Bees of the family Halictidae Thomson, 1869 from Dominica, Lesser Antilles (Hymenoptera: Apoidea)

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Abstract. The bees of the family Halictidae Thomson, 1869 from Dominica are reviewed. Seven new species are described and illustrated: Lasioglossum (Dialictus) kalinago sp. nov., L. (D.) dominicense sp. nov., L. (D.) kilpatrickae sp. nov., L. (Habralictellus) roseaunense sp. nov., Sphecodes diablotinus sp. nov., S. albifacies sp. nov. and Habralictus antillarus sp. nov. A description and images of the previously unknown female of Microsphecodes dominicanus (Stage, 1972) are provided. In total, eleven species are recognized: eight nest-building species and three kleptoparasites. All halictid species from Dominica are currently known only from the island. A key to halictid bees from Dominica is provided.

Keywords. Caenohalictini, Halictini, Sphecodini, taxonomy, West Indies.

Introduction
The Commonwealth of Dominica is a small island in the Caribbean Sea, with a total area of approximately 750 km² and reaching a maximum elevation of 1447 m. Dominica is at approximately the midpoint of the Lesser Antilles chain of islands, belonging to the so-called Windward Islands. The bee diversity of the Lesser Antilles remains poorly studied, particularly for the family Halictidae Thomson, 1869. Halictid bees occurring in the Lesser Antilles have been recorded and described from several Windward Islands, including Dominica (Crawford 1914; Eickwort & Stage 1972; Gibbs 2012), and islands to the south such as Grenada (Smith-Pardo 2009), Trinidad and Tobago (Hook et al. 2014), and St. Vincent and the Grenadines (Ashmead 1900). A small number of halictid bees have been reported from the Leeward Islands Saint Kitts, Saint John and Sombrero, Anguilla and the Virgin Islands to the north of Dominica (Engel 2001b, 2006a, 2011; Genaro & Franz 2008). Islands adjacent to Dominica, such as Guadeloupe and Martinique, do not have any halictid bees currently listed in their faunae (Ascher & Pickering 2015; Meurgey 2014), but they do occur on these islands (A. Pauly, pers. comm.).

The bee fauna of Dominica was first reviewed by Crawford (1914), who recognized 15 species at the time and described two halictid bees. Eighteen bee species are currently recognized from Dominica; most are relatively large-bodied apid and megachilid bees which are not endemic to the island (Ascher...
& Pickering 2015; Gibbs 2012; Moure 2007). The halictid fauna of Dominica currently comprises four species, all endemic to the island (Gibbs 2012). These are *Augochlora ignifera* Crawford, 1914, *LasioGLOSSum punctifrons* (Crawford, 1914), *Microsphecodes dominicanus* (Stage in Eickwort & Stage, 1972) and *Habralictus gonzalezi* Gibbs, 2012. Gibbs (2012) also documented the occurrence of two unknown species of *LasioGLOSSum* Curtis, 1833 (*Dialictus* Robertson, 1902a) and one *Sphecodes* Latreille, 1804. These new species, as well as two additional species of *LasioGLOSSum*, one additional *Sphecodes*, and one new *Habralictus* Moure, 1941 are described herein, bringing the total bee fauna of Dominica to twenty-five species. These new species descriptions are provided to better document the bee fauna of this region and to allow future comparisons to other islands in the Lesser Antilles.

**Material and methods**

This work is part of a continuing effort to revise the *LasioGLOSSum* species of North America (Gibbs 2009a, 2009b, 2010, 2011; Gibbs et al. 2013). A large number of specimens have been examined from the West Indies, including relevant type material, with the goal of revising the *LasioGLOSSum* species in the region. West Indian specimens have been examined from the following collections (abbreviations indicate institutions with specimens from Dominica or type material examined):

- AMNH = American Museum of Natural History, New York City, New York
- BBSL = Bee Biology and Systematics Laboratory, Utah State University, Logan, Utah
- FSCA = Florida State Collection of Arthropods, Gainesville, Florida
- NMNH = National Museum of Natural History, Washington, D.C.
- TAMUIC = Texas A & M University, College Station, Texas
- Carnegie Museum of Natural History, Pittsburgh, Pennsylvania
- Cornell University Insect Collection, Ithaca, New York
- Los Angeles County Museum, Los Angeles, California
- North Carolina State University, Raleigh, North Carolina
- Packer Collection at York University, Toronto, Ontario
- Snow Entomological Collection, Lawrence, Kansas

This study is based largely on specimens collected from the Archbold Tropical Research and Education Center (ATREC; abbreviated ATRC on some label information below), Dominica, including voucher material from a previously published study (Wells & Decker 2006). More specific information on collection sites and methods is available from that study. ATREC is located in St. Paul Parish, although some labels from this location incorrectly read “Parish of St. Joseph, Springfield Estate”. Additional material from the NMNH was collected largely during the Bredin-Archbold-Smithsonian Biological Survey of Dominica (Evans 1972).

Descriptions follow those of other halictid bees (Gibbs 2009a, 2009b, 2010, 2011, 2012; Gibbs et al. 2013). Puncture density is given as the length of interspaces between punctures (i) measured in terms of puncture diameter (pd). Metasomal terga are abbreviated ‘T’ followed by the appropriate segment number. Antennal flagellomeres are abbreviated ‘F’ followed by the appropriate flagellomere number. Terminology for structures follows earlier studies on bees (Engel 2001a; Gibbs 2011; Michener 2007). A published glossary of insect surface sculpturing was used as the basis for sculpture terms in the descriptions (Harris 1979). Tribal names for halictid bees are based on those proposed from a family-level phylogeny (Danforth et al. 2004). Photographs were taken using a Canon MPE-65 macro lens on a 70D or T3i body. Composite images were produced using Zerene Stacker and edited in Photoshop Elements 12.
Results

Family Halictidae Thomson, 1869
Tribe Halictini Thomson, 1869
Genus Lasioglossum Curtis, 1933
Subgenus Dialictus Robertson, 1902a

Paralictus Robertson, 1901: 229 (type species: Halictus cephalicus Robertson, 1892, by original designation).

Dialictus Robertson, 1902a: 48 (type species: Halictus anomalus Robertson, 1892, by original designation and monotypy).

Chloralictus Robertson, 1902b: 248 (type species: Halictus cressonii Robertson, 1890, by original designation).

Halictus (Gastrolictus) Ducke, 1902: 102 (type species: Halictus osmioides Ducke, 1902, by monotypy).

Halictomorpha Schrottky, 1911: 81 (type species: Halictomorpha phaedra Schrottky, 1911, by original designation).


Halictus (Sneathhalictus) Warncke, 1975: 88 (type species: Melitta smeathmanella Kirby, 1802, by original designation).


Evylaeus (Glauchalictus) Pesenko, 2007: 26 (type species: Halictus problematicus Blüthgen, 1823, by original designation).


Evylaeus (Loethalictus) Pesenko, 2007: 26 (type species: Halictus loetus Brullé, 1840, by original designation).

Evylaeus (Aerathalictus) Pesenko, 2007: 27 (type species: Melitta aerata Kirby, 1802, by original designation).

Lasioglossum (Dialictus) kalinago sp. nov.

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Fig. 1A–C

Diagnosis

Lasioglossum kalinago sp. nov. females can be distinguished from congeners in Dominica by the presence of dark mesoscutal setae; other characters which are diagnostic in combination include the following: mesepisternum punctation indistinct dorsally, dull due to microsculpture; head wider than long (length/width ratio = 0.9; Fig. 1A); mesoscutal punctures distinct; and T1 appressed setal fan complete. Lasioglossum dominicense sp. nov. is smaller in size, with deep and distinct punctures throughout the mesepisternum including the hypostomal area. Lasioglossum kippatrickae sp. nov. has a longer head (length/width ratio = 1.0; Fig. 5A) and distinct mesepisternal punctures. Lasioglossum punctifrons (Crawford, 1914) has a longer head (length/width ratio = 1.0; Fig. 7A), granular microsculpture with indistinct punctation and lacks a complete T1 appressed setal fan. Lasioglossum roseauense sp. nov. has only two submarginal cells and lacks a T1 fan. The male of L. kalinago sp. nov. is unknown.
Fig. 1. *Lasioglossum (Dialictus) kalinago* sp. nov. Holotype (A) and paratype (B–C), ♀♀. A. Face. B. Lateral habitus. C. Dorsum of mesosoma. Scale bars = 1 mm.
Etymology
The specific epithet is named for the indigenous people of the island. It is treated as a noun in apposition.

Type material

Holotype

Paratypes

Description

Female

Measurements (n = 4). Length 4.3–5.0 mm (mean = 4.6); head length 1.2–1.4 mm (mean = 1.3); head width 1.4–1.6 mm (mean = 1.5); intertegular distance 1.0–1.3 mm (mean = 1.2).


Pubescence. Dull white, intermixed with darker setae on mesoscutum, dorsal surface of metatibia, and metasomal terga. Relatively sparse erect setae throughout, without tomentum, except narrow basolateral patches of T2–T3. T1 with complete fan of appressed setae on anterior surface. T2 without apical fimbriae, T3–T4 with only sparse fine setae on apical impressed areas. Scopa well developed on hind leg and metasomal sterna.

Surface sculpture. Face imbricate, punctuation moderately coarse, finer on frons. Clypeus punctuation sparse (i = 1–2.5 pd), surface smooth distally (i = 2–3 pd), supraclypeal area with punctures sparse, absent medially (i = 1–2.5 pd) and lower paraocular area punctuation dense (i ≤ pd). Upper paraocular area and frons reticulate-punctate (1 < pd). Ocellocular area punctate (i ≤ pd). Gena and postgena finely carinate. Mesoscutum with tessellate-imbricate punctuation moderately coarse, dense on lateral and posterior portions (1 < pd), sparser on anterior portions and medially (i = 1–1.5 pd); mesoscutellum similar, with small submedial impunctate area (i = 1–2 pd). Metanotum imbricate. Preepisternum rugulose. Hypoepimeral area finely rugulose. Mesepisternum below scrobe reticulate-rugulose (1 < pd), imbricate ventrally with coarse punctures. Metepisternum dorsal ½ rugoso-carinulate, ventral portion imbricate. Metapostnotum medially with irregular rugae reaching ½ distance to posterior margin, oblique carinulae on lateral portions extending to dorsolateral slope. Propodeum posterior and lateral surfaces polished tessellate, with some fine carinulae. Metasomal terga polished, finely coriarious on T1 anterior surface and apical impressed areas; punctuation fine, obscure on basal portions (i = 1–2 pd), virtually absent on apical impressed area of T2, very obscure on apices of remaining segments. Metasomal sterna coriarious and finely, sparsely punctate (i = 2–4 pd).

Structure. Head round (length/width ratio = 0.9). Eyes weakly convergent below. Clypeus ½ below suborbital tangent. Gena narrower than eye. Hypostomal carinae subparallel. Pronotal dorsolateral angle
obtuse. Pronotal ridge rounded, interrupted by sulcus. Tegula ovoid. Submarginal cells three (1rs-m present). Distal hamuli arranged 2-1-2. Inner metatibial spur pectinate, with 3–4 branches, proximal branch much longer than width of rachis. Metapostnotum slight depressed, narrowly rounded onto posterior propodeal surface. Propodeum with lateral carina nearly reaching dorsal margin; oblique carina distinct. T2–T4 impressed areas medially nearly equal to longitudinal length of basal area.

**Male**
Unknown.

**Remarks**

*Lasioglossum kalinago* sp. nov. bears some similarity to other West Indian species, such as *L. magdalena* (Baker, 1906), *L. sanctivincenti* (Ashmead, 1900) and *L. plumbeum* (Ashmead, 1900). *Lasioglossum magdalena* is from Cuba and has finer punctation and a more polished mesepisternum. Specimens from the type series of *L. sanctivincenti*, *L. plumbeum* and *L. cyaneum* (Ashmead, 1900), collected in St. Vincent and the Grenadines and deposited in the NHMUK and NMNH, were examined in 2012 and 2015. Images of specimens from the type series of the latter two species are available from the NMNH. Non-types of *L. sanctivincenti* and *L. plumbeum* from St. Vincent and the Grenadines (deposited at FSCA) were also examined, and these species were found to be distinct from the Dominica fauna. *Lasioglossum kalinago* sp. nov. can be distinguished from these species based on multiple characters, including the distinct mesepisternal punctures of *L. sanctivincenti*, the long head of *L. plumbeum* and the bright blue metasoma of *L. cyaneum*.

*Lasioglossum (Dialictus) dominicense* sp. nov.

**Diagnosis**

*Lasioglossum dominicense* sp. nov. females have the following characteristics: head wider than long (length/width ratio = 0.9; Fig. 2A); mesoscutal and mesepisternal punctures distinct (Fig. 2B–C); mesoscutal setae entirely pale; submarginal cells three; and T1 appressed setal fan complete. The male is similar but lacks a T1 fan. *Lasioglossum kilpatrickae* sp. nov. is larger, with a distinctly longer head in both sexes (length/width ratio = 1.0; Figs 5A, 6A). *Lasioglossum kalinago* sp. nov. is larger in size, with less distinct punctures on the mesepisternum and dark setae intermingled with pale setae on the mesoscutum. *Lasioglossum punctifrons* has a longer head, granular microsculpture with indistinct punctuation, and lacks a complete T1 appressed setal fan. *Lasioglossum roseauense* sp. nov. has only two submarginal cells.

**Etymology**

The specific epithet refers to the collection locality in the Commonwealth of Dominica.

**Type material**

**Holotype**


**Paratypes**

Fig. 2. *Lasioglossum (Dialictus) dominicense* sp. nov. Holotype (A, C) and paratype (B), ♀♀. A. Face. B. Lateral habitus. C. Dorsum of mesosoma. Scale bars = 1 mm.

Description

Female

Measurements (n = 8). Length 3.5–3.8 mm (mean = 3.6); head length 1.1–1.2 mm (mean = 1.1); head width 1.2–1.3 mm (mean = 1.2); intertegular distance 0.8–1.0 mm (mean = 0.9).


Pubescence. Dull white. Relatively sparse erect setae throughout, without tomentum, except on gena near eye, pronotum dorsolateral angles and lobe, narrow basolateral patches of T2–T3 and sparsely on T4. Metasomal T1 with complete fan of appressed setae on anterior surface. T2 without apical fimbriae, T3–T4 with only sparse, fine setae on apical impressed areas. Scopa well developed on hind leg and metasomal sterna.

Surface sculpture. Face imbricate, punctuation moderately fine. Clypeus punctuation sparse (i = 1–2.5 pd), denser proximally, surface smooth distally (i = 2–3 pd). Supraclypeal area with punctures sparse, present medially (i = 1–2 pd), and lower paraocular area punctuation dense (i ≤ pd). Upper paraocular area and frons reticulate-punctate (1 < pd). Ocellocular area punctate (i ≤ pd). Gena and postgena polished, finely punctate-lineolate. Mesoscutum imbricate, punctuation moderately fine, dense on laterad of parapsidal lines, posterior portion (1 < pd), sparser medially (i = 1–2 pd); mesoscutellum similar, with small submedial impunctate area (i = 1–2 pd). Metanotum imbricate. Preépisternum finely reticulate rugulose. Hypoepimeral area finely punctate. Mesepisternum below scrobe punctate (1 < pd), finely imbricate. Metepisternum dorsal ½ rugulose, ventral portion imbricate. Metapostnotum medially with irregular rugae reaching ¾ distance to posterior margin, oblique carinulae on lateral portions extending to dorsolateral slope. Propodeum posterior and lateral surfaces polished tessellate. Metasomal terga polished, finely coriarious on apical impressed areas, T1 anterior face polished; punctuation fine, obscure on basal portions (i = 1–2 pd), indistinct, sparser on apical impressed areas. Metasomal sterna coriarious and finely, sparsely punctate (i = 2–4 pd).

Fig. 3. *Lasioglossum*(Dialictus) *dominicense* sp. nov. Paratype, ♂. A. Face. B. Lateral habitus. C. Dorsum of mesosoma. Scale bars = 1 mm.
Fig. 4. — Genital capsule of *Lasioglossum (Dialictus) dominicense* sp. nov. Paratype, ♂. A. Dorsal view. B. Ventral view. — Genital capsule of *Lasioglossum (Dialictus) kilpatrickae* sp. nov. Paratype, ♂. C. Dorsal view. D. Ventral view. Scale bars = 1 mm.
Male

Measurements (n = 1). Length 4.4 mm; head length 1.2 mm; head width 1.2 mm; intertegular distance 0.8 mm.

Colouration. Similar to female, except tarsi reddish.


Surface sculpture. Similar to female, but more polished, with less evident imbricate microsculpture. Metanotum sparsely punctate (i = 1–1.5 pd) Metepisternum punctate. Lateral surface of propodeum distinctly punctate. T1–T4 apical impressed areas impunctate.

Structure. Similar to female, with typical sexual differences. Head round (length/width ratio = 0.97). F2 length nearly 2 × F1. Scape, pedicel and F1 reaching lower margin of median ocellus. Antenna reaching posterior margin of mesosoma. T2–T4 apical impressed areas less than ⅓ of median length.

Terminalia. As shown in Fig. 4A–B.

Remarks

*Lasioglossum dominicense* sp. nov. bears some superficial resemblance to members of the *L. parvum* species group in its size and overall appearance, but it lacks the enlarged tegula diagnostic for that complex. It is perhaps most similar to *L. sanctivincenti*, and could easily be considered a subspecies based on the close similarity to that species. *Lasioglossum sanctivincenti* appears to have more distinct microsculpture throughout, which is most apparent in the interspaces of the mesoscutum and the anterior face of T1. The puncture density mesad of the parapsidal line is slightly denser (1 < pd) and more numerous to a distance of about 3–4 puncture diameters from the parapsidal line. If the species were sympatric it would be challenging to differentiate them and any variation in the above characters would make distinguishing them next to impossible. A more comprehensive survey of the intervening islands would be useful for clarifying the biogeographic history of these and other species in the Lesser Antilles.

*Lasioglossum (Dialictus) kilpatrickae* sp. nov.

Diagnosis

*Lasioglossum kilpatrickae* sp. nov. females have the following characteristics: head at least as long as wide (length/width ratio = 1.0; Fig. 5A); mesoscutal and mesepisternal punctures distinct (Fig. 5B–C); mesoscutal setae entirely pale; and T1 appressed setal fan complete. The male is similar but lacks a T1 fan. *Lasioglossum dominicense* sp. nov. is smaller, with a distinctly shorter head in both sexes (length/width = 0.9) (Figs 2A, 3A). *Lasioglossum kalinago* sp. nov. has less distinct punctures on the mesepisternum and dark setae intermingled with pale setae on the mesoscutum. *Lasioglossum punctifrons* has granular microsculpture with indistinct punctuation (Fig. 7B) and lacks a complete T1 appressed setal fan.

Etymology

This species is named for Shelby Kilpatrick (TAMUIC), who collected most of the type series and arranged additional Dominican bee specimens for study.
Fig. 5. *Lasioglossum* (Dialictus) *kilpatrickae* sp. nov. Holotype, ♀. A. Face. B. Lateral habitus. C. Dorsum of mesosoma. Scale bars = 1 mm.
GIBBS J., The bee family Halictidae of Dominica

Type material

Holotype

Paratypes
DOMINICA: 1 ♀, 2 ♂♂, St. David Parish, topotypical (TAMUIC); 1 ♂, St. Andrew Parish, Wolfdorf Hill, 5–7 Jun. 1987, coll. R.E. Woodruff (FSCA).

Description

Female

Measurements (n = 1). Length 4.7 mm; head length 1.2 mm; head width 1.2 mm; intertegular distance 1.0 mm.

Colouration.


Pubescence.

Dull white. Relatively sparse erect setae throughout, without tomentum, except on gena near eye, pronotum dorsolateral angles and lobe, narrow basolateral patches of T2–T3 and sparsely on T4. Metasomal T1 with complete fan of appressed setae on anterior surface. T2 without apical fimbriae, T3–T4 with only sparse fine setae on apical impressed areas. Scopa well developed on hind leg and metasomal sterna.

Surface sculpture.

Face imbricate, punctuation moderately fine. Clypeus punctuation sparse (i = 1–2.5 pd), denser proximally, surface smooth distally (i = 2–3 pd). Supraclypeal area with punctures sparse, present medially (i = 1–2 pd), and lower paraocular area punctuation dense (i ≤ pd). Upper paraocular area and frons reticulate-punctate (i < pd). Ocellocular area punctate (i ≤ pd). Gena and postgena polished, finely punctate-lineolate. Mesoscutum imbricate, punctuation fine, dense on laterad of parapsidal lines, posterior portion (i < pd), slightly sparser medially (i = 1–1.5 pd), submedial areas sparser still; mesoscutellum similar with small submedial impunctate area (i = 1–2 pd). Metanotum finely punctate. Preepisternum finely reticulate rugulose. Hypoepimeral area finely punctate. Mesepisternum below scrobe punctate (i ≤ d), finely imbricate. Metepisternum dorsal ⅔ rugulose, ventral portion imbricate. Metapostnotum medially with longitudinal rugae reaching posterior margin, oblique carinulae on lateral portions extending to dorsolateral slope. Propodeum posterior and lateral surfaces polished tessellate. Metasomal terga polished, finely coriarious on apical impressed areas and T1 anterior face; punctuation fine, obscure on basal portions (i = 1–2 pd), indistinct, sparser on apical impressed areas, T1–T2 apical impressed areas impunctate, except near lateral margins. Metasomal sterna coriarious and finely, sparsely punctate (i = 2–4 pd).

Structure.

Head round (length/width ratio = 1.00). Eyes weakly convergent below. Clypeus ⅔ below suborbital tangent. Gena narrower than eye. Hypostomal carinae subparallel. Pronotal dorsolateral angle obtuse. Pronotal ridge rounded, interrupted by sulcus. Tegula ovoid. Submarginal cells three (1rs-m present). Distal hamuli arranged 2-1-2. Inner metatibial spur pectinate, with 3 branches, proximal branch much longer than width of rachis. Metapostnotum narrowly rounded onto posterior propodeal surface. Propodeum with lateral carina reaching ⅔ distance to dorsal margin; oblique carina fine. T2–T4 impressed areas medially about ⅓ longitudinal length of basal area.
Fig. 6. *Lasioglossum* (Dialictus) *kilpatrickae* sp. nov. Paratypes, ♂♂. A. Face. B. Lateral habitus. C. Dorsum of mesosoma. Scale bars = 1 mm.
Male

MEASUREMENTS (n = 3). Length 3.9–4.7 mm (mean = 4.4); head length 1.3–1.4 mm (mean = 1.4); head width 1.3–1.4 mm (mean = 1.4); intertegular distance 0.8–1.0 mm (mean = 0.9).

COLOURATION. Similar to female, except F1–F11 yellowish brown ventrally.

PUBESCENCE. Similar to female, except scopa absent. Face below eye emargination with sparse tomentum, obscuring lower paraocular area. T1 fan absent. T2–T4 with at most very sparse tomentum basolaterally.

SURFACE SCULPTURE. Similar to female, but more polished, with less evident imbricate microsculpture. Metanotum sparsely punctate (i = 1–1.5 pd). Metepisternum densely punctate (i ≤ pd). Metapostnotal rugae not reaching posterior margin. Lateral surface of propodeum distinctly punctate. T1–T4 apical impressed areas impunctate.

STRUCTURE. Similar to female, with typical sexual differences. Head round (length/width ratio = 1.00–1.04). F2 length nearly 2 × F1. Scape, pedicel and F1 reaching lower margin of median ocellus. T2–T4 apical impressed areas less than ½ of median length.

TERMINALIA. As shown in Fig. 4C–D.

Remarks

Lasioglossum kilpatrickae sp. nov. is similar to L. plumbeum in many respects, most notably the shape of the head. Despite a close similarity, the two species can be readily differentiated. Lasioglossum plumbeum females have distinct medial punctures on the apical impressed area of T2, finer and denser punctures on the mesepisternum, as well as a dark blue colour of the head and mesosoma. Male L. plumbeum lack the tomentum on the lower face present in L. kilpatrickae sp. nov.

Subgenus Habralictellus Moure & Hurd, 1982

Habralictellus Moure & Hurd, 1982: 46 (type species: Halictus auratus Ashmead, 1900, by original designation).

Lasioglossum (Habralictellus) punctifrons (Crawford, 1914)  
Fig. 7A–B

Halictus punctifrons Crawford, 1914: 133.

Material examined

Holotype  
DOMINICA: ♀, examined 2015, metasoma not attached, held in capsule on pin, USNM 16733 (NMNH).

Diagnosis

Lasioglossum punctifrons is distinguished from congeners on Dominica by any combination of the following characteristics: head as long as wide (length/width ratio = 1.02; Fig. 7A); mesosoma with granular microsculpture, punctuation indistinct (Fig. 7B); metapostnotum long, with weak carinulae limited to lateral margins; and T1 without complete setal fan. Lasioglossum roseauense sp. nov. has a shorter head (length/width ratio = 0.87; Fig. 8A) and only two submarginal cells. The male is unknown.
Fig. 7. *Lasioglossum* (*Habralictellus*) *punctifrons* (Crawford, 1914). Holotype, ♀. A. Face. B. Dorsum of mesosoma. Scale bars = 1 mm.
Remarks
This is clearly a member of the *Lasioglossum auratum* (Ashmead, 1900) species complex, which has sometimes been recognized as a separate genus, *Habralictellus* Moure & Hurd. Many members of this species group, which is endemic to the West Indies, have brilliant iridescent colours on at least the head and mesosoma. The colours are duller in *L. punctifrons*. The metasoma is entirely dark, without evident metallic reflections. The metapostnotum is elongate, approximately equal in length to the mesoscutellum and metanotum combined, and has only weak carinulae at the lateral margins. The overall structure and sculpturing is very similar to *L. auratum*, from St. Vincent and the Grenadines, but *L. auratum* has bright iridescent reflections on the head and mesosoma and more distinct carinulae on the metapostnotum, although still largely limited to the lateral parts. The Puerto Rican species *L. eickwortellum* (Engel, 2001) also belongs to this group and has similar structural features. The female of *L. eickwortellum* is bright iridescent, with dense but fine punctuation on the mesoscutum, and a bright orange-red colour of T1–T2.

No recent collections of *L. punctifrons* have been examined. To my knowledge it has not been collected since the original survey in 1913.

*Lasioglossum (Habralictellus) roseauense* sp. nov.


Fig. 8A–C

Diagnosis
The female of *L. roseauense* sp. nov. can easily be recognized by the absence of vein 1rs-m, resulting in two submarginal cells (Fig. 8B), rather than the three submarginal cells typical of other halictid bees on the island. In addition, the wide face (length/width ratio = 0.87; Fig. 8A), granular microsculpture and metapostnotum lacking rugae (Fig. 8C) further differentiate this species from congenerics on the island. *Lasioglossum punctifrons* is easily differentiated by its longer head (length/width ratio = 1.02; Fig. 7A). *Lasioglossum roseauense* sp. nov. is superficially similar to *Habralictus gonzalezi* Gibbs, 2012 and *H. antillarus* sp. nov., but *L. roseauense* sp. nov. has a weakened vein 2rs-m, typical of *Lasioglossum*, and more distinct punctuation on the mesoscutum.

Etymology
This species is named for the type locality: Roseau, capital city of Dominica.

Type material

Holotype

Description

Female

Measurements (n = 1). Length 5.1 mm; head length 1.3 mm; head width 1.5 mm; intertegular distance 1.1 mm.

Fig. 8. *Lasioglossum (Habralictellus) roseauense* sp. nov. Holotype, ♀. A. Face. B. Lateral habitus. C. Dorsum of mesosoma. Scale bars = 1 mm.
GIBBS J., The bee family Halictidae of Dominica

**Pubescence.** Dull white. Relatively sparse erect setae throughout, without tomentum, except sparsely on gena near eye and pronotum dorsolateral angles and lobe. Metasomal T1 with erect setae laterally on anterior surface. T2–T4 without apical fimbriae. Scopa well developed on hind leg and metasomal sterna.

**Surface sculpture.** Face granular, punctation fine, indistinct. Clypeus punctuation sparse (i = 1–2.5 pd), surface smooth distally. Supraclypeal area with punctures sparse, present medially (i = 1–2 pd), and lower paraocular area punctuation dense (i ≤ pd). Upper paraocular area and frons indistinctly punctuate (i = 1–2.5 pd). Ocellocular area punctate (i ≤ pd). Gena and postgena imbricate-lineolate. Mesoscutum tessellate, punctuation fine, relatively dense laterad of parapsidal lines (i = 1.5 pd), becoming sparser medially (i = 1.5–4 pd); mesocutellum tessellate, sparsely punctate (i = 2–5 pd). Metanotum granular. Preepisternum tessellate. Hypoepimeral imbricate. Mesepisternum below scrobe, tessellate-granular, indistinctly punctate ventrally (i = 2–5 pd). Metepisternum dorsal ⅓ carinulate, ventral portion imbricate. Metapostnotum tessellate-granular, transversely lineolate medially. Propodeum posterior and lateral surfaces polished tessellate. Metasomal terga polished, finely coriarious on apical impressed areas; punctuation fine, obscure on basal portions (i = 1–2 pd), indistinct, sparser on apical impressed areas, T1–T2 apical impressed areas with irregular indistinct punctures. Metasomal sterna coriarious, sparsely punctate on posterior half (i = 2–4 pd).

**Structure.** Head wide (length/width ratio = 0.87). Eyes weakly convergent below. Clypeus ⅓ below suborbital tangent. Gena narrower than eye. Hypostomal carinae subparallel. Pronotal dorsolateral angle obtuse. Pronotal ridge rounded, interrupted by sulcus. Tegula ovoid. Submarginal cells three (1rs-m present). Distal hamuli arranged 2-1-2. Inner metatibial spur pectinate, with 5 branches, proximal branch much longer than width of rachis. Metapostnotum narrowly rounded onto posterior propodeal surface. Propodeum with lateral carina reaching ½ distance to dorsal margin; oblique carina absent. T2–T4 impressed areas medially about ½ longitudinal length of basal area.

**Male**

Unknown.

**Remarks**

*Lasioglossum roseauense* sp. nov. belongs to the *L. rufopantex* (Engel, 2001) species group of *L. (Habralictellus)*, which is recognizable by the short face and absence of vein 1rs-m (Fig. 8A–B). *Lasioglossum eleutherense* (Engel, 2001) is the only other described member of this complex. Both are known from the Greater Antilles, reaching in the case of *L. rufopantex* as far as the Virgin Islands. *Lasioglossum rufopantex* is easily distinguished from *L. roseauense* sp. nov. by the mesoscutum being polished, iridescent green.

Tribe Sphecodini Schenck, 1868 [1869]

**Genus** *Sphecodes* Latreille, 1804

*Sphecodes* Latreille, 1804: 182 (type species: *Nomada gibba* Fabricius, 1804 = *Sphex gibba* Linnaeus, 1758, by monotypy).


*Sabulicola* Verhoeff, 1890: 328 (type species: *Sabulicola cirsii* Verhoeff, 1890 = *Nomada albilabris* Fabricius, 1793, by monotypy).

*Thrausmus* Buysson, 1900: 177 (type species: *Thrausmus grandidieri* Buysson, 1900, by monotypy).
Drepanium Robertson, 1903: 103 (type species: Sphecodes falcifer Patton, 1880 = Sphecodes confertus Say, 1837, by original designation).
Proteraner Robertson, 1903: 103 (type species: Sphecodes ranunculi Robertson, 1897, by monotypy).
Dialonia Robertson, 1903: 104 (type species: Sphecodes antennariae Robertson, 1891, by original designation).
Machaeris Robertson, 1903: 104 (type species: Sphecodes stygius Robertson, 1893, by original designation).
Sphecodium Robertson, 1903: 104 (= Stelidium Robertson, 1903 lapsus calami, not Stelidium Robertson, 1902c) (type species: Sphecodium cressonii Robertson, 1903, by original designation).
Sphecodes (Callosphecodes) Friese, 1909: 182 (type species: Callosphecodes ralunensis Friese, 1909, by monotypy).
Sphegodes Mavromoustakis, 1948: 553, unjustified emendation.

Sphecodes diablotinus sp. nov.
urn:lsid:zoobank.org:act:D309231C-B957-4B22-924D-CD6C4766A93D
Figs 9A–C, 10A–C, 13A, 14A–B

Diagnosis
The male of S. diablotinus sp. nov. can be recognized by the combination of face without tomentose setae (Fig. 9A) and body black. The female of S. diablotinus has the head and mesosoma black, orange-red on T1–T4 (Fig. 10B); T2 is nearly impunctate, only sparse punctures are present basally. Both sexes of S. diablotinus sp. nov. have a distinctly smooth triangular area on the posterior margin of the mesepisternum (Fig. 13A). The male of S. albifacies sp. nov. is similar but has dense tomentum on the face (Fig. 11A). The female of S. albifacies sp. nov. is red on T1–T3 (Fig. 12B); T2 has distinct, albeit fine punctuation basally. Both sexes have a narrow, indistinct smooth area on the posterior margin of the mesepisternum. Both sexes of Microsphecodes dominicanus (Stage, 1972) have testaceous colour on the mesosoma and reticulate-rugae over the entire metapostnotum (Figs 15B–C, 16B–C).

Etymology
The specific epithet is based on the local word “diablotin”, meaning “little devil”, used as a common name for the black-capped kestrel, Pterodroma hasitata (Kuhl, 1820) and the tallest peak on the island, Morne Diablotin.

Type material
Holotype

Paratypes
**Fig. 9.** *Sphecodes diablotinus* sp. nov. Holotype (A–B) and paratype (C), ♂♀. A. Face. B. Lateral habitus. C. Dorsum of mesosoma. Scale bars = 1 mm.
Description

Male

Measurements (n = 2). Length 3.8 mm; head length 1.0 mm; head width 1.2 mm; intertegular distance 0.8 mm.


Pubescence. Dull white. Sparse erect setae throughout, without tomentum on head.

Surface sculpture. Face polished, punctuation fine. Clypeus punctuation dense (i = 1–1.5 pd). Supraclypeal area, lower and upper paraocular areas and frons densely punctate (i ≤ pd). Ocellocular area sparsely punctate (i = 1–2 pd). Gena and postgena polished, finely punctate-lineolate. Mesoscutum polished; punctuation moderately coarse, relatively dense laterad of parapsidal lines (i = 1–1.5 pd), sparser on posterior and medial area of disc (i = 1–3 pd); mesoscutellum similar. Metanotum rugulose. Preepisternum reticulate rugulose. Hypoepimeral area finely rugulose. Mesepisternum below scrobe finely rugulose, with smooth posterior triangle, minute punctures present in anteroventral third of triangle. Metepisternum rugulose. Metapostnotum with longitudinal carinulae reaching ⅔ distance to posterior margin, posterior margin smooth. Propodeum posterior and lateral surfaces smooth with irregular sparse rugae. Metasomal terga polished, finely cariarious on apical impressed areas; punctuation fine, obscure on basal portions (i = 1–2 pd), virtually absent on T1; apical impressed areas impunctate. Metasomal sterna cariarious and finely, sparsely punctate (i = 2–4 pd).

Structure. Head wide (length/width ratio = 0.85–0.86). Eyes weakly convergent below. Clypeus ⅔ below suborbital tangent. Frontal line deeply impressed below median ocellus. Gena narrower than eye. Hypostomal carinae subparallel. Occipital carina small but distinct. Pronotal dorsolateral angle orthogonal. Pronotal ridge carinate, interrupted by sulcus. Tegula ovoid. Submarginal cells two or three (1rs-m present or absent), if 1rs-m present then 2nd submarginal cell narrow, posterior length approximately ⅔ anterior length of 3rd submarginal cell. Distal hamuli arranged 2-2. Second tarsal segment narrow at base, length as long as 3rd tarsus. Propodeum with lateral carina reaching ⅔ distance to dorsal margin; oblique carina fine.

Terminalia. As shown in Fig. 14A–B.

Female

Measurements (n = 2). Length 4.5–4.6 mm (mean = 4.5); head length 1.1 mm (mean = 1.1); head width 1.3–1.5 mm (mean = 1.4); intertegular distance 0.7–0.8 mm (mean = 0.8).


Fig. 10. *Sphecodes diablotinus* sp. nov. Paratypes, ♀♀. A. Face. B. Lateral habitus. C. Dorsum of mesosoma. Scale bars = 1 mm.
**Surface sculpture.** Face polished, punctuation fine. Clypeus punctuation dense (i = 1–1.5 pd). Supraclypeal area, lower and upper paraocular areas and frons densely punctate (i ≤ pd). Ocellocular area sparsely punctate (i = 1–2 pd). Postgena polished, gena finely punctate-lineolate. Mesoscutum polished; punctuation moderately coarse, relatively dense laterad of parapsidal lines (i = 1–1.5 pd), sparser on posterior and medial area of disc (i = 1–2 pd); mesoscutellum similar, submedial patch nearly impunctate. Metanotum rugulose. Preëpisternum reticulate rugulose. Hypoepimeral area finely rugulose. Mesepisternum below scrobe finely rugulose, with smooth posterior triangle expanding ventrally, minute punctures present in anteroventral third of triangle. Metepisternum rugulose. Metapostnotum with longitudinal carinulae reaching ⅔ distance to posterior margin, posterior margin smooth. Propodeum posterior and lateral surfaces reticulate rugulose. T1–T2 polished nearly impunctate, T3–T5 weakly coriarious, basal areas with very fine obscure punctuation (i = 1–3 pd), virtually absent on T1; apical impregnated areas impunctate. Metasomal sterna coriarious and finely, sparsely punctate (i = 2–4 pd).

**Structure.** Head wide (length/width ratio = 0.81–0.82). Eyes weakly convergent below. Labrum broad, without apical projection or dorsal keel. Clypeus ½ below suborbital tangent. Mandible simple, without preapical tooth. Gena narrower than eye. Hypostomal carinae subparallel. Occipital carina small but distinct. Flagellum 1 distinctly broader than long on dorsal surface, shorter than pedicel. Pronotal dorsolateral angle acute. Pronotal ridge carinate, interrupted by sulcus. Tegula ovoid. Submarginal cells three (1rs-m present), 2nd submarginal cell narrow, posterior length slightly less than anterior length of 3rd submarginal cell. Distal hamuli arranged 2-2. Inner metatibial spur minutely serrate. Basitibial plate indistinct, represented by minute glabrous spot. Metatarsus 2 narrow at base, length as long as metatarsus 3. Propodeum with lateral carina diverging dorsally, reaching ½ distance to dorsal margin; oblique carina indistinct. T5 without evident pseudopygidial area, T6 with narrow pygidial plate.

**Remarks**

Hosts of *S. diablotinus* sp. nov. and *S. albifacies* sp. nov. are unknown, but are presumably among the *Lasioglossum* (*Dialictus*) species included herein. Both *Sphecodes* species have been collected at the same locality as *L. kalinago* sp. nov., *L. dominicense* sp. nov. and *Habralictus gonzalezi*.

**Sphecodes albifacies** sp. nov.

 urn:lsid:zoobank.org:act:50B6BF6B-1A37-4D18-89F3-1EF2E996173B

Figs 11A–C, 12A–C, 13B, 14C–D

**Diagnosis**

The male of *S. albifacies* sp. nov. can be recognized by the combination of face with dense tomentose setae (Fig. 11A), black body, and metapostnotum with longitudinal carinulae reaching two-thirds of the distance to the smooth posterior margin. The female is similar, but has red on T1–T3 (Fig. 12B). Both sexes have a narrow, indistinct smooth area on the posterior margin of the mesepisternum (Fig. 13B). The male of *S. diablotinus* sp. nov. is similar but has no tomentum on the face (Fig. 10A). The female of *S. diablotinus* sp. nov. has red on T1–T4 (Fig. 10B). Both sexes of *S. diablotinus* sp. nov. have a distinct smooth triangular area on the posterior margin of the mesepisternum (Fig. 13A). *Microsphecodes dominicanus* has testaceous colour on the mesosoma and reticulate rugae over the entire metapostnotum (Figs 15B–C, 16B–C).

**Etymology**

The specific epithet is derived from the Latin for “white face”, and is a reference to the dense white pilosity of the male.
Fig. 11. *Sphecodes albifacies* sp. nov. Holotype (A) and paratype (B–C), ♂♂. A. Face. B. Lateral habitus. C. Dorsum of mesosoma. Scale bars = 1 mm.
Type material

Holotype

Paratypes

Description

Male

Measurements (n = 4). Length 3.5–3.8 mm (mean = 3.7); head length 1.0–1.1 mm (mean = 1.1); head width 1.2 mm (mean = 1.2); intertegular distance 0.7–0.8 mm (mean = 0.7).


Pubescence. Dull white. Sparse erect setae throughout, face below frons with tomentum partially obscuring clypeus, denser on lower paraocular area. Gena adjacent to eye with sparse tomentum.

Surface sculpture. Face polished, punctuation fine. Clypeus punctuation dense (i = 1–1.5 pd). Supracleical area, lower and upper paraocular areas and frons densely punctate (i ≤ pd). Ocellocular area sparsely punctate (i = 1–2 pd). Gena and postgena polished, finely punctate-lineolate. Mesoscutum polished; punctuation moderately coarse, finer laterally, relatively dense laterad of parapsidal lines (i = 1–1.5 pd), sparser on posterior and medial area of disc (i = 1–3 pd); mesoscutellum similar. Metanotum rugulose. Preepisternum reticulate rugulose. Hypoepimeral area finely rugulose. Mesepisternum below scrobe finely rugulose, with narrow smooth posterior margin. Metepisternum rugulose. Metapostnotum with longitudinal carinulae reaching ⅔ distance to posterior margin, posterior margin smooth. Propodeum posterior and lateral surfaces smooth, with irregular sparse rugae. Metasomal terga polished, finely coriarious on apical impressed areas; punctuation fine, present on basal portions (i = 1–2 pd), sparser (i = 1–4 pd) but distinct on T1; apical impressed areas impunctate. Metasomal sternum coriarious and finely, sparsely punctate (i = 2–4 pd).

Structure. Head round (length/width ratio = 0.85–0.86). Eyes weakly convergent below. Clypeus ½ below suborbital tangent. Frontal line deeply impressed below median ocellus. Gena narrower than eye. Hypostomal carinae subparallel. Occipital carina small but distinct. Pronotal dorsolateral angle orthogonal. Pronotal ridge carinate, interrupted by sulcus. Tegula ovoid. Submarginal cells three (1rs-m present), 2nd submarginal cell posterior length approximately equal to anterior length of 3rd submarginal.
Fig. 12. *Sphecodes albifacies* sp. nov. Paratype, ♀. A. Face. B. Lateral habitus. C. Dorsum of mesosoma. Scale bars = 1 mm.
Fig. 13. Mesepisternum of species of *Sphecodes* Latreille, 1804 from Dominica. Arrows indicate smooth area on posterior margin. A. *Sphecodes diablotinus* sp. nov. B. *S. albifacies* sp. nov.
cell. Distal hamuli arranged 2-2. 2nd tarsal segment narrow at base, length as long as 3rd tarsus. Propodeum with lateral carina reaching ⅔ distance to dorsal margin; oblique carina fine.

**Terminalia.** As shown in Fig. 14C–D.

**Female**

**Measurements** (n = 4). Length 3.7–4.1 mm (mean = 3.8); head length 1.1 mm (mean = 1.1); head width 1.3–1.4 mm (mean = 1.4); intertegular distance 0.8 mm (mean = 0.8).


**Surface sculpture.** Face polished, punctation fine. Clypeus punctuation dense (i = 1–1.5 pd). Supraclypeal area, lower and upper paraocular areas and frons densely punctate (i ≤ pd). Ocellocular area sparsely punctate (i = 1–2 pd). Postgena polished, gena finely punctate-lineolate. Mesoscutum polished; punctuation moderately coarse, relatively dense laterad of parapsidal lines (i = 1–1.5 pd), sparser on posterior and medial area of disc (i = 1–2 pd); mesoscutellum similar, submedial patch nearly impunctate. Metanotum rugulose. Preëpisternum reticulate rugulose. Hypoepimeral area finely rugulose. Mesepisternum below scrobe finely rugulose, with narrow, smooth posterior margin. Metepisternum rugulose. Metapostnotum with longitudinal carinulae reaching ⅔ distance to posterior margin, posterior margin smooth. Propodeum posterior and lateral surfaces reticulate rugulose. T1–T2 polished, nearly impunctate, T3–T5 weakly coriarious, basal areas with very fine obscure punctation (i = 1–3 pd), virtually absent on T1; apical impressed areas impunctate. Metasomal sterna coriarious and finely, sparsely punctate (i = 2–4 pd).

**Structure.** Head wide (length/width ratio = 0.77–0.82). Eyes weakly convergent below. Labrum broad, without apical projection or dorsal keel. Clypeus ½ below suborbital tangent. Mandible simple, without preapical tooth. Gena narrower than eye. Hypostomal carinae subparallel. Occipital carina small but distinct. Flagellum 1 distinctly broader than long on dorsal surface, shorter than pedicel. Pronotal dorsolateral angle acute. Pronotal ridge carinate, interrupted by sulcus. Tegula ovoid. Submarginal cells three (1rs-m present), 2nd submarginal cell narrow, posterior length slightly less than anterior length of 3rd submarginal cell. Distal hamuli arranged 2-2. Inner metatibial spur minutely serrate. Basitibial plate indistinct, represented by minute glabrous spot. Metatarsus 2 narrow at base, length as long as metatarsus 3. Propodeum with lateral carina diverging dorsally, reaching ⅔ distance to dorsal margin; oblique carina indistinct. T5 without evident pseudopygidial area, T6 with narrow pygidial plate.

**Remarks**

The holotype male of *S. nigritus* Ashmead, 1900 (NHMUK) was examined and found to have dense pubescence on the face, like *S. albifacies* sp. nov., but also a large smooth triangular area on the posterior mesepisternum. There does not yet seem to be any overlap in the halictid faunas of St. Vincent and the Grenadines (from where *S. nigritus* was described) and Dominica. There are only two other species of *Sphecodes* in the West Indies, both described from Cuba (Engel 2006b) and one of these, *S. tainoi* Engel, 2006, has subsequently been recorded from Puerto Rico (Engel & Prado 2014).
Fig. 14. — Genital capsule of *Sphecodes diablotinus* sp. nov. Paratype, ♂. A. Dorsal view. B. Ventral view. — Genital capsule of *Sphecodes albifacies* sp. nov. Paratype, ♂. C. Dorsal view. D. Ventral view. Scale bars = 1 mm.
Genus *Microsphecodes* Eickwort & Stage, 1972


*Microsphecodes dominicanus* (Stage, 1972)
Figs 15A–C, 16A–C

*Sphecodes* (*Microsphecodes*) dominicanus Stage in Eickwort & Stage, 1972: 509, figs 17–27.

**Type locality**

**Material examined**

**Type material**

**Other material**

**Description**

**Female**

**Measurements** (n = 1). Length 3.4 mm; head length 0.9 mm; head width 1.1 mm; intertegular distance 0.6 mm.

**Colouration.** Head blackish-brown, except clypeal distal margin, labrum, mandible and anterior surface of scape testaceous. Flagellum dark reddish brown. Mesosoma including tegula and legs testaceous, except mesonotum reddish orange, mesoscutellum with dark brown patch. Wing membrane faintly dusky, with dark setae, venation and pterostigma dark brown. Metasoma testaceous, except apex of T1–T4 reddish orange, T5–T6 and apex of T4 dark brown.


**Surface sculpture.** Face polished, punctuation fine. Clypeus punctuation dense (i = 1–1.5 pd). Supraclypeal area, lower and upper paraocular areas and frons densely punctate (i ≤ pd). Ocellocular area punctate (i ≤ pd). Postgena weakly imbricate, gena finely punctate-lineolate. Mesoscutum polished; punctuation moderately coarse, relatively dense laterad of parapsidal lines (i = 1–1.5 pd), sparser on posterior and medial area of disc (i = 1–3 pd); mesoscutellum similar. Metanotum rugulose. Preepisternum reticulate rugulose. Hypoepimeral area finely punctate. Mesepisternum below scrobe finely rugulose, ventral half smooth. Metepisternum with longitudinal carinulae. Metapostnotum reticulate-rugose. Propodeum posterior and lateral surfaces reticulate rugulose. T1–T6 polished, T3–T5 weakly coriarious basally. Metasomal sternum coriarius and finely, sparsely punctate (i = 2–4 pd).

**Structure.** Head wide (length/width ratio = 0.8). Eyes weakly convergent below. Labrum broad, without apical projection or dorsal keel. Clypeus ⅔ below suborbital tangent. Mandible simple, without preapical tooth. Gena narrower than eye. Hypostomal carinae diverging towards mandible. F1 much broader than
Fig. 15. Microsphecodes dominicanus (Stage, 1972), ♀. A. Face. B. Lateral habitus. C. Dorsum of mesosoma. Scale bars = 1 mm.
Fig. 16. *Microsphecodes dominicanus* (Stage, 1972). Paratype, ♂. A. Face. B. Lateral habitus. C. Dorsum of mesosoma. Scale bars = 1 mm.
long, shorter than pedicel. Pronotal dorsolateral angle acute. Pronotal ridge carinate, interrupted by sulcus. Tegula ovoid. Submarginal cells three (1rs-m present), 2nd submarginal cell narrow, posterior length slightly less than anterior length of 3rd submarginal cell. Distal hamuli arranged 2-2. Inner metatibial spur minutely serrate. Legs slender. Basitibial absent. Metatarsus 2 narrow at base, length as long as metatarsus 3. Propodeum with lateral carina, reaching ½ distance to dorsal margin; oblique carina fine. T5 without evident pseudopygidial area, T6 with narrow pygidial plate.

Remarks

The female of Microsphecodes dominicanus is described above for the first time. Both sexes can be distinguished easily from the two Sphecodes described above by the presence of yellow-testaceous colour on the legs and mesosoma (Figs 15B, 16B) and the reticulate rugae present on the metapostnotum and posterior propodeal surface (Figs 15C, 16C; see also Eickwort & Stage 1972: figs 17–18). The host of M. dominicanus is unknown, but Microsphecodes are known to parasitize both Habralictus and LasioGLOSSum (Michener 1978; Michener et al. 1979). The single female specimen was collected at the same site as were seven specimens of H. gonzalezi and a single specimen of L. kalinago sp. nov., but L. dominicense sp. nov. is also known from nearby sites.

The use of Microsphecodes at the generic level is questionable. Sphecodes (Austrosphecodes) is evidently rendered paraphyletic by Microsphecodes based on molecular phylogenetic results (Habermannová et al. 2013). The implication of these results is that some or all Austrosphecodes should be synonymized with Microsphecodes. The latter name has priority, but if Austrosphecodes is treated at only the subgeneric level, then Microsphecodes should also be treated as a subgenus of Sphecodes. The current phylogenetic hypothesis would allow for Austrosphecodes and Microsphecodes combined to be treated at the generic level since together they form the sister group to other species included in the phylogeny (Habermannová et al. 2013). Full taxon sampling of major sphecodine groups has not been completed. The West Indian genus Nesosphecodes Engel, 2006, for example, also needs to be included in future studies of sphecodine bees. Until a more complete revision of the higher level systematics of the Sphecodini is completed, Microsphecodes is used as a genus following current usage (Michener 2007) despite the apparent synonymy.

Tribe Caenohalictini Michener, 1954
Genus Habralictus Moure, 1941

Habralictus Moure, 1941: 59 (type species: Habralictus flavopictus Moure, 1941, by original designation).

Zikaniella Moure, 1941: 57 (type species: Zikaniella crassiceps Moure, 1941, by original designation).

Habralictus antillarus sp. nov.

urn:lsid:zoobank.org:act:0AF3E368-ACF0-4F9B-99AD-115866D1A12B
Figs 17A–C, 18A–C, 19A–B

Diagnosis

Males of Habralictus antillarus sp. nov. can be distinguished from H. gonzalezi by head wide (length/width ratio = 0.84–0.85), clypeus with distal yellow maculation less than ½ longitudinal length of clypeus (Fig. 18A), and gonostylus short, with numerous distinct setae (Fig. 19A–B). In H. gonzalezi males, the head is longer (length/width ratio = 0.95–0.96), clypeal maculation is ½ the longitudinal length of the clypeus (Fig. 21A; Gibbs 2012: fig. 8), and the gonostylus is long, clavate, with a single distinct seta (Gibs 2012: figs 12–13).
Fig. 17. Habralictus antillarus sp. nov. Paratype, ♀. A. Face. B. Lateral habitus. C. Dorsum of mesosoma. Scale bars = 1 mm.
Females of *H. antillarus* sp. nov. have a slightly wider head (length/width ratio = 0.90) and distal dark brown maculation of the clypeus is only ⅓ the longitudinal length of the clypeus (Fig. 17A). In females of *H. gonzalezi*, the head is longer (length/width ratio = 0.92–0.97) and the clypeal dark maculation is ⅓ the longitudinal length of the clypeus (Fig. 20A). Furthermore, the dark integument of the lower paraocular area extends to the eye emargination in *H. antillarus* sp. nov. (Fig. 17A), but only to the lower margin of the antennal socket in *H. gonzalezi* (Fig. 20A; Gibbs 2012: fig. 2). *Lasioglossum roseauense* sp. nov. is superficially similar, but can be distinguished by generic characters such as the weak distal venation of the forewing, including the absence of 1rs-m (Fig. 8B).

**Type material**

**Holotype**

**Paratypes**

**Description**

**Female**

**Measurements** (n = 1). Length 5.0 mm; head length 1.2 mm; head width 1.4 mm; intertegular distance 0.9 mm.


**Pubescence.** Dull white to dark brown. Relatively sparse erect setae throughout, without tomentum, except on gena near eye, pronotal lobe and posterior surface of propodeum. Metasomal T1 anterior surface bare. T3 with sparse, erect dark setae. T4–T5 with very long dark setae, most evident laterally. Scopa well developed on hind leg and metasomal sterna, meso- and metatibia and tarsi with dark setae.

**Surface sculpture.** Head and mesosoma granular-tessellate, punctuation indistinct. Metapostnotum medially with weak rugae, not reaching more than half distance to posterior margin, oblique carinulae on lateral portions extending to dorsolateral slope. Metasomal terga polished, T1–T2 virtually impunctate, T3 sparsely punctate (i = 3–6 pd), T4 sparsely punctate (i = 2–4 pd), apical impressed areas impunctate, T1–T2 apical impressed areas impunctate except near lateral margins. Metasomal sterna smooth, piliferous punctures present on apical half (i = 1–2.5 pd).

**Structure.** Head wide (length/width ratio = 0.90). Eyes weakly convergent below. Clypeus ⅔ below suborbital tangent. Gena narrower than eye. Hypostomal carinae weakly divergent. Pronotal dorsolateral angle obtuse. Pronotal ridge rounded, interrupted by sulcus. Tegula ovoid. Submarginal cells three (1rs-m present). Distal hamuli arranged 2-1-2. Inner metatibial spur pectinate, with 4 branches, proximal branch much longer than width of rachis. Metapostnotum narrowly rounded onto posterior propodeal surface; longitudinal length greater than apical width. Propodeum with lateral carina reaching less than ⅓ distance to dorsal margin; oblique carina absent. Metasomal terga strongly reflexed laterally, metasoma appearing relatively flat. T2–T4 impressed areas medially about ⅓ longitudinal length of basal area.
Fig. 18. *Habralictus antillarus* sp. nov. Holotype, ♂. A. Face. B. Lateral habitus. C. Dorsum of mesosoma. Scale bars = 1 mm.
Male

Measurements (n = 3). Length 4.3–4.8 mm (mean = 4.4); head length 0.9–1.3 mm (mean = 1.1); head width 1.1–1.5 mm (mean = 1.3); intertegular distance 0.7–0.9 mm (mean = 0.8).

Colouration. Similar to female except labrum yellow, clypeus distal margin very narrowly yellow, F2–F11 reddish to yellowish brown ventrally, and metacoxa metallic.

Pubescence. Similar to female except scopa absent.

Surface sculpture. Similar to female except punctation on T4 sparser (i = 4–8 pd).

Structure. Similar to female, with typical sexual differences. Head wide (length/width ratio = 0.84–0.85), eyes more distinctly convergent below. F2 length nearly 2 × F1. Scape, pedicel and F1 reaching lower margin of median ocellus. Flagellomeres broadening towards apex. Inner metatibial spur simple, unbranched. Metasoma slender, widening towards T4–T5; not so strongly reflexed laterally. T2–T4 apical impressed areas less than 1⁄3 of median length.

Terminalia. As shown in Fig. 19A–B. Gonostylus short, length and width subequal, with numerous long setae.

Fig. 19. Genital capsule of Habralictus antillarus sp. nov. Paratype, ♂. A. Dorsal view. B. Ventral view. Scale bar = 1 mm.
Habralictus gonzalezi Gibbs, 2012
Figs 20A–C, 21A–C

Habralictus gonzalezi Gibbs, 2012: 3, figs 1–14.

Material examined

Holotype

Other material

Remarks

Habralictus gonzalezi is the most northerly distributed species of the genus known to occur in the Caribbean Islands. It can easily be distinguished from other bees on the island, except for H. antillarus sp. nov., by the various characters diagnostic for the tribe and genus (Michener 2007). The diagnosis provided for H. antillarus sp. nov. above can be used to distinguish these two species. The bright metallic colouration of the head and mesosoma (Figs 20C, 21C) will distinguish it from the dull metallic, black or testaceous colours of most of the halictine and sphecodine bees above. Lasioglossum roseaense sp. nov. is superficially similar, but the absence of vein 1rs-m (Fig.8) and the more distinct mesoscutal punctuation (Fig. 8C) clearly differentiate it from H. gonzalezi. Diagnostic characters, additional images and a key for discriminating this species from other Habralictus in the Lesser Antilles are available in the original description (Gibbs 2012).

Tribe Augochlorini Beebe, 1925
Genus Augochlora Smith, 1853
Subgenus Augochlora Smith, 1853


Oxystoglossa Smith, 1853: 83 (type species: Oxystoglossa decorata Smith, 1853, by monotypy).

Angochlora Schrottky, 1901: 213, lapsus calami.

Odontochlora Schrottky, 1909: 141 (type species: Augochlora mulleri Cockerell, 1900, by original designation).

Fig. 20._Habralictus gonzalezi_ Gibbs, 2012, ♂. A. Face. B. Lateral habitus. C. Dorsum of mesosoma. Scale bars = 1 mm.
Fig. 21. *Habralictus gonzalezi* Gibbs, 2012, ♂. A. Face. B. Lateral habitus. C. Dorsum of mesosoma. Scale bars = 1 mm.
Augochlora (Augochlora) ignifera Crawford, 1914

Augochlora ignifera Crawford, 1914: 46.

Type locality

Remarks
Augochlora ignifera is the only member of this genus and tribe currently known from the island, and it can easily be distinguished from other halictid bees on that basis. The female is particularly distinctive due to the fiery red iridescence covering most of the head, mesosoma and metasoma (Fig. 22A–C). The wings are faintly dusky. The male has a more coppery and greenish tone (Crawford 1914). The closest islands with a relatively well known halictid fauna are St. Vincent and the Grenadines. Six augochlorine bees are recorded from those islands (Ashmead 1900; Moure 2007). Future studies should compare A. ignifera to these species and others which presumably occur on intermediary islands but remain undocumented.

Key to the Halictidae of Dominica

1. Head and mesosoma lacking metallic reflections; female without scopa ……………………2
   – Head and mesosoma with metallic reflections; female with scopa ……………………4

2. Legs entirely orange-testaceous (Figs 15B, 16B); mesepisternum reddish to testaceous; marginal cell with basal fourth or less subtended by submarginal cells; metapostnotum completely covered in reticulate rugae (Figs 15C, 16C) ………………………Microsphecodes dominicanus (Stage, 1972)
   – Legs mostly dark brown (Figs 9B, 10B, 11B, 12B); mesepisternum black; marginal cell with basal third or more subtended by submarginal cells; metapostnotum with longitudinal carinulae restricted to basal portion (Figs 9C, 10C, 11C, 12C) ………………………………3

3. Male face mostly bare (Fig. 9A); female metasoma red on T1–T4 (Fig. 10B); both sexes with mesepisternum below scrobe with smooth triangular posterior area (Fig. 13A) …………………………………………………………………………………………………………Sphecodes diablotinus sp. nov.
   – Male face covered in white pubescence (Fig. 11A); female metasoma red on T1–T3 (Fig. 12B); both sexes with mesepisternum below scrobe with narrow smooth posterior margin (Fig. 13B) …………………………………………………………………………………………………………Sphecodes albifacies sp. nov.

4. Metallic red colouration extending over entire body, distinctive on metasomal terga (Fig. 22B); female T5 with median longitudinal specialized area divided; male T7 without preapical carina forming false apex ……………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………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Fig. 22. Augochlora ignifera Crawford, 1914. Holotype, ♂. A. Face. B. Lateral habitus. C. Dorsal habitus. Images of *A. ignifera* provided with the permission of the National Museum of Natural History, Smithsonian Institution, 10th and Constitution Ave. N.W., Washington, DC 20560-0193 (http://www.nmnh.si.edu/).
6. Two submarginal cells (Fig. 8B); mesoscutal punctation sparse, but distinct; male unknown
   \[Lasioglossum\ \textit{roseauense} \text{sp. nov.}\]
   - Three submarginal cells; mesoscutal punctation obscure .................................7

7. Second and third submarginal cells weak; head longer than wide (length/width ratio = 1.02; Fig. 7A); male unknown (antenna unlikely to be clavate) ..........................................................Lasioglossum \textit{punctifrons} (Crawford, 1914)
   - Second and third submarginal cells strong; head usually wider than long (length/width ratio = 0.84–0.97); male with clavate antenna, slender T1–T2 (Figs 18B, 21B–C) ..................8

8. Clypeal yellow or dark brown distal maculation narrow (¼ longitudinal distance in male, ½ longitudinal distance in female) (Figs 17A, 18A); metapostnotum longitudinal length greater than apical width (Figs 17B, 18B); male head distinctly wider than long (length/width ratio = 0.84–0.85) (Fig. 18A) ..................................................Habralictus \textit{antillarus} sp. nov.
   - Clypeal yellow or dark brown distal maculation broad (¼ longitudinal distance in male, ½ longitudinal distance in female) (Figs 20A, 21A); metapostnotum longitudinal length subequal to apical width (Figs 20B, 21B); male head narrower (length/width ratio = 0.95–0.96) (Fig. 21A) ..................................Habralictus \textit{gonzalezi} Gibbs, 2012

9. Hypoepimeral area finely rugulose, without distinct punctures; mesepisternum below scrobe reticulate-rugulose; mesoscutal setae a mix of brown and dull white; male unknown .................................Lasioglossum \textit{kalinago} sp. nov.
   - Hypoepimeral area smooth, with distinct punctures; mesepisternum below scrobe punctate; mesoscutal setae dull white .................................................................10

10. Head short (length/width ratio = 0.9; Figs 2A, 3A); smaller in size (body length ~ 4 mm) ........Lasioglossum \textit{dominicense} sp. nov.
   - Head longer (length/width ratio = 1.0; Figs 5A, 6A); larger in size (body length ~ 5 mm) .......Lasioglossum \textit{kilpatrickae} sp. nov.

Discussion

Bees are widely recognized as the most important animal pollinators of wildflowers and agricultural crops (Brown & Paxton 2009). Reports of pollinator declines have led to increased interest in bees, yet there remains limited knowledge of bee taxonomy for many regions. This lack of understanding is due to a dearth of taxonomic expertise and revisionary studies. For the most species-rich genus of bee, Lasioglossum, revisions remain largely incomplete for North America, with the exception of Lasioglossum \textit{s. s.} and \textit{L. (Leuchalictus)} (McGinley 1986), \textit{L. (Dialictus)} for Canada and the eastern USA (Gibbs 2010, 2011), and \textit{L. (Hemihalictus s.l.)} and \textit{L. (Sphecodogastra s.l.)} for eastern North America and, in part, the West (Gibbs \textit{et al.} 2013; McGinley 2003). Many North American species of this abundant taxon still await description.

The halictid fauna of the West Indies has been poorly studied in the past, likely due to the perceived difficulty of the group and the lack of general interest in such a depauperate bee fauna. Studies of West Indian halictid bees, particularly in the Greater Antilles, were initiated by George C. Eickwort (Eickwort 1988), before his untimely death in Jamaica (Wcislo \textit{et al.} 1994). More recently, there has been a limited number of studies in the region, but most of these have been haphazard descriptions of only one or a few species (e.g., Engel 2011; Gibbs 2012), which provide limited context to understanding the broader diversity of the islands, or have been checklists which do not include coverage of halictid bees (Meurgey 2014). To begin to resolve this lack of understanding, a complete survey of all halictid bees from...
Dominica has been provided herein. Prior to this work, the halictid bee fauna of Dominica went largely unstudied for more than a century. There are no described halictid bees reported from several islands in the West Indies (e.g., Montserrat, Martinique, Guadeloupe, St. Lucia, Antigua and Barbuda), but this is due to a lack of sampling and taxonomic studies in the area rather than true absence. Additional studies of other regions in the West Indies are underway (J. Gibbs, unpublished data; A. Pauly, in litt.) as steps towards a more complete understanding of the regional bee fauna.

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