THE NEARCTIC SPECIES OF HOLOTELEIA KIEFFER (HYMENOPTERA: SCELIONIDAE)

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Abstract
The Nearctic species of the genus Holoteleia are revised. Two named species are redescribed and five new species are described: H. armigera from Florida; H. coriacea, H. laticeps, and H. polita from eastern Canada and the United States; and H. elegans, widespread east of the Rocky Mountains. A diagnosis of Holoteleia and a key to the Nearctic species are given. Potential impact of environmental degradation on the frequency of Holoteleia species in North America is discussed.

Masner, L. 1994. Espèces néarctiques d’Holoteleia Kieffer (Hymenoptera: Scelionidae). The Canadian Entomologist 126: 75–102.

Résumé
Les espèces néarctiques du genre Holoteleia ont fait l’objet d’une révision. Deux espèces connues sont décrites de nouveau et cinq nouvelles espèces sont décrites: H. armigera de Floride, H. coriacea, H. laticeps et H. polita de l’est du Canada et des États-Unis, et H. elegans, très répandue à l’est des Rocheuses. On trouvera ici la diagnose du genre Holoteleia, ainsi qu’une cle d’identification des espèces néarctiques. L’influence que peut avoir la détérioration de l’environnement sur la fréquence des espèces d’Holoteleia en Amérique du Nord est examinée.

[Traduit par la rédaction]

INTRODUCTION
The seven species of the genus Holoteleia Kieffer in America north of Mexico comprise minute (1.4–1.8 mm), spindle-shaped, elongate, yellowish-orange wasps, often with shortened wings. Only two species were known prior to this revision (Muesebeck 1979); five species are described as new to science. This increase in the number of species reflects the general situation in faunal exploration of most groups of parasitic Hymenoptera in North America. More effort from entomologists and greater support by granting agencies are urgently needed to stimulate the faunal surveys. Environmental degradation and global climatic change are new challenges to all concerned biologists.

The geographic distribution of Holoteleia in its present concept (Masner 1980a) is restricted to the Holarctic super-region. Holoteleia nigriceps (Kieffer) is the only known species in the western Palearctic, recorded from Italy and France (Kieffer 1908, 1926), Czechoslovakia (Masner 1956), and Austria (Masner 1976). The seven Nearctic species presently recognized are predominantly distributed in the eastern part of North America (Figs. 1–7), with only H. bicolor (Harrington) extending considerably westward to Alberta (Fig. 1). This pattern corresponds in general to the geographic distribution of ground crickets (Gryllidae, Nemobiinae) in North America (Daniel Otte, personal communication).

The biology and behaviour of species of Holoteleia are little known. The wasps are presumed to parasitize eggs of various ground crickets (Gryllidae, Nemobiinae). Even though no Nearctic species has been reared from cricket eggs, all seven species were frequently caught in pan traps together with nymphal or adult ground crickets especially during the late summer and fall. Severin (1935) described the biology of a closely related scelionid wasp, Calliscelio marlattii (Ashmead), an egg parasitoid of Gryllus assimilis Fabricius, a serious pest of agricultural crops in South Dakota. Up to 50% of all eggs of the pest were reportedly parasitized by the above wasp. Therefore, the two frequent and widely distributed Nearctic species of Holoteleia, viz. bicolor and parvipennis (Melander and
Brues), could play a significant role in controlling ground crickets in habitats such as meadows. Furthermore, the two above-mentioned species seem to prefer generally man-made or man-altered situations such as fields, gardens, lawns, etc. In contrast, the remaining five Nearctic species of *Holoteleia* are markedly less frequent, preferring natural habitats such as peat bogs, sand dunes, or forests. Pan trapping is the most productive collecting method. Six species have a distinct late summer – early fall peak of occurrence; only *H. armigera* is clearly vernal in Florida.

Faunal surveys conducted by the author during the past 20 years in the Ottawa–Hull region showed a remarkable decrease in populations of two local common species, viz. *H. bicolor* and *H. parvipennis*. Pan traps operated in 10 locations in the Ottawa–Hull area, representing four major ecosystems (urban meadows, marsh, sands, forest), yielded gradually fewer individuals during 1970–1988. A near total crash in populations occurred in 1989–1990, with only a few individuals caught during the entire season. A similar decline was monitored on Nearctic species of *Duta* Nix. (Masner 1991) and other genera of local scelionid wasps. Altogether 48 species representing nine genera were monitored; thousands of specimens were examined and tabulated. It is interesting to note that the only European member of *Holoteleia* (*H. nigriceps* Kieff.) is very rare in European collections. During the past years I was able to examine only a dozen individuals of the above species (Masner 1976). The more advanced environmental degradation in Europe may be a possible explanation for the rarity of *H. nigriceps* Kieffer.

Nearly all of the 1029 specimens of Nearctic *Holoteleia* examined in this study are deposited in the Canadian National Collection of Insects and Arachnids (CNCI) and were collected in the past 2 decades. The deposition of specimens other than in CNCI is stated.

**HOLOTELEIA KIEFFER**

*Baryconus* (subg. *Holoteleia*) Kieffer, 1908. Ann. Soc. sci. Bruxelles 32: 120, 169. Type species: *Baryconus (Holoteleia) nigriceps* Kieffer (= bicolor Kieffer nec Harrington).

By original designation.

*Holoteleia* Kieffer, 1913. Proctotrypidae (3e partie) in André, Spec. Hym. Eur. Alg. 11: 231.

Elevated to generic rank.

**Diagnosis** (♀ ♂). Mostly small (1.4–1.8 mm long) orange-yellow members of slender habitus; head in dorsal view transverse, moderately to distinctly wider than long, subelliptical; eye large, pubescent or almost glabrous; lateral ocellus distant from inner orbit at most by 1 diameter; occipital carina well developed, often crenulate; frons slightly convex, without depression; cheek and frons above malar sulcus not striate; malar sulcus well developed; clypeus truncate; labrum exposed, sclerotized; mandibles tridentate, with teeth subequal; palpal formula 4-2; antennal formula 12-12, antenna with 6-segmented clava and sensillus formula 0-1-2-2-2-1 in female, thread-like in male, with antennomere 5 modified (sex segment).

Mesosoma in dorsal view longer than wide; skaphion not developed; notaules usually abbreviate anteriorly, rarely almost complete or entirely absent; transscutal suture with foveolae at side, deep at meson; scutellar disc convex, unarmed; dorsellum unarmed and not expanded in plate, with smooth ventral lip; propodeum unarmed, excavate and reduced medially, in *H. armigera* with dorsal apices of propodeal keels pointed and projecting; mesosoma in lateral view with netrion well developed; mesopleural carina complete; fore wing with submarginal vein adjacent to fore margin of wing, with erect bristles along its length; marginal vein usually shorter than stigmal vein, postmarginal vein longer than stigmal vein, other veins not indicated; hind wing with complete submarginal vein; wings often shortened and attenuate, in *H. armigera* strip-like, without venation; leg slender, with tarsal formula 5-5-5.
Metasoma elongate, spindle-like, narrowed at base; laterotergites narrow, submarginal ridge well impressed; T1 and T2 with longitudinal costae, T1 in female usually with hump, hump not developed in *H. coriacea* and *H. polita*; T3 largest segment of metasoma, smooth or sculptured; T6 in female subtriangular, not attenuate; T7 in female attached to and extruded with ovipositor.

The name *Holoteleia* was proposed by Kieffer (1908) at first as a subgenus of *Baryconus* auct. (i.e. *Probaryconus* Kieffer) and later (Kieffer 1913) elevated to full generic rank. *Holoteleia nigriceps* Kieffer (= *Holoteleia bicolor* Kieffer nec Harrington), originally designated as the type species, was described from specimens collected in France and Italy (Masner 1976). The Nearctic species *Baryconus bicolor* Harrington was transferred to *Holoteleia* by Masner (1976), *Baryconus cinctus* Harrington to *Harringtonia* Masner (Masner 1980a), and *Caloteleia parvipennis* Melander and Brues to *Holoteleia* (Masner 1976). The Oriental *Holoteleia tenuicornis* Dodd was transferred to *Duta* Nixon (Nixon 1933) and the Ethiopian *Holoteleia spherocephala* Risbec to *Probaryconus* Kieffer (Masner 1976).

In North America the concept of *Holoteleia* was precisely defined recently (Masner 1980a) to include only two eastern Nearctic species: *H. bicolor* (Harrington) and *H. parvipennis* (Melander and Brues). These were previously classified in *Baryconus* auct. (Harrington 1899; Muesebeck and Walkley 1951), *Caloteleia* Ashmead (Melander and Brues 1903), *Ceratoteleia* Kieffer (Muesebeck and Walkley 1951), *Calotelea* Westwood (Muesebeck and Masner 1967). Members of *Holoteleia* can be distinguished from those of *Calotelea* by the non-striate cheek, by the notaulus being at least partly developed (in most species), by the non-modified dorsellum, and by the absence of a skaphion on the mesocutum. From *Calliscelio* Ashmead (= *Ceratoteleia*) the members of *Holoteleia* differ by the non-modified dorsellum and by the subtriangular metasomal tergite 6 in females. In contrast to all Nearctic species of *Calotelea* (Masner 1980b) and *Calliscelio*, the *Holoteleia* species in North America frequently display facultative brachyptery or are only brachypterous.

*Holoteleia* belongs to the tribe *Calliscelionini* of the subfamily Scelioninae (Masner 1976). The female ovipositor is housed internally in a membranous tube which is telescoped out during oviposition (Figs. 21, 22); abdominal tergites 8 and 9 (apparent metasomatic tergite 7) are extruded at the tip of the telescoped tube, similarly as in females of the tribe Scelionini (Field and Austin 1994).

**KEY TO NEARCTIC SPECIES OF HOLOTELEIA**

1. Upper apices of propodeal keels sharply pointed, projecting (Fig. 20, arrow); wings without venation, reduced to narrow strips not exceeding T1; T2 with extremely short keels in basal fifth of tergite; United States (Florida) .............................................. *H. armigera* sp.nov. ♀♂
   — Upper apices of propodeal keels not pointed and not projecting (Fig. 22); wings with distinct venation, reaching at least to middle of T3; T2 with distinct keels reaching at least basal third of tergite ................................................................. 2
2. Mesopleural carina ventrally with parallel chain of foveolae, irregular pits or rugae (Fig. 22, arrow) .............................................................. 3
   — Mesopleural carina ventrally without such sculpture ....................................... 5
3. Frons below anterior ocellus evenly coriaceous (except for smooth spot above antennal insertion); T1 in female without hump (Fig. 13), evenly costate; Canada (from New Brunswick to Ontario) and United States (Florida, Maryland, and Missouri) .................. *H. coriacea* sp.nov. ♀♂
   — At least lower part of frons smooth, with scattered punctures; T1 in female with smooth hump (Figs. 12, 22) ......................................................... 4
4. T3 partly coriaceous, especially posterolaterally (Fig. 21, inset); T2 with costae reaching almost to posterior margin of tergite (♀♂) (Fig. 21); A1 and A2 entirely orange-yellow in contrast to...
darker rest of antenna; mesoscutum usually uniformly orange; Canada (from New Brunswick to Alberta) and United States (Georgia to New Hampshire and west to New Mexico and South Dakota). .............................. 

H. bicolor (Harrington) ♀♂ (part)

— T3 almost entirely smooth; T2 with costae not exceeding basal half of tergite (♀) (Fig. 12); lower half of A1 yellow, upper half of A1 and entire A3 dark brown, concolorous with rest of antenna; mesoscutum usually bicoloured, orange with large dark spot in anterior half of midlobe and small dark spots on lateral lobes; Canada (from Québec to Manitoba) and United States (from Florida to Virginia and west to New Mexico and Missouri) .............................. 

H. elegans sp. nov. ♀♂

5. Scutellum predominantly smooth, with only a few scattered punctures anteriorly; upper frons and LOL space predominantly smooth; T1 in female without hump (Figs. 8, 11), evenly costate; Canada (New Brunswick, Ontario) and United States (Florida to Michigan and west to Oklahoma) .............................. 

H. polita sp. nov. ♀♂

— Scutellum predominantly sculptured; upper frons and LOL space predominantly sculptured; T1 in female with smooth hump (Figs. 10, 22). .............................. 

6. Metasomal T3 partly with coriaceous sculpture (Fig. 21), rather mat, sculpture most intensive at sides of tergite; T2 with costae distinctly exceeding basal half of tergite (Fig. 22); Canada (from New Brunswick to Alberta) and United States (Georgia to New Hampshire and west to New Mexico and South Dakota) .............................. 

H. bicolor (Harrington) ♀♂ (part)

— Metasomal T3 almost entirely smooth and lustrous; T2 with costae rarely exceeding basal half of tergite (Fig. 9) .............................. 

7. Female A1–A4 golden yellow in contrast to dark rest of antenna; male A2 dark yellow, almost concolorous with A3–A4; smooth part of upper frons separated from anterior ocellus by zone of dense reticulation; in female upper apices of propodeal keels (below dorsellum) almost contiguous (Fig. 14); United States (from Florida to Maryland) .............................. 

H. laticeps sp. nov. ♀♂

— Female A1 and A2 bright orange-yellow in contrast to dark rest of antenna; male A2 yellow, lighter than A3 and A4; smooth part of upper frons reaching up to margin of anterior ocellus; in female upper apices of propodeal keels (below dorsellum) apart (Fig. 8); Canada (Ontario, Québec) and United States (South Carolina to Maryland and west to Texas) .............................. 

H. parvipennis (Melander and Brues) ♀♂

Holoteleia armigera sp. nov.

(Figs. 1, 19, 20)

Diagnosis and Recognition (♀♂). Frons entirely densely coriaceous with scattered deep setigerous punctures, setae extremely short, appressed; notaulus not developed; scutellum entirely coriaceous; wings reduced to narrow strips without venation, not exceeding T1; mesopleural carina ventrally with parallel chain of foveolae; upper apices of propodeal keels sharply pointed, projecting; female T1 anteriorly with hump; T2 with extremely short keels in basal fifth of tergite; T3 entirely finely coriaceous, with dense appressed yellow pilosity.

Holoteleia armigera is unique among Nearctic species in having pointed and sharply projecting upper apices of the propodeal keels, extremely short keels on T2, the notaulus absent, and narrow strip-like wings without venation in both sexes.

Description. FEMALE (Holotype). Length 1.8 mm. Colour predominantly orange-yellow including head (except for darker rims around ocelli); A3–A6 brown; A7–A12 dark brown to black, ventral corner of metapleuron (above metacoxa), hump on T1, posterior third of T2, posterior quarter of T3, and T4–T7 brown; wings whitish.

Head in dorsal view strongly transverse, wider than long (53:30), with extremely short sparse decumbent hairs; occipital carina strong, complete, finely crenulate medially; occiput and vertex including interocellar triangle and on upper frons densely coriaceous with extremely short appressed setae; ocellar triangle low (POL:LOL = 18:10). OOL slightly more than 0.5d of lateral ocellus; eye large, appearing glabrous with scattered extremely short hairs; temples reduced to narrow strips, strongly receding; head in lateral view higher than long (51:30); eye height/malar space (28:14); postgena entirely finely coriaceous with
few scattered decumbent hairs; hairs in vertex extremely short, not exceeding top of lateral ocellus; head in frontal view subcircular; frons entirely densely coriaceous; upper part of frons with scattered distinct setigerous punctures without keel or bulge above interantennal process; malar sulcus deep, not widened in lower half; relative proportions of antennomeres (32:5), (7:4), (11:4.5), (9:5), (5:4), (4.5:7), (5:8), (6:8), (5:8), (5:8), (6:6).

Mesosoma in dorsal view longer than wide (58:43); mesoscutum evenly densely coriaceous, with scattered appressed yellowish hairs; notaulus not developed; humeral and suprahumeral sulci well impressed, non-foveolate; tegula reduced but present; transscutal suture without foveolae at side, narrow and deep across its entire course; scutellum entirely finely coriaceous, with short appressed yellowish hairs, without crenulae along posterior margin (in front of scutellar rim); dorsellum with ventral lip very narrow; propodeum anterodorsally deeply excavate with anterior apices sharply pointed and projecting blade-like, posterolateral corner of propodeum sharply pointed, sides of propodeum (below spiracle) with fine dense pilosity; mesosoma in lateral view convex, longer than high (58:44); side of pronotum entirely finely coriaceous; metanotum relatively narrow with deep foveolae along anterior margin, foveolae larger than half metanotum width; mesopleural depression smooth and glabrous; mesopleural carina complete, sharp, flanked ventrally by row of irregular foveolae and generally fine rugulosity (Fig. 20); mesepisternum below metapleural carina entirely finely coriaceous with scattered pilosity; acetabular carina sharp, non-foveolate; mesepimeron divided from mesepisternum by row of foveolae, foveolae becoming indistinct in lower part; metapleuron smooth and glabrous except for patch of sculpture above hind coxa, with row of fine foveolae along anterior margin and with deep non-foveolate median sulcus; fore wing narrow, strip-like without veins and bristles, reaching to anterior margin of T1; hind wing similar to fore wing, slightly exceeding posterior margin of propodeum.

Metasoma in dorsal view longer than wide (115:46); T1 slightly wider than long (22:17), with strong longitudinal costae except on hump, hump with very fine coriaceous sculpture, sculpture becoming evanescent on very top; T2 strongly transverse (46:25) with strong longitudinal costae in anterior fifth of tergite, remaining part of tergite with dense fine coriaceous sculpture and dense appressed yellow pilosity; T3 strongly transverse (35:46) with even dense fine coriaceous sculpture all over and dense appressed yellow pilosity; T4–T6 with sculpture and pilosity identical to T3; T7 with pairs of bristles on cercus.

MALE (Allotype). Differs from female as follows: Antenna thread-like with relative proportions of antennomeres (26:5), (6:4), (11:4), (8:4.5), (10:4), (10:4), (9:4), (9:3.5), (9:3.5), (9:3.5), (9:3.5), (12:3.5); A3–A12 with short decumbent hairs, hairs not exceeding one-third length of antennomeres; A5 with very low keel extending slightly over basal half on antennomere; OOL = 1.0d of lateral ocellus; fore wing extending only to middle of propodeum; anterodorsal point of propodeal keel about as long as point on posterolateral corner of propodeum; T1 more elongate, wider than long (18:14), without hump, entirely longitudinally costate; T8 glabrous dorsally, with 4 shorter bristles on apex, large cercus with 2 long bristles.

Material Examined. (126 specimens, ♀ ♂). HOLOTYPE ♀ (CNCI No. 20858), USA, Florida, Levy Co. 5 km SW Archer, April 11–16, 1986, G.A.P. Gibson, turkey oak shrub, flight intercept trap. ALLOTYPE ♂, USA, Florida, Levy Co. 5 km SW Archer, April 11–16, 1986, G.A.P. Gibson, flight intercept trap. PARATYPES: USA: Florida: 42 ♀ ♂, same data as holotype; 3 ♀ ♂, same data as holotype but caught May–July 1987, BRC Hymenoptera Team; 2 ♀ ♂, same data as holotype but caught September 10, 1987, BRC Hymenoptera Team; 18 ♀ ♂, Alachua Co., Gainesville, Doyle Conner Building, January–December, 1975–1976, E.E. Grissell, pan trap; ♀, Alachua Co., Gainesville (American Entomological Institute), January 12, 1985, G.A.P. Gibson, sweeping; ♂, same data but caught April 9–17, 1986, G.A.P. Gibson pan trap; ♀, same data but caught June–July 1987, flight intercept trap,
BRC Hymenoptera Team; 5♂  ♂, Alachua Co., Gainesville (Airport), April 26, 1989, J.S. Noyes, sweeping; 5♀ ♀, Leon Co., Tall Timbers Research Station, July–August 1971–1972, D. Harris, D-Vacuum (Deposited in DPA Gainesville); ♀, Marion Co., Zay Prairie, Ocala National Forest, June 14–18, 1984, S. Marshall, carrion trap; ♀, Marion Co., Sand trail to Oklawaha Swamp, June 10–15, 1984, mushroom trap; ♂, Highlands Co., Archbold Biological Station, March 18–22, 1987, D.B. Wahl, pan trap; ♂, same data but caught March 19–22; ♀ 2♂  ♂, same data but caught July 15 – September 1, 1987; ♂, same data but caught March 11, 1985, M. Deyrup.

Distribution (Fig. 1). Restricted to Florida (from Leon to Highlands Co.).

Biology. Host and habits unknown. The largest series (nr. Archer) was collected on sands with shrubby vegetation.

Variation. Several individuals (♀ ♂) from Central Florida (Archbold Biological Station) are remarkably dark brown.

Etymology. Armigera derived from the Latin arma meaning weapons, and gero meaning to carry, referring to the armed propodeum.

**Holoteleia bicolor** (Harrington)
(Figs. 2, 21, 22)

*Baryconus bicolor* Harrington 1899, *Can. Ent.* 31: 79 (♀ ♂). Lectotype ♀ in CNCI; examined.

*Leptoteleia bicolor*: Kieffer 1926, *Das Tierreich* 48: 478.

*Baryconus bicolor*: Muesebeck and Walkley 1951, in Muesebeck et al. Hymenoptera of America North of Mexico, *Agric. Monogr.* 2: 705.

*Holoteleia bicolor*: Masner 1976, *Mem. Ent. Soc. Can.* 97: 39.

*Holoteleia bicolor*: Muesebeck 1979, in Krombein et al., Catalog of Hymenoptera in America North of Mexico, p. 1156.

*Holoteleia bicolor*: Sarazin 1986, *Can. Ent.* 118: 972. Lectotype ♀ designated herein by L. Masner.

*Holoteleia bicolor*: Johnson 1992, *Mem. Am. Ent. Inst.* 51: 401.

**Diagnosis and Recognition** (♀ ♂). Frons predominantly with extremely fine coriaceous sculpture to almost smooth; scutellum entirely coriaceous; mesopleural carina ventrally almost always with parallel chain of foveolae or irregular pits; upper apices of propodeal keels not pointed and not projecting; female T1 anteriorly with smooth hump; T2 with longitudinal costae reaching to almost posterior margin of tergite; T3 predominantly finely coriaceous especially posterolaterally.

*Holoteleia bicolor* can be distinguished from the sympatric *H. parvipennis* by the presence of foveolae or irregular rugae below the mesopleural carina, also by the longer longitudinal costae on T2 and the distinct coriaceous sculpture on T3. From *H. coriacea*, it differs primarily by the relatively smoother sculpture on the frons, presence of a hump on T1, and the generally larger size.

**Description. Female** (Lectotype). Length 1.8 mm. Colour predominantly orange-yellow, with head dark brown to black, A3–A12 dark brown; posterior margin of T3 and following tergites brown; mandibles, radicle, A1, A2, and legs including coxae bright orange-yellow; wings lightly parchment-coloured.

Head in dorsal view transverse, wider than long (47:28), with very short, sparse decumbent hairs mostly along inner orbits; occipital carina strong, complete, distinctly crenulate; occiput and vertex including interocellar triangle densely coriaceous, coriaceous sculpture enclosing anterior ocellus from in front and continuing in broader zone down along inner orbit; ocellar triangle low (POL: LOL = 14:8), OOL less than 0.5d of lateral ocellus; eye large
with short scattered hairs; temples narrow, strongly receding; head in lateral view higher than long (43:28); eye height/malar space (26:11); postgena especially along outer orbit coriaceous, mostly smooth in lower part with few scattered large setigerous punctures; hairs on vertex extremely short, hardly exceeding top of lateral ocellus; head in frontal view subcircular; upper part of frons medially with gradually diminishing coriaceous sculpture and with few scattered large setigerous punctures at meson, almost smooth in lower half, without keel above interantennal process but with slight bulge slightly below midline between interantennal process and anterior ocellus, with strong strip of coriaceous sculpture along inner orbit, sculpture reaching malar sulcus; clypeus truncate; labrum exposed, sclerotized; malar sulcus deep, slightly widened in lower half; mandible tridentate with teeth subequal; relative proportion of antennomeres (32:6), (6:4.5), (10:5), (8:5), (5:4.5), (3:4.5), (5:7), (5:8), (5:7.5), (5:7.5), (5:6).

Mesosoma in dorsal view longer than wide (54:45); cervical part of pronotum not foveolate; mesoscutum evenly densely coriaceous, with scattered appressed yellowish hairs; notaulus delicate, short, visible only in posterior quarter of mesoscutum; humeral and suprahumeral sulci deep, non-foveolate; scutellum anterolaterally with 3–4 foveolae and with broad and deep transscutal suture medially; entire scutellum with even dense coriaceous sculpture and with few scattered decumbent hairs, posterior margin of scutellum (in front of scutellar rim) distinctly foveolate; dorsellum with very narrow smooth ventral lip; propodeum anterodorsally (under dorsellum) deeply excavate, with anterodorsal points wide apart, posterior margin of propodeum carinate, not projecting in sharp points; mesosoma in lateral view convex, longer than high (54:40); side of pronotum partly smooth medially, with distinct coriaceous sculpture in dorsal part in front of spiracle, without foveolae along anterior or upper margins; netrion foveolate along anterior margin, foveolae smaller than half netrion width; mesopleural depression smooth and glabrous; mesopleural carina complete, sharp, flanked ventrally by row of deep foveolae; meseisternum below mesopleural carina predominantly smooth with few setigerous punctures; acetabular carina sharp, not distinctly foveolate ventrally; mesepimeron divided from meseisternum by row of deep foveolae; metapleuron smooth and glabrous with row of foveolae along anterior margin and with deep non-foveolate median sulcus; fore wing attenuate, not exceeding tip of metasoma, with 8–9 semierect black bristles on submarginal vein, marginal vein moderately elongate but shorter than stigma vein (6:9); postmarginal vein not clearly defined apically, distinctly longer than marginal vein (23:6); basal and median veins non-pigmented, spectral.

Metasoma in dorsal view longer than wide (120:44); T1 slightly wider than long (22:17), with strong longitudinal costae except for smooth low hump anteromedially, with 4 semierect bristles at side; T2 wider than long (42:30), with strong dense longitudinal costae reaching posterior five-sixths of tergite, narrow posterior margin of tergite smooth; T3 strongly transverse, wider than long (44:32), with fine coriaceous sculpture all over, sculpture delicate to almost inconspicuous anteromedially, more pronounced posteriorly and especially posterolaterally, sides of tergites with very short appressed hairs; T4–T6 with fine but distinct coriaceous sculpture and with scattered short hairs at side, T6 generally more hairy; T7 with pair of bristles on cercus.

**MALE (Lectoallotype).** Differs from female as follows: Antenna thread-like with relative proportions of antennomeres (27:5), (6:4.5), (10:5.5), (8:5), (9:5), (8:4.5), (9:4.5), (9:4.5), (9:4.5), (9:4.5), (13:4.5); A3–A12 with dense decumbent hairs, hairs not exceeding half width of antennomeres; A5 ventrally with sharp keel slightly exceeding basal two-thirds length of antennomere; fine coriaceous sculpture on frons better expressed medially than in female; median keels of propodeum almost meeting anteromedially (below dorsellum); T1 without hump, entirely costate; longitudinal costae on T2 slightly shorter than in female but still exceeding basal two-thirds of length of tergite.
Material Examined. (369 specimens, ♀♂). LECTOTYPE ♀ and LECTOALLOTYPE ♂ (CNCI No. 2522), Canada, Ontario; Ottawa (= Race Course), August 29, 1894/“Type”/Baryconus bicolor Hgtn., W.H. Harrington Collection/ Lectotype of Baryconus bicolor Harrington CNC 2522 designated by L. Masner, February 1986/ PARALECTOTYPES 5 ♀♂, 4 ♂♂, same data as lectotype. CANADA: Alberta: 148 ♀♂, (July 10 – September 30). New Brunswick: 4 ♀♂, (September 12–21). Ontario: 152 ♀♂, (May 27 – October 8). Québec: 27 ♀♂, (August 10 – November 2). USA: Georgia: ♂, (September). Illinois: ♀, (September). Maryland: 4 ♀♂, (August 24 – September 19). Massachusetts: 2 ♀♂, (July). Michigan: 2 ♀♂, (September). Missouri: ♂, (September–October). New Hampshire: ♀, (August–October). New Jersey: ♂, (July). New Mexico: ♂, (June). North Carolina: ♀, (September–November). South Carolina: 2 ♀♀, (September–October). South Dakota: ♀, (August). Virginia: 10 ♀♂, (August–September).

Distribution (Fig. 2). Canada and the United States. Large areas of the continent remain uncollected, especially in the prairie region.

Biology. Host and habits unknown. Adults occur in open, sunny habitats such as grassland and bogs, with peak occurrence in late summer and early fall (August–September).

Variation. The fore wing in females (frequently) and males (rarely) may be shortened, rather narrow, reaching only to about the middle of T3. Foveolae under the mesopleural carina may appear in some individuals as irregular impressions or (rarely) may be almost obliterated. For this reason H. bicolor appears twice in the key (cf. p. 78). The coriaceous sculpture on T3 may be effaced in the middle part of the tergite, usually better expressed at sides. The hump on T1 in females may vary slightly in degree of development. The anterior half of the midlobe of the mesoscutum may rarely bear a dark spot similar to individuals of H. elegans.

Remarks. Harrington’s (1899) type series consists of mixed individuals of H. bicolor and H. parvipennis (Sarazin 1986). Holoteleia bicolor is very close to the Palearctic H. nigriceps Kieffer from which it differs principally by the sculpture of the lower frons and that of T3; in H. bicolor the lower frons is almost entirely smooth and T3 is finely coriaceous with smoother middle part, whereas in H. nigriceps the lower frons has strong transverse wrinkles and T3 is distinctly longitudinally striate in its middle part.

Holoteleia coriacea sp.nov. (Figs. 3, 13, 17)

Diagnosis and Recognition (♀ ♂). Frons entirely and evenly coriaceous, rather mat, with only minute smooth spot on bulge above interantennal process; scutellum almost entirely coriaceous; mesopleural carina ventrally with parallel chain of foveolae; upper apices of median propodeal keels meeting, not pointed and not projecting; wings shortened, narrow strip-like; female T1 with no hump; T2 with longitudinal costae reaching almost posterior margin of tergite; T3 smooth.

Holoteleia coriacea is unique among Nearctic species principally because of the entirely coriaceous frons. The absence of a hump in T1 in the female and the short strip-like wings in both sexes further characterize the species. Members are also the smallest among the Nearctic species of Holoteleia.

Description. FEMALE (Holotype). Length 1.4 mm. Colour predominantly yellowish-brown; radicle, A1, postgena, cheeks, mandibles, palpi, labrum, pleura, mesoscutum, T1, anterior two-thirds of T3, and legs including coxae yellowish-brown; dorsal part of head and antennal clava almost black; A2–A6, scutellum, sides of T2, posterolateral parts of T3, T4–T7, and apices of hind femora dark brown; rest of body and legs including coxae lighter; wings slightly infuscate.
Head in dorsal view less transverse, wider than long (41:26), with very short sparse decumbent hairs; occipital carina strong, complete, crenulate medially and partly also at side; occiput and vertex including interocellar triangle densely coriaceous, mat, coriaceous sculpture enclosing anterior ocellus and continuing on frons; ocellar triangle higher (POL:LOL = 12:8), OOL less than 0.5d of lateral ocellus; eye large with short scattered hairs; temples narrow, strongly receding; head in lateral view higher than long (39:26); eye height/malar space (24:10); postgena smooth with only narrow strip of coriaceous sculpture adjacent to posterior orbit; hairs on vertex extremely short, not exceeding top of ocellus; head in frontal view subcircular; entire frons (from anterior ocellus to malar sulcus and above interantennal process) evenly coriaceous, rather mat, with only minute smooth spot on distinct bulge above interantennal process; clypeus truncate; labrum exposed; malar sulcus narrow but deeply incised; mandible tridentate with teeth subequal; relative proportion of antennomeres (27:4.5), (6:4), (10:4.5), (7.5:4.5), (4.5:4), (2.5:3.5), (4:6), (5:7.5), (5:7.5), (5:7.5), (5:7), (6:6).

Mesosoma in dorsal view longer than wide (47:35); mesoscutum evenly densely scaly-like coriaceous with dense appressed hairs; notaulus complete, deeply incised particularly in posterior half; humeral and suprategular sulci deep, non-foveolate; scutellum anteriorly with 2–3 deep foveolae and deep transscutal suture medially; scutellar disc with dense coriaceous sculpture and few setigerous punctures especially in anterior half, sculpture becoming delicate in posterior margin, posterior margin of scutellum (in front of scutellar rim) with fine foveolae; dorsellum with narrow smooth ventral lip; propodeal keels meeting below dorsellum, anterodorsal apices of keels not pointed and not projecting; posterolateral corner of propodeum sharply produced into point; mesosoma in lateral view convex dorsally, longer than high (47:37); side of pronotum smooth medially with patch of dense microsculpture in front of spiracle; netrion narrow, smooth, foveolate along anterior margin, foveolae smaller than netrion width; mesopleural depression smooth and glabrous; mesopleural carina strong, complete, with parallel row of deep foveolae ventrally; mesepistemum below mesopleural carina mostly smooth, with scattered hairs; acetabular carina sharp, not foveolate ventrally; mesepimeron divided from mesepistemum by row of deep foveolae; metapleuron smooth and glabrous with row of foveolae along anterior margin and with deep non-foveolate median sulcus; fore wing shortened, narrow strip-like, only slightly wider than width of hind femur, not exceeding posterior margin of T3, without black bristles on submarginal vein; marginal vein longer than short stigmal vein; postmarginal vein slightly longer than marginal vein; basal and medial veins not indicated.

Metasoma in dorsal view longer than wide (80:37); T1 slightly wider than long (16:12) with strong longitudinal costae all over, without hump, with 3 erect bristles at sides; T2 wider than long (32:14), with strong longitudinal costae reaching almost to posterior margin of tergite, leaving only narrow strip of smooth surface along posterior margin; T3 transverse wider than long (37:27), predominantly smooth but rather mat with larger circular patch of coriaceous sculpture posterolaterally and with few scattered decumbent hairs postero-laterally; T4–T6 with fine coriaceous sculpture and scattered decumbent pilosity; T7 with pair of bristles on cercus.

MALE (Allotype). Differs from female as follows: Antenna thread-like with relative proportions of antennomeres (21:4.5), (5:4), (6:4), (5.5:4.5), (6:5), (6:4), (6:4), (6:4), (6:4), (6:4), (6:4), (9:4); A3–A12 with short decumbent hairs, hairs not exceeding half width of antennomeres; A5 ventrally with sharp keel, slightly exceeding basal half of antennomere; fore wing slightly exceeding posterior margin on T3; patch of coriaceous sculpture on T3 considerably larger than in female, covering most of postero-lateral corner of tergite.

Material Examined. (172 specimens, ♂ ♀). HOLOTYPE ♂ (CNCI No. 20861), Canada, Ontario, Upper Rock Lake, 30 km N of Kingston, August 24 – October 12, 1977, C.D. Dondale, J. Redner, ex pitfall trap in sphagnum bog. ALLOTYPE: ♀, same data.
PARATYPES: CANADA: New Brunswick: 10 ♀ ♂, Kouchibouguac National Park, August 29 – September 12, 1977, G.A. Calderwood. Ontario: 28 ♀ ♂, Upper Rock Lake, 30 km N Kingston, July–October 12, 1977, C.D. Dondale, J. Redner, ex pitfall trap in sphagnum; 18 ♀ ♂, 18 km E Gananoque, August 24 – October 12, 1977, C.D. Dondale, J. Redner; ♂, 10 mi. W Chaffey’s Locks, September 6, 1980, S.B. Peck, sifting sphagnum; 4 ♀ ♂, Mer Bleue near Ottawa, July 3 – August 20, 1975, J. Redner, C.D. Dondale, sphagnum bogs; ♂, Mer Bleue near Ottawa, October 1972, L. Masner. Québec: 3♂ ♂, Gatineau Park, September 13, 1983, J. Denis; ♂, Ste. Cécile de Masham, September 19, 1984, J. Denis. USA: Florida: 61 ♀ ♂, Dade Co., Everglades National Park, Long Pine Key, pineland forest, August 31 – December 9, 1986, S.&J. Peck, flight intercept trap; 10 ♀ ♂, same data but caught May 28 – August 26; 22 ♀ ♂, same data but caught June 8 – August 26, Malaise trap, flight intercept trap; 4 ♀ ♂, same data but caught August 28 – September 5, Malaise trap, flight intercept trap; ♂, Highlands Co., Venus, Big Cypress Swamp, December 30, 1973, W. Suter; ♂, Collier–Seminole State Park, May 25–26, 1978, N.F. Johnson, pan trap at edge of clearing. Maryland: ♂, Prince George Co., Patuxent Research Station, August 6–15, 1980, Malaise trap. Missouri: 4 ♀ ♂, Wayne Co., Williamsville, September 23 – October 20, 1988, August 1987, October 1987, October 1989, J.T. Becker, Malaise trap.

Distribution (Fig. 3). Sporadically recorded throughout eastern North America (from New Brunswick to Florida).

Biology. Host and habits unknown. The adult wasps seem to prefer open, wet habitats, such as bogs, fens, and marshes.

Variation. The fore wing in the female may very rarely attain full size, widely surpassing the tip of the metasoma; fore wing in the male may vary from reaching the posterior margin of T3 to slightly surpassing the tip of the metasoma.

Etymology. Coriacea derived from *coriaceus* in Latin meaning leather-like, referring to the sculpture of the head, especially the frons.

**Holoteleia elegans** sp.nov. (Figs. 4, 12)

Diagnosis and Recognition (♀ ♂). Upper part of frons with even fine coriaceous sculpture and scattered pilosity, only lower part of frons smooth; scutellum entirely coriaceous; mesopleural carina ventrally with parallel chain of foveolae; upper apices of propodeal keel not pointed and not projecting, female T1 with smooth hump; longitudinal keels on T2 not exceeding basal half of tergite; T3 almost entirely smooth; mesoscutum usually bicoloured, orange with large dark spot on anterior half of midlobe and smaller darker spots on lateral lobes.

*Holoteleia elegans* can be distinguished from *H. bicolor* by the smooth T3, by the costae on T2 not exceeding the basal half of the tergite, by having the upper part of A1 and entire A2 dark brown, and by the distinct large circular dark spot on the anterior half of the mesoscutum.

Description. FEMALE (Holotype). Length 1.7 mm. Colour predominantly orange-yellow, with head almost black, anterior half of A1 and rest of antenna dark brown to black, mesoscutum with large dark circular spot in anterior half of midlobe and with smaller darker spots on lateral lobes, scutellum, hump on T1, most of T2, posterior part of T3, and T4–T7 dark brown, tegula and metapleuron light brown, labrum, palpi, mandible, radicle, basal half of A1, pleura, posterior half of mesoscutum, anterior half of T3, and legs including coxae orange-yellow; wings slightly infuscate.

Head in dorsal view transverse, wider than long (44:26), with very short dense decumbent hairs; occipital carina strong, complete, distinctly crenulate; occiput and vertex
including on interocellar triangle with dense fine coriaceous sculpture, sculpture enclosing anterior ocellus from in front and continuing down on frons, sculpture on vertex interspersed with setigerous punctures; ocellar triangle low (POL:LOL = 14:8), OOL less than 0.5d of lateral ocellus; eye large with short scattered hairs; temples narrow, strongly receding; head in lateral view higher than long (43:26); eye height/malar space (23:11); most of postgena coriaceous, with few scattered large setigerous punctures; hairs on vertex extremely short, hardly exceeding top of lateral ocellus; head in frontal view subcircular; fine coriaceous sculpture extending to middle of frons, sculpture interspersed with scattered setigerous punctures, coriaceous sculpture continuing down along inner orbit to malar sulcus; frons without keel above interantennal process and almost no indication of bulge medially; clypeus truncate; labrum exposed, sclerotized; malar sulcus narrow but deep, not widened in lower half; mandible tridentate with teeth subequal; relative proportions of antennomeres (30:6.5), (8:4.5), (11:5), (9:5), (5:4.5), (3:4.5), (4:7), (5.5:8), (5.5:8), (5.5:8), (5:8), (7:7).

Mesosoma in dorsal view longer than wide (50:40), cervical part of pronotum not foveolate; mesoscutum evenly densely reticulate with scattered setigerous punctures, with dense decumbent yellowish pilosity, notaulus incomplete, deeply incised in posterior two-thirds of mesoscutum; humeral and suprahumeral sulci deep, non-foveolate; scutellum entirely and evenly coriaceous, with few scattered setigerous punctures; posterior margin of scutellum (in front of scutellar rim) distinctly foveolate; dorsellum with ventral lip well developed; propodeum (below dorsellum) partly excavate with anterodorsal points non-contiguous, posterior margin of propodeum carinate, not projecting to sharp points; mesosoma in lateral view longer than high (50:41); side of pronotum smooth medially, with patch of microgranular sculpture in front of spiralce and with fine rugulose sculpture along dorsal margin; netrion smooth, foveolate along anterior margin, foveolae about half netrion width; mesopleural depression smooth and glabrous; mesopleural carina complete, sharp, flanked ventrally by row of deep foveolae; mesepisternum below mesopleural carina partly smooth, with fine scattered hairs and with fine sculpture near acatubar carina; acatubar carina not foveolate; mesepimeron divided from mesepisternum by row of deep foveolae; metapleuron smooth and glabrous with row of deep foveolae along anterior margin and with deep non-foveolate sulcus; fore wing attenuate, not exceeding tip of metasoma with 9 semierect bristles along submarginal vein, marginal vein shorter than stigmal vein (5:7), postmarginal vein longer than marginal vein (17:5); basal and median veins non-pigmented.

Metasoma in dorsal view longer than wide (100:40); T1 slightly wider than long (20:15) with strong longitudinal costae except for smooth low hump anteromedially, with 5 semierect bristles at sides; T2 wider than long (40:27), with strong longitudinal costae not exceeding basal half of tergite, rest of tergite smooth and almost glabrous with only minute hair at side; T3 strongly transverse, wider than long (40:31), smooth, lustrous, with only minute patch of coriaceous sculpture posterolaterally and few scattered hairs at side; T4 with fine coriaceous sculpture laterally, almost smooth medially, with few scattered hairs; T5 and T6 predominantly with fine coriaceous sculpture; T7 with pair of bristles on cercus.

MALE (Allotype). Differs from female as follows: Antenna thread-like with relative proportion of antennomeres (25:5), (6:4), (8.5:5), (6:4), (8:4.5), (8:4), (8:4), (8:4), (8:4), (12:4); A5 ventrally with sharp keel extending to two-thirds of antennomere; fine coriaceous sculpture on frons finer than in female; median keels of propodeum almost meeting anteriorly below dorsellum; T1 without hump, entirely costate; longitudinal costae on T2 exceeding basal half of length of tegrite.

Material Examined. (89 specimens, ♂ ♀). HOLOTYPE ♀ (CNCI No. 20859), USA, Missouri, Wayne Co., Williamsville, October 1987, J.T. Becker, Malaise trap. ALLOTYPE ♂: USA, Mississippi, Starkville, Mississippi State University, North Farms, October 27-29, 1989, J.T. Baker, pan trap. PARATYPES: CANADA: Manitoba: ♀, Riding Mountain National Park, Whirlpool River, August 28, 1979, D.B. Lyons, sweeping. Ontario: ♀ ♂,
Nepean, Tanglewood, August 7–17, 1978, L. Masner, pan trap; Q, Ottawa, August 12, 1943, O. Peck; 2 Q, Mer Bleue near Ottawa, August 1982, H. Goulet; Q, Mer Bleue near Ottawa, August 28, 1981, S.J. Miller; Q, Oxford Mills, August 17–21, 1978, G. Gibson, yellow pan trap; Q, Chatterton, 13 mi. N Belleville, July 16, 1968, C.D. Dondale, pitfall trap in meadow; Q, Upper Rock Lake, 30 km N of Kingston, July–August 1977, C.D. Dondale, J. Redner, ex pitfall trap in sphagnum bog; Q, 3 km N Almonte, August 12–19, 1986, J. Denis, L. Dumouchel, pan trap; Q, Waterloo, August 2, 1977, L. LeSage, 2 Q, Thedford near London, September–October 1982, A. Tomlin, pan trap. Québec: 25 Q, St.-Anne-de-Bellevue, Arboretum, September 1979, M. Sharkey, pan trap; 2 Q, Gatineau Park, September 13–20, 1983, L. Dumouchel, pan trap; Q, Gatineau Park, September 13, 1981, L. Masner; 3 Q, Gatineau Park, August–September 1983, J. Denis, interception trap; Q, Hull, September 1–6, 1983, L. Masner, pan trap in forest; Q, Rigaud, August 9, 1979, L. Masner, H. Goulet, flood forest; Q, Lac Roddick, August 17–25, 1978, L. Masner, pan trap; Q, Frelighsburg, August 12, 1970, B. Parent. USA: Florida: Q, Liberty Co., Torreya State Park, October 7, 1980, L. Masner, B. Bowen, sweeping. Illinois: Q, Hardin Co. Pounds Hollow Lake, June 19, 1991, J.T. Pinto, screen sweeping. Maryland: Q, Silver Springs, July 21–25, 1985, E.E. Grissell, pan trap. Mississippi: Q, Starkville, Mississippi State University, North Farm, October 13–15, 1989, G.T. Baker, pan trap. Missouri: 23 Q, Wayne Co., Williamsville, July–October, 1987 and 1989, J.T. Becker, Malaise trap. New Mexico: 3 Q, Torrance Co., 6 mi. SW Manzano, Red Canyon Camp, 7500’, June 17–30, 1979, S.&J. Peck, Malaise trap. North Carolina: Q, Jackson Co., Whiteside Mountain near Highlands, 1600 m, July–September 13, 1987, BRC Hymenoptera Team, Malaise trap in oak forest; Q, same data but caught July 10, 1987, J.T. Huber, sweeping. Virginia: Q, Fairfax Co., near Annandale, September 17, 1989, D.R. Smith, Malaise trap; 3 Q Q, Louisa Co., 4 mi. S Cuckoo, August 4 – November 5, 1989, Malaise trap.

**Distribution** (Fig. 4). Eastern Canada and United States, with only sporadic records in midwest of the continent.

**Biology.** Host and habits unknown. Peak of occurrence is in late summer and fall.

**Variation.** Rarely the fore wing may be shortened (Q), not exceeding the posterior margin of T3. The size and shape of the darker spots on the mesoscutum may vary slightly in extent.

**Remarks.** The males of *H. elegans* have the longitudinal costae on T2 exceeding the basal half of the tergite. In this respect they resemble males of *H. bicolor* but differ from them by having T3 almost entirely smooth.

**Etymology.** Elegans derived from the Latin elegans meaning fine or beautiful, referring to the fine combination of two colours on the mesoscutum.

**Holoteleia laticeps** sp.nov.

(Figs. 5, 14, 18)

**Diagnosis and Recognition** (Q). Head in dorsal view strongly transverse; upper half of frons (including area in front of anterior ocellus) densely coriaceous, with scattered setigerous punctures; scutellum entirely scutellated; mesopleural carina ventrally without foveola; upper apices of propodeal keels closely approximated, not pointed, not projecting; fore wing shortened, moderately attenuate, exceeding posterior margin of T3; female T1 with moderate hump; T2 with costae not exceeding basal half of tergite; T3 almost entirely smooth; female A1–A4 bright orange-yellow.

Females of *H. laticeps* can be distinguished from *H. parvipennis* in having A1–A4 bright orange-yellow (in *H. parvipennis* only A1–A2 are bright orange-yellow) and by the upper apices of the propodeal keels being closely approximated (wide apart in *H. parvipennis*). Male A1–A4 are dark yellow, almost concolourous (male A2 is lighter than A3–A4 in
H. parvipennis). Holoteleia laticeps differs from H. polita principally by the entirely sculptured scutellum, by the upper half of the frons being densely coriaceous, and by the presence of a low hump on female T1.

Description. FEMALE (Holotype). Length 1.7 mm. Colour predominantly orange-yellow; head and A5–A12 almost black, scutellum, lower part of metapleuron, median part of propodeum, hump on T1, most of T2, posterior third of T3 and T4–T6, posterior margin of S3 and S4–S6 brown; palpi, mandibles, radicle, A1–A4, mesoscutum, pleura, and legs (except for apex of hind femur) including coxae orange-yellow; wings slightly infuscate.

Head in dorsal view strongly transverse, wider than long (46:23) with few scattered decumbent hairs; occipital carina strong, complete, distinctly crenulate especially in middle part; occiput, vertex (including ocellar triangle), and upper frons densely coriaceous, with scattered setigerous punctures, sculpture continuing down along inner orbit; ocellar triangle very low (POL:LOL = 15:8), OOL about 0.5d of lateral ocellus; eye large with short scattered hairs; temples extremely narrow receding immediately behind posterior orbit; head in lateral view higher than long (41:23); eye height/malar space (28:9); postgena mostly smooth, with narrow zone of coriaceous sculpture in upper part (adjacent to posterior orbit), with few scattered setigerous punctures; hairs on vertex decumbent, not exceeding top of ocellus; head in frontal view subellipsoidal, upper half of frons (including broad zone below anterior ocellus) and distinct zone along inner orbit coriaceous, with scattered deep setigerous punctures below anterior ocellus, lower half of frons smooth, without keel or bulge above interantennal process; malar sulcus deep, not widened in lower half; relative proportions of antennomeres (30:5), (6:4), (11:4), (9:4), (2.5:4), (4.5:7), (5:8), (5:8.5), (5:8.5), (5:8), (5:6).

Mesosoma in dorsal view longer than wide (51:40); mesoscutum entirely scaly-coriaceous with dense appressed hairs; notaulus fine, deeply incised, almost complete, becoming indistinct at anterior apex; humeral and suprahumeral sulci deep, non-foveolate; transscutal suture with 3 foveolae laterally; scutellar disc entirely coriaceous with scattered setigerous punctures and with dense decumbent hairs; posterior margin of scutellum (in front of scutellar rim) with distinct foveolae; ventral lip of dorsellum smooth, relatively broad; propodeal keels meeting below dorsellum, anterodorsal apices of keels not pointed and not projecting; posterolateral corners of propodeum sharply pointed and projecting; mesosoma in lateral view convex dorsally, longer than high (51:40); side of pronotum mostly smooth with patch of dense microsculpture in front of spiracle and with row of irregular foveolae along dorsal margin; netrion smooth with distinct crenulae along inner margin, crenulae smaller than half netrion width; mesopleural carina completely smooth, without foveolae ventrally; mesepisternum below mesopleural carina mostly smooth, with scattered fine pilosity and patch of fine coriaceous sculpture below acetabular carina; acetabular carina sharp, not foveolate ventrally; mesepimeron divided from mesepisternum by row of deep foveolae; metapleuron smooth and glabrous with row of foveolae along anterior margin and with deep non-foveolate sulcus; fore wing shortened, moderately attenuate, exceeding posterior margin of T3, with 9 large semierect black bristles on submarginal vein; marginal vein slightly shorter than stigma vein (6:8), with 2 large bristles, postmarginal vein longer than marginal vein (17:6), with 5 large bristles; median and basal vein not indicated.

Metasoma in dorsal view longer than wide (95:39); T1 slightly wider than long (17:13) with strong longitudinal costae except anteromedially, hump smooth, with 4 erect bristles at side; T2 wider than long (39:22), with strong longitudinal costae reaching to middle of tergite, rest of tergite smooth, with dense pilosity at sides; T3 transverse wider than long (39:31), almost entirely smooth and lustrous with extremely small patch of coriaceous sculpture (consisting of 3 cells) posterolaterally and with scattered decumbent hairs at side;
T4–T6 smooth with decumbent pilosity mostly at side, T6 mostly pilose; T7 with pair of bristles on cercus.

**Male (Allotype).** Differs from female as follows: Antenna thread-like with relative proportions of antennomeres (23:5), (5:4.5), (10:5), (9:4.5), (9:5), (8:4.5), (8:4), (8:4), (8:4), (8:4), (12:4); A3–A12 with short decumbent hairs, hairs not exceeding half width of antennomeres; A5 ventrally with sharp keel, slightly exceeding basal half of antennomere; fore wing normal, slightly exceeding tip of metasoma; submarginal vein with 8 semiereect bristles, marginal vein shorter than stigmal vein (6:8) and with 2 erect bristles, postmarginal vein longer than marginal vein (17:7), with 5 large bristles; patch of coriaceous sculpture on T3 slightly larger than in female, similar patch on side of T4.

**Material Examined.** (65 specimens, ♀♂). **Holotype ♀ (CNCI No. 20860)**, USA, Florida, Alachua Co., Gainesville, AEI (American Entomological Institute), August 20–September 14, 1987, BRC Hymenoptera Team, oak forest flight intercept trap. **Allotype: ♀, same data as holotype. Paratypes: USA:** Florida: 2 ♀♂, same data as holotype but caught April–July 14; ♀, same data as holotype but caught July 25; ♀, same data as holotype but caught April 12–19, 1986, M. Sharkey, Malaise trap; ♀, same data as holotype but caught May 5, L. Masner, H. Goulet, flight intercept trap; 2 ♀♂, same data as holotype but caught August 2–18, D.B. Wahl, flight intercept trap; 8 ♀♂, Alachua Co., Gainesville (Airport), April 26, 1989, J.S. Noyes, sweeping; 2 ♀♂, Alachua Co., Gainesville (Airport), May 27, 1991, J. Woolley and G. Zolnerovich, screen sweeping; 4 ♀♂, Alachua Co., Gainesville, Doyle Conner Building, April 12–30, September 27 – October 1, 1976, E.E. Grissell, pan trap; ♀, Leon Co., Tall Timbers Research Station, September 28 – October 4, 1971, D.L. Harris, pitfall trap; ♀, Levy Co., 5 km SW Archer, July 15 – August 5, 1987, BRC Hymenoptera Team, turkey oak shrub, flight intercept trap; ♀, Ocala National Forest, Juniper Springs, August 13, 1980, L. Masner, sweeping; ♀, Bradenton, January 16, 1986, D.J. Schuster, pan trap; ♀, Highlands Co., Archbold Biological Station, Lake Placid, November, 1979, D.&V. Hardwick, pan trap; 21 ♀♂, Dade Co., Everglades National Park, Long Pine Key, May 25 – December 9, 1982, S.&J. Peck, flight intercept trap. **Georgia:** 5 ♀♂, McIntosh Co., Sapelo Island, May 9 – July 18, 1987, BRC Hymenoptera Team, flight intercept trap, live oak forest and savanna; 13 ♀♂, Tift Co., 13 km NW Tifton, August and November 1985, M. Keller, pan trap. **Maryland:** ♀, Prince George Co., Patuxent Wildlife Center, September 1–19, 1979, E.E. Grissell, M. Schaff. **North Carolina:** ♀, Jackson Co., Whiteside Mountain, near Highlands, 1600 m, July–September 13, 1987, BRC Hymenoptera Team, flight intercept trap in oak forest.

**Distribution** (Fig. 5). Sporadically recorded in eastern North America (from Maryland to Florida).

**Biology.** Host and habits unknown.

**Variation.** The fore wing in the female may be shortened to reach only to the posterior margin of T3.

**Etymology.** Laticeps derived from the Latin latus meaning broad or wide, and caput meaning head referring to the broad head.

**Holoteleia parvipennis** (Melander and Brues)  
(Figs. 6, 8, 9, 10, 15)

*Baryconus bicolor* Harrington 1899, *Can. Ent.* 31: 79. Misidentification.

*Caloteleia parvipennis* Melander and Brues 1903, *Biol. Bull.* 5: 22. ♀. Type in MCZ; examined.

*Ceratoteleia parvipennis*: Kieffer 1926, *Das Tierreich* 48: 504.
Ceratoteleia parvipennis: Muesebeck and Walkley 1951, in Muesebeck et al. Hymenoptera of America North of Mexico, Agric. Monogr. 2: 705.  
Calotelea parvipennis: Masner 1965, Psyche 72: 299.  
Holoteleia parvipennis: Muesebeck 1979, in Krombein et al., Catalog of Hymenoptera in America North of Mexico, p. 1156.  
Holoteleia parvipennis: Johnson 1992, Mem. Am. Ent. Inst. 51: 401.

Diagnosis and Recognition (♀♂). Frons predominantly smooth and glabrous, in upper half with few scattered setigerous punctures and fine coriaceous sculpture; scutellum predominantly sculptured; mesopleural carina ventrally without foveolae; upper apices of propodeal keels not pointed and not projecting; female T1 anteriorly with smooth hump; T2 with keels not exceeding basal two-thirds of tergite; T3 almost entirely smooth; female A1–A2 bright orange-yellow.

Holoteleia parvipennis can be distinguished from the sympatric H. bicolor by the absence of foveolae or irregular sculpture below the mesopleural carina, by the shorter longitudinal costae on T2, and by the absence of coriaceous sculpture on T3. From H. laticeps it differs in the female by having only A1–A5 bright orange-yellow and by having the upper apices of the propodeal keel distinctly apart.

Description. FEMALE (Holotype). Length 1.85 mm. Colour predominantly orange-yellow with head dark brown to black, A3–A12 dark brown, hump on T1 brown; posterior margin of T3 and following tergites chestnut brown; labrum, mandibles, palpi, radicle, A1 and A2, and legs including coxae bright yellow; wing lightly parchment-coloured.

Head in dorsal view transverse, wider than long (48:28), with very short sparse decumbent hairs; occipital carina strong, complete, distinctly crenulate at least in middle part; occiput and vertex including interocellar triangle densely coriaceous-granular, sculpture almost enclosing anterior ocellus from in front and here almost abruptly ending, but continuing down along inner orbits as narrow band; ocellar triangle low (POL:LOL = 16:8), OOL less than 0.5d of lateral ocellus; eye large with short scattered hairs; temples narrow, strongly receding; head in lateral view higher than long (46:28); eye height/malar space (29: 10); postgena especially along outer orbit coriaceous, mostly smooth in lower part, with few scattered large setigerous punctures; hairs on vertex extremely short, hardly surpassing top of anterior ocellus; head in frontal view subcircular; upper part of frons slightly below anterior ocellus already smooth without coriaceous sculpture but with few scattered large setigerous punctures, smooth and glabrous in lower part but with narrow band of coriaceous sculpture along inner orbit, without keel but slightly bulged above interantennal process; clypeus truncate; labrum exposed, sclerotized; malar sulcus deep, slightly widened in lower half; mandible tridentate with teeth subequal; relative proportion of antennomeres (33:6), (7:5), (13:5), (9:5), (5:4), (3:3.5), (4.5:6.5), (5.5:7.5), (6:7.5), (6:7.5), (5.5:6.5), (7:6).

Mesosoma in dorsal view longer than wide (60:46); cervical part of pronotum not foveolate; mesoscutum evenly densely scaly-coriaceous, with dense appressed yellowish hairs; notaulus delicate, incomplete, but well impressed in posterior three-quarters of scutum; humeral and suprahumeral sulci deep, non-foveolate; scutellum anteriorly with 4 deep foveolae and with deep transscutal suture medially; scutellum with even dense coriaceous sculpture, sculpture becoming finer posteriorly, scutellum with scattered decumbent hairs, posterior margin of scutellum (in front of scutellar rim) distinctly foveolate; dorsellum with smooth ventral lip very narrow; propodeum anterodorsally (below dorsellum) deeply excavate with anterodorsal points wide apart, posterior margin of propodeum not carinate, not projecting in sharp points; mesosoma in lateral view convex, longer than high (60:40); side of pronotum predominantly smooth with patch of dense microgranular sculpture in front of spiracle, upper margin of pronotum (below mesoscutum) with row of irregular foveolae, anterior margin of pronotum with band of fine coriaceous
sculpture; netrion smooth, foveolate along anterior margin, foveolae smaller than half
netrion width; mesopleuron depression smooth and glabrous; mesepisternal carina complete,
sharp, without foveolae ventrally; mesepisternum below acetabular carina with fine
coriaceous sculpture; acetabular carina sharp, not distinctly foveolate ventrally; mes-
epimeron divided from mesepisternum by row of deep foveolae; metapleural smooth and
glabrous with row of foveolae along anterior margin and with deep non-foveolate median
sulcus; fore wing attenuate, reaching only to middle of T3, with 11 semi-erect bristles on
submarginal vein, marginal vein as long as the short and very slanted stigmal vein (6:6);
postmarginal vein clearly defined, twice as long as marginal vein (12:6); basal and median
veins not indicated.

Metasoma in dorsal view longer than wide (110:41); T1 wider than long (22:17) with
strong longitudinal costae except for large smooth area on hump anteromedially with several
erect bristles at side; T2 wider than long (38:26), with strong longitudinal costae not reaching
basal half of tergite, major part of tergite smooth with few scattered hairs laterally; T3
transverse, wider than long (41:33), smooth, lustrous with only minute patch (only 10 cells)
of microcoriaceous sculpture posterolaterally, and with very few scattered hairs around; T4
and T5 smooth with few scattered setigerous punctures, T6 largely smooth with denser
pilosity; T7 with pair of bristles on cercus.

MALE. Differs from female as follows: Antenna thread-like with relative proportions of
antennomeres (25:5:5), (5:5:4:5), (11:5), (8:5), (9:4:5), (9:4:5), (9:4:5), (9:4:5),
(9:4:5), (8:5:4), (11:3:5); A3–A12 with dense decumbent hairs, hairs not exceeding half
width of antennomeres; A5 ventrally with low sharp keel reaching to basal two-thirds length
of antennomere; ventral lip of dorsellum broader than in female; median propodeal keels
almost confluent medially (below dorsellum); wings normally developed, reaching to apex
of metasoma, marginal vein slightly shorter than stigmal vein (6:8); T1 without hump
entirely longitudinally costate, slightly darkened anteromedially; T2 with costae reaching
close to basal half of length of tergite; mesoscutum anteromedially as well as top of scutellum
brownish.

Material Examined. (132 specimens ♀ ♂). HOLOTYPE ♀ (Museum of Comparative
Zoology No. 31014), USA, Massachusetts, Woods Hole/“Halictus”/ type Caloteleia
parvipennis, M. et B. type. HOMOTYPE ♀, Canada, Ontario, Nepean, Slack Road, October
21, 1984, L. Masner, pan trap. FIRST DESCRIBED MALE ♀, Canada, Ontario, Nepean,
Tanglewood, July 26 – August 9, 1979, L. Masner, pan trap. PARALECTOTYPES of
Baryconus bicolor Harrington: 4 ♀ ♂, Canada, Ontario, Ottawa (Race Course), August 29,
1894, H. Harrington. CANADA: Ontario: 72 ♀ ♂ (July 13 – October 21). Québec: 13 ♀ ♂
(August 1 – September 14). USA: Maryland: 8 ♀ ♂ (August–September 24). Michigan:
2 ♀ ♂ (September). Mississippi: ♀ (October). Missouri: 17 ♀ ♂ (August 8 – October 20).
North Carolina: 4 ♀ ♂ (August 16 – October 24). South Carolina: ♀ (October). Texas: ♀
(May). Virginia: 6 ♀ ♂ (September 12 – October 6).

Distribution (Fig. 6). Eastern Canada and United States. Sympatric with H. bicolor except
absent in western Canada.

Biology. Host unknown. Adult wasps prefer open, sunny habitats such as grassland, sand
pits, etc., with peak of occurrence in late summer and early fall.

Variation. Fore wings in females are frequently shortened, not exceeding the middle of T3
but also fully developed; wings are rarely shortened in males. Some male individuals may
be dark brown, i.e. much darker than most populations.

Remarks. Harrington (1899) mixed H. parvipennis with H. bicolor (Sarazin 1986).
Holoteleia polita sp. nov.  
(Figs. 7, 11, 16)

**Diagnosis and Recognition** ($\varphi$ $\sigma$). Frons and LOL space predominantly smooth including area in front of anterior ocellus; scutellum predominantly smooth with only few scattered punctures anteriorly; mesopleural carina ventrally without foveolae; upper apices of propodeal keels closely approximated, not pointed and not projected; wings shortened, attenuate, not exceeding posterior margin of T3; female T1 without hump; T2 with costae slightly exceeding basal half of tergite; T3 entirely smooth; A1–A4 in female bright orange-yellow.

*Holoteleia polita* is unique among North American species of *Holoteleia* because of the smooth scutellum and the entirely smooth T3. It differs from *H. laticeps* which also has the female A1–A4 orange-yellow by the absence of a hump of female T1 and by the frons being predominantly smooth.

**Description. FEMALE** (Holotype). Length 1.7 mm. Colour predominantly orange-yellow; head and antennal clava almost black, A5–A6 dark brown, scutellum dark brown, metapleuron, propodeum brown, posterior half of T2, posterolateral corners of T3, T4–T7, S4–S6 dark brown to black; palpi, mandibles (except for dark tips), A1–A4, mesoscutum, pro- and mesopleura, major part of T3, S1–S3 orange-yellow, legs light yellow, femora, trochanters, and especially coxae almost whitish; wings slightly infuscate.

Head in dorsal view strongly transverse, wider than long (44:25), with few scattered semidecumbent hairs; occipital carina strong, complete, distinctly crenulate medially; occiput and vertex (except LOL space and around anterior ocellus) with dense coriaceous sculpture, sculpture continuing as narrow band along inner orbit; ocellar triangle low (P0L:L0L = 12:7); OOL slightly more than 0.5d of lateral ocellus; eye large with scattered hairs; temples narrow, strongly receding; head in lateral view higher than long (41:25); eye height/malar space (26:8); postgena entirely smooth with few scattered setigerous punctures; hairs on vertex more erect, distinctly exceeding top of ocellus; head in frontal view subcircular, frons smooth and lustrous, almost glabrous, coriaceous sculpture continuing down on inner orbit reduced to one line, frons without keel and no distinct bulge above interantennal process; malar sulcus deep, not widened in lower half; relative proportions of antennomeres (31:5), (6:4), (11:5), (7:5), (6:4.5), (2.5:2.5), (4:6), (4.5:7); (5.5:7), (5:7), (5:7), (6:6).

Mesosoma in dorsal view longer than wide (51:41); mesoscutum evenly densely scaly-coriaceous with dense appressed hairs; notaulus complete, deeply incised particularly in posterior half; humeral and suprhumeral sulci deep, non-foveolate; transscutal suture with 3–4 foveolae laterally; scutellar disc predominantly smooth and glabrous, with only few scattered setigerous punctures and remnants of fine coriaceous sculpture along anterior margin, posterior margin of scutellum (in front of scutellar rim) with distinct foveolae; ventral lip of dorsellum moderately developed; propodeal keels almost meeting below dorsellum, anterodorsal apices of keels not pointed, not projecting; posterolateral corner of propodeum not pointed; mesosoma in lateral view convex dorsally, longer than high (51:40); side of pronotum largely smooth and glabrous with patch of dense microsculpture in front of spiracle; netrion smooth, foveolate only in lower part, foveolae very small, smaller than half netrion width; mesopleural depression smooth and glabrous; mesopleural carina strong, complete, without foveolae ventrally; mesepisternum below mesopleural carina entirely smooth and glabrous; acetabular carina sharp, not foveolate ventrally; epimeron divided from mesepisternum by row of deep foveolae; metapleuron smooth and glabrous with row of foveolae along anterior margin and with deep non-foveolate median sulcus; wing shortened, attenuate, reaching posterior margin of T3, with 9 large semierect black bristles on submarginal vein; marginal vein longer than short stigmatic vein; postmarginal vein slightly longer than marginal vein; basal and median veins not indicated.
Metasoma in dorsal view longer than wide (95:44); T1 slightly wider than long (20:15) with strong longitudinal costae all over, without hump, with 4 erect bristles at side; T2 wider than long (39:21), with strong longitudinal costae slightly exceeding basal half of tergite; T3 transverse, wider than long (44:35), entirely smooth and lustrous with only few scattered hairs mostly at side; T4–T6 entirely smooth, with more scattered hairs, especially T6; T7 with pairs of bristles on cercus.

MALE (Allotype). Differs from female as follows: Antenna thread-like with relative proportions of antennomeres (22:4.5), (5:4), (8:4.5), (7:4.5), (8:5), (7:4.5), (7:4), (6.5:4), (6.5:4), (6:4), (6:4), (11:4); A3–A12 with short decumbent hairs; A5 ventrally with sharp keel reaching to two-thirds length of antennomere; wings normally developed, exceeding tip of metasoma, with 10 large semierect bristles on submarginal vein, 2 large bristles on submarginal vein and 5 large bristles on postmarginal vein, marginal vein shorter than stigmatic vein (6:9), postmarginal vein much longer than marginal vein (25:6), median and basal vein indicated by darker pigmentation; A2–A12 concolourous, dark brown, legs including coxae yellow, apex of hind femur darkened, meso- and metapleuron and entire propodeum brown; posterior two-thirds of T3 brown.

Material Examined. (76 specimens, 9 9). HOLOTYPE 9 (CNCI No. 20862), USA, Maryland, Calvert Co., 7 km S Prince Frederick, September 24–November 14, 1987, BRC Hymenoptera Team, flight intercept trap in hardwood forest. ALLOTYPY 9, same data as holotype. PARATYPES: CANADA: New Brunswick: 4 9, Kouchibouguac National Park, August 30–September 20, 1977, S.J. Miller. Ontario: 9, Hamilton, October 31–September 7, 1981, M. Sanborne, Malaise trap. USA: Florida: 9 9, Leon Co., Chaires, July 17, 1969, W. Suter, cypress swamp, (sawdust pile); 9, Alachua Co., Felasco Hammock State Park, May–July 1987, BRC Hymenoptera Team, flight intercept trap in hardwood forest; 9, Dade Co., Everglades National Park, January 1970, L. Masner. Georgia: 14 9, Tift Co., 13 km NW Tifton, August and November 1985, M. Keller, pan trap; 2 9, McIntosh Co., Sapelo Island, September 16–November 16, 1987, BRC Hymenoptera Team, flight intercept trap in live oak forest. Kentucky: 9, Christian Co., 5 mi. W Hopkinsville, September 22, 1967, J.M. Campbell. Berlese sample of deciduous duff. Maryland: 14 9, Calvert Co., 7 km S Prince Frederick, July–November 14, 1987, BRC Hymenoptera Team, flight intercept trap and sweeping in hardwood forest; 3 9, as previous locality but caught August 25, 1986, M. Sharkey; 5 9, Prince George Co., Patuxent Wildlife Center, August 21–September 6, 1979, 1980, E.E. Grisell, M. Schaff, pan trap; 9, same data but caught August 22–September 6, 1979, S.B. Peck, pan trap. Massachusetts: 9, Berkshire Co., Barrington, August 1, 1979, M. Schaff. Michigan: 9, Ann Arbor, August 23, 1982, M. Sharkey. Missouri: 8 9, Wayne Co., Williamsville, June 15–October 20, 1987, 1988, J.T. Becker, Malaise trap. North Carolina: 3 9, 22.5 km NW Highlands, Nantahala National Forest, 1068 m, September 27, 1980, L. Masner, B. Bowen, sweeping. Oklahoma: 9, Latimer Co., December 1981, K. Stephan. Virginia: 3 9, Montgomery Co., 8 km NW Blacksburg, August 1–17, 1987, BRC Hymenoptera Team, Malaise trap, disturbed forest edge; 9, Blue Ridge Parkway, mile 170, Rock Castle Gorge Overlook, 915 m, September 22, 1980, L. Masner, B. Bowen, sweeping; 7 9, Clarke Co., Blandy Experimental Farm 2 mi. S Boyce, August–October 1990, D.R. Smith, Malaise trap.

Distribution (Fig. 7). Sporadically recorded throughout eastern North America (from New Brunswick to Florida).

Biology. Host and habits unknown.

Variation. The fore wing (9 9) may be reduced to reach only to the middle or posterior part of T3. Some males may be distinctly darker, with the entire body dark brown.
**Etymology.** Polita is derived from the Latin politus meaning smooth, and referring to the smooth scutellum.

**ACKNOWLEDGMENTS**

Susan Rigby [Centre for Land and Biological Resources Research (CLBRR), Agriculture Canada, Ottawa] made the illustrations; Jocelyn Denis (CLBRR) prepared the plates and incorporated corrections; K.G.A. Hamilton and J. O’Hara (CLBRR) reviewed the manuscript.

**REFERENCES**

Field, S.A., and A.D. Austin. 1994. Morphology and mechanics of the ovipositor system of Scelio Latreille (Hymenoptera: Scelionidae) and related genera. *International Journal of Insect Morphology and Embryology*. In press.

Harrington, W.H. 1899. Six new Ottawa Proctotrupidae. *The Canadian Entomologist* 31: 77–80.

Johnson, N.F. 1992. Catalog of World Species of Proctotrupoidea, Exclusive of Platygasteridae (Hymenoptera). *Memoirs of the American Entomological Institute* 51: 825 pp.

Kieffer, J.J. 1908. Révision des Scelionidae (Hyménoptères). *Annales de la Société Scientifique de Bruxelles* 32: 110–250, 1 pl.

———. 1913. Proctotrupidae (3e partie). In André E., *Species des Hyménoptères d’Europe et d’Algérie...* Vol. 11: 161–304. Paris.

———. 1926. Scelionidae. *Das Tierreich* 48: 885 pp.

Masner, L. 1956. First preliminary report on the occurrence of genera of the group Proctotrupoidea (Hym.) in CSR. (First part — family Scelionidae). *Acta Faunistica Entomologica Musei Nationalis Pragae* 1: 99–126.

———. 1965. The types of Proctotrupoidea (Hymenoptera) in the Charles T. Brues collection at the Museum of Comparative Zoology. *Psyche* 72: 295–304.

———. 1976. Revisionary notes and keys to world genera of Scelionidae (Hymenoptera: Proctotrupoidea). *Memoirs of the Entomological Society of Canada* 97: 87 pp.

———. 1980a. Key to genera of Scelionidae of the Holarctic region, with descriptions of new genera and species (Hymenoptera: Proctotrupoidea). *Memoirs of the Entomological Society of Canada* 113: 54 pp.

———. 1980b. A revision of the Nearctic species of Calotelea Westwood (Hymenoptera, Proctotrupoidea, Scelionidae). *The Canadian Entomologist* 122: 397–408.

———. 1991. The Nearctic species of Dutu Nixon (Hymenoptera: Scelionidae), egg parasitoids of ground crickets (Orthoptera: Gryllidae). *The Canadian Entomologist* 123: 777–793.

Melander, A.L., and C.T. Brues. 1903. Guests and parasites of the burrowing bee Halictus. *Biological Bulletin* 5: 1–27.

Muesebeck, C.F.W. 1979. Superfamily Proctotrupoidea. pp. 1121–1186 in Krombein, K.V., et al. (Eds.), Catalog of Hymenoptera in North America North of Mexico. Smithsonian Institution Press, Washington, DC.

Muesebeck, C.F.W., and L. Masner. 1967. Superfamily Proctotrupoidea. pp. 285–305 in Krombein, K.V., and B.D. Burks (Eds.), Hymenoptera of America North of Mexico. Synoptic Catalog Second Supplement. *Agriculture Monograph* 2.

Muesebeck, C.F.W., and L.M. Walkley. 1951. Superfamily Proctotrupoidea. pp. 655–718 in Muesebeck, C.F.W., et al. (Eds.), Hymenoptera of America North of Mexico. Synoptic Catalog. *U.S. Department of Agriculture, Agriculture Monograph* 2.

Nixon, G.E.J. 1933. A further contribution to the study of South African Scelionidae (Insecta, Hymenoptera, Proctotrupoidea). *Annals and Magazines of Natural History* ser. 10, 12: 288–304.

Sarazin, M.J. 1986. Primary types of Ceraphronoidea, Evanioidea, Proctotrupoidea and Trigonalioidea (Hymenoptera) in the Canadian National Collection. *The Canadian Entomologist* 118: 957–989.

Severin, H.C. 1935. The common black field cricket a serious pest in South Dakota. *Bulletin of South Dakota Agriculture Experimental Station* 295: 51 pp.

(Date received: 21 June 1993; date accepted: 14 October 1993)
H. armigera n.sp.

extrapolated range

Fig. 1. Distribution of Hololeia armigera sp.nov.
Fig. 2. Distribution of *Holoteleia bicolor* (Harrington) (isolated dot in New Mexico).
FIG. 3. Distribution of *Holoteleia coriacea* sp.nov.
Fig. 4. Distribution of *Holoteleia elegans* sp.nov. (isolated dots in Manitoba and New Mexico).
H. laticeps n.sp.

extrapolated range

Fig. 5. Distribution of *Holoteleia laticeps* sp.nov.
Fig. 6. Distribution of Holoteleia parvipennis (Melander and Brues).
H. polita n.sp.

extrapolated range

Fig. 7. Distribution of Holoteleia polita sp.nov.
FIGS. 8–18. *Holoteleia parvipennis* (Melander and Brues) $\varphi$ (8, dorsal view of mesosoma and T1; 9, dorsal view of T1 and T2; 10, lateral view of segment 1 of metasoma); 11, *H. polita* sp.nov. $\varphi$, lateral view of segment 1 of metasoma; 12, *H. elegans* sp.nov. $\varphi$, dorsal view of T1 and T2; 13, *H. coriacea* sp.nov. $\varphi$, dorsal view of T1; 14, *H. laticeps* sp.nov. $\varphi$, dorsal view of mesosoma and T1; 15, *H. parvipennis* (Melander and Brues) $\varphi$, head, dorsal view; 16, *H. polita* sp.nov. $\varphi$, head, dorsal view; 17, *H. coriacea* sp.nov. $\varphi$, head, dorsal view; 18, *H. laticeps* sp.nov. $\varphi$, head, dorsal view.
Figs. 19–22. 19, 20, *Holoteleia armigera* sp.nov. ♀ (19, body, dorsal view; 20, body, lateral view; arrow indicates propodeum); 21, 22, *H. bicolor* (Harrington) ♀ (21, body, dorsal view with ovipositor partly extruded; microsculpture of T3 (inset); 22, body, lateral view with ovipositor partly extruded; arrow indicates mesopleural carina).