR0051354. 1♂, 5–21.xii.2012, DHJPAR0051350. 1♂, on *Urera elata*, 10.87097°N, 85.39144°W, 640 m, 22.ix–11.x.1998, DHJPAR0015339. 1♀, 22.ix–12.x.1998, DHJPAR0015338. 1♀, 22.ix–13.x.1998, DHJPAR0015337. 1♂, 10.87766°N, 85.39343°W, 645 m, 23.i–11.ii.2013, DHJPAR0051383. 1♂, 23.i–9.ii.2013, DHJPAR0051384. 1♀, 10.90661°N, 85.28784°W, 400 m, 22.ii–8.iii.2006, DHJPAR0015530. 1♀, 10.9305°N, 85.37223°W, 527 m, 14.i–18.ii.2009, DHJPAR0030609. 1♀, from *Pycnarmon* BioLep66 on *Lepidaploa tortuosa*, 11.01983°N, 85.41342°W, 445 m, 3–31.iii.2009, DHJPAR0035529. 1♂, from *Rhectocraspeda periusalis* on *Piper auritum*, 10.94076°N, 85.3177°W, 461 m, 17–31.i.2010, DHJPAR0038812. 1♀, on *Piper umbellatum*, 10.9301°N, 85.25205°W, 109 m, 7–26.iii.2010, DHJPAR0038807. 1♀, 10.93548°N, 85.25314°W, 123 m, 22.xi–5.xii.2013, DHJPAR0054506. 1♀, 10.94404°N, 85.31738°W, 455 m, 24.viii–7.ix.2010, DHJPAR0041186. 1♀, from *spilo*Janzen01 Janzen14DHJ02 on *Piper* 21153, 10.89666°N, 85.29003°W, 400 m, 12.iv–8.v.2011, DHJPAR0042826 (EMUS, HIC).

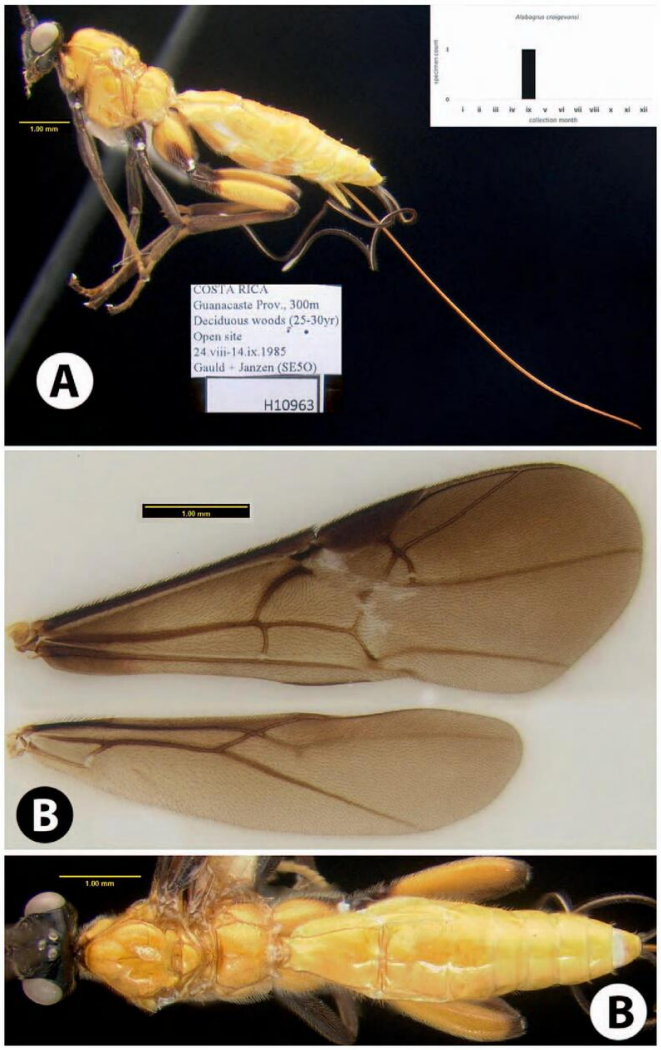


Figure 19 *Alabagrus craigevansi* n. sp., holotype: **A**. lateral habitus, **B**. wings, **C**. dorsal habitus.

Alabagrus craigevansi Sharkey n. sp.

Figure 19

DIAGNOSIS. Gena rounded posteroventrally. Propleuron melanic and yellow. Hind coxa with a melanic patch laterally. Propodeum entirely smooth except for a weak, rounded median longitudinal bulge. Scutellum entirely yellow.

NOTES. Included under *A. imitatus* in Leathers and Sharkey (2003).

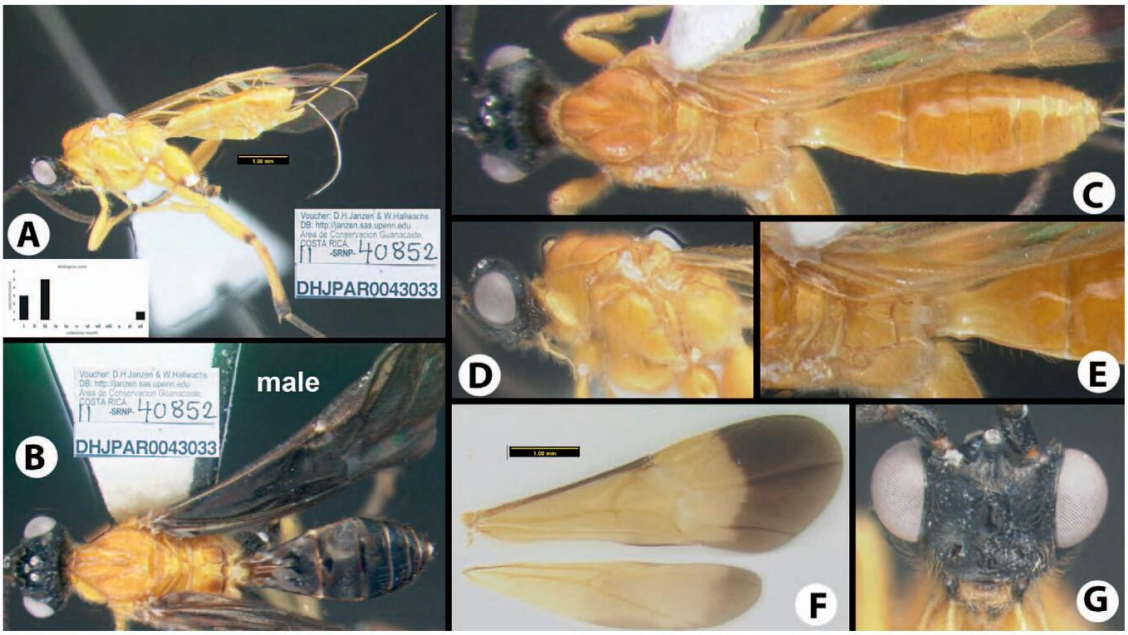


Figure 20 *Alabagrus cuna*: **A**, **C–G** female; **B** male: **A**. lateral habitus, **B**. dorsal habitus, **C**. dorsal habitus, **D**. lateral head and mesosoma, **E**. propodeum and tergum 1, **F**. wings, **G**. anterior head.

DESCRIPTION. Body length 7.7 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.5× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor distinctly longer than body.

Males. Unknown.

ETYMOLOGY. Named in honor of Mr. Craig Evans, extraordinary friend.

MATERIAL EXAMINED. HOLOTYPE ♀, Guanacaste, 300 m, deciduous woods (25–30 yr), open site, 24.viii–14.ix.1985, Gauld and Janzen, SE50, H10963 (HIC).

Alabagrus cuna Sharkey, 1988
Figure 20

Alabagrus cuna Sharkey, 1988:362. Holotype ♀, Panama (AMNH)

DIAGNOSIS. Female: Propleuron pale. Propodeum areolate, with at least one closed areola. Midfemur pale. Head melanic. Hind coxa entirely pale. Forewing yellow in basal ⅔, melanic apically. Midfemur entirely or mostly pale. Ovipositor slightly longer than metasoma. Male: metasoma entirely melanic, contrasting with a yellow mesosoma. Forefemur melanic, or pale apically and basally, melanic at midlength.

DESCRIPTION. Body length 5.5 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum areolate, with at least one closed areola. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.4× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor short, not longer than metasoma, or longer than metasoma but not longer than body.

Males. First median tergite with well-defined median carina; forewing entirely infuscate, lacking yellow color; metasomal terga mostly melanic; legs more melanic, e.g., hind leg completely black.

HOST INFORMATION. *Neurophyseta* BioLep226.

DISTRIBUTION. Costa Rica and Panama (Leathers and Sharkey, 2003).

MATERIAL EXAMINED. Reared specimens: all from *Neurophyseta* BioLep226 on *Hypolepis repens*. 1♂, 10.89666°N, 85.29003°W, 400 m, 21.ii–6.iii.2011, DHJPAR0043025 (EMUS). 1♀, 21.ii–7.iii.2011, DHJPAR0042807. 1♂, 21.ii–8.iii.2011, DHJPAR0043033. 1♀, 4–20.iii.2012, DHJPAR0049045. 1♀, 4–21.iii.2012, DHJPAR0049047. 1♀, 1♂, 10.90661°N, 85.28784°W, 400 m, 27.xii.2013–10.i.2014, DHJPAR0054521, DHJPAR0054535. 1♀, 27.xii.2013–14.i.2014, DHJPAR0054525 (EMUS, HIC).

Alabagrus derailersi Leathers and Sharkey, 2003
Figure 21

Alabagrus derailersi Leathers and Sharkey, 2003:25–26. Holotype ♀, Costa Rica (INBio)

DIAGNOSIS. Female: Gena rounded posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with a smooth shallow groove extending anteriorly. Propodeum mostly smooth with a few crenulae anteromedially but lacking areolae. Mesoscutum yellow. Propleuron melanic. Fore- and midcoxae entirely yellow. Ovipositor

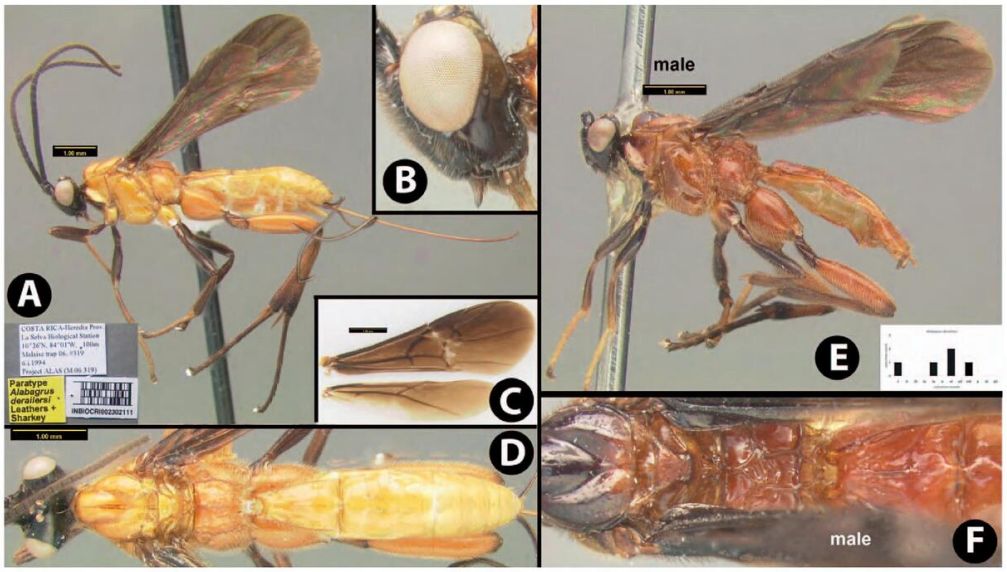


Figure 21 *Alabagrus derailersi*, **A–D** paratype; **E, F** male: **A**. lateral habitus, **B**. lateral head, **C**. wings, **D**. dorsal habitus, **E**. lateral habitus, **F**. dorsal mesosoma and tergum 1.

slightly shorter than body. Male: Mesoscutum mostly reddish orange with some melanic infusions, or mostly melanic with some reddish orange infusions. Scutellum reddish orange.

DESCRIPTION. Body length 5.9 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.5× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Mesoscutum mostly reddish orange with some melanic infusions, or mostly melanic with some reddish orange infusions; mesoscutellum reddish orange.

DISTRIBUTION. Costa Rica (Leathers and Sharkey, 2003).

Alabagrus donharveyi Sharkey n. sp.

Figure 22

DIAGNOSIS. Median tergite 1 mostly melanic but red at base. Hind coxa entirely red. Metapleuron mostly or entirely melanic.

NOTES. Specimens of this species were included under *A. semialbus* in Leathers and Sharkey (2003). The holotype of *A. semialbus* is from Brazil, and the metapleuron is more areolated those of *A. donharveyi*.

DESCRIPTION. Body length 8.2 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly, or distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron areolate rugose in ventral half or more. Propodeum areolate, with at least one closed areola. Hind femur heavily sculptured ventrally with large aciculations or rugosities, distinctly more heavily sculptured than dorsal surface. First tergum 0.9× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Similar to female.

HOST INFORMATION. *Coelorhyncidia pandarali*, *Coenostolopsis apicalis*.

ETYMOLOGY. Named in honor of Dr. Donald Harvey of the U.S. National Museum of Natural History of the Smithsonian Institution, who has long curated and accessioned the ACG inventory of many families of butterflies and moths, in collaboration with other Lepidoptera taxonomists.

MATERIAL EXAMINED. HOLOTYPE ♀, host=*Coenostolopsis apicalis* on *Dalechampia websteri* 10.93332°N, 85.25331°W, 135 m, 14.xii.2009–4.i.2010, DHJPAR0037930 (EMUS). PARATYPES: reared specimens: 1♀, from *Coelorhyncidia pandaralis* on *Dichapetalum grayumii*, 10.9305°N, 85.37223°W, 527 m, 4–21.iv.2007, DHJPAR0021165. 1♀, 1♂, DHJPAR0021158, DHJPAR0021163. 1♂, from *Coenostolopsis apicalis* on *Dalechampia scandens*, 10.992840°N, 85.42936°W, 660 m, 25.i–19.ii.2014, DHJPAR0054512. 1♀, 25.i–22.ii.2014, DHJPAR0054513. 1♀, on *Dalechampia websteri*, 10.93332°N, 85.25331°W, 135 m, 20.ix–3.x.2009, DHJPAR0036711. 1♀, 20.ix–8.x.2009, DHJPAR0036688. 1♀, 10.93548°N, 85.25314°W, 123 m, 4–15.ix.2011, DHJPAR0045810. 1♀, 11.01926°N, 85.40997°W, 440 m, 21.ii–16.iii.2012, DHJPAR0048734 (EMUS, HIC). Nonreared paratypes: 1♀, Guanacaste, Estación Pitilla, P.N. Guanacaste, 700 m, 9 km S Santa Cicelia, 19.v–3.vi.1993, C. Moranga, L-N-330200, 380200 (INBio). 4♀,2♂, Alajuela, 20 km S Upala (10.84°N, 85.07°W), 16–24,vii,1995, 1–10.iv.1991, 20–26.iii.1991, 21–30.iv.1991, 12.iii.1991, 10–19.iii.1991, F.D. Parker (EMUS, HIC). 2♀, Guanacaste, 3 km SE R. Narango, 20–31.i.1992 and 11.i.1993, F.D. Parker (EMUS, HIC). 1♀, PANAMA, Canal Zone, Barro Colorado Is., 9.17°N, 79.83°W, 14.viii.1978, H. Hespenheide (HIC). 1♀, ECUADOR, Sucumbios, Rio Napo, Sacha Lodge, 0.5°S, 76.5°W, 290 m, 31.x–10.xi.1994, Hibbs (EMUS).

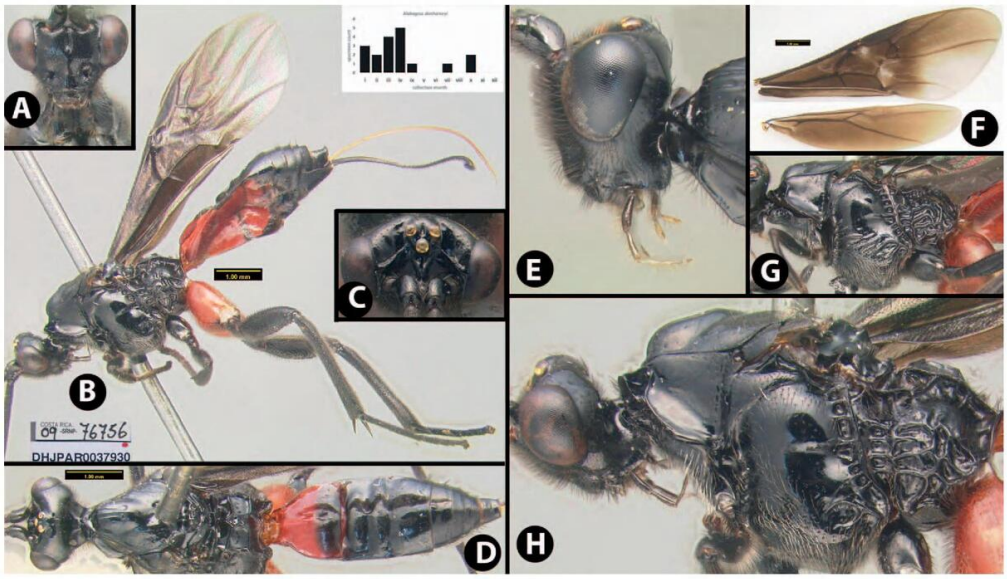


Figure 22 *Alabagrus donharveyi* n. sp., paratype: **A**. anterior head, **B**. lateral habitus, **C**. dorsal head, **D**. dorsal habitus, **E**. lateral head, **F**. wings, **G**. lateral mesosoma, **H**. lateral head and mesosoma.

Alabagrus donlafontainei Sharkey n. sp.
Figure 23

DIAGNOSIS. Female: Propodeum areolate, with at least one closed areola. Ovipositor slightly shorter than body. Head melanic. Propleuron. Midfemur yellow. Hind coxa entirely yellow. Forewing mostly melanic with a clear vertical band near stigma. Male: Terga 1 and 2 mostly or entirely yellow, remaining terga mostly or entirely black. Midfemur melanic apically and basally, pale elsewhere.

DESCRIPTION. Body length 4.5 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly, or absent or almost absent, represented at most by small, shallow depression posteriorly, crenulae always lacking. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum areolate, with at least one closed areola. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface, or heavily sculptured ventrally with large aciculations or rugosities, distinctly more heavily sculptured than dorsal surface. First tergum 0.9× longer than wide; varying from weakly convex to with a rounded longitudinal bulge, or with well-defined median longitudinal carina. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Forewing evenly infuscate, lacking clear band; hind leg and metasomal terga mostly melanic.

HOST INFORMATION. musoBioLep01 BioLep448.

ETYMOLOGY. Named in honor of Dr. Don Lafontaine of the Canadian National Collection, Ottawa, who has long labored at helping the taxonomic identification of the ACG inventory of Noctuoidea, in collaboration with other moth taxonomists.

MATERIAL EXAMINED. HOLOTYPE ♀, host=musoBioLep01 BioLep448 on *Polypodium fraxinifolium*, 10.98816°N, 85.39581°W, 485 m, 4–21.iii.2010, DHJPAR0038929 (EMUS). PARATYPES: all from musoBioLep01 BioLep448 on *Polypodium fraxinifolium*: 1♂, 10.98816°N, 85.39581°W, 485 m, 4–21.iii.2010, DHJPAR0038927. 1♂, 10.98816°N, 85.39581°W, 485 m, 4–23.iii.2010, DHJPAR0038923. 2♂, 4–23.iii.2010, DHJPAR0038928, DHJPAR0050137 (EMUS, HIC).

Alabagrus donnai Leathers and Sharkey, 2003
Figure 24

Alabagrus donnai Leathers and Sharkey, 2003:26–27. Holotype ♀, Costa Rica (INBio)

DIAGNOSIS. Gena acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with a smooth groove extending anteriorly. First tergum weakly convex. Body black and yellow. Mesoscutum melanic. Forefemur melanic. Metasoma entirely yellow.

DESCRIPTION. Body length 5.2 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum areolate, with at least one closed areola. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface, or heavily sculptured ventrally with large aciculations or rugosities, distinctly more heavily sculptured than dorsal surface. First tergum 1× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Pale parts of body darker than females, pale orange rather than dark or pale yellow.

DISTRIBUTION. Widespread in Costa Rica and also known from Yucatán, Mexico (Leathers and Sharkey, 2003).

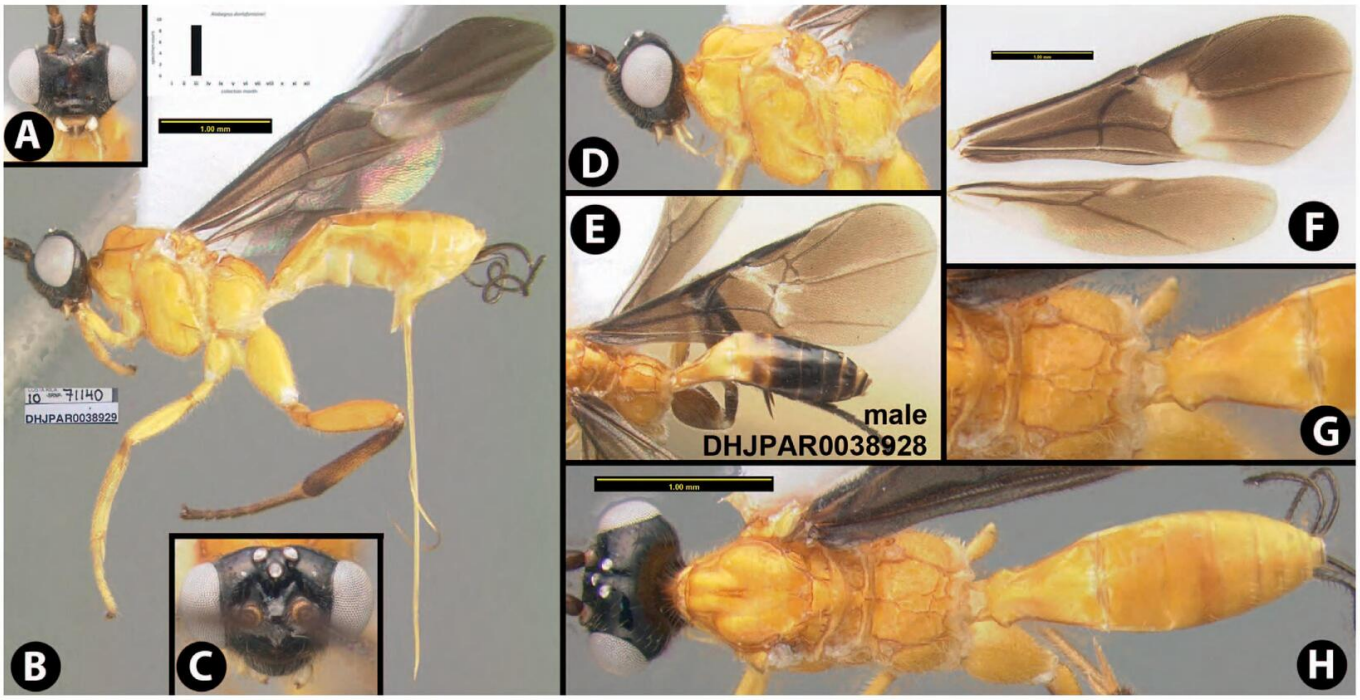


Figure 23 *Alabagrus donlafontainei* n. sp., **A–D**, **F–H** holotype; **E** male paratype: **A**. anterior head, **B**. lateral habitus, **C**. dorsal head, **D**. lateral head and mesosoma, **E**. dorsal wing, propodeum and metasoma, **F**. wings, **G**. propodeum and tergum 1, **H**. dorsal habitus.

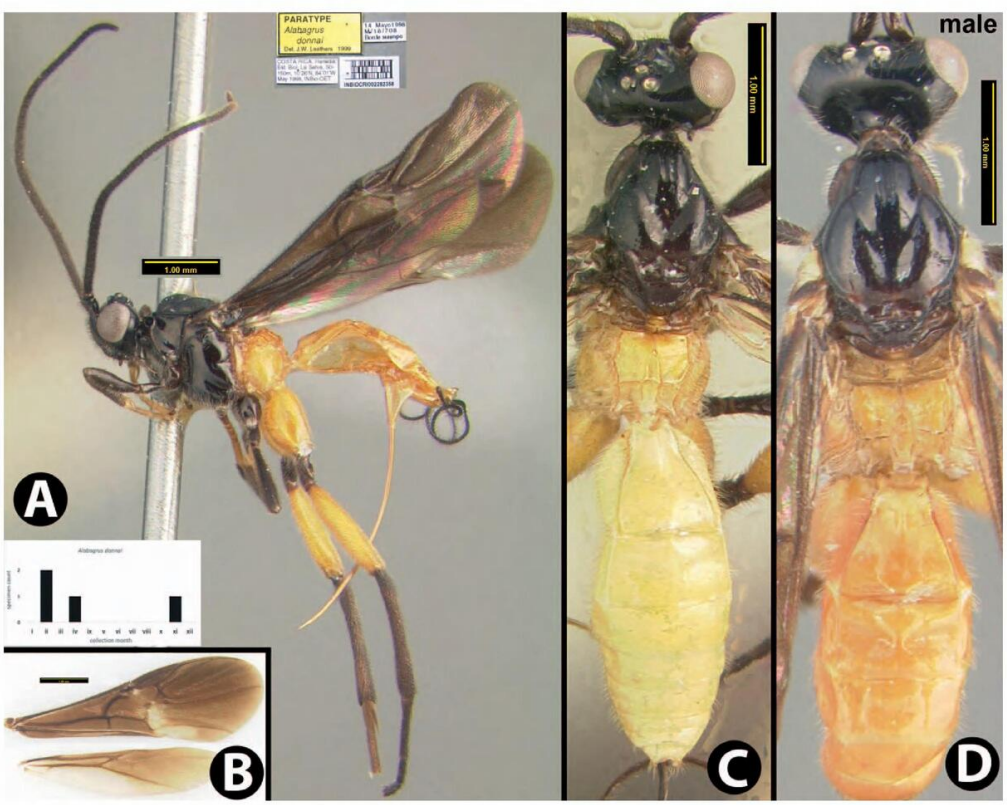


Figure 24 *Alabagrus donnai*, **A–C** paratype female; **D** male: **A**. lateral habitus, **B**. wings, **C**. dorsal habitus, **D**. dorsal habitus.

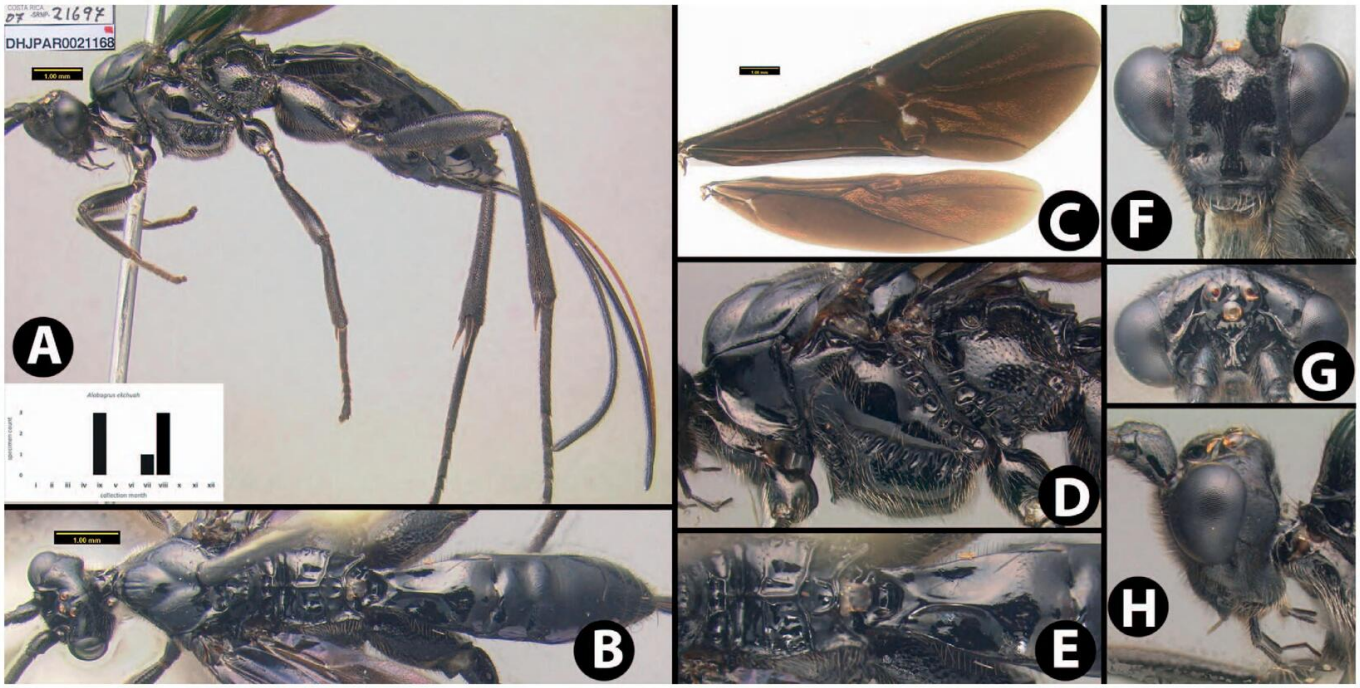


Figure 25 *Alabagrus ekchuah*: **A**. lateral habitus, **B**. dorsal habitus, **C**. wings, **D**. lateral mesosoma, **E**. propodeum and tergum 1, **F**. anterior head, **G**. dorsal head, **H**. lateral head.

Alabagrus ekchuah Sharkey, 1988
Figure 25

Alabagrus ekchuah Sharkey, 1988:366–7. Holotype ♀, Costa Rica (EMUS)

DIAGNOSIS. Body entirely black. Precoxal sulcus distinct and foveolate ½ or more length of mesopleuron. Forewing almost entirely infuscate, ignore small clear patches posterad stigma.

DESCRIPTION. Body length 10.7 mm. Gena rounded or with an obtuse angle posteroventrally. Precoxal sulcus distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron areolate rugose in ventral quarter or less. Propodeum areolate, with at least one closed areola. Hind femur heavily sculptured ventrally with large aciculations or rugosities, distinctly more heavily sculptured than dorsal surface. First tergum 1.7× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Fore- and midtarsi yellow; propodeum with slightly more sculpture.

HOST INFORMATION. *Pantographa suffusalis*, *Syllepte amando*DHJ02.

DISTRIBUTION. Known from Costa Rica, El Salvador, and Mexico.

MATERIAL EXAMINED. Reared specimens: 1♂, from *Pantographa suffusalis* on *Triumfetta bogotensis*, 10.88919°N, 85.47609°W, 600 m, 16–28.viii.2004, DHJPAR0015405 (EMUS). 1♀, 16.viii–7.ix.2004, DHJPAR0015404. 1♀, from *Syllepte amando*DHJ02 on *Prockia costaricensis*, 11.01454°N, 85.47492°W, 380 m, 26.viii–23.ix.2002, DHJPAR0015403. 1♀, 11.01087°N, 85.48817°W, 400 m, 27.v–17.viii.2007, DHJPAR0021168 (EMUS, HIC).

Alabagrus englishi Leathers and Sharkey, 2003
Figure 26

Alabagrus englishi Leathers and Sharkey, 2003:27–28. Holotype ♀, Costa Rica (INBio)

DIAGNOSIS. Precoxal sulcus with one or several distinct foveae posteroventrally or absent. Propodeum smooth. Ovipositor longer than body. Forewing weakly infuscate in basal ⅔, more infuscate apically. Pronotum melanic. Hind coxa, metapleuron, and metasoma all entirely orange.

NOTES. The concept of *A. englishi* is much changed from that of Leathers and Sharkey (2003) and has a much more restricted morphological definition. Many paratypes of *A. englishi,* sensu Leathers and Sharkey (2003), will now key to the following species: *Alabagrus johnobryckii, A. sarahmeierottoae, A. sarahsharkeyae, and A. barbsharanowskiae.*

DESCRIPTION. Body length 7.6 mm. Gena rounded or with an obtuse angle posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly, or absent or almost absent, represented at most by small, shallow depression posteriorly, crenulae always lacking. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.3× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking

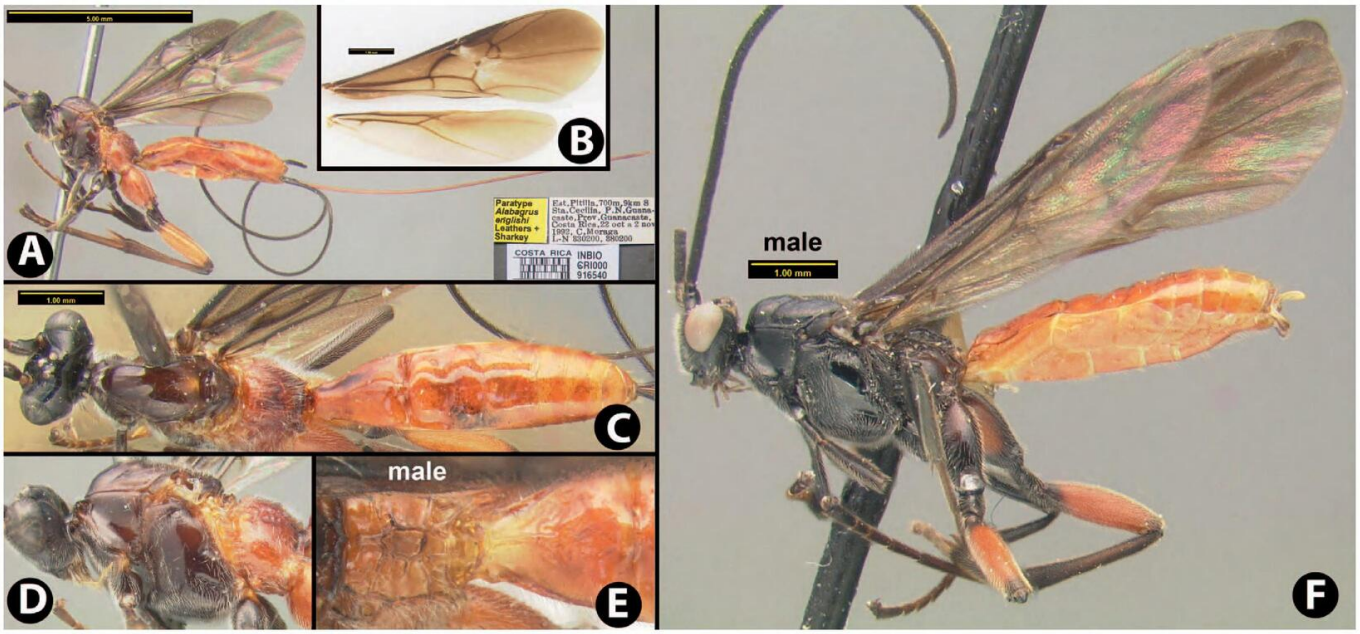


Figure 26 *Alabagrus englishi*, **A–D** paratype; **E, F** male: **A**. lateral habitus, **B**. wings, **C**. dorsal habitus, **D**. lateral head and mesosoma, **E**. propodeum and tergum 1, **F**. lateral habitus.

transverse depression, or depression barely indicated. Ovipositor distinctly longer than body.

Males. Unknown. The concept of *A. englishi* in Leathers and Sharkey (2003) conflates many species, and without *COI* sequence data, it is not possible at this time to discern which males are conspecific with the holotype female.

DISTRIBUTION. Costa Rica.

Alabagrus fernandezi Sharkey n. sp.

Figure 27

DIAGNOSIS. Gena acute posteroventrally. Midtibia with zero to three nonapical spines. Precoxal sulcus short with a few crenulae restricted to posterior margin. Propodeum smooth with a subtle hint of smooth shallow areolae. First tergum weakly convex. All femora, metapleuron, and hind coxa all entirely yellow. Mesoscutum melanic. Forewing with two yellow bands, apical band complete to posterior margin, costal vein yellow.

NOTES. Specimens of this species were included under *A. pachamama* in Leathers and Sharkey (2003). *Alabagrus pachamama* does not occur in Costa Rica. Members are very similar to *A. andresfreitasi* but have fewer spines on midtibia and more sculpture on propodeum. *Alabagrus fernandezi* is also similar to some small specimens of *A. fernandodiesi*. The color of the midfemur, with at least a hint of melanic color and a smoother propodeum in the latter, will distinguish these species.

DESCRIPTION. Body length 7 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.5× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Unknown.

ETYMOLOGY. Named in honor of Dr. Fernando Fernandez, in thanks for his collaboration during years of research in Colombia.

MATERIAL EXAMINED. HOLOTYPE ♀, Heredia, Puerto Viejo, OTS, La Selva, 100 m, i.1993, P. Hanson, H17270 (HIC). PARATYPES: 23♀, from the following provinces: Limón, Puntarenas, Heredia (HIC, EMUS, INBio, MUCR).

Alabagrus fernandodiasi Sharkey n. sp.

Figure 28

DIAGNOSIS. Gena acute posteroventrally. First tergum weakly convex. Forefemur, hind coxa, and metapleuron all entirely pale. Mesoscutum melanic. Propodeum lacking complete areolae, usually mostly or completely smooth. Midfemur yellow at base and apex but melanic at midlength, sometimes only ventrally.

NOTES. Specimens of this species were included under *A. pachamama* in Leathers and Sharkey (2003). *Alabagrus pachamama* as it is circumscribed here does not occur in Costa Rica.

DESCRIPTION. Body length 8.1 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly. Margin between metepisternum and metepimeron with very small weak crenulae. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.3× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking

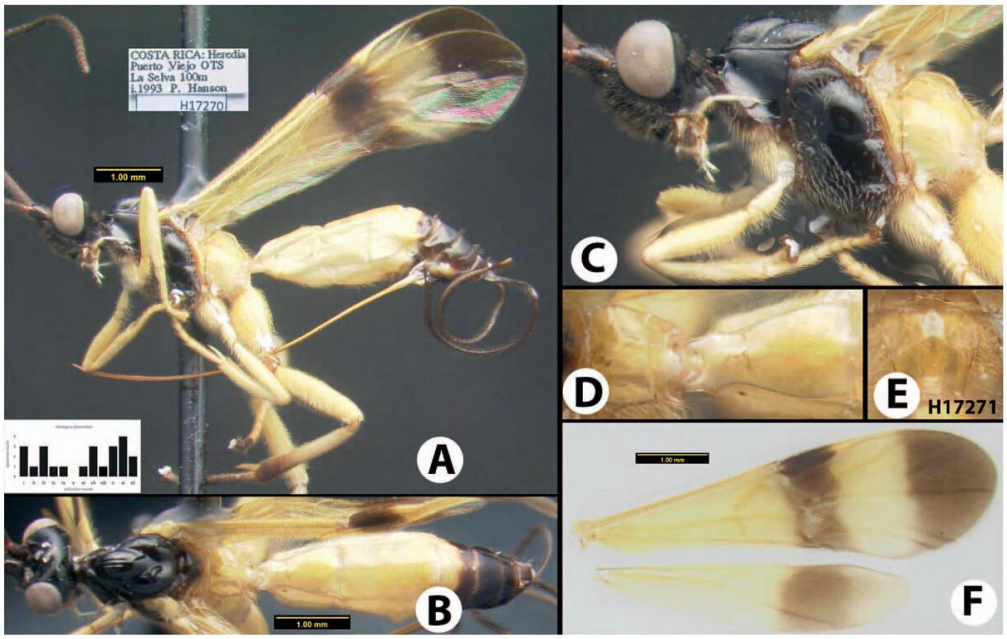


Figure 27 *Alabagrus fernandezi* n. sp., **A–D**, **F** holotype; **E** paratype: **A**. lateral habitus, **B**. dorsal habitus, **C**. lateral head and mesosoma, **D**. propodeum and tergum 1, **E**. propodeum, **F**. wings.

transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Unknown.

HOST INFORMATION. *Rhectocraspeda* Solis05, *Rhectocraspeda* Janzen347, *Desmia benealis*DHJ02, *Desmia* Janzen19, *Herpetogramma* Solis10, *Rhectocraspeda periusalis*, spiloBioLep01 BioLep243, spiloBioLep01 BioLep311, spiloBioLep01 BioLep402, spiloBioLep01 BioLep403, spiloBioLep01 BioLep414, spiloBioLep01 BioLep415.

ETYMOLOGY. Named in honor of Dr. Fernando Dias of the Universidade Federal do Paraná, Brazil, in recognition of his careful and precise identification and description of ACG Nymphalidae.

MATERIAL EXAMINED. HOLOTYPE ♀, host=*Rhectocraspeda* Solis05 on *Cestrum rugulosum*, 11.016020°N, 85.380530°W, 380 m, 8.viii–1.ix.2014, DHJPAR0056299 (EMUS). PARATYPES: 1♀, from *Desmia benealis*DHJ02 on *Besleria columneoides*, 10.8962°N, 85.27769°W, 430 m, 10–25.ix.2012, DHJPAR0050360. 1♀, from

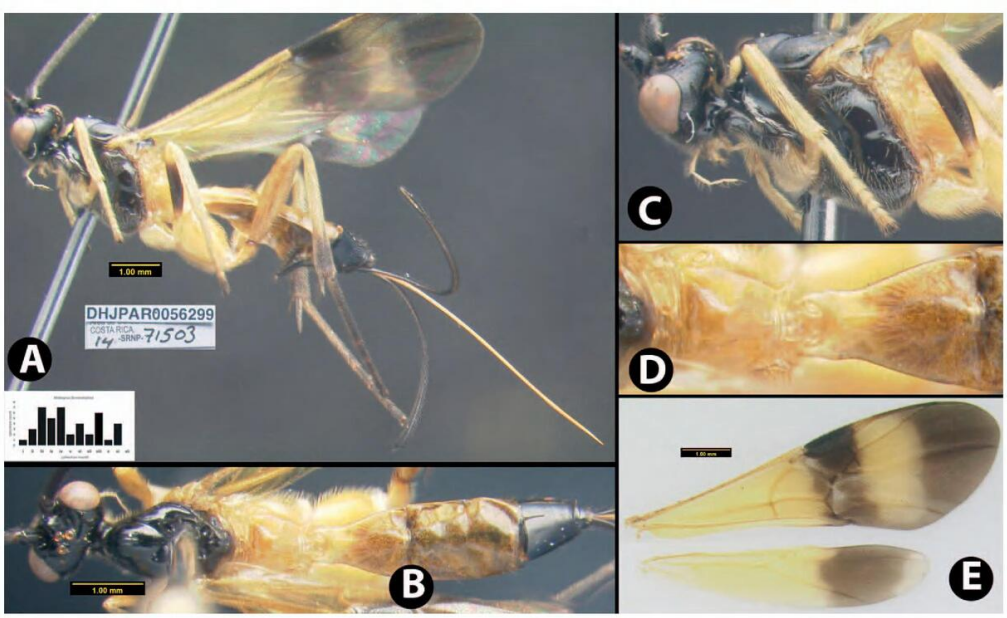


Figure 28 *Alabagrus fernandodiasi* n. sp., holotype: **A**. lateral habitus, **B**. dorsal habitus, **C**. lateral head and mesosoma, **D**. propodeum and tergum 1, **E**. wings.

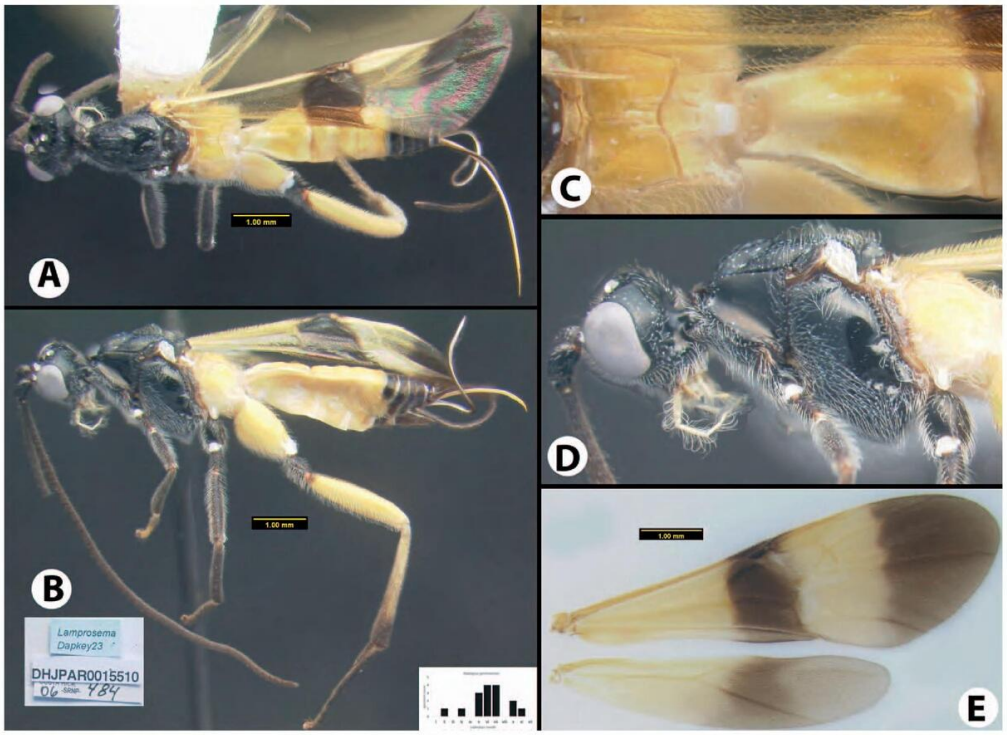


Figure 29 *Alabagrus genemonroei* n. sp., holotype: **A**. dorsal habitus, **B**. lateral habitus, **C**. propodeum and tergum 1, **D**. lateral head and mesosoma, **E**. wings.

Desmia Janzen19 on *Cissus verticillata*, 10.87766°N, 85.39343°W, 645 m, 31.v–22.vi.2013, DHJPAR0052090. 1♀, from *Herpetogramma* Solis10 on *Justicia aurea*, 10.86472°N, 85.41531°W, 540 m, 23.x–7.xi.2010, DHJPAR0041163. 1♀, on *Justicia macrantha*, 11.02364°N, 85.49139°W, 290 m, 24.i–12.ii.2005, DHJPAR0009377. 1♀, from *Herpetogramma* Solis11 on *Solanum aturense*, 10.89666°N, 85.29003°W, 400 m, 26.ii–15.iii.2014, DHJPAR0055088. 1♀, 26.ii–17.iii.2014, DHJPAR0055236. 1♀, on *Solanum rovirosanum*, 10.90037°N, 85.37254°W, 500 m, 12–30.iii.2012, DHJPAR0048731. 1♀, 12–31.iii.2012, DHJPAR0048732. 1♀, 10.87766°N, 85.39343°W, 645 m, 4–24.iv.2013, DHJPAR0052085. 1♀, 10.880090°N, 85.388870°W, 575 m, 1–25.v.2014, DHJPAR0055818. 1♀, on *Solanum schlechtendalianum*, 11.02367°N, 85.41884°W, 375 m, 16.i–5.ii.2007, DHJPAR0021198. 1♀, 16.i–6.ii.2007, DHJPAR0017273. 1♀, 10.86472°N, 85.41531°W, 540 m, 2–22.vii.2010, DHJPAR0040215. 1♀, 27.viii–13.ix.2011, DHJPAR0045801. 1♀, on *Witheringia solanacea*, 10.94076°N, 85.3177°W, 461 m, 29.x–13.xi.2013, DHJPAR0054488. 2♀, from *Rhectocraspeda* Janzen347 on *Solanum lanceifolium*, 11.01087°N, 85.48817°W, 400 m, 25.viii–11.ix.2009, DHJPAR0037883, DHJPAR0037890. 1♀, from *Rhectocraspeda periusalis* on *Piper aequale*, 10.90445°N, 85.28412°W, 400 m, 7.xii.2011–1.i.2012, DHJPAR0046750. 1♀, on *Piper sancti-felicis*, 10.86472°N, 85.41531°W, 540 m, 20.iii–10.iv.2011, DHJPAR0042804. 1♀, on *Piper urostachyum*, 10.98705°N, 85.42816°W, 700 m, 7–27.iii.2014, DHJPAR0055099. 1♀, 7–29.iii.2014, DHJPAR0055098. 1♀, on *Piper auritum*, 10.93548°N, 85.25314°W, 123 m, 12–27.x.2012, DHJPAR0050924. 1♀, from spiloBioLep01 BioLep243 on *Solanum schlechtendalianum*, 10.9305°N, 85.37223°W, 527 m, 10–27.xi.2013, DHJPAR0054490. 1♀, from spiloBioLep01 BioLep311 on *Columnea purpurata*, 10.8962°N, 85.27769°W, 430 m, 10–25.vi.2013, DHJPAR0052089. 1♀, from spiloBioLep01 BioLep402 on *Mikania cordifolia*, 10.86472°N, 85.41531°W, 540 m, 11–27.viii.2011, DHJPAR0045800. 1♀, 11–29.viii.2011, DHJPAR0045799. 1♀, from spiloBioLep01 BioLep403 on *M. cordifolia*, 11.01983°N, 85.41342°W, 445 m, 12–26.viii.2011, DHJPAR0044991. 1♀, 12–29.viii.2011, DHJPAR0045804. 1♀, from spiloBioLep01 BioLep414 on *Mikania guaco*, 10.87766°N, 85.39343°W, 645 m, 1–20.iv.2013, DHJPAR0052081. 1♀, 1–21.iv.2013, DHJPAR0052080. 1♀, from spiloBioLep01 BioLep415 on *Tournefortia bicolor*, 10.8702°N, 85.39153°W, 640 m, 8–22.xi.2014, DHJPAR0057002 (EMUS, HIC).

Alabagrus genemonroei Sharkey n. sp.

Figure 29

DIAGNOSIS. Gena acute posteroventrally. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. Third tergum lacking transverse depression, or depression barely indicated. Forewing with two distinct yellow bands, one basal and the other directly below (posterior to) stigma; distal band complete to hind margin; costal vein mostly yellow. Forefemur and mesoscutum black. Metapleuron entirely yellow. Terga 1–3 yellow, remaining terga black.

NOTES. Specimens of this species will key to *A. pachamama* in Leathers and Sharkey (2003). *Alabagrus pachamama* does not occur in Costa Rica.

DESCRIPTION. Body length 8.4 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly, or distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present,

restricted to extreme margins. Propodeum areolate, with at least one closed areola, or lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.3× longer than wide; varying from weakly convex to with a rounded longitudinal bulge, or with well-defined median longitudinal carina. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor short, not longer than metasoma, or longer than metasoma but not longer than body.

Males. Unknown.

HOST INFORMATION. *Lamprosema* Dapkey23.

ETYMOLOGY. Named in honor of Dr. Gene Munroe (deceased) of the Canada Department of Agriculture, Ottawa, in recognition of his enormous contributions to the taxonomy and systematics of Pyraloidea of ACG and the world.

MATERIAL EXAMINED. HOLOTYPE ♀, host=*Lamprosema* Dapkey23 on *Serjania valerii*, 10.9163°N, 85.37869°W, 460 m, 13.i–1.ii.2006, DHJPAR0015510 (EMUS). PARATYPES: 16♀, from the following provinces: Limón, Guanacaste, Heredia (HIC, EMUS, INBio, MUCR). 1♀, PANAMA, Canal Zone, 20.vii.1978 (HIC).

Alabagrus hansoni Sharkey n. sp.

Figure 30

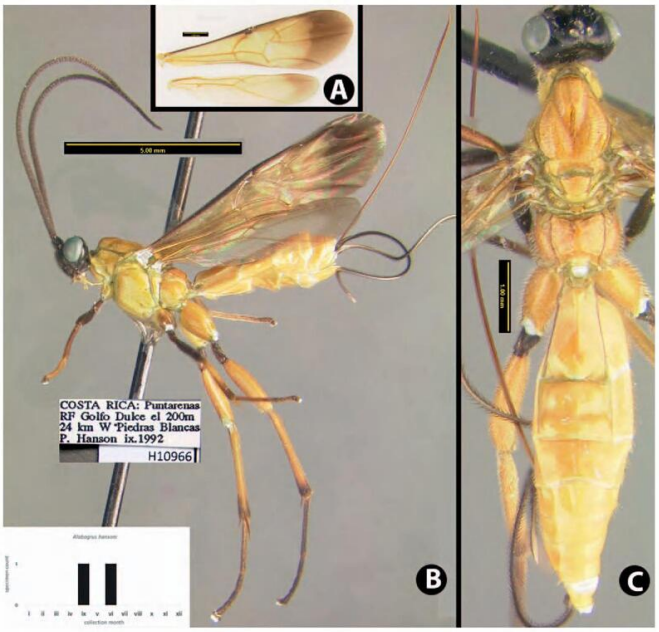


Figure 30 *Alabagrus hansoni* n. sp., holotype: **A**. wings, **B**. lateral habitus, **C**. dorsal habitus.

DIAGNOSIS. Body predominantly yellow. Margins of mesopleuron with a greenish tinge.

DESCRIPTION. Body length 9 mm. Gena rounded or with an obtuse angle posteroventrally. Precoxal sulcus absent or almost absent, represented at most by small, shallow depression posteriorly, crenulae always lacking. Margin between metepisternum and metepimeron smooth. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.6× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Unknown.

ETYMOLOGY. Named in honor of Dr. Paul Hanson, hymenopterist extraordinaire, for the many occasions on which he facilitated research in Costa Rica.

MATERIAL EXAMINED. HOLOTYPE ♀, Puntarenas, RF Golgo Dulce el 200 m, 24 km W Piedras Blancas, P. Hanson, ix.1992, H10966 (HIC). PARATYPE: 1♀, same data as holotype, except date vi.1993 (MUCR).

Alabagrus hespenheidei Sharkey n. sp.

Figure 31

DIAGNOSIS. Gena rounded posteroventrally. Hind coxa entirely or almost entirely melanic. Median tergite 1 red at base and melanic apically. Median tergite 2 melanic.

NOTES. Referred to as *A. semialbus* by Leathers and Sharkey (2003). The holotype of *A. semialbus* is from Brazil, and the species does not occur in Costa Rica.

DESCRIPTION. Body length 9.2 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly, or distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins, or areolate rugose in ventral quarter or less. Propodeum areolate, with at least one closed areola. Hind femur heavily sculptured ventrally with large aciculations or rugosities, distinctly more heavily sculptured than dorsal surface. First tergum 1.1× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Forewing color variable, from similar to the female to almost completely infuscate; propodeum from almost completely black to completely black; propodeum with more sculpture.

ETYMOLOGY. Named in honor of Dr. Henry Hespenheide, coleopterist extraordinaire, for his many gifts of reared and otherwise collected braconids.

MATERIAL EXAMINED. HOLOTYPE ♀, Heredia, La Selva Biol. Sta., 3 km S Pto. Viejo, 10.43°N, 84.02°W, 25.vii.1992, H. Hespenheide, H17275 (HIC). PARATYPES: 1♀, 7♂, Heredia Prov. (HIC, EMUS, INBio).

Alabagrus iankitchingi Sharkey n. sp.

Figure 32

DIAGNOSIS. Gena acute posteroventrally. Propodeum smooth with a subtle hint of smooth shallow areolae. Third tergum lacking transverse depression, or depression barely indicated. Forewing with two yellow bands, one distinct basal band and a weaker triangular band directly below (posterior to) stigma that is not complete to the posterior wing margin. Mesoscutum melanic. Median terga 1–4 orange, remaining terga black.

DESCRIPTION. Body length 7.2 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly.

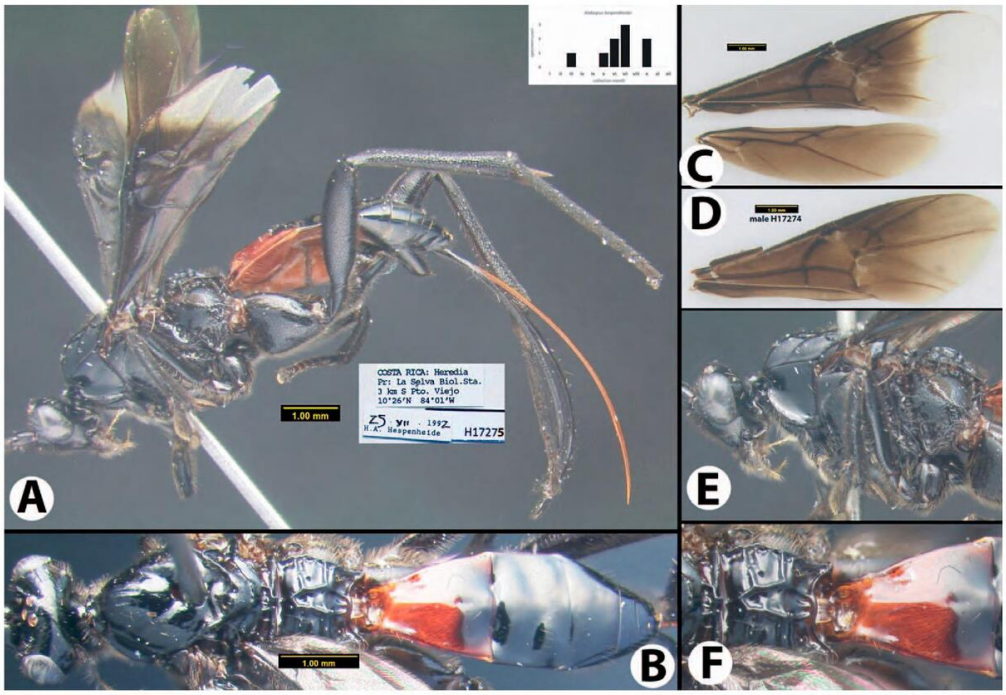


Figure 31 *Alabagrus hespenheidei* n. sp., **A–C**, **E**, **F** holotype; **D** paratype male: **A**. lateral habitus, **B**. dorsal habitus, **C**. wings, **D**. forewing, **E**. lateral head and mesosoma, **F**. propodeum and tergum 1.

Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 0.9× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Unknown.

HOST INFORMATION. *Phaedropsis* Solis350DHJ02.

ETYMOLOGY. Named in honor of Dr. Ian Kitching of The Natural History Museum, London, in recognition of his very fruitful labors and web site for the taxonomy and systematics of Sphingidae of ACG and the world.

MATERIAL EXAMINED. HOLOTYPE ♀, host=*Phaedropsis* Solis350DHJ02 on *Guazuma ulmifolia*, 10.76261°N, 85.42979°W, 330 m, 24.x–5.xii.2013, DHJPAR0054545 (EMUS). PARATYPE: 1♀, same host data as holotype, 10.7648°N, 85.38445°W, 550 m, 29.vi–21.vii.2011, DHJPAR0045001 (HIC).

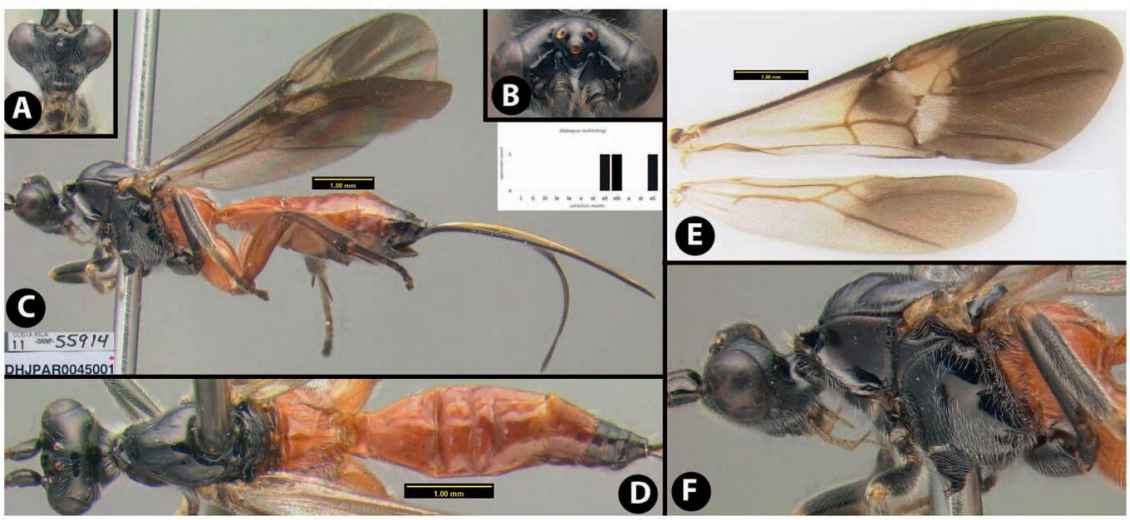


Figure 32 *Alabagrus iankitchingi* n. sp., paratype: **A**. anterior head, **B**. dorsal head, **C**. lateral habitus, **D**. dorsal habitus, **E**. wings, **F**. lateral head and mesosoma.

Alabagrus ilgookangi Sharkey n. sp.
Figure 33

DIAGNOSIS. Gena rounded posteroventrally. Precoxal sulcus distinct and foveolate ½ or more length of mesopleuron. Forewing weakly infuscate in basal ⅔ with a yellowish tinge, more deeply infuscate apically. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. Pronotum melanic anteriorly, pale (yellow to orange) posteriorly.

DESCRIPTION. Body length 7.6 mm. Gena right angled or acute posteroventrally. Precoxal sulcus distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron with very small weak crenulae. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum areolate, with at least one closed areola, or lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.1× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body, or distinctly longer than body.

Males. Unknown.

ETYMOLOGY. Named in honor of Mr. Ilgoo Kang, former graduate student in my (M.J.S.) program.

MATERIAL EXAMINED. HOLOTYPE ♀, Puntarenas, San Vito, Estac. Biol. Los Altures, 1500 m, iv.1992, P. Hanson, H10695 (HIC). PARATYPES: 4♀, from San Jose and Puntarenas Provinces, all between 1200 and 1500 m (HIC, EMUS, MUCR, INBio).

Alabagrus isidrochaconi Sharkey n. sp.
Figure 34

DIAGNOSIS. Difficult or impossible to separate morphologically from *Alabagrus jeanfrancoislandryi* and *A. jennyphillipsae*. Gena rounded posteroventrally. Hind femur heavily sculptured ventrally with aciculations or rugosities, distinctly more heavily sculptured than dorsal surface. Head less elongate than *A. arua*. Hind femur narrower (lateral view) than *A. nicoya*. First metasomal median tergite slightly longer than wide; weakly convex in females and with a rounded longitudinal bulge in males. Pronotum entirely melanic. Metapleuron entirely orange. Terga all orange, except apical two terga slightly to distinctly melanic.

NOTES. Specimens of this species were included under *A. albispina* in Leathers and Sharkey (2003).

DESCRIPTION. Body length 7.3 mm. Gena right angled or acute posteroventrally. Precoxal sulcus distinct and foveolate or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth, sculpture, if present, restricted to extreme margins, or areolate rugose in ventral quarter or less. Propodeum areolate, with at least one closed areola. Hind femur heavily sculptured ventrally with large aciculations or rugosities, distinctly more heavily sculptured than dorsal surface. First tergum 1× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Medial ridge of median tergite 1 more acute; forewing color variable, from as in the female to completely infuscate; hind coxa color variable, from as in the female to completely orange.

HOST INFORMATION. *Eulepte* Janzen03, *Glyphodes sibillalis*DHJ01, *Phaedropsis cernalis*, *Phaedropsis* Solis348.

ETYMOLOGY. Named in honor of Sr. Isidro Chacon of INBio and the Museo Nacional de Costa Rica, who has long and masterfully taxonomized all the ACG macrolepidoptera inventory to date, as well as for all of Costa Rica.

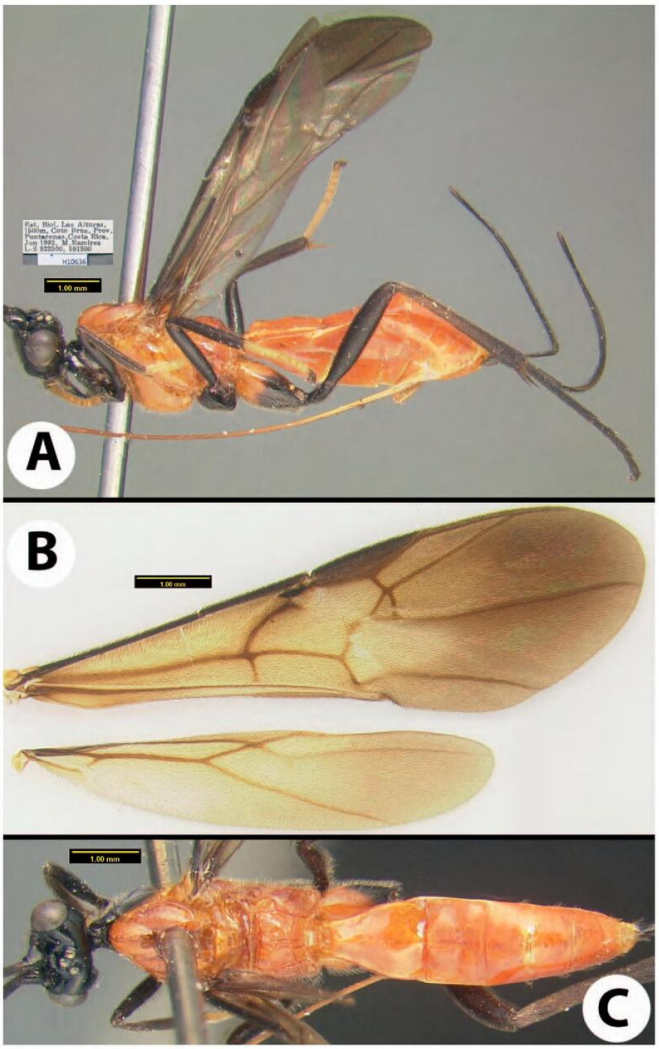


Figure 33 *Alabagrus ilgookangi* n. sp., **A**, **C–E** holotype; **B** paratype male: **A**. lateral habitus, **B**. propodeum, **C**. wings, **D**. dorsal head and mesosoma, **E**. dorsal metasoma.

MATERIAL EXAMINED. HOLOTYPE ♀, host=*Glyphodes sibillalis*DHJ01 on *Trophis racemosa*, 11.00217°N, 85.46337°W, 560 m, 15.vii–1.viii.2005, DHJPAR0015520 (EMUS). PARATYPES: 1♂, from *Eulepte* Janzen03 on *Amphilophium crucigerum*, 10.88996°N, 85.47966°W, 550 m, 24.ix–13.x.2004, DHJPAR0015525. 1♀, 1♂, from *Glyphodes* sibillalisDHJ01 on *Trophis racemosa*, 10.72750°N, 85.41212°W, 315 m, 14.xi–4.xii.2014, DHJPAR0056985, DHJPAR0057426. 1♀, 10.72750°N, 85.41212°W, 315 m, 14.xi–5.xii.2014, DHJPAR0056987. 1♀, 10.83013°N, 85.61372°W, 285 m, 23.vii–5.viii.1990, DHJPAR0015466. 1♀, 10.84389°N, 85.61384°W, 300 m, 19.vii–4.viii.1981, DHJPAR0015469. 1♀, 6–18.vii.1981, DHJPAR0015467. 1♀, 6–19.vii.1981, DHJPAR0015468. 1♂, 15–31.vii.2005, DHJPAR0009405. 1♀, 11.00217°N, 85.46337°W, 560 m, 5–22.viii.2005, DHJPAR0015523. 2♂, 11.03226°N, 85.52776°W, 290 m, 8–19.viii.2013, DHJPAR0052674, DHJPAR0052684. 2♂, 8–20.viii.2013, DHJPAR0052675, DHJPAR0052676,

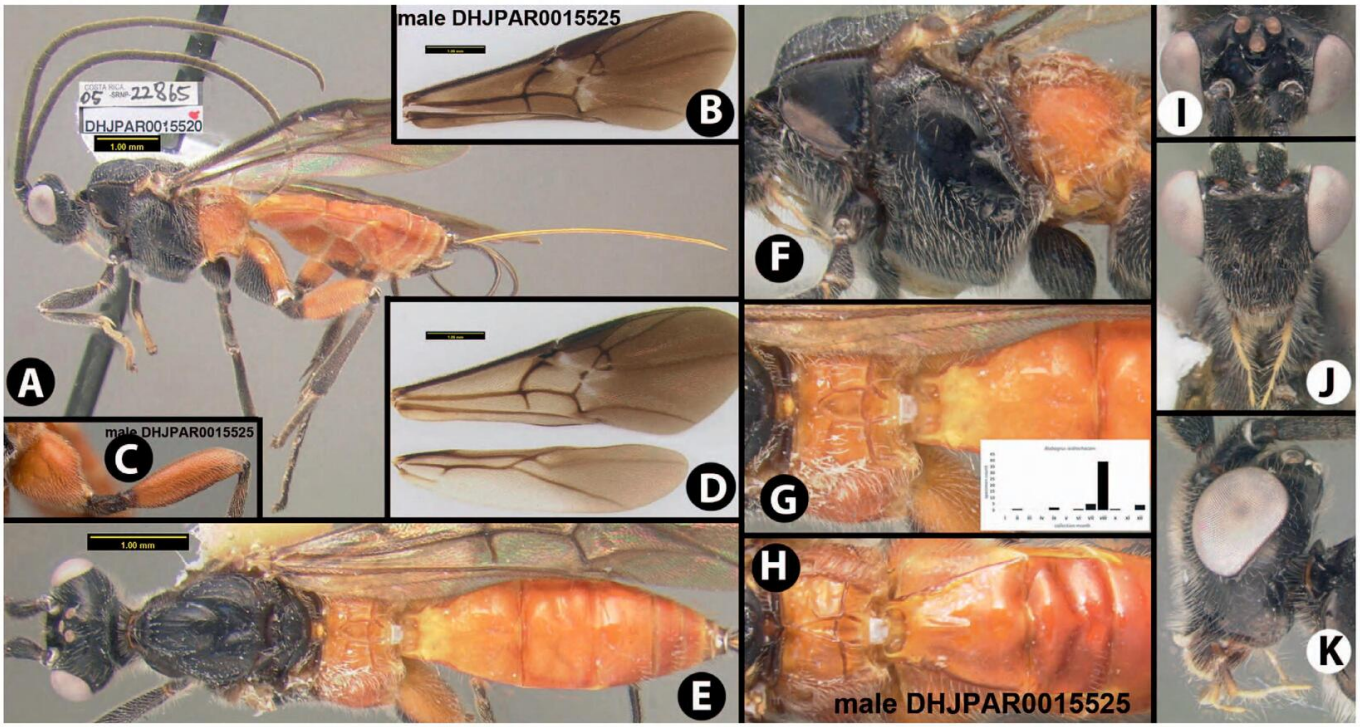


Figure 34 *Alabagrus isidrochaconi* n. sp., **A**, **D–G**, **I–K** holotype; **B**, **C**, **H** paratype males: **A**. lateral habitus, **B**. forewing, **C**. hind leg, **D**. wings, **E**. dorsal habitus, **F**. lateral mesosoma, **G**. propodeum and tergum 1, **H**. propodeum and tergum 1 **I**. dorsal head, **J**. anterior head, **K**. lateral head.

DHJPAR0052683. 2♀, 1♂, 8–21.viii.2013, DHJPAR0053609, DHJPAR0053624, DHJPAR0053631. 2♂, 8–22.viii.2013, DHJPAR0053626, DHJPAR0053629. 4♀, 8–23.viii.2013, DHJPAR0053630, DHJPAR0053632, DHJPAR0053633, DHJPAR0053634. 3♀, 8–26.viii.2013, DHJPAR0053610, DHJPAR0053627, DHJPAR0053628. 1♀, 8–28.viii.2013, DHJPAR0053608. 1♀, from *Phaedropsis cernalis* on *Triplaris melaenodendron*, 10.81224°N, 85.54438°W, 95 m, 21.viii–7.ix.2000, DHJPAR0015325. 1♀, from *Phaedropsis* Solis348 on *Triplaris melaenodendron*, 10.8269°N, 85.60413°W, 240 m, 24.xi–29.xii.1983, DHJPAR0015470. 1♀, from unknown on unknown, 10.83575°N, 85.61253°W, 290 m, 8–20.vi.1995, DHJPAR0015323 (EMUS, HIC).

Alabagrus jackiemillerae Sharkey n. sp.

Figure 35

DIAGNOSIS. Median tergite 3 pale anteriorly, melanic posteriorly. Midfemur pale basally and apically, otherwise melanic. Third tergum lacking transverse depression, or depression barely indicated. Apical yellow band of forewing reaching posterior wing margin.

NOTES. Specimens of this species were included under *A. pachamama* in Leathers and Sharkey (2003).

DESCRIPTION. Body length 8.6 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly, or distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.3× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Unknown.

HOST INFORMATION. spiloBioLep01 BioLep403, *Pleuroptya* Solis191, *Desmia* Janzen07, *Herpetogramma salbialis*, *Herpetogramma* Solis11, *Phostria* Janzen03, *Phostria* Janzen05, *Rhectocraspeda* Janzen347, *Rhectocraspeda* Solis05, *Pilocrocis purpurascens*, *Pleuroptya* Solis03.

ETYMOLOGY. Named in honor of Dr. Jackie Miller of the McGuire Center for Lepidoptera and Biodiversity of the University of Florida in recognition of her contributions to the taxonomy and systematics of Neotropical butterflies and their biodiversity.

MATERIAL EXAMINED. HOLOTYPE ♀, host=spiloBioLep01 BioLep403 on *Mikania cordifolia*, 11.01983°N, 85.41342°W, 445 m, 12.viii–5.ix.2011, DHJPAR0045802 (EMUS). PARATYPES: 1♀, from *Pleuroptya* Solis191 on *Justicia aurea*, 11.01926°N, 85.40997°W, 440 m, 4–29.ix.2003, DHJPAR0015350. 1♀, from *Desmia* Janzen07 on *Psychotria microbotrys*, 10.9959°N, 85.39842°W, 470 m, 27.viii–17.ix.2013, DHJPAR0053593. 1♀, from *Desmia* Solis19 on *Psychotria berteriana*, 10.94076°N, 85.3177°W, 461 m, 9–22.ix.2009, DHJPAR0037895. 1♀, 11.01373°N, 85.42531°W, 525 m, 16.ix–3.x.2010, DHJPAR0041165. 1♀, 10.94741°N, 85.31501°W, 491 m, 19.v–14.vi.2012, DHJPAR0048729. 1♀, 10.90037°N, 85.37254°W, 500 m, 12.ix–3.x.2014, DHJPAR0057448. 1♀, 10.944040°N, 85.31738°W, 455 m, 22.xi–11.xii.2014,

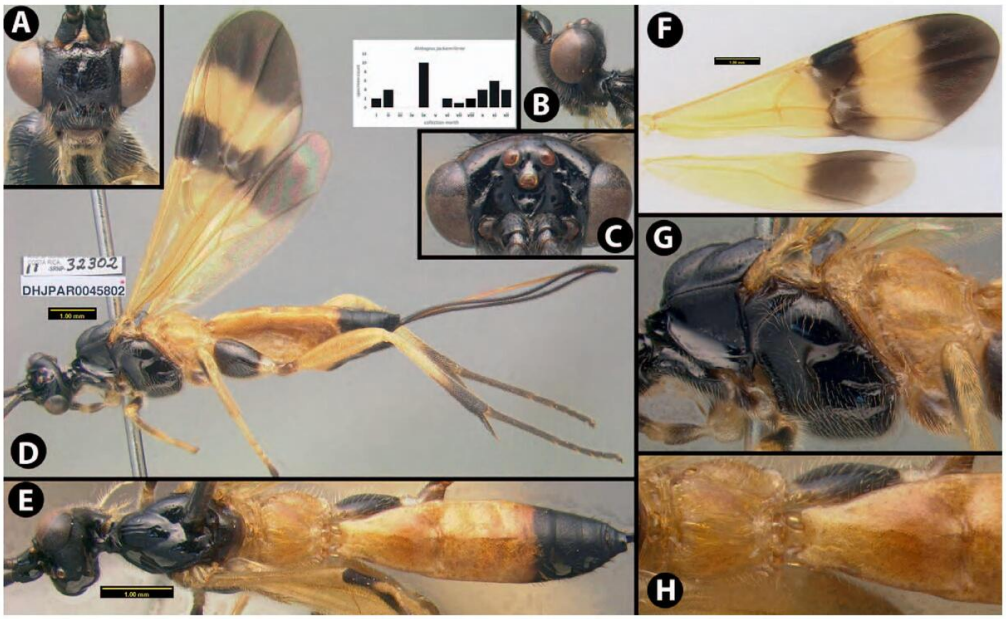


Figure 35 *Alabagrus jackiemillerae* n. sp., holotype: **A**. anterior head, **B**. lateral head, **C**. dorsal head, **D**. lateral habitus, **E**. dorsal habitus, **F**. wings, **G**. lateral mesosoma, **H**. propodeum and tergum 1.

DHJPAR0057441. 2♀, 10.940760°N, 85.3177°W, 461 m, 16.xi–13.xii.2014, DHJPAR0057439, DHJPAR0057440. 1♀, from *Herpetogramma salbialis* on *Clibadium pittieri*, 10.89666°N, 85.29003°W, 400 m, 13.ix–1.x.2011, DHJPAR0045798. 1♀, from *Herpetogramma* Solis11 on *Solanum aturense*, 10.89666°N, 85.29003°W, 400 m, 21.v–13.vi.2013, DHJPAR0052078. 1♀, on *Solanum rovirosanum*, 10.9305°N, 85.37223°W, 527 m, 10–31.i.2015, DHJPAR0057449. 1♀, 10.i–1.ii.2015, DHJPAR0057451. 1♀, on *Solanum schlechtendalianum*, 11.01087°N, 85.48817°W, 400 m, 14.viii–4.ix.2009, DHJPAR0037886. 1♀, 10.91589°N, 85.26631°W, 420 m, 29.i–18.ii.2010, DHJPAR0038805. 1♀, on *Witheringia solanacea*, 10.94076°N, 85.3177°W, 461 m, 10–27.viii.2013, DHJPAR0053596. 1♀, from *Phostria* Janzen03 on *Psychotria berteriana*, 10.90425°N, 85.28651°W, 410 m, 10.x–1.xi.2003, DHJPAR0015351. 1♀, from *Phostria* Janzen05 on *Palicourea guianensis*, 11.01823°N, 85.45024°W, 410 m, 8.xi.2005–25.i.2006, DHJPAR0029183. 1♀, 10.93548°N, 85.25314°W, 123 m, 12–28.ii.2013, DHJPAR0051668. 1♀, 10.91847°N, 85.30338°W, 320 m, 10.xi–6.xii.2014, DHJPAR0057446. 1♀, 10.96543°N, 85.32043°W, 383 m, 8–26.IX.2015, DHJPAR0058044. 2♀, from *Rhectocraspeda* Janzen347 on *Solanum rovirosanum*, 10.91847°N, 85.30338°W, 320 m, 11–28.xi.2013, DHJPAR0054491, DHJPAR0054492. 1♀, from *Rhectocraspeda* Solis05 on *Solanum hayesii*, 10.89678°N, 85.270010°W, 420 m, 12.i–9.ii.2015, DHJPAR0057450. 1♀, on *Solanum rovirosanum*, 10.944040°N, 85.31738°W, 455 m, 13.x–4.xi.2014, DHJPAR0057445. 1♀, from *Pilocrocis purpurascens* on *Pentagonia donnell-smithii*, 10.94076°N, 85.3177°W, 461 m, 5–19.xi.2011, DHJPAR0046753. 1♀, from *Pleuroptya* Solis03 on *Laportea aestuans*, 10.96187°N, 85.28045°W, 96 m, 28.vi–16.vii.2013, DHJPAR0052682. 1♀, from spiloBioLep01 BioLep403 on *Mikania cordifolia*, 11.01983°N, 85.41342°W, 445 m, 12–31.viii.2011, DHJPAR0045803. 1♀, 12.viii–1.ix.2011, DHJPAR0045805 (EMUS, HIC).

Alabagrus janzeni Sharkey, 1988
Figure 36

Alabagrus janzeni Sharkey, 1988:373. Holotype ♀, Costa Rica (EMUS)

DIAGNOSIS. Gena right angled or acute posteroventrally. Third tergum with deep transverse depression. Forefemur pale. First tergum long and narrow with well-defined median longitudinal carina extending most of length.

DESCRIPTION. Body length 8.9 mm. Gena right angled or acute posteroventrally. Precoxal sulcus distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.5× longer than wide; with well-defined median longitudinal carina. Third tergum with deep transverse depression. Ovipositor longer than metasoma but not longer than body.

Males. Propodeum variable but usually areolate; hind femur sometimes with some weak rugose sculpture.

HOST INFORMATION. *Eulepte concordalis*, *Eulepte* Janzen06, *Eulepte* Janzen02, *Eulepte* Solis15.

MATERIAL EXAMINED. Reared specimens: 1♀, from *Eulepte* Janzen06 on *Handroanthus impetiginosus*, 10.83764°N, 85.61871°W, 295 m, 20.vii–3.viii.1994, DHJPAR0015482. 1♀, 3–19.x.2000, 00-SRNP-18596. 1♂, 3–25.x.2000, 00-SRNP-18607. 2♂, 10.76828°N, 85.42567°W, 480 m, 8–25.x.2010, DHJPAR0041197, DHJPAR0041198. 1♂, 10.76828°N, 85.42567°W, 480 m, 8–26.x.2010, DHJPAR0041195. 1♂, 10.76737°N, 85.43313°W, 325 m, 27.xi–12.xii.2010, DHJPAR0041166. 2♀, 1♂, 27.xi–30.xii.2010, DHJPAR0041576. 3♀, 10.76828°N, 85.42567°W, 480 m, 28.vii–

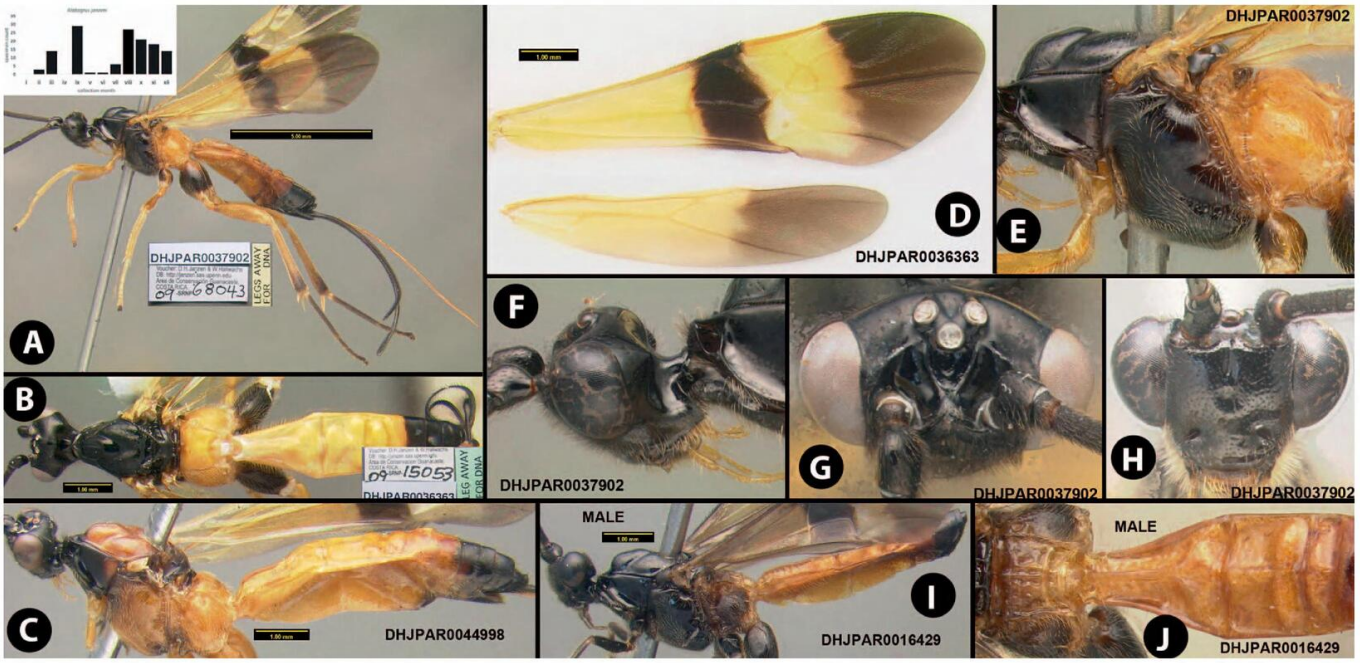


Figure 36 *Alabagrus* janzeni, **A–H** females; **I**, **J** males: **A**. lateral habitus, **B**. dorsal habitus, **C**. lateral habitus, **D**. wings, **E**. lateral mesosoma, **F**. lateral head, **G**. dorsal head, **H**. anterior head, **I**. lateral habitus, **J**. propodeum and terga 1–3.

11.viii.2011, DHJPAR0044992, DHJPAR0044993, DHJPAR0044994. 1♀, 1♂, 28.vii–12.viii.2011, DHJPAR0044995, DHJPAR0044996. 1♀, 28.vii–13.viii.2011, DHJPAR0044997. 1♂, 10.76261°N, 85.42979°W, 330 m, 5–23.xi.2012, DHJPAR0050927. 1♀, 4–20.x.2013, DHJPAR0053588. 1♂, 4–23.x.2013, DHJPAR0053589. 1♀, 4–24.x.2013, DHJPAR0053622. 2♀, 4–26.x.2013, DHJPAR0053590, DHJPAR0054487. 1♂, from *Eulepte concordalis* on *Spathodea campanulata*, 10.9163°N, 85.37869°W, 460 m, 10–23.iii.2014, DHJPAR0055089. 2♀, 10–26.iii.2014, DHJPAR0055090, DHJPAR0055096. 1♀, 1♂, 10–27.iii.2014, DHJPAR0055093, DHJPAR0055095. 2♀, 10–28.iii.2014, DHJPAR0055092, DHJPAR0055094. 1♂, 10–30.iii.2014, DHJPAR0055091. 1♀, 10–31.iii.2014, DHJPAR0055097. 1♂, from *E. concordalis* on *Tabebuia rosea*, 10.74769°N, 85.58577°W, 90 m, 3–19.viii.2000, DHJPAR0015499. 1♂, 3–20.viii.2000, DHJPAR0015498. 1♂, 10.75725°N, 85.55354°W, 80 m, 10.viii–1.ix.2006, DHJPAR0010510. 1♂, 10.viii–26.ix.2006, 06-SRNP-18511. 1♂, 10–28.viii.2006, DHJPAR0010509. 1♀, 13.v–1.vi.2006, DHJPAR0010083. 1♀, 10.76261°N, 85.42979°W, 330 m, 22.ix–10.x.2013, DHJPAR0053587. 1♂, 22.ix–11.x.2013, DHJPAR0053623. 1♀, 10.76271°N, 85.56004°W, 95 m, 12.viii–1.ix.2009, DHJPAR0036363. 1♂, 12–27.viii.2008, DHJPAR0036365. 1♀, 12–29.viii.2009, DHJPAR0036366. 1♀, 10.76737°N, 85.43313°W, 325 m, 21.ii–19.iii.2005, DHJPAR0009400. 2♀, 24.ii–14.iii.2005, DHJPAR0009374, DHJPAR0009375. 1♀, 24.ii–17.iii.2005, DHJPAR0009403. 1♂, 25.i–19.ii.2005, DHJPAR0009376. 1♀, 10.76828°N, 85.42567°W, 480 m, 7–26.viii.2011, DHJPAR0044998. 1♂, 10.77074°N, 85.42874°W, 365 m, 25.vii–11.viii.2012, DHJPAR0049940. 1♂, 10.77175°N, 85.434°W, 305 m, 29.xi–17.xii.2012, DHJPAR0050926. 1♀, 10.80274°N, 85.67423°W, 10 m, 2–18.viii.2000, DHJPAR0015496. 1♂, 2–19.viii.2000, DHJPAR0015497. 1♂, 10.84389°N, 85.61384°W, 300 m, 5–20.viii.1982, DHJPAR0015481. 1♀, 10.85827°N, 85.61089°W, 280 m, 21.i–9.ii.2007, DHJPAR0016930. 1♀, 10.86333°N, 85.57443°W, 205 m, 25.viii–12.ix.2006, DHJPAR0016415. 1♂, 25.viii–8.ix.2006, DHJPAR0016417. 1♂, 25.viii–9.ix.2006, DHJPAR0016416. 2♀, 10.87124°N, 85.38749°W, 700 m, 10–27.ix.2006, DHJPAR0016429, DHJPAR0016432. 1♂, 10–29.ix.2006, DHJPAR0016428. 1♂, 10.8962°N, 85.27769°W, 430 m, 7–31.xii.2004, DHJPAR0009348. 1♂, 10.89678°N, 85.27001°W, 420 m, 26.ix–12.x.2012, DHJPAR0050363. 1♀, 10.90187°N, 85.27495°W, 415 m, 11.xi–2.xii.2005, DHJPAR0009434. 1♀, 11.xi–4.xii.2005, DHJPAR0009433. 1♂, 11–28.xi.2005, DHJPAR0015513. 1♂, 11–29.xi.2005, DHJPAR0015511. 2♀, 19.ix–6.x.2006, DHJPAR0016430, DHJPAR0016431. 1♀, 19.ix–8.x.2006, DHJPAR0021208. 1♀, 20.iv–7.v.2013, DHJPAR0052083. 1♂, 10.90383°N, 85.25964°W, 383 m, 31.x–20.xi.2005, DHJPAR0015515. 1♂, 31.x–21.xi.2005, DHJPAR0015514. 1♂, 31.x–23.xi.2005, DHJPAR0015512. 1♂, 31.x–26.xi.2005, DHJPAR0029179. 2♂, 10.9305°N, 85.37223°W, 527 m, 26.viii–10.ix.2009, DHJPAR0036712, DHJPAR0037190. 1♀, 26.viii–11.ix.2009, DHJPAR0036697. 1♂, 26.viii–18.ix.2009, DHJPAR0036698. 1♂, 10.93319°N, 85.25335°W, 95 m, 16.xi–4.xii.2006, DHJPAR0016926. 1♂, 21.x–7.xi.2006, DHJPAR0016928. 1♀, 10.93548°N, 85.25314°W, 123 m, 2–24.ix.2009, DHJPAR0036699. 1♀, 10.95991°N, 85.28298°W, 160 m, 25.viii–10.ix.2009, DHJPAR0037922. 1♀, 25.viii–12.ix.2009, DHJPAR0037902. 1♂, 10.96331°N, 85.32243°W, 434 m, 13–27.xii.2015, DHJPAR0058537. 1♀, 13–29.xii.2015, DHJPAR0058542. 1♂, 13–30.xii.2015, DHJPAR0058539. 2♂, 10.97853°N, 85.54628°W, 280 m, 13.viii–1.ix.1994, DHJPAR0015488, DHJPAR0015490. 2♀, 13.viii–4.ix.1994, DHJPAR0015487, DHJPAR0015489. 2♂, 13–28.viii.1994, DHJPAR0015485, DHJPAR0015486. 1♀, 13–29.viii.1994, DHJPAR0015484. 1♂, 13–31.viii.1994, DHJPAR0015483. 1♂,

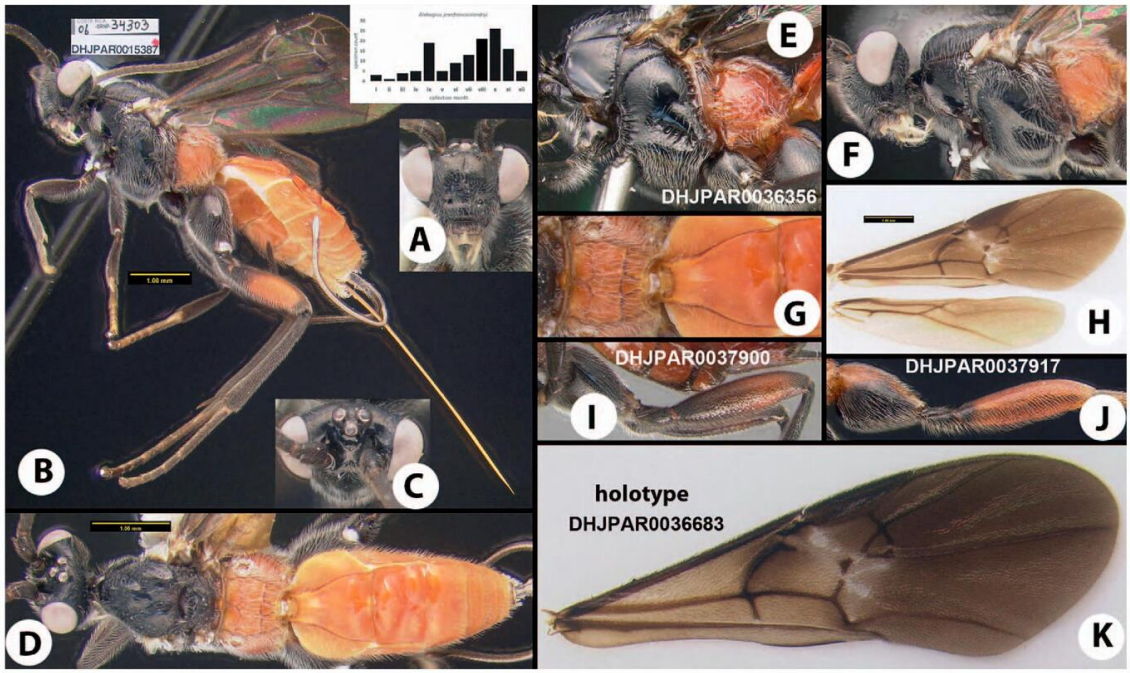


Figure 37 *Alabagrus jeanfrancoislandryi* n. sp., **A–J** paratypes; **K** holotype: **A**. anterior head, **B**. lateral habitus, **C**. dorsal head, **D**. dorsal habitus, **E**. lateral mesosoma, **F**. lateral head and mesosoma, **G**. propodeum and tergum 1, **H**. wings, **I**. hind leg, **J**. hind leg, **K**. forewing.

11.00217°N, 85.46337°W, 560 m, 13–30.ix.2004, DHJPAR0015381. 1♀, 11.02681°N, 85.49547°W, 290 m, 10–23.ix.2004, DHJPAR0015383. 1♂, 10–25.ix.2004, DHJPAR0015384. 2♀, 10–28.ix.2004, DHJPAR0015380, DHJPAR0015382. 1♀, 10–29.ix.2004, DHJPAR0015379. 1♀, 1–20.xi.2004, DHJPAR0009362. 1♀, 1–23.xi.2004, DHJPAR0015315. 1♀, 25.x–10.xi.2004, DHJPAR0009354. 1♀, 25.x–12.xi.2004, DHJPAR0009355. 1♀, 25.x–9.xi.2004, DHJPAR0009356. 1♀, 1♂, 11.03376°N, 85.47715°W, 290 m, 22.vi–8.vii.2009, DHJPAR0036716, DHJPAR0036718. 1♂, 11.04562°N, 85.45742°W, 280 m, 6–18.vii.2007, DHJPAR0021211. 1♀, 6–19.vii.2007, DHJPAR0021149. 1♀, 10.94076°N, 85.3177°W, 461 m, 8–23.iii.2012, DHJPAR0050371. 1♀, from *Eulepte* Janzen02 on *Cydista heterophylla*, 10.77594°N, 85.65799°W, 7 m, 27.ix–13.x.2000, DHJPAR0015385. 1♀, 2–21.x.2000, DHJPAR0015386. 1♂, 10.77175°N, 85.434°W, 305 m, 25.x–18.xi.2010, DHJPAR0041167. 1♂, from *Eulepte* Janzen06 on *Hadroanthus guayacan*, 10.93548°N, 85.25314°W, 123 m, 18.x–4.xi.2012, DHJPAR0050923. 1♀, 23.x–10.xi.2012, DHJPAR0050928. 1♂, from *Eulepte* Solis15, 11.03226°N, 85.52776°W, 290 m, 23.xi–10.xii.2011, DHJPAR0048724. 1♀, 1♂, from *Eulepte* Solis15on *Hadroanthus ochraceus*, 10.85145°N, 85.60801°W, 290 m, 23.x–12.xi.1998, DHJPAR0015492, DHJPAR0015493. 1♂, 23.x–20.xi.1998, DHJPAR0015491. 1♀, 23.x–15.xii.1998, DHJPAR0015494. 1♂, 23.x–17.xii.1998, DHJPAR0015495 (EMUS, HIC).

Alabagrus jeanfrancoislandryi Sharkey n. sp.

Figure 37

DIAGNOSIS. Difficult or impossible to distinguish morphologically from *A. isidrochaconi* and *A. jennyphillipsae*. Gena rounded or with an obtuse angle posteroventrally. Hind femur heavily sculptured ventrally with aciculations or rugosities, distinctly more heavily sculptured than dorsal surface. First tergum weakly convex or with a short, rounded longitudinal bulge. Hind coxa mostly or entirely black in lateral view. Pronotum melanic. Metapleuron entirely orange. Metasomal terga all orange.

DESCRIPTION. Body length 6.5 mm. Gena rounded or with an obtuse angle posteroventrally. Precoxal sulcus distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron areolate rugose in ventral half or more. Propodeum areolate, with at least one closed areola. Hind femur heavily sculptured ventrally with large aciculations or rugosities, distinctly more heavily sculptured than dorsal surface. First tergum 1.1× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. As in females.

HOST INFORMATION. *Ategumia lotanalis*, *Ategumia lotanalis*DHJ07, *Ategumia lotanalis*DHJ09, *Ategumia matutinalis*, *Bicilia iarchasalis*, *Conchylodes arcifera*, *Conchylodes ovulalis*, *Conchylodes platinalis*, *Desmia* BioLep22DHJ02, *Eulepte alialis*, *Eulepte concordalis*, *Eulepte* Janzen02, *Herpetogramma phaeopteralis*, *Herpetogramma salbialis*, *Herpetogramma semilaniata*, *Herpetogramma* Solis11, *Hyalorista exuvialis*DHJ02, *Microthyris anormalis*, *Palpusia* Janzen02, *Phaedropsis cernalis*, *Phostria samealis*, *Rhectocraspeda* Solis05, *Pilocrocis ramentalis*, *Pleuroptya* Solis03, *Pleuroptya* Solis04, *Salbia cassidalis*, *Salbia haemorrhoidalis*.

ETYMOLOGY. Named in honor of Dr. Jean-Francois Landry of the Canada Department of Agriculture, Ottawa, in recognition of his contributions to the taxonomy and systematics of ACG microlepidoptera.

MATERIAL EXAMINED. HOLOTYPE ♀, host=*Herpetogramma salbialis* on *Zexmenia virgulta*, 10.99637°N, 85.40195°W, 510 m, 7–20.ix.2009, DHJPAR0036683 (EMUS). PARATYPES: 1♂, from *Ategumia lotanalis* on *Conostegia xalapensis*, 10.99697°N, 85.39666°W, 470 m, 22.x–17.xi.2008, DHJPAR0030388. 1♀, on *Conostegia subcrustulata*, 10.95991°N, 85.28298°W, 160 m, 25.ii–19.iii.2013, DHJPAR0051670. 1♂, from *Ategumia lotanalis*DHJ07 on *Aciotis caulialata*, 10.94404°N, 85.31738°W, 455 m, 11–18.i.2013, DHJPAR0050933. 1♀, 11–27.i.2013, DHJPAR0050934. 1♀, from *A. lotanalis*DHJ07 on *Arthrostemma ciliatum*, 11.01983°N, 85.41342°W, 445 m, 21.ix–15.x.2006, DHJPAR0015387. 1♀, from *A. lotanalis*DHJ09 on *Conostegia xalapensis*, 10.93548°N, 85.25314°W, 123 m, 23.vii–7.viii.2009, DHJPAR0036356. 1♂, from *Ategumia matutinalis* on *Tibouchina longifolia*, 10.95991°N, 85.28298°W, 160 m, 21.ii–10.iii.2013, DHJPAR0051671. 1♀, from *Bicilia iarchasalis* on *Petiveria alliacea*, 10.78506°N, 85.6637°W, 10 m, 7–28.vii.1990, DHJPAR0015465. 1♀, from *Conchylodes arcifera* on *Verbesina gigantea*, 11.03004°N, 85.52699°W, 280 m, 8–22.ix.2000, DHJPAR0015332. 1♂, from *Conchylodes arcifera*, 11.03306°N, 85.42876°W, 400 m, 30.vii–6.viii.2005, DHJPAR0009406. 1♂, 30.vii–7.viii.2005, DHJPAR0015524. 1♀, 30.vii–9.viii.2005, DHJPAR0015521. 1♂, from *Conchylodes ovulalis* on *Baltimora recta*, 10.84867°N, 85.63046°W, 285 m, 12.viii–3.ix.1992, DHJPAR0015322. 1♀, 12.viii–6.ix.1992, DHJPAR0015320. 1♂, 12–28.viii.1992, DHJPAR0015321. 1♂, from *Conchylodes platinalis* on *Varronia guanacastensis*, 10.83764°N, 85.61871°W, 295 m, 19.vi–5.vii.2009, DHJPAR0036353. 1♂, on *Verbesina turbacensis*, 11.00891°N, 85.40977°W, 500 m, 7.ii–26.v.2007, DHJPAR0021157. 1♀, from *Desmia* BioLep22DHJ02 on *Begonia plebeja*, 10.944040°N, 85.31738°W, 455 m, 11–24.xi.2014, DHJPAR0057436. 1♀, from *Eulepte alialis* on *Clibadium pittieri*, 10.89928°N, 85.27486°W, 420 m, 10.xi–1.xii.2009, DHJPAR0037950. 1♀, on *Elephantopus angustifolius*, 10.77074°N, 85.42874°W, 365 m, 10–26.vii.2012, DHJPAR0049939. 1♀, on *Elephantopus mollis*, 10.77079°N, 85.37422°W, 733 m, 14.vi–3.vii.2011, DHJPAR0045003. 1♂, 21.vii–11.viii.2011, DHJPAR0044999. 1♂, 21.vii–7.viii.2011, DHJPAR0045000. 1♀, 22.vii–11.viii.2009, DHJPAR0036349. 1♂, 10.89678°N, 85.27001°W, 420 m, 24.vi–18.vii.2013, DHJPAR0052693. 1♀, 6.ix–1.x.2012, DHJPAR0050065. 1♂, 10.89928°N, 85.27486°W, 420 m, 10.xi–7.xii.2009, DHJPAR0037948. 1♂, 10.90427°N, 85.3073°W, 373 m, 5.vi–2.vii.2013, DHJPAR0052689. 1♂, 10.90528°N, 85.27882°W, 405 m, 17.vii–10.viii.2014, DHJPAR0057738. 1♂, 17.vii–7.viii.2014, DHJPAR0057745. 2♂, 27.vi–24.vii.2014, DHJPAR0055989, DHJPAR0055990. 1♂, 10.9061°N, 85.28281°W, 400 m, 31.vii–16.viii.2009, DHJPAR0036374. 1♀, 10.91847°N, 85.30338°W, 320 m, 7.x–7.xi.2009, DHJPAR0037917. 1♂, 10.94076°N, 85.3177°W, 461 m, 1–25.xi.2011, DHJPAR0046741. 1♀, 16.x–3.xi.2014, DHJPAR0057435. 1♂, 25.vii–7.viii.2014, DHJPAR0057005. 1♀, 25.vii–8.viii.2014, DHJPAR0056298. 1♀, 10.94404°N, 85.31738°W, 455 m, 3–21.x.2011, DHJPAR0045786. 1♀, 25.ix–13.x.2014, DHJPAR0057432. 1♀, 10.96952°N, 85.38258°W, 440 m, 4–23.x.2012, DHJPAR0050932. 1♂, 10.99102°N, 85.39539°W, 475 m, 20.ix–17.x.2010, DHJPAR0041196. 1♀, 10.99616°N, 85.45562°W, 560 m, 16.x–6.xi.2004, DHJPAR0009357. 1♂, 10.99697°N, 85.39666°W, 470 m, 18.ix–7.x.2009, DHJPAR0037187. 1♀, 29.x–20.xi.2009, DHJPAR0037956. 1♀, 11.0006°N, 85.438°W, 620 m, 8.x–1.xi.2004, DHJPAR0009373. 1♂, 8–28.x.2004, DHJPAR0009353. 1♀, on *Elephantopus spicatus*, 10.90353°N, 85.30916°W, 360 m, 12.ix–4.x.2009, DHJPAR0036703. 1♀, 12–25.ix.2009, DHJPAR0036717. 1♂, 10.9305°N, 85.37223°W, 527 m, 8.x–4.xi.2014, DHJPAR0057001. 1♀, 8–25.x.2014, DHJPAR0056990. 1♂, on *Spiracantha cornifolia*, 10.90187°N, 85.27495°W, 415 m, 29.ix–14.x.2009, DHJPAR0036685. 1♂, 10.93548°N, 85.25314°W, 123 m, 23.viii–3.ix.2014, DHJPAR0056296. 1♂, from *Eulepte concordalis* on *Tabebuia rosea*, 11.02681°N, 85.49547°W, 290 m, 1–20.xi.2004, DHJPAR0015316. 1♀, from *Eulepte* Janzen02 on *Cydista heterophylla*, 10.85827°N, 85.61089°W, 280 m, 16.viii–1.ix.1990, 90-SRNP-1985. 1♂, from *Herpetogramma phaeopteralis* on *Axonopus fissifolius*, 10.76737°N, 85.43313°W, 325 m, 18–30.v.2011, DHJPAR0045006. 1♂, from *Herpetogramma salbialis* on *Clibadium leiocarpum*, 10.77175°N, 85.434°W, 305 m, 22.v–6.vi.2011, DHJPAR0045015. 1♀, 2♂, 22.v–7.vi.2011, DHJPAR0045004, DHJPAR0045010, DHJPAR0045012. 1♀, on *Zexmenia virgulta*, 10.90661°N, 85.28784°W, 400 m, 30.iv–12.v.2014, DHJPAR0055349. 1♀, on *Eleutheranthera ruderalis*, 10.905280°N, 85.278820°W, 405 m, 25.xi–19.xii.2014, DHJPAR0056999. 1♀, 25.xi–26.xii.2014, DHJPAR0056994. 1♀, on *Melanthera aspera*, 10.93548°N, 85.25314°W, 123 m, 26.viii–6.ix.2014, DHJPAR0056295. 1♀, on *Melanthera nivea*, 10.77175°N, 85.434°W, 305 m, 11–25.v.2011, DHJPAR0042824. 1♀, 27.v–10.vi.2011, DHJPAR0045011. 2♂, 27.v–7.vi.2011, DHJPAR0045005, DHJPAR0045014. 1♀, 30.v–10.vi.2011, DHJPAR0045013. 1♂, 10.961870°N, 85.28045°W, 96 m, 11–20.x.2014, DHJPAR0057430. 1♀, on *Zexmenia virgulta*, 10.99637°N, 85.40195°W, 510 m, 7–18.ix.2009, DHJPAR0037951. 1♀, 1♂, from *Herpetogramma semilaniata* on *Justicia* 14522, 10.77594°N, 85.65799°W, 7 m, 24.ix–6.x.2000, DHJPAR0015329, DHJPAR0015330. 1♀, 27.ix–21.x.2000, DHJPAR0015331. 1♀, from *Herpetogramma* Solis11 on *Solanum hayesii*, 10.86472°N, 85.41531°W, 540 m, 27.viii–12.ix.2011, DHJPAR0045783. 1♀, 11.04118°N, 85.4417°W, 320 m, 8–30.ix.2010, DHJPAR0041603. 1♀, from *Hyalorista exuvialis*DHJ02 on *Hyptis obtusiflora*, 10.94076°N, 85.3177°W, 461 m, 16.ix–9.x.2009, DHJPAR0037900. 1♀, from *Microthyris anormalis* on *Merremia umbellata*, 10.88996°N, 85.47966°W, 550 m, 22.vi–10.vii.2005, DHJPAR0015522. 1♀, from *Palpusia* Janzen02 on *Ipomoea batatas*, 10.93332°N, 85.25331°W, 135 m, 21.vii–6.viii.2013, DHJPAR0052680. 1♀, from *Phaedropsis cernalis* on *Triplaris melaenodendron*, 10.78938°N, 85.55098°W, 85 m, 26.viii–10.ix.2000, DHJPAR0015327. 1♀, 26.viii–14.ix.2000, DHJPAR0015326. 1♂, 26.viii–7.ix.2000, DHJPAR0015328. 1♂, from *Phostria samealis* on *Tetracera hydrophila*, 10.93332°N, 85.25331°W, 135 m, 8–24.ix.2009, DHJPAR0036700. 1♀, from *Rhectocraspeda* Solis05 on *Solanum hayesii*, 10.93548°N, 85.25314°W, 123 m, 15–25.vii.2014, DHJPAR0055979. 1♂, on *Solanum torvum*, 10.9301°N, 85.25205°W, 109 m, 2–14.x.2012, DHJPAR0050931. 1♀, from *Pilocrocis ramentalis* on *Dyschoriste quadrangularis*, 10.78626°N, 85.55835°W, 105 m, 2–17.ix.1994, DHJPAR0015324. 1♀, 10.83764°N, 85.61871°W, 295 m, 29.vi–15.vii.1993, DHJPAR0015318. 1♂, on *Ruellia inundata*, 10.7416°N, 85.42734°W, 420 m, 14–31.viii.2013, DHJPAR0053650. 1♀, from *Pleuroptya* Solis03 on *Laportea aestuans*, 10.96187°N, 85.28045°W, 96 m, 26.iii–9.iv.2012, DHJPAR0050370. 1♂, 11.01823°N, 85.45024°W, 410 m, 2–23.iii.2009, DHJPAR0036696. 1♀, 2–21.iii.2009, DHJPAR0036695. 1♀, 11.00519°N, 85.47398°W, 490 m, 16–31.viii.2002, DHJPAR0015333. 1♂, 11.02865°N, 85.48669°W, 280 m, 20.viii–5.ix.2004, DHJPAR0015334. 1♀, from *Pleuroptya* Solis04 on *Cecropia peltata*, 10.83525°N, 85.62485°W, 285 m, 18.ix–5.x.2008, DHJPAR0028307. 1♀, on *Myriocarpa longipes*, 11.02865°N, 85.48669°W, 280 m, 25.ix–15.x.2004, DHJPAR0015335. 1♂, from *Salbia cassidalis* on *Lasiacis sorghoidea*, 10.83764°N, 85.61871°W, 295 m, 3–27.xi.1995, DHJPAR0015319. 1♂, from *Salbia haemorrhoidalis* on *Lantana camara*, 10.92291°N, 85.31877°W, 410 m, 9–20.x.2014, DHJPAR0057431. 1♀,

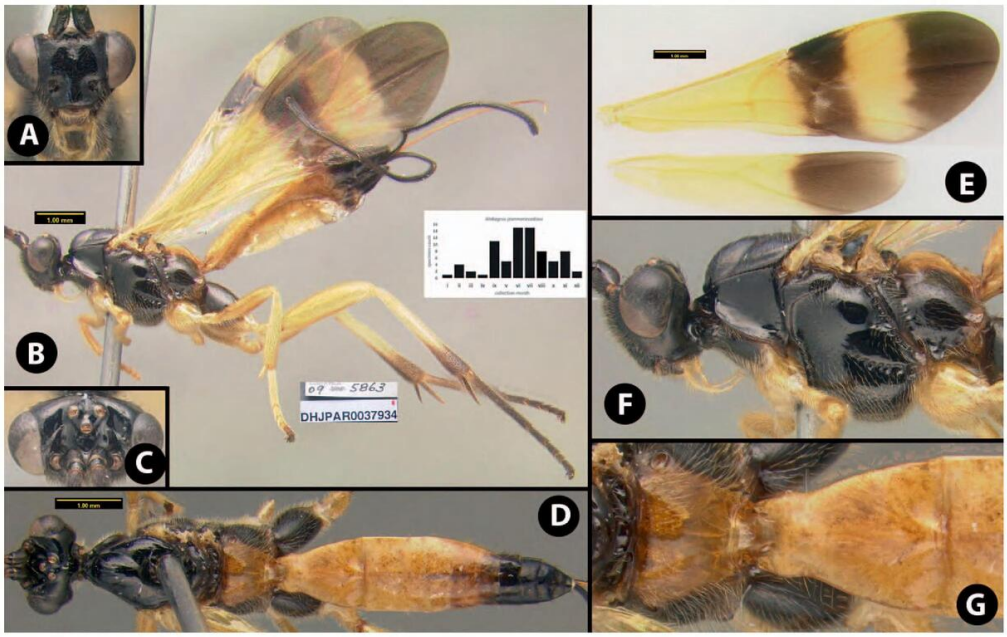


Figure 38 *Alabagrus jeanmariecadioui* n. sp., holotype: **A**. anterior head, **B**. lateral habitus, **C**. dorsal head, **D**. dorsal habitus, **E**. wings, **F**. lateral head and mesosoma, **G**. propodeum and tergum 1.

10.93332°N, 85.25331°W, 135 m, 6–21.x.2009, DHJPAR0037953. 1♀, 10.95991°N, 85.28298°W, 160 m, 6–21.viii.2013, DHJPAR0053613. 1♀, 10.918470°N, 85.30338°W, 320 m, 8–28.x.2014, DHJPAR0056995.

Alabagrus jeanmariecadioui Sharkey n. sp.

Figure 38

DIAGNOSIS. Precoxal sulcus distinct and foveolate ½ or more length of mesopleuron. Third tergum lacking transverse depression, or depression barely indicated. Propodeum completely smooth. Forefemur yellow. Metapleuron entirely melanic. Hind coxa mostly melanic laterally.

NOTES. Remarkably consistent in color; no males. May be *Alabagrus fuscovittatus* Enderlein, which was collected in "Central America."

DESCRIPTION. Body length 8.7 mm. Gena right angled or acute posteroventrally. Precoxal sulcus distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.2× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Unknown.

HOST INFORMATION. *Desmia ploralis*DHJ03, *Desmia ploralis*DHJ01, *Desmia ploralis*DHJ02, *Desmia* Janzen09, *Desmia octomaculalis, Desmia* Solis19, *Desmia ploralis*DHJ04, *Desmia ploralis*DHJ06, *Desmia* Solis100.

ETYMOLOGY. Named in honor of Dr. Jean-Marie Cadiou (deceased) of Belgium in recognition of his inspirational contributions to the taxonomy and systematics of ACG Sphingidae.

MATERIAL EXAMINED. HOLOTYPE ♀, from *D. ploralis*DHJ03 on *Psychotria chagrensis*, 10.90037°N, 85.37254°W, 500 m, 12.xi–2.xii.2009, DHJPAR0037934 (EMUS). PARATYPES: 1♀, from *Desmia* Janzen09 on *Psychotria chagrensis*, 10.87621°N, 85.38632°W, 670 m, 13–30.vi.2005, DHJPAR0009424. 1♀, 10.90014°N, 85.38284°W, 495 m, 19.vii–12.viii.2005, DHJPAR0015508. 1♀, on *Psychotria jimenezii*, 10.94076°N, 85.3177°W, 461 m, 20.ix–14.x.2012, DHJPAR0050925. 1♀, from *Desmia octomaculalis* on *Psychotria chagrensis*, 10.87766°N, 85.39343°W, 645 m, 21.ii–29.iii.2013, DHJPAR0053592. 1♀, from *Desmia ploralis*DHJ01 on *Coccocypselum herbaceum*, 10.94076°N, 85.3177°W, 461 m, 27.viii–10.ix.2011, DHJPAR0045806. 1♀, 11.00311°N, 85.42041°W, 580 m, 10–29.ix.2011, DHJPAR0045796. 1♀, 10–29.ix.2011, DHJPAR0045807. 1♀, 13.x–14.xi.2011, DHJPAR0046752. 1♀, 13.x–25.xi.2011, DHJPAR0051346. 1♀, 13.x–8.xi.2011, DHJPAR0046751. 1♀, from *D.* ploralisDHJ02 on *Psychotria horizontalis*, 11.02681°N, 85.49547°W, 290 m, 24.vii–18.viii.2005, DHJPAR0015507. 1♀, from *D.* ploralisDHJ03 on *Psychotria chagrensis*, 10.89021°N, 85.38803°W, 520 m, 10.v–3.vi.2012, DHJPAR0048716. 1♀, 22.ix–15.x.2009, DHJPAR0036687. 1♀, 10.89296°N, 85.3788°W, 520 m, 30.ix–22.x.2009, DHJPAR0036710. 1♀, 10.89678°N, 85.27001°W, 420 m, 26.v–17.vi.2005, DHJPAR0009427. 1♀, 10.90037°N, 85.37254°W, 500 m, 11.viii–2.ix.2009, DHJPAR0036704. 1♀, 22.vi–14.vii.2014, DHJPAR0055969. 2♀, 10.90445°N, 85.28412°W, 400 m, 10.vi–2.vii.2005, DHJPAR0009416, DHJPAR0009429. 2♀, 10.vi–4.vii.2005, DHJPAR0009428, DHJPAR0009430. 1♀, 10.90528°N, 85.27882°W, 405 m, 29.viii–26.ix.2011, DHJPAR0045797. 1♀, 10.9305°N, 85.37223°W, 527 m, 10.v–2.vi.2012, DHJPAR0048717. 1♀, 10.94076°N, 85.3177°W, 461 m, 1–23.vii.2011, DHJPAR0044989. 1♀, 10.940760°N, 85.3177°W, 461 m, 4–24.xi.2014, DHJPAR0057444. 1♀, 10.98705°N,

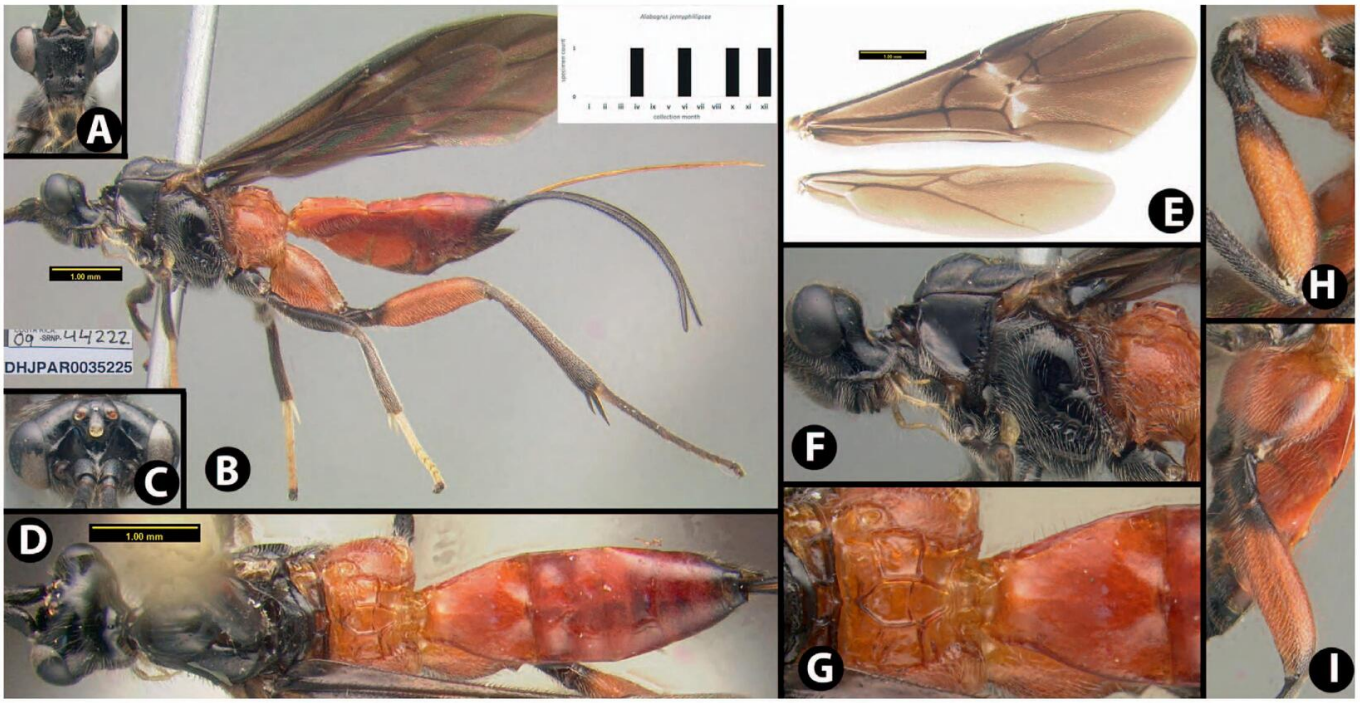


Figure 39 *Alabagrus* jennyphillipsae n. sp., **A–G** holotype; **H**, **I** paratypes: **A**. anterior head, **B**. lateral habitus, **C**. dorsal head, **D**. dorsal habitus, **E**. wings, **F**. lateral head and mesosoma, **G**. propodeum and tergum 1, **H**. hind leg, **I**. hind leg.

85.42816°W, 700 m, 22.vi–15.vii.2006, DHJPAR0015509. 1♀, 10.9888°N, 85.42336°W, 680 m, 10.xii.2012–5.i.2013, DHJPAR0050922. 1♀, 15.vii–4.viii.2006, DHJPAR0010513. 1♀, 10.98931°N, 85.42581°W, 675 m, 11.vii–11.viii.2003, DHJPAR0015377. 2♀, 11.vii–8.viii.2003, DHJPAR0015376, DHJPAR0015378. 2♀, on *Psychotria graciliflora*, 10.88068°N, 85.26968°W, 540 m, 26.viii–14.ix.2010, DHJPAR0041193, DHJPAR0041206. 1♀, 10.88111°N, 85.38889°W, 570 m, 11–28.vi.2013, DHJPAR0052690. 1♀, 23.vi–13.vii.2013, DHJPAR0052691. 1♀, 10.89666°N, 85.29003°W, 400 m, 10–30.vi.2008, DHJPAR0028030. 1♀, 16.v–6.vi.2012, DHJPAR0048730. 1♀, 7–30.v.2013, DHJPAR0052084. 1♀, 10.89678°N, 85.27001°W, 420 m, 13.vi–2.vii.2012, DHJPAR0049656. 1♀, 10.89928°N, 85.27486°W, 420 m, 24.v–17.vi.2005, DHJPAR0009425. 1♀, 10.90187°N, 85.27495°W, 415 m, 1–20.vii.2011, DHJPAR0044985. 1♀, 1–25.vii.2011, DHJPAR0044987. 1♀, 10.9305°N, 85.37223°W, 527 m, 17.vi–9.viii.2013, DHJPAR0052695. 1♀, from *D.* ploralisDHJ04 on *Coccocypselum herbaceum*, 10.89928°N, 85.27486°W, 420 m, 16.x–5.xi.2009, DHJPAR0037918. 1♀, 10.91589°N, 85.26631°W, 420 m, 17.ii–12.iii.2010, DHJPAR0038804. 1♀, 10.9163°N, 85.37869°W, 460 m, 3–22.xi.2009, DHJPAR0037954. 1♀, from *Desmia* ploralisDHJ06 on *Psychotria lamarinensis*, 11.01926°N, 85.40997°W, 440 m, 22.i–22.ii.2008, DHJPAR0023534. 1♀, from *Desmia* Solis100 on *Ludwigia foliobracteolata*, 10.90187°N, 85.27495°W, 415 m, 11.ix–2.x.2009, DHJPAR0036702. 1♀, 10.90528°N, 85.27882°W, 405 m, 30.xi–21.xii.2012, DHJPAR0050921. 1♀, 10.94741°N, 85.31501°W, 491 m, 12–30.vii.2010, DHJPAR0041190. 1♀, 2–20.v.2010, DHJPAR0041204. 1♀, 10.96187°N, 85.28045°W, 96 m, 12.x–5.xi.2009, DHJPAR0037901. 1♀, 13–31.viii.2009, DHJPAR0037905. 1♀, 17.viii–1.ix.2009, DHJPAR0037921. 1♀, 17.viii–2.ix.2009, DHJPAR0037904. 1♀, 17.viii–8.ix.2009, DHJPAR0037903. 1♀, from *Desmia* Solis19 on *Psychotria panamensis*, 10.94741°N, 85.31501°W, 491 m, 21.x–5.xi.2009, DHJPAR0037893 (EMUS, HIC).

Alabagrus jennyphillipsae Sharkey n. sp.

Figure 39

DIAGNOSIS. Difficult or impossible to distinguish morphologically from *A. isidrochaconi* and *A. jeanfrancoislandryi*. Gena rounded or with an obtuse angle posteroventrally. Head less elongate than *A. arua*. Hind femur heavily sculptured ventrally with aciculations or rugosities, distinctly more heavily sculptured than dorsal surface. Forewing entirely infuscate, not clear or yellow at base. Pronotum melanic. Propodeum orange. Terga orange except apical terga melanic. First tergum varying from weakly convex to with a short rounded longitudinal bulge.

NOTES. Specimens of this species were included under *A. albispina* in Leathers and Sharkey (2003).

DESCRIPTION. Body length 7.2 mm. Gena rounded or with an obtuse angle posteroventrally. Precoxal sulcus distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron areolate rugose in ventral quarter or less, or areolate rugose in ventral half or more. Propodeum areolate, with at least one closed areola. Hind femur heavily sculptured ventrally with large aciculations or rugosities, distinctly more heavily sculptured than dorsal surface. First tergum 1× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Unknown.

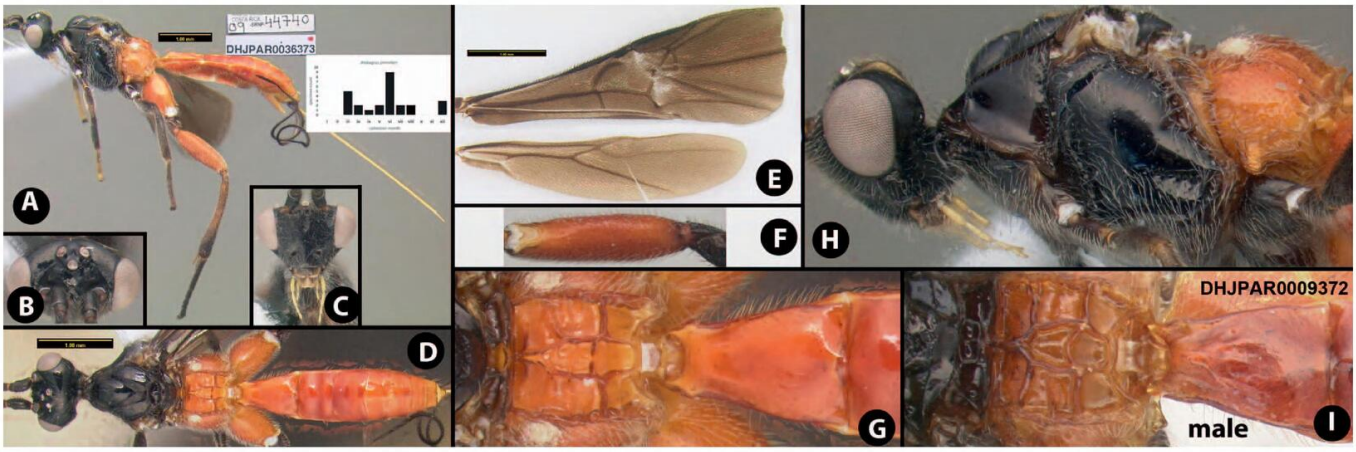


Figure 40 *Alabagrus jimmilleri* n. sp., **A–G** holotype; **I** paratype male: **A**. lateral habitus, **B**. dorsal head, **C**. anterior head, **D**. dorsal habitus, **E**. wings, **F**. ventral hind femur, **G**. propodeum and tergum 1, **H**. lateral head and mesosoma, **I**. propodeum and tergum 1.

HOST INFORMATION. *Leucochromodes melusinalis*DHJ01.

ETYMOLOGY. Named in honor of Dr. Jenny Phillips of INBio and the Museo Nacional de Costa Rica, who has long and masterfully taxonomized the ACG Pyraloidea and Tortricoidea inventory, as well as for all of Costa Rica.

MATERIAL EXAMINED. HOLOTYPE ♀, host=*Leucochromodes melusinalis*DHJ01 on *Mandevilla hirsuta*, 10.93332°N, 85.25331°W, 135 m, 19.v–1.vi.2009, DHJPAR0035225 (EMUS). PARATYPES: reared: 1♀, *Leucochromodes melusinalis*DHJ01 on *Tassadia obovata*, 10.99697°N, 85.39666°W, 470 m, 30.xi–21.xii.2009, DHJPAR0037923 (EMUS). 1♀, on *Tassadia obovate*, 10.99637°N, 85.40195°W, 510 m, 23.iii–11.iv.2010, DHJPAR0039523 (HIC).

Alabagrus jimmilleri Sharkey n. sp.

Figure 40

DIAGNOSIS. Gena acute posteroventrally. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum varying from weakly convex (most females) to with a rounded longitudinal bulge (most males). Body black and red to black and orange. Forewing almost entirely infuscate, ignore small clear patches posterad stigma. Scutellum melanic. Metapleuron and metasoma entirely orange.

NOTES. Specimens of this species were included under *Alabagrus combos* in Leathers and Sharkey (2003).

DESCRIPTION. Body length 5.7 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly, or distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins, or areolate rugose in ventral quarter or less. Propodeum areolate, with at least one closed areola. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.4× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Propodeum with more sculpture; metasomal median tergite 1 with sharper median longitudinal bulge.

HOST INFORMATION. *Lygropia tripunctata*DHJ04, *Microthyris anormalis*DHJ02, *Microthyris prolongalis*, *Microthyris prolongalis*DHJ02, *Palpusia* Janzen02.

ETYMOLOGY. Named in honor of Dr. Jim Miller of New York City and the American Museum of Natural History, who has long and masterfully taxonomized the ACG Notodontidae inventory, as well as for all of Costa Rica.

MATERIAL EXAMINED. HOLOTYPE ♀, host=*Lygropia tripunctata*DHJ04 on *Ipomoea phillomega*, 10.93332°N, 85.25331°W, 135 m, 24.vi–7.vii.2009, DHJPAR0036373 (EMUS). PARATYPES: reared: 1♀, from *Microthyris anormalis*DHJ02 on *Ipomoea batatas*, 10.86472°N, 85.41531°W, 540 m, 20.vii–9.viii.2012, DHJPAR0049946. 1♂, from *Microthyris prolongalis* on *Ipomoea phillomega*, 10.90661°N, 85.28784°W, 400 m, 25.v–26.vi.2010, DHJPAR0040337. 1♂, 10.90037°N, 85.37254°W, 500 m, 3–18.vi.2012, DHJPAR0049046. 1♂, 10.90093°N, 85.28915°W, 400 m, 4–21.vi.2014, DHJPAR0055343. 1♂, from *M. prolongalis*DHJ02 on *Merremia tuberosa*, 11.01602°N, 85.38053°W, 380 m, 23.vii–9.viii.2012, DHJPAR0049938. 1♂, from *Palpusia* Janzen02 on *Turbina corymbosa*, 11.02865°N, 85.48669°W, 280 m, 15.xi–5.xii.2004, DHJPAR0009372. Nonreared paratypes: 4♀, 2♂, from Limón and Puntarenas Provinces (HIC, INBio).

Alabagrus johnbrowni Sharkey n. sp.

Figure 41

DIAGNOSIS. Gena acute posteroventrally. Mesoscutum yellow. Precoxal sulcus distinct and foveolate about ½ length of mesopleuron. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. Forefemur black. Hind coxa with a black patch laterally. Forewing yellow in basal ⅔ gradually becoming infuscate apically. Costal vein melanic.

NOTES. Specimens of this species were included under *A. cocto* and *A. yaruro* in Leathers and Sharkey (2003).

DESCRIPTION. Body length 8.2 mm. Gena right angled or acute posteroventrally. Precoxal sulcus distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum areolate, with at least one closed areola. Hind femur with weak sparse punctures

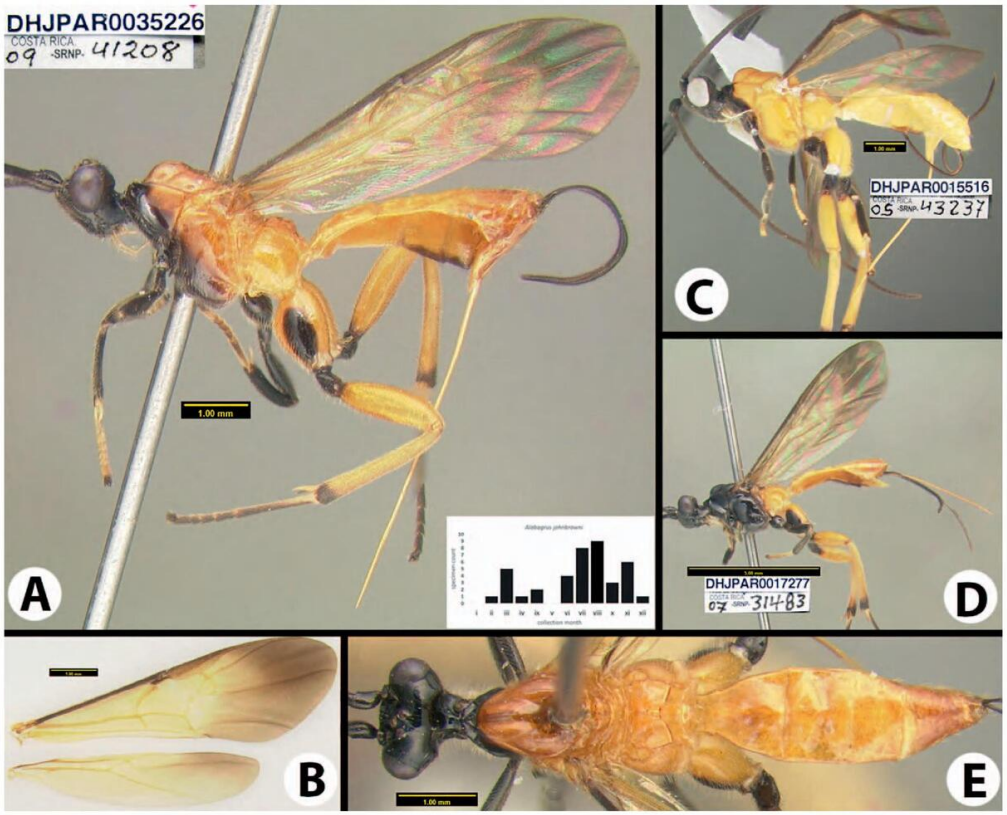


Figure 41 *Alabagrus johnbrowni* n. sp., **A**, **B**, **E** holotype; **C**, **D** paratypes: **A**. lateral habitus, color variation, **B**. wings, **C**. lateral habitus, color variation, **D**. lateral habitus, **E**. dorsal habitus.

ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor short, not longer than metasoma, or longer than metasoma but not longer than body.

Males. Propodeum with more sculpture.

Variation. Body color varies considerably; thorax varying from almost completely melanic to almost completely yellow; forewing may have a less distinct border between the yellow and melanic colors shown in Figure 41D.

HOST INFORMATION. *Desmia* BioLep09, *Desmia* BioLep19, *Desmia* BioLep42, *Desmia tages*, *Lamprosema* Dapkey23, *Phostria* Janzen05, *Piletosoma thialis*, *Piletosoma thialis*DHJ03.

ETYMOLOGY. Named in honor of Dr. John Brown of the Systematic Entomology Laboratory in the U.S. National Museum of Natural History, the taxonomist who has long and masterfully taxonomized the ACG Tortricoidea inventory, as well as for all of the Neotropics.

MATERIAL EXAMINED. HOLOTYPE ♀, from *Piletosoma thialis* on *Doliocarpus multiflorus*, 10.89678°N, 85.27001°W, 420 m, 1–20.vi.2009, DHJPAR0035226 (EMUS). PARATYPES: 1♀, 4♂, from *Desmia* BioLep09 on *Cissus alata*, 10.87741°N, 85.32363°W, 560 m, 11.vii–2.viii.2011, DHJPAR0045060, DHJPAR0045058, DHJPAR0045059, DHJPAR0045057, DHJPAR0045061. 1♀, from *Desmia* BioLep19 on *Hamelia patens*, 10.9305°N, 85.37223°W, 527 m, 22.viii–10.ix.2014, DHJPAR0056357. 1♀, 11.04249°N, 85.40339°W, 390 m, 8–27.viii.2014, DHJPAR0056297. 1♂, from *Desmia* BioLep42 on *Vitis tiliifolia*, 10.89678°N, 85.270010°W, 420 m, 16.vii–7.viii.2014, DHJPAR0055980. 1♀, 10.905280°N, 85.278820°W, 405 m, 22.vii–13.viii.2014, DHJPAR0057743. 1♀, from *Desmia tages* on *Hamelia patens*, 10.87741°N, 85.32363°W, 560 m, 1–21.x.2010, DHJPAR0041591. 1♂, 10.9305°N, 85.37223°W, 527 m, 11.x–1.xi.2011, DHJPAR0045782. 1♂, 11.03234°N, 85.43954°W, 380 m, 30.i–23.ii.2005, DHJPAR0009378. 1♂, from *Lamprosema* Dapkey23 on *Serjania mexicana*, 10.9301°N, 85.25205°W, 109 m, 25.ii–13.iii.2013, DHJPAR0051669. 1♂, from *Phostria* Janzen05 on *Psychotria cyanococca*, 10.90187°N, 85.27495°W, 415 m, 24.viii–9.ix.2009, DHJPAR0036707. 1♀, from *Piletosoma thialis* on *Doliocarpus multiflorus*, 10.89678°N, 85.27001°W, 420 m, 22.ii–15.iii.2013, DHJPAR0051667. 1♀, 28.v–14.vi.2014, DHJPAR0055346. 1♀, 6.xi–13.xii.2013, DHJPAR0054531. 1♂, 9.vi–1.vii.2009, DHJPAR0036335. 1♀, 9.vi–7.vii.2009, DHJPAR0036336. 1♀, 9.vi–9.vii.2009, DHJPAR0035954. 1♂, 1–22.vii.2009, DHJPAR0036375. 1♂, 10.91847°N, 85.30338°W, 320 m, 19.iii–12.iv.2013, DHJPAR0052086. 1♀, 10.940760°N, 85.3177°W, 461 m, 28.ix–14.x.2014, DHJPAR0057418. 1♂, 28.ix–15.x.2014, DHJPAR0057417. 1♂, 10.94741°N, 85.31501°W, 491 m, 11–26.vi.2011, DHJPAR0045029. 1♂, 12.x–11.xi.2011, DHJPAR0046749. 1♀, 12.x–12.xi.2011, DHJPAR0046755. 1♀, 1♂, 12.x–8.xi.2011, DHJPAR0046748, DHJPAR0046754. 1♀, 10.99637°N, 85.40195°W, 510 m, 24.vi–20.vii.2009, DHJPAR0040069. 1♀, from *P.* thialisDHJ03, 10.90424°N, 85.2712°W, 410 m, 21.ii–21.iii.2006, DHJPAR0009364. 1♀, 21.ii–

23.iii.2006, DHJPAR0015517. 1♀, 2–29.xi.2005, DHJPAR0015516. 1♀, 8–27.vii.2005, DHJPAR0009407. 1♀, 11.01926°N, 85.40997°W, 440 m, 22.ii–18.iii.2007, DHJPAR0017277 (EMUS, HIC).

Alabagrus johnburnsi Sharkey n. sp.

Figure 42

DIAGNOSIS. Female: Shape of occiput dorsolaterally rounded. Propodeum completely smooth. Metasoma entirely yellow. Pronotum mesoscutum and scutellum melanic, propodeum melanic but slightly paler than mesonotum. Forewing yellow in basal ⅔ gradually becoming infuscate apically. Costal vein melanic. Hind coxa pale with a large melanic patch laterally. Male: Precoxal sulcus with one or several foveae posteroventrally, with or without a smooth groove extending anteriorly. Mesoscutum melanic. Propodeum weakly areolated. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum with a rounded longitudinal bulge extending more than ½ length of tergum. Body color black and yellow. Third tergum lacking transverse depression, or depression barely indicated.

DESCRIPTION. Body length 8.8 mm. Gena rounded or with an obtuse angle posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly, or absent or almost absent, represented at most by small, shallow depression posteriorly, crenulae always lacking. Margin between metepisternum and metepimeron with very small weak crenulae. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.5× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body, or distinctly longer than body.

Males. Some propodea areolate; precoxal sulcus always foveolate.

HOST INFORMATION. Unknown.

ETYMOLOGY. Named in honor of Dr. John M. Burns of the U.S. National Museum of Natural History in the Smithsonian Institution, the taxonomist who has long and masterfully taxonomized all of the ACG Hesperoidea as well as that for North America.

MATERIAL EXAMINED. HOLOTYPE ♀, Guanacaste, La Cruz, Estación Pitilla, 9 km S Santa Cicilia, 700 m, vi.1996, C. Moranga, P. Rios, Malaise, L_N_330200_380200, #47562, H10616 (INBio). PARATYPES: 1♂, 11♀, from the following provinces: Guanacaste, Alajuela, San Jose, Puntarenas, altitudes vary between 560 and 1040 m (HIC, INBio, MUCR, EMUS).

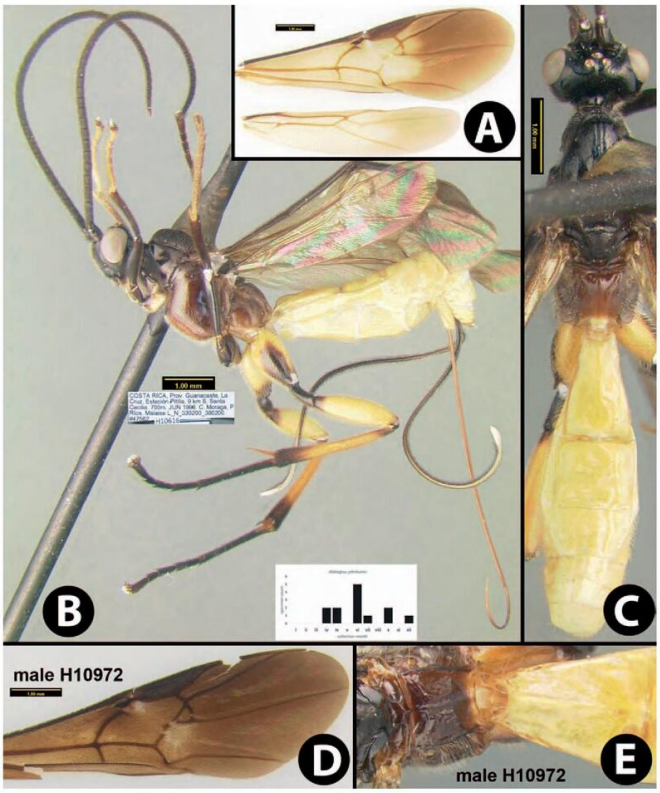


Figure 42 *Alabagrus johnburnsi* n. sp., **A–C** holotype; **D**, **E** paratype male: **A**. wings, **B**. lateral habitus, **C**. dorsal habitus, **D**. forewing, **E**. propodeum and tergum 1.

Alabagrus johnobryckii Sharkey n. sp.

Figure 43

DIAGNOSIS. Female: Metapleuron mostly or entirely melanic. Metasoma entirely orange. Ovipositor distinctly longer than body. First tergum weakly convex. Propodeum smooth. Forewing almost entirely infuscate, ignore small clear patches posterad stigma. Occiput rounded dorsolaterally. Male: First tergum with well-defined median longitudinal carina. Propodeum with more defined and complete sculpture.

NOTES. Specimens of this species were included under *A. englishi* in Leathers and Sharkey (2003).

DESCRIPTION. Body length 6.3 mm. Gena rounded or with an obtuse angle posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.5× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor distinctly longer than body.

Males. First tergum with well-defined median longitudinal carina; propodeum with more defined and complete sculpture; third tergum lacking transverse depression, or depression barely indicated.

ETYMOLOGY. Named in honor of Dr. John Obrycki, former chair of the Department of Entomology, University of Kentucky, for his many years of support to M.J.S.

MATERIAL EXAMINED. HOLOTYPE ♀, Guanacaste, 3 km SE R. Naranjo, 14–20.viii.1993, F.D. Parker (EMUS). PARATYPES: 1♀, Alajuela, 20 km S Upala, 22–30.ix.1991, F. D. Parker (HIC). 1♂, Cartago, PN Tapantí, Macizo de la Muerte, Torre circa del Est., 1200 m, 9.vi.2000, L_N_193800_560050, H10967 (INBio).

Alabagrus johnsharkeyi Sharkey n. sp.

Figure 44

DIAGNOSIS. Gena right angled posteroventrally. Median tergite 1 red, tergite 2 red and black, remaining terga black. Hind femur with

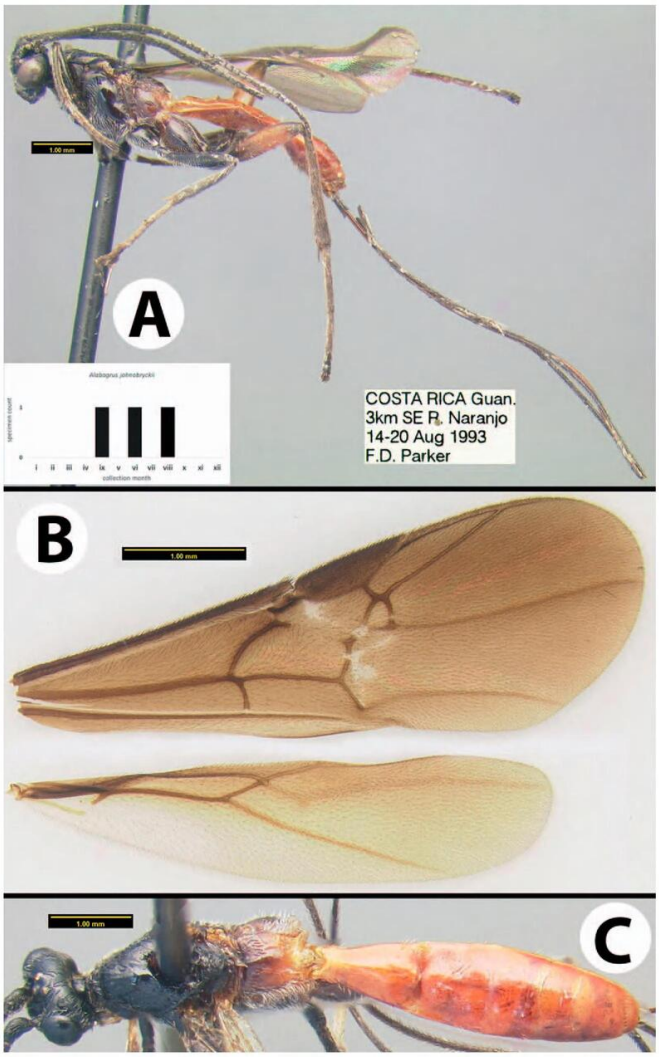


Figure 43 *Alabagrus johnobryckii* n. sp., holotype: **A**. lateral habitus, **B**. wings, **C**. dorsal habitus.

weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. Median tergite 1 about as wide as long. Hind femur, metapleuron and pronotum all entirely melanic.

NOTES. Specimens of this species were included under *A. semialbus* in Leathers and Sharkey (2003).

DESCRIPTION. Body length 8.5 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly, or distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum areolate, with at least one closed areola. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 0.9× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Unknown.

ETYMOLOGY. Named in honor of John Sharkey, youngest brother of M.J.S., and lawyer extraordinaire.

MATERIAL EXAMINED. HOLOTYPE ♀, Guanacaste, 3 km SE R. Naranjo, 22–24.vii.1992, F.D. Parker, H17276 (EMUS).

Alabagrus kaciejoae Sharkey n. sp.

Figure 45

DIAGNOSIS. First tergum with two converging longitudinal carinae, more pronounced in males. Propodeum with weak irregular ridges. Pronotum melanic.

NOTES. Specimens of this species were included under *A. parvifaciatus* in Leathers and Sharkey (2003).

DESCRIPTION. Body length 8.9 mm. Gena rounded or with an obtuse angle posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum areolate, with at least one closed areola, or lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.2× longer than wide; with two converging longitudinal carinae. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor distinctly longer than body.

Males. First tergum with more pronounced longitudinal carinae.

ETYMOLOGY. Named in honor of Kacie Athey, former graduate student of M.J.S.

MATERIAL EXAMINED. HOLOTYPE ♀, Guanacaste, 700 m, 9 km S Santa Cecilia, set 1989, UTM 330200_380200, GNP Biodiversity Study, H10955 (INBio). PARATYPES: 1♀, 2♂, Guanacaste and Alajuela (INBio, EMUS, HIC).

Alabagrus karensharkeyae Sharkey n. sp.

Figure 46

DIAGNOSIS. Precoxal sulcus with several large foveae posteroventrally. First tergum narrow basally, widening rapidly at midlength, with well-defined median longitudinal carina extending most of its length. Pronotum melanic. Metapleuron entirely pale. Hind femur mostly or entirely melanic. Forewing mostly infuscate with pale patches that do not form discrete bands. Apical metasomal terga melanic.

NOTES. Specimens of this species were included under *A. maya* in Leathers and Sharkey (2003).

DESCRIPTION. Body length 7.1 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum areolate, with at least one closed areola. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.4× longer than wide; with well-defined median longitudinal carina. Third tergum lacking transverse depression, or depression barely indicated, or with deep transverse depression. Ovipositor longer than metasoma but not longer than body.

Males. Similar to female.

HOST INFORMATION. *Microthyris prolongalis*, *Microthyris prolongalis*DHJ02, *Palpusia* Janzen02, *Psara obscuralis*DHJ02.

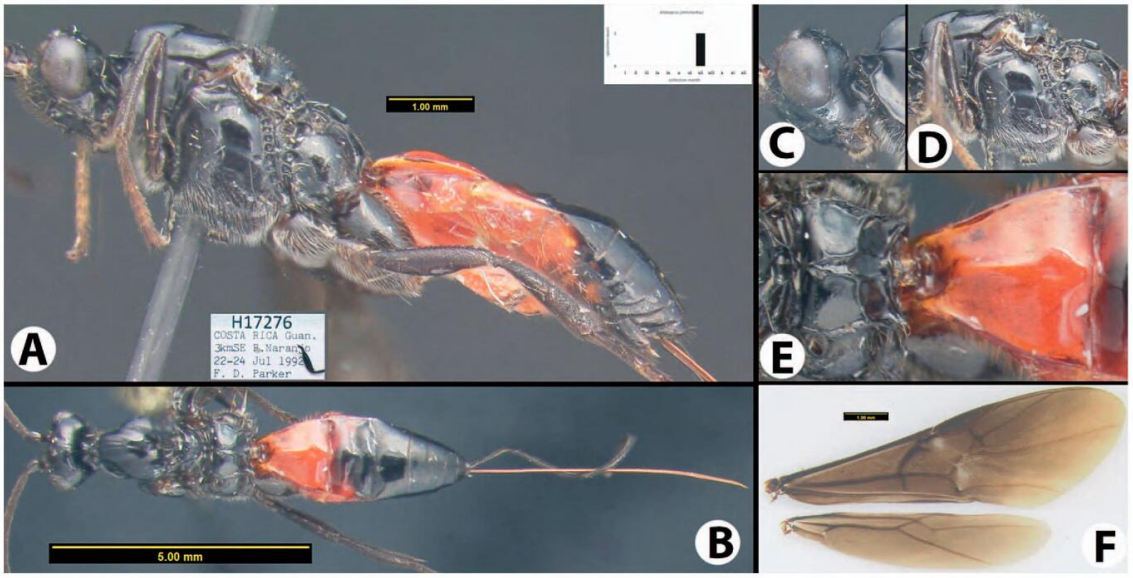


Figure 44 *Alabagrus johnsharkeyi* n. sp., holotype: **A**. lateral habitus, **B**. dorsal habitus, **C**. lateral head, **D**. lateral mesosoma, **E**. propodeum and tergum 1, **F**. wings.

ETYMOLOGY. Named in honor of my (M.J.S.) beautiful wife, Karen.

MATERIAL EXAMINED. HOLOTYPE ♀, host=*Microthyris prolongalis* on *Ipomoea phillomega*, 10.9301°N, 85.25205°W, 109 m, 17.v–3.vi.2010, DHJPAR0041200 (EMUS). PARATYPES: reared: 1♂, from *Microthyris prolongalis* on *Ipomoea batatas*, 10.87766°N, 85.39343°W, 645 m, 2–17.viii.2013, DHJPAR0052904. 1♀, 10.90093°N, 85.28915°W, 400 m, 23.v–10.vi.2006, DHJPAR0010196. 1♀, 10.90661°N, 85.28784°W, 400 m, 11–27.vi.2007, DHJPAR0021170. 1♀, 17.viii–14.ix.2005, DHJPAR0015531. 1♀, 8–29.v.2013, DHJPAR0052079. 1♀, 10.9305°N, 85.37223°W, 527 m, 13–31.vii.2009, DHJPAR0036348. 1♀, 10.93332°N, 85.25331°W, 135 m, 27.viii–19.ix.2009, DHJPAR0036706. 1♀, on *Ipomoea lindenii*, 9–24.viii.2009, DHJPAR0036715. 1♀, 10.9305°N, 85.37223°W, 527 m, 23.viii–10.ix.2012, DHJPAR0050362. 1♂, from *M. prolongalis*DHJ02 on *Ipomoea trifida*, 10.77175°N, 85.434°W, 305 m, 27.v–15.vi.2011, DHJPAR0045002. 1♂, from *Palpusia* Janzen02 on *Ipomoea batatas*, 10.93332°N, 85.25331°W, 135 m, 24.xi–10.xii.2011, DHJPAR0046742. 1♀, 10.93548°N, 85.25314°W, 123 m, 5–19.vii.2014, DHJPAR0055978. 1♀, from *Psara obscuralis*DHJ02 on *Ipomoea phillomega*, 10.9163°N, 85.37869°W, 460 m, 10–31.iii.2014, DHJPAR0055102. Nonreared paratypes: 4♂, 17♀, 0–200 m, Limón, Alajuela, Puntarenas, Guanacaste (EMUS, HIC, INBio, EMUS). MEXICO: Veracruz (CNCI).

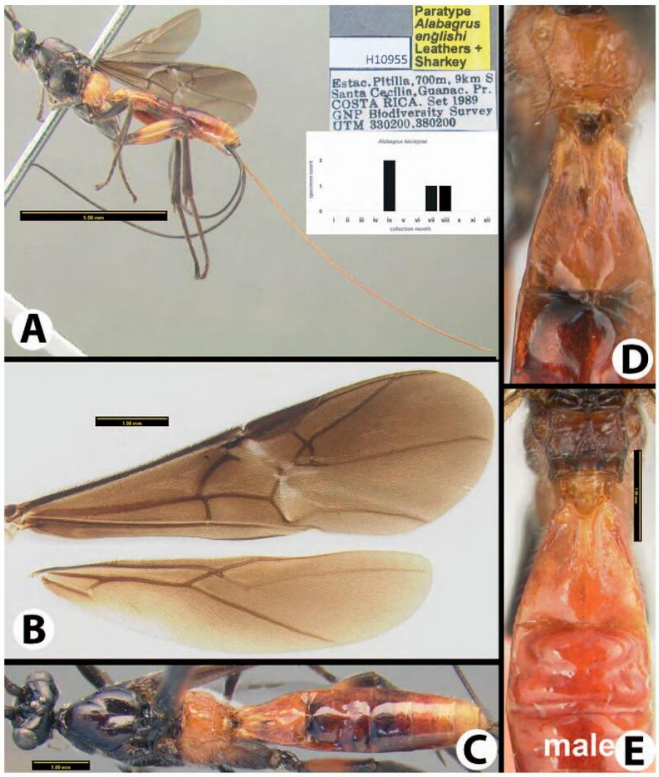


Figure 45 *Alabagrus kaciejoae* n. sp., **A–D** holotype; **E** paratype male: **A**. lateral habitus, **B**. wings, **C**. dorsal habitus, **D**. propodeum and tergum 1, **E**. propodeum and tergum 1.

Alabagrus kaydodgeae Sharkey n. sp.

Figure 47

DIAGNOSIS. Precoxal sulcus absent or almost absent, represented at most by small, shallow depression, usually posteriorly, crenulae always lacking. Head pale except vertex melanic, or melanic except margins of gena yellow, or melanic except margins of gena yellow and yellow patch on face. Mesoscutellum black contrasting with the otherwise yellow mesosoma.

NOTES. Formerly considered as *A. mojos* (Leathers and Sharkey, 2003). Male color variable; almost all have some black, at least near the superior orbits of the eyes.

DESCRIPTION. Body length 6.6 mm. Gena right angled or acute posteroventrally. Precoxal sulcus absent or almost absent, represented at

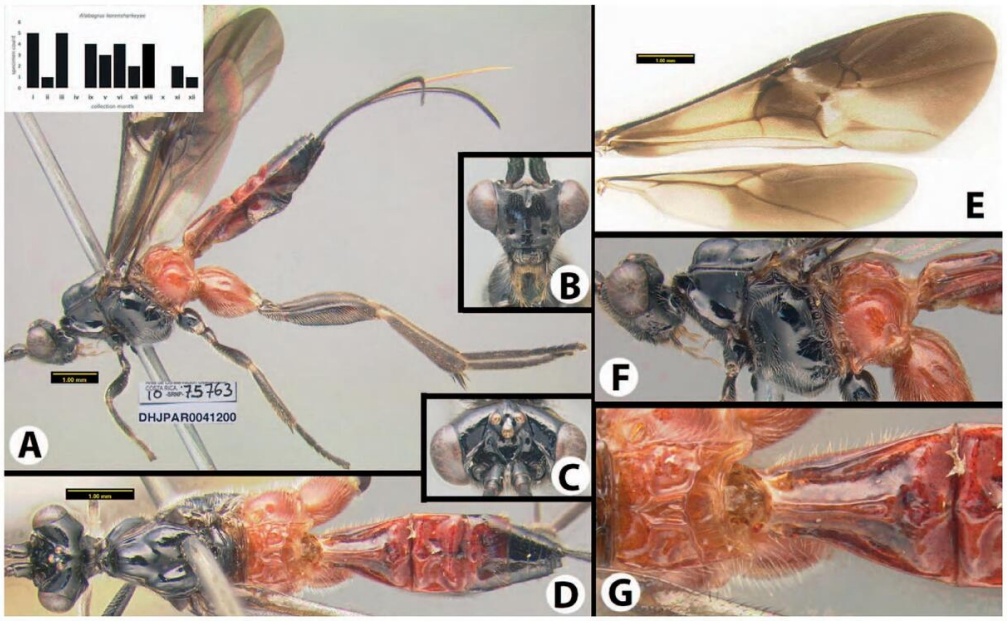


Figure 46 *Alabagrus karensharkeyae* n. sp., holotype: **A**. lateral habitus, **B**. anterior head, **C**. dorsal head, **D**. dorsal habitus, **E**. wings, **F**. lateral head and mesosoma, **G**. propodeum and tergum 1.

most by small, shallow depression posteriorly, crenulae always lacking. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum areolate, with at least one closed areola. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.36× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

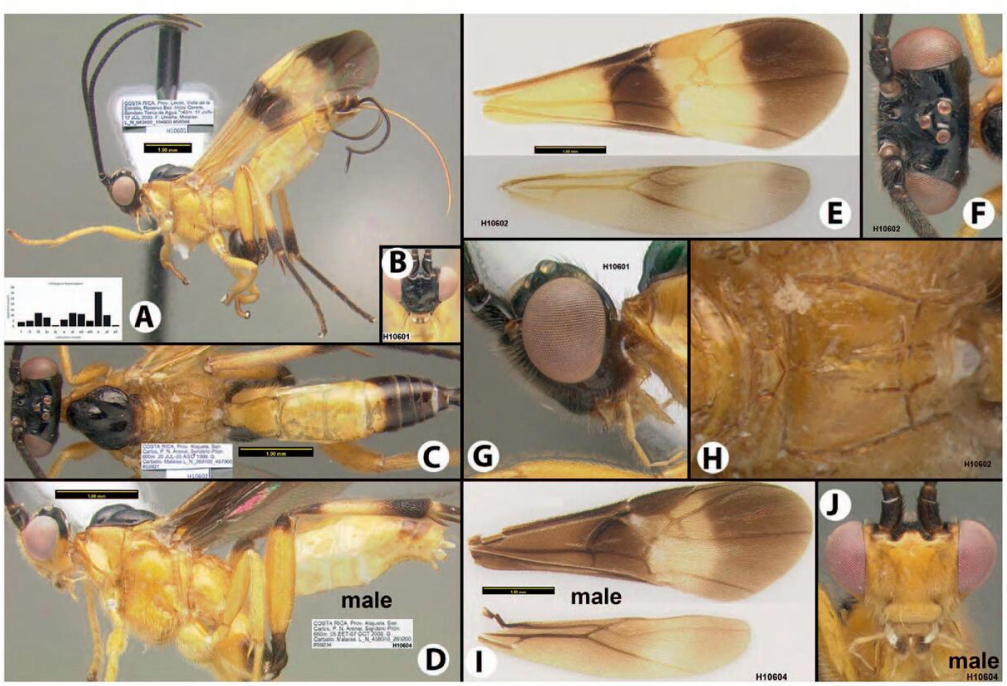


Figure 47 *Alabagrus kaydodgeae* n. sp., **A–C**, **E–H** paratype females; **D**, **I**, **J** paratype males: **A**. lateral habitus, **B**. anterior head, **C**. dorsal habitus, **D**. lateral habitus, **E**. wings, **F**. dorsal head, **G**. lateral head, **H**. propodeum, **I**. wings, **J**. anterior head.

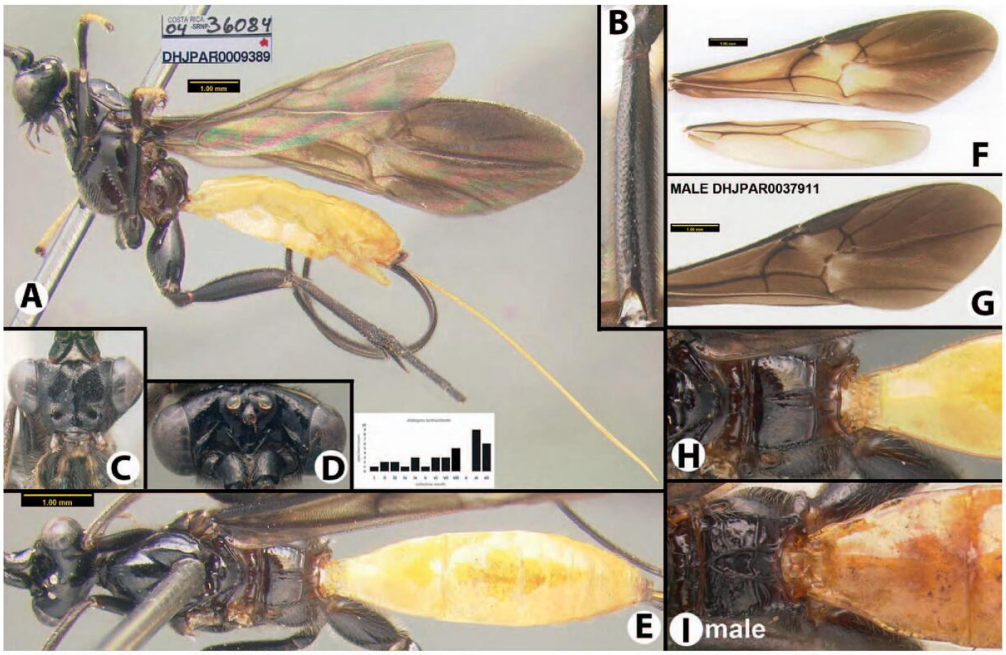


Figure 48 *Alabagrus keithwillmotti* n. sp., **A–F, H** holotype; **G, I** paratype male: **A.** lateral habitus, **B.** ventral hind femur, **C.** anterior head, **D.** dorsal head, **E.** dorsal habitus, **F.** wings, **G.** forewing, **H.** propodeum and tergum 1, **I.** propodeum and tergum 1.

Males. Color variable; forewing varies from banded, as in the female, to mostly infuscate with a weak pale band at midlength that does not include the stigma, to completely infuscate; head usually mostly yellow with vertex and upper occiput melanic.

HOST INFORMATION. *Ategumia* Solis01.

ETYMOLOGY. Named in honor of Ms. Kay Dodge of Santa Cruz, Guanacaste, Costa Rica, in recognition of her patient and very long term efforts to support the growth and evolution of ACG since its beginnings in 1986.

MATERIAL EXAMINED. HOLOTYPE ♀, Heredia, 11 km SE La Virgin, 10.33°N, 84.07°W, 450–550 m, 17.iv.2003, H1200 (INBio). PARATYPES: reared: 1♂, from *Ategumia* Solis01 on *Psychotria alfaroana*, 11.02367°N, 85.41884°W, 375 m, 31.v–25.vi.2013, DHJPAR0053007. 1♀, 11.019259°N, 85.40997°W, 440 m, host caterpillar, same as above, host plant=*Psychotria grandis*, collected 10.xi.2014, DHJPAR0057442 (EMUS). Nonreared paratypes: 44♀, 39♂, COSTA RICA, Limón, Puntarenas, Alujuela, Colón, San Jose; PANAMA, Colón, Canal Zone. (EMUS, HIC, INBio).

Alabagrus keithwillmotti Sharkey n. sp.

Figure 48

DIAGNOSIS. Gena rounded posteroventrally. Propodeum melanic but slightly paler than remainder of mesosoma. Precoxal sulcus distinct and foveolate ½ or more length of mesopleuron. First tergum weakly convex. Third tergum lacking transverse depression, or depression barely indicated. Metasoma yellow except apical tergum somewhat melanic.

DESCRIPTION. Body length 9.3 mm. Gena right angled or acute posteroventrally. Precoxal sulcus distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum areolate, with at least one closed areola. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface, or heavily sculptured ventrally with large aciculations or rugosities, distinctly more heavily sculptured than dorsal surface. First tergum 1.3× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Forewing darker, lacking most pale patches found in the female; propodeum with more sculpture; first metasomal median tergite wider.

HOST INFORMATION. *Asturodes fimbriauralis*DHJ02, *Desmia* Janzen07, *Desmia* Janzen14, *Desmia octomaculalis*, *Herpetogramma* Solis10, *Phostria* Janzen03, *Pilocrocis* Solis20, spilobiolep01 biolep498.

ETYMOLOGY. Named in honor of Dr. Keith Willmott of the McGuire Center for Lepidoptera and Biodiversity of the University of Florida in recognition of his contributions to the taxonomy and systematics of Neotropical butterflies and their biodiversity.

MATERIAL EXAMINED. HOLOTYPE ♀, host=*Pilocrocis* Solis20 on *Saurauia montana*, 10.92918°N, 85.46426°W, 1220 m, 23.x–25.xi.2004, DHJPAR0009389 (EMUS). 1♂, from *Asturodes fimbriauralis*DHJ02 on *Colubrina spinosa*, 10.98816°N, 85.39581°W, 485 m, 4–26.iii.2010, DHJPAR0038809. 1♂, 10.99697°N, 85.39666°W, 470 m, 2–30.vi.2009, DHJPAR0036339. 1♀, 11.01983°N, 85.41342°W, 445 m, 21.vii–19.viii.2003, DHJPAR0015336. 3♂, from *Desmia* Janzen07 on *Psychotria microbotrys*, 10.98758°N, 85.41967°W, 680 m, 23.xi–21.xii.2009, DHJPAR0037909, DHJPAR0037910, DHJPAR0037911. 1♂, 23.xi–23.xii.2009, DHJPAR0037913. 1♂, 23.xi–24.xii.2009, DHJPAR0037907. 1♀, 12.x–7.xi.2009, DHJPAR0037912. 1♂, 27.vi–17.vii.2013, DHJPAR0052730. 1♀, from *Desmia* Janzen14 on *Hoffmannia longipetiolata*, 10.98332°N, 85.43623°W, 900 m, 22.xii.2012–28.i.2013, DHJPAR0050935. 1♀, 3.i–11.ii.2013, DHJPAR0050930. 1♀, 3.i–8.ii.2013, DHJPAR0050868. 1♂, from *Desmia octomaculalis* on *Notopleura*

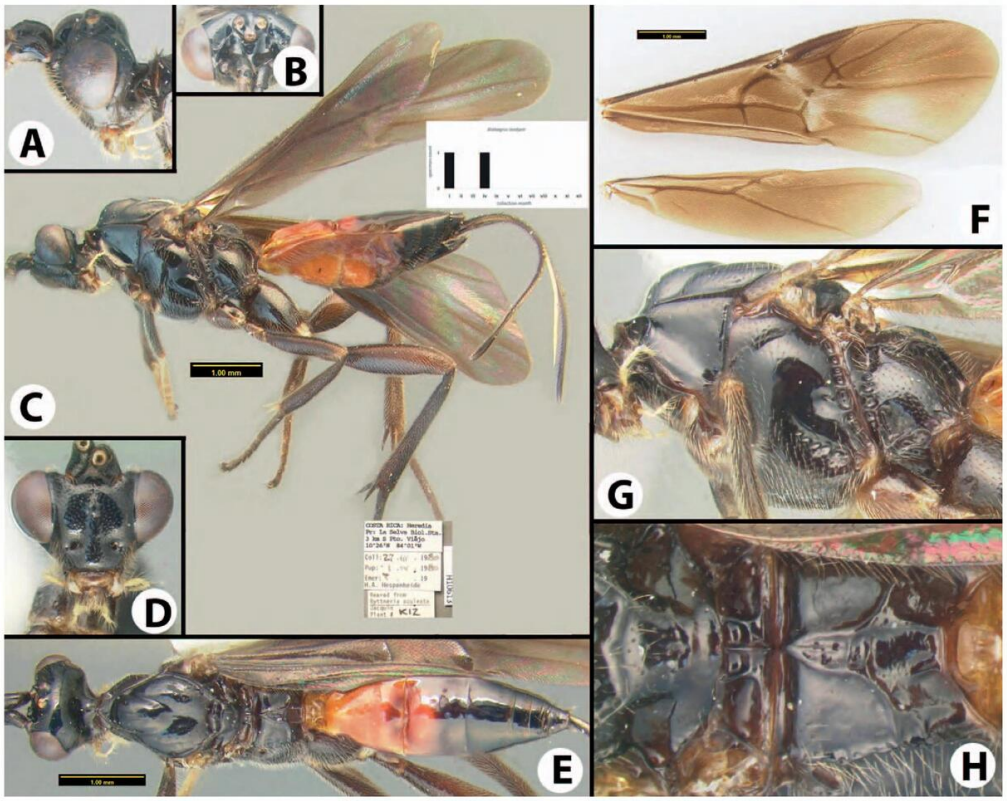


Figure 49 *Alabagrus leedyeri* n. sp., holotype: **A**. lateral head, **B**. dorsal head, **C**. lateral habitus, **D**. anterior head, **E**. dorsal habitus, **F**. forewing, **G**. lateral mesosoma, **H**. scutellum and propodeum.

uliginosa, 10.86472°N, 85.41531°W, 540 m, 13.v–6.vi.2010, DHJPAR0039357. 3♂, from *Herpetogramma* Solis10 on *Justicia macrantha*, 10.99637°N, 85.40195°W, 510 m, 7–29.ix.2011, DHJPAR0045789, DHJPAR0045808, DHJPAR0045809. 1♂, from *Phostria* Janzen03 on *Psychotria elata*, 10.98758°N, 85.41967°W, 680 m, 16.ii–12.iii.2010, DHJPAR0038808. 2♀, from *Pilocrocis* Solis20 on *Saurauia montana*, 10.92918°N, 85.46426°W, 1220 m, 23.x–19.xi.2004, DHJPAR0009387, DHJPAR0009388. 1♂, 23.x–23.xi.2004, DHJPAR0009386. 3♀, 23.x–25.xi.2004, DHJPAR0009385, DHJPAR0009389, DHJPAR0009390. 1♀, 24.vii–21.viii.2000, 00-SRNP-10070. 1♀, 24.vii–24.viii.2000, 00-SRNP-10067. 1♀, 24.vii–25.viii.2000, 00-SRNP-10080. 1♀, 24.vii–26.viii.2000, 00-SRNP-10087. 1♂, 10.99616°N, 85.45562°W, 560 m, 14.x–6.xi.2004, DHJPAR0007207. 1♀, from spilobiolep01 biolep498 on *Faramea stenura*, 10.98758°N, 85.41967°W, 680 m, 9.v–14.vi.2009, DHJPAR0035227 (EMUS, HIC).

Alabagrus leedyeri Sharkey n. sp.
Figure 49

DIAGNOSIS. Gena acute posteroventrally. First tergum longer than wide and weakly convex. Propodeum melanic and areolate, with at least one closed areola. All femora mostly or entirely melanic.

NOTES. Formerly considered as part of *A. tricarinatus* (Leathers and Sharkey, 2003).

DESCRIPTION. Body length 7.1 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly, or distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum areolate, with at least one closed areola. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.2× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Unknown.

ETYMOLOGY. In honor of Lee Dyer, entomologist and ecologist extraordinaire.

MATERIAL EXAMINED. HOLOTYPE ♀, caterpillar feeding on *Byttneria aculeata*, Heredia, La Selva Biol. Sta., 3 km S Puerto Viejo, 10.43°N, 84.02°W, Coll. 27.iii.1980, eclosed 7.iv.1980, H10613 (HIC). PARATYPE: 1♀, Ala(juela), 20 km S Upala (10.84°N, 85.07°W), 24.i.1991, F.D. Parker (EMUS).

Alabagrus lindapitkinae Sharkey n. sp.
Figure 50

DIAGNOSIS. Gena right angled or acute posteroventrally. Precoxal sulcus distinct with large fovae extending about ½ length of mesopleuron. Third tergum lacking transverse depression, or depression barely indicated. Metapleuron entirely orange. Midfemur black except pale apex. Hind femur black basally, more so dorsally, and with a black

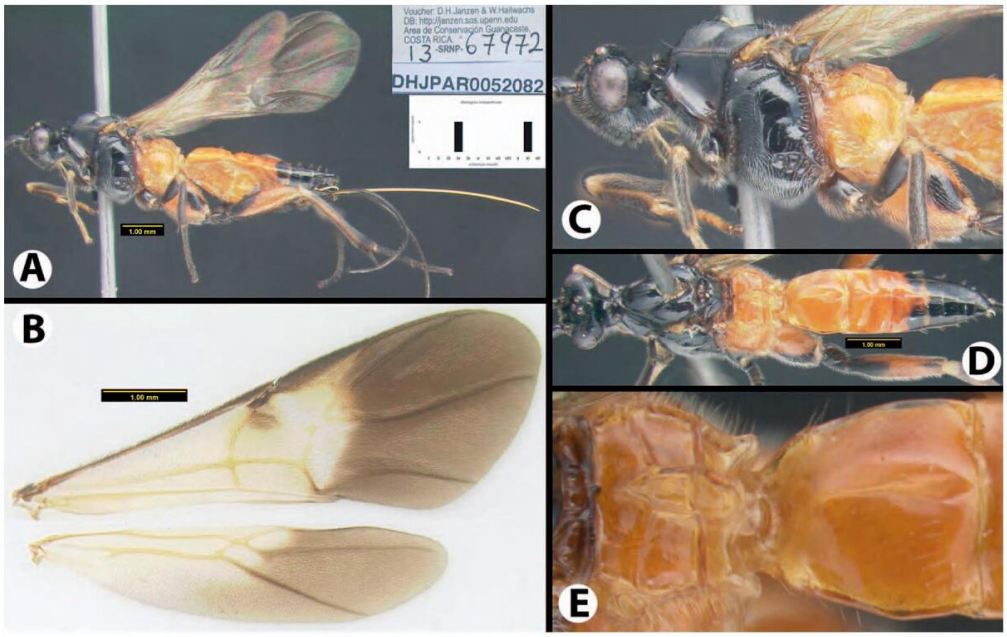


Figure 50 *Alabagrus lindapitkinae* n. sp., holotype: **A.** lateral habitus, **B.** wings, **C.** lateral head and mesosoma, **D.** dorsal habitus, **E.** propodeum and tergum 1.

patch apicodorsally. Terga 1–2 orange and about as long as wide, tergum 3 orange anteriorly and black posteriorly, remaining terga black.

DESCRIPTION. Body length 8.2 mm. Gena right angled or acute posteroventrally. Precoxal sulcus distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins, or areolate rugose in ventral quarter or less. Propodeum areolate, with at least one closed areola. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Unknown.

HOST INFORMATION. *Omiodes* Janzen05.

ETYMOLOGY. Named in honor of Dr. Linda Pitkin of The Natural History Museum, London, in recognition of her very fruitful labors for the parataxonomists, taxonomy, and systematics of Geometridae of ACG and the world.

MATERIAL EXAMINED. HOLOTYPE ♀, host=*Omiodes* Janzen05 on *Entada gigas*, 10.9555°N, 85.28381°W, 221 m, 4–26.iv.2013, DHJPAR0052082 (EMUS). PARATYPE: 1♀, *Omiodes* Janzen05 on *Entada gigas*, 10.96187°N, 85.28045°W, 96 m, 1–25.xi.2013, DHJPAR0054497 (EMUS).

Alabagrus longinoi Sharkey n. sp.
Figure 51

DIAGNOSIS. Third tergum lacking transverse depression, or depression barely indicated. Propodeum lacking complete areolae, usually mostly or completely smooth. Ovipositor longer than metasoma but not longer than body. All femora yellow. Pronotum melanic. Metapleuron entirely yellow; hind coxa almost entirely or entirely black. Apical yellow band of forewing starting near apex of stigma and complete to posterior margin.

DESCRIPTION. Body length 6.4 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly, or distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.6× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Unknown.

ETYMOLOGY. Named in honor of John (Jack) Longino, myrmecologist extraordinaire, for his support during years of research in Costa Rica.

MATERIAL EXAMINED. HOLOTYPE ♀, Heredia, 11 km SE La Virgen, 10.33°N, 84.07°W, 450–550 m, 23.iii.2003 (INBio). PARATYPES: 3♀, Heredia, Limón, 220–550 m, ii.2003 and x.1999 (INBio, HIC, EMUS).

Alabagrus maculipes (Cameron, 1887)
Figure 52

Microdus maculipes Cameron, 1887:404 holotype ♂, Guatemala (BMNH).

Microdus trochanteratus Cameron, 1905:50 holotype ♀, Nicaragua (BMNH)

Alabagrus maculipes (Sharkey, 1988:380)

DIAGNOSIS. Gena rounded posteroventrally. Head pale, or pale except vertex melanic. Forewing evenly infuscate or with some pale regions but always lacking distinct bands.

DESCRIPTION. Body length 5.8 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae

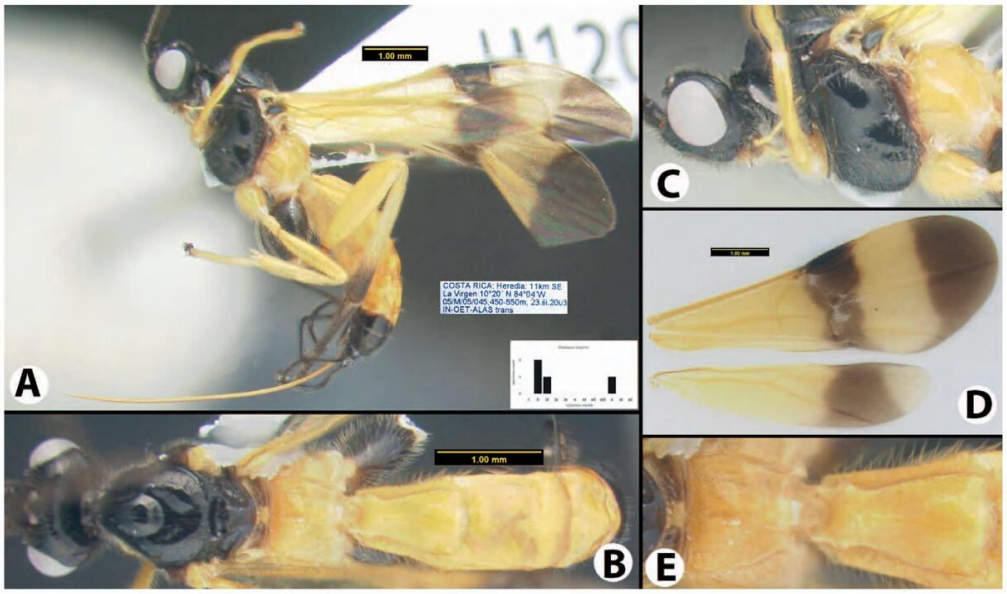


Figure 51 *Alabagrus longinoi* n. sp., holotype: **A**. lateral habitus, **B**. dorsal habitus, **C**. Lateral head and mesosoma, **D**. wings, **E**. propodeum and tergum 1.

posteroventrally, with or without a smooth groove extending anteriorly, or distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins, or areolate rugose in ventral quarter or less. Propodeum areolate, with at least one closed areola. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.3× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Forewing varies from as in the female to completely infuscate.

HOST INFORMATION. *Desmia ploralis*DHJ02, *Herpetogramma* Janzen04, *Herpetogramma salbialis*, *Herpetogramma semilaniata*, *Massepha grammalis*, *Palpusia* Janzen02, *Rhectocraspeda* Solis05, *Pilocrocis ramentalis*, *Salbia haemorrhoidalis*, *Syngamia florella*.

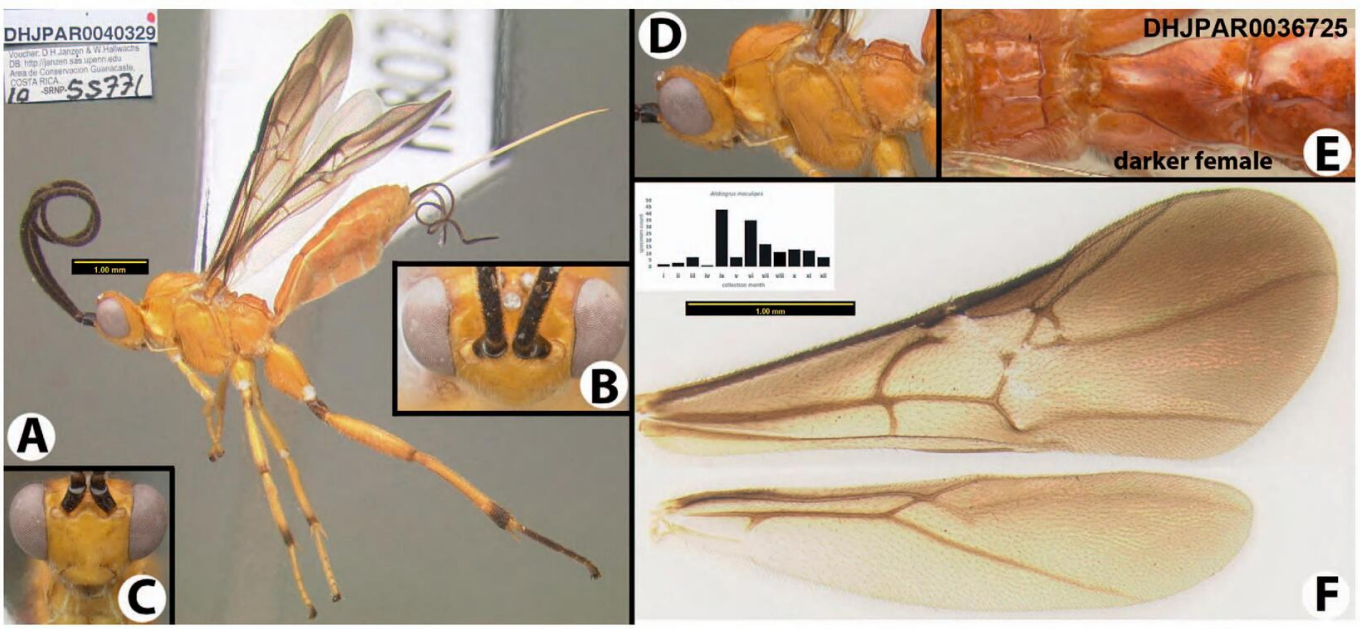


Figure 52 *Alabagrus maculipes*: **A**. lateral habitus, **B**. dorsal head, **C**. anterior head, **D**. lateral head and mesosoma, **E**. propodeum and tergum 1, **F**. wings.

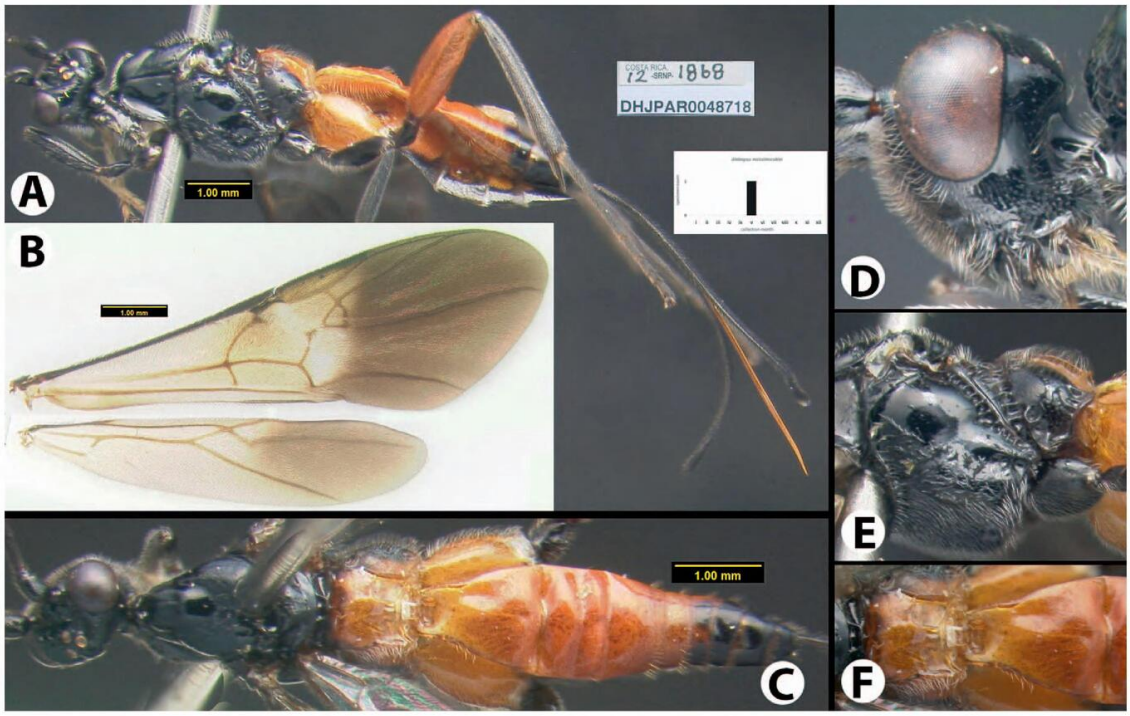


Figure 53 *Alabagrus malcolmscoblei* n. sp., holotype: **A**. lateral habitus, **B**. wings, **C**. dorsal habitus, **D**. lateral head, **E**. mesopleuron, **F**. propodeum and tergum 1.

DISTRIBUTION. Widespread from Mexico, the Caribbean south through Central America, and the Caribbean countries of South America (Sharkey, 1988).

MATERIAL EXAMINED. Reared specimens: 1♀, from *Desmia ploralis*DHJ02 on *Psychotria horizontalis*, 10.76712°N, 85.59663°W, 180 m, 11–22.viii.2009, DHJPAR0036337 (EMUS). 2♀, from *Herpetogramma* Janzen04 on *Achyranthes aspera*, 10.7416°N, 85.42734°W, 420 m, 12–30.xi.2010, DHJPAR0041150, DHJPAR0041151. 1♀, from *Herpetogramma salbialis* on *Delilia biflora*, 10.93548°N, 85.25314°W, 123 m, 8–18.ix.2014, DHJPAR0056292. 1♀, from *Herpetogramma semilaniata* on *Justicia* 14522, 10.77594°N, 85.65799°W, 7 m, 24.ix–9.x.2000, DHJPAR0015349. 1♀, on *Justicia carthaginensis*, 10.77079°N, 85.37422°W, 733 m, 17–29.vi.2010, DHJPAR0040329. 1♀, from *Massepha grammalis* on *Maranta arundinacea*, 10.85827°N, 85.61089°W, 280 m, host collection 21.vii.1990, DHJPAR0015346. 1♂, from *Palpusia* Janzen02 on *Ipomoea trifida*, 10.77079°N, 85.37422°W, 733 m, 28.vi–11.vii.2010, DHJPAR0040212. 1♂, 28.vi–12.vii.2010, DHJPAR0040213. 1♂, from *Rhectocraspeda* Solis05 on *Solanum jamaicense*, 10.95991°N, 85.28298°W, 160 m, 18–27.xii.2012, DHJPAR0050947. 1♀, on *Solanum aturense*, 10.93548°N, 85.25314°W, 123 m, 8–20.ix.2014, DHJPAR0056291. 1♀, from *Pilocrocis ramentalis* on *Dyschoriste quadrangularis*, 10.78626°N, 85.55835°W, 105 m, 2–12.ix.1994, 94-SRNP-7176. 1♀, 2–14.ix.1994, DHJPAR0015347. 1♀, 2–18.ix.1994, DHJPAR0015348. 11♀, host collection 2.ix.1994, 94-SRNP-7143, 94-SRNP-7144, 94-SRNP-7145, 94-SRNP-7146, 94-SRNP-7148, 94-SRNP-7160, 94-SRNP-7164, 94-SRNP-7165, 94-SRNP-7169, 94-SRNP-7173, 94-SRNP-7187. 1♂, 10.83764°N, 85.61871°W, 295 m, 7–16.vi.2012, DHJPAR0048735. 1♀, 7–19.vi.2012, DHJPAR0048736. 1♀, from *Salbia haemorrhoidalis* on *Lantana camara*, 10.93332°N, 85.25331°W, 135 m, 23.ix–4.x.2009, DHJPAR0037188. 1♀, from *Syngamia florella* on *Spermacoce exilis*, 11.0006°N, 85.438°W, 620 m, 5–26.ii.2009, DHJPAR0036725 (EMUS, HIC).

Alabagrus malcolmscoblei Sharkey n. sp.

Figure 53

DIAGNOSIS. Gena right angled or acute posteroventrally. Propodeum lacking complete areolae, mostly smooth. First tergum weakly convex. Forewing lacking two distinct bands; pale basally to near level of apex of stigma with a darkening near parastigma. Mesoscutum, tegula, and forefemur melanic. Hind coxa orange.

DESCRIPTION. Body length 9.3 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins, or areolate rugose in ventral quarter or less. Propodeum lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Unknown.

HOST INFORMATION. *Phostria latiapicalis*.

ETYMOLOGY. Named in honor of Dr. Malcolm Scoble of The Natural History Museum, London, in recognition of his very fruitful labors for the parataxonomists, taxonomy, and systematics of Geometridae and Hedylidae of ACG and the world.

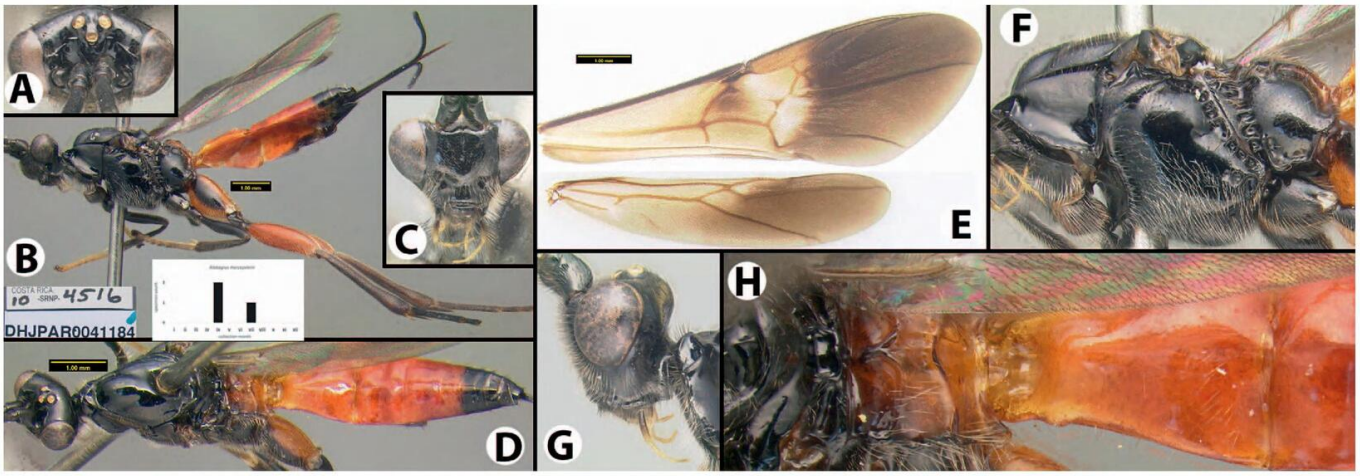


Figure 54 *Alabagrus marcepsteini* n. sp., holotype: **A**. dorsal head, **B**. lateral habitus, **C**. anterior head, **D**. dorsal habitus, **E**. wings, **F**. lateral mesosoma, **G**. lateral head, **H**. propodeum and tergum 1.

MATERIAL EXAMINED. HOLOTYPE ♀, host=*Phostria latiapicalis* on *Chimarrhis parviflora*, 10.9305°N, 85.37223°W, 527 m, 10–29.v.2012, DHJPAR0048718 (EMUS).

Alabagrus marcepsteini Sharkey n. sp.

Figure 54

DIAGNOSIS. Gena right angled or acute posteroventrally. Precoxal sulcus with several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly. Forewing lacking two distinct bands; pale basally to near level of apex of stigma with a darkening near parastigma. Forefemur and metapleuron mostly or entirely melanic.

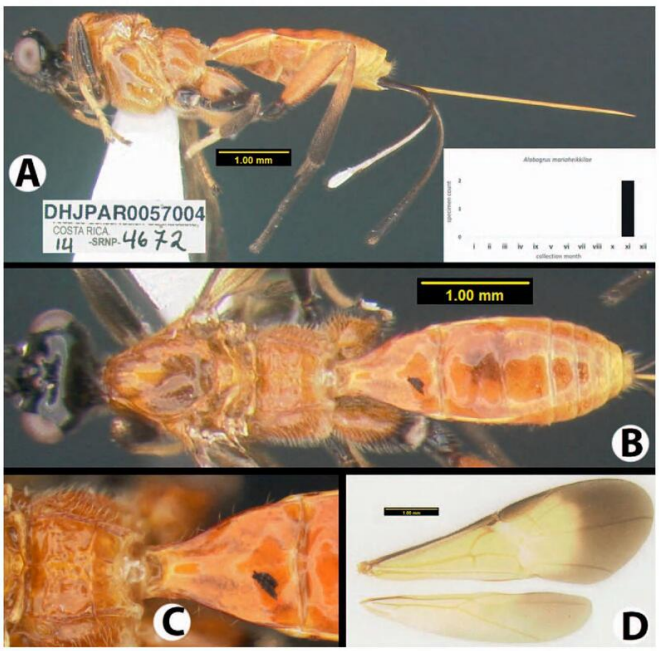


Figure 55 *Alabagrus mariaheikkilae* n. sp., holotype: **A**. lateral habitus, **B**. dorsal habitus, **C**. propodeum and tergum 1, **D**. wings.

Propodeum mostly or entirely orange. Hind coxa mostly orange with a vertical black stripe.

NOTES. Specimens of this species were included under *A. kagaba* in Leathers and Sharkey (2003).

DESCRIPTION. Body length 9.5 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum areolate, with at least one closed areola, or lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.2× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Unknown.

HOST INFORMATION. crambidJanzen01 Janzen21.

ETYMOLOGY. Named in honor of Dr. Marc Epstein of California Department of Food and Agriculture, Sacramento, California, in recognition of his long labor at taxonomizing the Limacodidae of ACG and all of Costa Rica for their inventories.

MATERIAL EXAMINED. HOLOTYPE ♀, host=crambidJanzen01 Janzen21 on *Elaeagia auriculata*, 10.84886°N, 85.3281°W, 980 m, 17.viii–8.ix.2010, DHJPAR0041184 (EMUS). PARATYPES: reared: 1♀, from crambidJanzen01 Janzen21 on *Elaeagia auriculata*, 10.84886°N, 85.3281°W, 980 m, 17.viii–6.ix.2010, DHJPAR0041192 (ovipositor broken at base). Nonreared: 1♀, Limón, Valle de la Estrella, Res. Biol. Hitoy Cerere, Sendero Toma de Agua, 140 m, 17.vi–17.vii.2000, LN_643400_184600 (INBio).

Alabagrus mariaheikkilae Sharkey n. sp.

Figure 55

DIAGNOSIS. Gena acute posteroventrally; forewing yellow basally, infuscate in apical ¼ with a sharp margin between colors; metasoma entirely yellowish orange; propodeum with weak areolae.

DESCRIPTION. Body length 5.5 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly,

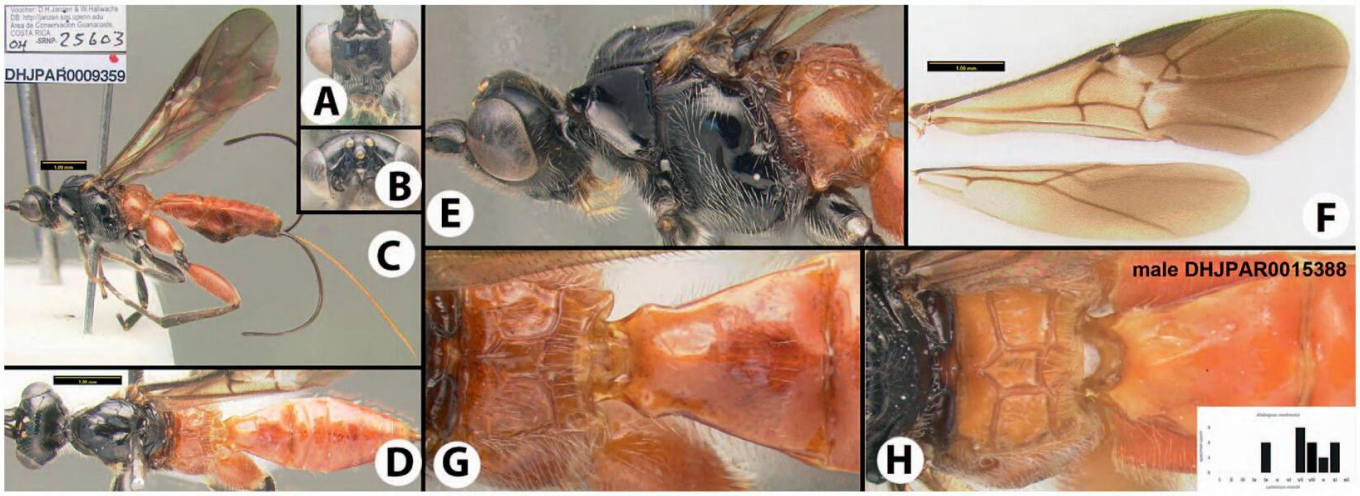


Figure 56 *Alabagrus markmetzi* n. sp., **A–G** holotype; **H** paratype male: **A**. anterior head, **B**. dorsal head, **C**. lateral habitus, **D**. dorsal habitus, **E**. lateral head and mesosoma, **F**. wings, **G**. propodeum and tergum 1, **H**. propodeum and tergum 1.

or distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum areolate, with at least one closed areola. Hind femur heavily sculptured ventrally with large aciculations or rugosities, distinctly more heavily sculptured than dorsal surface. First tergum 1.2× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Unknown.

HOST INFORMATION. *Salbia cassidalis*DHJ02.

ETYMOLOGY. Named in honor of Dr. Maria Heikkila of the Systematic Entomology Laboratory in the U.S. National Museum of Natural History in recognition of her enthusiastic taxonomizing of ACG Gelechioidea for the inventory.

MATERIAL EXAMINED. HOLOTYPE ♀, host=*Salbia cassidalis*DHJ02 on *Lasiacis ruscifolia*, 10.9305°N, 85.37223°W, 527 m, 23.x–21.xi.2014, DHJPAR0057004 (EMUS). PARATYPE: 1♀, same data as holotype, except date 23.x–13.xi.2014, DHJPAR0057434 (HIC).

Alabagrus markmetzi Sharkey n. sp.

Figure 56

DIAGNOSIS. Gena rounded posteroventrally. Precoxal sulcus with several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly. Propodeum areolate. First tergum weakly convex. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. Scutellum melanic. Body color black and orange to black and red.

NOTES. Specimens of this species were included under *A. roibasi* in Leathers and Sharkey (2003).

DESCRIPTION. Body length 6.2 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum areolate, with at least one closed areola. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Propodeal sculpture more pronounced, areolae deeper.

HOST INFORMATION. *Syllepte aechmisalis*.

ETYMOLOGY. Named in honor of Dr. Mark Metz of the Systematic Entomology Laboratory in the U.S. National Museum of Natural History in recognition of his enthusiastic taxonomizing of ACG Gelechioidea for the inventory.

MATERIAL EXAMINED. HOLOTYPE ♀, host=*Syllepte aechmisalis* on *Triumfetta lappula*, 11.02991°N, 85.45364°W, 345 m, 12.x–12.xi.2004, DHJPAR0009359 (EMUS). PARATYPES: all from *Syllepte aechmisalis* on *Triumfetta lappula*. 1♀, 10.76737°N, 85.43313°W, 325 m, 17.vi–6.vii.2005, DHJPAR0009417. 1♀, 10.76901°N, 85.43465°W, 335 m, 10.viii–2.ix.2011, DHJPAR0046737. 1♂, 10.78938°N, 85.55098°W, 85 m, 22.viii–13.ix.2006, DHJPAR0015388. 1♀, 11.04788°N, 85.45266°W, 280 m, 28.x–21.xi.2004, DHJPAR0009363. 1♀, 10.78506°N, 85.6637°W, 10 m, 17–30.vii.1990, DHJPAR0015476. 1♀, 11.02364°N, 85.49139°W, 290 m, 26.ix–16.x.2004, DHJPAR0015368 (EMUS, HIC).

Alabagrus masneri Sharkey, 1988

Figure 57

Alabagrus masneri Sharkey, 1988:381–2. Holotype ♀, Panama (EMUS)

DIAGNOSIS. Female: Gena rounded posteroventrally. Propodeum lacking complete areolae, mostly or completely smooth. Forewing almost entirely infuscate, ignore small clear patches posterad stigma. Ovipositor about as long as body. Body length 4.01–5.79 mm., shorter than similar species. Head melanic. Mesoscutum yellow. Fore- and midcoxae both partly or entirely melanic. Hind femur mostly or entirely yellow. Male: Darker than females and with a well areolated propodeum and a distinct median carina on tergum 1. Hind coxa partly to entirely melanic. Pronotum pale, or melanic anteriorly and pale posteriorly. Precoxal sulcus with one or several distinct foveae posteroventrally, with

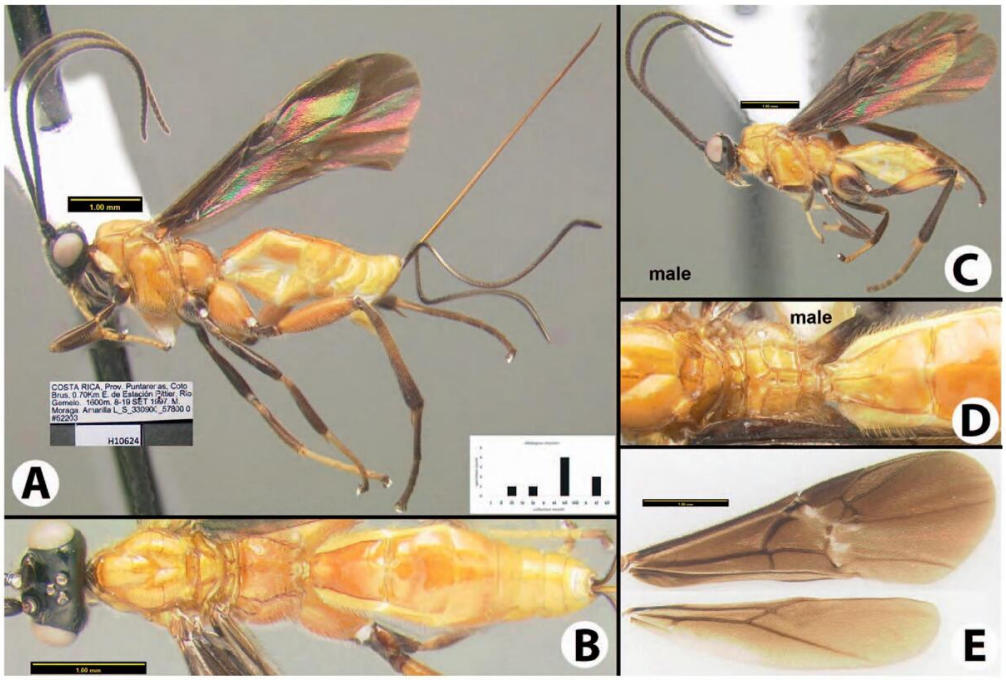


Figure 57 *Alabagrus* masneri, **A**, **B**, **E** female; **C**, **D** male: **A**. lateral habitus, **B**. dorsal habitus, **C**. lateral habitus, **D**. propodeum and tergum 1, **E**. wings.

or without a smooth groove extending anteriorly, or distinct and foveolate ½ or more length of mesopleuron.

DESCRIPTION. Body length 4.9 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly, or absent or almost absent, represented at most by small, shallow depression posteriorly, crenulae always lacking. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.3× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body, or distinctly longer than body.

Males. Propodeum areolate. First tergum often with a median carina.

DISTRIBUTION. Widespread from southern Mexico to northern South America (Leathers and Sharkey, 2003).

Alabagrus mattottoi Sharkey n. sp.
Figure 58

DIAGNOSIS. Gena rounded posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly. Propodeum mostly smooth with a few irregular rugae anteromedially. Propleuron yellow. Forewing almost entirely infuscate, ignore small clear patches posterad stigma. Fore- and midcoxae entirely yellow.

NOTES. Specimens of this species were included under *A. imitatus* in Leathers and Sharkey (2003).

DESCRIPTION. Body length 6.8 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.6× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor distinctly longer than body.

Males. Unknown.

ETYMOLOGY. Named in honor of Mr. Mathew Otto, golfer and friend extraordinaire.

MATERIAL EXAMINED. HOLOTYPE ♀, Guanacaste, Los Almendros, P.N. Guanacaste A.C., 300 m, 3–22.viii.1993, L_N_334800_369800 (INBio).

Alabagrus miqa Sharkey, 1988
Figure 59

Alabagrus miqa Sharkey, 1988:384–5. Holotype ♀, Mexico (BMNH)

DIAGNOSIS. Tergum 1 wider than long with a distinct median longitudinal carina. Third tergum with deep transverse depression. Ovipositor short, not longer than metasoma. Forewing almost entirely infuscate, ignore small clear patches posterad stigma.

DESCRIPTION. Body length 7.3 mm. Gena right angled or acute posteroventrally, or rounded or with an obtuse angle posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly, or absent or almost absent, represented at most by small, shallow depression posteriorly, crenulae always lacking. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum

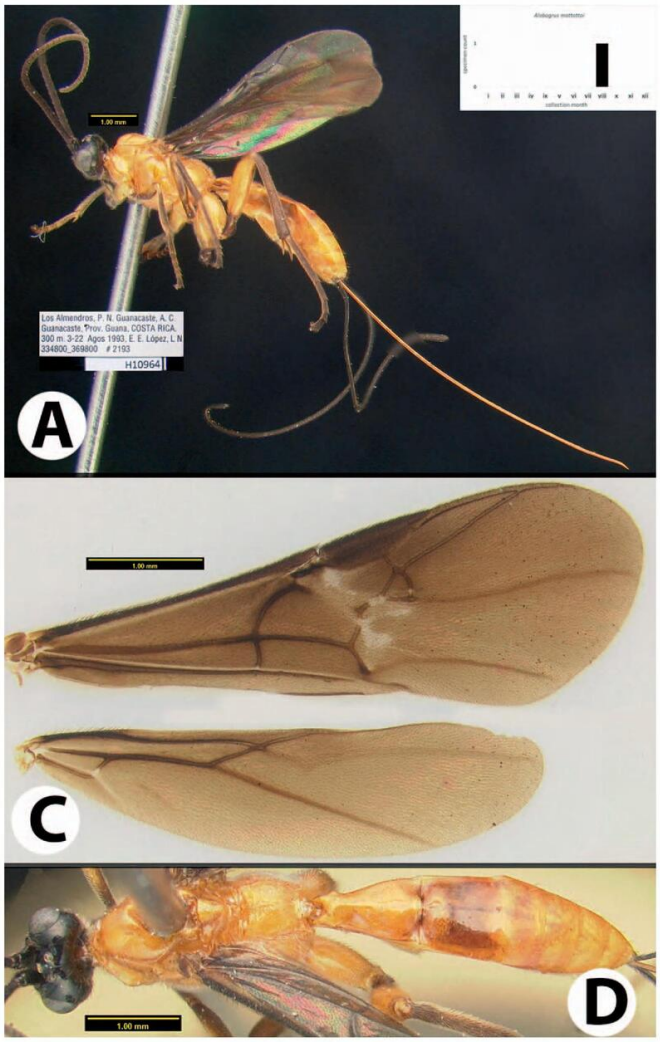


Figure 58 *Alabagrus mattottoi* n. sp., holotype: **A**. lateral habitus, **B**. wings, **C**. dorsal habitus.

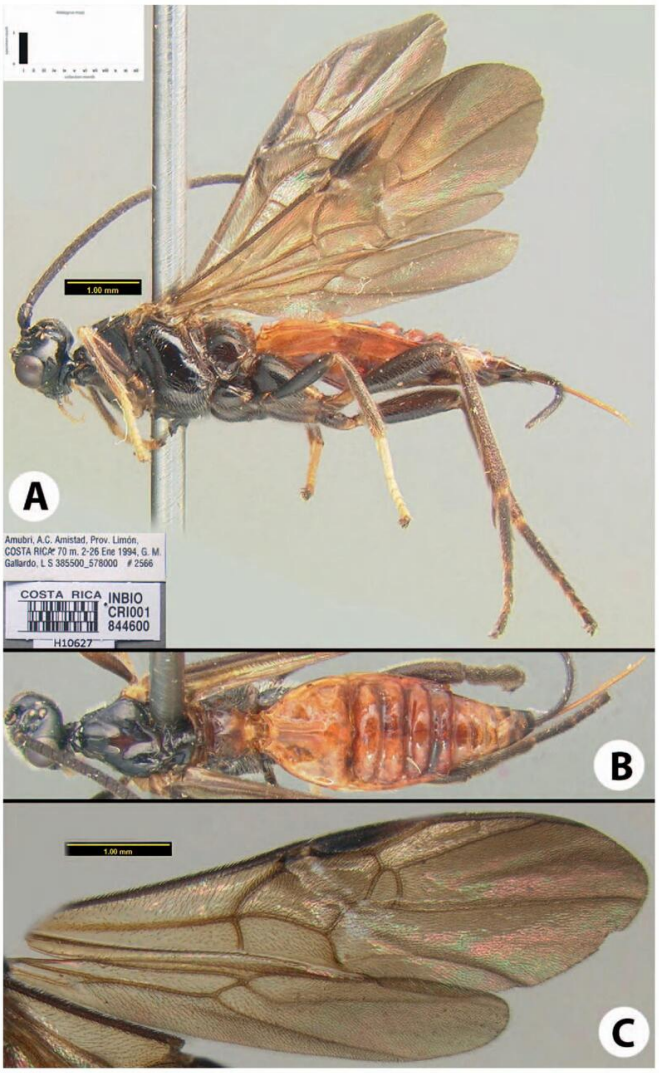


Figure 59 *Alabagrus miqa*: **A**. lateral habitus, **B**. dorsal habitus, **C**. wings.

lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 0.8× longer than wide; with well-defined median longitudinal carina. Third tergum with deep transverse depression. Ovipositor short, not longer than metasoma.

Males. Unknown.

DISTRIBUTION. Southern Mexico to Costa Rica (Leathers and Sharkey, 2003).

Alabagrus nickgrishini Sharkey n. sp.

Figure 60

DIAGNOSIS. Gena right acute posteroventrally. Propodeum completely smooth with a hint of smooth shallow areolation. Forewing lacking two distinct bands; pale basally to near level of apex of stigma with a darkening near parastigma. First tergum weakly convex. Mesoscutum melanic. Tegula yellow. Forefemur black. Hind coxa entirely reddish orange.

NOTES. No specimens that are parasitoids of *Phostria* have *COI* data, but the morphology and color are good matches.

DESCRIPTION. Body length 7.4 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.1× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Unknown.

Variation. Some specimens have a hint of a posterior median areola on the propodeum.

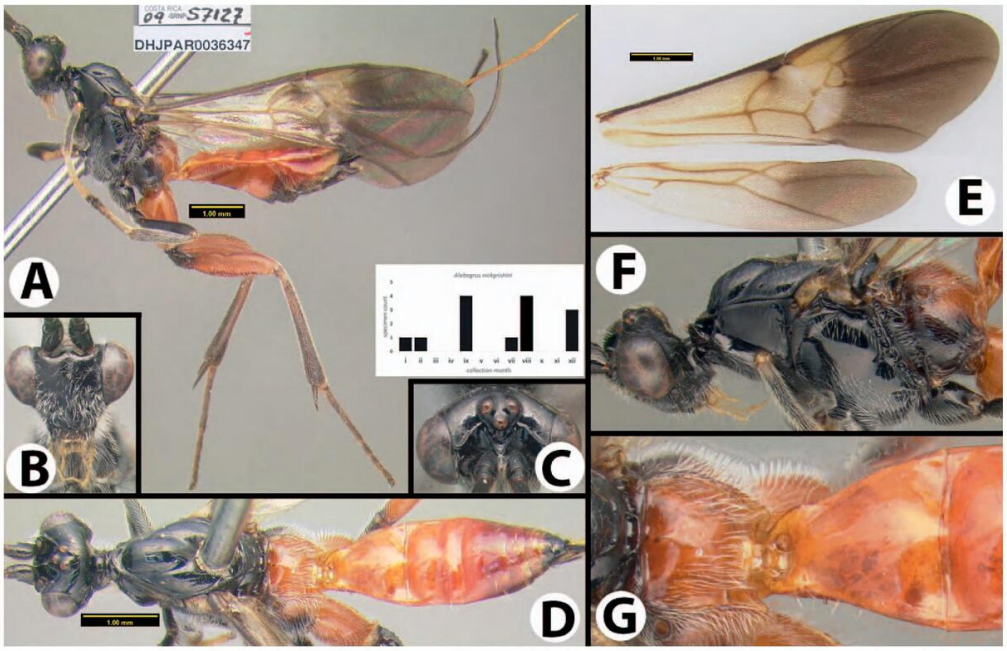


Figure 60 *Alabagrus nickgrishini* n. sp., holotype: **A**. lateral habitus, **B**. anterior head, **C**. dorsal head, **D**. dorsal habitus, **E**. wings, **F**. lateral head and mesosoma, **G**. propodeum and tergum 1.

HOST INFORMATION. *Microthyris alvinalis*, *Erilusa leucoplagialis*, *Phostria latiapicalis*, *Pleuroptya* Solis02.

ETYMOLOGY. Named in honor of Dr. Nick Grishin of the Howard Hughes Medical Institute, Dallas, Texas, in recognition of his enthusiastic taxonomizing of Neotropical Hesperiidae and deep genetic dissection of ACG complexes.

MATERIAL EXAMINED. HOLOTYPE ♀, host=*Microthyris alvinalis* on *Banisteriopsis muricata*, 10.77079°N, 85.37422°W, 733 m, 6–24.viii.2009, DHJPAR0036347 (EMUS). PARATYPES: 1♀, from *Erilusa leucoplagialis* on *Calycophyllum candidissimum*, 10.76261°N, 85.429790°W, 330 m, 29.xii.2014–14.i.2015, DHJPAR0057425. 1♀, from *Microthyris alvinalis* on *Banisteriopsis muricata*, 10.83764°N, 85.61871°W, 295 m, 12–29.viii.2011, DHJPAR0045022. 1♀, 28.vi–12.vii.2000, DHJPAR0015345. 1♀, 11.01087°N, 85.48817°W, 400 m, 25.viii–14.ix.2009, DHJPAR0037892. 2♀, from *Phostria latiapicalis* on *Calycophyllum candidissimum*, 10.83575°N, 85.61253°W, 290 m, 17.xi–4.xii.1990, DHJPAR0015342, DHJPAR0015343. 1♀, 10.83575°N, 85.61253°W, 290 m, 17.xi–4.xii.1990, DHJPAR0015344. 1♀, from *Pleuroptya* Solis02 on *Guettarda macrosperma*, 10.77079°N, 85.37422°W, 733 m, 11–28.ix.2012, DHJPAR0050367. 1♀, 11–30.ix.2012, DHJPAR0050366 (EMUS, HIC).

Alabagrus nicoya Sharkey, 1988
Figure 61

Alabagrus nicoya Sharkey, 1988:388–9. Holotype ♀, Costa Rica (CNCI)

DIAGNOSIS. Hind femur wider than any other species and heavily rugose ventrally. First metasomal tergite weakly convex and wider than long. Metapleuron and median tergites 1–3 orange. Pronotum melanic. First tergum varying from weakly convex to with a rounded longitudinal bulge.

DESCRIPTION. Body length 9.3 mm. Gena rounded or with an obtuse angle posteroventrally. Precoxal sulcus distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron areolate rugose in ventral quarter or less, or areolate rugose in ventral half or more. Propodeum areolate, with at least one closed areola. Hind femur heavily sculptured ventrally with large aciculations or rugosities, distinctly more heavily sculptured than dorsal surface. First tergum 0.7× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. As in females.

HOST INFORMATION. *Dichogama colotha*, *Dichogama diffusalis*, *Dichogama redtenbacheri*.

DISTRIBUTION. Southern Mexico to northwestern Costa Rica.

MATERIAL EXAMINED. Reared specimens: 1♀, from *Dichogama colotha* on *Capparis flexuosa*, 10.83575°N, 85.61253°W, 290 m, 30.vii–22.viii.2001, 01-SRNP-16138. 1♀, 18.vii–22.viii.2001, 01-SRNP-15782. 1♂, on *Capparis incana*, 10.81703°N, 85.64366°W, 270 m, 18.viii–14.ix.1993, 93-SRNP-4958. 1♂, 18.viii–20.ix.1993, 93-SRNP-4953. 1♀, 3.viii–13.ix.1992, DHJPAR0015396. 1♀, 3.viii–20.ix.1992, 92-SRNP-4222. 1♀, 3.viii–5.ix.1992, DHJPAR0015397. 1♂, 31.vii.1992–12.iii.1993, DHJPAR0015398. 1♀, 5.viii.1992–22.iii.1993, 92-SRNP-4242. 1♂, 5.viii–10.ix.1992, DHJPAR0015394. 1♀, 5.viii–29.ix.1992, DHJPAR0015395. 1♂, 5.viii–5.ix.1992, 92-SRNP-4230. 1♀, 7.viii–7.ix.1992, DHJPAR0015393. 1♂, on *Capparis indica*, 10.78938°N, 85.55098°W, 85 m, 12.viii–10.ix.2007, DHJPAR0022193. 1♂, 10.79342°N, 85.6666°W, 5 m, 10.v–5.vi.1996, 96-SRNP-1278. 1♂, 10.80274°N, 85.67423°W, 10 m, 15.vi–18.vii.1996, 96-SRNP-4969. 1♀, 10.8269°N, 85.60413°W, 240 m, 16.vii–25.viii.2001, 01-SRNP-15698. 1♂, 10.83575°N, 85.61253°W, 290 m, 11.vii–10.viii.1998, 98-SRNP-9501. 1♀,

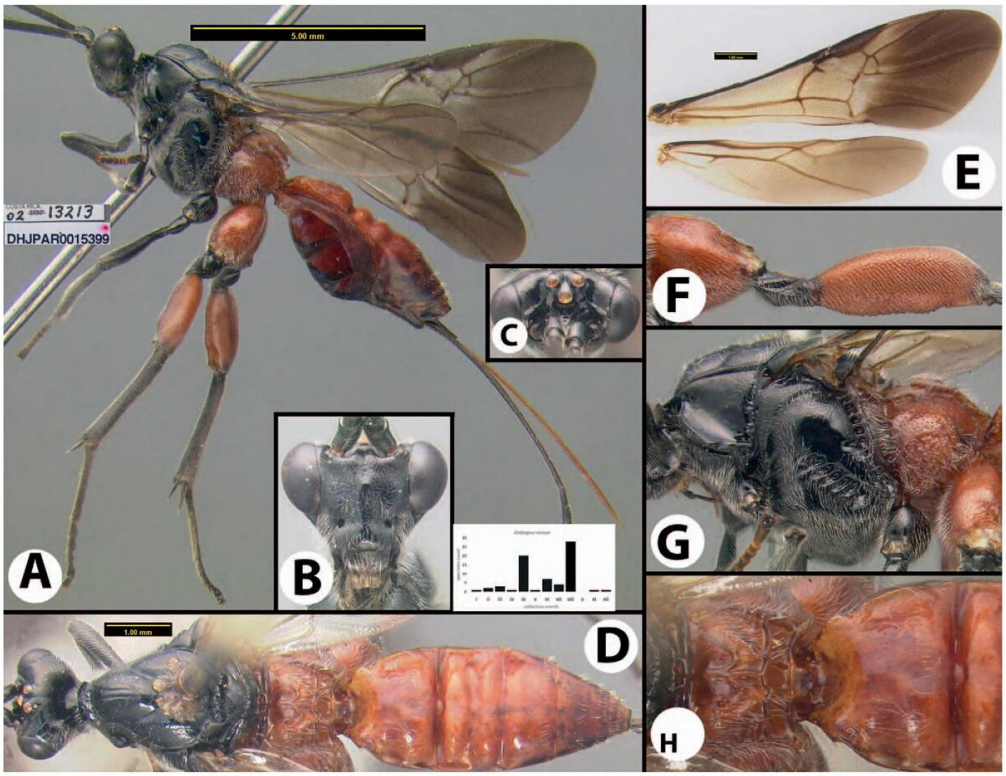


Figure 61 *Alabagrus nicoya*: **A**. lateral habitus, **B**. anterior head, **C**. dorsal head, **D**. dorsal habitus, **E**. wings, **F**. hind leg, **G**. lateral mesosoma, **H**. propodeum and tergum 1.

11.vii–14.xii.1998, 98-SRNP-9492. 1♂, 14.viii.2002–2.ii.2003, 02-SRNP-13211. 1♀, 1♂, 14.viii–10.ix.2002, DHJPAR0015399, DHJPAR0015400. 1♀, 14.viii–11.ix.2002, 02-SRNP-13198. 1♂, 14.viii–12.ix.2002, 02-SRNP-13187. 1♀, 14.viii–13.ix.2002, 02-SRNP-13194. 1♀, 14.viii–26.xi.2002, 02-SRNP-13199. 1♀, 16.vi–26.vii.1989, 89-SRNP-204. 2♀, 1♂, 21.v–18.vi.2001, 01-SRNP-12510, 01-SRNP-12512, 01-SRNP-12513. 1♀, 21.v–26.vi.2001, 01-SRNP-12518. 1♂, 30.vii.2001–23.iii.2002, 01-SRNP-16233. 1♀, 30.vii–22.viii.2001, 01-SRNP-16203. 1♂, 30.vii–23.viii.2001, 01-SRNP-16173. 2♀, 1♂, 30.vii–25.viii.2001, 01-SRNP-16151, 01-SRNP-16211, 01-SRNP-16214. 1♂, 30.vii–27.viii.2001, 01-SRNP-16153. 1♀, 1♂, 30.vii–28.viii.2001, 01-SRNP-16254, 01-SRNP-16290. 1♀, 30.vii–29.viii.2001, 01-SRNP-16272. 1♂, 30.vii–30.viii.2001, 01-SRNP-16302. 1♂, 8.vii–10.viii.1979, 79-SRNP-211. 1♀, 10.84389°N, 85.61384°W, 300 m, 19.xii.2006–22.i.2007, DHJPAR0016931. 2♀, 21.v–12.vi.1993, DHJPAR0015392, 93-SRNP-831. 1♀, 7.vii–19.viii.1990, 90-SRNP-1194. 1♀, 9.vii–11.viii.2012, DHJPAR0049650. 1♀, 10.85413°N, 85.61534°W, 280 m, 13.vii–1.viii.1994, 94-SRNP-5606. 1♀, from *Dichogama diffusalis* on *Capparis discolor*, 11.03004°N, 85.52699°W, 280 m, 26.i–23.ii.2001, 01-SRNP-9101. 1♂, from *Dichogama redtenbacheri* on *Capparis frondosa*, 10.78506°N, 85.6637°W, 10 m, 17.vii–10.viii.1990, 90-SRNP-1407.2. 1♂, 17.vii–11.viii.1990, 90-SRNP-1407.3. 1♂, 17.vii–8.viii.1990, 90-SRNP-1407.1. 1♂, 7–27.vii.1990, 90-SRNP-1242.1. 1♀, 10.83381°N, 85.61271°W, 295 m, 12.vii–7.viii.2014, DHJPAR0055977. 1♂, 15.vii–3.viii.2014, DHJPAR0055972. 1♀, 15.vii–7.viii.2014, DHJPAR0055976. 1♀, 10.83575°N, 85.61253°W, 290 m, 12.viii–4.ix.1990, 90-SRNP-1955. 1♀, 12.viii–4.ix.1990, 90-SRNP-1955. 1♂, on *Morisonia americana*, 10.82224°N, 85.64338°W, 270 m, 11.viii–4.ix.1993, DHJPAR0015391 (EMUS, HIC).

Alabagrus patsharkeyi Sharkey n. sp.

Figure 62

DIAGNOSIS. Gena rounded posteroventrally. Body length more than 7 mm, and ovipositor clearly longer than body. Precoxal sulcus distinct and foveolate about ½ length of mesopleuron. Forewing almost entirely infuscate, ignore small clear patches posterad stigma. Propleuron yellow, or melanic and yellow. Hind coxa yellow except extreme apex melanic. Propodeum with weak rugose sculpture medially. Fore- and midcoxae both partly or entirely melanic.

NOTES. Specimens of this species were included under *A. imitatus* in Leathers and Sharkey (2003).

DESCRIPTION. Body length 8.7 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly, or distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum areolate, with at least one closed areola, or lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface, or heavily sculptured ventrally with large aciculations or rugosities, distinctly more heavily sculptured than dorsal surface. First tergum 1.4× longer than wide; varying from weakly convex to with a rounded longitudinal bulge.

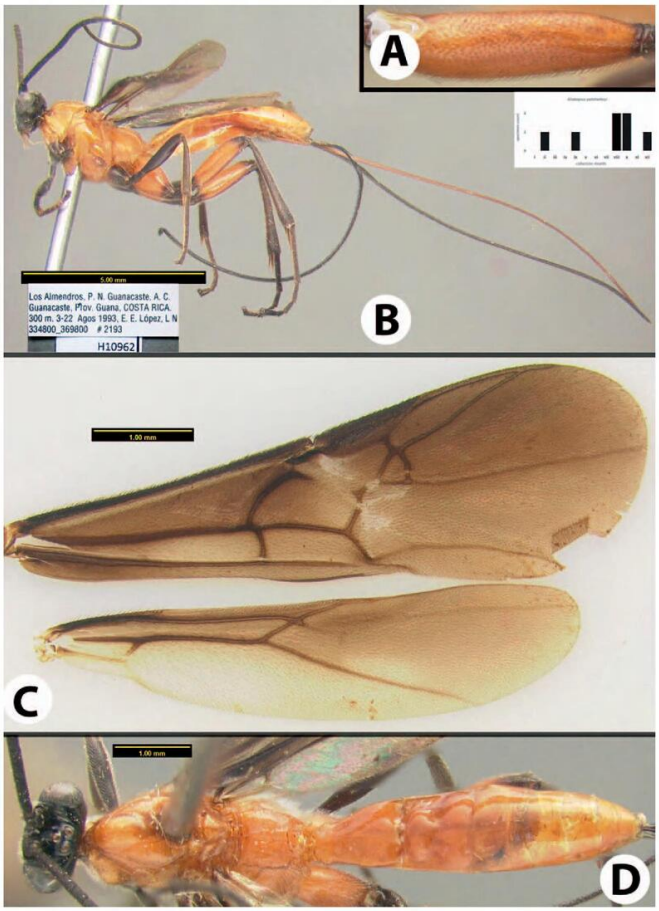


Figure 62 *Alabagrus patsharkeyi* n. sp., holotype: **A**. ventral hind femur, **B**. lateral habitus, **C**. wings, **D**. dorsal habitus.

Third tergum lacking transverse depression, or depression barely indicated. Ovipositor distinctly longer than body.

Males. Unknown.

ETYMOLOGY. Named in honor of Patrick Sharkey, second youngest brother of M.J.S. and great fighter.

MATERIAL EXAMINED. HOLOTYPE ♀, Guanacaste, ACG, Los Almendros, 3–22.viii.1993, 300 m, LN 334800 369800 (INBio). PARATYPES: 1♀, same data as holotype (HIC). 4♀, Guanacaste, ~4 km S Cañas, ix–xii, 1990–1991, F. Parker (EMUS, EMUS, HIC). 1♀, Limón, Sector Cocori, 30 km N Cariari, 100 m, ii.1995, LN 286000 567500 (INBio).

Alabagrus paulgoldsteini Sharkey n. sp.

Figure 63

DIAGNOSIS. Gena acute posteroventrally. Hind femur heavily sculptured ventrally with aciculations or rugosities, distinctly more heavily sculptured than dorsal surface. Third tergum with transverse depression barely indicated. Most of dorsal surface of hind femur melanic, most of ventral surface pale. Terga 1–3 orange, remaining terga melanic. Hind femur melanic dorsally, pale ventrally. Forewing yellow basally, infuscate apically, with a melanic patch posterad parastigma. Propodeum orange, contrasting with melanic metapleuron.

DESCRIPTION. Body length 13 mm. Gena right angled or acute posteroventrally. Precoxal sulcus distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins, or areolate rugose in ventral quarter or less. Propodeum areolate, with at least one closed areola. Hind femur heavily sculptured ventrally with large aciculations or rugosities, distinctly more heavily sculptured than dorsal surface. First tergum 1× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Unknown.

HOST INFORMATION. *Syllepte amando*DHJ02.

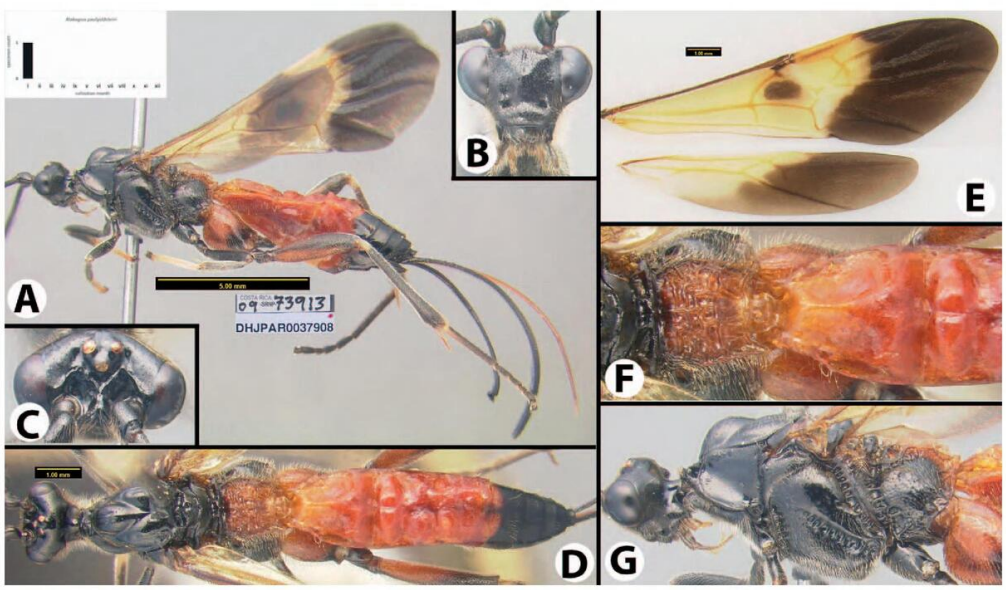


Figure 63 *Alabagrus paulgoldsteini* n. sp., holotype: **A**. lateral habitus, **B**. anterior head, **C**. dorsal head, **D**. dorsal habitus, **E**. wings, **F**. propodeum and tergum 1, **G**. lateral head and mesosoma.

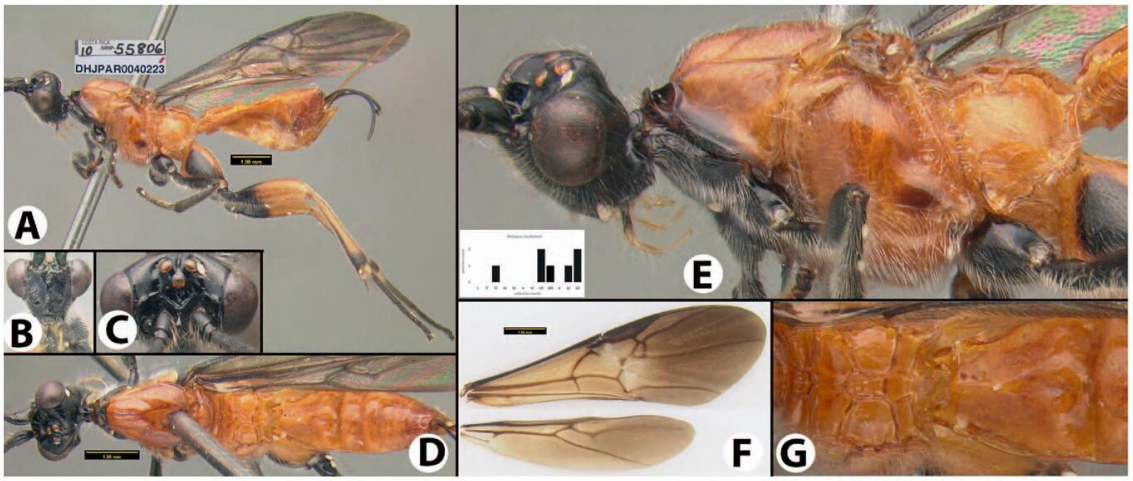


Figure 64 *Alabagrus paulheberti* n. sp., holotype: **A**. lateral habitus, **B**. anterior head, **C**. dorsal head, **D**. dorsal habitus, **E**. lateral head and mesosoma, **F**. wings, **G**. propodeum and tergum 1.

ETYMOLOGY. Named in honor of Dr. Paul Goldstein of the Systematic Entomology Laboratory in the U.S. National Museum of Natural History in recognition of his diligent and enthusiastic taxonomizing of ACG Noctuoidea for the inventory.

MATERIAL EXAMINED. HOLOTYPE ♀, host=*Syllepte amando*DHJ02 on *Banara guianensis*, 11.01525°N, 85.39766°W, 415 m, 28.xi.2009–8.i.2010, DHJPAR0037908 (EMUS).

Alabagrus paulheberti Sharkey n. sp.
Figure 64

DIAGNOSIS. Ovipositor short, not longer than metasoma. Hind femur heavily sculptured ventrally with aciculations or rugosities, distinctly more heavily sculptured than dorsal surface. Pronotum melanic anteriorly and ventrally, pale posteriorly and dorsally.

DESCRIPTION. Body length 8.5 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum areolate, with at least one closed areola. Hind femur heavily sculptured ventrally with large aciculations or rugosities, distinctly more heavily sculptured than dorsal surface. First tergum 1.1× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor short, not longer than metasoma.

Males. Unknown.

HOST INFORMATION. *Aponia itzalis*, *Aponia minnithalis*.

ETYMOLOGY. Named in honor of Dr. Paul Hebert of the Centre for Biodiversity Genomics of the University of Guelph in recognition of his essential invention and evolution of DNA barcoding, without which the ACG Lepidoptera and parasitoid inventory would be impossible.

MATERIAL EXAMINED. HOLOTYPE ♀, host=*Aponia itzalis* on *Cornutia grandifolia*, 10.76737°N, 85.43313°W, 325 m, 20.vi–9.vii.2010, DHJPAR0040223 (EMUS). PARATYPES: 1♀, from *Aponia itzalis* on *Cornutia grandifolia,* 10.85827°N, 85.61089°W, 280 m, 30.vi–26.vii.1989, DHJPAR0015389. 1♀, from *Aponia minnithalis* on *Cornutia grandifolia*, 10.87741°N, 85.32363°W, 560 m, 5.xi–1.xii.2011, DHJPAR0046953. 1♀, 5–27.xi.2011, DHJPAR0046746 (EMUS, HIC).

Alabagrus paulsharkeyi Sharkey n. sp.
Figure 65

DIAGNOSIS. Forefemur yellow. Pronotum and scutellum melanic. Metasoma entirely yellow.

NOTES. Specimens of this species were included under *A. latreillei* in Leathers and Sharkey (2003).

DESCRIPTION. Body length 6.4 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum areolate, with at least one closed areola. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface, or heavily sculptured ventrally with large aciculations or rugosities, distinctly more heavily sculptured than dorsal surface. First tergum 1.3× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Unknown.

ETYMOLOGY. Named in honor of Paul Sharkey, older brother of M.J.S. and surgeon extraordinaire.

MATERIAL EXAMINED. HOLOTYPE ♀, Heredia, 50–150 m, Est. Biol. La Selva, 10.43°N, 84.02°W, 10.vii.2000 (INBio).

Alabagrus paulthiaucourti Sharkey n. sp.
Figure 66

DIAGNOSIS. Gena rounded posteroventrally. First tergum with well-defined median longitudinal carina in females and with several longitudinal carinae and rugosities in male. Hind femur heavily sculptured ventrally with aciculations or rugosities, distinctly more

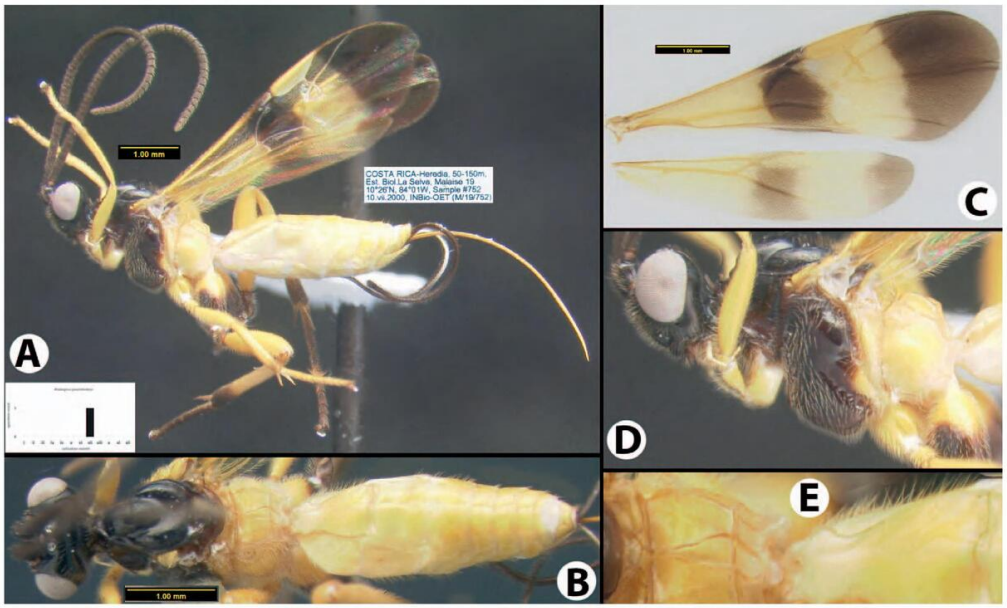


Figure 65 *Alabagrus paulsharkeyi* n. sp., holotype: **A**. lateral habitus, **B**. Dorsal habitus, **C**. wings, **D**. Lateral head and mesosoma, **E**. propodeum and tergum 1.

heavily sculptured than dorsal surface. Pronotum melanic. All terga except apical (which is intermediate or variable) orange.

DESCRIPTION. Body length 9 mm. Gena right angled or acute posteroventrally. Precoxal sulcus distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron areolate rugose in ventral quarter or less. Propodeum areolate, with at least one closed areola. Hind femur heavily sculptured ventrally with large aciculations or rugosities, distinctly more heavily sculptured than dorsal surface. First tergum 1.4× longer than wide; with well-defined median longitudinal carina. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body, or distinctly longer than body.

Males. Male with more propodeal sculpture; first tergum with rugosostriate sculpture laterally.

HOST INFORMATION. *Diatraea* Janzen989.

ETYMOLOGY. Named in honor of Dr. Paul Thiaucourt of Paris, France, in recognition of his long and fruitful taxonomizing of the Notodontidae of the world, with special attention to the hundreds found by the ACG inventory.

MATERIAL EXAMINED. HOLOTYPE ♀, host=*Diatraea* Janzen989 on *Paspalum orbiculatum*, 10.9301°N, 85.25205°W, 109 m,

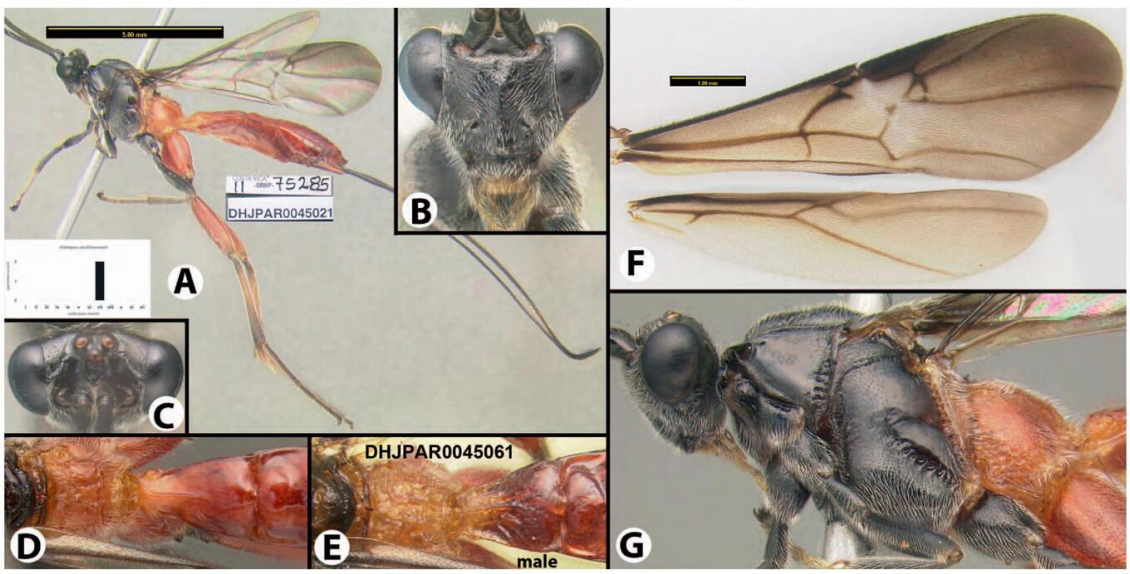


Figure 66 *Alabagrus paulthiaucourti* n. sp., **A–D**, **F**, **G** holotype; **E** paratype male: **A**. lateral habitus, **B**. anterior head, **C**. dorsal head, **D**. propodeum and tergum 1, **E**. propodeum and tergum 1, **F**. wings, **G**. Lateral head and mesosoma.

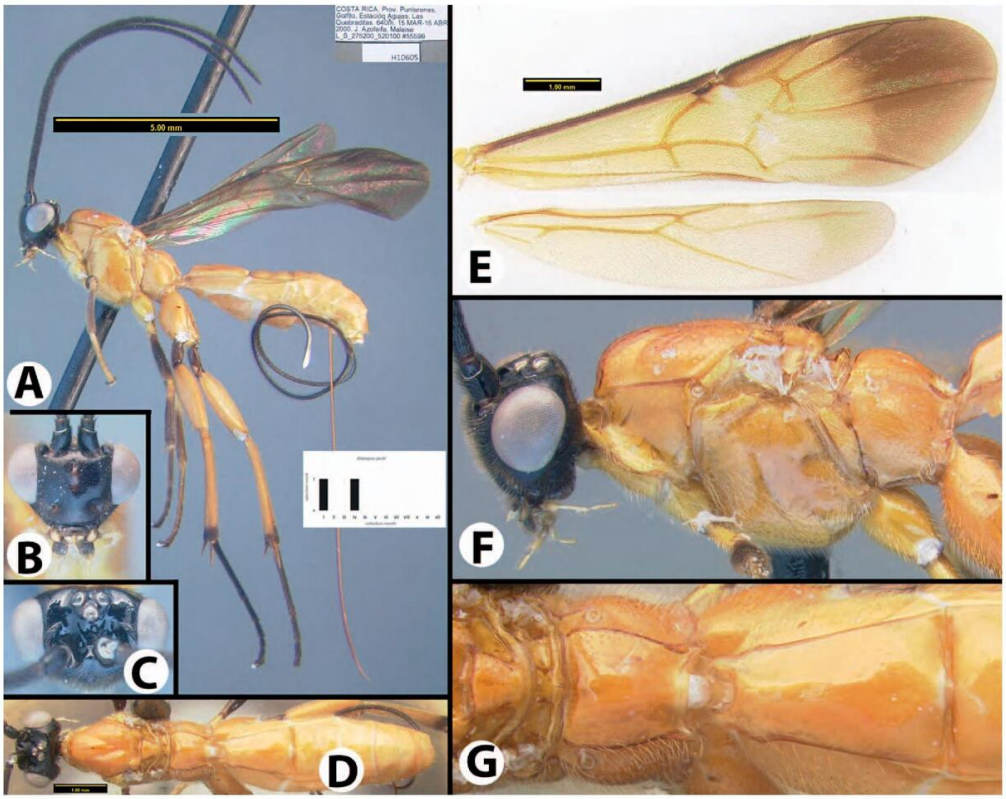


Figure 67 *Alabagrus pecki*: **A**. lateral habitus, **B**. anterior head, **C**. dorsal head, **D**. dorsal habitus, **E**. wings, **F**. lateral head and mesosoma, **G**. propodeum and tergum 1.

27.vi–18.vii.2011, DHJPAR0045021 (EMUS). PARATYPE: 1♂, same data as holotype, DHJPAR0045061 (EMUS).

Alabagrus pecki Sharkey, 1988
Figure 67

Alabagrus pecki Sharkey, 1988:395. Holotype ♀, Mexico (CNCI)

DIAGNOSIS. Females: Gena rounded posteroventrally. Precoxal sulcus absent or almost absent, represented at most by small, shallow depression posteriorly, crenulae always lacking. Propodeum smooth with areolate pattern barely indicated. Propleuron and mesoscutum yellow. Forewing yellow in basal ¾, infuscate distally. Fore- and midfemora mostly or entirely melanic. Margins of mesopleuron without a greenish tinge, concolorous with remainder of pleuron. Males: Propodeum with more sculpture, transverse and longitudinal rugae/carinae present. Forewing almost entirely infuscate, ignore small clear patches posterad stigma. Propleuron yellow, or melanic and yellow. Forefemur melanic.

DESCRIPTION. Body length 8.5 mm. Gena right angled or acute posteroventrally. Precoxal sulcus absent or almost absent, represented at most by small, shallow depression posteriorly, crenulae always lacking. Margin between metepisternum and metepimeron smooth. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.2× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body, or distinctly longer than body.

Males. Propodeum with more sculpture, weak transverse and longitudinal rugae/carinae present; forewing almost entirely infuscate; first median tergite may have a rounded median longitudinal carina.

DISTRIBUTION. Southern Mexico (Palenque) to Costa Rica, where it is widespread at lower altitudes.

***Alabagrus quickei* Sharkey n. sp.**
Figure 68

DIAGNOSIS. Precoxal sulcus absent or almost absent, represented at most by small, shallow depression posteriorly, crenulae always lacking. Forefemur melanic. Forewing yellow basally, infuscate apically with a large infuscate patch below parastigma. Scutellum melanic. Metapleuron entirely pale. Apical metasomal terga melanic.

NOTES. Specimens of this species were included under *A. paruyana* in Leathers and Sharkey (2003).

DESCRIPTION. Body length 9.8 mm. Gena rounded or with an obtuse angle posteroventrally. Occiput dorsolaterally rounded. Precoxal sulcus absent or almost absent, represented at most by small, shallow depression posteriorly, crenulae always lacking. Margin between metepisternum and metepimeron smooth. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1× longer than wide; varying from weakly convex to with a rounded longitudinal bulge.

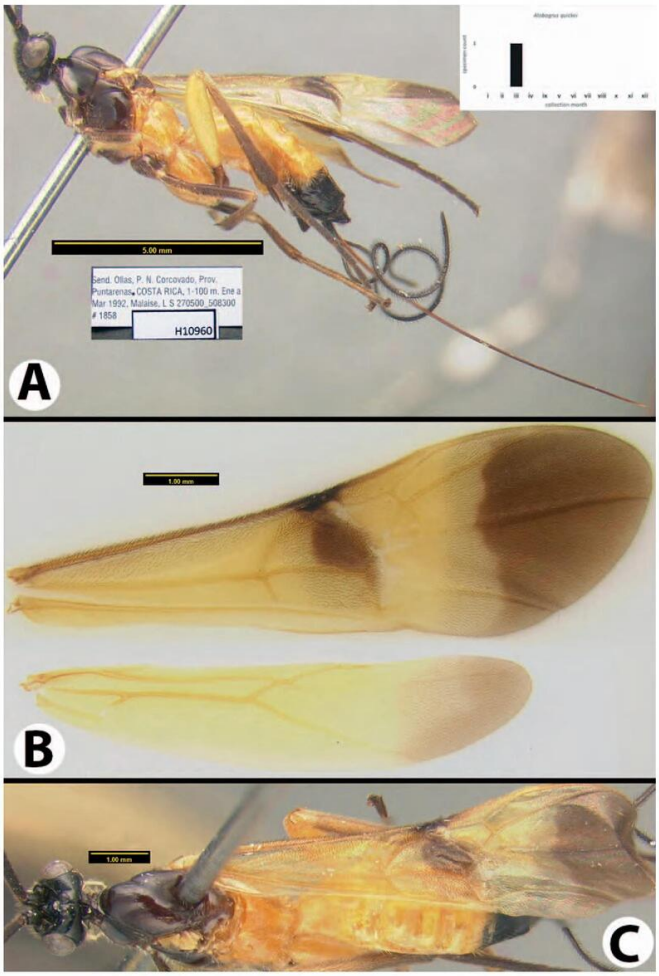


Figure 68 *Alabagrus quickei* n. sp., holotype: **A**. lateral habitus, **B**. wings, **C**. dorsal habitus.

Third tergum lacking transverse depression, or depression barely indicated. Ovipositor distinctly longer than body.

Males. Unknown.

ETYMOLOGY. Named in honor of Dr. Donald Quicke, hymenopterist extraordinaire.

MATERIAL EXAMINED. HOLOTYPE ♀, Puntarenas, P.N. Corcovado, 1–100 m, i–iii.1992, LS 270500 508300 (INBio).

Alabagrus ramyamanjunathae Sharkey n. sp.
Figure 69

DIAGNOSIS. Gena right angled or acute posteroventrally. Hind femur heavily sculptured ventrally with aciculations or rugosities, distinctly more heavily sculptured than dorsal surface. Forewing yellow in basal ⅔, infuscate apically with infuscate patch posterior to parastigma, costal vein melanic. Hind femur entirely melanic, sometimes with a hint of reddish color ventrally but much darker than *A. paulgoldsteini*. Propodeum orange contrasting with melanic metapleuron. Third tergum lacking transverse depression, or depression barely indicated. Apical metasomal terga melanic.

DESCRIPTION. Body length 8.9 mm. Gena right angled or acute posteroventrally. Precoxal sulcus distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron areolate rugose in ventral quarter or less. Propodeum areolate, with at least one closed areola. Hind femur heavily sculptured ventrally with large aciculations or rugosities, distinctly more heavily sculptured than dorsal surface. First tergum 0.9× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Unknown.

HOST INFORMATION. *Phostria temira*.

ETYMOLOGY. Named in honor of Ms. Ramaya Manjunath of the Centre for Biodiversity Genomics (CBG), University of Guelph, Canada, in recognition of her long and patient curation of the ACG Lepidoptera inventory data insertion to the BOLD web site for DNA barcoding for the CBG.

MATERIAL EXAMINED. HOLOTYPE ♀, from *Phostria temira* on *Ipomoea batatas*, 10.93332°N, 85.25331°W, 135 m, 28.viii–13.ix.2009, DHJPAR0036701 (EMUS).

Alabagrus reddypallii Sharkey n. sp.
Figure 70

DIAGNOSIS. Gena rounded posteroventrally. Propleuron melanic. Pronotum melanic anteriorly, pale posteriorly. Forewing almost entirely infuscate, ignore small clear patches posterad stigma. Propodeum mostly smooth with some rugae anteromedially and laterally.

NOTES. Specimens of this species were treated as part of *A. pecki* in Leathers and Sharkey (2003).

DESCRIPTION. Body length 6.3 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly, or distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.2× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Unknown.

ETYMOLOGY. Named in honor of Dr. Reddy Palli, present chair of the Department of Entomology, University of Kentucky, for his leadership and support.

MATERIAL EXAMINED. HOLOTYPE ♀, Heredia, 16 km SSE La Virgen, 10.27°N, 84.08°W, 1150 m, 21.iii.–09.iv.2001 (INBio). PARATYPE: 1♀, Mexico, Yucatan, Uxmal ruins, 5 m, 2.viii.1983 (HIC).

Alabagrus roibasi Sharkey, 1988
Figure 71

Alabagrus roibasi Sharkey, 1988:397–8. Holotype ♀, Costa Rica (EMUS)

DIAGNOSIS. Gena rounded or with an obtuse angle posteroventrally. Metapleuron entirely pale. Forewing with yellowish pigmentation basally that reaches second submarginal cell. Mesoscutum melanic. Hind coxa with a large melanic patch laterally. Metasoma mostly orange, apical two terga melanic.

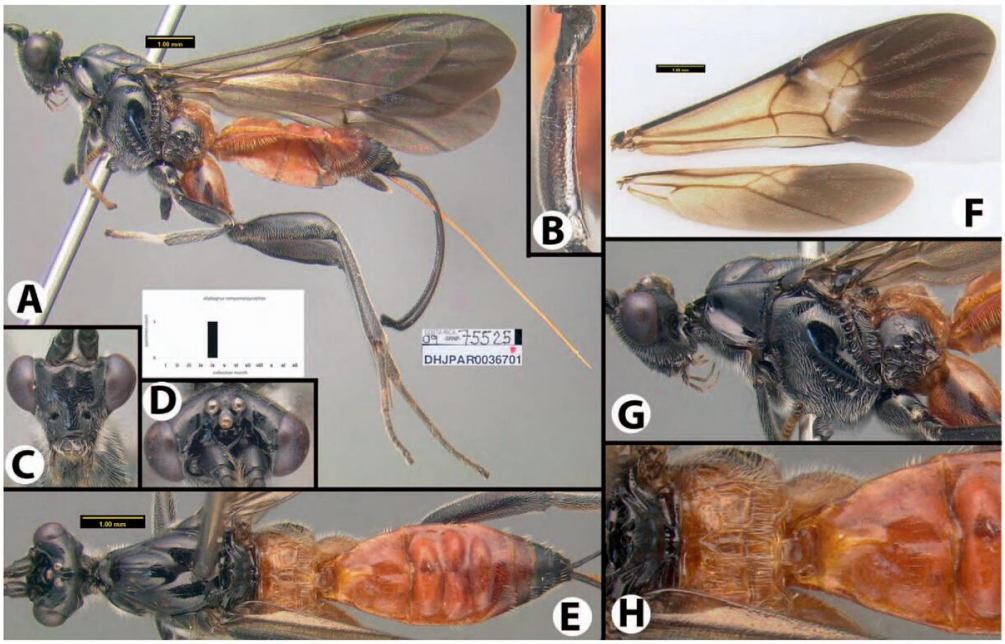


Figure 69 *Alabagrus ramyamanjunathae*, holotype: **A**. lateral habitus, **B**. ventral hind femur, **C**. anterior head, **D**. dorsal head, **E**. dorsal habitus, **F**. wings, **G**. lateral head and mesosoma, **H**. propodeum and tergum 1.

DESCRIPTION. Body length 7.3 mm. Gena rounded or with an obtuse angle posteroventrally. Precoxal sulcus distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins, or areolate rugose in ventral quarter or less. Propodeum areolate, with at least one closed areola, or lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface, or heavily sculptured ventrally with large aciculations or rugosities, distinctly more heavily sculptured than dorsal surface. First tergum 1.2× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Propodeum with more pronounced sculpture; first median tergite wider.

HOST INFORMATION. *Syllepte aechmisalis*, *Microthyris prolongalis*, *Phaedropsis cernalis*, *Phostria oajacalis*.

DISTRIBUTION. Sharkey (1988) listed the distribution of this species as widespread in Mexico and ranging to Guanacaste Costa Rica; however the *COI* data presented here suggests that he, and consequently Leathers and Sharkey (2003), confounded multiple species within the concept of *A. roibasi*. Here, we treat the former concept of *A. roibasi* as three species, including *A. brianharrisi* and *A. markmetzi*. The holotype of *A. roibasi* is from Guanacaste and matches well morphologically with the specimens listed below. It is likely that many, or perhaps all, of the specimens that are found north of Guanacaste belong to other species.

MATERIAL EXAMINED. Reared specimens: 1♀, from *Syllepte aechmisalis* on *Triumfetta lappula*, 10.83764°N, 85.61871°W, 295 m, host collection 10.vii.1993, 93-SRNP-3578. 1♀, 10.85827°N, 85.61089°W, 280 m, host collection 3.x.2000, 00-SRNP-18739. 1♀, from *Microthyris prolongalis* on *Ipomoea alba*, 10.77175°N, 85.434°W, 305 m, 28.ix–16.x.2011, DHJPAR0046736. 1♀, from *Phaedropsis cernalis* on *Triplaris melaenodendron*, 10.78506°N, 85.6637°W, 10 m, 7–22.vii.1990, 90-SRNP-1247A. 1♀, 10.78938°N, 85.55098°W, 85 m, host collection 26.viii.2000, 00-SRNP-17699. 1♀, from *Phostria oajacalis* on *Merremia umbellata*, 11.02681°N, 85.49547°W, 290 m, 4.viii–5.ix.2009, DHJPAR0037882. 1♂, 4–21.viii.2009, DHJPAR0036690. 1♀, 1♂, 4–28.viii.2009, DHJPAR0036691, DHJPAR0036693. 1♀, on *Turbina corymbosa*, 11.02865°N,

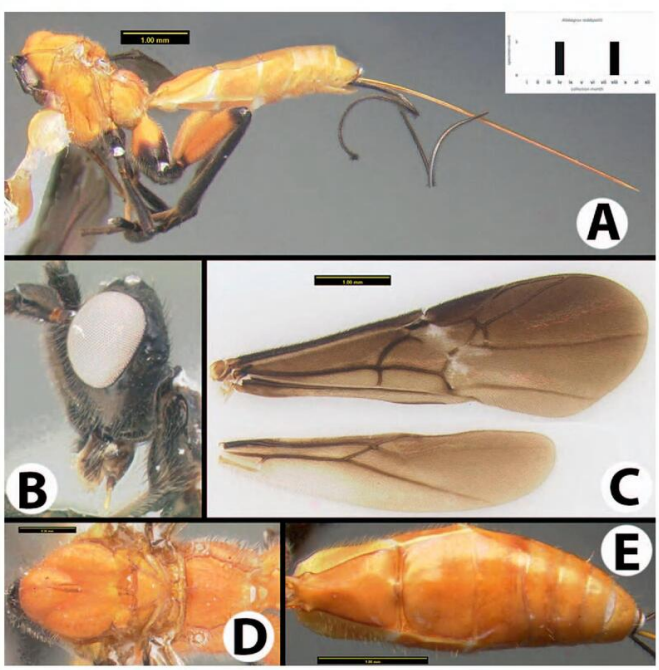


Figure 70 *Alabagrus reddypallii* n. sp., holotype: **A**. lateral habitus, **B**. lateral head, **C**. wings, **D**. dorsal mesosoma, **E**. dorsal metasoma.

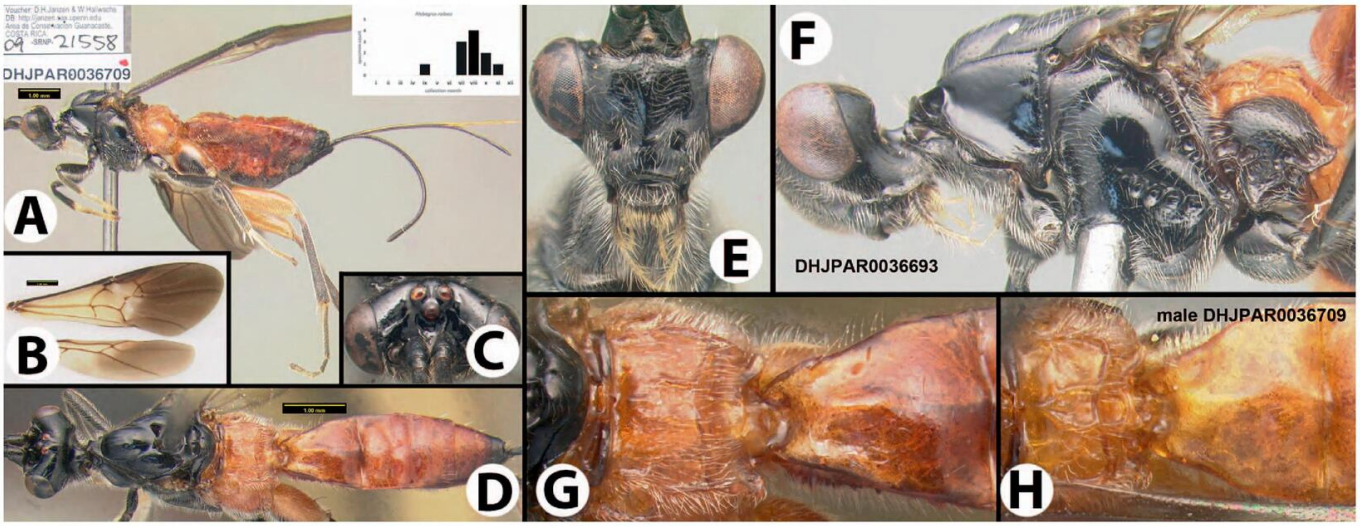


Figure 71 *Alabagrus roibasi*, **A–G** female; **H** male: **A**. lateral habitus, **B**. wings, **C**. dorsal head, **D**. dorsal habitus, **E**. anterior head, **F**. lateral head and mesosoma, **G**. propodeum and tergum 1, **H**. propodeum and tergum 1.

85.48669°W, 280 m, 16–27.xi.2004, DHJPAR0009358. 1♀, 11.03376°N, 85.47715°W, 290 m, 15.vi–2.vii.2009, DHJPAR0036709 (EMUS, HIC).

Alabagrus rudolfmeieri Sharkey n. sp.

Figure 72

DIAGNOSIS. Precoxal sulcus absent, represented at most by small, shallow depression posteriorly, crenulae always lacking. Pronotum melanic anteriorly, pale posteriorly. Forewing almost entirely infuscate, ignore small clear patches posterad stigma. Hind femur entirely melanic.

DESCRIPTION. Body length 9.3 mm. Gena rounded or with an obtuse angle posteroventrally. Precoxal sulcus absent or almost absent, represented at most by small, shallow depression posteriorly, crenulae always lacking. Margin between metepisternum and metepimeron with very small weak crenulae. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.3× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body, or distinctly longer than body.

Males. Unknown.

ETYMOLOGY. Named in honor of Dr. Rudolf Meier, dipterist extraordinaire, for his unselfish mentoring of M.J.S.'s graduate student Sarah Meierotto.

MATERIAL EXAMINED. HOLOTYPE ♀, Puntarenas, Buenos Aires, Estación Altamira, Senero a Casa Coca, 1700 m, 16.vii–16.viii.2000, L S 574400 331750 (INBio).

Alabagrus sarahmeierottoae Sharkey n. sp.

Figure 73

DIAGNOSIS. Females: Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. Propodeum with complete areolation. First tergum with well-defined median longitudinal carina. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor distinctly longer than body. Body orange and melanic. Pronotum melanic. Metasoma entirely orange. Propodeum sculptured with irregular rugae. Metapleuron entirely orange. First tergum weakly convex. Males: Gena rounded or with an obtuse angle posteroventrally. Pronotum melanic.

NOTES. Specimens of this species, including the holotype, were included under *A. englishi* in Leathers and Sharkey (2003).

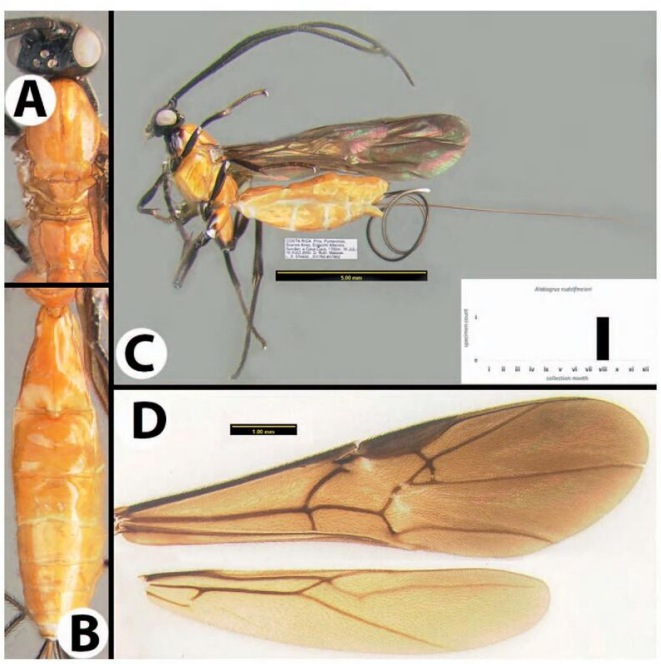


Figure 72 *Alabagrus rudolfmeieri* n. sp., holotype: **A**. dorsal mesosoma, **B**. dorsal metasoma, **C**. lateral habitus, **D**. wings.

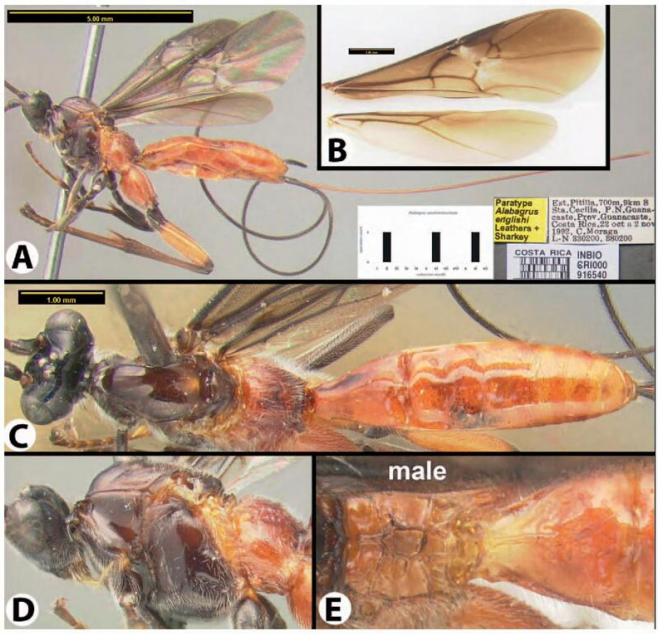


Figure 73 *Alabagrus sarahmeierottoae* n. sp., **A–D** holotype; **E** paratype male: **A.** lateral habitus, **B.** wings, **C.** dorsal habitus, **D.** lateral head and mesosoma, **E.** propodeum and tergum 1.

DESCRIPTION. Body length 7.61 mm. Gena rounded or with an obtuse angle posteroventrally. Precoxal sulcus absent or almost absent, represented at most by small, shallow depression posteriorly, crenulae always lacking. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.4× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor distinctly longer than body.

Males. Propodeum areolate; median tergite 1 with sharp median carina.

ETYMOLOGY. Named in honor of Sarah Meierotto, graduate student extraordinaire.

MATERIAL EXAMINED. HOLOTYPE ♀, Guanacaste, P.N. Guanacaste, Sta. Cecilia, 22.x–2.xi.1992, L_N 830200 880200 (INBio). PARATYPES: 1♂, Cartago, P.N. Tapantí, Macizo de la Muerte, Torre circa del Est., 1200 m, 9.vi.2000, L_N 193800 560050 (INBio). 1♀, Limón, Sector Corcori, 30 km N Cariari, 100 m, ii.1995, L_N 286000 567500 (HIC).

Alabagrus sarahsharkeyae Sharkey n. sp.

Figure 74

DIAGNOSIS. Precoxal sulcus almost absent, represented by small, shallow depression posteriorly, crenulae always lacking. Propodeum mostly smooth with median longitudinal and transverse carinae indicated. Metasoma entirely pale. Propleuron melanic. Pronotum pale. Ovipositor longer than body.

NOTES. Specimens of this species were included under *A. englishi* in Leathers and Sharkey (2003).

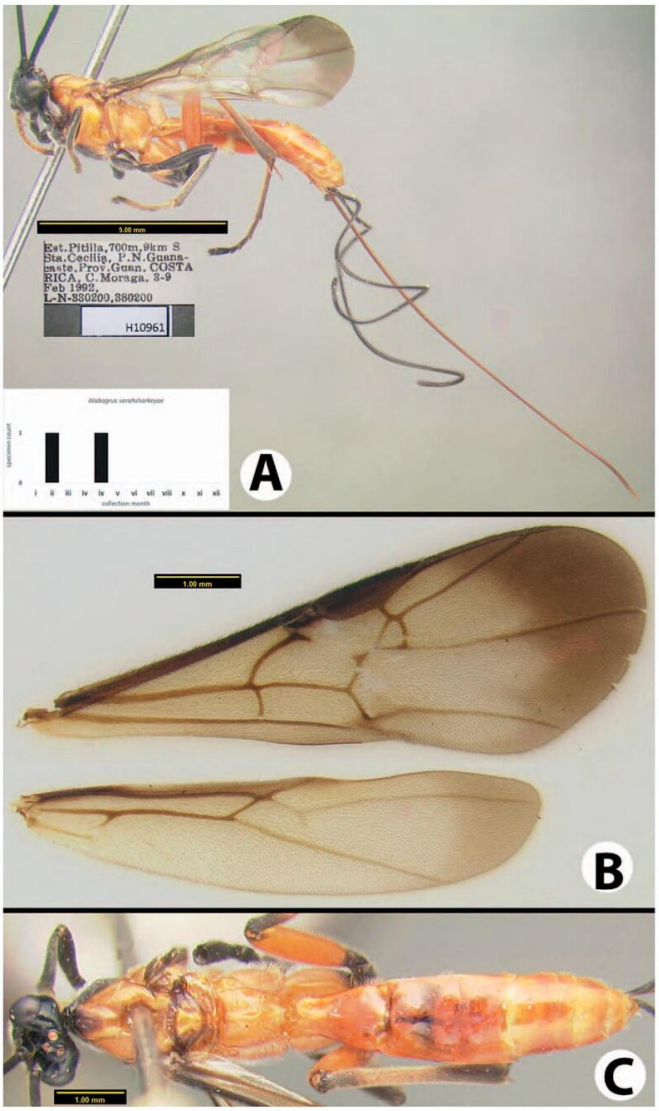


Figure 74 *Alabagrus sarahsharkeyae* n. sp., holotype: **A.** lateral habitus, **B.** wings, **C.** dorsal habitus.

DESCRIPTION. Body length 7 mm. Gena rounded or with an obtuse angle posteroventrally. Precoxal sulcus absent or almost absent, represented at most by small, shallow depression posteriorly, crenulae always lacking. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum areolate, with at least one closed areola, or lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.3× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor distinctly longer than body.

Males. Unknown.

ETYMOLOGY. Named in honor of Sarah Sharkey, youngest sister of M.J.S. and chef extraordinaire.

MATERIAL EXAMINED. HOLOTYPE ♀, Guanacaste, P.N. Guanacaste, Sta. Cecilia, 3–9.ii.1992, L_N 330200 380200 (INBio). PARATYPE: 1♀, same data as holotype, except 700 m, 1994 (HIC).

Alabagrus sarapiqui Leathers and Sharkey, 2003
Figure 75

Alabagrus sarapiqui Leathers and Sharkey, 2003:44–45. Holotype ♀, Costa Rica (INBio)

DIAGNOSIS. Gena acute posteroventrally. Precoxal sulcus distinct and foveolate ½ or more length of mesopleuron. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. Body black and yellow. Pronotum melanic. Metasoma entirely yellow.

DESCRIPTION. Body length 6.5 mm. Gena right angled or acute posteroventrally. Precoxal sulcus distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum areolate, with at least one closed areola. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Male with more pronounced propodeal sculpture.

DISTRIBUTION. Costa Rica.

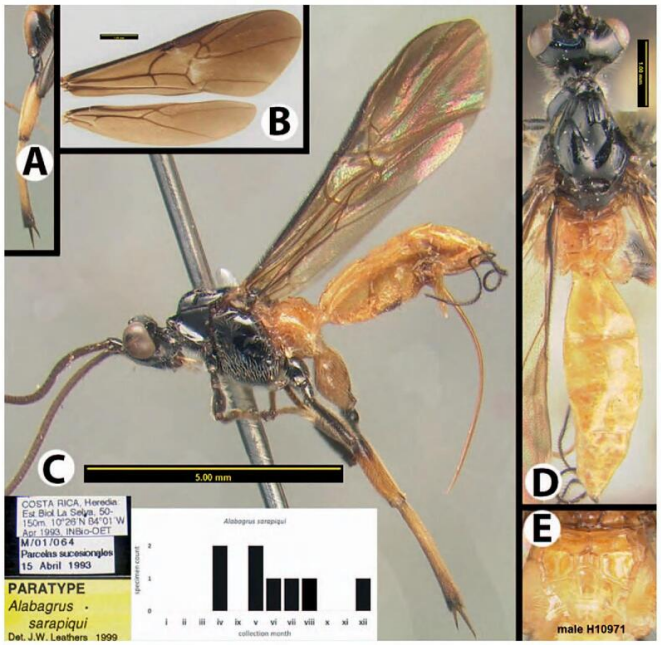


Figure 75 *Alabagrus sarapiqui*, paratype: **A**. hind leg, **B**. wings, **C**. lateral habitus, **D**. dorsal habitus, **E**. propodeum.

***Alabagrus scottmilleri* Sharkey n. sp.**
Figure 76

DIAGNOSIS. Females: Head melanic. Propleuron yellow. Propodeum areolate. Midfemur yellow. Hind coxa with a black patch laterally or near apex. Forewing banded from base: yellow, infuscate, yellow, infuscate, second yellow band complete to hind margin of wing. Midfemur entirely pale. Ovipositor longer than metasoma and shorter than body. Males: Median tergite 1 entirely melanic. Forefemur pale.

DESCRIPTION. Body length 5.8 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum areolate, with at least one closed areola. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.2× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Forewing mostly infuscate; propodeum and metasomal terga almost entirely melanic; midfemur and hind leg almost entirely black.

HOST INFORMATION. *Neurophyseta* Janzen222, *Neurophyseta* BioLep219, *Neurophyseta camptogrammalis*DHJ01.

ETYMOLOGY. Named in honor of Dr. Scott Miller of the U.S. National Museum of Natural History and Smithsonian Institution, the taxonomist who has long and masterfully taxonomized all of the ACG Dalceridae and supported the movement of ACG Lepidoptera into the Smithsonian safe harbor.

MATERIAL EXAMINED. HOLOTYPE ♀, host=*Neurophyseta* Janzen222 on *Lomariopsis vestita*, 10.90093°N, 85.28915°W, 400 m, 17.ii–4.iii.2009, DHJPAR0030469 (EMUS). PARATYPES: reared: 1♀, from *Neurophyseta* BioLep219 on *Alsophila firma*, 10.90661°N, 85.28784°W, 400 m, 24.xii.2009–15.i.2010, DHJPAR0037942. 1♂, from *Neurophyseta camptogrammalis*DHJ01, 10.89928°N, 85.27486°W, 420 m, 21.iii–5.iv.2013, DHJPAR0052088 (EMUS, HIC).

***Alabagrus scottshawi* Sharkey n. sp.**
Figure 77

DIAGNOSIS. Gena acute posteroventrally. First tergum weakly convex, almost flat. Forefemur yellow apically and basally, melanic centrally, or mostly yellow but melanic distally. Mesoscutum melanic. Terga 1–3 yellow, remaining terga black.

NOTES. Specimens of this species were included under *A. pachamama* in Leathers and Sharkey (2003).

DESCRIPTION. Body length 9.4 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly. Margin between metepisternum and metepimeron smooth, or with very small weak crenulae. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.2× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Unknown.

ETYMOLOGY. Named in honor of Dr. Scott Shaw, braconologist extraordinaire.

MATERIAL EXAMINED. HOLOTYPE ♀, Heredia, La Selva Biol. Sta., 50–150 m, 10.43°N, 84.02°W, 7.vii.2000 (INBio). PARATYPES: 7♀, Heredia, La Selva Biol. Sta., 50–150 m, ii, iv, vi, vii, ix (INBio,

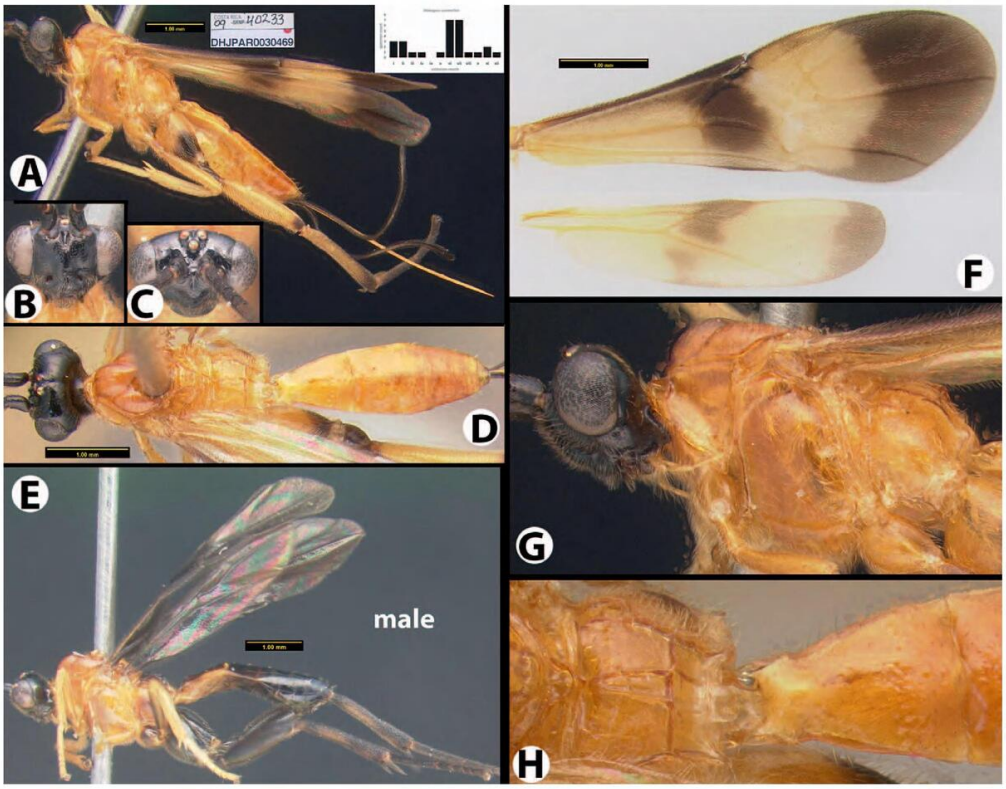


Figure 76 *Alabagrus scottmilleri* n. sp., **A–D**, **F–H** holotype; **E** paratype male: **A**. lateral habitus, **B**. anterior head, **C**. dorsal head, **D**. dorsal habitus, **E**. lateral habitus, **F**. wings, **G**. lateral head and mesosoma, **H**. propodeum and tergum 1.

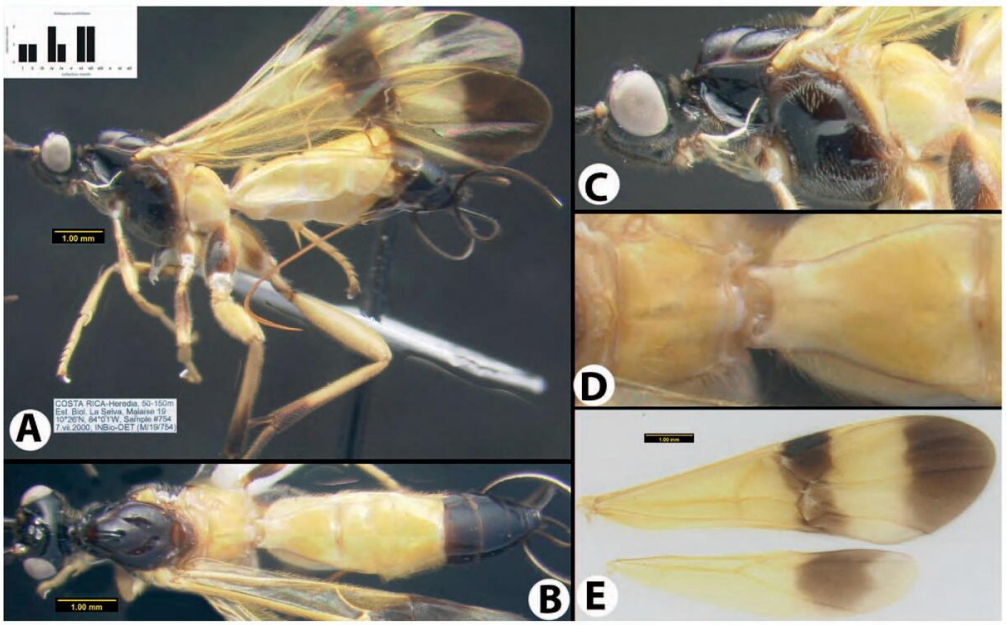


Figure 77 *Alabagrus scottshawi* n. sp., holotype: **A**. lateral habitus, **B**. dorsal habitus, **C**. lateral head and mesosoma, **D**. propodeum and tergum 1, **E**. wings.

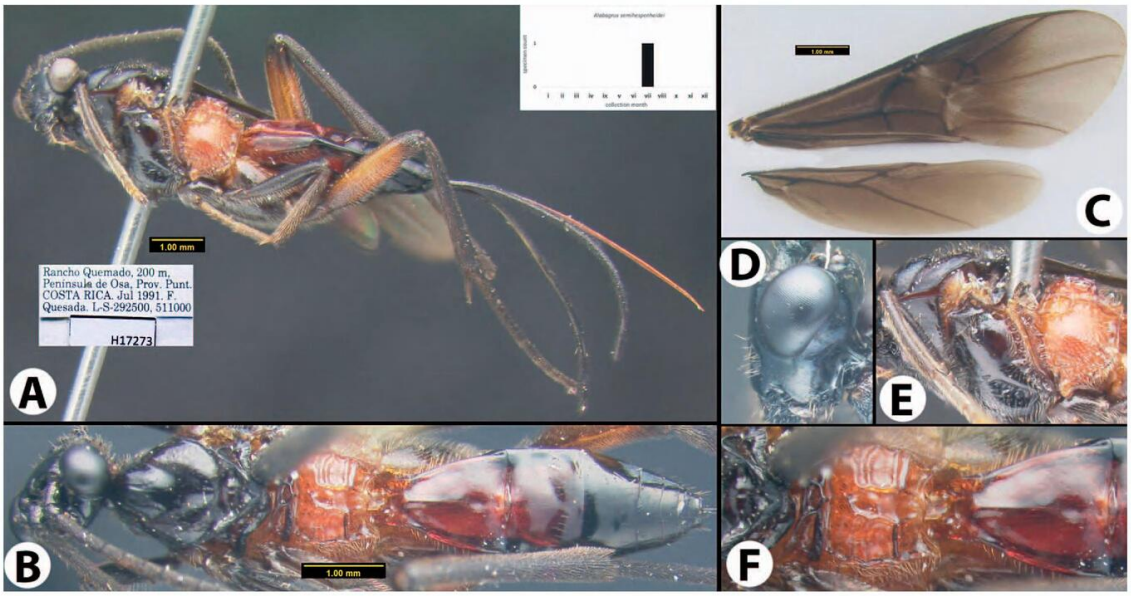


Figure 78 *Alabagrus semihespenheidei* n. sp., holotype: **A**. lateral habitus, **B**. dorsal habitus, **C**. wings, **D**. lateral head, **E**. lateral mesosoma, **F**. propodeum and tergum 1.

HIC, EMUS). 2♀, PANAMA, Darien, P.N. Darien, Est. Rancho Frio, 80 m, 16.xi.2000–17.i.2001 and 21.iii.–4.iv.2000 (EMUS).

***Alabagrus semihespenheidei* Sharkey n. sp.**
Figure 78

DIAGNOSIS. Gena rounded or with an obtuse angle posteroventrally. Metapleuron entirely pale. Median tergites 1 and 2 partly or entirely red; tergite 3 and following tergites melanic.

DESCRIPTION. Body length 8.3 mm. Gena rounded or with an obtuse angle posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly, or distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins, or areolate rugose in ventral quarter or less. Propodeum areolate, with at least one closed areola. Hind femur heavily sculptured ventrally with large aciculations or rugosities, distinctly more heavily sculptured than dorsal surface. First tergum 1.1× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Unknown.

ETYMOLOGY. Named for its similarity to *A. hespenheidei*.

MATERIAL EXAMINED. HOLOTYPE ♀, Puntarenas, Península de Osa, Rancho Quemado, 200 m, vii.1991, L_S 292500 511000 (INBio).

Alabagrus stigma (Brullé, 1846)
Figure 79

Agathis stigma Brullé, 1846:501. Holotype ♀, Brazil (MNHN)
Microdus stigmaterus Cresson, 1865:65. Holotype ♀, Cuba (ANSP)
Microdus diatraeae Turner, 1918:82. Holotype ♀, Guyana (BMNH)
Alabagrus citreistigma Enderlein, 1920:203. Holotype ♀, Brazil (ZMPA)
Microdus crossi Brèthes, 1927:163. Holotype ♀, Argentina (depository?)
Microdus sacchari Myers, 1931:274. Holotype ♀, Guyana (BMNH)
Alabagrus stigma (Sharkey, 1988:401–402)

DIAGNOSIS. Hind femur heavily sculptured ventrally with aciculations or rugosities, distinctly more heavily sculptured than dorsal surface. Ovipositor longer than metasoma but not distinctly longer than body, or distinctly longer than body. First tegite with a median carinae and lateral rugosities in female; male with two longitudinal carinae and more lateral rugae. Forewing pattern variable but stigma and area near stigma always yellow.

DESCRIPTION. Body length 9.1 mm. Gena rounded or with an obtuse angle posteroventrally. Precoxal sulcus distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron entirely densely punctate or aciculate. Propodeum areolate, with at least one closed areola, or lacking complete areolae, usually mostly or completely smooth, or punctate in anterior half, areolate posteriorly, with or without areolae. Hind femur heavily sculptured ventrally with large aciculations or rugosities, distinctly more heavily sculptured than dorsal surface. First tergum 1.5× longer than wide; with well-defined median longitudinal carina. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body, or distinctly longer than body.

Males. Much more pronounced propodeal sculpture; median tergite 1 with two longitudinal carinae and entire surface rugosostriate.

HOST INFORMATION. *Diatraea canella*, *Diatraea, Diatraea lineolata*, *Diatraea saccharalis*.

DISTRIBUTION. Widespread from the southeastern USA (e.g., Florida, Louisiana) through most of the lowland, warm Neotropics.

***Alabagrus stiremani* Sharkey n. sp.**
Figure 80

DIAGNOSIS. Precoxal sulcus absent. Propodeum smooth, melanic. Metasomal terga 1–4 yellow, remaining terga black.

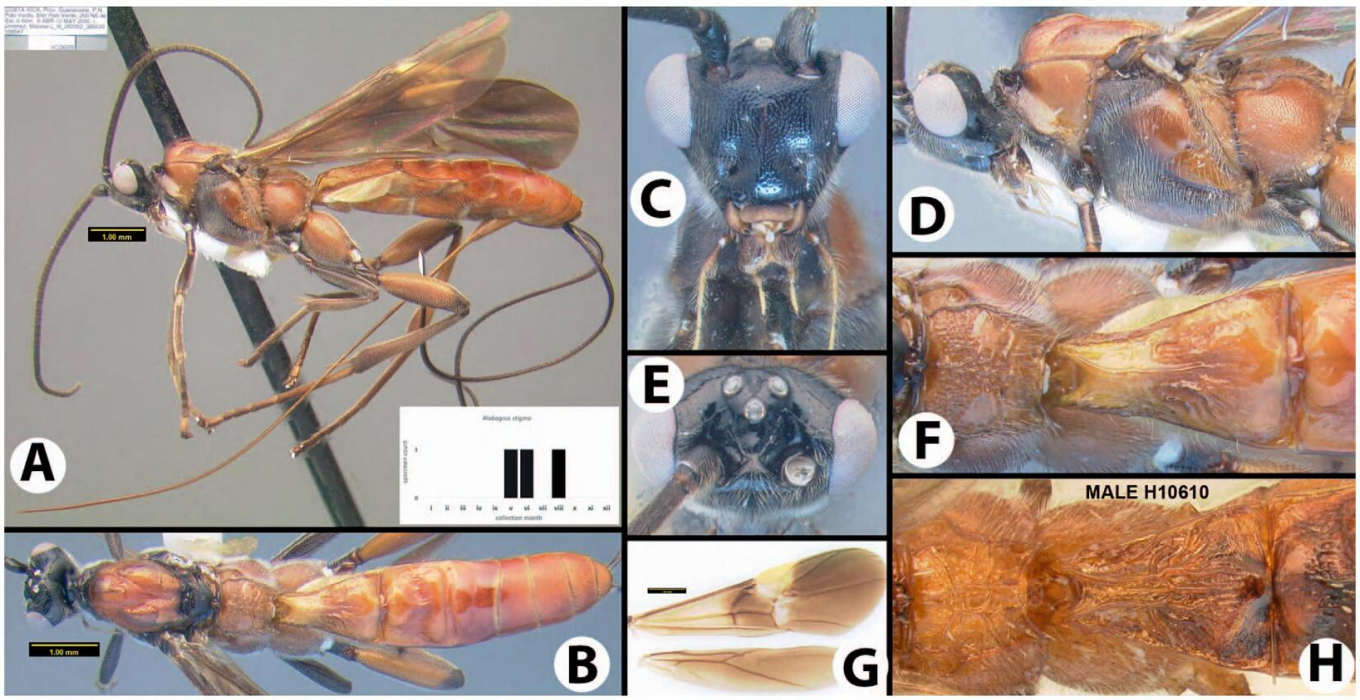


Figure 79 *Alabagrus stigma*, **A–F** female; **H** male: **A**. lateral habitus, **B**. dorsal habitus, **C**. anterior head, **D**. lateral head and mesosoma, **E**. dorsal head, **F**. propodeum and tergum 1, **G**. wings, **H**. propodeum and tergum 1.

NOTES. Specimens of this species were included under *A. paruyana* in Leathers and Sharkey (2003).

DESCRIPTION. Body length 10.5 mm. Gena rounded or with an obtuse angle posteroventrally. Occiput dorsolaterally rounded. Precoxal sulcus absent or almost absent, represented at most by small, shallow depression posteriorly, crenulae always lacking. Margin between metepisternum and metepimeron with very small weak crenulae. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor distinctly longer than body.

Males. Unknown.

ETYMOLOGY. Named in honor of Dr. John Stireman, dipterist extraordinaire.

MATERIAL EXAMINED. HOLOTYPE ♀, Guanacaste, Estación Pitilla, 9 km S Santa Cicilia, 700 m, iii.1995, L_N 329500 380450 (INBio). PARATYPE: 1♀, Guanacaste, Estación Pitilla, 9 km S Santa Cicilia, 700 m, vi.1994, L_N 330200 380200 (HIC).

Alabagrus tanyadapkeyae Sharkey n. sp.

Figure 81

DIAGNOSIS. Terga melanic except rarely first tergum with some red color. Precoxal sulcus with large fovae extending about ½ length of mesopleuron. Forewing infuscate in basal ⅔, white/opaque apically. Mesosoma including legs entirely black.

DESCRIPTION. Body length 7.5 mm. Gena rounded or with an obtuse angle posteroventrally. Precoxal sulcus distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins, or areolate rugose in ventral quarter or less. Propodeum areolate, with at least one closed areola. Hind femur heavily sculptured ventrally with large aciculations or rugosities, distinctly more heavily sculptured than dorsal surface. First tergum 1.1× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Forewing entirely infuscate; propodeum and median tergite 1 red.

HOST INFORMATION. *Phostria cyrisalis*.

ETYMOLOGY. Named in honor of Ms. Tanya Dapkey of the University of Pennsylvania, Philadelphia, the information and specimen manager who has long maintained the curatorial organization and databasing process for the ACG Lepidoptera inventory.

MATERIAL EXAMINED. HOLOTYPE ♀, host=*Phostria cyrisalis* on *Goethalsia meiantha*, 11.01602°N, 85.38053°W, 380 m, 17.vii–21.viii.2010, DHJPAR0040218 (EMUS). PARATYPES: reared: 1♀, from *Phostria cyrisalis* on *Goethalsia meiantha*, 10.93010°N, 85.252050°W, 109 m, 25.vi–15.vii.2014, DHJPAR0055970. 1♀, 17.vii–23.viii.2010, DHJPAR0040225. 1♂, on *Trichospermum galeottii*, 10.95644°N, 85.266110°W, 121 m, 30.ix–23.x.2014, DHJPAR0057429 (EMUS, HIC). Nonreared: 1♀, Heredia, 50–150 m, Est. Biol. La Selva, 10.43°N, 84.02°W, v.2000 (INBio).

Alabagrus tommyersi Sharkey n. sp.

Figure 82

DIAGNOSIS. Third tergum with deep transverse depression. First tergum weakly convex. Forewing with two yellow bands, one complete

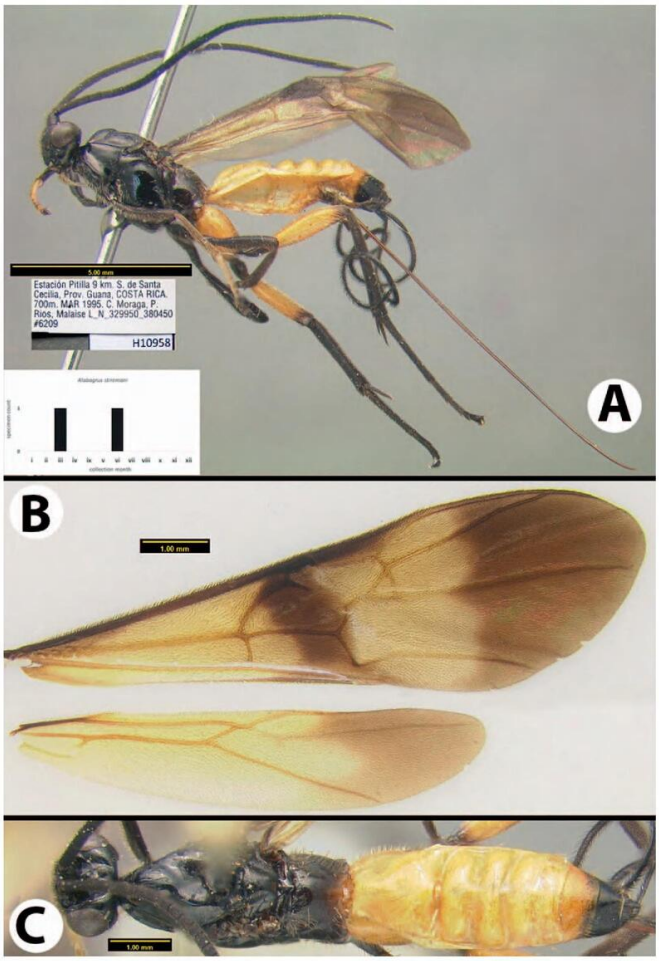


Figure 80 *Alabagrus stiremani* n. sp., holotype: **A**. lateral habitus, **B**. wings, **C**. dorsal habitus.

basal yellow band and a weaker, incomplete, yellow, triangular band directly below (posterior to) stigma. Precoxal sulcus with one or several distinct foveae posteroventrally.

DESCRIPTION. Body length 11.4 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum areolate, with at least one closed areola, or lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 0.8× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum with deep transverse depression. Ovipositor longer than metasoma but not longer than body.

Males. Propodeum areolate.

HOST INFORMATION. *Syllepte belialis*.

ETYMOLOGY. In honor of Tom Myers for the generous use of his diverse property for research by the Sharkey lab.

MATERIAL EXAMINED. HOLOTYPE ♀, Guanacaste, 3 km N de Nacaome, 100 m, P.N. Barra Honda, 5–27.vii.1992, L_N 239000 386000 (HIC). PARATYPES: reared: 1♀, from *Syllepte belialis* on *Casearia corymbosa*, 10.84389°N, 85.61384°W, 300 m, 26.ix–26.x.2004, DHJPAR0015402. 1♀, 4–25.vi.1982, 82-SRNP-162. 1♂, 10.85827°N, 85.61089°W, 280 m, 25.vii–27.viii.1992, DHJPAR0015401. Nonreared paratypes: 3♀, Guanacaste, vi–viii (EMUS, HIC, INBio).

Alabagrus varius (Enderlein, 1920)
Figure 83

Astiria varia Enderlein, 1920:207. Holotype ♀, Mexico (ZMPA)
Alabagrus varius (Sharkey, 1988:410)

DIAGNOSIS. Occiput with squared protuberance dorsolaterally. Mesosoma mostly pale anteriorly and posteriorly, melanic at midlength.

DESCRIPTION. Body length 10 mm. Gena right angled or acute posteroventrally, or rounded or with an obtuse angle posteroventrally. Clypeus with lateral protrusions. Occiput dorsolaterally with squared protuberances. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.2× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor distinctly longer than body.

Males. Unknown.

DISTRIBUTION. Known from southern Mexico and Guanacaste (Leathers and Sharkey, 2003).

***Alabagrus victoriapookae* Sharkey n. sp.**
Figure 84

DIAGNOSIS. Occiput with squared protuberances dorsolaterally. Mesosoma melanic except propodeum pale.

DESCRIPTION. Body length 9.5 mm. Gena rounded or with an obtuse angle posteroventrally. Clypeus with lateral protrusions. Occiput dorsolaterally with squared protuberances. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly, or distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron smooth. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum lacking complete areolae, usually mostly or completely smooth. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor distinctly longer than body.

Males. Unknown.

ETYMOLOGY. Named in honor of Victoria Pook, scientist extraordinaire and former student of M.J.S.

MATERIAL EXAMINED. HOLOTYPE ♀, Alajuela, A.C.A. San Carlos, P.N. Volcán Arenal, Sector Colada, 600 m, 25.vi–26.vii.1999, L_N 269900 456750 (INBio).

Alabagrus voto Sharkey, 1988
Figure 85

Alabagrus voto Sharkey, 1988:411. Holotype ♀, Costa Rica (EMUS)

DIAGNOSIS. Head yellow. Forewing with two distinct yellow bands. Fore- and midlegs entirely yellow.

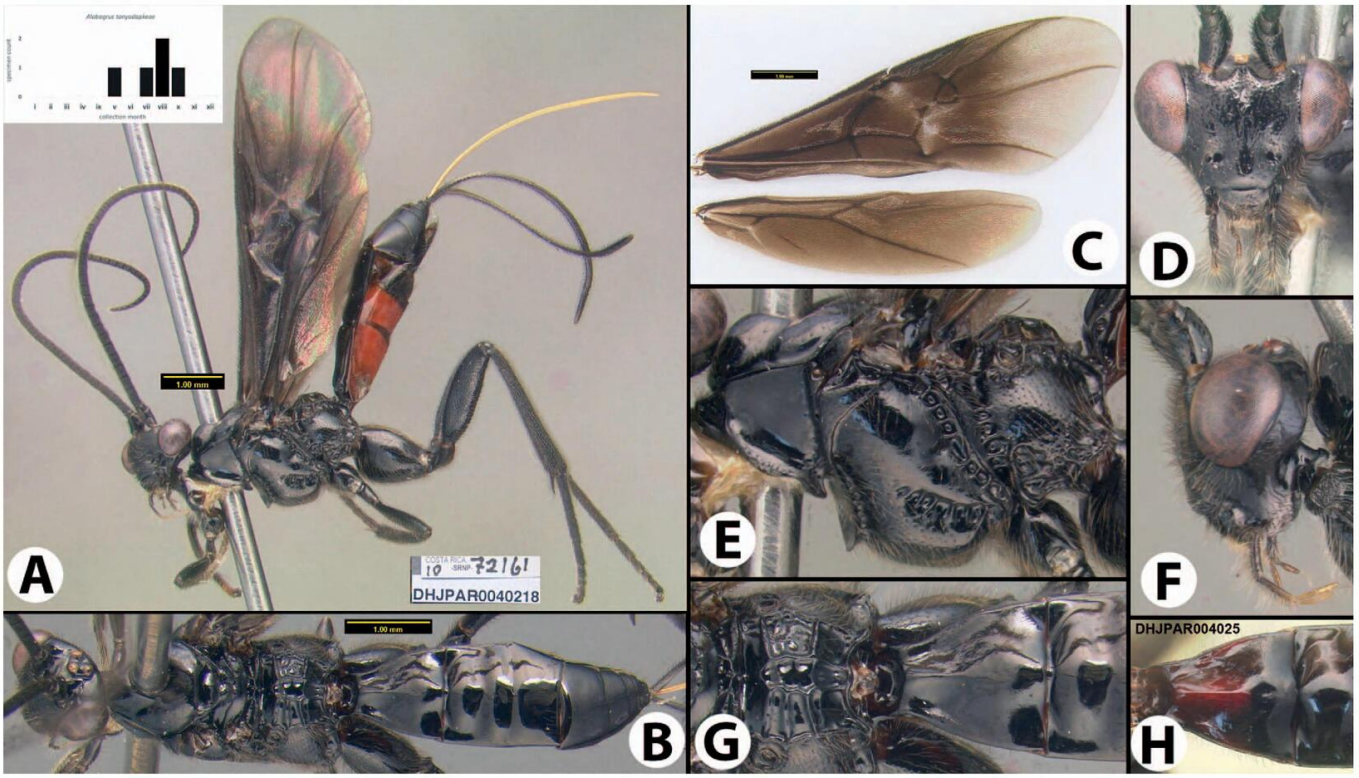


Figure 81 *Alabagrus tanyadapkeyae* n. sp., **A–G** holotype; **H** paratype female: **A**. lateral habitus, **B**. dorsal habitus, **C**. wings, **D**. anterior head, **E**. lateral mesosoma, **F**. lateral head, **G**. propodeum and tergum 1, **H**. tergum 1.

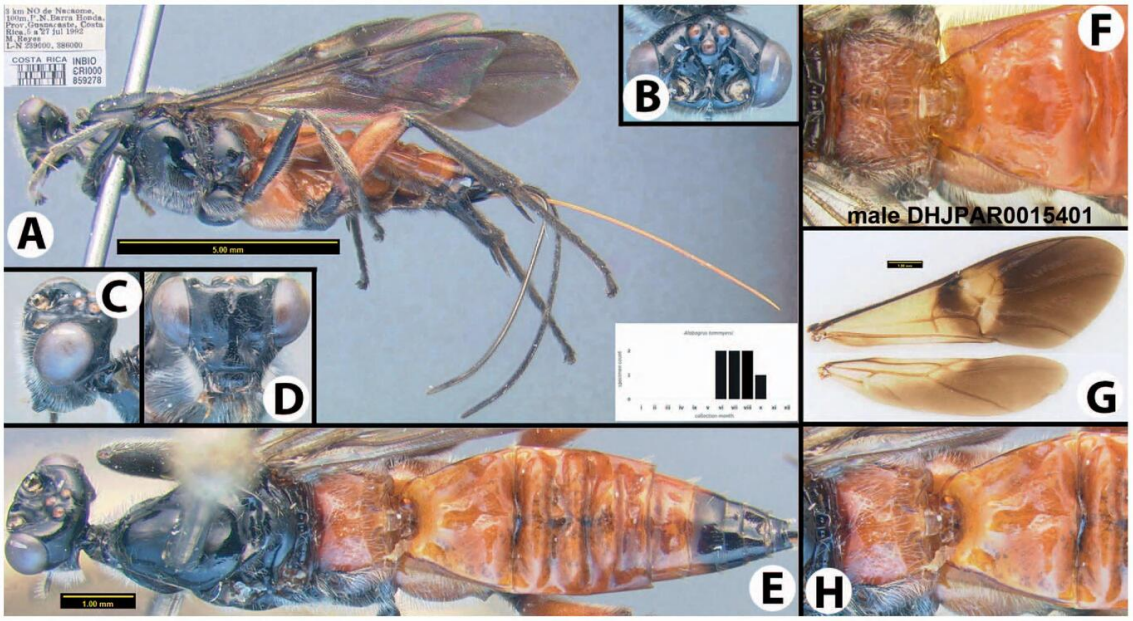


Figure 82 *Alabagrus tommyersi* n. sp., **A–E**, **G**, **H** holotype; **F** paratype male: **A**. lateral habitus, **B**. dorsal head, **C**. lateral head, **D**. anterior head, **E**. dorsal habitus, **F**. propodeum and tergum 1, **G**. wings, **H**. propodeum and tergum 1.

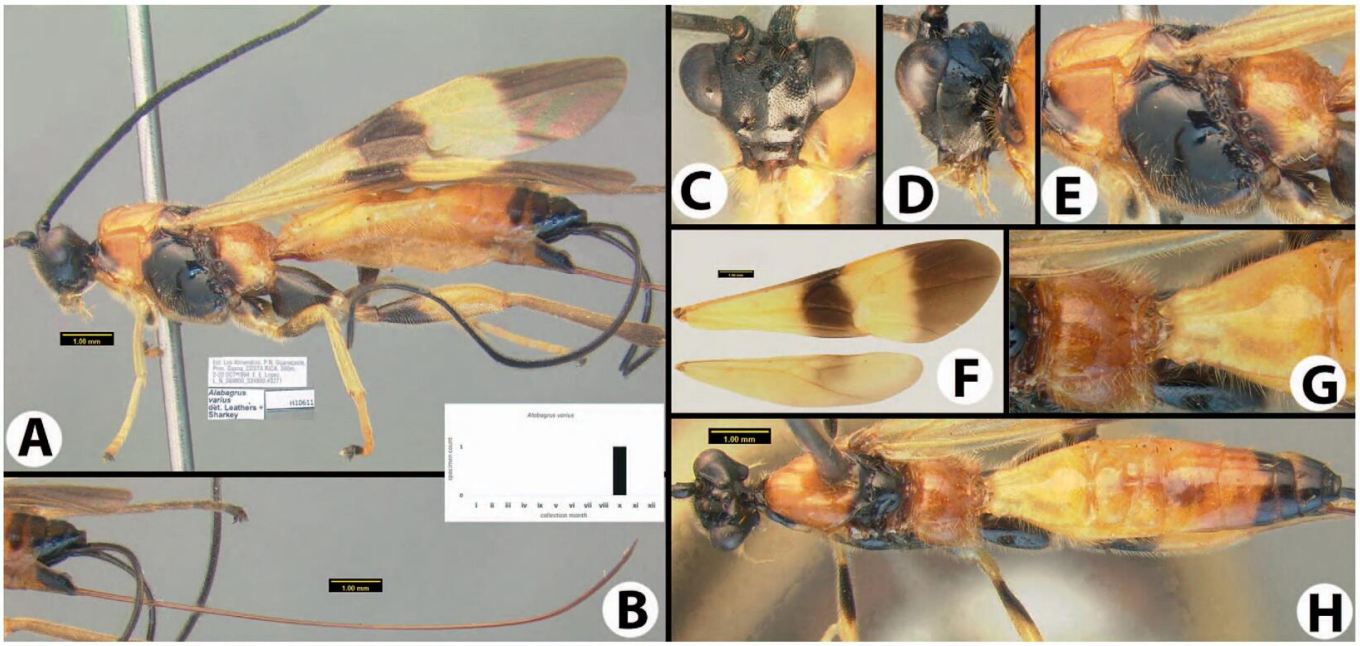


Figure 83 *Alabagrus varius*: **A**. lateral habitus, **B**. ovipositor (on same scale as A), **C**. anterior head, **D**. lateral head, **E**. lateral mesosoma, **F**. wings, **G**. propodeum and tergum 1, **H**. dorsal habitus.

DESCRIPTION. Body length 7.1 mm. Gena rounded or with an obtuse angle posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum areolate, with at least one closed areola. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.2× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression,

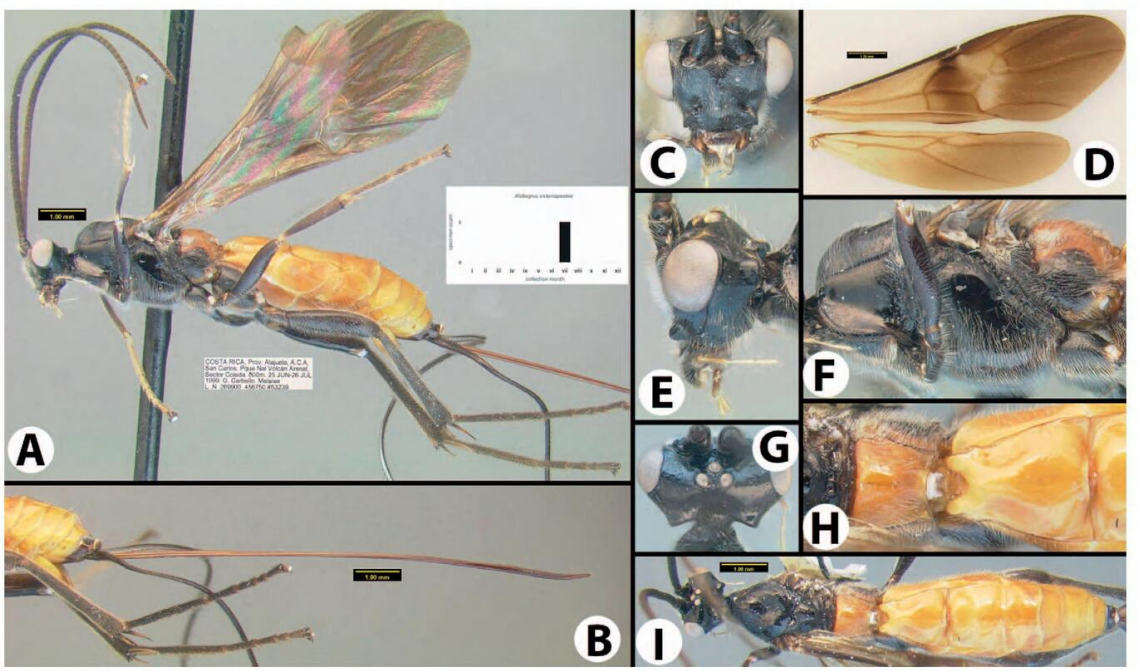


Figure 84 *Alabagrus victoriapookae* n. sp., holotype: **A**. lateral habitus, **B**. ovipositor (on same scale as A), **C**. anterior head, **D**. wings, **E**. lateral head, **F**. lateral mesosoma, **G**. dorsal head, **H**. propodeum and tergum 1, **I**. dorsal habitus.

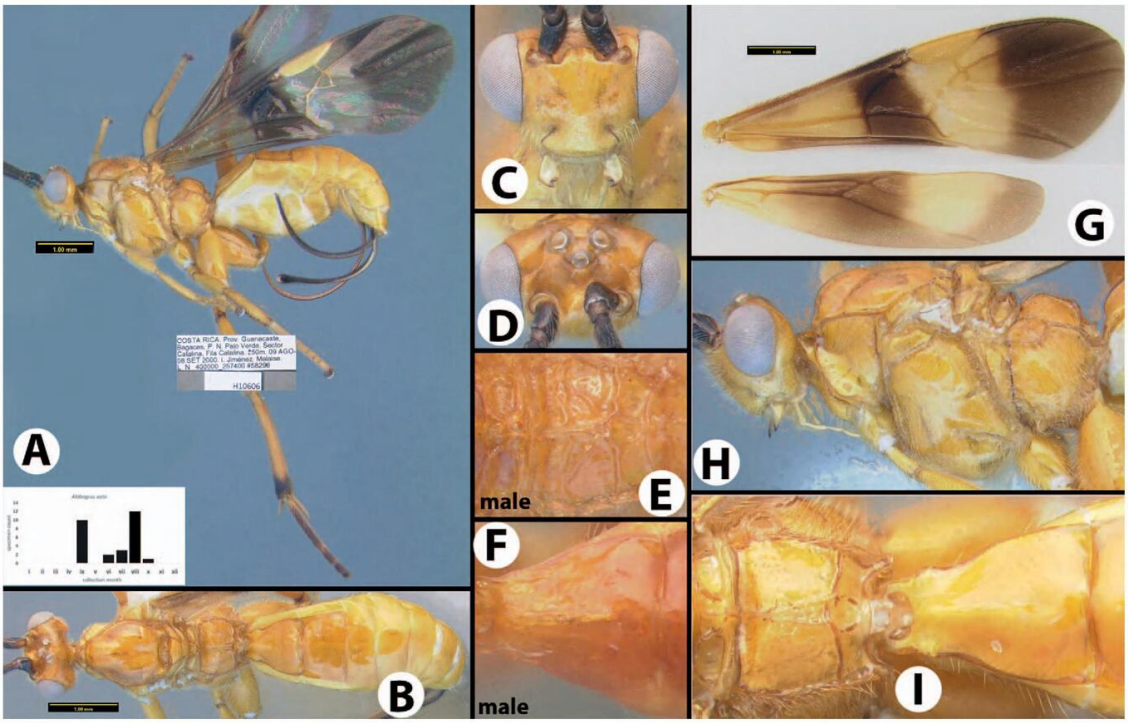


Figure 85 *Alabagrus voto*, **A–D**, **G–I** female; **E**, **F** male: **A**. lateral habitus, **B**. dorsal habitus, **C**. anterior head, **D**. dorsal head, **E**. propodeum, **F**. tergum 1, **G**. wings, **H**. lateral head and mesosoma, **I**. propodeum and tergum 1.

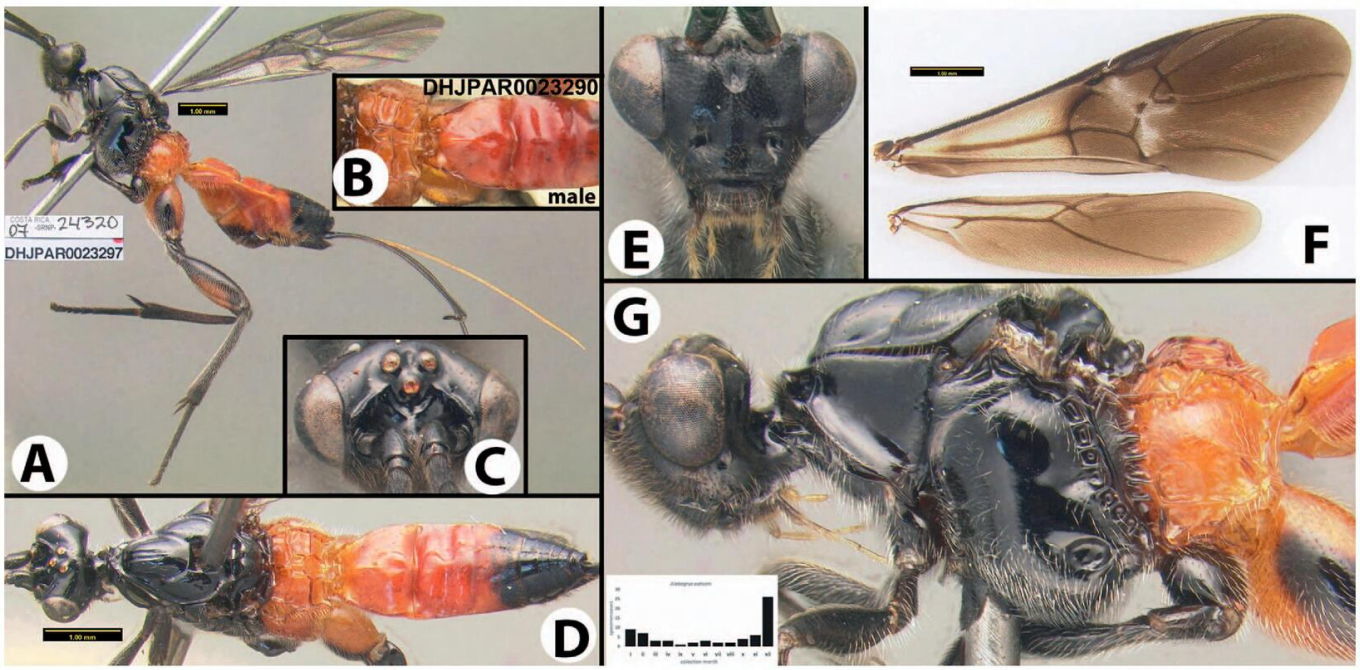


Figure 86 *Alabagrus watsoni*, **A**, **C–G** female; **B** male: **A**. lateral habitus, **B**. propodeum and terga 1–3, **C**. dorsal head, **D**. dorsal habitus, **E**. anterior head, **F**. wings, **G**. lateral head and mesosoma.

or depression barely indicated. Ovipositor short, not longer than metasoma, or longer than metasoma but not longer than body.

Males. Propodeum with more sculpture; first median tergite with distinct median carina; body color may be slightly darker; first median tergite wider.

DISTRIBUTION. Costa Rica: Guanacaste and Puntarenas (Leathers and Sharkey, 2003).

Alabagrus watsoni Leathers and Sharkey, 2003
Figure 86

Alabagrus watsoni Leathers and Sharkey, 2003:51–51. Holotype ♀, Costa Rica (INBio)

DIAGNOSIS. Gena acute posterolaterally. Precoxal sulcus with one or two large foveae posteroventrally. Terga 1–2 orange, tergum 3 orange and melanic, remaining terga melanic. Median tergite 3 pale anteriorly, melanic posteriorly. Forewing almost entirely infuscate, or mostly infuscate, but mostly clear basad 1cu-a. Metapleuron mostly orange.

DESCRIPTION. Body length 6.8 mm. Gena right angled or acute posteroventrally. Precoxal sulcus with one or several distinct foveae posteroventrally, with or without a smooth groove extending anteriorly. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron areolate rugose in ventral quarter or less. Propodeum areolate, with at least one closed areola. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 0.9× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Propodeum with slightly more sculpture; first median tergite with sharper median carina.

HOST INFORMATION. *Omiodes fulvicauda*, *Omiodes humeralis*, *Omiodes insolutalis*, *Omiodes humeralis*DHJ02, *Omiodes humeralis*DHJ07, *Lamprosema* Dapkey23.

DISTRIBUTION. Costa Rica.

MATERIAL EXAMINED. 1♀, from *Lamprosema* Dapkey23 on *Serjania rhombea*, 10.87766°N, 85.393430°W, 645 m, 29.iii–14.iv.2014, DHJPAR0055347. 1♀, from *Omiodes fulvicauda* on *Dioclea malacocarpa*, 10.90661°N, 85.28784°W, 400 m, 14–31.v.2010, DHJPAR0039356. 1♂, from *Omiodes humeralis* on *Inga chocoensis*, 10.89678°N, 85.27001°W, 420 m, 13.xi–9.xii.2013, DHJPAR0054496. 1♂, 10.9163°N, 85.37869°W, 460 m, 22.ix–13.x.2005, DHJPAR0015519. 2♀, 11.01926°N, 85.40997°W, 440 m, host collection 9.xi.2007, 07-SRNP-33841, 07-SRNP-33842. 1♀, on *Inga oerstediana*, 10.90037°N, 85.37254°W, 500 m, 4–28.x.2007, DHJPAR0023531. 1♂, 10.90661°N, 85.28784°W, 400 m, 13–28.xii.2004, DHJPAR0015526. 1♀, 29.ii–14.iii.2012, DHJPAR0048722. 1♀, 10.91847°N, 85.30338°W, 320 m, 23.ii–16.iii.2004, DHJPAR0015341. 1♀, 23.x–4.xi.2009, DHJPAR0037915. 1♂, 10.93332°N, 85.25331°W, 135 m, 3–25.i.2010, DHJPAR0037937. 1♀, 10.95642°N, 85.26617°W, 123 m, 8–25.ix.2010, DHJPAR0041201. 1♀, 10.9867°N, 85.38503°W, 440 m, 23.xi–10.xii.2011, DHJPAR0046747. 1♀, 23.xi–12.xii.2011, DHJPAR0046740. 1♀, 23.xi–15.xii.2011, DHJPAR0046743. 1♀, 11.0006°N, 85.438°W, 620 m, 11–28.i.2008, 08-SRNP-20276. 1♂, 11.01373°N, 85.42531°W, 525 m, 14.xi–2.xii.2007, DHJPAR0023290. 2♀, 14.xi–3.xii.2007, DHJPAR0023299, DHJPAR0023300. 1♂, 14.xi–7.xii.2007, DHJPAR0023298. 1♀, 18.xii.2007–8.i.2008, DHJPAR0023286. 1♀, 7.xi–2.xii.2007, DHJPAR0023297. 1♀, 7–26.xi.2007, DHJPAR0023285. 1♂, 11.01618°N, 85.35902°W, 340 m, 10–30.x.2007, DHJPAR0022189. 1♂, 6.xii.2007–10.i.2008, DHJPAR0023293. 1♀, 6–24.xii.2007, 07-SRNP-66142. 1♀, 11.01825°N, 85.37199°W, 360 m, 25.ix–8.x.2010, DHJPAR0041202. 1♀, 11.01926°N, 85.40997°W, 440 m, 1.xi–15.xii.2007, DHJPAR0028282. 1♀, 8–29.xii.2007, DHJPAR0023292. 1♂, 9.xi–2.xii.2007, DHJPAR0028283. 1♀, 9.xi–7.xii.2007, DHJPAR0028285. 1♀, host collection 1.xi.2007, 07-SRNP-33778. 1♀, host collection 26.xii.2007, 07-SRNP-34425. 3♀, host collection 7.xii.2007, 07-SRNP-34085, 07-SRNP-34088, 07-SRNP-34089. 1♀, host collection 9.xi.2007, 07-SRNP-33856. 1♂, 11.03306°N, 85.42876°W, 400 m, 15.i–3.ii.2008, DHJPAR0028293. 1♀, 17.i–10.ii.2008, DHJPAR0028308. 1♀, 21.i–11.ii.2008, DHJPAR0023535. 1♀, 27.xi–11.xii.2007, DHJPAR0028286. 2♀, 27.xi–14.xii.2007, DHJPAR0023287, DHJPAR0023289. 1♂, 27.xi–20.xii.2007, DHJPAR0028291. 1♀, 27.xi–22.xii.2007, DHJPAR0028290. 1♀, 7–25.xii.2007, DHJPAR0023288. 1♀, 11.04249°N, 85.40339°W, 390 m, 22.xi–20.xii.2007, DHJPAR0028284. 1♀, on *Inga samanensis*, 10.89666°N, 85.29003°W, 400 m, 17.xii.2014–7.i.2015, DHJPAR0057000. 1♀, 10.93332°N, 85.25331°W, 135 m, host collection 2.ii.2010, 10-SRNP-75204. 1♂, 11.01373°N, 85.42531°W, 525 m, 12–25.ii.2007, DHJPAR0021196. 1♀, 11.01926°N, 85.40997°W, 440 m, host collection 14.i.2004, 04-SRNP-30212. 1♀, on *Inga vera*,

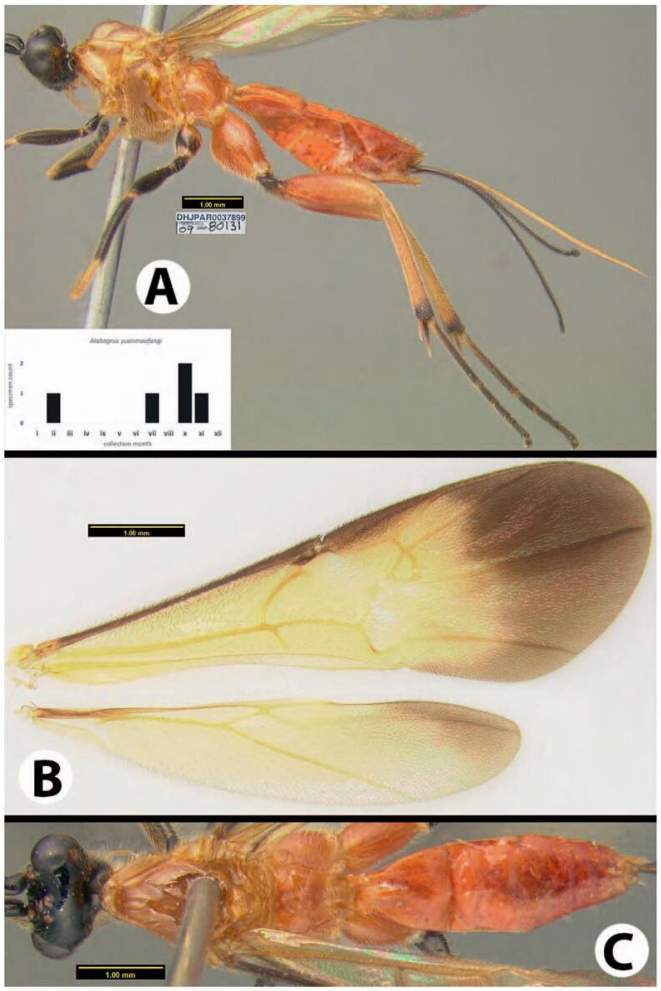


Figure 87 *Alabagrus yuanmaofangi* n. sp., holotype: **A**. lateral habitus, **B**. wings, **C**. dorsal habitus.

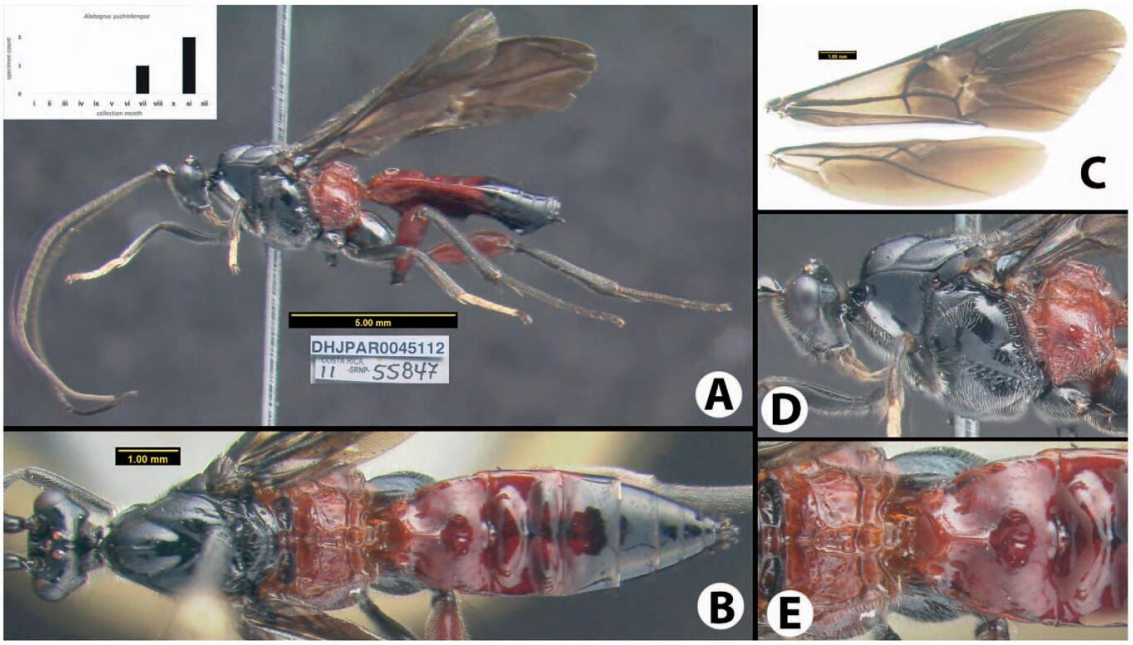


Figure 88 *Alabagrus yuchinkengae* n. sp., holotype male: **A**. lateral habitus, **B**. dorsal habitus, **C**. wings, **D**. lateral head and mesosoma, **E**. propodeum and tergum 1.

10.94041°N, 85.68043°W, 275 m, 23.vi–7.vii.1993, DHJPAR0015390. 1♀, from *Omiodes* humeralisDHJ02 on *Inga oerstediana*, 10.93332°N, 85.25331°W, 135 m, 11–22.i.2010, DHJPAR0037938. 1♀, 11–25.i.2010, DHJPAR0037936. 1♀, from *Omiodes* humeralisDHJ07 on *Inga oerstediana*, 10.93319°N, 85.25335°W, 95 m, 8.i–8.ii.2008, DHJPAR0023530. 1♀, from *Omiodes insolutalis* on *Mucuna holtonii*, 10.90376°N, 85.30274°W, 340 m, 10–26.iii.2011, DHJPAR0042827. 1♀, 5.ii.2011, 11-SRNP-40659. 1♀, 10.90528°N, 85.27882°W, 405 m, 2–16.vi.2011, DHJPAR0045018. 1♀, 10.91847°N, 85.30338°W, 320 m, 24.iii–20.iv.2011, DHJPAR0042825 (EMUS, HIC). Also known from La Selva Biol. Station, Heredia (Leathers and Sharkey, 2003).

Alabagrus yuanmaofangi Sharkey n. sp.

Figure 87

DIAGNOSIS. Gena right angled or acute posteroventrally. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum with a rounded longitudinal bulge. Ovipositor longer than metasoma but shorter than body. Mesoscutum pale. Fore- and midfemora mostly or entirely melanic. Hind coxa entirely pale.

NOTES. Specimens of this species were included under *A. cocto* and *A. yaruro* in Leathers and Sharkey (2003).

DESCRIPTION. Body length 7.4 mm. Gena right angled or acute posteroventrally. Precoxal sulcus distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum areolate, with at least one closed areola. Hind femur with weak sparse punctures ventrally, little or no more heavily sculptured than dorsal surface. First tergum 1.2× longer than wide; varying from weakly convex to with a rounded longitudinal bulge. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Similar to females.

HOST INFORMATION. *Desmia* Janzen09, *Desmia* biolep02, *Desmia* biolep06, *Desmia ploralis*DHJ03, *Trichaea pilicornis*.

ETYMOLOGY. Named in honor of Mr. Yuan-Mao Fang of Jiangsu, China (24 Aug. 1912–2 Dec. 1986), father to Ming Fang of Hawaii, who is a major supporter of the ACG forest in which this wasp lives.

MATERIAL EXAMINED. HOLOTYPE ♀, host=*Desmia* Janzen09 on *Psychotria panamensis*, 10.94076°N, 85.3177°W, 461 m, 22.ix–11.x.2009, DHJPAR0037899 (EMUS). PARATYPES: 1♂, from *Desmia* biolep02 on *Hoffmannia valerii*, 10.89928°N, 85.27486°W, 420 m, 9–28.vii.2009, DHJPAR0036334. 1♀, from *Desmia* BioLep06, 14.i–8.ii.2010, DHJPAR0037941. 1♂, from *Desmia* Janzen09 on *Psychotria officinalis*, 10.94741°N, 85.31501°W, 491 m, 3–21.xi.2009, DHJPAR0037894. 1♀, from *Desmia ploralis*DHJ03 on *Psychotria chagrensis*, 4–24.x.2013, DHJPAR0053600. 1♀, from *Trichaea pilicornis* on *Psychotria chagrensis*, 10.8962°N, 85.27769°W, 430 m, 23.iii–12.iv.2011, DHJPAR0042834 (EMUS, HIC).

Alabagrus yuchinkengae Sharkey n. sp.

Figure 88

DIAGNOSIS. Gena rounded or with an obtuse angle posteroventrally. Median tergites 1–2 red, tergite 3 pale anteriorly, melanic posteriorly, remaining tergites melanic.

DESCRIPTION. Body length 12.1 mm. Gena rounded or with an obtuse angle posteroventrally. Precoxal sulcus distinct and foveolate ½ or more length of mesopleuron. Margin between metepisternum and metepimeron distinctly and deeply crenulate. Metapleuron mostly or entirely smooth; sculpture, if present, restricted to extreme margins. Propodeum areolate, with at least one closed areola. Hind femur heavily sculptured ventrally with large aciculations or rugosities, distinctly more heavily sculptured than dorsal surface. First tergum 0.9× longer than

wide; varying from weakly convex to with a rounded longitudinal bulge, or with well-defined median longitudinal carina. Third tergum lacking transverse depression, or depression barely indicated. Ovipositor longer than metasoma but not longer than body.

Males. Unknown.

HOST INFORMATION. *Microthyris prolongalis*.

ETYMOLOGY. Named in honor of Ms. Yuchin Keng of Kengchuan, Henan, China (16 Feb. 1911–12 Jul. 1987), mother to Ming Fang of Hawaii, who is a major supporter of the ACG forest in which this wasp lives.

MATERIAL EXAMINED. HOLOTYPE ♂, from *Microthyris prolongalis* on *Ipomoea trifida*, 10.77074°N, 85.42874°W, 365 m, 24.vi–18.vii.2011, DHJPAR0045112 (EMUS).

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Appendix 1 Specimens in the molecular analysis including specimen number, host, geographic area, and BOLD and GenBank accession numbers. Specimens with unconventional host species names (e.g., *Hyalorista exuvialis*DHJ02) are as of yet undescribed.

Taxon	Specimen no.	Host family	Host species	Country: region	Accession no.
Pharpa sp. (outgroup)	H1158			Colombia: Meta	ATRMK257-11
Alabagrus almasolisae	DHJPAR0028269	Crambidae	*Ceratocilia sixolalis*	Costa Rica: Alajuela	ASHYF031-09
Alabagrus almasolisae	DHJPAR0028270	Crambidae	*Ceratocilia sixolalis*	Costa Rica: Alajuela	ASHYF032-09
Alabagrus almasolisae	DHJPAR0028271	Crambidae	*Ceratocilia sixolalis*	Costa Rica: Alajuela	ASHYF033-09
Alabagrus almasolisae	DHJPAR0028272	Crambidae	*Ceratocilia sixolalis*	Costa Rica: Alajuela	ASHYF034-09
Alabagrus almasolisae	DHJPAR0028273	Crambidae	*Ceratocilia sixolalis*	Costa Rica: Alajuela	ASHYF035-09
Alabagrus almasolisae	DHJPAR0030384	Crambidae	*Ceratocilia sixolalis*	Costa Rica: Alajuela	ASHYB1123-09
Alabagrus almasolisae	DHJPAR0037924	Crambidae	*Ceratocilia sixolalis*	Costa Rica: Alajuela	ASHYC4669-10
Alabagrus almasolisae	DHJPAR0037931	Crambidae	*Ceratocilia sixolalis*	Costa Rica: Alajuela	ASHYC4676-10
Alabagrus almasolisae	DHJPAR0037932	Crambidae	*Ceratocilia sixolalis*	Costa Rica: Alajuela	ASHYC4677-10
Alabagrus almasolisae	DHJPAR0037933	Crambidae	*Ceratocilia sixolalis*	Costa Rica: Alajuela	ASHYC4678-10
Alabagrus almasolisae	DHJPAR0037935	Crambidae	*Ceratocilia sixolalis*	Costa Rica: Alajuela	ASHYC4680-10
Alabagrus almasolisae	DHJPAR0041205	Crambidae	*Ceratocilia sixolalis*	Costa Rica: Alajuela	ASHYF1111-11
Alabagrus almasolisae	DHJPAR0041578	Crambidae	*Ceratocilia sixolalis*	Costa Rica: Alajuela	ASHYF1484-11
Alabagrus almasolisae	DHJPAR0042816	Crambidae	*Ceratocilia sixolalis*	Costa Rica: Alajuela	ASHYH574-11
Alabagrus almasolisae	DHJPAR0042817	Crambidae	*Ceratocilia sixolalis*	Costa Rica: Alajuela	ASHYH575-11
Alabagrus almasolisae	DHJPAR0042818	Crambidae	*Ceratocilia sixolalis*	Costa Rica: Alajuela	ASHYH576-11
Alabagrus almasolisae	DHJPAR0053625	Crambidae	*Ceratocilia sixolalis*	Costa Rica: Alajuela	ASHYM2979-13
Alabagrus almasolisae	DHJPAR0054493	Crambidae	*Ceratocilia sixolalis*	Costa Rica: Alajuela	ASHYD3658-14
Alabagrus almasolisae	DHJPAR0054507	Crambidae	*Ceratocilia sixolalis*	Costa Rica: Alajuela	ASHYD3672-14
Alabagrus almasolisae	DHJPAR0054508	Crambidae	*Ceratocilia sixolalis*	Costa Rica: Alajuela	ASHYD3673-14
Alabagrus almasolisae	DHJPAR0055101	Crambidae	*Ceratocilia sixolalis*	Costa Rica: Alajuela	ASHYH1648-14
Alabagrus almasolisae	DHJPAR0058543	Crambidae	*Ceratocilia sixolalis*	Costa Rica: Alajuela	MHMYN8143-16
Alabagrus almasolisae	DHJPAR0058544	Crambidae	*Ceratocilia sixolalis*	Costa Rica: Alajuela	MHMYN8144-16
Alabagrus almasolisae	DHJPAR0058545	Crambidae	*Ceratocilia sixolalis*	Costa Rica: Alajuela	MHMYN8145-16
Alabagrus andresfreitasi	DHJPAR0036714	Crambidae	*Phostria truncatalis*	Costa Rica: Guanacaste	ASHYE1625-09
Alabagrus andresfreitasi	DHJPAR0037880	Crambidae	*Phostria truncatalis*	Costa Rica: Guanacaste	ASHYC4625-10
Alabagrus andresfreitasi	DHJPAR0037959	Crambidae	*Phostria truncatalis*	Costa Rica: Guanacaste	ASHYC4704-10
Alabagrus andresfreitasi	DHJPAR0050365	Crambidae	*Phostria truncatalis*	Costa Rica: Guanacaste	ACGAZ1679-12
Alabagrus andywarreni	DHJPAR0015471	Crambidae	*Phostria truncatalis*	Costa Rica: Guanacaste	ASAG157-07
Alabagrus andywarreni	DHJPAR0015472	Crambidae	*Phostria truncatalis*	Costa Rica: Guanacaste	ASAG158-07
Alabagrus andywarreni	DHJPAR0037906	Crambidae	*Phostria metalobalis*	Costa Rica: Guanacaste	ASHYC4651-10
Alabagrus andywarreni	DHJPAR0041199	Crambidae	*Phostria metalobalis*	Costa Rica: Guanacaste	ASHYF1105-11
Alabagrus andywarreni	DHJPAR0044988	Crambidae	*Phostria metalobalis*	Costa Rica: Guanacaste	ACGAZ209-11
Alabagrus arawak	H1196			Costa Rica: Cartago	MF361679
Alabagrus arawak	H1201			Costa Rica: Heredia	MF361683
Alabagrus arawak	H12092			Costa Rica: Heredia	MF361699
Alabagrus arawak	H12186			Costa Rica: Heredia	MF361703
Alabagrus arua	DHJPAR0015518	Crambidae	*Hyalorista exuvialis*DHJ02	Costa Rica: Alajuela	ASAG204-07
Alabagrus arua	DHJPAR0021202	Crambidae	*Hyalorista exuvialis*DHJ02	Costa Rica: Alajuela	ASBC1014-07
Alabagrus arua	DHJPAR0030487	Crambidae	*Hyalorista exuvialis*DHJ02	Costa Rica: Alajuela	ASHYB1230-09
Alabagrus arua	DHJPAR0035224	Crambidae	*Hyalorista exuvialis*DHJ02	Costa Rica: Alajuela	ASHYE1046-09
Alabagrus arua	DHJPAR0035296	Crambidae	*Hyalorista exuvialis*DHJ02	Costa Rica: Alajuela	ASHYE1118-09
Alabagrus arua	DHJPAR0035297	Crambidae	*Hyalorista exuvialis*DHJ02	Costa Rica: Alajuela	ASHYE1119-09
Alabagrus arua	DHJPAR0041194	Crambidae	*Hyalorista exuvialis*DHJ02	Costa Rica: Alajuela	ASHYF1100-11
Alabagrus arua	DHJPAR0049054	Crambidae	*Hyalorista exuvialis*DHJ02	Costa Rica: Alajuela	ACGBA2596-12
Alabagrus arua	DHJPAR0051379	Crambidae	*Hyalorista exuvialis*DHJ02	Costa Rica: Alajuela	ACGBA3971-13
Alabagrus axelhausmanni	DHJPAR0042832, H6745	Crambidae	musoBioLep01 BioLep448	Costa Rica: Guanacaste	ASHYH590-11
Alabagrus bernardoespinozai	DHJPAR0036338	Crambidae	*Microthyris prolongalis*	Costa Rica: Alajuela	ASHYD1529-09
Alabagrus bobpoolei	DHJPAR0036694	Crambidae	*Eulepte* Janzen06	Costa Rica: Guanacaste	ASHYE1605-09
Alabagrus bobpoolei	DHJPAR0037887	Crambidae	*Eulepte* Solis15	Costa Rica: Guanacaste	ASHYC4632-10
Alabagrus bobpoolei	DHJPAR0038924	Crambidae	*Eulepte* Solis15	Costa Rica: Guanacaste	ASHYD2497-10
Alabagrus bobpoolei	DHJPAR0041169	Crambidae	*Eulepte* Janzen12	Costa Rica: Guanacaste	ASHYF1084-11
Alabagrus bobpoolei	DHJPAR0042805	Crambidae	*Eulepte* Solis15	Costa Rica: Alajuela	ASHYH563-11
Alabagrus bobpoolei	DHJPAR0042811	Crambidae	*Eulepte* Solis15	Costa Rica: Guanacaste	ASHYH569-11
Alabagrus bobpoolei	DHJPAR0042813	Crambidae	*Eulepte* Solis15	Costa Rica: Alajuela	ASHYH571-11
Alabagrus bobpoolei	DHJPAR0042814	Crambidae	*Eulepte* Solis15	Costa Rica: Alajuela	ASHYH572-11
Alabagrus bobpoolei	DHJPAR0042815	Crambidae	*Eulepte* Solis15	Costa Rica: Alajuela	ASHYH573-11
Alabagrus bobpoolei	DHJPAR0042828	Crambidae	*Eulepte* Solis15	Costa Rica: Alajuela	ASHYH586-11
Alabagrus bobpoolei	DHJPAR0045785	Crambidae	*Eulepte* Solis15	Costa Rica: Alajuela	ACGAZ974-11
Alabagrus bobpoolei	DHJPAR0048725	Crambidae	*Eulepte* Solis15	Costa Rica: Guanacaste	ACGBA2267-12
Alabagrus bobpoolei	DHJPAR0048727	Crambidae	*Eulepte* Solis15	Costa Rica: Guanacaste	ACGBA2269-12
Alabagrus bobpoolei	DHJPAR0050364	Crambidae	*Eulepte* Solis15	Costa Rica: Alajuela	ACGAZ1678-12
Alabagrus bobpoolei	DHJPAR0051380	Crambidae	*Eulepte* Solis15	Costa Rica: Alajuela	ACGBA3972-13
Alabagrus bobpoolei	DHJPAR0051382	Crambidae	*Eulepte* Solis15	Costa Rica: Alajuela	ACGBA3974-13
Alabagrus bobpoolei	DHJPAR0054495	Crambidae	*Eulepte* Solis15	Costa Rica: Alajuela	ASHYD3660-14
Alabagrus bobpoolei	DHJPAR0054514	Crambidae	*Eulepte* Solis15	Costa Rica: Alajuela	ASHYD3679-14

Appendix 1 Continued.

Taxon	Specimen no.	Host family	Host species	Country: region	Accession no.
Alabagrus bobrobbinsi	DHJPAR0037881	Crambidae	*Microthyris anormalis*DHJ02	Costa Rica: Guanacaste	ASHYC4626-10
Alabagrus bobrobbinsi	DHJPAR0045007	Crambidae	*Microthyris prolongalis*DHJ02	Costa Rica: Guanacaste	ACGAZ228-11
Alabagrus bobrobbinsi	DHJPAR0045008	Crambidae	*Microthyris prolongalis*DHJ02	Costa Rica: Guanacaste	ACGAZ229-11
Alabagrus bobrobbinsi	DHJPAR0045017	Crambidae	*Microthyris prolongalis*DHJ02	Costa Rica: Guanacaste	ACGAZ238-11
Alabagrus bobrobbinsi	DHJPAR0046733	Crambidae	*Microthyris prolongalis*DHJ02	Costa Rica: Guanacaste	ACGBA906-12
Alabagrus bobrobbinsi	DHJPAR0049657	Crambidae	*Microthyris prolongalis*DHJ02	Costa Rica: Alajuela	ASHYB2451-12
Alabagrus brianharrisi	DHJPAR0041187	Crambidae	*Phaedropsis cernalis*	Costa Rica: Guanacaste	ASHYF1093-11
Alabagrus brianharrisi	DHJPAR0046738	Crambidae	*Microthyris prolongalis*	Costa Rica: Guanacaste	ACGBA911-12
Alabagrus cara	BIOUG24991-C07			Costa Rica: Guanacaste	GMACR173-15
Alabagrus cara	BIOUG25233-D08			Costa Rica: Guanacaste	GMACW602-15
Alabagrus cara	DHJPAR0035232	Crambidae	*Desmia ufeus*	Costa Rica: Alajuela	ASHYE1054-09
Alabagrus cara	DHJPAR0041579, H7675	Crambidae	*Diacme* BioLep02	Costa Rica: Alajuela	ASHYF1485-11
Alabagrus cara	DHJPAR0052681	Crambidae	*Desmia benealis*DHJ03	Costa Rica: Alajuela	ASHYM2035-13
Alabagrus cara	DHJPAR0058550	Crambidae	*Desmia* BioLep22DHJ02	Costa Rica: Alajuela	MHMYN8150-16
Alabagrus cara	H1202			Costa Rica: Heredia	MF361684
Alabagrus cara	H12109			Costa Rica: Heredia	MF361701
Alabagrus cocto	DHJPAR0016927	Crambidae	*Conchylodes grammaphora*	Costa Rica: Alajuela	ASBR900-07
Alabagrus cocto	DHJPAR0021151	Crambidae	*Conchylodes arcifera*	Costa Rica: Guanacaste	ASBC963-07
Alabagrus cocto	DHJPAR0030383	Crambidae	*Herpetogramma salbialis*	Costa Rica: Guanacaste	ASHYB1122-09
Alabagrus cocto	DHJPAR0040345, H8044	Crambidae	*Syllepte* Solis22	Costa Rica: Guanacaste	ASHYE2481-11
Alabagrus cocto	DHJPAR0041594	Crambidae	*Syllepte* Solis22	Costa Rica: Guanacaste	ASHYF1500-11
Alabagrus cocto	DHJPAR0042356	Crambidae	*Syllepte* Solis22	Costa Rica: Alajuela	ASHYH120-11
Alabagrus cocto	DHJPAR0045784	Crambidae	*Salbia haemorrhoidalis*	Costa Rica: Alajuela	ACGAZ973-11
Alabagrus cocto	DHJPAR0048715	Crambidae	*Desmia ploralis*DHJ03	Costa Rica: Alajuela	ACGBA2257-12
Alabagrus cocto	DHJPAR0050361	Crambidae	*Syllepte* Solis22	Costa Rica: Alajuela	ACGAZ1675-12
Alabagrus cocto	DHJPAR0053598	Crambidae	*Salbia haemorrhoidalis*	Costa Rica: Alajuela	ASHYM2952-13
Alabagrus cocto	DHJPAR0053599	Crambidae	*Phostria vitrifera*	Costa Rica: Alajuela	ASHYM2953-13
Alabagrus cocto	DHJPAR0053601	Crambidae	*Salbia haemorrhoidalis*	Costa Rica: Alajuela	ASHYM2955-13
Alabagrus cocto	DHJPAR0053603	Crambidae	*Desmia ploralis*DHJ01	Costa Rica: Alajuela	ASHYM2957-13
Alabagrus combos	DHJPAR0009361	Crambidae	*Patania* Solis03	Costa Rica: Guanacaste	ASBR628-06
Alabagrus combos	DHJPAR0015530	Crambidae	*Patania* Solis03	Costa Rica: Alajuela	ASAG216-07
Alabagrus combos	DHJPAR0017276	Crambidae	*Conchylodes platinalis*	Costa Rica: Guanacaste	ASBD381-07
Alabagrus combos	DHJPAR0030609	Crambidae	*Patania* Solis03	Costa Rica: Alajuela	ASHYB1350-09
Alabagrus combos	DHJPAR0035295	Crambidae	*Ategumia lotanalis*DHJ09	Costa Rica: Alajuela	ASHYE1117-09
Alabagrus combos	DHJPAR0035529	Crambidae	*Pycnarmon* BioLep66	Costa Rica: Guanacaste	ASHYE1351-09
Alabagrus combos	DHJPAR0036341	Crambidae	*Ategumia lotanalis*DHJ09	Costa Rica: Alajuela	ASHYD1532-09
Alabagrus combos	DHJPAR0036376	Crambidae	*Ategumia lotanalis*DHJ09	Costa Rica: Alajuela	ASHYD1567-09
Alabagrus combos	DHJPAR0036377	Crambidae	*Ategumia lotanalis*DHJ09	Costa Rica: Alajuela	ASHYD1568-09
Alabagrus combos	DHJPAR0037877	Crambidae	*Herpetogramma salbialis*	Costa Rica: Guanacaste	ASHYC4622-10
Alabagrus combos	DHJPAR0037878	Crambidae	*Herpetogramma salbialis*	Costa Rica: Guanacaste	ASHYC4623-10
Alabagrus combos	DHJPAR0037879	Crambidae	*Herpetogramma salbialis*	Costa Rica: Guanacaste	ASHYC4624-10
Alabagrus combos	DHJPAR0037884	Crambidae	*Herpetogramma salbialis*	Costa Rica: Guanacaste	ASHYC4629-10
Alabagrus combos	DHJPAR0037891	Crambidae	*Herpetogramma salbialis*	Costa Rica: Guanacaste	ASHYC4636-10
Alabagrus combos	DHJPAR0037896	Crambidae	*Ategumia matutinalis*DHJ03	Costa Rica: Alajuela	ASHYC4641-10
Alabagrus combos	DHJPAR0037897	Crambidae	*Ategumia lotanalis*	Costa Rica: Alajuela	ASHYC4642-10
Alabagrus combos	DHJPAR0037898	Crambidae	*Ategumia lotanalis*	Costa Rica: Alajuela	ASHYC4643-10
Alabagrus combos	DHJPAR0037914	Crambidae	*Ategumia matutinalis*DHJ03	Costa Rica: Guanacaste	ASHYC4659-10
Alabagrus combos	DHJPAR0037929	Crambidae	*Herpetogramma salbialis*	Costa Rica: Alajuela	ASHYC4674-10
Alabagrus combos	DHJPAR0037955	Crambidae	*Ategumia matutinalis*DHJ03	Costa Rica: Alajuela	ASHYC4700-10
Alabagrus combos	DHJPAR0037958	Crambidae	*Herpetogramma salbialis*	Costa Rica: Guanacaste	ASHYC4703-10
Alabagrus combos	DHJPAR0038807	Crambidae	*Rhectocraspeda periusalis*	Costa Rica: Alajuela	ASHYD2380-10
Alabagrus combos	DHJPAR0038812	Crambidae	*Rhectocraspeda periusalis*	Costa Rica: Alajuela	ASHYD2385-10
Alabagrus combos	DHJPAR0041185	Crambidae	*Herpetogramma salbialis*	Costa Rica: Alajuela	ASHYF1091-11
Alabagrus combos	DHJPAR0041186	Crambidae	*Rhectocraspeda periusalis*	Costa Rica: Alajuela	ASHYF1092-11
Alabagrus combos	DHJPAR0041562, H7958	Crambidae	*Herpetogramma salbialis*	Costa Rica: Alajuela	ASHYF1468-11
Alabagrus combos	DHJPAR0041583, H7981	Crambidae	*Herpetogramma salbialis*	Costa Rica: Alajuela	ASHYF1489-11
Alabagrus combos	DHJPAR0041596, H7948	Crambidae	*Herpetogramma salbialis*	Costa Rica: Alajuela	ASHYF1502-11
Alabagrus combos	DHJPAR0041598, H7823	Crambidae	*Herpetogramma salbialis*	Costa Rica: Alajuela	ASHYF1504-11
Alabagrus combos	DHJPAR0042819	Crambidae	*Ategumia lotanalis*DHJ08	Costa Rica: Alajuela	ASHYH577-11
Alabagrus combos	DHJPAR0042826	Crambidae	*spilo*Janzen01 Janzen14DHJ02	Costa Rica: Alajuela	ASHYH584-11
Alabagrus combos	DHJPAR0046734	Crambidae	*Herpetogramma* Solis10	Costa Rica: Alajuela	ACGBA907-12
Alabagrus combos	DHJPAR0046735	Crambidae	*Ategumia lotanalis*DHJ09	Costa Rica: Alajuela	ACGBA908-12
Alabagrus combos	DHJPAR0046739	Crambidae	*Herpetogramma* Solis10	Costa Rica: Alajuela	ACGBA912-12
Alabagrus combos	DHJPAR0049475, H16752	Crambidae	*Patania* Solis03	Costa Rica: Alajuela	ACGBA3017-12
Alabagrus combos	DHJPAR0050368	Crambidae	*Herpetogramma salbialis*	Costa Rica: Alajuela	ACGAZ1682-12
Alabagrus combos	DHJPAR0050372	Crambidae	*Ategumia lotanalis*DHJ09	Costa Rica: Alajuela	ACGAZ1686-12
Alabagrus combos	DHJPAR0051350, H16026	Crambidae	*Patania* Solis03	Costa Rica: Alajuela	ACGBA3942-13
Alabagrus combos	DHJPAR0051354, H15917	Crambidae	*Patania* Solis03	Costa Rica: Alajuela	ACGBA3946-13

Appendix 1 Continued.

Taxon	Specimen no.	Host family	Host species	Country: region	Accession no.
Alabagrus combos	DHJPAR0051383, H16066	Crambidae	*Patania* Solis03	Costa Rica: Alajuela	ACGBA3975-13
Alabagrus combos	DHJPAR0051384, H16067	Crambidae	*Patania* Solis03	Costa Rica: Alajuela	ACGBA3976-13
Alabagrus combos	DHJPAR0053607	Crambidae	*Herpetogramma salbialis*	Costa Rica: Alajuela	ASHYM2961-13
Alabagrus combos	DHJPAR0053635	Crambidae	*Herpetogramma salbialis*	Costa Rica: Alajuela	ASHYM2989-13
Alabagrus combos	DHJPAR0054498	Crambidae	*Ategumia lotanalis*	Costa Rica: Alajuela	ASHYD3663-14
Alabagrus combos	DHJPAR0054506	Crambidae	*Rhectocraspeda periusalis*	Costa Rica: Alajuela	ASHYD3671-14
Alabagrus combos	DHJPAR0055974	Crambidae	*Ategumia matutinalis*	Costa Rica: Alajuela	ASHYH2711-14
Alabagrus combos	DHJPAR0055975	Crambidae	*Ategumia matutinalis*	Costa Rica: Alajuela	ASHYH2712-14
Alabagrus combos	DHJPAR0056358, H15821	Crambidae	*Ategumia lotanalis*	Costa Rica: Alajuela	MHMYC2438-15
Alabagrus combos	DHJPAR0057427	Crambidae	*Ategumia lotanalis*	Costa Rica: Alajuela	ACGBA5337-15
Alabagrus combos	DHJPAR0057437	Crambidae	*Herpetogramma salbialis*	Costa Rica: Alajuela	ACGBA5347-15
Alabagrus combos	DHJPAR0057438	Crambidae	*Herpetogramma salbialis*	Costa Rica: Alajuela	ACGBA5348-15
Alabagrus combos	DHJPAR0058538	Crambidae	*Ategumia lotanalis*	Costa Rica: Alajuela	MHMYN8138-16
Alabagrus cuna	DHJPAR0042807	Crambidae	*Neurophyseta* BioLep226	Costa Rica: Alajuela	ASHYH565-11
Alabagrus cuna	DHJPAR0043025, H8836	Crambidae	*Neurophyseta* BioLep226	Costa Rica: Alajuela	ASHYH783-11
Alabagrus cuna	DHJPAR0043033, H4852	Crambidae	*Neurophyseta* BioLep226	Costa Rica: Alajuela	ASHYH791-11
Alabagrus cuna	DHJPAR0049045	Crambidae	*Neurophyseta* BioLep226	Costa Rica: Alajuela	ACGBA2587-12
Alabagrus cuna	DHJPAR0049047	Crambidae	*Neurophyseta* BioLep226	Costa Rica: Alajuela	ACGBA2589-12
Alabagrus cuna	DHJPAR0054521, H15804	Crambidae	*Neurophyseta* BioLep226	Costa Rica: Alajuela	ASHYD3686-14
Alabagrus cuna	DHJPAR0054525, H15916	Crambidae	*Neurophyseta* BioLep226	Costa Rica: Alajuela	ASHYD3690-14
Alabagrus cuna	DHJPAR0054535, H15930	Crambidae	*Neurophyseta* BioLep226	Costa Rica: Alajuela	ASHYD3700-14
Alabagrus donharveyi	DHJPAR0021163	Crambidae	*Coelorhyncidia pandaralis*	Costa Rica: Alajuela	ASBC975-07
Alabagrus donharveyi	DHJPAR0021165	Crambidae	*Coelorhyncidia pandaralis*	Costa Rica: Alajuela	ASBC977-07
Alabagrus donharveyi	DHJPAR0036688	Crambidae	*Coenostolopsis apicalis*	Costa Rica: Alajuela	ASHYE1599-09
Alabagrus donharveyi	DHJPAR0036711	Crambidae	*Coenostolopsis apicalis*	Costa Rica: Alajuela	ASHYE1622-09
Alabagrus donharveyi	DHJPAR0037930	Crambidae	*Coenostolopsis apicalis*	Costa Rica: Alajuela	ASHYC4675-10
Alabagrus donharveyi	DHJPAR0045810	Crambidae	*Coenostolopsis apicalis*	Costa Rica: Alajuela	ACGAZ999-11
Alabagrus donharveyi	DHJPAR0048734	Crambidae	*Coenostolopsis apicalis*	Costa Rica: Guanacaste	ACGBA2276-12
Alabagrus donharveyi	DHJPAR0054512	Crambidae	*Coenostolopsis apicalis*	Costa Rica: Guanacaste	ASHYD3677-14
Alabagrus donharveyi	DHJPAR0054513	Crambidae	*Coenostolopsis apicalis*	Costa Rica: Guanacaste	ASHYD3678-14
Alabagrus donlafontainei	DHJPAR0038923	Crambidae	musoBioLep01 BioLep448	Costa Rica: Guanacaste	ASHYD2496-10
Alabagrus donlafontainei	DHJPAR0038927	Crambidae	musoBioLep01 BioLep448	Costa Rica: Guanacaste	ASHYD2500-10
Alabagrus donlafontainei	DHJPAR0038928	Crambidae	musoBioLep01 BioLep448	Costa Rica: Guanacaste	ASHYD2501-10
Alabagrus donlafontainei	DHJPAR0038929	Crambidae	musoBioLep01 BioLep448	Costa Rica: Guanacaste	ASHYD2502-10
Alabagrus donlafontainei	DHJPAR0050137, H16759	Crambidae	musoBioLep01 BioLep448	Costa Rica: Guanacaste	ACGAZ1451-12
Alabagrus donnai	H1199			Costa Rica: Heredia	MF361681
Alabagrus donnai	H12192			Costa Rica: Heredia	MF361704
Alabagrus ekchuah	DHJPAR0015403	Crambidae	*Syllepte amando*DHJ02	Costa Rica: Guanacaste	ASAG089-07
Alabagrus ekchuah	DHJPAR0015404	Crambidae	*Pantographa suffusalis*	Costa Rica: Guanacaste	ASAG090-07
Alabagrus ekchuah	DHJPAR0015405	Crambidae	*Pantographa suffusalis*	Costa Rica: Guanacaste	ASAG091-07
Alabagrus ekchuah	DHJPAR0021168	Crambidae	*Syllepte amando*DHJ02	Costa Rica: Guanacaste	ASBC980-07
Alabagrus englishi	H12110			Costa Rica: Heredia	MF361702
Alabagrus englishi	INB0003765129			Costa Rica: San Jose	ASINH998-12
Alabagrus englishi	INBIOCRI002005193			Costa Rica: Guanacaste	ASINH1007-12
Alabagrus fernandodiasi	DHJPAR0009377	Crambidae	*Herpetogramma* Solis10	Costa Rica: Guanacaste	ASBR644-06
Alabagrus fernandodiasi	DHJPAR0017273	Crambidae	*Herpetogramma* Solis11	Costa Rica: Guanacaste	ASBD378-07
Alabagrus fernandodiasi	DHJPAR0021198	Crambidae	*Herpetogramma* Solis11	Costa Rica: Guanacaste	ASBC1010-07
Alabagrus fernandodiasi	DHJPAR0037883	Crambidae	*Rhectocraspeda* Janzen347	Costa Rica: Guanacaste	ASHYC4628-10
Alabagrus fernandodiasi	DHJPAR0037890	Crambidae	*Rhectocraspeda* Janzen347	Costa Rica: Guanacaste	ASHYC4635-10
Alabagrus fernandodiasi	DHJPAR0040215	Crambidae	*Herpetogramma* Solis11	Costa Rica: Guanacaste	ASHYE2382-11
Alabagrus fernandodiasi	DHJPAR0041163	Crambidae	*Herpetogramma* Solis10	Costa Rica: Guanacaste	ASHYF1078-11
Alabagrus fernandodiasi	DHJPAR0042804	Crambidae	*Rhectocraspeda periusalis*	Costa Rica: Guanacaste	ASHYH562-11
Alabagrus fernandodiasi	DHJPAR0044991	Crambidae	spiloBioLep01 BioLep403	Costa Rica: Guanacaste	ACGAZ212-11
Alabagrus fernandodiasi	DHJPAR0045799	Crambidae	spiloBioLep01 BioLep402	Costa Rica: Guanacaste	ACGAZ988-11
Alabagrus fernandodiasi	DHJPAR0045800	Crambidae	spiloBioLep01 BioLep402	Costa Rica: Guanacaste	ACGAZ989-11
Alabagrus fernandodiasi	DHJPAR0045801	Crambidae	*Herpetogramma* Solis11	Costa Rica: Guanacaste	ACGAZ990-11
Alabagrus fernandodiasi	DHJPAR0045804	Crambidae	spiloBioLep01 BioLep403	Costa Rica: Guanacaste	ACGAZ993-11
Alabagrus fernandodiasi	DHJPAR0046750	Crambidae	*Rhectocraspeda periusalis*	Costa Rica: Alajuela	ACGBA923-12
Alabagrus fernandodiasi	DHJPAR0048731	Crambidae	*Herpetogramma* Solis11	Costa Rica: Alajuela	ACGBA2273-12
Alabagrus fernandodiasi	DHJPAR0048732	Crambidae	*Herpetogramma* Solis11	Costa Rica: Alajuela	ACGBA2274-12
Alabagrus fernandodiasi	DHJPAR0050360	Crambidae	*Desmia benealis*DHJ02	Costa Rica: Alajuela	ACGAZ1674-12
Alabagrus fernandodiasi	DHJPAR0052080	Crambidae	spiloBioLep01 BioLep414	Costa Rica: Alajuela	ASHYH1192-13
Alabagrus fernandodiasi	DHJPAR0052081	Crambidae	spiloBioLep01 BioLep414	Costa Rica: Alajuela	ASHYH1193-13
Alabagrus fernandodiasi	DHJPAR0052085	Crambidae	*Herpetogramma* Solis11	Costa Rica: Alajuela	ASHYH1197-13
Alabagrus fernandodiasi	DHJPAR0052089	Crambidae	spiloBioLep01 BioLep311	Costa Rica: Alajuela	ASHYH1201-13
Alabagrus fernandodiasi	DHJPAR0052090	Crambidae	*Desmia* Janzen19	Costa Rica: Alajuela	ASHYH1202-13
Alabagrus fernandodiasi	DHJPAR0054488	Crambidae	*Herpetogramma* Solis11	Costa Rica: Alajuela	ASHYD3653-14
Alabagrus fernandodiasi	DHJPAR0054490	Crambidae	spiloBioLep01 BioLep243	Costa Rica: Alajuela	ASHYD3655-14

Appendix 1 Continued.

Taxon	Specimen no.	Host family	Host species	Country: region	Accession no.
Alabagrus fernandodiasi	DHJPAR0055088	Crambidae	*Herpetogramma* Solis11	Costa Rica: Alajuela	ASHYH1635-14
Alabagrus fernandodiasi	DHJPAR0055098	Crambidae	*Rhectocraspeda periusalis*	Costa Rica: Guanacaste	ASHYH1645-14
Alabagrus fernandodiasi	DHJPAR0055099	Crambidae	*Rhectocraspeda periusalis*	Costa Rica: Guanacaste	ASHYH1646-14
Alabagrus fernandodiasi	DHJPAR0055236, H15945	Crambidae	*Herpetogramma* Solis11	Costa Rica: Alajuela	ASHYH1783-14
Alabagrus fernandodiasi	DHJPAR0055818	Crambidae	*Herpetogramma* Solis11	Costa Rica: Alajuela	ASHYH2555-14
Alabagrus fernandodiasi	DHJPAR0056299	Crambidae	*Rhectocraspeda* Solis05	Costa Rica: Guanacaste	MHMYC2379-15
Alabagrus fernandodiasi	DHJPAR0057002, H15957	Crambidae	spiloBioLep01 BioLep415	Costa Rica: Alajuela	ACGBA4912-15
Alabagrus genemonroei	DHJPAR0015510	Crambidae	*Lamprosema* Dapkey23	Costa Rica: Alajuela	ASAG196-07
Alabagrus iankitchingi	DHJPAR0045001	Crambidae	*Phaedropsis* Solis350DHJ02	Costa Rica: Guanacaste	ACGAZ222-11
Alabagrus iankitchingi	DHJPAR0054545, H15841	Crambidae	*Phaedropsis* Solis350DHJ02	Costa Rica: Guanacaste	ASHYD3710-14
Alabagrus imitatus	H10807			USA: Missouri	MF361690
Alabagrus imitatus	H10850			USA: Missouri	MF361691
Alabagrus imitatus	H10874			USA: Missouri	MF361692
Alabagrus imitatus	H10876			USA: Missouri	MF361693
Alabagrus imitatus	H10882			USA: Missouri	MF361694
Alabagrus imitatus	H10888			USA: Missouri	MF361695
Alabagrus isidrochaconi	DHJPAR0009405	Crambidae	*Glyphodes sibillalis*DHJ01	Costa Rica: Guanacaste	ASBR672-06
Alabagrus isidrochaconi	DHJPAR0015520	Crambidae	*Glyphodes sibillalis*DHJ01	Costa Rica: Guanacaste	ASAG206-07
Alabagrus isidrochaconi	DHJPAR0015523	Crambidae	*Glyphodes sibillalis*DHJ01	Costa Rica: Guanacaste	ASAG209-07
Alabagrus isidrochaconi	DHJPAR0015525	Crambidae	*Eulepte* Janzen03	Costa Rica: Guanacaste	ASAG211-07
Alabagrus isidrochaconi	DHJPAR0052674	Crambidae	*Glyphodes sibillalis*DHJ01	Costa Rica: Guanacaste	ASHYM2028-13
Alabagrus isidrochaconi	DHJPAR0052675	Crambidae	*Glyphodes sibillalis*DHJ01	Costa Rica: Guanacaste	ASHYM2029-13
Alabagrus isidrochaconi	DHJPAR0052676	Crambidae	*Glyphodes sibillalis*DHJ01	Costa Rica: Guanacaste	ASHYM2030-13
Alabagrus isidrochaconi	DHJPAR0052683	Crambidae	*Glyphodes sibillalis*DHJ01	Costa Rica: Guanacaste	ASHYM2037-13
Alabagrus isidrochaconi	DHJPAR0052684	Crambidae	*Glyphodes sibillalis*DHJ01	Costa Rica: Guanacaste	ASHYM2038-13
Alabagrus isidrochaconi	DHJPAR0053608	Crambidae	*Glyphodes sibillalis*DHJ01	Costa Rica: Guanacaste	ASHYM2962-13
Alabagrus isidrochaconi	DHJPAR0053609	Crambidae	*Glyphodes sibillalis*DHJ01	Costa Rica: Guanacaste	ASHYM2963-13
Alabagrus isidrochaconi	DHJPAR0053624	Crambidae	*Glyphodes sibillalis*DHJ01	Costa Rica: Guanacaste	ASHYM2978-13
Alabagrus isidrochaconi	DHJPAR0053626	Crambidae	*Glyphodes sibillalis*DHJ01	Costa Rica: Guanacaste	ASHYM2980-13
Alabagrus isidrochaconi	DHJPAR0053627	Crambidae	*Glyphodes sibillalis*DHJ01	Costa Rica: Guanacaste	ASHYM2981-13
Alabagrus isidrochaconi	DHJPAR0053629	Crambidae	*Glyphodes sibillalis*DHJ01	Costa Rica: Guanacaste	ASHYM2983-13
Alabagrus isidrochaconi	DHJPAR0053630	Crambidae	*Glyphodes sibillalis*DHJ01	Costa Rica: Guanacaste	ASHYM2984-13
Alabagrus isidrochaconi	DHJPAR0053631	Crambidae	*Glyphodes sibillalis*DHJ01	Costa Rica: Guanacaste	ASHYM2985-13
Alabagrus isidrochaconi	DHJPAR0053633	Crambidae	*Glyphodes sibillalis*DHJ01	Costa Rica: Guanacaste	ASHYM2987-13
Alabagrus isidrochaconi	DHJPAR0053634	Crambidae	*Glyphodes sibillalis*DHJ01	Costa Rica: Guanacaste	ASHYM2988-13
Alabagrus ixtilton	H7357			Mexico: Jalisco	ATRMK377-11
Alabagrus jackiemillerae	DHJPAR0037886	Crambidae	*Herpetogramma* Solis11	Costa Rica: Guanacaste	ASHYC4631-10
Alabagrus jackiemillerae	DHJPAR0037895	Crambidae	*Desmia* Solis19	Costa Rica: Alajuela	ASHYC4640-10
Alabagrus jackiemillerae	DHJPAR0038805	Crambidae	*Herpetogramma* Solis11	Costa Rica: Alajuela	ASHYD2378-10
Alabagrus jackiemillerae	DHJPAR0041165	Crambidae	*Desmia* Solis19	Costa Rica: Guanacaste	ASHYF1080-11
Alabagrus jackiemillerae	DHJPAR0045798	Crambidae	*Herpetogramma salbialis*	Costa Rica: Alajuela	ACGAZ987-11
Alabagrus jackiemillerae	DHJPAR0045802	Crambidae	spiloBioLep01 BioLep403	Costa Rica: Guanacaste	ACGAZ991-11
Alabagrus jackiemillerae	DHJPAR0045803	Crambidae	spiloBioLep01 BioLep403	Costa Rica: Guanacaste	ACGAZ992-11
Alabagrus jackiemillerae	DHJPAR0045805	Crambidae	spiloBioLep01 BioLep403	Costa Rica: Guanacaste	ACGAZ994-11
Alabagrus jackiemillerae	DHJPAR0046753	Crambidae	*Pilocrocis purpurascens*	Costa Rica: Alajuela	ACGBA926-12
Alabagrus jackiemillerae	DHJPAR0048729	Crambidae	*Desmia* Solis19	Costa Rica: Alajuela	ACGBA2271-12
Alabagrus jackiemillerae	DHJPAR0051668	Crambidae	*Phostria* Janzen05	Costa Rica: Alajuela	ACGBA4260-13
Alabagrus jackiemillerae	DHJPAR0052078	Crambidae	*Herpetogramma* Solis11	Costa Rica: Alajuela	ASHYH1190-13
Alabagrus jackiemillerae	DHJPAR0052682	Crambidae	*Patania* Solis03	Costa Rica: Alajuela	ASHYM2036-13
Alabagrus jackiemillerae	DHJPAR0053593	Crambidae	*Desmia* Janzen07	Costa Rica: Guanacaste	ASHYM2947-13
Alabagrus jackiemillerae	DHJPAR0053596	Crambidae	*Herpetogramma* Solis11	Costa Rica: Alajuela	ASHYM2950-13
Alabagrus jackiemillerae	DHJPAR0054491	Crambidae	*Rhectocraspeda* Janzen347	Costa Rica: Alajuela	ASHYD3656-14
Alabagrus jackiemillerae	DHJPAR0054492	Crambidae	*Rhectocraspeda* Janzen347	Costa Rica: Alajuela	ASHYD3657-14
Alabagrus jackiemillerae	DHJPAR0057439	Crambidae	*Desmia* Solis19	Costa Rica: Alajuela	ACGBA5349-15
Alabagrus jackiemillerae	DHJPAR0057440	Crambidae	*Desmia* Solis19	Costa Rica: Alajuela	ACGBA5350-15
Alabagrus jackiemillerae	DHJPAR0057441	Crambidae	*Desmia* Solis19	Costa Rica: Alajuela	ACGBA5351-15
Alabagrus jackiemillerae	DHJPAR0057445	Crambidae	*Rhectocraspeda* Solis05	Costa Rica: Alajuela	ACGBA5355-15
Alabagrus jackiemillerae	DHJPAR0057446	Crambidae	Phostria Janzen05	Costa Rica: Alajuela	ACGBA5356-15
Alabagrus jackiemillerae	DHJPAR0057448	Crambidae	*Desmia* Solis19	Costa Rica: Alajuela	ACGBA5358-15
Alabagrus jackiemillerae	DHJPAR0057450	Crambidae	*Rhectocraspeda* Solis05	Costa Rica: Alajuela	ACGBA5360-15
Alabagrus janzeni	DHJPAR0009348	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	ASBR615-06
Alabagrus janzeni	DHJPAR0009354	Crambidae	*Eulepte concordalis*	Costa Rica: Guanacaste	ASBR621-06
Alabagrus janzeni	DHJPAR0009355	Crambidae	*Eulepte concordalis*	Costa Rica: Guanacaste	ASBR622-06
Alabagrus janzeni	DHJPAR0009356	Crambidae	*Eulepte concordalis*	Costa Rica: Guanacaste	ASBR623-06
Alabagrus janzeni	DHJPAR0009362	Crambidae	*Eulepte concordalis*	Costa Rica: Guanacaste	ASBR629-06
Alabagrus janzeni	DHJPAR0009374	Crambidae	*Eulepte concordalis*	Costa Rica: Guanacaste	ASBR641-06
Alabagrus janzeni	DHJPAR0009375	Crambidae	*Eulepte concordalis*	Costa Rica: Guanacaste	ASBR642-06
Alabagrus janzeni	DHJPAR0009376	Crambidae	*Eulepte concordalis*	Costa Rica: Guanacaste	ASBR643-06

Appendix 1 Continued.

Taxon	Specimen no.	Host family	Host species	Country: region	Accession no.
Alabagrus janzeni	DHJPAR0009400	Crambidae	*Eulepte concordalis*	Costa Rica: Guanacaste	ASBR667-06
Alabagrus janzeni	DHJPAR0009403	Crambidae	*Eulepte concordalis*	Costa Rica: Guanacaste	ASBR670-06
Alabagrus janzeni	DHJPAR0009433	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	ASBR700-06
Alabagrus janzeni	DHJPAR0009434	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	ASBR701-06
Alabagrus janzeni	DHJPAR0010083	Crambidae	*Eulepte concordalis*	Costa Rica: Guanacaste	ASBC667-06
Alabagrus janzeni	DHJPAR0010509	Crambidae	*Eulepte concordalis*	Costa Rica: Guanacaste	ASBC668-06
Alabagrus janzeni	DHJPAR0010510	Crambidae	*Eulepte concordalis*	Costa Rica: Guanacaste	ASBC669-06
Alabagrus janzeni	DHJPAR0015384	Crambidae	*Eulepte concordalis*	Costa Rica: Guanacaste	ASAG070-07
Alabagrus janzeni	DHJPAR0015493	Crambidae	*Eulepte* Solis15	Costa Rica: Guanacaste	ASAG179-07
Alabagrus janzeni	DHJPAR0015494	Crambidae	*Eulepte* Solis15	Costa Rica: Guanacaste	ASAG180-07
Alabagrus janzeni	DHJPAR0015495	Crambidae	*Eulepte* Solis15	Costa Rica: Guanacaste	ASAG181-07
Alabagrus janzeni	DHJPAR0015496	Crambidae	*Eulepte concordalis*	Costa Rica: Guanacaste	ASAG182-07
Alabagrus janzeni	DHJPAR0015497	Crambidae	*Eulepte concordalis*	Costa Rica: Guanacaste	ASAG183-07
Alabagrus janzeni	DHJPAR0015498	Crambidae	*Eulepte concordalis*	Costa Rica: Guanacaste	ASAG184-07
Alabagrus janzeni	DHJPAR0015499	Crambidae	*Eulepte concordalis*	Costa Rica: Guanacaste	ASAG185-07
Alabagrus janzeni	DHJPAR0015511	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	ASAG197-07
Alabagrus janzeni	DHJPAR0015512	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	ASAG198-07
Alabagrus janzeni	DHJPAR0015513	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	ASAG199-07
Alabagrus janzeni	DHJPAR0015515	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	ASAG201-07
Alabagrus janzeni	DHJPAR0016416	Crambidae	*Eulepte concordalis*	Costa Rica: Guanacaste	ASTAP445-06
Alabagrus janzeni	DHJPAR0016417	Crambidae	*Eulepte concordalis*	Costa Rica: Guanacaste	ASTAP446-06
Alabagrus janzeni	DHJPAR0016428	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	ASTAP457-06
Alabagrus janzeni	DHJPAR0016429	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	ASTAP458-06
Alabagrus janzeni	DHJPAR0016430	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	ASTAP459-06
Alabagrus janzeni	DHJPAR0016431	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	ASTAP460-06
Alabagrus janzeni	DHJPAR0016432	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	ASTAP461-06
Alabagrus janzeni	DHJPAR0016926	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	ASBR899-07
Alabagrus janzeni	DHJPAR0016928	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	ASBR901-07
Alabagrus janzeni	DHJPAR0016930	Crambidae	*Eulepte concordalis*	Costa Rica: Guanacaste	ASBR903-07
Alabagrus janzeni	DHJPAR0021149	Crambidae	*Eulepte concordalis*	Costa Rica: Guanacaste	ASBC961-07
Alabagrus janzeni	DHJPAR0021208	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	ASBC1020-07
Alabagrus janzeni	DHJPAR0021211	Crambidae	*Eulepte concordalis*	Costa Rica: Guanacaste	ASBC1023-07
Alabagrus janzeni	DHJPAR0029179	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	ASHYE586-09
Alabagrus janzeni	DHJPAR0036363	Crambidae	*Eulepte concordalis*	Costa Rica: Guanacaste	ASHYD1554-09
Alabagrus janzeni	DHJPAR0036365	Crambidae	*Eulepte concordalis*	Costa Rica: Guanacaste	ASHYD1556-09
Alabagrus janzeni	DHJPAR0036366	Crambidae	*Eulepte concordalis*	Costa Rica: Guanacaste	ASHYD1557-09
Alabagrus janzeni	DHJPAR0036697	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	ASHYE1608-09
Alabagrus janzeni	DHJPAR0036698	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	ASHYE1609-09
Alabagrus janzeni	DHJPAR0036699	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	ASHYE1610-09
Alabagrus janzeni	DHJPAR0036712	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	ASHYE1623-09
Alabagrus janzeni	DHJPAR0036716	Crambidae	*Eulepte concordalis*	Costa Rica: Guanacaste	ASHYE1627-09
Alabagrus janzeni	DHJPAR0036718	Crambidae	*Eulepte concordalis*	Costa Rica: Guanacaste	ASHYE1629-09
Alabagrus janzeni	DHJPAR0037190	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	ASHYE2024-10
Alabagrus janzeni	DHJPAR0037902	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	ASHYC4647-10
Alabagrus janzeni	DHJPAR0037922	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	ASHYC4667-10
Alabagrus janzeni	DHJPAR0041166	Crambidae	*Eulepte* Janzen06	Costa Rica: Guanacaste	ASHYF1081-11
Alabagrus janzeni	DHJPAR0041167	Crambidae	*Eulepte* Janzen02	Costa Rica: Guanacaste	ASHYF1082-11
Alabagrus janzeni	DHJPAR0041195	Crambidae	*Eulepte* Janzen06	Costa Rica: Guanacaste	ASHYF1101-11
Alabagrus janzeni	DHJPAR0041197	Crambidae	*Eulepte* Janzen06	Costa Rica: Guanacaste	ASHYF1103-11
Alabagrus janzeni	DHJPAR0041198	Crambidae	*Eulepte* Janzen06	Costa Rica: Guanacaste	ASHYF1104-11
Alabagrus janzeni	DHJPAR0041576, H7674	Crambidae	*Eulepte* Janzen06	Costa Rica: Guanacaste	ASHYF1482-11
Alabagrus janzeni	DHJPAR0044992	Crambidae	*Eulepte* Janzen06	Costa Rica: Guanacaste	ACGAZ213-11
Alabagrus janzeni	DHJPAR0044993	Crambidae	*Eulepte* Janzen06	Costa Rica: Guanacaste	ACGAZ214-11
Alabagrus janzeni	DHJPAR0044994	Crambidae	*Eulepte* Janzen06	Costa Rica: Guanacaste	ACGAZ215-11
Alabagrus janzeni	DHJPAR0044995	Crambidae	*Eulepte* Janzen06	Costa Rica: Guanacaste	ACGAZ216-11
Alabagrus janzeni	DHJPAR0044996	Crambidae	*Eulepte* Janzen06	Costa Rica: Guanacaste	ACGAZ217-11
Alabagrus janzeni	DHJPAR0044997	Crambidae	*Eulepte* Janzen06	Costa Rica: Guanacaste	ACGAZ218-11
Alabagrus janzeni	DHJPAR0044998	Crambidae	*Eulepte* concordalis	Costa Rica: Guanacaste	ACGAZ219-11
Alabagrus janzeni	DHJPAR0048724	Crambidae	*Eulepte* Solis15	Costa Rica: Guanacaste	ACGBA2266-12
Alabagrus janzeni	DHJPAR0049940	Crambidae	*Eulepte concordalis*	Costa Rica: Guanacaste	ACGAZ1254-12
Alabagrus janzeni	DHJPAR0050363	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	ACGAZ1677-12
Alabagrus janzeni	DHJPAR0050371	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	ACGAZ1685-12
Alabagrus janzeni	DHJPAR0052083	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	ASHYH1195-13
Alabagrus janzeni	DHJPAR0053587	Crambidae	*Eulepte concordalis*	Costa Rica: Guanacaste	ASHYM2941-13
Alabagrus janzeni	DHJPAR0053588	Crambidae	*Eulepte* Janzen06	Costa Rica: Guanacaste	ASHYM2942-13
Alabagrus janzeni	DHJPAR0053589	Crambidae	*Eulepte* Janzen06	Costa Rica: Guanacaste	ASHYM2943-13
Alabagrus janzeni	DHJPAR0053590	Crambidae	*Eulepte* Janzen06	Costa Rica: Guanacaste	ASHYM2944-13
Alabagrus janzeni	DHJPAR0053622	Crambidae	*Eulepte* Janzen06	Costa Rica: Guanacaste	ASHYM2976-13

Appendix 1 Continued.

Taxon	Specimen no.	Host family	Host species	Country: region	Accession no.
Alabagrus janzeni	DHJPAR0053623	Crambidae	*Eulepte concordalis*	Costa Rica: Guanacaste	ASHYM2977-13
Alabagrus janzeni	DHJPAR0054487	Crambidae	*Eulepte* Janzen06	Costa Rica: Guanacaste	ASHYD3652-14
Alabagrus janzeni	DHJPAR0055089	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	ASHYH1636-14
Alabagrus janzeni	DHJPAR0055090	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	ASHYH1637-14
Alabagrus janzeni	DHJPAR0055091	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	ASHYH1638-14
Alabagrus janzeni	DHJPAR0055092	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	ASHYH1639-14
Alabagrus janzeni	DHJPAR0055093	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	ASHYH1640-14
Alabagrus janzeni	DHJPAR0055094	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	ASHYH1641-14
Alabagrus janzeni	DHJPAR0055095	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	ASHYH1642-14
Alabagrus janzeni	DHJPAR0055096	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	ASHYH1643-14
Alabagrus janzeni	DHJPAR0055097	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	ASHYH1644-14
Alabagrus janzeni	DHJPAR0058537	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	MHMYN8137-16
Alabagrus janzeni	DHJPAR0058539	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	MHMYN8139-16
Alabagrus janzeni	DHJPAR0058542	Crambidae	*Eulepte concordalis*	Costa Rica: Alajuela	MHMYN8142-16
Alabagrus jeanfrancoislandryi	DHJPAR0009353	Crambidae	*Eulepte alialis*	Costa Rica: Guanacaste	ASBR620-06
Alabagrus jeanfrancoislandryi	DHJPAR0009357	Crambidae	*Eulepte concordalis*	Costa Rica: Guanacaste	ASBR624-06
Alabagrus jeanfrancoislandryi	DHJPAR0009373	Crambidae	*Eulepte alialis*	Costa Rica: Guanacaste	ASBR640-06
Alabagrus jeanfrancoislandryi	DHJPAR0009406	Crambidae	*Conchylodes arcifera*	Costa Rica: Guanacaste	ASBR673-06
Alabagrus jeanfrancoislandryi	DHJPAR0015316	Crambidae	*Eulepte concordalis*	Costa Rica: Guanacaste	ASAG002-07
Alabagrus jeanfrancoislandryi	DHJPAR0015328	Crambidae	*Phaedropsis cernalis*	Costa Rica: Guanacaste	ASAG014-07
Alabagrus jeanfrancoislandryi	DHJPAR0015329	Crambidae	*Herpetogramma semilaniata*	Costa Rica: Guanacaste	ACGBA6164-16
Alabagrus jeanfrancoislandryi	DHJPAR0015330	Crambidae	*Herpetogramma semilaniata*	Costa Rica: Guanacaste	ASAG016-07
Alabagrus jeanfrancoislandryi	DHJPAR0015387	Crambidae	*Ategumia lotanalis*DHJ07	Costa Rica: Guanacaste	ASAG073-07
Alabagrus jeanfrancoislandryi	DHJPAR0015521	Crambidae	*Conchylodes arcifera*	Costa Rica: Guanacaste	ASAG207-07
Alabagrus jeanfrancoislandryi	DHJPAR0015522	Crambidae	*Microthyris anormalis*	Costa Rica: Guanacaste	ASAG208-07
Alabagrus jeanfrancoislandryi	DHJPAR0021157	Crambidae	*Conchylodes platinalis*	Costa Rica: Guanacaste	ASBC969-07
Alabagrus jeanfrancoislandryi	DHJPAR0030388	Crambidae	*Ategumia lotanalis*	Costa Rica: Guanacaste	ASHYB1127-09
Alabagrus jeanfrancoislandryi	DHJPAR0036349	Crambidae	*Eulepte alialis*	Costa Rica: Guanacaste	ASHYD1540-09
Alabagrus jeanfrancoislandryi	DHJPAR0036353	Crambidae	*Conchylodes platinalis*	Costa Rica: Guanacaste	ASHYD1544-09
Alabagrus jeanfrancoislandryi	DHJPAR0036356	Crambidae	*Ategumia lotanalis*DHJ09	Costa Rica: Alajuela	ASHYD1547-09
Alabagrus jeanfrancoislandryi	DHJPAR0036374	Crambidae	*Eulepte alialis*	Costa Rica: Alajuela	ASHYD1565-09
Alabagrus jeanfrancoislandryi	DHJPAR0036683	Crambidae	*Herpetogramma salbialis*	Costa Rica: Guanacaste	ASHYE1594-09
Alabagrus jeanfrancoislandryi	DHJPAR0036685	Crambidae	*Eulepte alialis*	Costa Rica: Alajuela	ASHYE1596-09
Alabagrus jeanfrancoislandryi	DHJPAR0036696	Crambidae	*Patania* Solis03	Costa Rica: Guanacaste	ASHYE1607-09
Alabagrus jeanfrancoislandryi	DHJPAR0036700	Crambidae	*Phostria samealis*	Costa Rica: Alajuela	ASHYE1611-09
Alabagrus jeanfrancoislandryi	DHJPAR0036703	Crambidae	*Eulepte alialis*	Costa Rica: Alajuela	ASHYE1614-09
Alabagrus jeanfrancoislandryi	DHJPAR0036717	Crambidae	*Eulepte alialis*	Costa Rica: Alajuela	ASHYE1628-09
Alabagrus jeanfrancoislandryi	DHJPAR0037187	Crambidae	*Eulepte alialis*	Costa Rica: Guanacaste	ASHYE2021-10
Alabagrus jeanfrancoislandryi	DHJPAR0037900	Crambidae	*Hyalorista exuvialis*DHJ02	Costa Rica: Alajuela	ASHYC4645-10
Alabagrus jeanfrancoislandryi	DHJPAR0037917	Crambidae	*Eulepte alialis*	Costa Rica: Alajuela	ASHYC4662-10
Alabagrus jeanfrancoislandryi	DHJPAR0037948	Crambidae	*Eulepte alialis*	Costa Rica: Alajuela	ASHYC4693-10
Alabagrus jeanfrancoislandryi	DHJPAR0037950	Crambidae	*Eulepte alialis*	Costa Rica: Alajuela	ASHYC4695-10
Alabagrus jeanfrancoislandryi	DHJPAR0037951	Crambidae	*Herpetogramma salbialis*	Costa Rica: Guanacaste	ASAG283-16
Alabagrus jeanfrancoislandryi	DHJPAR0037953	Crambidae	*Salbia haemorrhoidalis*	Costa Rica: Alajuela	ASHYC4698-10
Alabagrus jeanfrancoislandryi	DHJPAR0037956	Crambidae	*Eulepte alialis*	Costa Rica: Guanacaste	ASHYC4701-10
Alabagrus jeanfrancoislandryi	DHJPAR0041196	Crambidae	*Eulepte alialis*	Costa Rica: Guanacaste	ASHYF1102-11
Alabagrus jeanfrancoislandryi	DHJPAR0041603, H7902	Crambidae	*Herpetogramma* Solis11	Costa Rica: Guanacaste	ASHYF1509-11
Alabagrus jeanfrancoislandryi	DHJPAR0042824	Crambidae	*Herpetogramma salbialis*	Costa Rica: Guanacaste	ASHYH582-11
Alabagrus jeanfrancoislandryi	DHJPAR0044999	Crambidae	*Eulepte alialis*	Costa Rica: Guanacaste	ACGAZ220-11
Alabagrus jeanfrancoislandryi	DHJPAR0045000	Crambidae	*Eulepte alialis*	Costa Rica: Guanacaste	ACGAZ221-11
Alabagrus jeanfrancoislandryi	DHJPAR0045003	Crambidae	*Eulepte alialis*	Costa Rica: Guanacaste	ACGAZ224-11
Alabagrus jeanfrancoislandryi	DHJPAR0045004	Crambidae	*Herpetogramma salbialis*	Costa Rica: Guanacaste	ACGAZ225-11
Alabagrus jeanfrancoislandryi	DHJPAR0045005	Crambidae	*Herpetogramma salbialis*	Costa Rica: Guanacaste	ACGAZ226-11
Alabagrus jeanfrancoislandryi	DHJPAR0045006	Crambidae	*Herpetogramma phaeopteralis*	Costa Rica: Guanacaste	ACGAZ227-11
Alabagrus jeanfrancoislandryi	DHJPAR0045010	Crambidae	*Herpetogramma salbialis*	Costa Rica: Guanacaste	ACGAZ231-11
Alabagrus jeanfrancoislandryi	DHJPAR0045011	Crambidae	*Herpetogramma salbialis*	Costa Rica: Guanacaste	ACGAZ232-11
Alabagrus jeanfrancoislandryi	DHJPAR0045012	Crambidae	*Herpetogramma salbialis*	Costa Rica: Guanacaste	ACGAZ233-11
Alabagrus jeanfrancoislandryi	DHJPAR0045013	Crambidae	*Herpetogramma salbialis*	Costa Rica: Guanacaste	ACGAZ234-11
Alabagrus jeanfrancoislandryi	DHJPAR0045014	Crambidae	*Herpetogramma salbialis*	Costa Rica: Guanacaste	ACGAZ235-11
Alabagrus jeanfrancoislandryi	DHJPAR0045015	Crambidae	*Herpetogramma salbialis*	Costa Rica: Guanacaste	ACGAZ236-11
Alabagrus jeanfrancoislandryi	DHJPAR0045783	Crambidae	*Herpetogramma* Solis11	Costa Rica: Guanacaste	ACGAZ972-11
Alabagrus jeanfrancoislandryi	DHJPAR0045786	Crambidae	*Eulepte alialis*	Costa Rica: Alajuela	ACGAZ975-11
Alabagrus jeanfrancoislandryi	DHJPAR0046741	Crambidae	*Eulepte alialis*	Costa Rica: Alajuela	ACGBA914-12
Alabagrus jeanfrancoislandryi	DHJPAR0049939	Crambidae	*Eulepte alialis*	Costa Rica: Guanacaste	ACGAZ1253-12
Alabagrus jeanfrancoislandryi	DHJPAR0050065	Crambidae	*Eulepte alialis*	Costa Rica: Alajuela	ACGAZ1379-12
Alabagrus jeanfrancoislandryi	DHJPAR0050370	Crambidae	*Patania Solis03*	Costa Rica: Alajuela	ACGAZ1684-12
Alabagrus jeanfrancoislandryi	DHJPAR0050932	Crambidae	*Eulepte alialis*	Costa Rica: Alajuela	ACGBA3524-13
Alabagrus jeanfrancoislandryi	DHJPAR0052689	Crambidae	*Eulepte alialis*	Costa Rica: Alajuela	ASHYM2043-13

Appendix 1 Continued.

Taxon	Specimen no.	Host family	Host species	Country: region	Accession no.
Alabagrus jeanfrancoislandryi	DHJPAR0052693	Crambidae	*Eulepte alialis*	Costa Rica: Alajuela	ASHYM2047-13
Alabagrus jeanfrancoislandryi	DHJPAR0053613	Crambidae	*Salbia haemorrhoidalis*	Costa Rica: Alajuela	ASHYM2967-13
Alabagrus jeanfrancoislandryi	DHJPAR0055979	Crambidae	*Rhectocraspeda* Solis05	Costa Rica: Alajuela	ASHYH2716-14
Alabagrus jeanfrancoislandryi	DHJPAR0055989, H15845	Crambidae	*Eulepte alialis*	Costa Rica: Alajuela	ASHYH2726-14
Alabagrus jeanfrancoislandryi	DHJPAR0055990, H16019	Crambidae	*Eulepte alialis*	Costa Rica: Alajuela	ASHYH2727-14
Alabagrus jeanfrancoislandryi	DHJPAR0056295	Crambidae	*Herpetogramma salbialis*	Costa Rica: Alajuela	ASHYH2552-14
Alabagrus jeanfrancoislandryi	DHJPAR0056296	Crambidae	*Eulepte alialis*	Costa Rica: Alajuela	MHMYC2376-15
Alabagrus jeanfrancoislandryi	DHJPAR0056298	Crambidae	*Eulepte alialis*	Costa Rica: Alajuela	MHMYC2378-15
Alabagrus jeanfrancoislandryi	DHJPAR0056994, H15959	Crambidae	*Herpetogramma salbialis*	Costa Rica: Alajuela	ACGBA4904-15
Alabagrus jeanfrancoislandryi	DHJPAR0056999, H15937	Crambidae	*Herpetogramma salbialis*	Costa Rica: Alajuela	ACGBA4909-15
Alabagrus jeanfrancoislandryi	DHJPAR0057430	Crambidae	*Herpetogramma salbialis*	Costa Rica: Alajuela	ACGBA5340-15
Alabagrus jeanfrancoislandryi	DHJPAR0057431	Crambidae	*Salbia haemorrhoidalis*	Costa Rica: Alajuela	ACGBA5341-15
Alabagrus jeanfrancoislandryi	DHJPAR0057738, H16751	Crambidae	*Eulepte alialis*	Costa Rica: Alajuela	ASHYB2672-15
Alabagrus jeanfrancoislandryi	DHJPAR0057745, H16735	Crambidae	*Eulepte alialis*	Costa Rica: Alajuela	ASHYB2679-15
Alabagrus jeanfrancoislandryi	DHJPAR0059747	Crambidae	*Pilocrocis ramentalis*	Costa Rica: Guanacaste	ACGBA6165-16
Alabagrus jeanfrancoislandryi	H7628			Mexico: Yucatan	ATRMK411-11
Alabagrus jeanfrancoislandryi	H7630			Mexico: Yucatan	ATRMK412-11
Alabagrus jeanfrancoislandryi	H7631			Mexico: Yucatan	ATRMK413-11
Alabagrus jeanfrancoislandryi	H831			Mexico: Yucatan	ATRMK246-11
Alabagrus jeanfrancoislandryi	H873			Mexico: Yucatan	ATRMK247-11
Alabagrus jeanmariecadioui	DHJPAR0009416	Crambidae	*Desmia ploralis*DHJ03	Costa Rica: Alajuela	ASBR683-06
Alabagrus jeanmariecadioui	DHJPAR0009424	Crambidae	*Desmia* Janzen09	Costa Rica: Alajuela	ASBR691-06
Alabagrus jeanmariecadioui	DHJPAR0009425	Crambidae	*Desmia ploralis*DHJ03	Costa Rica: Alajuela	ASBR692-06
Alabagrus jeanmariecadioui	DHJPAR0009427	Crambidae	*Desmia ploralis*DHJ03	Costa Rica: Alajuela	ASBR694-06
Alabagrus jeanmariecadioui	DHJPAR0009428	Crambidae	*Desmia ploralis*DHJ03	Costa Rica: Alajuela	ASBR695-06
Alabagrus jeanmariecadioui	DHJPAR0009429	Crambidae	*Desmia ploralis*DHJ03	Costa Rica: Alajuela	ASBR696-06
Alabagrus jeanmariecadioui	DHJPAR0009430	Crambidae	*Desmia ploralis*DHJ03	Costa Rica: Alajuela	ASBR697-06
Alabagrus jeanmariecadioui	DHJPAR0010513	Crambidae	*Desmia ploralis*DHJ03	Costa Rica: Guanacaste	ASBC672-06
Alabagrus jeanmariecadioui	DHJPAR0015507	Crambidae	*Desmia ploralis*DHJ02	Costa Rica: Guanacaste	ASAG193-07
Alabagrus jeanmariecadioui	DHJPAR0015508	Crambidae	*Desmia* Janzen09	Costa Rica: Alajuela	ASAG194-07
Alabagrus jeanmariecadioui	DHJPAR0015509	Crambidae	*Desmia ploralis*DHJ03	Costa Rica: Guanacaste	ASAG195-07
Alabagrus jeanmariecadioui	DHJPAR0023534	Crambidae	*Desmia ploralis*DHJ06	Costa Rica: Guanacaste	ASHYM286-08
Alabagrus jeanmariecadioui	DHJPAR0028030	Crambidae	*Desmia ploralis*DHJ03	Costa Rica: Alajuela	ASHYE267-08
Alabagrus jeanmariecadioui	DHJPAR0028030	Crambidae	*Desmia ploralis*DHJ03	Costa Rica: Alajuela	ASHYE267-08
Alabagrus jeanmariecadioui	DHJPAR0036687	Crambidae	*Desmia ploralis*DHJ03	Costa Rica: Alajuela	ASHYE1598-09
Alabagrus jeanmariecadioui	DHJPAR0036702	Crambidae	*Desmia* Solis100	Costa Rica: Alajuela	ASHYE1613-09
Alabagrus jeanmariecadioui	DHJPAR0036704	Crambidae	*Desmia ploralis*DHJ03	Costa Rica: Alajuela	ASHYE1615-09
Alabagrus jeanmariecadioui	DHJPAR0036710	Crambidae	*Desmia ploralis*DHJ03	Costa Rica: Alajuela	ASHYE1621-09
Alabagrus jeanmariecadioui	DHJPAR0037893	Crambidae	*Desmia* Solis19	Costa Rica: Guanacaste	ASHYC4638-10
Alabagrus jeanmariecadioui	DHJPAR0037901	Crambidae	*Desmia* Solis100	Costa Rica: Alajuela	ASHYC4646-10
Alabagrus jeanmariecadioui	DHJPAR0037903	Crambidae	*Desmia* Solis100	Costa Rica: Alajuela	ASHYC4648-10
Alabagrus jeanmariecadioui	DHJPAR0037904	Crambidae	*Desmia* Solis100	Costa Rica: Alajuela	ASHYC4649-10
Alabagrus jeanmariecadioui	DHJPAR0037905	Crambidae	*Desmia* Solis100	Costa Rica: Alajuela	ASHYC4650-10
Alabagrus jeanmariecadioui	DHJPAR0037918	Crambidae	*Desmia ploralis*DHJ04	Costa Rica: Alajuela	ASHYC4663-10
Alabagrus jeanmariecadioui	DHJPAR0037921	Crambidae	*Desmia* Solis100	Costa Rica: Alajuela	ASHYC4666-10
Alabagrus jeanmariecadioui	DHJPAR0037934	Crambidae	*Desmia ploralis*DHJ03	Costa Rica: Alajuela	ASHYC4679-10
Alabagrus jeanmariecadioui	DHJPAR0037954	Crambidae	*Desmia ploralis*DHJ04	Costa Rica: Alajuela	ASHYC4699-10
Alabagrus jeanmariecadioui	DHJPAR0038804	Crambidae	*Desmia ploralis*DHJ04	Costa Rica: Alajuela	ASHYD2377-10
Alabagrus jeanmariecadioui	DHJPAR0041190	Crambidae	*Desmia* Solis100	Costa Rica: Alajuela	ASHYF1096-11
Alabagrus jeanmariecadioui	DHJPAR0041193	Crambidae	*Desmia ploralis*DHJ03	Costa Rica: Alajuela	ASHYF1099-11
Alabagrus jeanmariecadioui	DHJPAR0041204	Crambidae	*Desmia* Solis100	Costa Rica: Alajuela	ASHYF1110-11
Alabagrus jeanmariecadioui	DHJPAR0041206	Crambidae	*Desmia ploralis*DHJ03	Costa Rica: Alajuela	ASHYF1112-11
Alabagrus jeanmariecadioui	DHJPAR0044985	Crambidae	*Desmia ploralis*DHJ03	Costa Rica: Alajuela	ACGAZ206-11
Alabagrus jeanmariecadioui	DHJPAR0044987	Crambidae	*Desmia ploralis*DHJ03	Costa Rica: Alajuela	ACGAZ208-11
Alabagrus jeanmariecadioui	DHJPAR0044989	Crambidae	*Desmia ploralis*DHJ03	Costa Rica: Alajuela	ACGAZ210-11
Alabagrus jeanmariecadioui	DHJPAR0045796	Crambidae	*Desmia ploralis*DHJ01	Costa Rica: Guanacaste	ACGAZ985-11
Alabagrus jeanmariecadioui	DHJPAR0045797	Crambidae	*Desmia ploralis*DHJ03	Costa Rica: Guanacaste	ACGAZ986-11
Alabagrus jeanmariecadioui	DHJPAR0045806	Crambidae	*Desmia ploralis*DHJ01	Costa Rica: Alajuela	ACGAZ995-11
Alabagrus jeanmariecadioui	DHJPAR0045807	Crambidae	*Desmia ploralis*DHJ01	Costa Rica: Guanacaste	ACGAZ996-11
Alabagrus jeanmariecadioui	DHJPAR0046751	Crambidae	Desmia ploralisDHJ01	Costa Rica: Guanacaste	ACGBA924-12
Alabagrus jeanmariecadioui	DHJPAR0046752	Crambidae	*Desmia ploralis*DHJ01	Costa Rica: Guanacaste	ACGBA925-12
Alabagrus jeanmariecadioui	DHJPAR0048716	Crambidae	*Desmia ploralis*DHJ03	Costa Rica: Alajuela	ACGBA2258-12
Alabagrus jeanmariecadioui	DHJPAR0048717	Crambidae	*Desmia ploralis*DHJ03	Costa Rica: Alajuela	ACGBA2259-12
Alabagrus jeanmariecadioui	DHJPAR0048730	Crambidae	*Desmia ploralis*DHJ03	Costa Rica: Alajuela	ACGBA2272-12
Alabagrus jeanmariecadioui	DHJPAR0049656	Crambidae	*Desmia ploralis*DHJ03	Costa Rica: Alajuela	ASHYB2450-12
Alabagrus jeanmariecadioui	DHJPAR0051346, H15927	Crambidae	*Desmia ploralis*DHJ01	Costa Rica: Guanacaste	ACGBA3938-13
Alabagrus jeanmariecadioui	DHJPAR0052084	Crambidae	*Desmia ploralis*DHJ03	Costa Rica: Alajuela	ASHYH1196-13
Alabagrus jeanmariecadioui	DHJPAR0052690	Crambidae	*Desmia ploralis*DHJ03	Costa Rica: Alajuela	ASHYM2044-13

Appendix 1 Continued.

Taxon	Specimen no.	Host family	Host species	Country: region	Accession no.
Alabagrus jeanmariecadioui	DHJPAR0052691	Crambidae	*Desmia ploralis*DHJ03	Costa Rica: Alajuela	ASHYM2045-13
Alabagrus jeanmariecadioui	DHJPAR0052695	Crambidae	*Desmia ploralis*DHJ03	Costa Rica: Alajuela	ASHYM2049-13
Alabagrus jeanmariecadioui	DHJPAR0053592	Crambidae	*Desmia octomaculalis*	Costa Rica: Alajuela	ASHYM2946-13
Alabagrus jeanmariecadioui	DHJPAR0055969	Crambidae	*Desmia ploralis*DHJ03	Costa Rica: Alajuela	ASHYH2706-14
Alabagrus jennyphillipsae	DHJPAR0035225	Crambidae	*Leucochromodes melusinalis*DHJ01	Costa Rica: Alajuela	ASHYE1047-09
Alabagrus jennyphillipsae	DHJPAR0037923	Crambidae	*Leucochromodes melusinalis*DHJ01	Costa Rica: Guanacaste	ASHYC4668-10
Alabagrus jennyphillipsae	DHJPAR0039523, H8033	Crambidae	*Leucochromodes melusinalis*DHJ01	Costa Rica: Guanacaste	ASHYB1811-10
Alabagrus jimmilleri	DHJPAR0009372	Crambidae	*Palpusia* Janzen02	Costa Rica: Guanacaste	ASBR639-06
Alabagrus jimmilleri	DHJPAR0036373	Crambidae	*Lygropia tripunctata*DHJ04	Costa Rica: Alajuela	ASHYD1564-09
Alabagrus jimmilleri	DHJPAR0040337, H8022	Crambidae	*Microthyris prolongalis*	Costa Rica: Alajuela	ASHYE2473-11
Alabagrus jimmilleri	DHJPAR0049046	Crambidae	*Microthyris prolongalis*	Costa Rica: Alajuela	ACGBA2588-12
Alabagrus jimmilleri	DHJPAR0049938	Crambidae	*Microthyris prolongalis*DHJ02	Costa Rica: Guanacaste	ACGAZ1252-12
Alabagrus jimmilleri	DHJPAR0049946	Crambidae	*Microthyris anormalis*DHJ02	Costa Rica: Guanacaste	ACGAZ1260-12
Alabagrus johnbrowni	DHJPAR0009364	Crambidae	*Piletosoma thialis*DHJ03	Costa Rica: Alajuela	ASBR631-06
Alabagrus johnbrowni	DHJPAR0009378	Crambidae	*Desmia tages*	Costa Rica: Guanacaste	ASBR645-06
Alabagrus johnbrowni	DHJPAR0009407	Crambidae	*Piletosoma thialis*DHJ03	Costa Rica: Alajuela	ASBR674-06
Alabagrus johnbrowni	DHJPAR0015516	Crambidae	*Piletosoma thialis*DHJ03	Costa Rica: Alajuela	ASAG202-07
Alabagrus johnbrowni	DHJPAR0015517	Crambidae	*Piletosoma thialis*DHJ03	Costa Rica: Alajuela	ASAG203-07
Alabagrus johnbrowni	DHJPAR0017277	Crambidae	*Piletosoma thialis*DHJ03	Costa Rica: Guanacaste	ASBD382-07
Alabagrus johnbrowni	DHJPAR0035226	Crambidae	*Piletosoma thialis*	Costa Rica: Alajuela	ASHYE1048-09
Alabagrus johnbrowni	DHJPAR0035954	Crambidae	*Piletosoma thialis*	Costa Rica: Alajuela	ASHYD1335-09
Alabagrus johnbrowni	DHJPAR0036335	Crambidae	*Piletosoma thialis*	Costa Rica: Alajuela	ASHYD1526-09
Alabagrus johnbrowni	DHJPAR0036336	Crambidae	*Piletosoma thialis*	Costa Rica: Alajuela	ASHYD1527-09
Alabagrus johnbrowni	DHJPAR0036375	Crambidae	*Piletosoma thialis*	Costa Rica: Alajuela	ASHYD1566-09
Alabagrus johnbrowni	DHJPAR0036707	Crambidae	*Phostria* Janzen05	Costa Rica: Alajuela	ASHYE1618-09
Alabagrus johnbrowni	DHJPAR0040069, H6492	Crambidae	*Piletosoma thialis*	Costa Rica: Guanacaste	ASHYE2244-11
Alabagrus johnbrowni	DHJPAR0041591, H7910	Crambidae	*Desmia tages*	Costa Rica: Alajuela	ASHYF1497-11
Alabagrus johnbrowni	DHJPAR0045029	Crambidae	*Piletosoma thialis*	Costa Rica: Alajuela	ACGAZ250-11
Alabagrus johnbrowni	DHJPAR0045058	Crambidae	*Desmia* BioLep09	Costa Rica: Alajuela	ACGAZ279-11
Alabagrus johnbrowni	DHJPAR0045059	Crambidae	*Desmia* BioLep09	Costa Rica: Alajuela	ACGAZ280-11
Alabagrus johnbrowni	DHJPAR0045782	Crambidae	*Desmia tages*	Costa Rica: Alajuela	ACGAZ971-11
Alabagrus johnbrowni	DHJPAR0046748	Crambidae	*Piletosoma thialis*	Costa Rica: Alajuela	ACGBA921-12
Alabagrus johnbrowni	DHJPAR0046749	Crambidae	*Piletosoma thialis*	Costa Rica: Alajuela	ACGBA922-12
Alabagrus johnbrowni	DHJPAR0046754	Crambidae	*Piletosoma thialis*	Costa Rica: Alajuela	ACGBA927-12
Alabagrus johnbrowni	DHJPAR0046755	Crambidae	*Piletosoma thialis*	Costa Rica: Alajuela	ACGBA928-12
Alabagrus johnbrowni	DHJPAR0051669	Crambidae	*Lamprosema* Dapkey23	Costa Rica: Alajuela	ACGBA4261-13
Alabagrus johnbrowni	DHJPAR0052086	Crambidae	*Piletosoma thialis*	Costa Rica: Alajuela	ASHYH1198-13
Alabagrus johnbrowni	DHJPAR0054531, H15910	Crambidae	*Piletosoma thialis*	Costa Rica: Alajuela	ASHYD3696-14
Alabagrus johnbrowni	DHJPAR0055980	Crambidae	*Desmia* BioLep42	Costa Rica: Alajuela	ASHYH2717-14
Alabagrus johnbrowni	DHJPAR0056297	Crambidae	*Desmia* BioLep19	Costa Rica: Guanacaste	MHMYC2377-15
Alabagrus johnbrowni	DHJPAR0056357, H15823	Crambidae	*Desmia* BioLep19	Costa Rica: Alajuela	MHMYC2437-15
Alabagrus johnbrowni	DHJPAR0057743, H16755	Crambidae	*Desmia* BioLep42	Costa Rica: Alajuela	ASHYB2677-15
Alabagrus karensharkeyae	DHJPAR0010196	Crambidae	*Microthyris prolongalis*	Costa Rica: Alajuela	ASBC477-06
Alabagrus karensharkeyae	DHJPAR0021170	Crambidae	*Microthyris prolongalis*	Costa Rica: Alajuela	ASBC982-07
Alabagrus karensharkeyae	DHJPAR0036348	Crambidae	*Microthyris prolongalis*	Costa Rica: Alajuela	ASHYD1539-09
Alabagrus karensharkeyae	DHJPAR0036706	Crambidae	*Microthyris prolongalis*	Costa Rica: Alajuela	ASHYE1617-09
Alabagrus karensharkeyae	DHJPAR0036715	Crambidae	*Microthyris prolongalis*	Costa Rica: Alajuela	ASHYE1626-09
Alabagrus karensharkeyae	DHJPAR0041200	Crambidae	*Microthyris prolongalis*	Costa Rica: Alajuela	ASHYF1106-11
Alabagrus karensharkeyae	DHJPAR0045002	Crambidae	*Microthyris prolongalis*DHJ02	Costa Rica: Guanacaste	ACGAZ223-11
Alabagrus karensharkeyae	DHJPAR0046742	Crambidae	*Palpusia* Janzen02	Costa Rica: Alajuela	ACGBA915-12
Alabagrus karensharkeyae	DHJPAR0052904	Crambidae	*Microthyris prolongalis*	Costa Rica: Alajuela	ASHYM2258-13
Alabagrus karensharkeyae	DHJPAR0055978	Crambidae	*Palpusia* Janzen02	Costa Rica: Alajuela	ASHYH2715-14
Alabagrus kaydodgeae	DHJPAR0053007, H16737	Crambidae	*Ategumia* Solis01	Costa Rica: Guanacaste	ASHYM2361-13
Alabagrus kaydodgeae	H1200			Costa Rica: Heredia	MF361682
Alabagrus kaydodgeae	INBIOCRI000737989			Costa Rica: Limón	ASINH1036-12
Alabagrus keithwillmotti	DHJPAR0007207	Crambidae	*Pilocrocis* Solis20	Costa Rica: Guanacaste	ASTAV449-06
Alabagrus keithwillmotti	DHJPAR0009385	Crambidae	*Pilocrocis* Solis20	Costa Rica: Guanacaste	ASBR652-06
Alabagrus keithwillmotti	DHJPAR0009386	Crambidae	*Pilocrocis* Solis20	Costa Rica: Guanacaste	ASBR653-06
Alabagrus keithwillmotti	DHJPAR0009387	Crambidae	*Pilocrocis* Solis20	Costa Rica: Guanacaste	ASBR654-06
Alabagrus keithwillmotti	DHJPAR0009388	Crambidae	*Pilocrocis* Solis20	Costa Rica: Guanacaste	ASBR655-06
Alabagrus keithwillmotti	DHJPAR0009389	Crambidae	*Pilocrocis* Solis20	Costa Rica: Guanacaste	ASBR656-06
Alabagrus keithwillmotti	DHJPAR0009390	Crambidae	*Pilocrocis* Solis20	Costa Rica: Guanacaste	ASBR657-06
Alabagrus keithwillmotti	DHJPAR0035227	Crambidae	spilobiolep01 biolep498	Costa Rica: Guanacaste	ASHYE1049-09
Alabagrus keithwillmotti	DHJPAR0036339	Crambidae	*Asturodes fimbriauralis*DHJ02	Costa Rica: Guanacaste	ASHYD1530-09
Alabagrus keithwillmotti	DHJPAR0037907	Crambidae	*Desmia* Janzen07	Costa Rica: Guanacaste	ASHYC4652-10
Alabagrus keithwillmotti	DHJPAR0037909	Crambidae	*Desmia* Janzen07	Costa Rica: Guanacaste	ASHYC4654-10
Alabagrus keithwillmotti	DHJPAR0037910	Crambidae	*Desmia* Janzen07	Costa Rica: Guanacaste	ASHYC4655-10
Alabagrus keithwillmotti	DHJPAR0037911	Crambidae	*Desmia* Janzen07	Costa Rica: Guanacaste	ASHYC4656-10

Appendix 1 Continued.

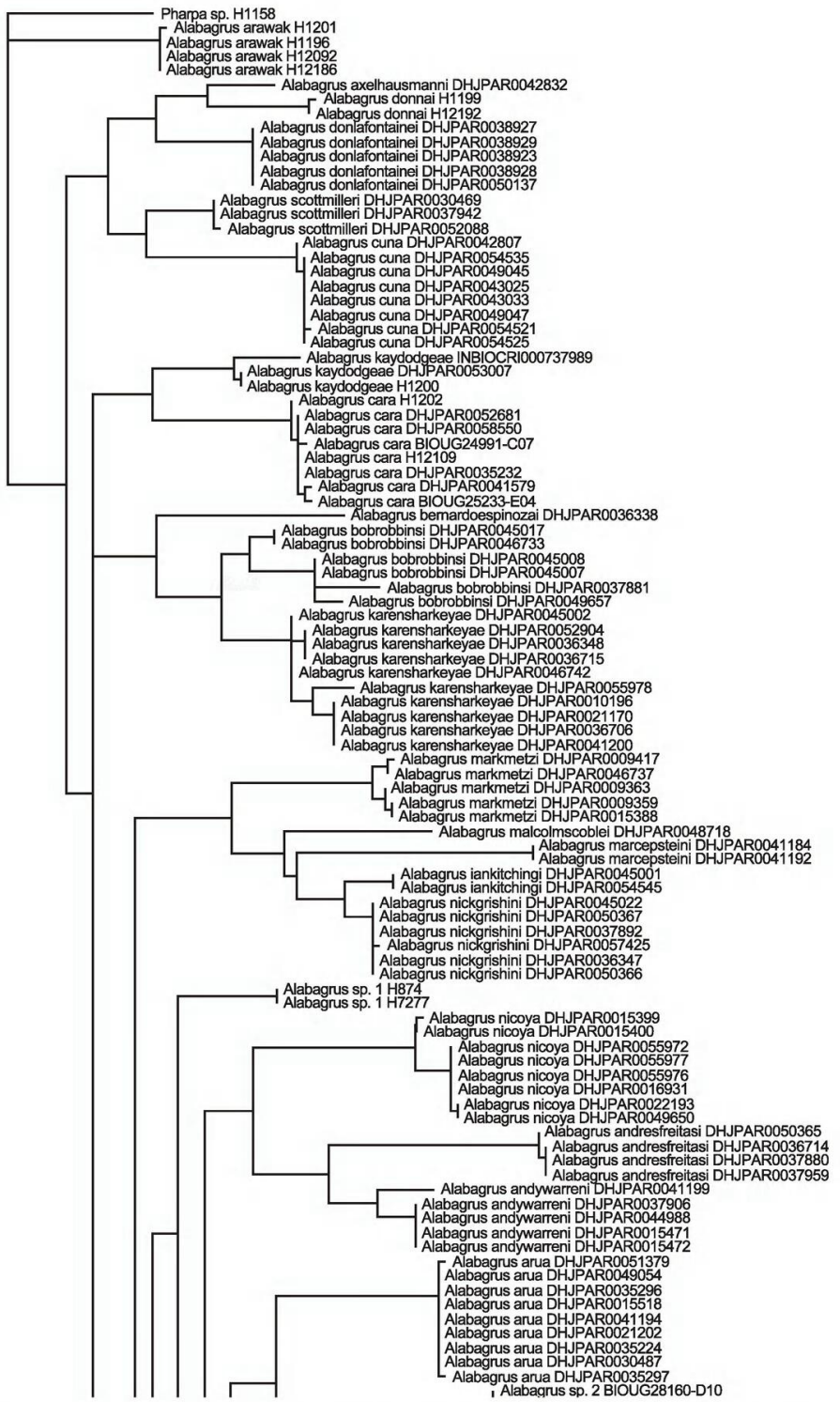
Taxon	Specimen no.	Host family	Host species	Country: region	Accession no.
Alabagrus keithwillmotti	DHJPAR0037912	Crambidae	*Desmia* Janzen07	Costa Rica: Guanacaste	ASHYC4657-10
Alabagrus keithwillmotti	DHJPAR0037913	Crambidae	*Desmia* Janzen07	Costa Rica: Guanacaste	ASHYC4658-10
Alabagrus keithwillmotti	DHJPAR0038808	Crambidae	*Phostria* Janzen03	Costa Rica: Guanacaste	ASHYD2381-10
Alabagrus keithwillmotti	DHJPAR0038809	Crambidae	*Asturodes fimbriauralis*DHJ02	Costa Rica: Guanacaste	ASHYD2382-10
Alabagrus keithwillmotti	DHJPAR0039357	Crambidae	*Desmia octomaculalis*	Costa Rica: Guanacaste	ASHYB1645-10
Alabagrus keithwillmotti	DHJPAR0045789	Crambidae	*Herpetogramma* Solis10	Costa Rica: Guanacaste	ACGAZ978-11
Alabagrus keithwillmotti	DHJPAR0045808	Crambidae	*Herpetogramma* Solis10	Costa Rica: Guanacaste	ACGAZ997-11
Alabagrus keithwillmotti	DHJPAR0045809	Crambidae	*Herpetogramma* Solis10	Costa Rica: Guanacaste	ACGAZ998-11
Alabagrus keithwillmotti	DHJPAR0050868	Crambidae	*Desmia* Janzen14	Costa Rica: Guanacaste	ACGBA3460-13
Alabagrus keithwillmotti	DHJPAR0052730	Crambidae	*Desmia* Janzen07	Costa Rica: Guanacaste	ASHYM2084-13
Alabagrus lindapitkinae	DHJPAR0052082	Crambidae	*Omiodes* Janzen05	Costa Rica: Alajuela	ASHYH1194-13
Alabagrus lindapitkinae	DHJPAR0054497	Crambidae	*Omiodes* Janzen05	Costa Rica: Alajuela	ASHYD3662-14
Alabagrus maculipes	DHJPAR0036337	Crambidae	*Desmia ploralis*DHJ02	Costa Rica: Guanacaste	ASHYD1528-09
Alabagrus maculipes	DHJPAR0036725	Crambidae	*Syngamia florella*	Costa Rica: Guanacaste	ASHYE1636-09
Alabagrus maculipes	DHJPAR0037188	Crambidae	*Salbia haemorrhoidalis*	Costa Rica: Alajuela	ASHYE2022-10
Alabagrus maculipes	DHJPAR0040212	Crambidae	*Palpusia* Janzen02	Costa Rica: Guanacaste	ASHYE2379-11
Alabagrus maculipes	DHJPAR0040213	Crambidae	*Palpusia* Janzen02	Costa Rica: Guanacaste	ASHYE2380-11
Alabagrus maculipes	DHJPAR0040329, H8023	Crambidae	*Herpetogramma semilaniata*	Costa Rica: Guanacaste	ASHYE2465-11
Alabagrus maculipes	DHJPAR0041150	Crambidae	*Herpetogramma* Janzen04	Costa Rica: Guanacaste	ASHYF1065-11
Alabagrus maculipes	DHJPAR0041151	Crambidae	*Herpetogramma* Janzen04	Costa Rica: Guanacaste	ASHYF1066-11
Alabagrus maculipes	DHJPAR0048735	Crambidae	*Pilocrocis ramentalis*	Costa Rica: Guanacaste	ACGBA2277-12
Alabagrus maculipes	DHJPAR0048736	Crambidae	*Pilocrocis ramentalis*	Costa Rica: Guanacaste	ACGBA2278-12
Alabagrus maculipes	DHJPAR0056292	Crambidae	*Herpetogramma salbialis*	Costa Rica: Alajuela	ASHYH2549-14
Alabagrus maculipes	H14909			Mexico: Sonora	MF361709
Alabagrus maculipes	H15106			Mexico: Sonora	MF361713
Alabagrus maculipes	H6020			Mexico: Jalisco	ATRMK370-11
Alabagrus malcolmscoblei	DHJPAR0048718	Crambidae	*Phostria latiapicalis*	Costa Rica: Alajuela	ACGBA2260-12
Alabagrus marcepsteini	DHJPAR0041184	Crambidae	crambidJanzen01 Janzen21	Costa Rica: Alajuela	ASHYF1090-11
Alabagrus marcepsteini	DHJPAR0041192	Crambidae	crambidJanzen01 Janzen21	Costa Rica: Alajuela	ASHYF1098-11
Alabagrus mariaheikkilae	DHJPAR0057004, H15960	Crambidae	*Salbia cassidalis*DHJ02	Costa Rica: Alajuela	ACGBA6199-16
Alabagrus markmetzi	DHJPAR0009359	Crambidae	*Syllepte aechmisalis*	Costa Rica: Guanacaste	ASBR626-06
Alabagrus markmetzi	DHJPAR0009363	Crambidae	*Syllepte aechmisalis*	Costa Rica: Guanacaste	ASBR630-06
Alabagrus markmetzi	DHJPAR0009417	Crambidae	*Syllepte aechmisalis*	Costa Rica: Guanacaste	ASBR684-06
Alabagrus markmetzi	DHJPAR0015388	Crambidae	*Syllepte aechmisalis*	Costa Rica: Guanacaste	ASAG074-07
Alabagrus markmetzi	DHJPAR0046737	Crambidae	*Syllepte aechmisalis*	Costa Rica: Guanacaste	ACGBA910-12
Alabagrus masneri	H1197			Costa Rica: Cartago	MF361680
Alabagrus nickgrishini	DHJPAR0036347	Crambidae	*Microthyris alvinalis*	Costa Rica: Guanacaste	ASHYD1538-09
Alabagrus nickgrishini	DHJPAR0037892	Crambidae	*Microthyris alvinalis*	Costa Rica: Guanacaste	ASHYC4637-10
Alabagrus nickgrishini	DHJPAR0045022	Crambidae	*Microthyris alvinalis*	Costa Rica: Guanacaste	ACGAZ243-11
Alabagrus nickgrishini	DHJPAR0050366	Crambidae	*Patania* Solis02	Costa Rica: Guanacaste	ACGAZ1680-12
Alabagrus nickgrishini	DHJPAR0050367	Crambidae	*Patania* Solis02	Costa Rica: Guanacaste	ACGAZ1681-12
Alabagrus nickgrishini	DHJPAR0057425	Crambidae	*Erilusa leucoplagialis*	Costa Rica: Guanacaste	ACGBA5335-15
Alabagrus nicoya	DHJPAR0015399	Crambidae	*Dichogama colotha*	Costa Rica: Guanacaste	ASAG085-07
Alabagrus nicoya	DHJPAR0015400	Crambidae	*Dichogama colotha*	Costa Rica: Guanacaste	ASAG086-07
Alabagrus nicoya	DHJPAR0016931	Crambidae	*Dichogama colotha*	Costa Rica: Guanacaste	ASBR904-07
Alabagrus nicoya	DHJPAR0022193	Crambidae	*Dichogama colotha*	Costa Rica: Guanacaste	ASTAT1331-07
Alabagrus nicoya	DHJPAR0049650	Crambidae	*Dichogama colotha*	Costa Rica: Guanacaste	ASHYB2444-12
Alabagrus nicoya	DHJPAR0055972	Crambidae	*Dichogama redtenbacheri*	Costa Rica: Guanacaste	ASHYH2709-14
Alabagrus nicoya	DHJPAR0055976	Crambidae	*Dichogama redtenbacheri*	Costa Rica: Guanacaste	ASHYH2713-14
Alabagrus nicoya	DHJPAR0055977	Crambidae	*Dichogama redtenbacheri*	Costa Rica: Guanacaste	ASHYH2714-14
Alabagrus paulgoldsteini	DHJPAR0037908	Crambidae	*Syllepte amando*DHJ02	Costa Rica: Guanacaste	ASHYC4653-10
Alabagrus paulheberti	DHJPAR0040223	Crambidae	*Aponia itzalis*	Costa Rica: Guanacaste	ASHYE2390-11
Alabagrus paulheberti	DHJPAR0046746	Crambidae	*Aponia minnithalis*	Costa Rica: Alajuela	ACGBA919-12
Alabagrus paulheberti	DHJPAR0046953	Crambidae	*Aponia minnithalis*	Costa Rica: Alajuela	ACGBA1099-12
Alabagrus paulthiaucourti	DHJPAR0045016	Crambidae	*Diatraea* Janzen989	Costa Rica: Alajuela	ACGAZ237-11
Alabagrus paulthiaucourti	DHJPAR0045021	Crambidae	*Diatraea* Janzen989	Costa Rica: Alajuela	ACGAZ242-11
Alabagrus ramyamanjunathae	DHJPAR0036701	Crambidae	*Phostria temira*	Costa Rica: Alajuela	ASHYE1612-09
Alabagrus roibasi	DHJPAR0009358	Crambidae	*Phostria oajacalis*	Costa Rica: Guanacaste	ASBR625-06
Alabagrus roibasi	DHJPAR0036690	Crambidae	*Phostria oajacalis*	Costa Rica: Guanacaste	ASHYE1601-09
Alabagrus roibasi	DHJPAR0036691	Crambidae	*Phostria oajacalis*	Costa Rica: Guanacaste	ASHYE1602-09
Alabagrus roibasi	DHJPAR0036693	Crambidae	*Phostria oajacalis*	Costa Rica: Guanacaste	ASHYE1604-09
Alabagrus roibasi	DHJPAR0036709	Crambidae	*Phostria oajacalis*	Costa Rica: Guanacaste	ASHYE1620-09
Alabagrus roibasi	DHJPAR0037882	Crambidae	*Phostria oajacalis*	Costa Rica: Guanacaste	ASHYC4627-10
Alabagrus roibasi	DHJPAR0046736	Crambidae	*Microthyris prolongalis*	Costa Rica: Guanacaste	ACGBA909-12
Alabagrus sanctus	H1339			USA: Kentucky	MF098379
Alabagrus scottmilleri	DHJPAR0030469	Crambidae	*Neurophyseta* Janzen222	Costa Rica: Alajuela	ASHYB1212-09
Alabagrus scottmilleri	DHJPAR0037942	Crambidae	*Neurophyseta* BioLep219	Costa Rica: Alajuela	ASHYC4687-10
Alabagrus scottmilleri	DHJPAR0052088	Crambidae	*Neurophyseta camptogrammalis*DHJ01	Costa Rica: Alajuela	ASHYH1200-13

Appendix 1 Continued.

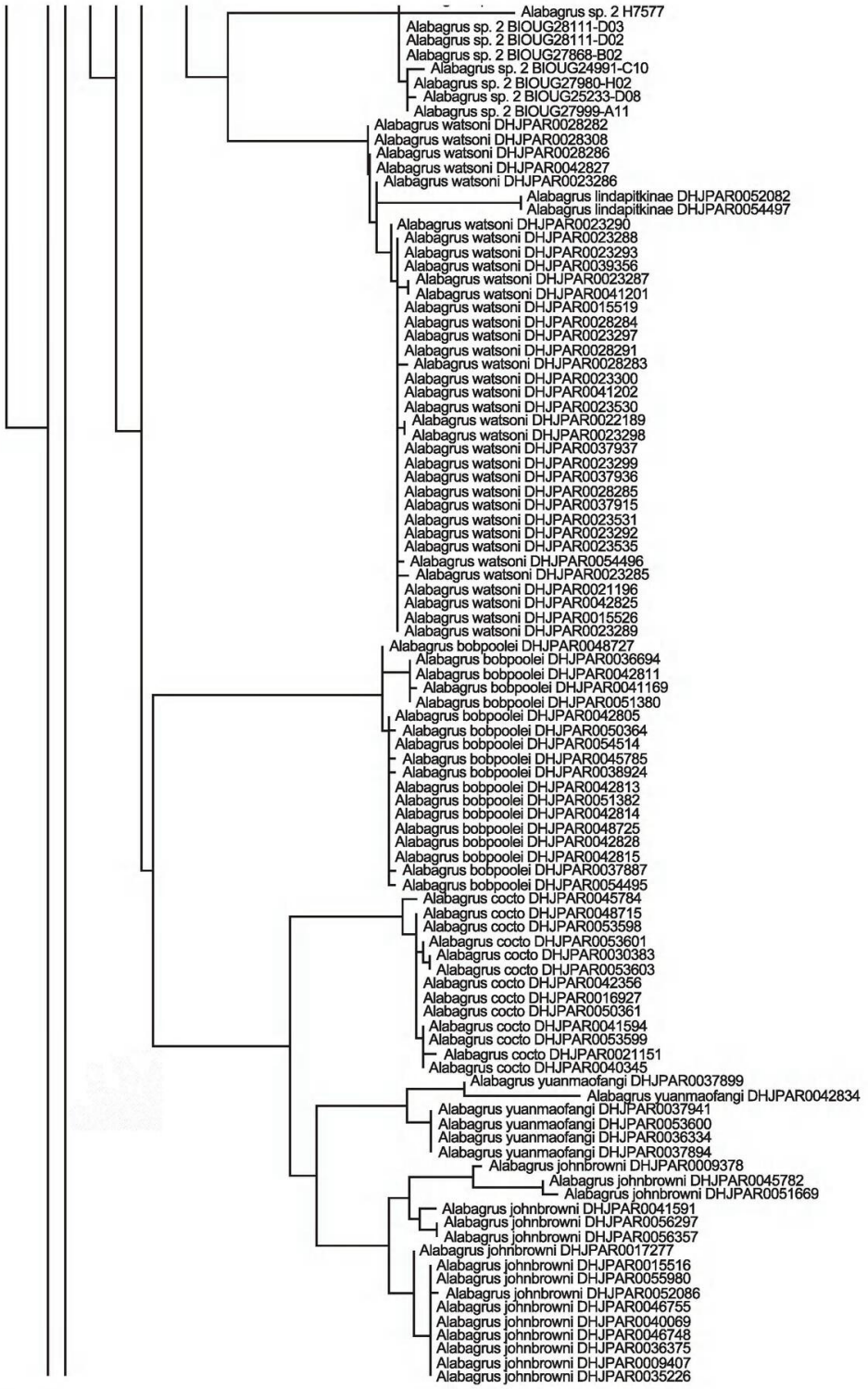
Taxon	Specimen no.	Host family	Host species	Country: region	Accession no.
Alabagrus sp. 1	H7277			Mexico: Yucatan	ATRMK428-11
Alabagrus sp. 1	H874			Mexico: Yucatan	ATRMK248-11
Alabagrus sp. 2	BIOUG24991-C10			Costa Rica: Guanacaste	GMACR176-15
Alabagrus sp. 2	BIOUG25233-E04			Costa Rica: Guanacaste	GMACX053-15
Alabagrus sp. 2	BIOUG27868-B02			Costa Rica: Guanacaste	GMAAT148-16
Alabagrus sp. 2	BIOUG27980-H02			Costa Rica: Guanacaste	GMABS001-16
Alabagrus sp. 2	BIOUG27999-A11			Costa Rica: Guanacaste	GMAAF505-16
Alabagrus sp. 2	BIOUG28111-D02			Costa Rica: Guanacaste	GMADE028-16
Alabagrus sp. 2	BIOUG28111-D03			Costa Rica: Guanacaste	GMADE029-16
Alabagrus sp. 2	BIOUG28160-D10			Costa Rica: Guanacaste	GMADW094-16
Alabagrus sp. 2	H7577			Honduras: Atlantida	ATRMK391-11
Alabagrus sp. 3	H806			Mexico: Yucatan	ATRMK243-11
Alabagrus sp. 4	H11326			USA: Virginia	MF361698
Alabagrus sp. 5	H14623			Mexico: Sonora	MF361705
Alabagrus sp. 6	H12099			Costa Rica: Heredia	MF361700
Alabagrus tanyadapkeyae	DHJPAR0040218	Crambidae	*Phostria cyrisalis*	Costa Rica: Guanacaste	ASHYE2385-11
Alabagrus tanyadapkeyae	DHJPAR0040225	Crambidae	*Phostria cyrisalis*	Costa Rica: Guanacaste	ASHYE2392-11
Alabagrus tanyadapkeyae	DHJPAR0055970	Crambidae	*Phostria cyrisalis*	Costa Rica: Alajuela	ASHYH2707-14
Alabagrus tanyadapkeyae	DHJPAR0057429	Crambidae	*Phostria cyrisalis*	Costa Rica: Alajuela	ACGBA6201-16
Alabagrus texanus	H11120			USA: Kentucky	MF361696
Alabagrus texanus	H11310			USA: Virginia	MF361697
Alabagrus texanus	H1343			USA: Kentucky	MF361685
Alabagrus texanus	H2735			USA: Kentucky	MF361686
Alabagrus texanus	H2736			USA: Kentucky	MF361687
Alabagrus texanus	H4418			USA: Kentucky	MF361688
Alabagrus texanus	H7301			USA: Kentucky	MF361689
Alabagrus texanus	H7539			USA: Kentucky	MF098381
Alabagrus texanus	H964			USA: Kentucky	MF361678
Alabagrus texanus	H7342			USA: Kentucky	ATRMK454-11
Alabagrus watsoni	DHJPAR0015519	Crambidae	*Omiodes humeralis*	Costa Rica: Alajuela	ASAG205-07
Alabagrus watsoni	DHJPAR0015526	Crambidae	*Omiodes humeralis*	Costa Rica: Alajuela	ASAG212-07
Alabagrus watsoni	DHJPAR0021196	Crambidae	*Omiodes humeralis*	Costa Rica: Guanacaste	ASBC1008-07
Alabagrus watsoni	DHJPAR0022189	Crambidae	*Omiodes humeralis*	Costa Rica: Alajuela	ASTAT1327-07
Alabagrus watsoni	DHJPAR0023285	Crambidae	*Omiodes humeralis*	Costa Rica: Guanacaste	ASHYM037-08
Alabagrus watsoni	DHJPAR0023286	Crambidae	*Omiodes humeralis*	Costa Rica: Guanacaste	ASHYM038-08
Alabagrus watsoni	DHJPAR0023287	Crambidae	*Omiodes humeralis*	Costa Rica: Guanacaste	ASHYM039-08
Alabagrus watsoni	DHJPAR0023288	Crambidae	*Omiodes humeralis*	Costa Rica: Guanacaste	ASHYM040-08
Alabagrus watsoni	DHJPAR0023289	Crambidae	*Omiodes humeralis*	Costa Rica: Guanacaste	ASHYM041-08
Alabagrus watsoni	DHJPAR0023290	Crambidae	*Omiodes humeralis*	Costa Rica: Guanacaste	ASHYM042-08
Alabagrus watsoni	DHJPAR0023292	Crambidae	*Omiodes humeralis*	Costa Rica: Guanacaste	ASHYM044-08
Alabagrus watsoni	DHJPAR0023293	Crambidae	*Omiodes humeralis*	Costa Rica: Alajuela	ASHYM045-08
Alabagrus watsoni	DHJPAR0023297	Crambidae	*Omiodes humeralis*	Costa Rica: Guanacaste	ASHYM049-08
Alabagrus watsoni	DHJPAR0023298	Crambidae	*Omiodes humeralis*	Costa Rica: Guanacaste	ASHYM050-08
Alabagrus watsoni	DHJPAR0023299	Crambidae	*Omiodes humeralis*	Costa Rica: Guanacaste	ASHYM051-08
Alabagrus watsoni	DHJPAR0023300	Crambidae	*Omiodes humeralis*	Costa Rica: Guanacaste	ASHYM052-08
Alabagrus watsoni	DHJPAR0023530	Crambidae	Omiodes *humeralis*DHJ07	Costa Rica: Alajuela	ASHYM282-08
Alabagrus watsoni	DHJPAR0023531	Crambidae	*Omiodes humeralis*	Costa Rica: Alajuela	ASHYM283-08
Alabagrus watsoni	DHJPAR0023535	Crambidae	*Omiodes humeralis*	Costa Rica: Guanacaste	ASHYM287-08
Alabagrus watsoni	DHJPAR0028282	Crambidae	*Omiodes humeralis*	Costa Rica: Guanacaste	ASHYF044-09
Alabagrus watsoni	DHJPAR0028283	Crambidae	*Omiodes humeralis*	Costa Rica: Guanacaste	ASHYF045-09
Alabagrus watsoni	DHJPAR0028284	Crambidae	*Omiodes humeralis*	Costa Rica: Guanacaste	ASHYF046-09
Alabagrus watsoni	DHJPAR0028285	Crambidae	*Omiodes humeralis*	Costa Rica: Guanacaste	ASHYF047-09
Alabagrus watsoni	DHJPAR0028286	Crambidae	*Omiodes humeralis*	Costa Rica: Guanacaste	ASHYF048-09
Alabagrus watsoni	DHJPAR0028291	Crambidae	*Omiodes humeralis*	Costa Rica: Guanacaste	ASHYF053-09
Alabagrus watsoni	DHJPAR0028308	Crambidae	*Omiodes humeralis*	Costa Rica: Guanacaste	ASHYF070-09
Alabagrus watsoni	DHJPAR0037915	Crambidae	*Omiodes humeralis*	Costa Rica: Alajuela	ASHYC4660-10
Alabagrus watsoni	DHJPAR0037936	Crambidae	*Omiodes humeralis*DHJ02	Costa Rica: Alajuela	ASHYC4681-10
Alabagrus watsoni	DHJPAR0037937	Crambidae	*Omiodes humeralis*	Costa Rica: Alajuela	ASHYC4682-10
Alabagrus watsoni	DHJPAR0039356	Crambidae	*Omiodes fulvicauda*	Costa Rica: Alajuela	ASAG284-16
Alabagrus watsoni	DHJPAR0041201	Crambidae	*Omiodes humeralis*	Costa Rica: Alajuela	ASHYF1107-11
Alabagrus watsoni	DHJPAR0041202	Crambidae	*Omiodes humeralis*	Costa Rica: Alajuela	ASHYF1108-11
Alabagrus watsoni	DHJPAR0042825	Crambidae	*Omiodes insolutalis*	Costa Rica: Alajuela	ASHYH583-11
Alabagrus watsoni	DHJPAR0042827	Crambidae	*Omiodes insolutalis*	Costa Rica: Alajuela	ASHYH585-11
Alabagrus watsoni	DHJPAR0054496	Crambidae	*Omiodes humeralis*	Costa Rica: Alajuela	ASHYD3661-14
Alabagrus yuanmaofangi	DHJPAR0036334	Crambidae	*Desmia* biolep02	Costa Rica: Alajuela	ASHYD1525-09
Alabagrus yuanmaofangi	DHJPAR0037894	Crambidae	*Desmia* Janzen09	Costa Rica: Alajuela	ASHYC4639-10
Alabagrus yuanmaofangi	DHJPAR0037899	Crambidae	*Desmia* Janzen09	Costa Rica: Alajuela	ASHYC4644-10
Alabagrus yuanmaofangi	DHJPAR0037941	Crambidae	*Desmia* BioLep06	Costa Rica: Alajuela	ASHYC4686-10

Appendix 1 Continued.

Taxon	Specimen no.	Host family	Host species	Country: region	Accession no.
Alabagrus yuanmaofangi	DHJPAR0042834, H6804	Crambidae	*Trichaea pilicornis*	Costa Rica: Alajuela	ASHYH592-11
Alabagrus yuanmaofangi	DHJPAR0053600	Crambidae	*Desmia ploralis*DHJ03	Costa Rica: Alajuela	ASHYM2954-13
Alabagrus yuchinkengae	DHJPAR0045112	Crambidae	*Microthyris prolongalis*	Costa Rica: Guanacaste	ACGAZ333-11



Supplemental Figure 1 Tree of highest posterior probability from a 10 million generation Bayesian analysis of 681 COI sequences.



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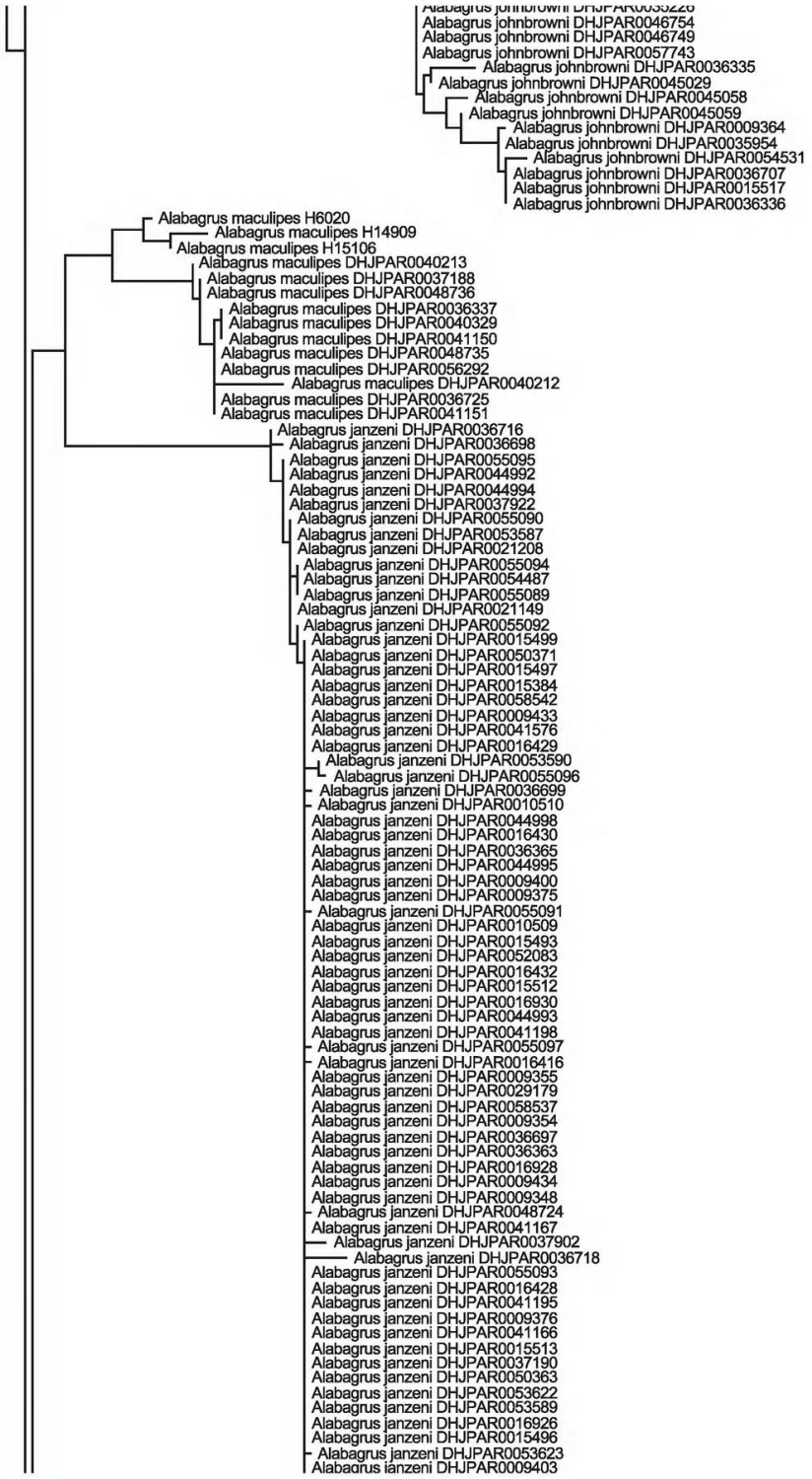
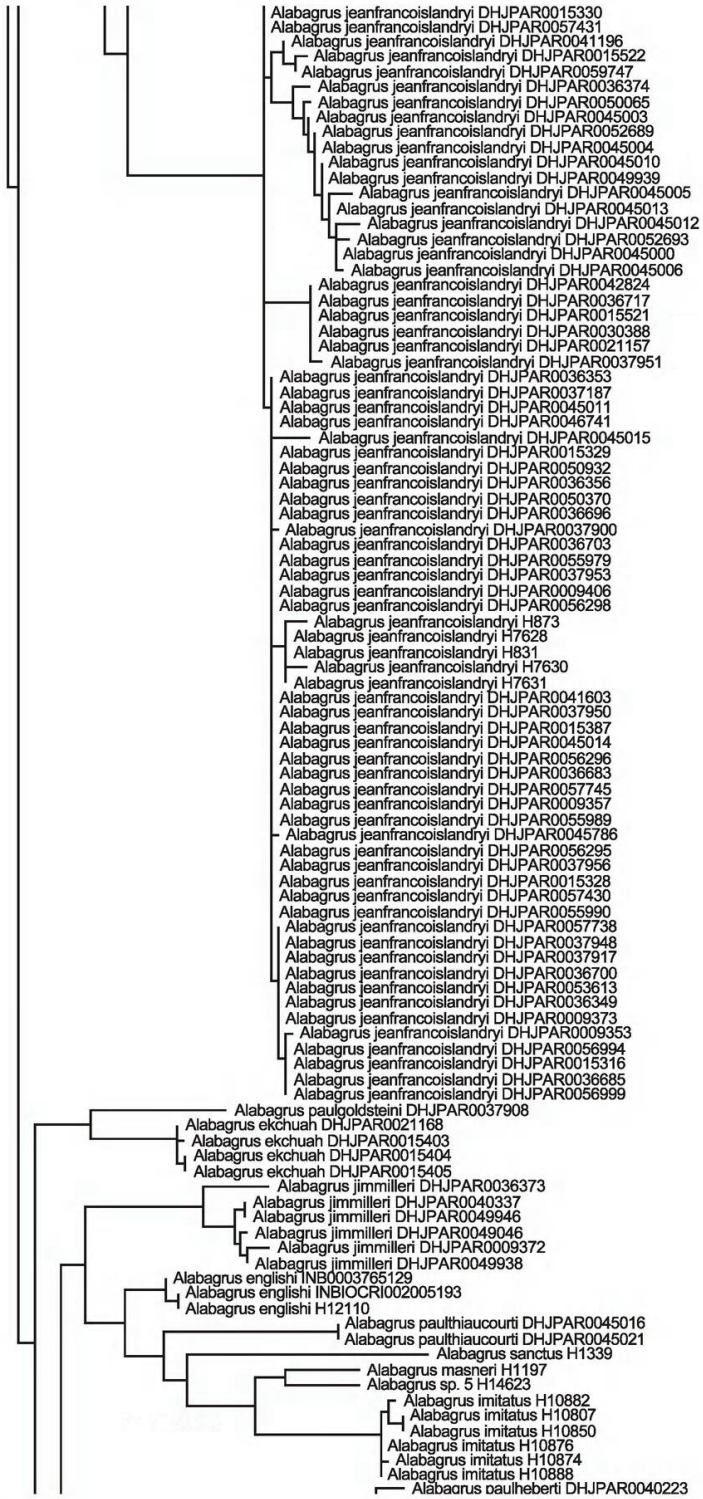


Supplemental Figure 1 Continued.

Supplemental Figure 1 Continued.



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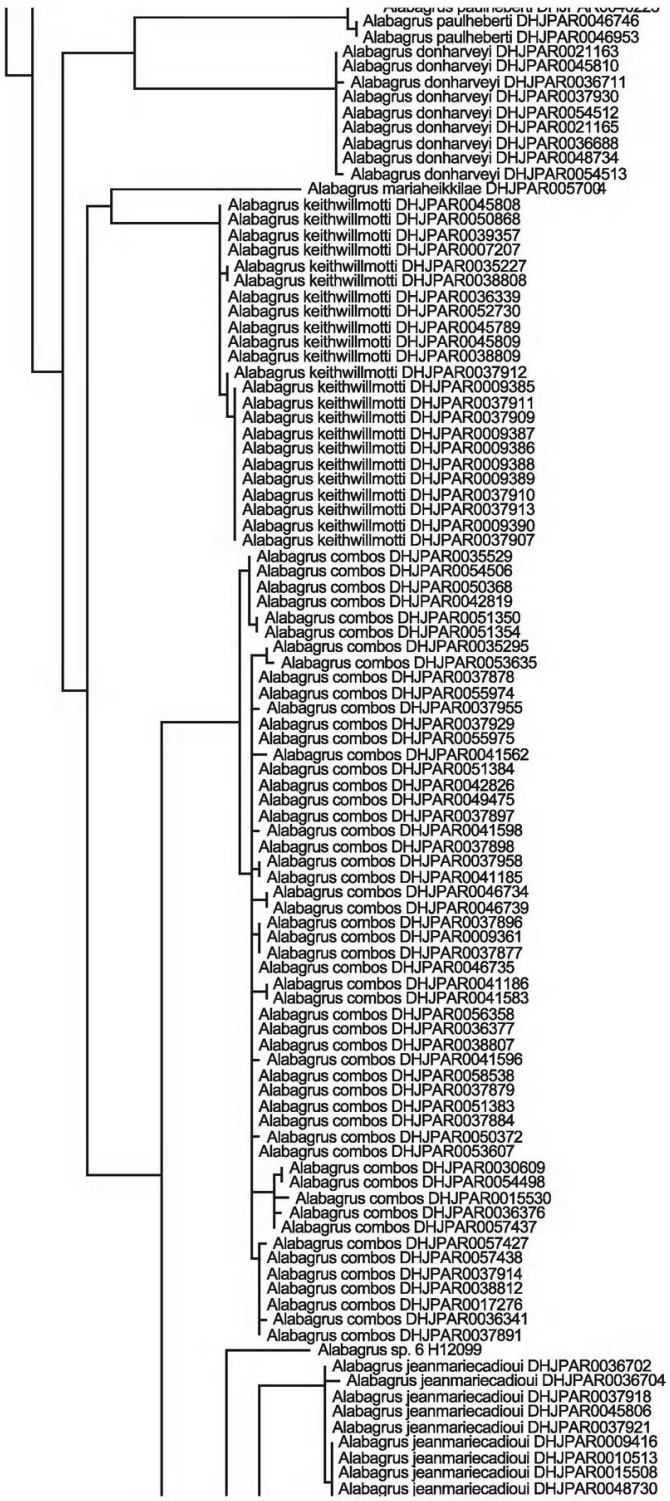
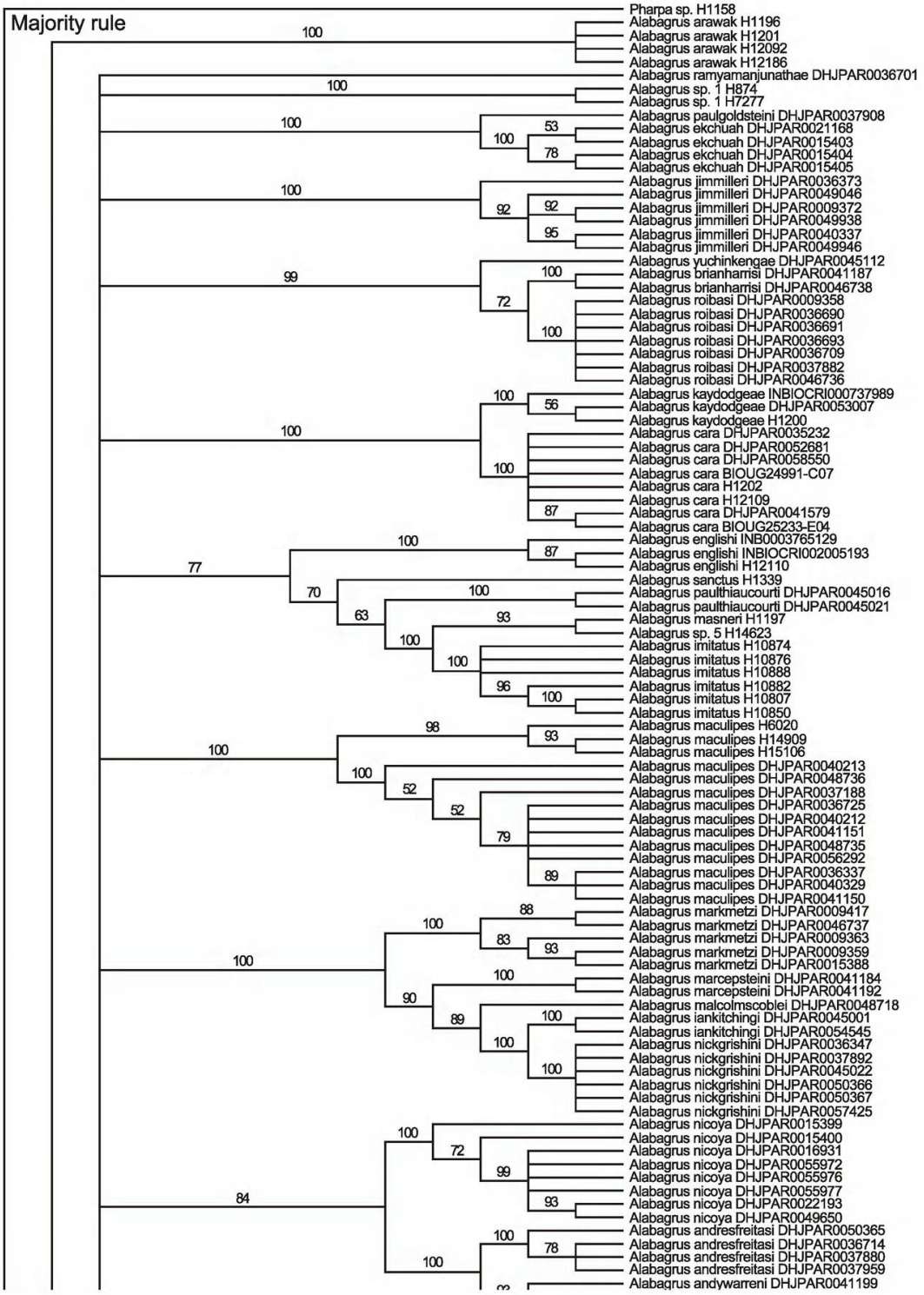
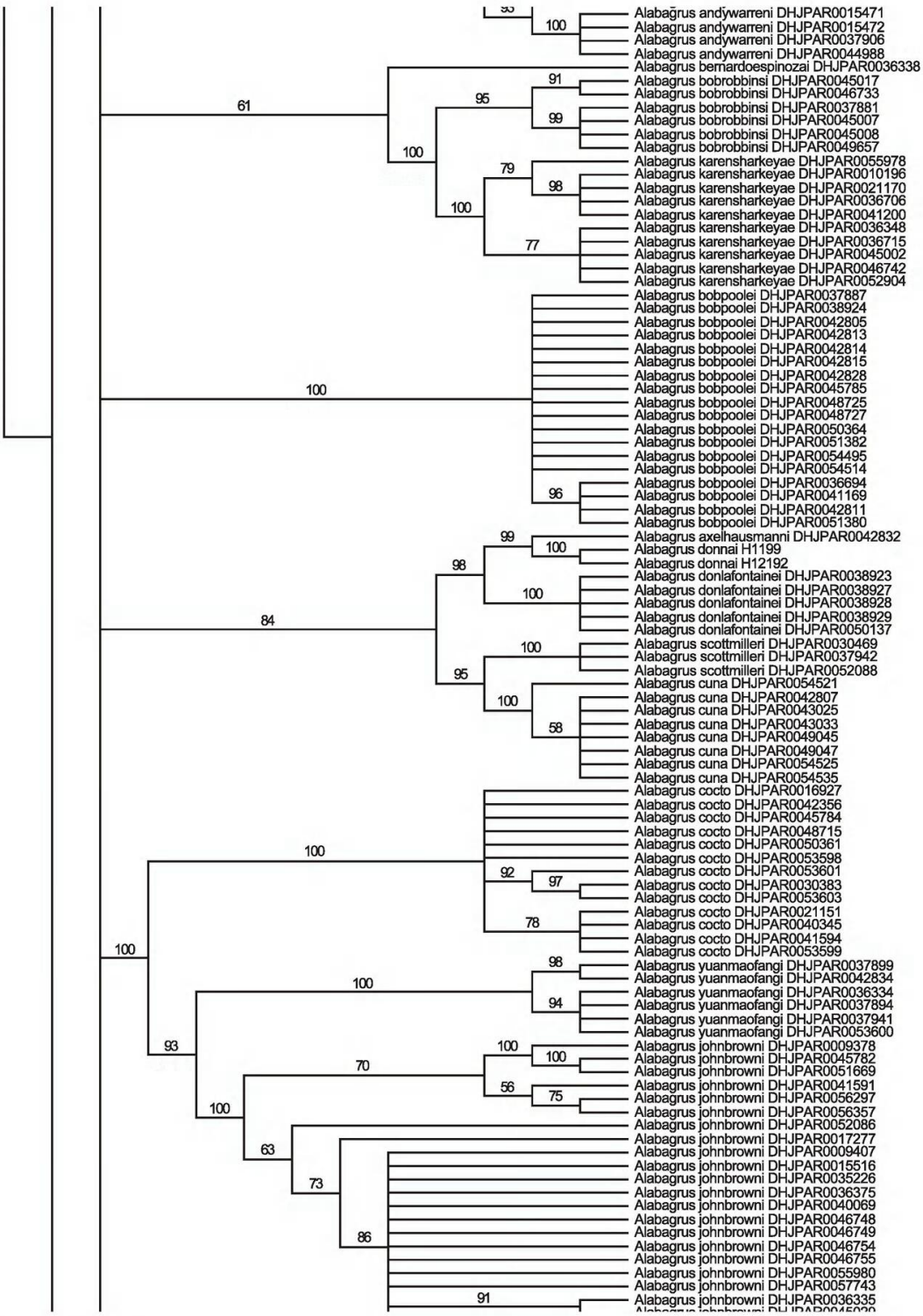


Supplemental Figure 1 Continued.

Supplemental Figure 1 Continued.



Supplemental Figure 2 Majority-rule consensus tree from a 10 million generation Bayesian analysis of 681 COI sequences.



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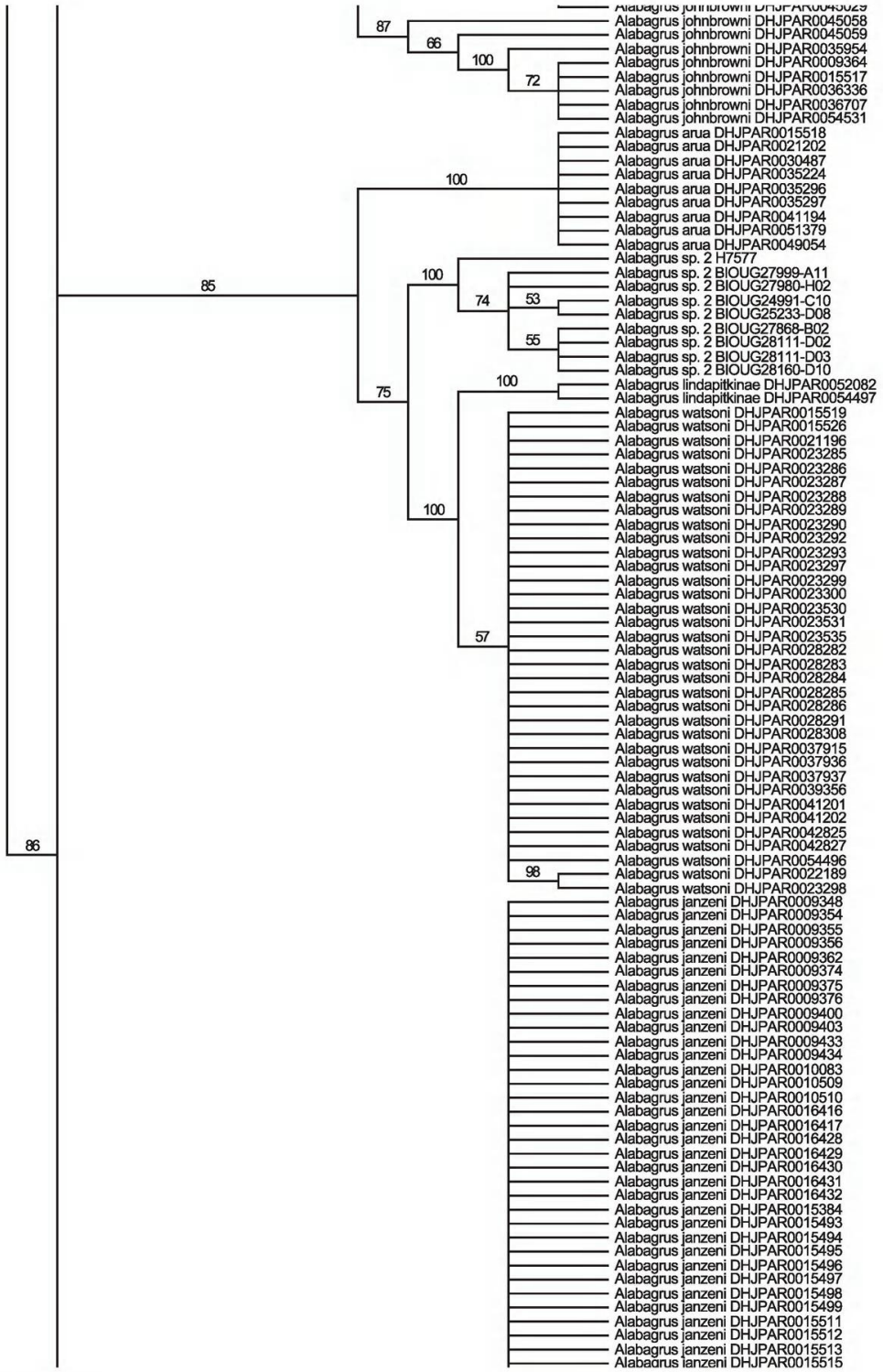

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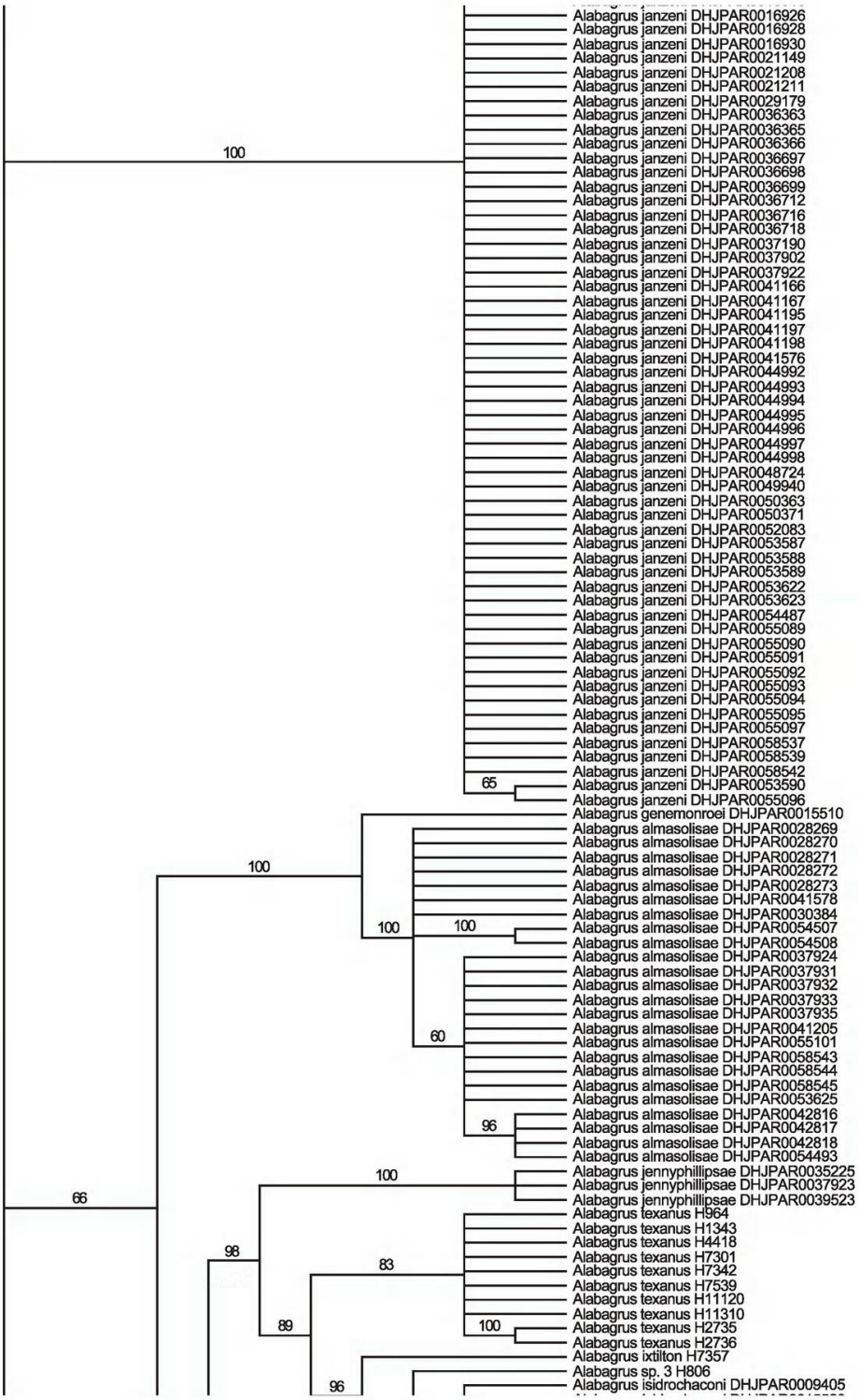

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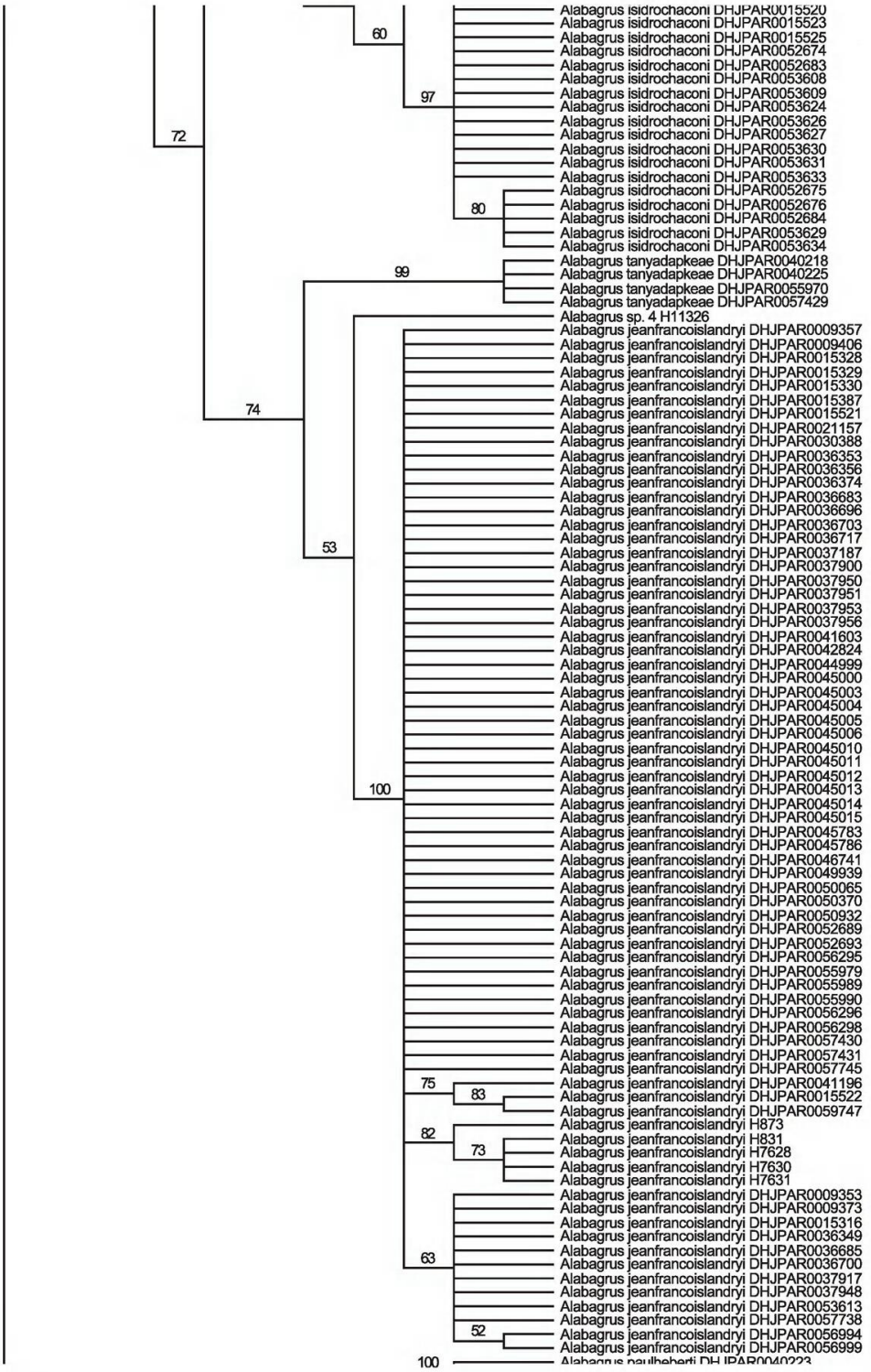

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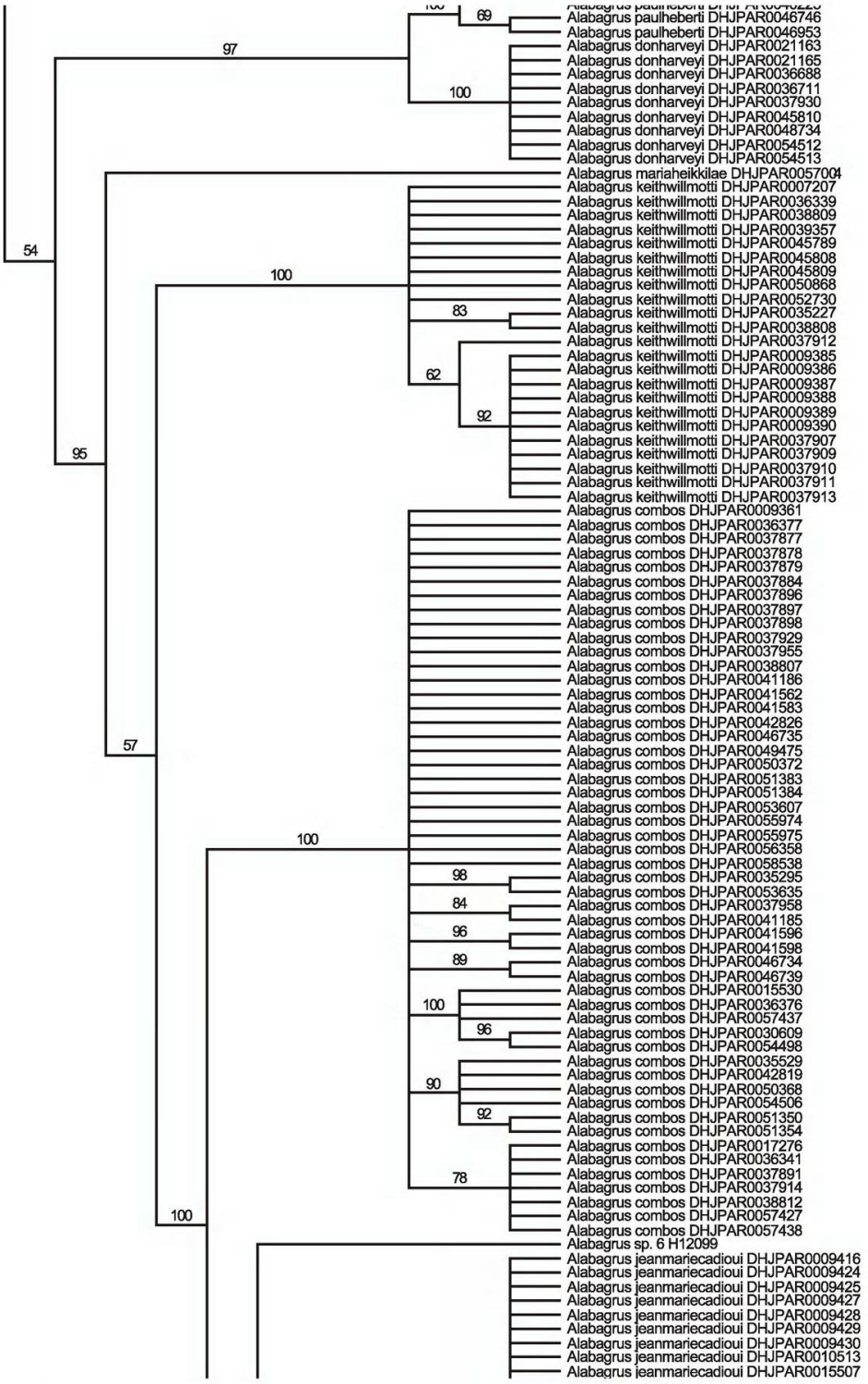
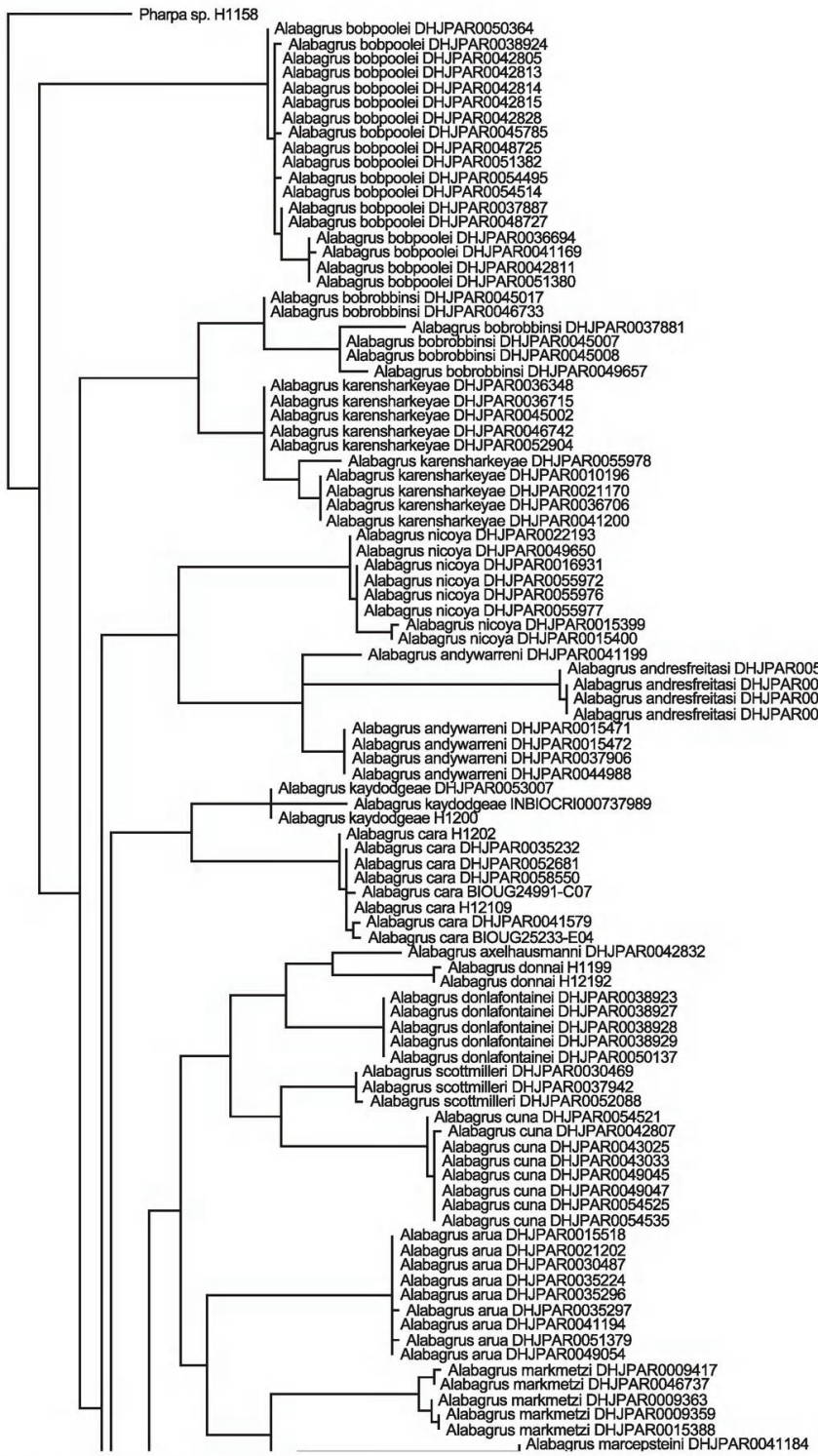
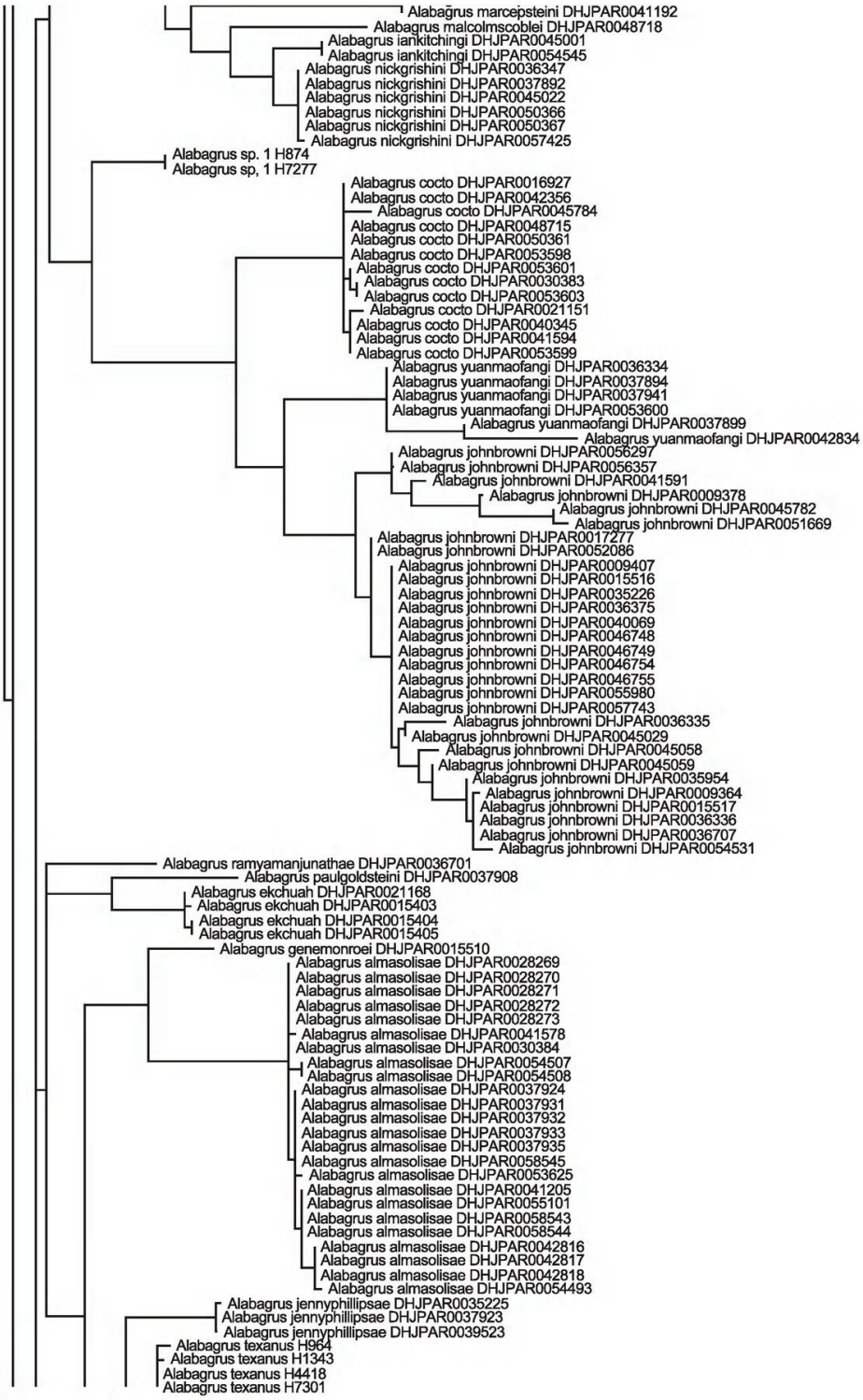


Supplemental Figure 2 Continued.

Supplemental Figure 2 Continued.



Supplemental Figure 3 Tree of highest log-likelihood from a 50-replicate ML analysis of 681 COI sequences.



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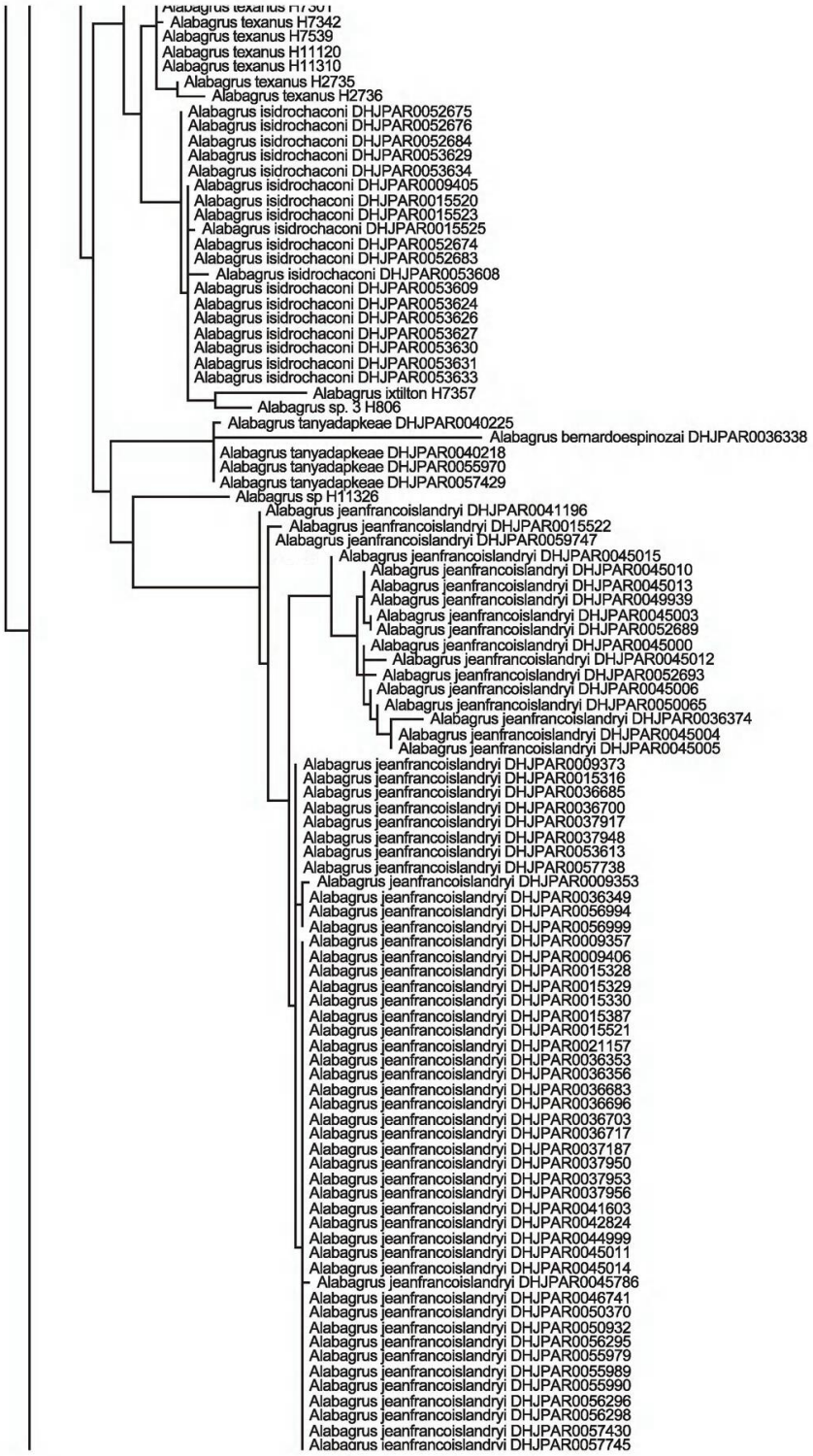

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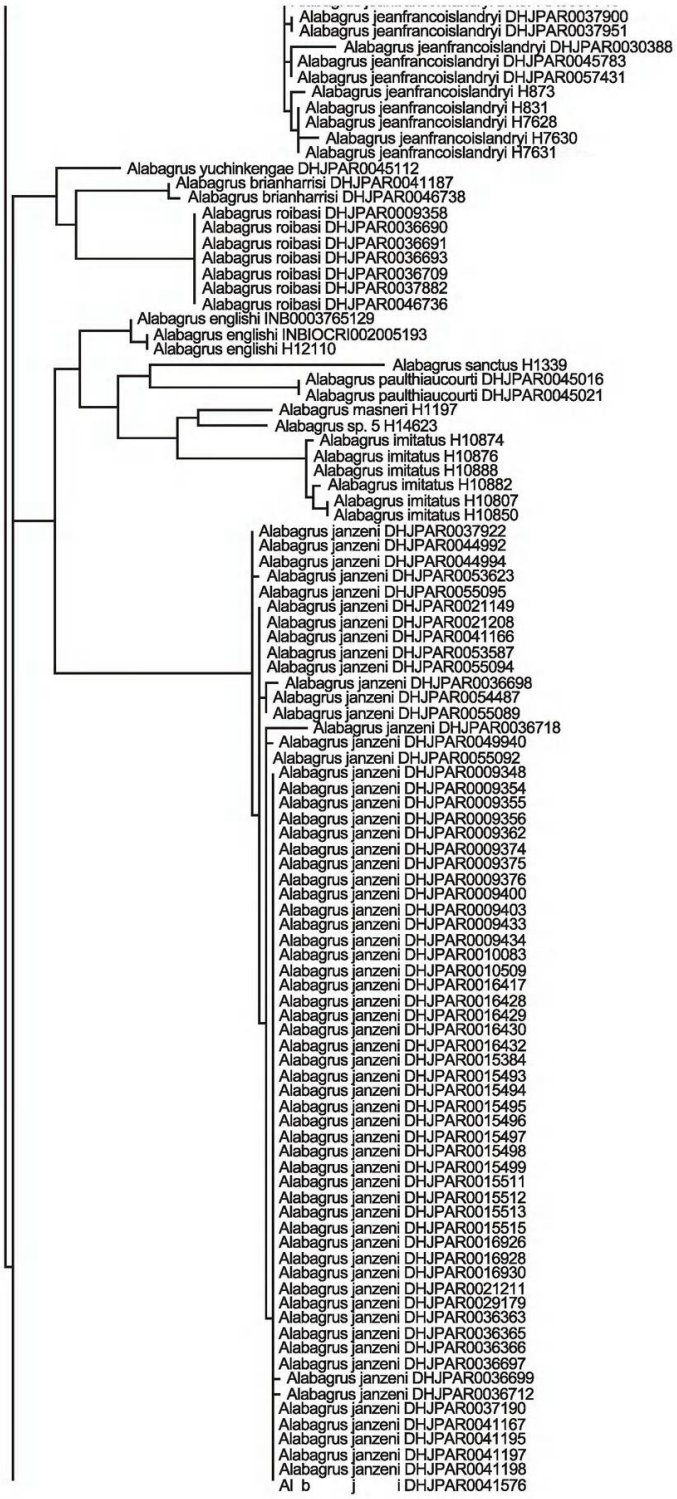

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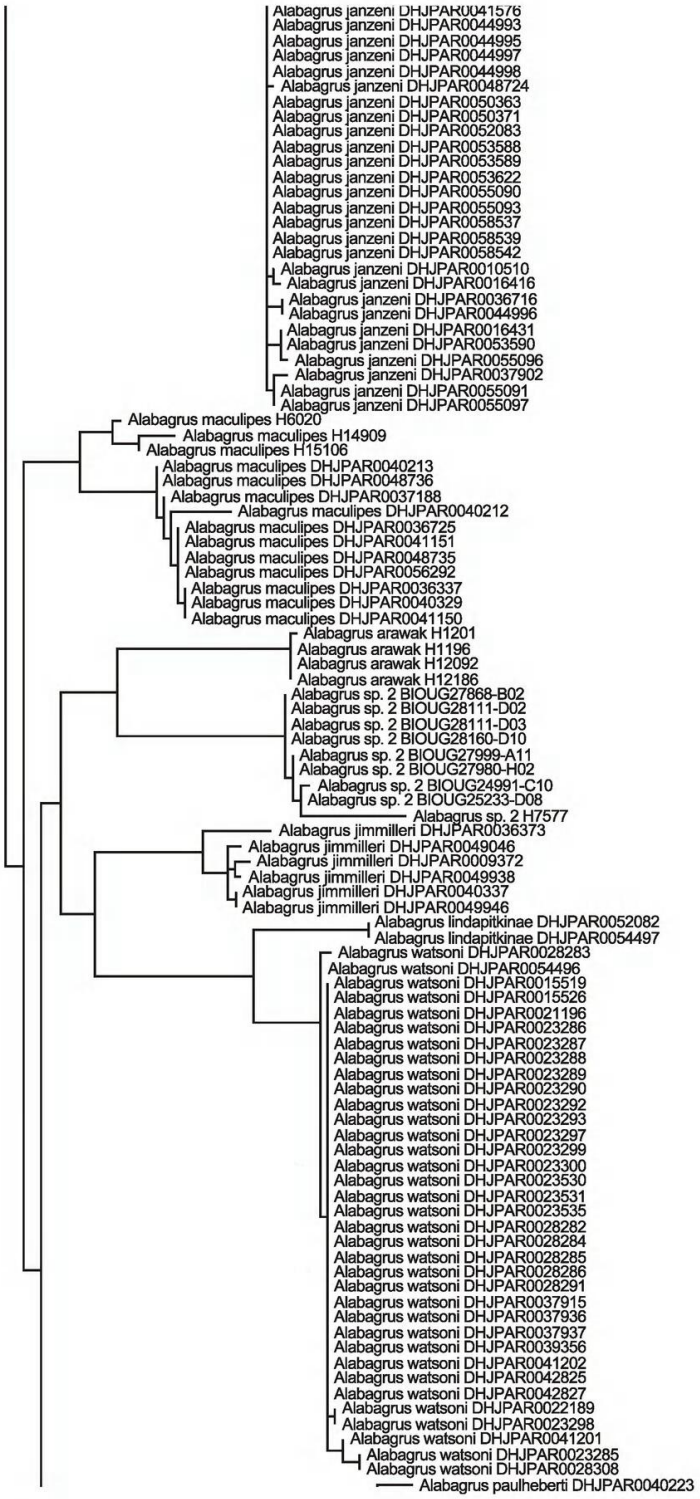

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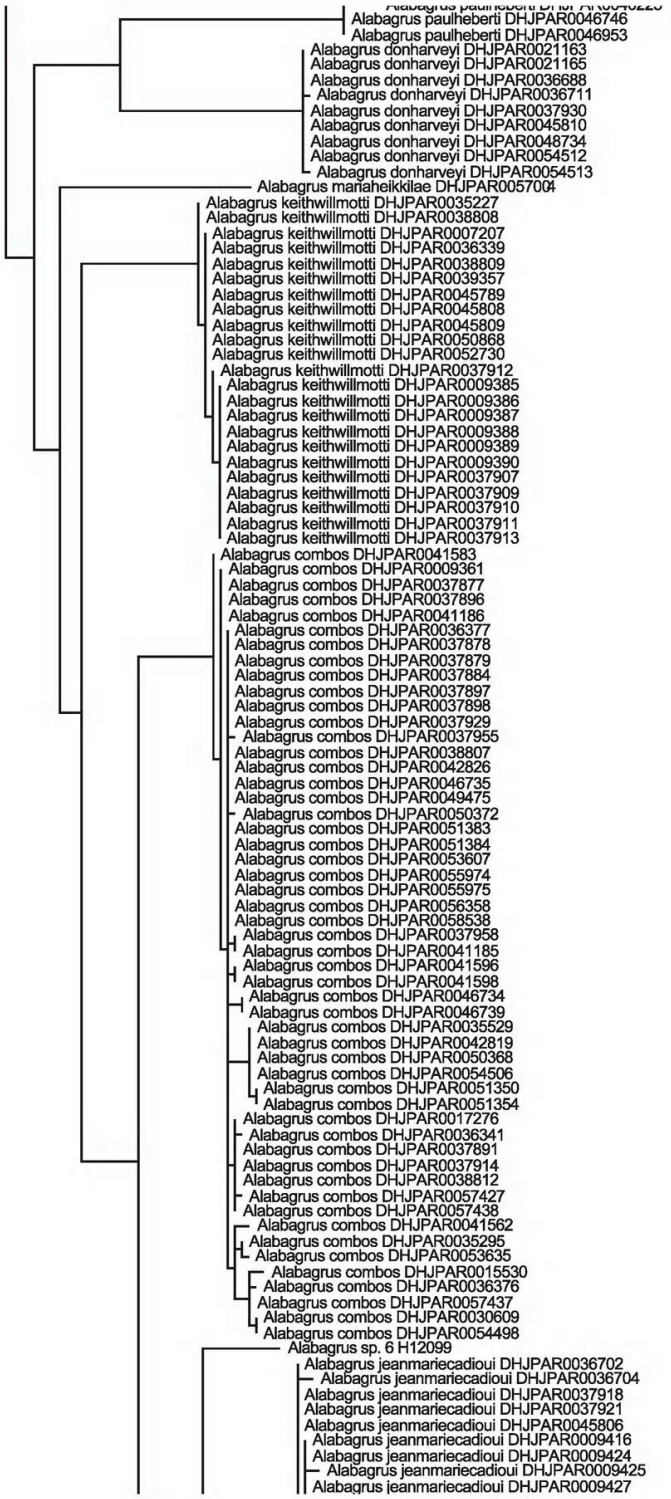

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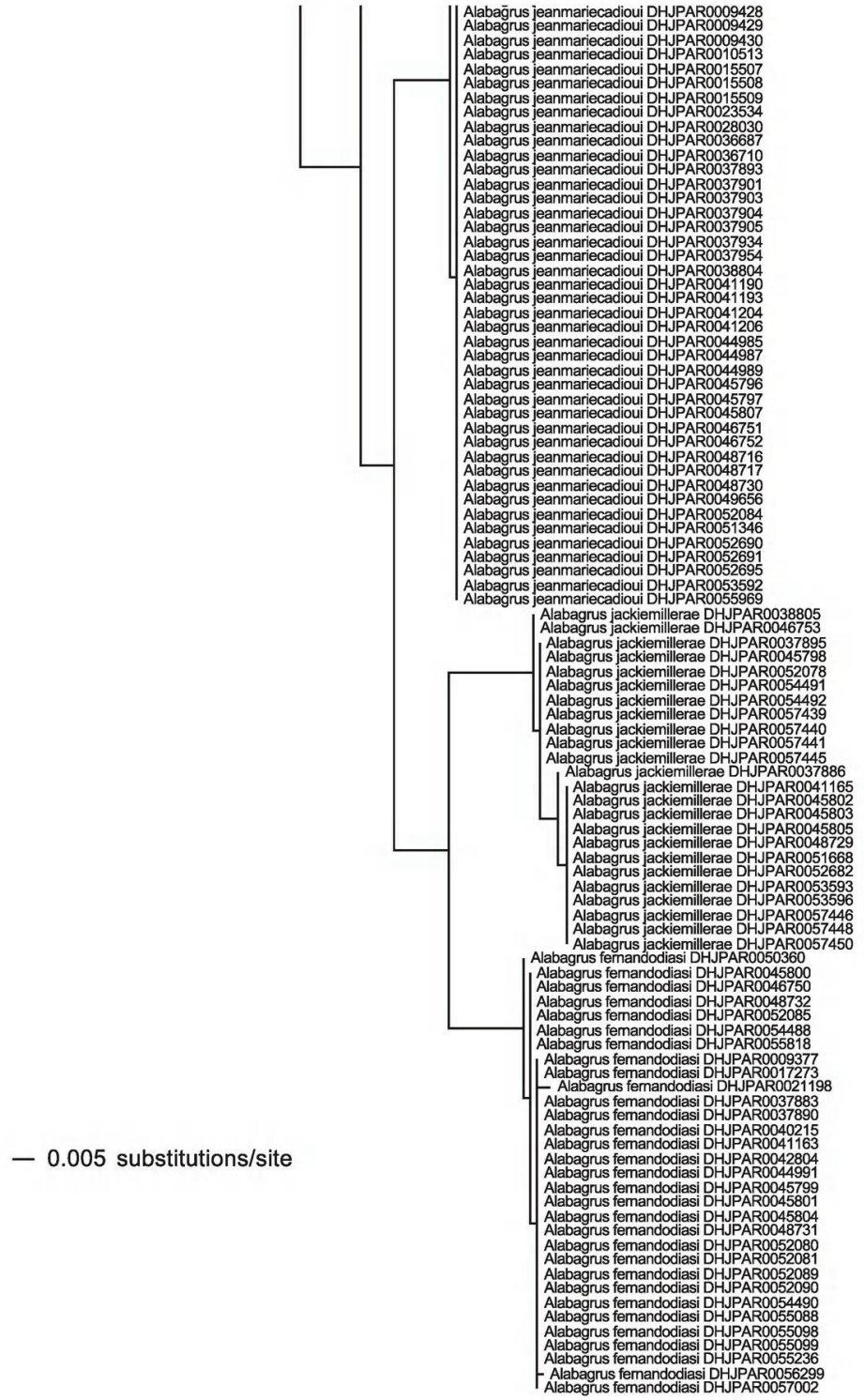

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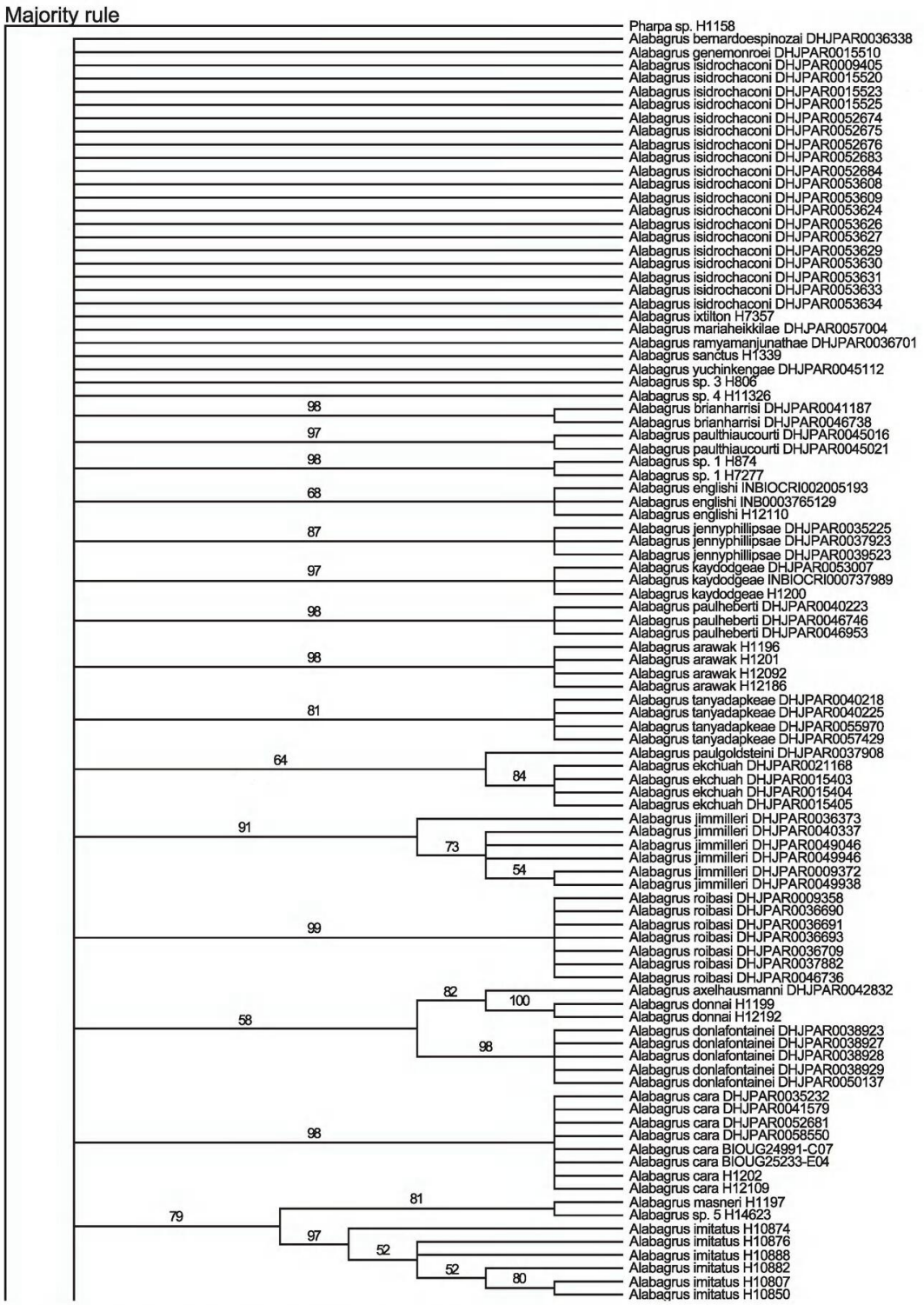
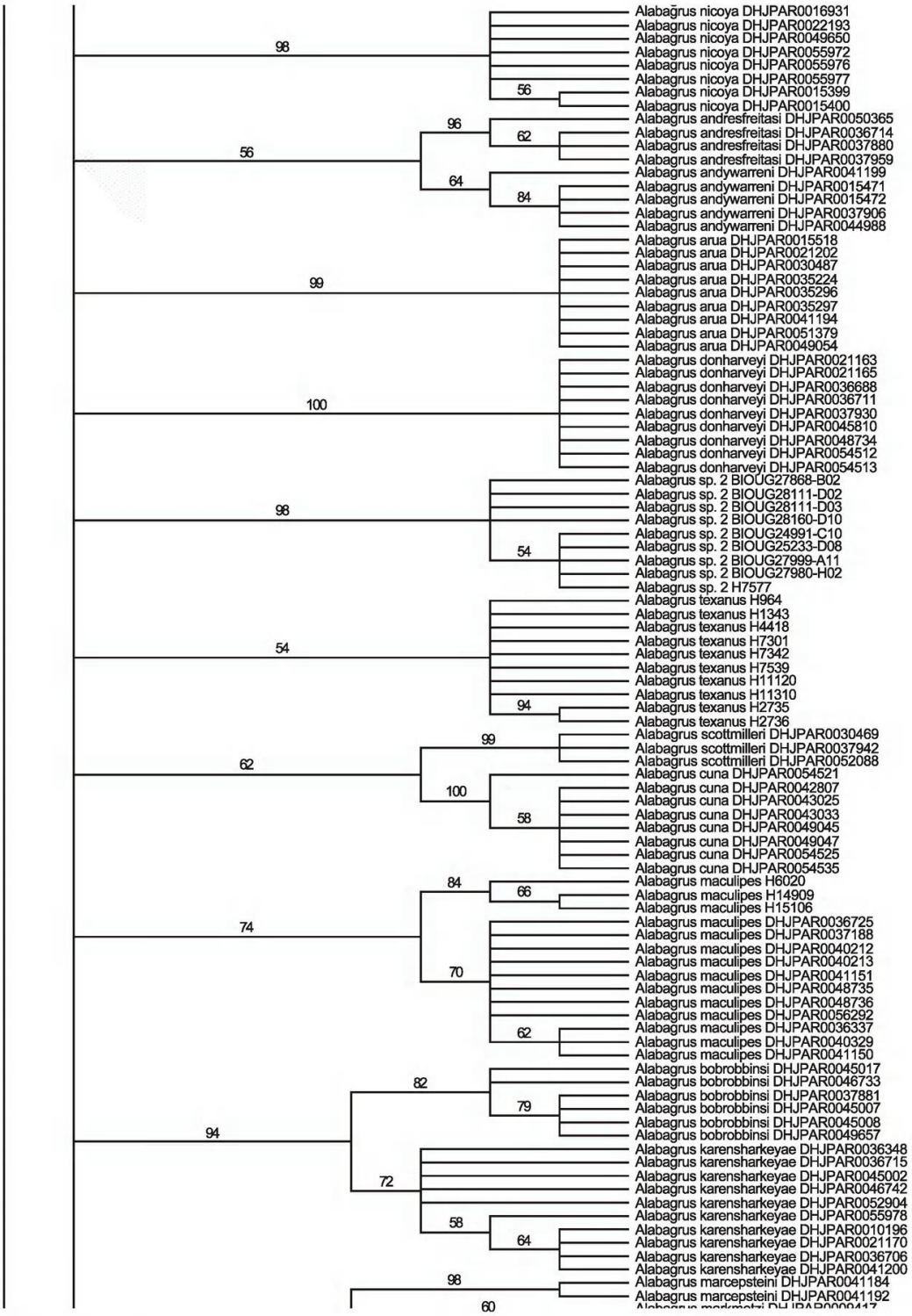


Supplemental Figure 4 Majority-rule consensus tree from a 200-replicate ML bootstrap analysis of 681 COI sequences.



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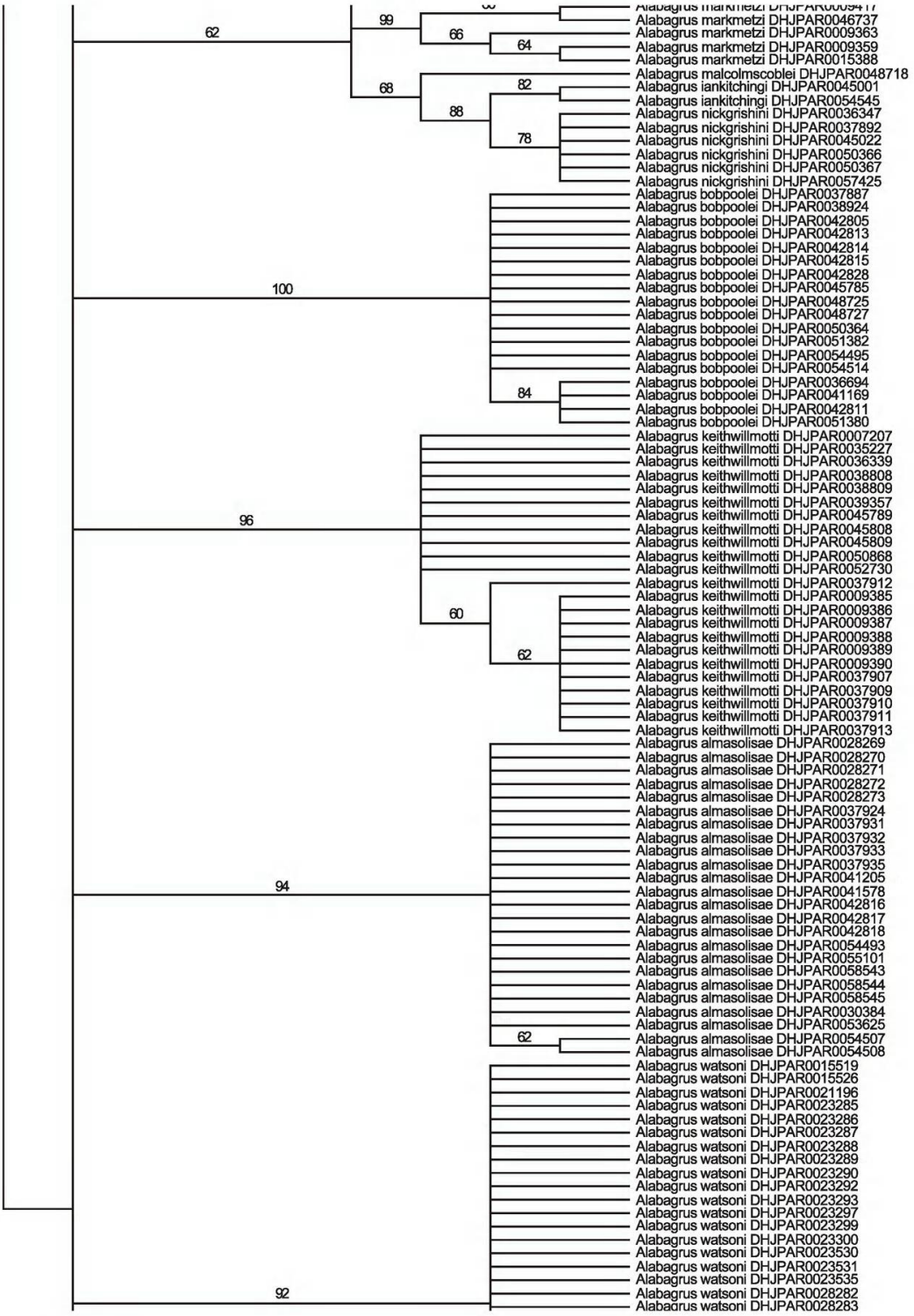

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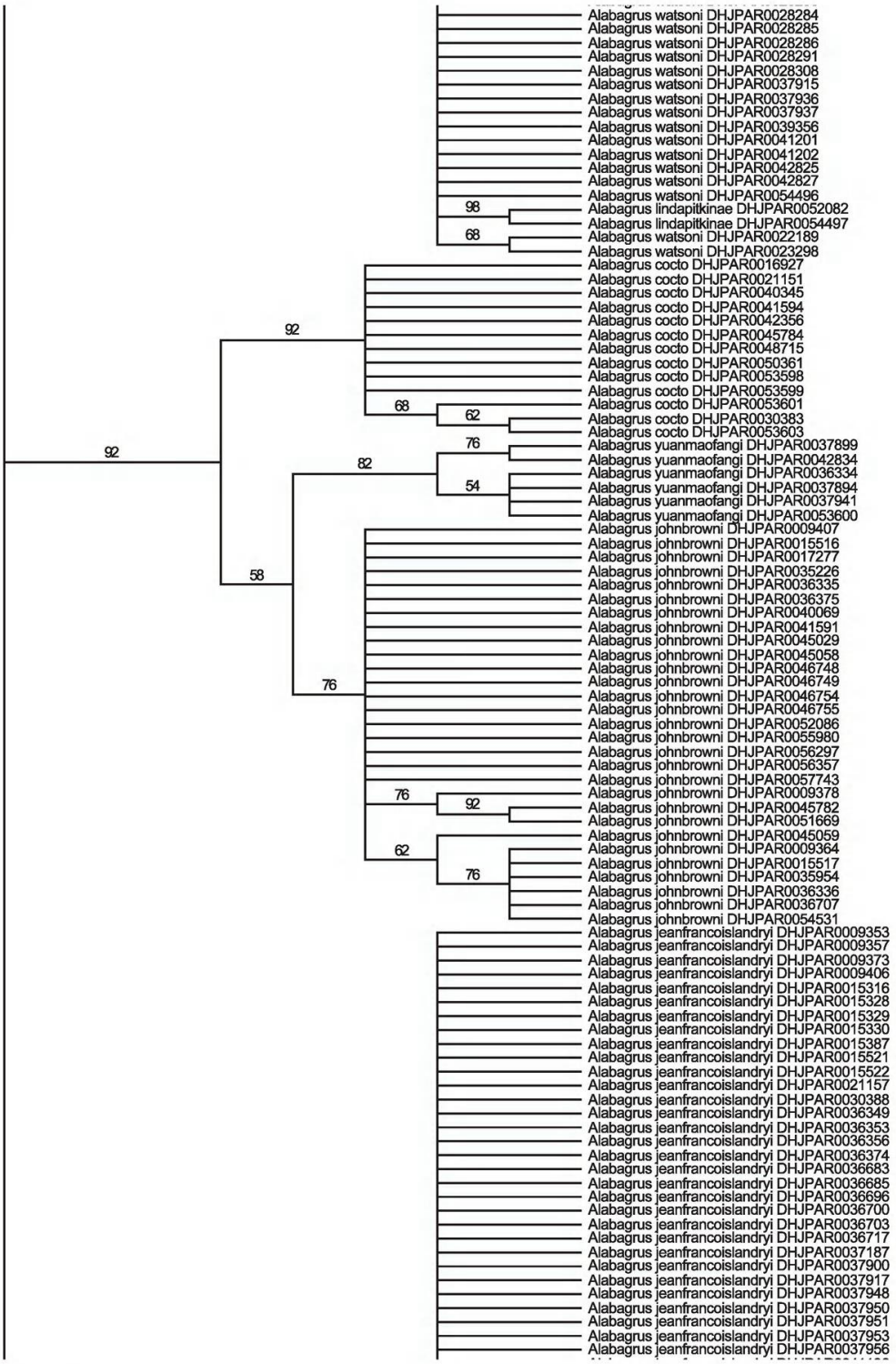

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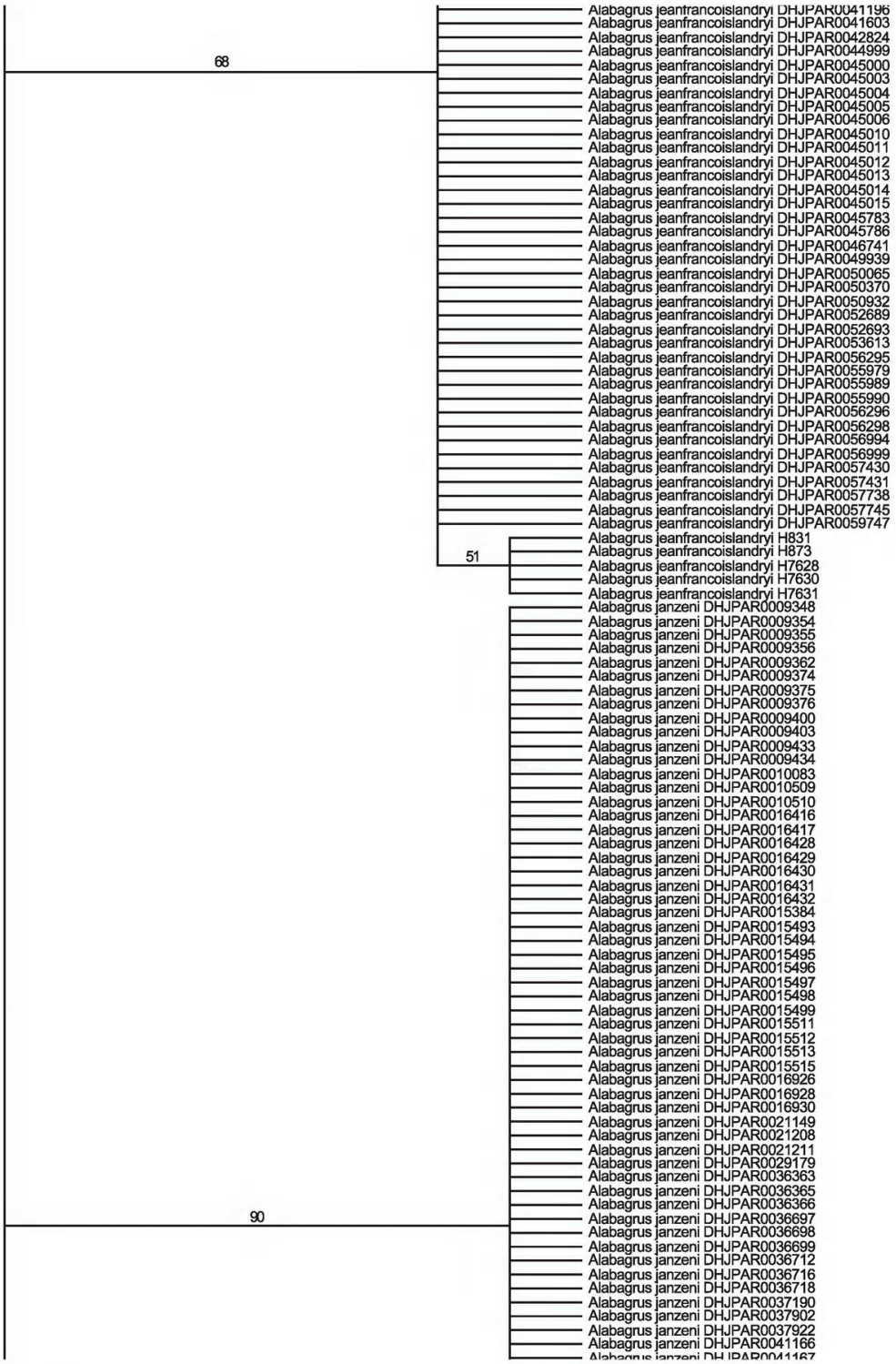

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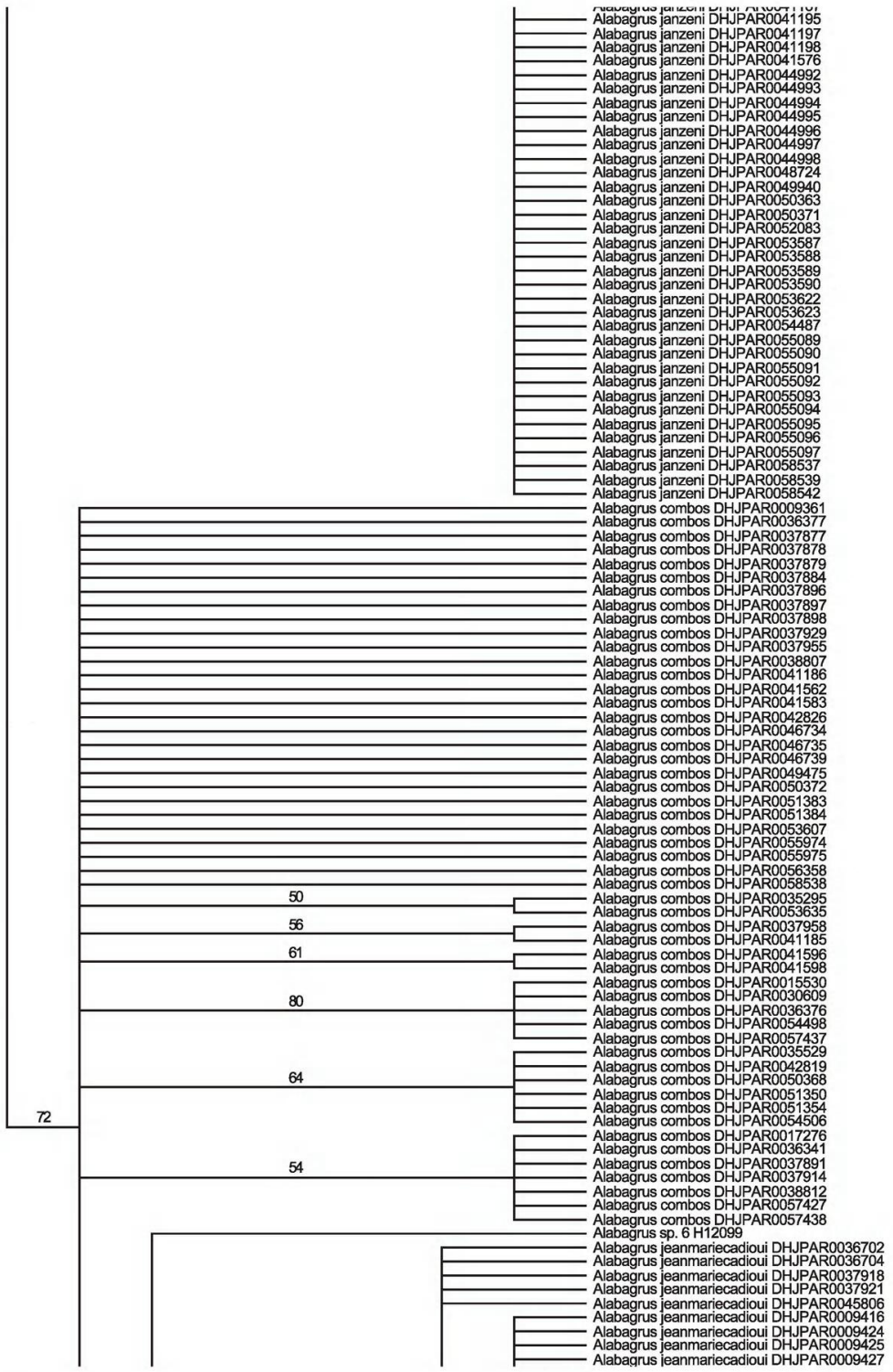

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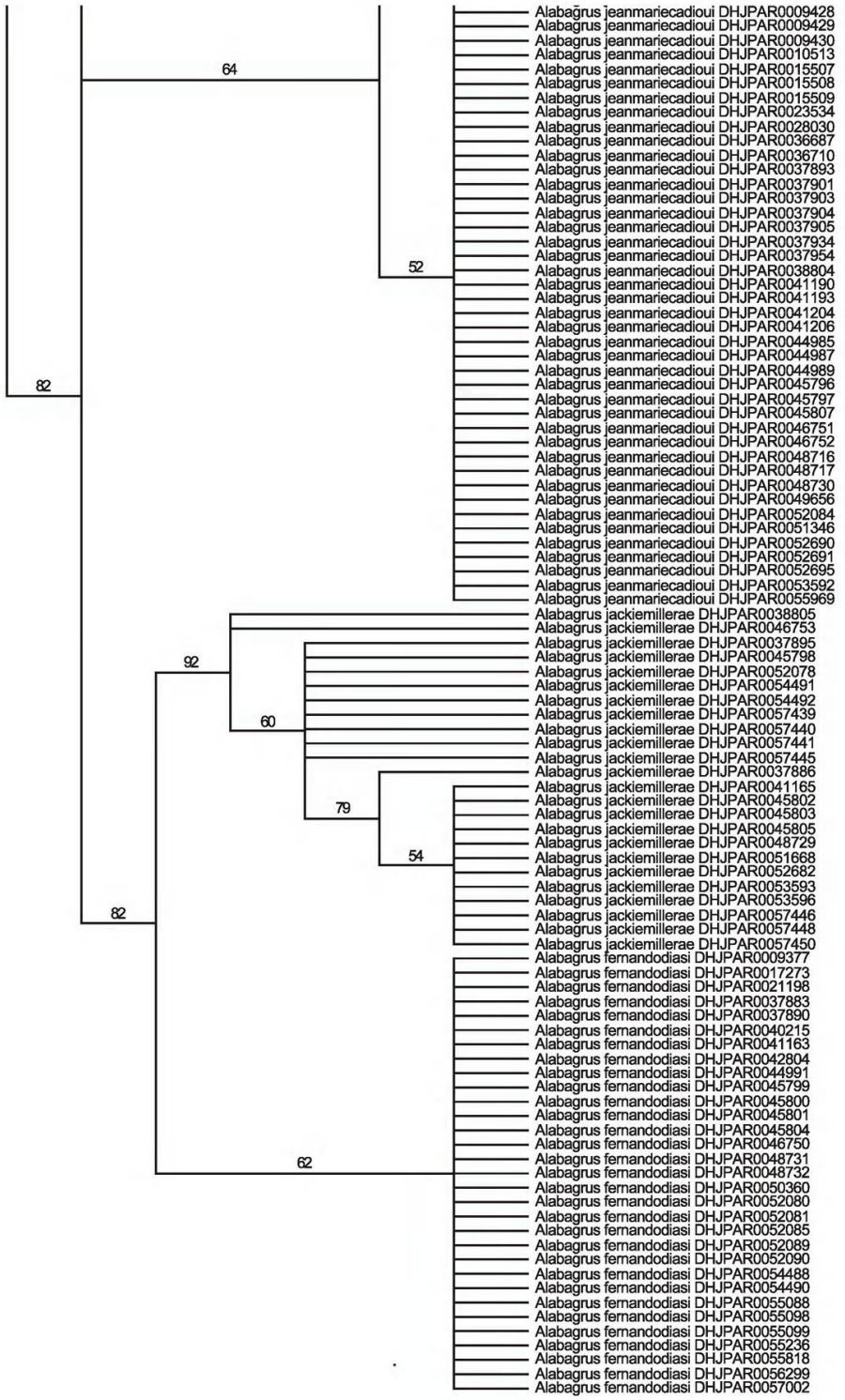

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