

**BEES OF GENUS *COLLETES* OF ONTARIO  
(HYMENOPTERA, APOIDEA, COLLETIDAE)**

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**Abstract**

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Sixteen species of *Colletes* are reported from Ontario, seven of these, *C. aberrans*, *C. aestivalis*, *C. hyalinus*, *C. latitarsis*, *C. thoracicus*, *C. validus*, and *C. wilmattae*, are new records for the province. The *Colletes* flight period in Ontario begins in early April. The peak of diversity is in July-August. Identification keys for males and for females are given to identify Ontario species.

**Introduction**

There has been no systematic study of *Colletes* in Ontario. A few records are scattered in the literature (e.g., MacKay and Knerer 1979). Thus, the opportunity to study this group of bees from the largest bee collections of eastern Canada was most welcome. I present the first annotated list of Ontario *Colletes*. Species identification keys by males and females are given.

**Material Examined**

All material is deposited in the entomological collections of the Royal Ontario Museum (ROME), University of Guelph (DEBU), and Canadian National Collection of Insects (CNCI). Morphological characteristics, flight period and distribution data on the species are based on specimens from these collections. Distribution records from outside Ontario are given according to literature records (Hurd 1979). Morphological terms used in this paper are defined and illustrated in Michener (2000).

More than 1200 specimens were identified using Mitchell (1960 and 1962) and Stephen (1954). All existing determinations in the collections studied were checked.

**Family Colletidae**

Holarctic Colletidae are recognized by their short, truncate, bilobed glossa, and subantennal suture meeting the antennal socket at its inner side. Nest cells are lined with cellophane-like material.

The family Colletidae is represented in Ontario by both holarctic genera – *Colletes* Latreille and *Hylaeus* Fabricius. They are a common element of the local bee fauna.

**Genus *Colletes* Latreille**

Species of *Colletes* are medium to large in size (7 – 14 mm), with females generally being larger than males of the same species. Integument black, weakly to moderate sculptured. Pubescence abundant on head, thorax, and legs, mostly white and tawny in colour, sometimes with dark hairs on tergal discs, or admixed on head or dorsal surface of body. Metasoma of both males and females almost conical, with white hair bands, in female without pygidial and prepygidial fimbriae. Fore

wing with three submarginal cells and outwardly arcuate posterior part of the second recurrent vein. The last feature alone is sufficient to separate bees of this genus from any other.

*Colletes* nest in the ground, the cell lining and closure are of a cellophane-like material, the food provision is liquid, and the egg is attached to the upper wall of the cell (Michener 2000).

Data on hand indicates that there are 16 species of *Colletes* in Ontario, 7 of which are newly recorded for the province. At least 3 species that occur in adjacent areas are expected for Ontario: *C. banksi* Swenk, *C. brevicornis* Robertson, and *C. mandibularis* Smith.

Flight activity of *Colletes* species begins in early April (Figure 1). Through July – August *Colletes* abundance and diversity are at a peak; 14 species nest at that time. Half of these species disappear only with colder September weather.

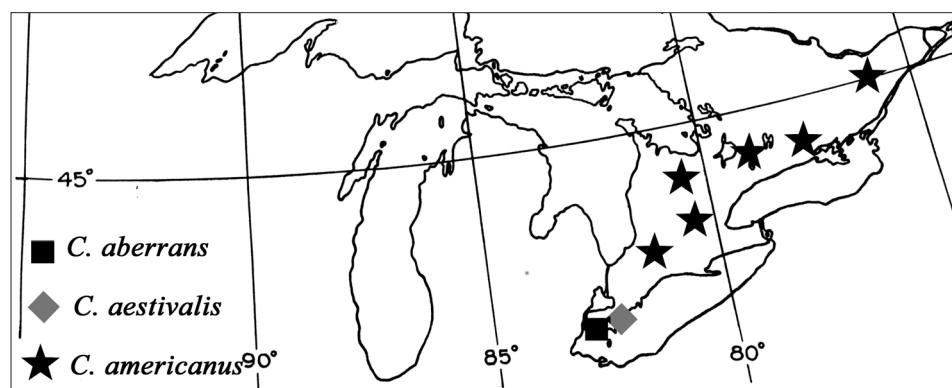


FIGURE 1. Ontario collection localities of *Colletes*: *C. aberrans*, *C. aestivalis*, *C. americanus*.

#### Key to *Colletes* species of Ontario

Species new for Ontario are designated by an asterisk.

The species descriptions, following m-dash in couplets, involve only the characteristics, which are most important for the recognition of the particular species.

The abbreviations are as followed: F – flagellar segment, T – tergum, S – sternum; administrative subdivisions, states, provinces, and territories, are given according to the recent standards.

**Female.** Antennae of 12 segments. Clypeal sculpture not hidden by pubescence.

Metasoma and legs are more robust than in males.

1. Facial fovea maximal width 1.5 – 2.5 times maximal width of scape. Pronotum angulate, without long spines, length of spine not exceed its basal width. .... 2
- Facial fovea width equal to or less than maximal width of scape. Pronotum angulate or spinose ..... 6
  
2. Metapleura with dorsal carinate projection frequently with testaceous margin. Pubescence completely pale, without dark hairs. – Genal area shorter than eye width. F1 equal to F2 on longer side. Malar area linear. Clypeus slightly convex, shiny, with deep punctures

- longitudinally confluent. Supraclypeal area shagreened, with punctures small and deep. Facial fovea with maximum width twice apical width of scape, triangular. Propodeum postero-laterally tessellate, finely rugose, mid triangle shiny. Scutum with punctures close, deep, their diameter larger than interspaces, with impunctate area posteriorly. Scutellum anteriorly shiny, impunctate. T1 shiny, puncture diameter much less than interspaces, medially punctures scarce. T2 and T3 with punctures small, dense. Hind basitarsi 5 times as long as wide. Body length 8 – 10 mm. ON: VIII-X. Southern Canada; SD, KS, south to FL. .... *C. americanus* Cresson
- Metapleura without dorsal carinate projection. Pubescence with dark hairs. ..... 3
3. Hind basitarsi 2–2.5 times as long as wide. Genal area 2/3 times as long as eye width. - F1 about twice as long as F2. Clypeus elongate, striae, with longitudinal median impression. Facial fovea twice as wide as scape, subtriangular, with a few small punctures. Malar area linear. Pronotum with short spines. Scutum and scutellum evenly punctured, diameter of punctures greater than space between them, pubescence short, plumose, widely black. Mesopleura with punctures less than diameter apart. T1 – T3 with punctures deep, round, less than diameter apart, discs with deep, short, black, erect hairs. Body length 9 mm. ON: VII-IX. MT, WI, NY, MI, south to FL. .... \**C. latitarsis* Robertson
- Hind basitarsi 3-3.5 times as long as wide. Genal area as long as eye width. ..... 4
4. Terga without white hair bands. — F1 on shorter side equal to F2. Clypeus with close, longitudinally confluent punctures, with basal, median, longitudinal, narrow groove. Facial foveae twice as wide as scape, almost reach ocellus. Thorax on back side with short, plumose, dense, yellow pubescence. Scutum dull, with deep punctures, less than diameter apart, posteriorly interspaces greater. Malar area linear. Mesopleura shagreened, diameter of punctures greater than interspaces, on lower half pits greater, deeper, interspaces flat. Propodeum with posterior surface transversally wrinkled on sides, longitudinally wrinkled on basal part, smooth only on small central triangular area. Legs with dark hairs. T1 shiny, with punctures shallow, 5 and more diameters apart. T2 and T3 with punctures equal to or much greater than puncture diameter apart. T4 –T6 with erect black hairs. Sterna without apical white hair fringe. Hind tarsi 3 times as long as wide. Body length 14 mm. NY, MA, OK, south to FL.
- ..... \**C. thoracicus* Smith
  - Terga with white hair bands. ..... 5
5. T1 shiny, punctures almost invisible. Sterna with scopal hairs short, yellowish. — F1 1.5-2 times as long as F2 on shorter side. Clypeus with irregular size, longitudinally confluent punctures. Facial fovea twice as wide as scape, triangular, with smooth, milky surface. Malar area linear, length about 1/4 of width. Genal area equal to eye width. Head between eye and ocelli not impressed. Scutum polished, with punctures one to five diameters apart, disc impunctate. Tegulae dark-brown. Mesopleura shiny, with puncture diameters greater or equal to interspaces, posteriorly punctures smaller, more than apart. Propodeum postero-laterally shagreened, wrinkled. Head, thorax, and legs without dark hairs. T2 and T3 polished, punctures minute. T3 – T5 with erect, black hairs. T6 with deep yellow hairs. Hind basitarsi 4 times as long as wide. Body length 7 – 10 mm. ON: VI-VII. Canada from coast to coast; south to CA.
- ..... *C. consors* Cresson
  - T1 shiny, with dense punctures half diameter apart. Sterna with scopal hairs long, white. — F1 1.3 times as long as F2 on shorter side. Facial fovea wide, triangular. Clypeus transversal (3.5/6), with longitudinal, median, impunctate line, punctures small, confluent. Supraclypeal area tessellate, with punctures 1-2 diameters apart. Malar area linear (1/4). Genal area equal

to eye width. Mesopleura shagreened, punctures less than diameter apart on upper part, equal to or greater than puncture diameter on lower part. Propodeum postero-laterally tuberculate. T2 mostly with dense, short, erect, white hairs, with shorter black hairs posteriorly. T3 and T4 with long black hairs. T6 with long reddish-yellow hairs. Hind basitarsi 3.5 times as long as wide. Body length 11 mm. ON: VI. Eastern USA, west to IL, south to NC, TE.

..... *\*C. aestivalis* Patton

- |  |                                |
|--|--------------------------------|
| 6. Pronotum with long lateral spines, length exceeds width at base .....   | 7                              |
| - Pronotum without long lateral spines .....   | 9                              |
| 7. Scutum rugose, without distinct punctures. — Facial fovea apically curved, widest part equal to apical width of scape. Genal area equal to eye width. F1 equal to F2 on longer side. Scutum and scutellum with hairs short, strongly plumose; on disc pubescence sparse, black; on sides hair dense, yellowish-white. Propodeum with lateral surface shiny, wrinkled. T1 evenly, deeply punctured, with puncture diameter equal to or less than interspaces. Hind basitarsi 4 times as long as wide. Body length 9 – 11 mm. ON: VII-IX. Canada from coast to coast; south to AZ, GA. ....   | <i>C. simulans</i> Cresson     |
| - Scutum with distinct, separated punctures .....  | 8                              |
| 8. T1 uniformly coarsely, deeply punctured, less than or equal to puncture diameter apart.   |                                |
| – Clypeus protuberant, deeply, confluent punctured. Facial fovea width equal to scape apical width, surface shiny. F1 on longer side equal to F2. Genal area equal to half eye width. Head between eye and ocelli flattened, shiny, widely impunctate. Scutum with punctures deep, round, with pit diameter greater than spaces, posteriorly pits larger, the interspaces greater than puncture diameter; pubescence plumose, with admixture of white and black hairs. Scutellar punctures deep, round, with pit diameter less or equal to interspaces, on sides punctures closer. Mesopleura shiny, with deep, confluent pits, interspaces linear. T2-T4 with deeply impressed marginal area. S2 with long, dense, white hairs, sternal fringes thin. Hind basitarsi 3.5-4 times as long as wide. Antennae, mandibles, and legs brown. Body length 9 - 10 mm. ON: VII-IX. CO, MA, WI, south to LA, FL. .... | <i>C. nudus</i> Robertson      |
| - T1 with puncture diameter much less than interspaces. — Malar area linear. Clypeus shiny, with deep, longitudinally confluent punctures. F1 longer than F2. Genal area less than or equal to eye width. Facial fovea adjacent to eye, narrower than scape apical width. Head between facial fovea and posterior ocelli with longitudinal impression. Scutum with punctures greater than interspaces on on sides, smaller than interspaces on disc, with impunctate area posteriorly. Mesopleura shiny, with puncture deep, interspaces linear. Head, thorax, metasoma, and legs without black hairs. Hind basitarsi 3.5-4 times as long as wide. Body length 8 – 10 mm. ON: VI – VII. Canada from coast to coast; south to CA, NM.   |                                |
| .....  | <i>*C. hyalinus</i> Provancher |
| 9. Terga tomentose. Metapleura with dorsal projection more or less hidden with hairs. Scutum with hairs plumose, short, and dense. ....  | 10                             |
| - Terga not tomentose. Metapleura without dorsal projection. Scutum with hairs thin and long. ....   | 11                             |
| 10. Tergal discs with adjacent to apical hair band space black, without visible hairs, as wide as band. T2 – T5 with short, white, tomentose pubescence on basal part, with spares, long, white hairs on sides. Metapleural projection with yellow margin. — Malar area linear. Clypeus shiny,   |                                |

with hairs sparse, erect, thin; punctures of irregular size and shape, longitudinally confluent. F1 on longer side equal to F2. Facial fovea covered with dense hairs, reaches ocellus. Pronotum without lateral spines. Scutellum necked, shiny, impunctate anteriorly. Propodeum with long, dense hairs, basal area necked. Tegulae yellowish-brown, hyaline. Backside with pubescence yellowish. T6 with dark hairs. Sterna without marginal hair fringe. Hind basitarsi 4.5 times as long as wide. Body length 10 mm. ON: VII-VIII. From AB to QC\*, south to NM.

- .....\**C. aberrans* Cockerell
- Tergal disc without black space. T1-T5 with yellow tomentose pubescence. Metapleural projection without yellow margin, covered with dense pubescence. — Genal area less than eye width. Malar area linear. F1 longer than F2 on shorter side. Clypeus with central, preapical impression, with punctures confluent, hairs scattered. Supraclypeal area shagreened. Body mostly without black hairs, only T6 with dark hairs. Propodeum with dense, thin, suppressed hairs, postero-laterally tuberculate. Hind basitarsi 4.5 times as long as wide. Body length 7.5-10 mm. ON: VII-VIII. MB; south to NM, TX. .....\**C. wilmattae* Cockerell
  
  - 11. S6 with lateral, longitudinal, sharp edged ridges. Propodeum with posterior surface broad not divided into horizontal and vertical parts, convex, regularly transversely wrinkled, basally rugose. — Clypeus tessellate, with median, longitudinal impression, punctures smaller than interspaces. Supraclypeal area tessellate, with large deep punctures. Facial fovea width equal to scape width apically. F1 longer than F2. Genal area wider than eye width. Malar area half as long as mandible base. Pronotum with short lateral tooth. Scutum with punctures deep, less than diameter apart, posteriorly impunctate. Scutellar disc impunctate. Dorsum of thorax with hairs plumose, with admixture of black. Mesopleura shiny, with punctures deep, less than diameter apart, posteriorly punctures smaller and closer. T1 with punctures deep, dense to margin, less than diameter apart, anterior vertical surface impunctate. T2 and T3 with widely impressed margin, with punctures similar to T1. T2 with narrow, deep, white hair band basally. T3-T5 with long, erect, black hairs. Hind basitarsi 3.5-4 times as long as wide. Body length 12 - 13 mm. ON: VIII-IX. Canada from coast to coast; south to NM, GA.

.....*C. compactus* Cresson

    - S6 without lateral ridges. Propodeum divided into basal horizontal and posterior vertical surfaces. .....12
  
    - 12. Mesopleura with shallow punctures, shagreened. .....13
    - Mesopleura with punctures deep and close, shiny or tessellate. .....14
  
    - 13. Genal area longer than eye width. — F1 equal to F2. Malar area 1/3 as long as mandible base width. Clypeus with longitudinally confluent punctures. Scutum with deep punctures less than diameter apart. Head, scutal, and scutellar pubescence with admixture of black hairs. Pleura tessellate, with shallow, confluent punctures. Propodeum postero-laterally shagreened, closely tuberculate, basally longitudinally wrinkled. T1 with punctures equal to or greater than interspaces. Sterna with white pubescence. Hind basitarsi 4-4.5 times as long as wide. Body length 11.5 - 14 mm. ON: IV - VI. From SK to NS; south to GA.

.....*C. inaequalis* Say

      - Genal area as long as eye width. — F2 on longer side equal to F1. Clypeus twice as long as wide, shiny, sparsely punctured, with median, longitudinal impression. Malar area twice as long as wide. Head, scutal, and scutellar pubescence with admixture of black. Mesopleura shagreened, striate, punctures shallow. Propodeum laterally shagreened, not tuberculate,

- postero-laterally with sparse, shallow, round pits. T1 with punctures close, small, several diameters apart. Hind basitarsi 4-4.5 times as long as wide. Body length 11-13 mm. ON: IV-VI. Eastern Canada; MI, NY, south to NC. .... \**C. validus* Cresson
14. T1 with deep punctures. .... 15
- T1-T4 with punctures obscure. — Genal area equal to eye. Malar area equal to or longer than half mandible base. F2 on longer side equal to or longer than F1. Clypeus shiny, with median longitudinal impression, punctures longitudinally confluent. Supraclypeal area shiny, with punctures greater than or equal to interspaces. Scutum shiny, with punctures deep, merging, posteriorly more widely separated, with impunctate area. Dorsal surface of thorax with admixture of black hairs. Propodeum with basal area short, equal to 1/3 of metanotum; posteriorly rugose, with only lowest part shiny, impressed; postero-lateral surface roughly shagreened. Mesopleura shiny, punctures deep, less than diameter apart. T3-T5 disc with short black and longer white hairs. Hind basitarsi 3-3.5 times as long as wide. Sternal hair fringes dark, thin. Body length 10 mm. ON: V-VIII. Canada from coast to coast; MN, WI, MI, ME. .... *C. impunctatus* Nylander
15. Hind basitarsi 4-4.5 times as long as wide. Clypeus shiny, with punctures longitudinally confluent. F1 longer than F2 on shorter side. — Head, thorax, and T1 with ochraceous hairs, thorax dorsally with hairs dense, plumose. Genal area equal to eye width. Malar area shorter than half mandible base width. Scutum with punctures deep, more than puncture diameter apart, posteriorly with impunctate area. Propodeum basally with widely extended, longitudinal striae, creating shiny cells, postero-laterally shagreened, finely wrinkled. Mesopleura with punctures deep, interspaces flat. T1 with deep punctures, with diameters greater than or equal to interspaces. T2 and T3 with punctures minute, dense. T2 with basal, white hair band. T3-T5 with few white erect hairs. Body length 9-10 mm. ON: VI – VIII. Canada from coast to coast; south to CA, NC. .... *C. kincaidii* Cockerell
- Hind basitarsi 2.5 times as long as wide. Clypeus finely shagreened, with sparse, shallow, small punctures. F1 shorter than F2. — Head, thorax, and T1 with grey pubescence (white and black on back). T1 with punctures deep, 1-3 diameters apart. T2 with punctures dense to margin, disc impressed on basal third. T2 – T5 with thin, sparse, white hairs, longer on T4 and T5. Body length 9-10 mm. ON: VI-VII. Canada from coast to coast; south to TX, FL. .... *C. willistoni* Robertson

**Males.** Antennae with 13 segments. Clypeus often with deep, long pubescence.

1. Genal area equal to eye, or wider ..... 2
  - Genal area equal to half eye, or narrower ..... 11
2. T1 with punctures minute, more than diameter apart. Pronotum without lateral spines. .... 3
  - T1 with punctures deep and close, diameters greater than interspaces. Pronotum without or with lateral spines. .... 7
3. Malar area longer than mandible base. .... 4
  - Malar area shorter than mandible base. .... 5
4. Malar area a little longer than mandible base. — Genal area equal to eye width. F1 equal to F2. Scutum with punctures small, more than diameter apart. Scutum and scutellum without dark hairs. Propodeum with posterior triangle rugose, without shiny space. S3 with central

- basal swelling, S3 and S4 with preapical, lateral swellings. Hind basitarsi 4 times as long as wide. Body length 7 - 8 mm. .... *C. impunctatus* Nylander
- Malar area twice as long as mandible base. — Genal area equal to eye. Facial fovea less than scape width. Scutum with deep punctures, diameter or less apart. Scutellum with admixture of black hairs. T1 with punctures dense, minute, diameter apart. T3 and T4 with hairs short, erect, black. T4 on posterior part, T5 and T6 with long black hairs. T7 with deep, short, suppressed, white hairs and sparse, long black hairs. Tergal hair bands narrow, on T2 and T3 equal to 1/5 of tergal length. Sterna without swellings. Hind basitarsi 5 times as long as wide. Body length 11-13 mm. .... *C. validus* Cresson
5. Malar area longer than half mandible base. .... 6
- Malar area shorter than half mandible base. — F1 equal to F2. Scutum shiny, with puncture diameter less than or equal to interspaces, disc with impunctate area. Mesopleura shiny, with punctures shallow, one-half to one diameter apart. T1 shiny, finely punctured. T1 and T2 discs with long, white hairs. T3-T6 with long black hairs. Sterna with apical hair fringe longer on sides. Hind basitarsi 3-3.3 times as long as wide. Body length 7-8 mm.
- ..... *C. consors* Cresson
6. Mesopleura shagreened, punctures shallow, interspaces linear on upper half, flat on lower part. — Malar area equal to 2/3 mandible base width. F1 wider than long, half as long as F2. Genal area as long as eye. Scutum with punctures greater than interspaces, interspaces wider posteriorly. Propodeum wrinkled laterally and posteriorely. Tegulae yellowish, hyaline. T1-T4 shiny, with punctures one to two diameters apart. T1 and T2 disks with long, white hairs. T3-T5 with shorter black and longer white hairs. Hind basitarsi 4 times as long as wide. Body length 11-13 mm. .... *C. thoracicus* Swenk
- Mesopleura shiny, punctures deep, interspaces linear on upper part, flat on medial part. — F1 shorter than F2. Genal area as long as eye. Scutum shiny, with punctures smaller than interspaces, with impunctate area posteriorly. Mesopleural punctures deep, less than diameter apart. T1-T5 shiny, with minute punctures. T2 with long, white hairs. T3-T5 with black hairs. Hind basitarsi 4-4.5 times as long as wide. Body length 8 - 9 mm.
- ..... \**C. hyalinus* Provancher
7. Malar area longer than base of mandible. — Propodeum with posterior surface transversely wrinkled. Clypeus shiny, sparsely punctured, with median longitudinal impression. Genal area as long as eye. F1 2/3 as long as F2. Pronotum without lateral spines. Scutum with punctures less than diameter apart, with impunctate area. Dorsal surface of thorax with admixture of dark hairs. Terga with marginal area abruptly depressed, with or without black hairs on disc. Hind basitarsi 5 times as long as wide. Body length 9 - 12 mm.
- ..... *C. compactus* Cresson
- Malar area equal to or shorter than base of mandible. .... 8
8. Hind basitarsi twice as long as wide. S5 and S6 with margins incurved. Pronotum with long lateral spines. — F1 equal to F2 on longer side. Clypeus elongate, flat, confluently sculptured, with central longitudinal depression, short pubescence sparse, not hiding sculpture. Malar area half as long as mandible base. Tegulae dark. Mesopleura with punctures deep, interspaces linear. Scutum with pubescence dense, short, plumose, with admixture of black hairs. T1 with evenly dense punctures, less than diameter apart. T2 and T3 discs with hairs short, black, T4-T6 with hairs long, erect, black. Fore femur with brush of white hairs, twice as long as tibia. Body length 9 mm. .... \**C. latitarsis* Robertson

- Hind basitarsi 3.5 – 5 times as long as wide. S5 and S6 with margins almost straight Pronotum without lateral spines. .... **9**
- 9. T2-T7 discs without white hairs. — F1 equal to F2. Malar area linear. Genal area wider than eye. Clypeus twice as wide as long, roughly shagreened, with hairs short, do not hide surface. Head and thorax dorsally with deep, orange hairs. Tegulae black. T1-T5 with narrow, white hair band. T1 with punctures small, deep, 2-5 diameters apart; pubescence thin, short, white. T2-T7 with dense, erect, black hairs. Metasoma concave ventrally. Sterna with lateral, long, white hair brush. Hind basitarsi 3.5 times as long as wide. Body length 10-12 mm. .... *\*C. aestivalis* Patton **10**
- Tergal discs with white hairs. ....
- 10. Mesopleura shagreened, shallowly sculptured. — F1 equal to half F2 on longer side. Malar area as long as mandible base width. Genal area wider than eye. T2 – T5 with hairs long, erect, white. T6 with long, black hairs. Sterna with marginal fringes enlarged on sides, narrow medially. Hind basitarsi 4-4.5 times as long as wide. Body length 11 – 13 mm. .... *C. inaequalis* Say
- Mesopleura shiny, with punctures deep, close, interspaces flat.— F1 longer than half F2. Malar area equal to or little shorter than width of mandible base. Genal area as wide as eye. Tergal pubescence without black hairs. Sternal fringes medially enlarged on disc. Hind basitarsi 4-4.5 times as long as wide. Body length 8-10 mm. .... *C. kincaidii* Cockerell
- 11(1). Pronotum with long lateral spines, length of which exceeds width at base. .... **12**
- Pronotum without long lateral spines. .... **13**
- 12. Scutum rugose. T2 and T3 with marginal area not abruptly depressed. F1 longer than half F2. — Genal area wider than half eye. Malar area equal to or shorter than half mandible base. Propodeum with postero-lateral surface rugoso-wrinkled. Mesopleura with punctures deep, close, interspaces linear on lower part, punctures confluent on upper part. Dorsum of thorax with pubescence dense, long, yellowish, with admixture of black hairs. T1 with punctures dense, deep, diameter or more apart. T2 and T3 with punctures smaller and deeper. Sterna with hair fringes longer laterally. Hind basitarsi 5 times as long as wide. Body length 8 - 10 mm. .... *C. simulans* Cresson
- Scutum with deep, round, clearly separated punctures. T2 - T4 with marginal area abruptly depressed. F1 transversal, as long as half F2, or shorter.— Genal area shorter than half eye width. Malar area linear, equal to or shorter than 1/3 mandible base. Mesopleura with punctures large, deep, merged anteriorly, interspaces wider on median part. Scutal and scutellar pubescence short, not hiding surface, grey with admixture of black hairs. Propodeum posteriorly shiny, with fine transversal wrinkles. T1 shiny, with punctures deep, more than diameter apart. T2 and T3 with punctures diameter or more apart. Hind basitarsi 4-4.3 times as long as wide. Antennae, mandibles, and legs brown. Body length 8 – 10 mm. .... *C. nudus* Robertson
- 13. Metapleura without overhanging projection. — Malar area half as long as mandible base. T1 with punctures deep, close, less than diameter apart. F1 equal to F2 on shorter side. Genal area as long as half eye width. Clypeus flat, tessellate, punctures shallow, close, confluent. Mesopleura with punctures deep, interspaces linear. Terga with marginal area strongly impressed. Head and thorax with grey hairs, with admixture of black on scutum. Scutum with

- punctures deep, well separated, less than diameter apart. Hind basitarsi 3 times as long as wide. Sterna with long hair fringe. Body length 8 – 9 mm. .... *C. willistoni* Robertson
- Metapleura with dorsal overhanging projection. ..... 14
14. T1 disc with punctures sparse, minute, few diameters apart — Malar area linear, length about 1/4 width. F1 shorter than F2. Genal area half as long as eye width. Clypeus densely pubescent. Head, scutum, and metasoma without black hairs. Mesopleura with punctures merged on upper part, interspaces flat on lower half. T2 and T3 shagreened, with minute, dense punctures. Terga with margin widely hyaline. Tarsi yellowish. Hind basitarsi 5-6 times as long as wide. Body length 7- 10 mm. .... *C. americanus* Cresson
- T1 with deep punctures, less than diameter apart. ..... 15
15. T2 without basal fasciae. Genal area as long as half eye width. Malar area half as long as mandible base width. — F1 shorter than F2. Head and thorax without black hairs. Scutum with punctures greater than interspaces, on disc punctures 2 3 diameters apart. Propodeum posteriorly wrinkled. T2 and T3 with deep, dense punctures, less than diameter apart. Hind basitarsi 4 times as long as wide. S2-S4 discs with median, premarginal, triangular depression, mostly covered with short, white hairs. Body length 8-10 mm. .... *C. aberrans* Cockerell
- T2 with broad, basal, white hair fasciae. Genal area as long as eye width. Malar area as long as 1/3 mandible base width.— F1 shorter than F2. Scutum with dense, thin, yellowish-grey hairs. Propodeum posteriorly with sparse, thin, long hairs, laterally with long hairs, postero-lateral surface tiberculate. Mesopleura tessellate, with pits deep, dense, interspaces linear. Femur and tarsi yellow. Hind basitarsi 4.5-5 times as long as wide. Terga without black hairs. Sterna with lateral swellings. Body length 8-9 mm. .... *C. wilmattae* Cockerell

#### Annotated List of Ontario *Colletes* species.

The species are listed in alphabetical order. Locality records are grouped by Districts and Counties from north to south. Distributional data and the flight period are included in the female key; i.e., "ON: VIII-X" means flight period in Ontario is from August to October.

The abbreviations are as follows: collector's names: AR (W. Attwater), AT (C. Atwood), BG (N. Bigelow), BK (M. Buck), BL (S. Bailey), BR (K. Barber), CL (S. Clark), ED (C. Edwards), KL (L. Kelton), KN (G. Knerer), LM (R. Lambert), MF (R. MacFarlane), MK (P. MacKay), MN (J. Martin), PA (S. Paiero), PG (D. Pengelly), RL (K. Ralph), RM (T. Romankova), SL (F. Sladen), US (M. Usui); depositaries: CASC (California Academy of Sciences, San Francisco), CNC (Canadian National Collection of Insects, Ottawa), GU (University of Guelph, Guelph), INHS (Illinois Natural History Survey, Champaign), ROM (Royal Ontario Museum, Toronto), UCRC (University of California, Riverside), USNM (Smithsonian Institution, Washington).

##### 1.\**Colletes aberrans* Cockerell.

**Essex Co.:** Point Pelee, 30.VII.1978, ♂, AR, ♂, J. Cappleman (DEBU); 13.VII.1982, ♀, A. John (DEBU). Figure 1.

##### 2.\**C. aestivalis* Patton.

**Essex Co.:** Pelee Island, Stone Road Alvar FON Reserve, 41°45'20" N 82°7'20", 8.VI.2002, ♂, S. Marshall; 9.VI.2002, 2♂, PA, BK (DEBU).

Reviewed materials from other regions. IL, Dubois, 21.V.1917, ♀ (UCRC). NC, Bryson City, 1.VI.1923, ♀, ♂, J. Crawford (UCRC). Figure 1.

### 3. *C. americanus* Cresson.

**Carleton Co.:** Metcalfe, 27.IX.1982, ♀, B. Cooper (CNCI). **Northumberland Co.:** Alderville First Nations Prairie, 1.IX.2001, ♀, PA (DEBU). **Durham Co.:** Kendal, 1.IX.1960, ♂, KN; 27.VIII.1961, 2♂, KN (ROME). **Dufferin Co.:** Mono Cliffs Provincial Park, 31.VIII.2002, ♂, BK (DEBU). **Peel Reg.:** Forks of the Credit, 18-29.VIII.1968-1969, 51♂, MK; 12-20.IX.1969, 3♀, MK, *Solidago* sp. (ROME); Belfountain, 16.IX.1979, ♂, S. Marshall GU. **Wellington Co.:** Guelph, 13.IX.1969, ♀, T. Taylor (DEBU). **Elgin Co.:** Iona, 22-25.VIII.1968-1969, 2♂, KN (ROME). Figure 1.

### 4. *C. compactus* Cresson.

**Lanark Co.:** Prospect, 13.IX.1969, ♀, L. Smith (CNCI). **Hastings Co.:** Belleville, 10.IX.1982, ♀, W. Punchihewa (DEBU). Simcoe Co.: Midland, 11.IX.1970, 2♂, J. Huber (DEBU). **York Reg.:** Newmarket, 27.IX.1970, ♀, G. Surgeoner (DEBU); Leaside, 12.VIII.1961, ♂, G. Morris (DEBU). **Dufferin Co.:** Mono Cliffs Provincial Park, 31.VIII.2002, 3♂, BK (DEBU). **Peel Reg.:** Forks of Credit, 3-29.IX.1969, 39♀, 44♂, MK, *Solidago* (ROME); Belfountain, 1.IX.1982, ♂, W. Funchibewa; 16.IX.1979, ♀, S. Marshall (DEBU). **Wellington Co.:** Guelph, 10.IX.1993, ♂, X. Sun; 21.VIII.1978, ♂, B. Warner; 2.X.1975, 2♀, MF; 2.X.1972, 2♀, ♂, MF; 26.IX.1971, ♀, MF; 16.IX.1970, ♀, T. Taylor (DEBU). **Essex Co.:** Windsor, Ojibway Prairie, 22.IX.2001, ♂, S. Marshall (DEBU); Point Pelee, Mono Cliffs, 4.IX.1995, ♂, Middleton (DEBU). Ontario, 1979, ♂♀, B. Termir. Prescott, 7.IX.1978, ♂, BR (DEBU). Figure 2.

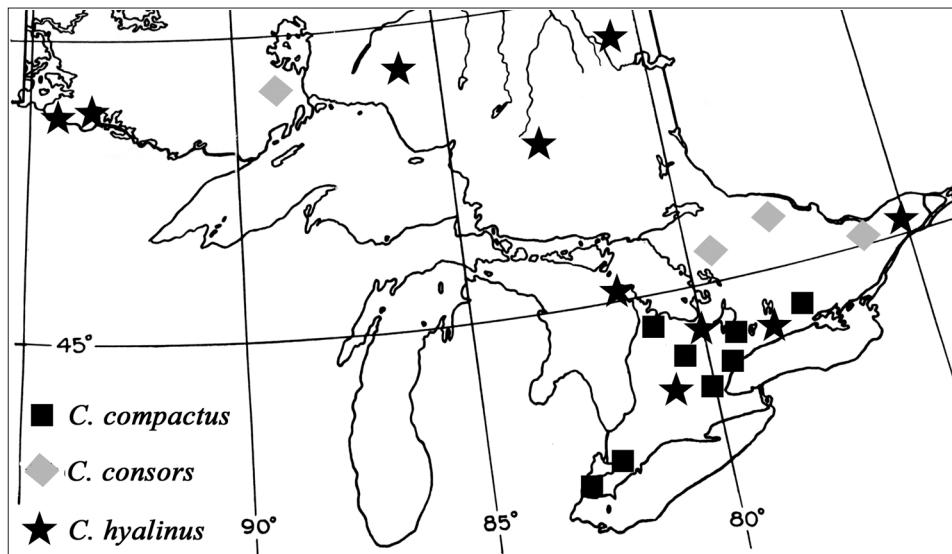


FIGURE 2. Ontario collection localities of *Colletes*: *C. compactus*, *C. consors*, *C. hyalinus*.

### 5. *C. consors* Cresson.

**Kenora Distr.:** Black Sturgeon Lake, 1.VII.1962, ♀ (CNCI); Oneside Lake, 1.VII.1960, ♀, CL (CNCI). **Thunder Bay Distr.:** Sleeping Giant Provincial Park, 48°20'53"N 88°48'11"W, 9.VII.2002, ♂, BK (DEBU). **Cochrane Distr.:** Abitibi Lake, Low Bush, 21.VII.1925, 3♀, BG

(ROME). **Timiskaming Distr.**: Cobalt, 1.VII.1960, ♀ (ROME). Carleton Co.: Ottawa, 20.VI.1973, 2♀, E. Small (CNCI). **Lennox & Addington Co.**: Kaladar, 14.VI.1960, ♀(ROME). **Muskoka Distr.**: Port Sydney, 23.VI.1897, ♂(CNCI). Figure 2.

Reviewed materials from other regions. Type *Colletes pascoensis* Cockerell, WA, Pasco, 25.VI.1916, ♂, (USNM). Paratype *Colletes mesocopus* Swenk, ME, Waldobero, VII.1904, ♀, J. Lovell (USNM).

#### 6.\**C. hyalinus* Provancher.

**Kenora Distr.**: Kenora, 28.VI.1984, ♂, R. Jaagumagim (ROME); Favourable Lake., 20.VI.1938, ♂, Neal (ROME). **Rainy River Distr.**: 3.VIII.1960, ♀, CL (CNCI). **Cochrane Distr.**: Cochrane, 9.VIII.1917, ♀, SL (CNCI); Abitibi Lake, Low Bush, 14-21.VII.1925, 4♀, BG (ROME). **Algoma Distr.**: Frances, 11.VII.1961, 3♀, H. Milliron (CNCI). **Sudbury Distr.**: Emo, 3.VII.1917, ♀, SL (CNCI); Chapleau, 18-24.VII.1990, 3♂, US, Early Goldenrod (DEBU). **Muskoka Distr.**: Port Sydney, 4-9.VII.1919, 2♀, 2♂, BG (ROME). **Carleton Co.**: Ottawa, 24.VI-26.VII.1913, 4♂, SL (CNCI). **Peterborough Co.**: Cordova, 10.VII.1959, ♀, CL (CNCI). **Durham Co.**: 16.VI.1987, ♂, B. Hubley (ROME); Kendal, 12.VII.1961, ♀, ♂, KN (ROME). **York Reg.**: Keswick, 1.VI.1975, ♀, Sowinsk (DEBU). **Bruce Co.**: Dyers Bay, 30.VI.1955, 24.VI-30.VII.1954, 26♀, ♂, PG; 8-16.VII.1953, 7♂, PG; 10.VII.1952, 12♀, 15♂, PG (DEBU). **Dufferin Co.**: Orangeville, 17.VII.1961, ♀, KN (ROME); 9.VII.1954, ♂, PG (DEBU); Primrose, 7.VII.1960, ♂, PG; 17.VII.1956, ♀, PG; 30.VI.1955, ♀, PG (DEBU). **York Reg.**: Toronto, 3.VII.1917, ♀, SL (CNCI). **Essex Co.**: Point Pelee, 25.VII.1979, ♀, AR (DEBU). Figure 2.

Reviewed materials from other regions. Holotype, Allotype, and 5 other Paratypes *Colletes aregonensis* Timberlake, OR, CA (CASC).

#### 7. *C. impunctatus* Nylander.

**Kenora Distr.**: Black Sturgeon Lake, 8.VII.1964, ♀ (CNCI). **Thunder Bay Distr.**, Sleeping Giant Provincial Park, Gardner Lake trail, 48°25' N 88°46' W, 11.VII.2002, 2♂, BK(DEBU). **Cochrane Distr.**: Abitibi Lake, Low Bush, 17.VII.1925, 2♀, BG (ROME). **Sudbury Distr.**: Chapleau, Racine Lake, 6-22.VII.1990, 17♀, 19.VI.1990, ♂, US, 10.VI.1992, ♂, US, *Chamerion*, *Trifolium*, Coe Vetch, Red raspberry, Early goldenrod, Alsike clover (DEBU). **York Reg.**: Toronto, 16.VI.1908, ♂ (CNCI), 12.VIII.1887, ♀(DEBU). Figure 3.

#### 8. *C. inaequalis* Say.

**Thunder Bay Distr.**: Stirling, 17.V.1963, ♀, A. Johnson (DEBU). Watershed, 17.V.1962, ♂, KN, *Chamaedaphne* (ROME). **Algoma Distr.**: Sault Ste. Marie, 4.VI.1948, 2♀, AT (ROME); Garden River, 28.IV.1951, 4♂, AT (ROME). **Sudbury Distr.**: Chapleau, 18.V.1990, 2♂, US, *Salix* sp. (DEBU); Peach Lake, 4-21.V.1962, 2♀, ♂, KN, *Vaccinium* (ROME). **Nipissing Distr.**: Kearney, 6.V.1977, 3♂, A. Konecny (DEBU). **Parry Sound Distr.**: Kearney, 6.V.1977, ♂ (DEBU). **Lanark Co.**: Perth, 12-31.V.1962, 5♀, ♂, KN, *Prunus*, *Salix* (ROME); Maberly, 17.IV.2002, ♀, BK (DEBU). **Carleton Co.**: Ottawa, 23.IV.1976, ♂, Cumming; 3-9.V.1914, 3♂, SL (DEBU); 19.IV.1973, ♀, E. Small; 24.IV-21.V.1913, 2♂, SL (CNCI); Constance Bay, 27.IV.1944, 2♀, 10♂(CNCI). **Grenville Co.**: Spencerville, 17.V.1938, 2♀(CNCI); 12.V.1955, ♀, H. Huckel (DEBU). **Leeds Co.**: Opinicon, 12-28.V.1962, ♀, 5♂, KN, *Salix*, *Amelanchier* (ROME). Chaffey's Locks, 25.V.1961, ♀, J. Morris (DEBU); 24.V.1961, ♀, KN, *Brassica* (ROME); Morton, 19.V.1971, 2♀ (CNCI). **Lennox & Addington Co.**: Kaladar, 22.V.1971, ♀, ♂, S. Vander Kloet, *Vaccinium angustifolium* (ROME). **Haliburton Co.**: Algonquin Park, Swan Lake, 1-7.VI.1994, ♀, E. Barr; 5.VI.1945, ♀, PG (DEBU). **Haliburton & Muskoka Distr.**: Dorset, 6.V.1995, ♂, R. Russell

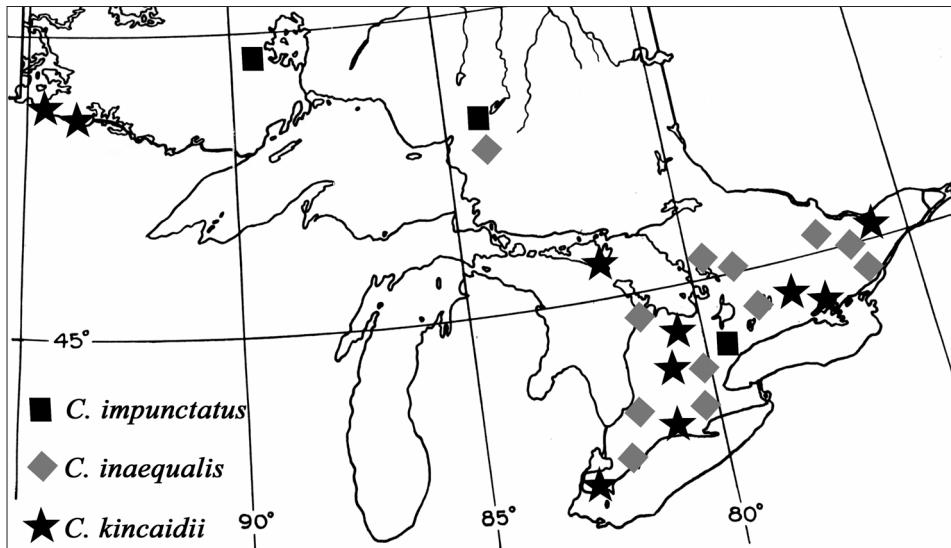


FIGURE 3. Ontario collection localities of *Colletes*: *C. impunctatus*, *C. inaequalis*, *C. kincaidii*.

(DEBU); 21.V.1962, 3♀, KN, *Prunus* (ROME). **Muskoka Distr.:** Severn Bridge, 12.IV.1968, 7♀, 13♂, G Scott (ROME). **Peterborough Co.:** Peterborough, 20.IV.1977, ♀, B. Smith (DEBU). **Durham Co.:** Kendal, 22.IV–4.V.1962, 2♀, 2♂, KN, *Salix* (ROME). **Simcoe Co.:** De Grassi Point, 2.V.1916, 2♂, E. Whetra (ROME). **York Reg.:** Maple, 25.IV.1962, ♀, KN, *Salix* (ROME); Toronto, 9.V.1893, ♂(DEBU); **Bruce Co.:** Paisley, 18.IV.1976, 3♂, S. Marshall (DEBU). **Peel Reg.:** Forks of the Credit, 21-30.IV.1969, 42♀, 3♂; 29.V.1969, ♀, MK, *Salix*, *Malus*; 21.IV.1962, 3♀, 16♂, KN, *Claytonia*; 21.VI.1962, ♀, KN (ROME). Westport, 25.V.1961, ♀, KN, *Malus* (ROME). **Bruce Co.:** Hepworth, 7.V.1995, ♀, ♂, D. Caloren; 30.V.1978, 2♀, D. Caloren (DEBU). **Grey Co.:** Owen Sound, 23.IV.1985, ♂, R. Sinclair (DEBU). **Wellington Co.:** Guelph, 30.IV.1977, ♀, RL; 1.V.1974, ♀, B. Akey; 13.V.1972, ♀, MF; 21.IV-1.V.1972, 2♂, MF, Gyacinth; 3-15.V.1965, 6♀, 4♂, ED; 24.IV.1960, ♀, N. LeBlanc (DEBU). **Huron Co.:** Kinburn, 13.V.1956, ♀, J. Martin (CNCI). **Wentworth Co.:** Ancaster, 15.IV.1963, 10♂, J. Martin; 21.V.1956, ♀, J. Martin (CNCI). **Middlesex Co.:** Strathroy, 10.V.1927, 2♀, H. Hudson (CNCI). **Norfolk Co.:** St. Williams, 20.V.1995, ♀, D. Caloren (DEBU); Port Dover, 25.VI.1959, ♀, PG (DEBU). **Essex Co.:** Point Pelee, 8.IX.1954, ♀, Mason (CNCI). Well Luther M. (=Luther Marsh), 10.IV.1998, ♀, D. Tozer (DEBU). Figure 3.

#### 9. *C. kincaidii* Cockerell.

**Rainy River Dist.:** Rainy River, 1.VIII.1924, ♀, Brimley (CNCI); Fort Frances, 11.VII.1961, 5♀, Milliron (CNCI). **Thunder Bay Distr.:** Strathroy, 2.VII.1925, ♂, H. Hudson (CNCI). **Carleton Co.:** Ottawa, 8-23.VII.1913, ♂, ♀, SL (CNCI); 24.VI.1913, ♂, SL (DEBU). **Leeds Co.:** Chaffey's Locks, 5.VII.1963, 9♂, Riotte (ROME). **Muskoka Distr.:** Port Sydney, 9.VII.1919, ♀, BG (ROME). **Victoria Co.:** Coboconk, 18.VII.1961, ♀, ♂, KN, *Melilotus* (ROME). **Northumberland Co.:** Crowe Bridge, 18.VII.1979, ♀, AR (DEBU); Brighton, 29.VI.1979, ♀, Appleby (DEBU). **Prince Edward Co.,** 1.VII.1896, 2♀, Evans (CNCI). **Durham Co.:** Kendal, 7.VI.1962, ♂, KN; 12.VII.1961, 5♀, KN (ROME). **Simcoe Co.:** Swift Rapids Road, Lake Matchedash, 17.VII.1996,

$\sigma$ , B. Larson (DEBU); Midland, 9.VIII.1977, 2 $\sigma$ , BR (DEBU); Orillia, 20.VII.1923,  $\sigma$ (CNCI); Barrie, 16.VII.1961, ♀, KN, *Rhus* (ROME). **York Reg.**: Leaside, 7.VII.1959, 2 $\sigma$ (ROME). **Bruce Co.**: Hepworth, 16.VII.1974,  $\sigma$ , J. Huber (DEBU); Dyers Bay, 7-30.VII.1953, 2♀, 3 $\sigma$ , PG; 11.VII.1913, ♀, SL (DEBU); Bruce Peninsula, 10.VII.1960,  $\sigma$  (ROME). **Dufferin Co.**: Primrose, 17.VII.1956,  $\sigma$ , PG; 30.VI.1955, 7 $\sigma$ , PG (DEBU); Orangeville, 17.VII.1961,  $\sigma$ , KN (ROME). **Peel Reg.**: Forks of Credit, 27.VIII.1968,  $\sigma$ , KN; 11-22.VII.1969, 3♀, MK; 18.VII.1968, ♀, MK; 4.VII-1.VIII.1968-1969, 47, MK; 24-28.VI.1965, 3♀,  $\sigma$ , KN (ROME); **York Reg.**: Toronto, 21.VII.1891, 5♀,  $\sigma$ ; 17.VI-2.VII.1888, 4♀, 7 $\sigma$  (CNCI); 27.VI.1965,  $\sigma$ , KN; 1.VIII.1890,  $\sigma$ , W. Brodie (ROME). **Wellington Co.**: Guelph, 30.VII.1980, ♀, Beierl; 31.VII.1978, ♀, B. Warner; 15.VII.1976,  $\sigma$ , Waters; 15.VIII.1976,  $\sigma$ , Stewart; 19.VII.1965,  $\sigma$ , ED (DEBU); Speedside, 20.VIII-7.IX.1965, 2♀, 3 $\sigma$ , ED (DEBU). **Huron Co.**: Goderich, 20.VII.1977,  $\sigma$ , D. Meddisson (ROME). **Wentworth Co.**: Borer's Falls, 14.VIII.1978, ♀, B. Warner (DEBU). **Durham Co.**: Port Perry, 1.VIII.1934, ♀(ROME). **Norfolk Co.**: St. Williams, 30.VI.2000,  $\sigma$ , BK (DEBU). **Kent Co.**: Fargo, 20.VII.1959, ♀, PG (DEBU). **Essex Co.**: Point Pelee, 31.VII.1960,  $\sigma$ , KN (ROME); 19.VII-2.VIII.1920, 2♀, 3 $\sigma$ , BG (ROME); 25.VII.1979, ♀, AR; 18.VII.1978,  $\sigma$ , BR (DEBU); 9-17.VII.1962, 2♀, CL; 19.VII.1920, 2 $\sigma$ , BG (CNCI). ? Co.: Pigeon Lake, 17.VII.60, ♀, Chuan (DEBU). Figure 3.

#### 10.\**C. latitarsis* Robertson.

**Renfrew Co.**: Griffith, 2.VIII.1982, ♀, Cooper (CNCI). **Carleton Co.**: HWY 16, Ottawa, 15.VIII.1994, ♀(CNCI). **Durham Co.**: Kendal, 12.VII.1961,  $\sigma$ , KN (ROME). **Grenville Co.**: Prescott, 7.IX.1978,  $\sigma$ , BR (DEBU). **Simcoe Co.**: Midland, 8.VIII.1977, ♀, BR (DEBU). **Wellington Co.**: Guelph, 1.VII.1977,  $\sigma$ , RL (DEBU); Elora, 16.VIII.1976, 2♀, Sharkey (DEBU). **Norfolk Co.**: St. Williams, 25.VII.2000,  $\sigma$ , BK (DEBU). **Kent Co.**: Rondeau Park, 14.VII.1962, 2 $\sigma$ , CL (CNCI); Chatham, 20.VII.1948,  $\sigma$ , MN; 14.IX.1927, ♀, C. Smith (CNCI). **Essex Co.**: Point Pelee, 24.VIII.1961, ♀, KN, *Malva*; 9.VII.1920,  $\sigma$ , BG (ROME). Long Point, 5.VIII.1978, ♀, V. Husby (DEBU). Figure 4.

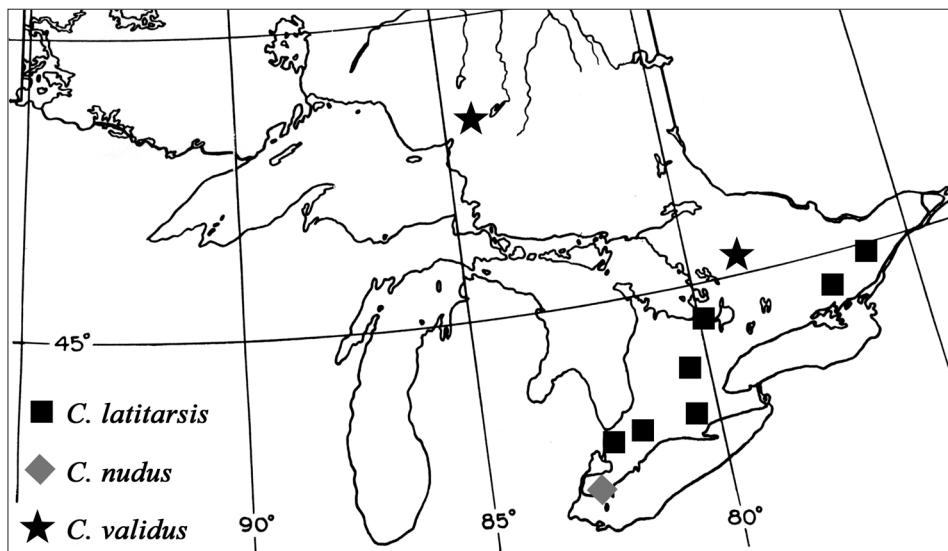


FIGURE 4. Ontario collection localities of *Colletes*: *C. latitarsis*, *C. nudus*, *C. validus*.

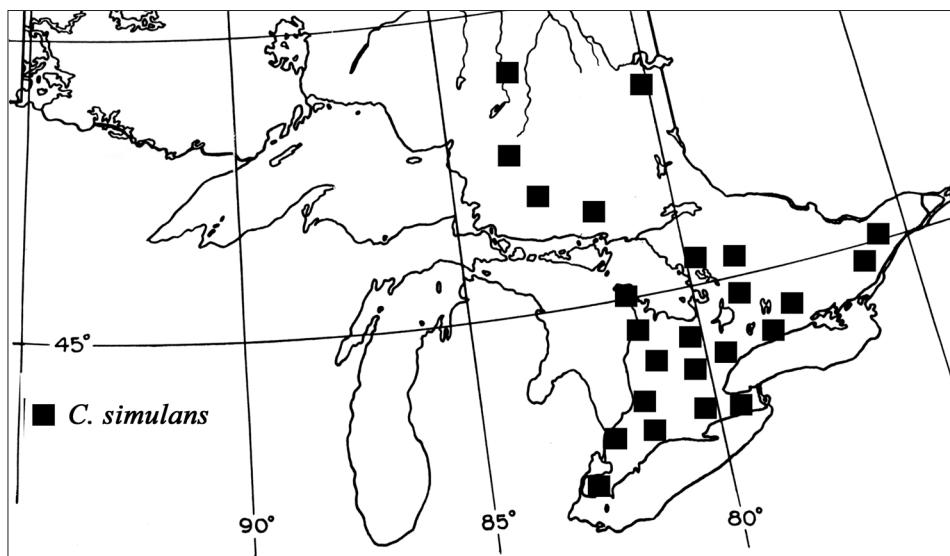
**11. *C. nudus* Robertson.**

**Victoria Co.:** Norland, 18.VII.1961, ♂, KN (ROME); Coboconk, 18.VII.1961, ♂, KN; 6.VII.1963, ♀, KN, 14.VIII.1961, 2♀, KN, *Solidago*; 18.VII.1961, 3♀, KN, *Rhus, Melilotus* (ROME). **Durham Co.:** Kendal, 13.VII.1978, ♀, Shefter (ROME). **Wellington Co.:** Guelph, 2.X.1984, ♂, T. Young, *Aster*; 10.VIII.1951, ♂, PG (DEBU). **Essex Co.:** Point Pelee, 20.VII.1978, ♂, D. Morris (DEBU). 24.VII.1979, ♀, ♂, AR, B. Witt; 25.VII.1979, ♂, AR (DEBU); 19.VII.1920, 2♂, BG (CNCI); 19.VII.1920, 5♂, BG (ROME). Figure 4.

**12. *C. simulans* Cresson.**

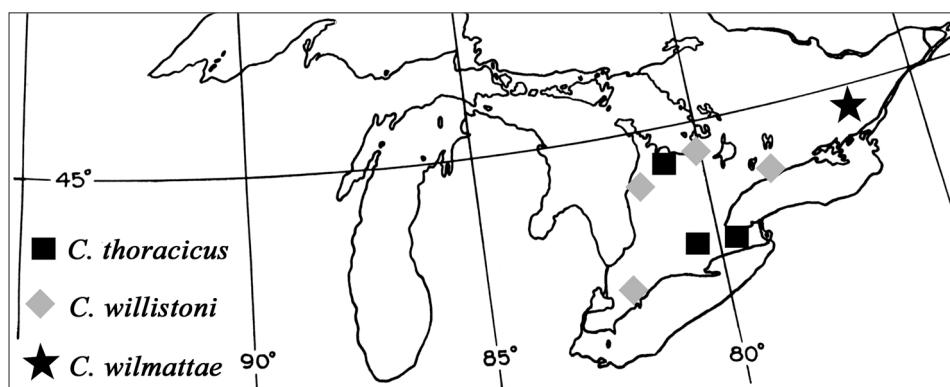
**Algoma Distr.:** Spanish, 19.VII.1957, ♀, M. Prime (DEBU). **Sudbury Distr.:** Chapleau, Racine Lake, 22.VII.1990, ♀; 12-28.VIII.1990, 19♀, 3♂, US, Early Goldenrod (DEBU). **Manitoulin Distr.:** Killarney Park, 17.VIII.1978, 2♀, 4♂, AR (DEBU). **Nipissing Distr.:** Penaish Lake, 2.VIII.1946, 4♂, 2♀, AT (ROME); Algonquin Provincial Park, East Gate, 20.VIII.2002, 3♀, BK (DEBU). **Lanark Co.:** Perth, 25.VIII.1957, ♀ (CNCI); Rosetta, 20.VIII.1978, ♀, E. Fuller (ROME). **Muskoka Distr.:** Port Sydney, 24.VIII.1919, ♂, BG (ROME). **Carleton Co.:** Ottawa, 30.VIII-13.IX.1913, 5♀, SL (CNCI); 23.VIII.1914, ♀, SL (DEBU). **Halton Reg.:** Georgetown, 29.VIII.1893, ♀ (DEBU). **Stornmont Co.:** Cornwall, 1.IX.1961, 2♀, KN (ROME). **Grenville Co.:** Spencerville, 31.VIII-14.IX.1939, 7♀, Hammond (CNCI). **Leeds Co.:** St. Lawrence Isl. N. Park, 26.VIII-14.IX.1976, 49♀, ♂ (CNCI). **Haliburton & Muskoka Distr.:** Dorset, 1.IX.1976, 2♀, PG (DEBU); 16.VIII.1961, 13♂; 18.VIII-3.IX.1961, 3♀, KN, *Solidago* (ROME). **Haliburton Co.:** Carnarvon, 17.VIII.1961, 2♀, KN (ROME). **Muskoka Distr.:** Rostrevor, 7.IX.1907, ♀ (CNCI); Georgian Bay, 26.VIII.1963, ♂, J. Bogard, 15-26.VIII.1953, 3♂, J. Bogart (DEBU). **Peterborough Co.:** Cox Lake, 10.IX.1960, ♂, KN, *Solidago* (ROME). **Victoria Co.:** Bobcaygeon, 29.VIII.1954, 10♀, LM (CNCI); Norland, 14.VIII.1961, 3♂, KN, *Solidago* (ROME). **Northumberland Co.:** Brighton, 14.IX.1954, 2♀, MN (CNCI). **Durham Co.:** Port Hope, 20.VIII.1963, 2♂, J. VanLoon (DEBU); 20.VIII.1925, 2♀, BG (ROME); Orono, 3.IX.1925, 9♀, BG (ROME); Kendal, 25.VIII.1960, 7♂, WG; 27.VIII.1961, 3♀, KN; 1.IX.1960, ♀, KN (ROME); 23.VIII.1963, ♀, J. VanLoon (DEBU). **Simcoe Co.:** Severn, 8.VIII.1919, ♀ (CNCI); Springwater Provincial Park, 2.IX.2002, ♀, BK (DEBU). **York Reg.:** Keswick, 5.VIII.1975, ♂ (DEBU). **Bruce Co.:** Dyers Bay, 13-23.VIII.1953, 14♀, 8♂, PG.; 21.VIII.1952, ♀, ♂, PG (DEBU); Hepworth, 1.VIII.1975, ♂, J. Huber (DEBU); Sauble Beach, 1.VIII.1977, ♀, B. Marshall (ROME). **Dufferin Co.:** Orangeville, 19.VIII.1954, 2♀, PG; Mono Cliffs Provincial Park, 31.VIII.2002, ♀, BK (DEBU). **Peel Reg.:** Forks of the Credit, 8-20.VIII.1968, 8♂, 15.VIII.1969, ♂; 20.IX.1969, ♀; 27.VIII.1968, ♀, *Solidago* (ROME); **York Reg.:** Toronto, 13.VIII.1959, ♀; 20.IX.1934, 2♀ (ROME); 7-16.IX.1891, 2♀; 30.VII-15.VIII.1893, 2♂ (CNCI). **Wellington Co.:** Speedside, 18.VIII.1965, 3♀, ♂, ED (DEBU); Guelph, 16.VIII.1981, ♂, G. Grant; 30.VIII.1978, ♀, MF; 4.IX-2X.1972, 3♀, ♂, MF; 17.IX.1963, ♀, J. Macklin, *Solidago*; 10.VIII.1951, ♂, PG; 23.VIII.2002, ♀, BK, *Solidago* (DEBU). **Halton Reg.:** Burlington, 6.X.1981, ♀, B. Sinclair; 3.VII.1981, ♀, J. Thomson (DEBU). **Brant Co.:** Brantford, 18.IX.1961, ♂, J. Morris; 14.IX.1956, ♀, T. Armstrong (DEBU). **Haldimand-Norfolk Reg.:** Delhi-Simcoe Railway, 7.IX.2001, ♀, PA (DEBU). **Haldimand Co.:** Dunnville, 3.IX.1954, 12♀, LM (CNCI). **Middlesex Co.:** Parkhill, 6.IX.1954, 6♀, C. Miller (CNCI); London, 10.IX.1963, ♀, KN (ROME). **Elgin Co.:** Iona, 22.VIII.1961, ♂, KN (ROME). **Norfolk Co.:** Normandale, 4.IX.1954, 2♀, LM (CNCI); Port Dover, 4.IX.1954, 3♀, LM (CNCI). **Lambton Co.:** Grand Bend, 6.IX.1954, 4♀, LM (CNCI); Pinery Provincial Park, 18.IX.1994, ♀, J. Skevington (DEBU). **Essex Co.:** Point Pelee, 9.IX.1954, ♀, W. Mason (CNCI); 24.VII.1979, ♀, AR; 19.VII.1978, ♀, J. Cumming (DEBU); Windsor, Ojibway Prairie, 30.VIII.2001, ♀, PA; 14-18.VIII 2001, ♀, PA (DEBU). Ontario, 22.VIII.1938, ♀, Smith (DEBU). Figure 5.

Reviewed materials from other regions. Neotype *Colletes armatus* Patton, NH, Pelham, 2.VIII.1905, ♀, Bridwell (USNM).

FIGURE 5. Ontario collection localities of *Colletes simulans*.13.\**C. thoracicus* Smith.

**Grey Co.:** Meaford, 16.VI.1983, ♀, S. Marshall (DEBU). **Welland Co.:** Ridgeway, 14.VI.1908, M, M. VanDayk (CAS). **Norfolk Co.:** Wilson Truct, 17.VI.1993, ♀, J. Skevington (DEBU).

Reviewed materials from other regions. 5♀ and 3♂ from NY, MD, GA, VA, and TX (CASC). Figure 6.

FIGURE 6. Ontario collection localities of *Colletes*: *C. thoracicus*, *C. willistoni*, *C. wilmattae*.14. *C. validus* Cresson.

**Cochrane Distr.:** Timmins, 21.IV.1987, ♂, B. Westhaver (DEBU). **Sudbury Distr.:** Chapleau, Racine Lake, 30.V.1990, ♀, 14♂; 23.V.1991, 5♀; 3.VI.1992, ♀, 2m; 6.VI.1992, ♂, US, *Lowbush blueberry* (DEBU). **Haliburton Co.:** Algonquin Park, 31.V.1961, ♂, L. Pilfrey (DEBU). Figure 4.

Reviewed materials from other regions. F, M, MI (ROME).

**15. *C. willistoni* Robertson.**

**Durham Co.:** Kendal, 12.VII.1961, ♂, KN (ROME). **Simcoe Co.:** Midland, 23.VI.1974, ♂, J. Huber (DEBU); Awenda Provincial Park, Dune Trail, 22.VII.2002, ♀, S. Marshall (DEBU). **Bruce Co.:** Hepworth, 15.VII.1974, 2♂, PG (DEBU). **Kent Co.:** Rondeau Provincial Park, 28.VI.2002, 2♀, BK (DEBU). Figure 6.

**16.\**C. wilmattae* Cockerell.**

**Lanark Co.:** Perth, 1.VIII.1961, ♀, KN (ROME). Figure 6.

Reviewed materials from other regions. Holotype, NM, Pecon, 9.VIII, ♀ (CASC). 2♀ and ♂, ND and NE (UCRC). Figure 6.

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