

MIRIDAE (HETEROPTERA) NEW TO CANADA, WITH SOME TAXONOMIC CHANGES

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Abstract.—This paper records 75 species of plant bugs new to Canada, including the first report of *Pinalitus cervinus* (Herrich-Schaeffer) in North America. The following taxonomic changes are proposed: *Melanotrichus vestitus* (Uhler), lectotype designated and new combination; *Macrotylodes symmetricus* Knight, new junior synonym of *Macrotylus vestitus* Uhler; and *Paraproba nigrinervis* Van Duzee, 1917, new junior synonym of *Paraproba cincta* Van Duzee, 1917.

Résumé.—L'auteur rapporte pour la première fois la présence de 75 espèces de punaises au Canada dont une espèce introduite, *Pinalitus cervinus* (Herrich-Schaeffer), mentionnée pour la première fois d'Amérique du Nord. On propose également les modifications taxonomiques suivantes: *Melanotrichus vestitus* (Uhler) est une nouvelle combinaison et un lectotype lui est désigné; *Macrotylodes symmetricus* Knight est un nouveau synonyme plus récent de *Macrotylus vestitus* Uhler; et *Paraproba nigrinervis* Van Duzee, 1917, est un nouveau synonyme plus récent de *Paraproba cincta* Van Duzee, 1917.

In systematic studies associated with a monograph on the plant bugs of British Columbia (Schwartz and Scudder, in prep.), we have discovered 75 species new to Canada, including the first record of *Pinalitus cervinus* (Herrich-Schaeffer) to North America. These locality records are published at this time to validate their inclusion in the *Hemiptera of Canada and Alaska* (Maw et al., 2000). Several new taxonomic changes are also reported as a result of these works.

RECORDS OF NEW SPECIES TO CANADA

Subfamily ISOMETOPINAE

Tribe ISOMETOPINI

Diphleps unica Bergroth

Material examined. CANADA, Ontario: Hagersville, 23.viii.1961 (Kelton & Brumpton) [CNC].

Subfamily BRYOCORINAE

Tribe DICYPHINI

Tupiocoris agilis (Uhler)

Material examined. CANADA, British Columbia: Apex Mountain Rd, 3 km NW of Green Mtn, Rd jct. 49°25'N 119°50'W, *Ipomopsis aggregata* (Pursh) V. Grant,

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13.viii.1998 (M.D. Schwartz) [CNC]; Osoyoos, Anarchist Mt., *Gilia aggregata*, 875.vii.1959 (R. Madge) [CNC]; Osoyoos, Anarchist Mt., 7.vi.1959 (R.E. Leech) [CNC]; Osoyoos, Anarchist Mt., 6.vi.1959 (R. Madge) [CNC].

Tupiocoris tinctus (Knight)

Material examined. CANADA, **British Columbia:** Apex Mt. Rd, nr jct. with Hedley Nickel Plate Rd, 49°23'31"N 119°55'04"W, *Rhododendron albiflorum* Hook., *Lonicera involucrata* (Richard) Banks, 13.viii.1998 (M.D. Schwartz) [CNC]; Likely, 7.vii.1938 (G.S. Walley) [CNC]; Manning Prov. Pk, Blackwall, ex *Viburnum* sp., 23.vii.1970 (L.A. Kelton) [CNC]; Merritt, 10 mi S of, *Geranium*, 19.vii.1959 (L.A. Kelton) [CNC]; Sidney, 15.vii. 1959 (L.A. Kelton) [CNC]; Victoria, 14.vii.1920 (G.) [CNC].

Subfamily DERAECORINAE

Tribe CLIVINEMATINI

Clivinema mediale Knight

Material examined. CANADA, **British Columbia:** Soda Cr., *Solanum tuberosum* L., 30.viii.1951 (H.R. MacCarthy) [CNC]; Cariboo, Westwick L., 13.vi.1962 (G.G.E. Scudder) [UBC].

Largidea grossa Van Duzee

Material examined. CANADA, **British Columbia:** Anarchist Mt., Osoyoos, *Pinus ponderosa*: 26.viii.1988 (G.G.E. Scudder) [UBC] and 13.vii.1970 (L.A. Kelton) [CNC]; Aspen Grove, *P. ponderosa*, 2.vii.1931 (H. Richmond) [CNC]; Cranbrook, *P. ponderosa*, 23.vii.1959 (L.A. Kelton) [CNC]; Elko, *P. ponderosa*, 8.vii.1970 (L.A. Kelton) [CNC]; Hedley, *P. ponderosa*, 23.vii.1970 (L.A. Kelton) [CNC]; Jaffray, 17.vii.1970 (L.A. Kelton) [CNC]; Kelowna, *P. ponderosa*, 7.vii.1970 (L.A. Kelton) [CNC]; Midway, FIS 59-7454-05, 5.viii.1959 [PFC]; Naramata, 8 km N of, *P. ponderosa*, 12.vi.1992 (G.G.E. Scudder) [CNC]; Okanagan Falls, *P. ponderosa*, 8.vii.1974 (L.A. Kelton) [CNC]; Okanagan Log, *P. ponderosa*, 25.vi.1963, FIS 63-6271-01 [PFC]; Oliver, *P. ponderosa*, 27.vi.1950 (L.A. Kelton) [CNC]; Oyama, FIS 69-0-5564-02, 16.vi.1969 [PFC]; Seacrest Hill, Oliver, 5.vi.1983 (S.G. Cannings) [UBC]; Summerland, *P. ponderosa*: FIS 62-6656-05, 6.vi.1962 [PFC], 2.vii.1974 (L.A. Kelton) [CNC], and 6.vii.1970 (L.A. Kelton) [CNC]; Vaseux L., *P. ponderosa*: 27.viii.1988 (G.G.E. Scudder) [UBC] and 14.viii.1957 (N. Anderson) [CNC]; Westbank, *P. ponderosa*, 26.vi.1950 (N. Anderson) [CNC]; Westbank, 9 mi N of, *P. ponderosa*, 10.ix.1957 (N. Anderson) [CNC].

Tribe DERAECORINI

Deraeocoris barberi Knight

Material examined. CANADA, **British Columbia:** Manning Prov. Pk., Blackwall, *Pinus contorta*, 23.vii.1970 (L.A. Kelton) [CNC]; Glacier Nat. Pk., 15.vii.1970 (L.A. Kelton) [UBC]; Kaslo, *P. contorta*, 10.vii.1970 (L.A. Kelton) [CNC]; Mt. Robson Prov. Pk., 27.viii.1970 (L.A. Kelton) [CNC]; Yahk, 8.viii.1970 (L.A. Kelton) [CNC].

Deraeocoris fulgidus Van Duzee

Material examined. CANADA, **British Columbia:** Kaleden, greasewood, 2.viii.1975 (L.A. Kelton) [CNC]; Oliver, 20.vi.1975 (L.A. Kelton) [CNC]; Oliver, McCuddy Cr. Rd., *Purshia tridentata*, 17.vii.1997 (G.G.E. Scudder) [UBC]; Oliver, McIntyre Cr., 4.vii.1959 (L.A. Kelton) [CNC]; Osoyoos, 10.vi.1919 (W.B. Anderson) [CNC]; Osoyoos, East Bench, *P. tridentata*, 9.vi.1990 (G.G.E. Scudder) [UBC]; Osoyoos L., I.R., south end, *P. tridentata*, 30.vi.1996 (G.G.E. Scudder) [UBC].

Deraeocoris fulvescens (Reuter)

Material examined. CANADA, **British Columbia:** Cranbrook, *Pinus ponderosa*, 23.vii.1959 (L.A. Kelton) [CNC]; Donald Station, *P. monticola*, 1.viii.1970 (L.A. Kelton) [CNC]; Fosthall, *P. monticola*, 1.viii.1956 (A.F. Hedlin) [CNC]; Glacier Nat. Pk., 15.vii.1970 (L.A. Kelton) [CNC]; Kaslo, *P. contorta*, 10.vii.1970 (L.A. Kelton) [CNC]; Manning Prov. Pk., Blackwall, *P. contorta*, 23.vii.1970 (L.A. Kelton) [CNC]; Okanagan Falls, *P. ponderosa*, 8.vii.1974 (L.A. Kelton) [CNC]; Silverton, *P. monticola*, 26.vii.1956 (A. F. Hedlin) [CNC].

Deraeocoris mutatus Knight

Material examined. CANADA, **British Columbia:** Osoyoos, Anarchist Mt., *Pinus ponderosa*, 13.vii.1970 (L.A. Kelton) [CNC]; Osoyoos, Anarchist Mt., *P. ponderosa*, 26.viii.1988 (G.G.E. Scudder) [UBC]; Summerland, *P. ponderosa*, 2-11.vii.1974 (L.A. Kelton) [CNC]; Summerland, *P. ponderosa*, 6.vii.1975 (L.A. Kelton) [CNC].

Deraeocoris ruber (Linnaeus)

Material examined. CANADA, **Nova Scotia:** Halifax, 10.vi.1980 (L.A. Kelton) [CNC]. **Ontario:** Vineland, *Verbascum thapsus*, 15.vii.1929 (W.L. Puman) [UG]. **Prince Edward Island:** Charlottetown, *Quercus* sp., 7-11.viii.1976 (L.A. Kelton) [CNC].

Hesperophylum heidemanni Reuter & Poppius

Material examined. CANADA, **Nova Scotia:** Kentville, *Prunus*, 10-14.vii.1976 (L.A. Kelton) [CNC].

Subfamily MIRINAE

Tribe MIRINI

Lygidea viburni Knight

Material examined. CANADA, **Nova Scotia:** Baddeck, *Viburnum*, 23.vii.1936 (J. McDunnough) [CNC]; White Pt. Beach, Queens Co., 27.vii.1934 (J. McDunnough) [CNC]. **Ontario:** Ingleside, 27-29.vi.1977 (L.A. Kelton) [CNC]. **Prince Edward Island:** Dalvay Beach, 10.vii.1966 (L.A. Kelton) [CNC]. **Québec:** Parke Reserve, Kam[ouraska]. Co., 17.vii.1957, light trap (G.E. Shewell) [CNC] and 950 ft, 26.vii.1957 (W.R.M. Mason) [CNC].

Lygus oregonae Knight

Material examined. CANADA, **British Columbia:** Long Beach Unit, Wickaninnish Beach Area, Pacific Rim Nat. Pk., *Ambrosia chamissonis* (Less.) Greene, 9.viii.1998 (M.D. Schwartz) [CNC].

Neoborella xanthenes Herring

Material examined. CANADA, **British Columbia:** Bear L., Rt. 97, *Arceuthobium* sp. on *Pinus contorta*, 26.viii.1963 (M.D. Schwartz) [CNC]; Hedley, *P. contorta*, 22.vii.1970 (L.A. Kelton) [CNC].

Neurocolpus longirostris Knight

Material examined. CANADA, **British Columbia:** Keremeos, Grist Mill, cat mint, 5.vii.1994 (G.G.E. Scudder) [UBC]; Kelowna, *Ceanothus*, 7.vii.1975 (L.A. Kelton) [CNC]; Ladysmith, *Spirea discolor*, 12.vii.1959 (L.A. Kelton) [CNC]; Oliver, sumac, vii.1951 (D.B. Waddell) [CNC]; Oliver, Madden L., sumac, 8.vii.1959 (L.A. Kelton) [CNC]; Osoyoos L., NE end, 30.vi.1981 (S.G. Cannings) [UBC]; Vaseux L., 26.vi.1959 (L.A. Kelton) [CNC].

Phytocoris californicus Knight

Material examined. CANADA, **British Columbia:** Oliver, UBC Geology Camp, MV light trap, 23.vii.1990 (S.G. Cannings) [UBC].

Phytocoris caryae Knight

Material examined. CANADA, **Ontario:** Forestville, *Carya*, 23.viii.1961 (L.A. Kelton) [CNC]; Tillsonburg, hickory, 18.vii.1962 (Kelton & Thorpe) [CNC].

Phytocoris fenestratus Reuter

Material examined. CANADA, **New Brunswick:** Penobsquis, 6.vii.1978 (L.A. Kelton) [CNC]. **Ontario:** Sundridge, 13.vii.1961 (G. Brumpton) [CNC]. **Québec:** Fabre, jack pine, 12.vi.1963 (L.A. Kelton) [CNC]; Kazubazua, 29.vi.1935 (G.S. Walley) [CNC]; Laniel, *Pinus banksiana*, 26–27.vi.1963 (L.A. Kelton) [CNC].

Phytocoris fraterculus Van Duzee

Material examined. CANADA, **British Columbia:** Cranbrook, *Pinus ponderosa*, 23.vii.1959 (L.A. Kelton) [CNC]; Donald Station, *P. monticola*, 1.viii.1970 (L.A. Kelton) [CNC]; Elko, *P. ponderosa*, 8.vii.1970 (L.A. Kelton) [CNC]; Elko River, Kootenay, 9.viii.1949 (H.R. Leech) [CAS]; Hedley, douglas fir, 22.vii.1970 (L.A. Kelton) [CNC]; Lumby, *P. ponderosa*, 13.viii.1975 (L.A. Kelton) [CNC]; Okanagan Falls, *P. ponderosa*, 8.vii.1974 (L.A. Kelton) [CNC]; Oliver, *P. ponderosa*, 27.vi.1959 (L.A. Kelton) [CNC]; Oliver, 17.viii.1953 (J.E.H. Martin) [CNC]; Oliver, 7 mi E of Indian Reserve, sage, 8.vii.1959 (L.A. Kelton) [CNC]; Osoyoos, Anarchist Mountain, *P. ponderosa*, 13.vii.1970 (L.A. Kelton) [CNC]; Princeton, *P. ponderosa*, 25.vii.1970 (L.A. Kelton) [CNC]; Princeton, 10 mi W of, *P. ponderosa*, 31.vii.1957

(N. Anderson) [CNC]; Sicamous, 22.viii.1970 (L.A. Kelton) [CNC]; Summerland, 2.vii.1974 (L.A. Kelton) [CNC]; Summerland, *P. ponderosa*, 6.vii.1975 (L.A. Kelton) [CNC]; Victoria, *P. ponderosa*, 29.vii.1957 (N. Anderson) [CNC]; Wasa, 7.viii.1970 (L.A. Kelton) [CNC].

Phytocoris fumatus Reuter

Material examined. CANADA, Nova Scotia: Kentville, *Pinus sylvestris*, 15-17.vii.1966 (L.A. Kelton) [CNC].

Phytocoris jucundus Van Duzee

Material examined. CANADA, British Columbia: Anarchist Mt., 12 km E of Osoyoos, at reststop on Route 3, 30.viii.1993 (M.D. Schwartz) [CNC]; Christina L., River Rd. & Route 3, 31.viii.1993 (M.D. Schwartz) [CNC]; Gallagher L., 4 mi N of Oliver, 3.ix.1957 (N. Anderson) [CNC]; Kalamalka Lake Prov. Pk., *Pinus ponderosa*, 21.viii.1987 (S.G. Cannings) [UBC]; Kelowna, 10 km S of N end of Okanagan Mt. Pk., 29.viii.1993 (M.D. Schwartz) [CNC]; Lytton, 23.vii. 931 (G.J. Spencer) [UBC]; Oliver, 15.ix.1953 (J.E.H. Martin) [CNC]; Oliver, 10.ix.1953 (J.E.H. Martin) [CNC]; Oliver, 20.ix.1953 (J.E.H. Martin) [CNC]; Penticton, 13.viii.1951 (W. Downes) [UBC]; Penticton, 6.ix.1980 (S.G. Cannings) [UBC]; Penticton, West Bench, light, 30.viii.1983, 22.viii.1987, 21.viii.1987, 24.viii.1987 (S.G. Cannings) [UBC]; Seton L., Lillooet, 5.viii.1933 (J. McDunnough) [CNC]; Seton L., Lillooet, 3.viii.1933 (J. McDunnough) [CNC]; Squally Point, Okanagan L., 19.ix.1957 (C.V.G. Morgan) [CNC]; Summerland, 28.viii.1924 (W. Downes) [CNC]; Summerland, 4.vii.1926 (W. Downes) [UBC]; Vaseux L., 14.viii.1957 (W. Downes) [CNC]; Vaseux L., *P. ponderosa*, 27.viii.1986 (G.G.E. Scudder) [UBC]; Westbank, 9 mi N of, 10.ix.1957 (N. Anderson) [CNC].

Phytocoris plenus Van Duzee

Material examined. CANADA, British Columbia: Cranbrook, 1.ix.1930 (J.H. Pepper) [CNC]; Oliver, 1,000', 21.viii.1953 (J.R. McGillis) [CNC]; Oliver, 15.ix.1953 (J.E.H. Martin) [CNC]; Oliver, UBC Geology Camp, at light, 24.vii.1989 (S.G. Cannings) [UBC]; Oliver, IRI, 'Watertower,' *Purshia* association, pitfall trap, 1.vi-7.vii.1994 (G.G.E. Scudder) [UBC]; Osoyoos, Black Sage Rd., *Purshia* association, pitfall trap, 2.vi-5.vii.1994 (G.G.E. Scudder) [UBC]; Osoyoos, IRI, Inkaneep, *Purshia* association, pitfall trap, 31.v-5.vii.1994 (G.G.E. Scudder) [UBC]; Osoyoos L., Osoyoos IRI, *Purshia* association, pitfall trap, 30.v-4.vii.1994 (G.G.E. Scudder) [UBC].

Phytocoris purshiae Stonedahl

Material examined. CANADA, British Columbia: Osoyoos, Desert Centre, 49°03'N 119°31'W, *Purshia tridentata*, 16.viii.1997 (G.G.E. Scudder) [UBC]; Osoyoos, East Bench, *P. tridentata*, 15.vii.1990 (G.G.E. Scudder) [UBC]; Osoyoos L., I.R., south end, *P. tridentata*, 30.vi.1996 (G.G.E. Scudder) [UBC].

Phytocoris purvus Knight

Material examined. CANADA, **Ontario:** Carp, 19.viii.1954 (J.E.H. Martin) [CNC]. **Québec:** Lac Mondor, Ste.-Flore, light, 1–2.viii.1951, 8.viii.1951 (E.G. Munroe) [CNC]; St. Jean, 8.viii.1961 (G. Brumpton) [CNC].

Phytocoris rostratus Knight

Material examined. CANADA, **British Columbia:** Chopaka, *Chrysothamnus nauseosus*, 27.viii.1986 (G.G.E. Scudder) [UBC]; Chopaka, BGxh1, SN, pitfall trap, 26.vi–10.vii.1995 (J. Jarrett) [UBC].

Phytocoris rubellus Knight

Material examined. CANADA, **Ontario:** Dashwood, *Salix*, 7.ix.1961 (L.A. Kelton) [CNC]; Exeter, 8.ix.1961 (J. Brumpton) [CNC]; Inverhuron, *Salix*, 7.ix.1961 (J. Brumpton) [CNC]; Niagara F., 10.viii.1961 (L.A. Kelton) [CNC]; Tillsonburg, *Salix*, 18.vii.1962 (Kelton & Thorpe) [CNC].

Phytocoris schotti Knight

Material examined. CANADA, **Ontario:** Tillsonburg, willow, 11.vii.1958 (L.A. Kelton) [CNC].

Phytocoris strigosus Knight

Material examined. CANADA, **British Columbia:** Osoyoos, *Chrysothamnus nauseosus*, 27.viii.1986 (G.G.E. Scudder) [UBC]; Osoyoos, East Bench, to light, 13.vi.1993 (G.G.E. Scudder) [UBC]; Penticton, West Bench, light trap, 9.vii.1988, 20.vii.1990 (S.G. Cannings) [UBC].

Phytocoris tenuis Van Duzee

Material examined. CANADA, **British Columbia:** Cawston, 4 mi E, 9.vii.1959 (L.A. Kelton) [CNC]; Chopaka, BGxh1, SN, pitfall trap, 28.ix–25.x.1996 (J. Jarrett) [UBC]; Green Mt., Old Apex Mt. Rd., 8.vii.1982, (H. Kirk) [UBC]; Kamloops, 23.vii.1939 (G.J. Spencer) [UBC]; Lytton, 18 mi N, 12.vi.1963 (G.G.E. Scudder) [UBC]; Oliver, 20.ix.1953 (J.E.H. Martin) [CNC]; Oliver, 8.vii.1959 (L.A. Kelton) [CNC]; Osoyoos, East Bench, *Artemisia tridentata*, 25.v.1990, 9.vi.1990 (G.G.E. Scudder) [UBC]; Osoyoos, Haynes Ecological Reserve, *A. tridentata*, 13.vi.1990 (G.G.E. Scudder) [UBC]; Osoyoos, nr. Haynes Ecological Reserve, *Artemisia-Purshia* association, pitfall trap, 21.v–13.vi.1990 (G.G.E. Scudder) [UBC]; Penticton, light trap, 27.vi.1981, 3.vii.1981, 4.vii.1981 (S.G. Cannings) [UBC]; Penticton, West Bench, 29.vi.1981 (S.G. Cannings) [UBC]; Summerland, 4.vii.1933 (A.N. Gartrell) [CNC]; Summerland, 22.x.1932 (A.N. Gartrell) [CNC]; Vaseux L., Oliver, 26.vi.1959 (L.A. Kelton) [CNC]; Vaseux Crk., 'Kennedy bench,' AN BGxh pit fall trap, Z4–1; 3.vi–8.vii.1994, 5.vii.1994–12.viii.1995 (G.G.E. Scudder) [UBC]; White Lake, Fairview, BGxh1, SWm, pan trap, 13.vi–20.vi.1995, 20.vi–27.vi.1995 (J. Jarrett) [UBC]; White Lake, Fairview, *A. tridentata*, big sage assoc., BGxh1 SWm, 29.vi.1966 (G.G.E. Scudder) [UBC].

Phytocoris yollabollae Bliven

Material examined. CANADA, **British Columbia:** Anarchist Mt., Osoyoos, 13.vii.1970 (L.A. Kelton) [CNC]; Christina L., 12.vii.1970 (L.A. Kelton) [CNC]; Oliver, 19.vii.1970 (L.A. Kelton) [CNC]; Rossland, 11.vii.1970 (L.A. Kelton) [CNC]; Rossland, 9.viii.1970 (L.A. Kelton) [CNC]; Soda Cr., 2.vii.1951 (H.R. MacCarthy) [CNC]; Soda Cr., 27.vi.1951 (H.R. MacCarthy) [CNC]; Vernon, 14.vii.1927 (D.B. Waddell) [CNC]; Vinsulla, 28.v.1962 (G.G.E. Scudder) [UBC].

Pinalitus cervinus (Herrich-Schaeffer)

Material examined. CANADA, **Nova Scotia:** Halifax, basswood, 10.viii.1980 (L.A. Kelton) 1♂, 3 ♀ [CNC]; Halifax, 17.vii.1994, sweeping (R. Hoebeke & A.G. Wheeler, Jr.) 1♂ [USNM].

Discussion. This Palearctic mirid occurs throughout Europe, Great Britain, Algeria, and Morocco (Kerzhner and Josifov, 1999). Even though Stichel (1930) reported it from many plants, Southwood and Leston (1959) and Wagner (1971) indicated that the primary host in the British Isles and continental Europe is lime, *Tilia europaea* L. It is less frequently collected on ash (*Fraxinus*), hazel (*Corylus*), and ivy (*Hedera*). On all its hosts, immature and adults feed on buds, flowers, and unripe fruits. It can also be collected from foliage. The egg is the overwintering stage in Sweden (Kullenburg, 1944), whereas in Britain (Southwood and Leston, 1959) and Mediterranean Europe (Wagner, 1971) it is the adult. One (Wagner, 1971) or two (Southwood and Leston, 1959) generations a year are reported with immatures present in July and again in early September. The North American specimens reported from basswood, *Tilia* sp. (Tiliaceae) were teneral in August. Because Kullenburg (1942) found eggs in ash buds or in bark crevices just below the bud in hazel, it is suspected that *P. cervinus* was introduced as eggs from imported plant stock. The dark bifurcate mark on the scutellum, the small apical reddish-brown mark on the cuneus, the diffuse dark band on the distal region of the corium, male genitalia, and host plant will distinguish this species from native *Pinalitus*. All other North American *Pinalitus* inhabit conifers, have a more uniformly bright, red or reddish-brown dorsum, and an unmarked or more broadly marked scutellum.

Polymerus flavocostatus Knight

Material examined. CANADA, **Manitoba:** Virden, 12.vii.1953 (Brooks & Kelton) [CNC]. **Ontario:** Kingsville, goldenrod, 18, 19.vi.1962 (L.A. Kelton) [CNC]; Leamington, 26.vi.1931 (G.S. Walley) [CNC] and 29.vi.1961 (G. Brumpton) [CNC]; London 24.vi.1985 (G.G.E. Scudder) [CNC]; Newry, 12.vii.1962 (Kelton & Thorpe) [CNC]; Pt. Pelee, 9.vii.1931 (G.S. Walley) [CNC]; Woodstock, *Salix*, 10.vii.1962 (Kelton & Thorpe) [CNC]. **Québec:** La Minerve, 28.viii.1956 [CNC].

Taylorilygus apicalis (Fieber)

Material examined. CANADA, **New Brunswick:** Fundy Nat. Pk., 25.viii.1976 (L.A. Kelton) [CNC]. **Ontario:** Pelee Island, 12.xi.1961 (Kelton & Brumpton) [CNC].

Tropidosteptes pacificus (Van Duzee)

Material examined. CANADA, **British Columbia:** Victoria, ash, 27.viii.1920 (W. Downes) [UBC]; Victoria, ash, 10.x.1927 (W. Downes) [UBC]; Victoria, 10.vii.1931 (W.H.A. Preece) [UBC].

Note. Previously reported from British Columbia as *T. amoenus* Uhler (Parshley 1921, Downes 1927); *T. amoenus* does not occur in British Columbia. Parshley (1921) noted that the bugs were "found on poplar and maple trees near the docks, not elsewhere on the island."

Tropidosteptes rufusculus (Knight)

Material examined. CANADA, **Ontario:** London, ash, 13.vi.1954 (G.S. Walley) [CNC]; Tillsonburg, 9.vi.1931 (G.S. Walley) [CNC].

Subfamily ORTHOTYLINAE

Tribe ORTHOTYLINI

Ceratocapsus denticulatus Knight

Material examined. CANADA, **British Columbia:** Galiano Is., douglas fir, 25.viii.1982 (G.G.E. Scudder) [UBC]; Hornby Is., Norman Point, 6.viii.1988 (S.G. Cannings) [UBC].

Ceratocapsus uniformis Knight

Material examined. CANADA, **Ontario:** London, walnut, 13.viii.1977 (L.A. Kelton) [CNC].

Ceratocapsus vicinus Knight

Material examined. CANADA, **Ontario:** Turkey Point, 13.vii.1955 (L.A. Kelton) [CNC].

Dichaetocoris piceicola (Knight)

Material examined. CANADA, **Alberta:** Banff-Jasper Hwy., Banff Nat. Pk., 25.vii.1970 (L.A. Kelton) [CNC]; Coal Valley, 31.viii.1970 (L.A. Kelton) [CNC]; Eisenhower Jct., 5.viii.1970 (L.A. Kelton) [CNC]; Jasper Hwy., Waterfowl L., 20.viii.1963 (G.G.E. Scudder) [CNC]; Kananaskis Rd., 28.vii.1974 (L.A. Kelton) [CNC]. **British Columbia:** Anarchist Mt., Osoyoos, 13.vii.1970 (L.A. Kelton) [CNC]; Apex Mt., 1850 m, *Abies lasiocarpa*, 28.viii.1988 (G.G.E. Scudder) [CNC]; Blackwall, Manning Prov. Pk., 23.vii.1970 (L.A. Kelton) [CNC]; Blackwall, Manning Prov. Pk., *A. lasiocarpa*, *Picea*, white spruce, 23.vii.1970 (L.A. Kelton) [CNC]; Christina L., *Pinus contorta*, 15.vii.1970 (L.A. Kelton) [CNC]; Garibaldi Prov. Pk., *A. lasiocarpa*, 18.viii.1970 (L.A. Kelton) [CNC]; Gibson Pass, Manning Prov. Pk., 11.viii.1970 (L.A. Kelton) [CNC]; Glacier Nat. Pk., 15.vii.1970 (L.A. Kelton) [CNC]; Glacier Nat. Pk., Rogers Pass, 31.vii.1970 (L.A. Kelton) [CNC]; Hedley, douglas fir, 22.vii.1970 (L.A. Kelton) [CNC]; Hodder L., 22.vii.1983 (G.G.E. Scudder) [CNC]; Iskut, Tatogga L., 21.vii.1983 (G.G.E. Scudder) [UBC]; Kinaskan L.,

22.vii.1983 (G.G.E. Scudder) [UBC]; Kitwanga, 5 mi W, 23.vii.1983 (G.G.E. Scudder) [UBC]; Merritt, 10 mi S, 19.vii.1959 (L.A. Kelton) [CNC]; Mt. Revelstoke Nat. Pk., *A. lasiocarpa*, 30.vii.1970 (L.A. Kelton) [CNC]; Mt. Kobau, 11 km NW of Osoyoos, summit, 1834 m, *Abies* sp., 30.viii.1993 (M.D. Schwartz) [CNC]; Mt. Kobau, Osoyoos, 1865 m, *A. lasiocarpa*, 27.viii.1988 (G.G.E. Scudder) [CNC]; Mt. Kobau, Osoyoos, 13.viii.1997 (G.G.E. Scudder) [CNC]; Mt. Kobau summit, Osoyoos, MSxh, *A. lasiocarpa*, 13.viii.1997 (G.G.E. Scudder) [UBC]; Oliver, 19.vii.1970 (L.A. Kelton) [CNC]; Pink Mt., spruce, 17.viii.1982 (L.A. Kelton) [CNC]; Racing R., Alaska Hwy., km 670, 1.viii.1982 (G.G.E. Scudder) [UBC]; Rogers Pass, Glacier Nat. Pk., 31.vii.1970 (L.A. Kelton) [CNC]; Rossland, 9.vii.1970 (L.A. Kelton) [CNC]; Rossland, 8 mi W, alpine spruce, 20.vii.1959 (L.A. Kelton) [CNC]; Rossland, 11.vii.1970 (L.A. Kelton) [CNC]; Saanichton, 15.vii.1959 (L.A. Kelton) [CNC]; Sicomous, 17.vii.1970 (L.A. Kelton) [CNC]; Stewart, 22.vii.1983 (G.G.E. Scudder) [UBC]; Strawberry Flats, Muncho L. Prov. Pk., 31.vii.1982 (G.G.E. Scudder) [UBC]; Summit L., lodgepole & spruce, 16.viii.1982 (L.A. Kelton) [CNC]; Tetsa R. campsite, Alaska Hwy., km 603.8, 1.vii.1982 (G.G.E. Scudder) [UBC]; Yoho Nat. Pk., 16.vii.1970 (L.A. Kelton) [CNC]. **Yukon Territory:** Boundary, 19.8 km E, 11.vii.1983 (G.G.E. Scudder) [UBC]; Dawson, spruce, 21.vii.1982 (L.A. Kelton) [CNC]; Dempster Hwy., Tombstone, spruce, 27.vii.1983 (L.A. Kelton) [CNC]; Destruction Bay, spruce, 26.vii.1982 (L.A. Kelton) [CNC]; Kluane, Alaska Hwy., Milepost 1052, 29.viii.1982 (J.J. Robinson) [UBC]; Sulphur Cr. Rd., *Picea glauca*, FIS 61-7513-05, 17.viii.1961 [PFC]; Tagish, 11.viii.1983 (L.A. Kelton) [CNC].

Ilnacorella argentata Knight

Material examined. CANADA, **British Columbia:** Anarchist Mt., Osoyoos: 6.vii.1959 (R. Madge) [CNC] and sunflower 13.vii.1970 (L.A. Kelton) [CNC]; Aspen Grove, sunflower, 10.vii.1975 (L.A. Kelton) [CNC]; Clinton, *Balsamorhiza*, 13 and 14.vii.1938 (G.S. Walley) [CNC]; Fife, *Balsamorhiza sagittata*, 8.vi.1959 (E.E. MacDougall) [CNC]; Fife, 5 mi E of, 8.vi.1959 (R.E. Leech, R. Madge) [CNC]; Hedley, 29.viii.1923 (C.B. Garrett) [CNC]; Madden Lake, Oliver, 3.vii.1959 (L.A. Kelton) [CNC]; McIntyre Creek, Oliver, *Balsamorhiza*, 27.v.1959, 6.vi.1959, and 4.vii.1959 (R.E. Leech, L.A. Kelton) [CNC]; Oliver: 15.v.1959 (E.E. MacDougall) [CNC], 16.v.1956 (N. Anderson) [CNC], 27.v.1959 (R.E. Leech) [CNC], 18.vi.1956 (N. Anderson) [CNC], and *Phacelia*, 25.v.1959 (R.E. Leech) [CNC]; Osoyoos, *Balsamorhiza*, 21, and 28.v.1938 (G.S. Walley) [CNC]; Richter Pass, Osoyoos, *B. sagittata*, 24.v.1959 (L.A. Kelton) [CNC]; Rock Creek, 7.vi.1959 (L.A. Kelton) [CNC]; Sawmill Lake, Oliver, 30.vi.1959 (L.A. Kelton) [CNC]; Summerland, sunflower, 10.vii.1975 (L.A. Kelton) [CNC]; Vaseaux Lake, Oliver, 23.v.1959 (R.E. Leech) [CNC]; Vernon, 5.vi.1937 (E.P. Venables) [CNC]; det. as *Orthotylus insignis* Van Duzee by Van Duzee, 8.vi.1918 (R.C. Treherne) [CAS, CNC]; 30.vii.1923 (D.G. Gillespie) [CNC]; White Lake, Oliver, *Balsamorhiza*, 28.v.1959 (L.A. Kelton) [CNC].

Discussion. Parshley (1919) and Downes (1927) recorded *Orthotylus insignis* Van Duzee in Vernon, British Columbia from specimens identified by E.P. Van Duzee. Kelton (1979) examined the type of *O. insignis* and based primarily on the black scale-like setae and male parameres provided the new combination *Ilnacorella in-*

signis and stated that this species has a close relationship with *Ilnacorella nigrisquamosa* Knight. Henry and Wheeler (1988) listed *I. insignis* from British Columbia based on Parshley (1919) and Downes (1927). We have not examined the type of *O. insignis*, but the material quoted by Parshley and Downes does not have black scale-like setae and is correctly identified as *I. argentata* Knight.

Melanotrichus vestitus (Uhler), **New Combination**

Macrotylus vestitus Uhler, 1890:88 (original description); Van Duzee, 1916a:214 (key, in part). Lectotype here designated to ensure the proper and consistent application of the name: ♀ “Los Angel [handwritten]; 167; PR Uhler collection; *Macrotylus vestitus* Cal. Uhl. [handwritten]; *Macrotylus vestitus* Uhl. Cal. [handwritten] Det UHLER” deposited in the National Museum of Natural History, Washington, D.C. Three ♀ paralectotypes recognized (USNM): one with “Los Angel [handwritten]; PR Uhler collection”; one with “Los Ang [handwritten]; PR Uhler collection; *Macrotylus vestitus* Cal. ♀ Uhl. [handwritten]; *Macrotylus vestitus* Uhl. Cal. [handwritten] Det UHLER”; one with “Los Angeles Co., CAL; COTYPE (by Uhler) [red label]; *Macrotylus vestitus* Uhl. O.H. [handwritten]”.

Macrotyloides vestitus: Van Duzee, 1916b:222 (specimens, in part).

Macrotyloides symmetricus Knight, 1928:235 (original description). **New synonym.**

Macrotyloides vestitus: Kelton, 1959:31, fig. 72 (male genitalia); Knight, 1968:98 (distribution).

Material examined. CANADA, **Alberta**: Kananaskis Rd., 27.vii.1974 (L.A. Kelton) [CNC]. **British Columbia**: Anaheim L., 18.vii.1978 (G.G.E. Scudder) [UBC]; Anarchist Mt., Osoyoos, *Phacelia*, 5.vii.1959 (R. Madge) [CNC]; Anarchist Mt., Osoyoos, 6.vii.1959 (R. Madge) [CNC]; Blackwall, Manning Provincial Park, 23.vii.1970 (L.A. Kelton) [CNC]; Fruitvale, 11.vii.1970 (L.A. Kelton) [CNC]; Mad-den L., Oliver, 8.vii.1959 (L.A. Kelton) [CNC]; McIntyre Cr., Oliver, *Balsamorhiza*, 6.vi.1959 (R.E. Leech) [CNC]; Oliver, IRI, ‘Water tower,’ BGxh1, AN, pitfall trap U3-1, 6.v-1.vii.1994 (G.G.E. Scudder) [UBC]; Oliver, *Phacelia linearis*, 25.v.1959, (L.A. Kelton) [CNC]; Oliver, 25.v.1959 (R.E. Leech) [CNC]; Oliver, 15.v.1959 (E.E. MacDougall) [CNC]; Osoyoos, Haynes Ecol. Res., 2.vi.1994 (G.G.E. Scudder) [UBC]; Osoyoos, Haynes Ecol. Res., 20.vi.1994 (G.G.E. Scudder) [UBC]; Osoyoos, Haynes Ecol. Res., *P. linearis*, 21.vi.1994 (G.G.E. Scudder) [UBC]; Richter Pass, Osoyoos, *Antennaria*, 6.vi.1959 (E.E. MacDougall) [CNC]; Vaseux L., Oliver, 20.v.1959 (L.A. Kelton) [CNC]; White L., Oliver, 23.v.1959 (E.E. MacDougall) [CNC]. USA: **California**: *Los Angeles Co.*: Los Angeles Co. (Coquillet), det H.H. Knight *Macrotyloides vestitus* (Uhler) [USNM]; Tanbark Flat, 18.vi.1956, det J.C.M. Carvalho 1974 *Macrotyloides vestitus* (Uhler) (J.I. Stage) [USNM]. *Orange Co.*, San Juan Cmpgrd, Hwy 74, Cleveland Nat. For., 405 m, *Phacelia distans*, 12.v.1978 (J.D. Pinto & R.T. Schuh) [AMNH, UCR]. *Riverside Co.*, Riverside, *P. ramosissima*, 23.v.1964 (L.D. Anderson) [UCR]. *San Bernardino Co.*, 4 mi E of Mentone, 750 m, *P. distans*, 11.v.1978 (J.D. Pinto & R.T. Schuh) [AMNH, UCR, USNM]; Camp Baldy, *Phacelia* sp., 14.vi.1917 (L.L. Muchmore), det H.H. Knight *Macrotyloides vestitus* (Uhler) [USNM]. *San Diego Co.*: La Mesa, 21.iv.1898 [USNM]; San Diego Co., 11, 12.iv.1914 & 8, 23.v.1913 (E.P. Van Duzee) [including 1♂, 23.v.1913 and 1♀, 8.v.1913 with det E.P. Van Duzee? *Macrotyloides vestitus*][CAS, USNM]. *Shasta*

Co., Mt Shasta City, 30.vi.1937 (B.P. Bliven) [CAS]. **Colorado:** Clear Creek Co.: Doolittle Ranch, Mt Evans, 9,800 ft, 17, 23.vii.1961 & 10.viii.1961 (B.H. Poole & J.R. Stainer) [CNC]; Mt Evans, 13,200 ft, 3.viii.1961 (B.H. Poole) [CNC]; West Chicago Crk, Arapaho Nat. For., 9,800 ft, 28, 29.vii.1968 (L.A. Kelton) [CNC]. Larimer Co.: Estes Park, 8,800 ft, 27.viii.1920 (H.C. Severin) holotype *Macrotyloides symmetricus* Knight [USNM]; Fish Crk Picnic Grd, Pingree Pk Rd, 46 mi W of Fort Collins, 7,700 ft, 14.vii.1986 (J.T. Polhemus & R.T. Schuh) [AMNH]; Little Beaver, 17, 19.vii.1898 (E.D. Ball) [CNC, TAM, USNM]. **Idaho:** Latah Co.: Moscow Mt, 18.vi.1932 (T.A. Brindley), det H.H. Knight *Macrotyloides vestitus* (Uhler) [AMNH, CNC, TAM, USNM]; Viola Grade, 3,000 ft, 18.vi.1932 (W.E. Shull) [TAM, USNM]. Nez Perce Co., top of Lewiston Grade, 8 mi NW of Lewiston, 2,600 ft, flowers of *Achillea* & *Phacelia*, 30.vi.1975 (W.J. Turner) (WSU). **Oregon:** Jackson Co., 0.5 mi S of Siskiyou Summit, Old Siskiyou Rd, 4,300 ft, *Phacelia* sp. 27.vi.1979 & 1.vii.1994 (M.D. Schwartz) [AMNH, CNC]. Wheeler Co., 0.1 & 0.2 mi E of Ochoco Divide, Ochoco Nat. For., *Phacelia* sp., 22.vi.1979 (R.T. Schuh & M.D. Schwartz) [AMNH, CNC].

Discussion. Uhler (1890) described *Macrotylus vestitus* for "a few females" from Los Angeles, California. Van Duzee (1916a, 1916b) erected *Macrotyloides* to accommodate *Macrotylus vestitus* and his new species *Macrotyloides apicalis*. Knight (1928) described *M. symmetricus* (Knight 1928) for a male specimen from Colorado. Several taxonomic changes are required based on the examination of *M. symmetricus* (holotype) and *Macrotylus vestitus* (lectotype, designated herein). It is our conclusion that the lectotype of *M. vestitus* correctly belongs to *Melanotrichus* Reuter and is conspecific with the later described *Macrotyloides symmetricus*. Van Duzee designated *Macrotylus vestitus* the type species of *Macrotyloides*. Our interpretation makes *Macrotyloides* Van Duzee a junior synonym of *Melanotrichus* and leaves *Macrotyloides apicalis* and some specimens misidentified as "*M. vestitus*" by Van Duzee (1916b) that are not congeneric with *Macrotylus vestitus* without correct generic placement. The erection of a new genus to accommodate this material will be addressed separately.

Melanotrichus vestitus is easily distinguished from congeners by the long labium that reaches the base of the genital segment and the sharply prominent clypeus. The male genitalia illustrated by Kelton (1959:31, fig. 72) documented a single vesical spiculum, C-shaped left paramere, and L-shaped right paramere similar in form to other *Melanotrichus* species. Knight (1928) described *Macrotyloides symmetricus* based on one male from Estes Park, Colorado and differentiated his species from *M. vestitus* by the "bilaterally symmetrical" parameres and absence of black "bristles" on the frons and base of the tylus [=clypeus]. However, these diagnostic features are in error as reexamination of the holotype revealed that the apical portion of the left paramere is obscured by glue, accounting for the apparent symmetry of the parameres and that the head is completely denuded of setae. Based on specimens from Alberta, British Columbia, California, Colorado, Idaho, and Oregon we propose the synonymy of *Macrotyloides symmetricus* Knight with *Macrotylus vestitus* Uhler. The obvious suberect, black, bristle-like setae on the dorsum and legs, the absence of pale simple setae on the dorsum; the pointed clypeus; the flattened vertex; the uniformly colored hemelytral membrane of the female; the narrower anterior margin of the pronotum; and the male genitalia distinguish *Melanotrichus vestitus* from other

specimens previously placed in *Macrotylodes*. The breeding host for this species is *Phacelia linearis* (Pursh.) Holtz. (Hydrophyllaceae) in British Columbia and *P. distans* Benth. and *P. ramosissima* Dougl. ex Lehm. in California.

Orthotylus contrastus Van Duzee

Material examined. CANADA, **British Columbia:** Cariboo, Westwick L., 17.vi.1961, 16.vi.1962, 30.vi.1962 (G.G.E. Scudder) [UBC].

Orthotylus pennsylvanicus Henry

Material examined. CANADA, **Alberta:** High Prairie, 22.vi.1961 (A.B. Brooks) [CNC]. **Manitoba:** Winnipeg, University of Manitoba Campus, nr. Red R., *Picea glauca* (Moench) Voss (Pinaceae), 6.vii.1990 (M.D. Schwartz) [CNC]. **New Brunswick:** Edmundston, *Picea*, 25.vii.1966 (L.A. Kelton) [CNC]. **Nova Scotia:** Big Intervale, *Picea*, 23.vii.1966 (L.A. Kelton) [CNC]; Cape Breton Nat. Pk., *Picea*, 22.vii.1966 (L.A. Kelton) [CNC]; Halifax, *Picea*, 7–8.viii.1966 (L.A. Kelton) [CNC]; Halifax, *Picea*, 22.vii.1976 (L.A. Kelton) [CNC]; Halifax, spruce, 7.viii.1980 (L.A. Kelton) [CNC]; Ingonish, *Picea*, 30.vii.1976 (L.A. Kelton) [CNC]; Kentville, *Picea*, 15–17.vii.1966 (L.A. Kelton) [CNC]; Kentville, 3–6.vii.1976 (L.A. Kelton) [CNC]; New Harris, C.B.H., grey composite, 23.vii.1966 (L.A. Kelton) [CNC]. **Ontario:** Corkery, *Picea*, 4.vii.1962 (D. Brown) [CNC]; Nestor Falls, J. pine, 20.vi.1978 (L.A. Kelton) [CNC]; Ottawa, Central Experimental Farm, *P. glauca* (Moench) Voss, 19.vi.1991 (M.D. Schwartz) [CNC]; Pitopiko R., picnic area on Rt. 11 between Longlac & Hearst, *P. mariana* (Mill) (Pinaceae), 21.vii.1990 (M.D. Schwartz) [CNC]. **Québec:** Fabre, white spruce, 5.vii.1963 (W. Gagné) [CNC]; Laniel, *Picea*, 10–11.vii.1963 (L.A. Kelton) [CNC].

Orthotylus robiniae Johnston

Material examined. CANADA, **Ontario:** Ottawa, Central Experimental Farm, *Gleditsia triacanthos* L., 19.vi.1991 (M.D. Schwartz) [CNC].

Orthotylus serus Van Duzee

Material examined. CANADA, **Ontario:** Exeter, 12.vii.1962 (Kelton & Thorpe) [CNC]; Dunnville, 9.vii.1962 (Kelton & Thorpe) [CNC].

Paraproba cincta Van Duzee

Paraproba cincta Van Duzee, 1917:273.

Paraproba nigrinervis Van Duzee, 1917:274. **New synonym.**

Discussion. The suspicion that *P. nigrinervis* and *P. cincta* preferred different host plants was the only reservation Carvalho (1987:90) had when he refrained from synonymizing the former species. In his key to the genus the two species were separated by the length of the labium and size of the eye; in *P. nigrinervis*, the labium does not surpass the hind coxa and the eye is small, whereas in *P. cincta*, the labium reaches abdominal segments III–IV and the eye is large. However, Carvalho noted that the labium and body lengths of some of the paratypes of *P. nigri-*

nervis are as long as those of *P. cinctus* and that male genitalia of both taxa are similar. We have examined all the type material and many specimens from Alberta, British Columbia, California, Idaho, Oregon, and Washington and concur with Carvalho in not finding any characters which can distinguish two taxa. Therefore we consider *P. nigrinervis* to be the junior synonym of *P. cincta* Van Duzee. We also do not find evidence to indicate host preference between the two nominate taxa. Specimens were collected on shrubs or small trees from the following seven plant families: *Corylus cornuta* Marsh var. *californica* (A. DC.) Sharp (Betulaceae); *Cornus* sp. (Cornaceae); *Shepherdia canadensis* (L.) Nutt. (Elaeagnaceae); fern (Polypodiaceae); *Physocarpus* sp., *Potentilla fruticosa* L., *Rubus* sp. (Rosaceae); *Ulmus campestris* L. (Ulmaceae); *Urtica* sp. (Urticaceae). This wide array of plant hosts may indicate that *P. cincta* is to some extent entomophagous as the superficially similar orthotyline species *Blepharidopterus angulatus* (Fallén), *B. diaphanus* Kirschbaum, *B. provancheri* (Burque), and *Malacocoris chlorizans* Panzer.

Paraproba hamata Van Duzee

Material examined. CANADA, **British Columbia:** Campbell L., 17.vii.1961 (G.G.E. Scudder) [UBC]; Gray Creek, 22.vii.1959 (L.A. Kelton) [CNC]; Ladysmith, *Holodiscus discolor*, 12 and 16.vii.1959 (L.A. Kelton) [CNC]; Ladysmith, 14-17.viii.1970 (L.A. Kelton) [CNC]; Langford, *Rubus* sp., 14.vii.1959 (L.A. Kelton) [CNC]; Royal Oak, fern, 15 and 16.vii.1959 (L.A. Kelton) [CNC]; Saanich Distr., *Salix lasiandra*, 23.vii.1925 (W. Downes) [UBC]; Saanichton, 15.vii.1959 (L.A. Kelton) [CNC].

Parthenicus basicornis Knight

Material examined. CANADA, **British Columbia:** Summerland, 9.vii.1975, in orchard taken at light (L.A. Kelton) [CNC].

Parthenicus brindleyi Knight

Material examined. CANADA, **British Columbia:** Kelowna, 10 mi S of N end of Okanagan Mt. Pk., *Physocarpus*, 29.viii.1993 (M.D. Schwartz) [CNC].

Parthenicus giffardi Van Duzee

Material examined. CANADA, **British Columbia:** Kelowna, 10 mi S of N end of Okanagan Mt. Pk., *Ceanothus*, 29.viii.1993 (M.D. Schwartz) [CNC].

Parthenicus grex Van Duzee

Material examined. CANADA, **British Columbia:** Duncan, 16.viii.1970 (L.A. Kelton) [CNC]; Koksilah, regeneration, pitfall trap 1.ix-7.x.1992 (K. Craig) [UBC]; Osoyoos, Mt. Kobau Rd., IDFxh1, VKw, pitfall trap, 18.viii-28.ix.1996 (J. Jarrett) [UBC]; Summerland, at light, 12.vii.1992 (L.A. Kelton) [CNC].

Parthenicus pallidicollis Van Duzee

Material examined. CANADA, **British Columbia:** Osoyoos, *Purshia tridentata*, 29.viii.1988 (G.G.E. Scudder) [UBC]; Osoyoos, Black Sage Rd., Wildlife Reserve,

P. tridentata, 21.viii.1997 (G.G.E. Scudder) [UBC]; Osoyoos, East Bench, *P. tridentata*, 15.vii.1990, 25.viii.1990, 12.vii.1997 (G.G.E. Scudder) [UBC]; Osoyoos, nr. Haynes Ecological Reserve, *P. tridentata*, 2.ix.1993, 2.x.1993 (G.G.E. Scudder) [UBC]; Penticton, West Bench, light trap, 13.vii.1986, 22.viii.1987, 24.viii.1987 (S.G. Cannings) [UBC]; Vaseux L., Wildlife Reserve, *P. tridentata*, 26.viii.1986, 7.vii.1996, 8.vii.1997 (G.G.E. Scudder) [UBC].

Parthenicus sabulosus Van Duzee

Material examined. CANADA, **British Columbia:** Kamloops, hill bluff NW Jct. of Hwy. 1 & 5, Summit Drive, *Artemisia dracunculus*, 28.viii.1993 (M.D. Schwartz) [CNC]; Oliver, *A. frigida*, 29.vi.1959 (L.A. Kelton) [CNC]; Osoyoos, East Bench, *Purshia tridentata*, 12.vii.1997 (G.G.E. Scudder) [UBC]; Summerland, 13.vii.1975 (L.A. Kelton) [CNC].

Pseudopsallus occidentalis Stonedahl & Schwartz

Material examined. CANADA, **British Columbia:** Grand Forks, Abrosimoff carrots, 17.vii.1951 (D.A. Arnott) [CNC]; Rock Cr., 10 km W., 9.vii.1980 (B. Gill) [UBC].

Reuteria bifurcata Knight

Material examined. CANADA, **Ontario:** Carlton Place, *Ostrya*, 6.viii.1965 (D. Brown) [CNC]; Effingham, basswood, 11.viii.1961 (L.A. Kelton) [CNC]; Jordan, *Juglans*, 9.viii.1961 (L.A. Kelton) [CNC]; Jordan, 24.viii.1961 (Kelton & Thorpe) [CNC]; Mt. Pleasant, 20.vii.1955 (L.A. Kelton) [CNC]; New Glasgow, 19.vii.1955 (L.A. Kelton) [CNC].

Reuteria platani Knight

Material examined. CANADA, **Ontario:** Port Erie, *Platanus*, 10.vii.1955 (L.A. Kelton) [CNC].

Slaterocoris ambrosiae (Knight)

Material examined. CANADA, **Ontario:** Harrow, red clover, 103, 14.vii.1998 (C. Teissen) [CNC].

Subfamily PHYLINAE

Tribe HALLODAPINI

Orectoderus arcuatus Knight

Material examined. CANADA, **British Columbia:** Cawston, 4 mi E, 9.vii.1959 (L.A. Kelton) [CNC]; Kilpoola L., 28.v.1989 (D. Sandford & S.G. Cannings) [UBC]; Kilpoola L., 880 m, 6.vi.1983 (S.G. Cannings) [UBC]; Mt. Kobau, km 17.1, 28.vi.1997 (G.G.E. Scudder) [UBC]; Mt. Kobau, pitfall trap K3-1, 20.vii–18.viii.1996 (J. Jarrett) [UBC]; Mt. Kobau, pitfall trap K3-2, 20.vii–18.viii.1996 (J. Jarrett) [UBC]; Mt. Kobau, pitfall trap K3-3, 20.vii–18.viii.1996 (J. Jarrett) [UBC].

Mt. Kobau, pitfall trap K4-1, 20.vii-18.viii.1996 (J. Jarrett) [UBC]; Mt. Kobau, pitfall trap K4-2, 20.vii-18.viii.1996 (J. Jarrett) [UBC]; Mt. Kobau, pitfall trap K4B-1, 20.vii-18.viii.1996 (J. Jarrett) [UBC]; Mt. Kobau, pitfall trap K4B-3, 20.vii-18.viii.1996 (J. Jarrett) [UBC]; Oliver, 1,000', 14.v.1953 (D.F. Hardwick) [CNC]; Oliver, 1,000', 24.v.1959 (E.E. MacDougall) [CNC]; Osoyoos, 19.v.1938 (J.K. Jacob) [CNC]; Osoyoos, 21.v.1953 (D.F. Hardwick) [CNC]; Penticton, West bench, 18.v.1987 (S.G. Cannings) [UBC]; Penticton, West bench, 20.vi.1980 (S.G. Cannings) [UBC]; Richter Pass, Osoyoos, 24.v.1959 (R.E. Leech) [CNC]; White L., *Lupinus sulphureus*, 15.v.1997 (G.G.E. Scudder) [UBC]; White L., Oliver, 23.v.1959 (E.E. MacDougall) [CNC]; White L., Oliver, *Artemisia*, 28.v.1959 (L.A. Kelton) [CNC]; White L., Oliver, 7.vii.1996 (G.G.E. Scudder) [UBC].

Orectoderus salicis Uhler

Material examined. CANADA, **Alberta:** CFB, Suffield, NWA, 50°37'N 110°18'W, PT 4.1.2, 16-29.vi.1995 (A.T. Finnamore) [APM].

Teleorhinus brindleyi Knight

Material examined. CANADA, **British Columbia:** Manning Prov. Pk., Blackwall, 23.vii.1970 (L.A. Kelton) [CNC]; Oliver, *Ceanothus*, 2.vii.1974 (L.A. Kelton) [CNC]; Summerland, *Ceanothus*, 2-11.vii.1974 (L.A. Kelton) [CNC].

Tribe PHYLINI

Amblytylus nasutus Kirschbaum

Material examined. CANADA, **British Columbia:** Oak Bay, Victoria, 2.vi.1959 (R.E. Leech); Royal Oak: 3.vi.1959 (L.A. Kelton); 15.vii.1959 (L.A. Kelton); 16.vii.1959 (L.A. Kelton). Saanich District, 6.vii.1950 (B.P. Beirne) [all specimens CNC]. **Ontario:** Ancaster, *Vicia*, 1, 2, 4.vii.1954 (J.E.H. Martin); Appin, 19.vi.1962 (Kelton/Brumpton); Balm Beach, 29.vi.1962 (G. Thorpe); Beechgrove, 29.vi.1962 (J.R. Vockeroth); Belle River, 7.vi.1961 (Kelton/Brumpton); Binbrook, 17.vi.1962 (Kelton/Brumpton); Braeside, 2.vii.1956 (J.C. Martin); Bryanston, 20.vi.1962 (Kelton/Brumpton); Burtch, 11.vii.1961 (L.A. Kelton); Canborough, 26.vi.1961 (Kelton/Brumpton); Cayuga, 26.vi.1961 (Kelton/Brumpton); Chatterton, *Euphorbia cyparissias*, 15.vi.1953 (D.R. Wadsworth); Christie Lake, Perth, 27.vi.1965 (J.E.H. Martin); Dunnville, 19.vi.1962 (G. Thorpe); Eagle, 26.vi. 1985 (G.G.E. Scudder); Espanola, south of, Great Cloche Island, off of Route 6, Poaceae, 6.vii.1990 (M.D. Schwartz); Fonthill, *Juglans*, *Juniperus virginiana*, *Robinia*, 8.vi.1962 (Kelton/Thorpe); Galt, 19.vi.1961 (Kelton/Brumpton); Gloucester South, Blossom Park, Greenbelt, 9.vi.1991 (M.D. Schwartz); Goderich, 2.vii.1962 (H. Blanchard); Guelph, 19.vi.1961 (G. Brumpton); Harrow, 18.vi.1958 (A.E. Hildebrand); Hespeler, 18.vi.1961 (Kelton/Brumpton); Hilton Beach, 8.vii.1961 (G. Brumpton); Inverhuron, 14.vi.1961 (Kelton/Brumpton); Jordan, 7.vi.1962 (Kelton/Thorpe); Kilworth, 30.vi.1985 (G.G.E. Scudder); Kingsville, 6.vi.1961 (L.A. Kelton); Leamington, 29.vi.1961 (G. Brumpton); 9.vi.1962 (H. Blanchard). Little Current, 9.vii.1961 (G. Brumpton); London, 24.vi.1985 (G.G.E. Scudder); Macton, 7.vi.1962 (Kelton/Thorpe); Madoc, 2.vii.1956 (J.C. Martin); Marmora: 13, 15-16, 19, 20, 24,

25.vi.1952 (J.C. Mitchell, C. Boyle, R. Lambert, J.R. Vockeroth). Massie, 15.vi.1962 (Kelton/Brumpton); Midland, 14.vi.1962 (Kelton/Thorpe); Miller Lake, 12.vi.1962 (Kelton/Thorpe); Mount Pleasant, 10.vii.1958 (L.A. Kelton); New Glasgow, 27.vi.1961 (Kelton/Brumpton); Niagara Falls: 23.vi.1961 (Kelton/Brumpton); 8.vi.1962 (Kelton/Thorpe). North Bay, 14–15.vii.1961 (G. Brumpton); Ojibway, 6–7.vi.1961 (Kelton/Brumpton); Ottawa, 2.vii.1989 (G.G.E. Scudder); Ottawa, Central Experimental Farm, (M.D. Schwartz): *Acer ginniaia*, 7.vi.1991; Fabaceae, 19.vi.1991. Ottawa, Russell Road, near Perley Baseball Diamond, *Eleagnus angustifolia*, 7.vi.1999 (M.D. Schwartz); Ottawa, near Central Experimental Farm, Island Park Drive, *Poa pratensis*, 3.vi.1991 (M.D. Schwartz); Petrolia, 21.vi.1962 (Kelton/Brumpton); Point Pelee: 28–29.vi.1961 (Kelton/Brumpton); 9.vi.1962 (H. Blanchard). Port Burwell, 3.vii.1962 (G. Thorpe, H. Blanchard); Pr. Edward Co. (J.F. Brimley): 19.vi.1952, *Phleum pratense*, 18.vi.1953, 21.vi.1953. Queenston, 24.vi.1961 (Kelton/Brumpton); Rondeau Provincial Park: 27.vi.1961 (Kelton/Brumpton); 26.vi.1985 (G.G.E. Scudder). Saint Catharines, 22.vi.1961 (Kelton/Brumpton); Simcoe, 20.vi.1961 (Kelton/Brumpton); Stittsville (D. Brown): 12.viii.1961, *Thuja occidentalis*, 20.vi.1962. Tilbury, 29.vi.1985 (G.G.E. Scudder); Tobermory, 12.vi.1962, 1.vi.1962 (Kelton/Thorpe); Turkey Point, 14.vi.1962 (G. Thorpe); Vine-land, 9.vi.1962 (Kelton/Thorpe); Vittoria, 20.vi.1961 (G. Brumpton); Wallaceburg, 10, 11.vi.1962 (H. Blanchard); Waterford, 17.vi.1962 (Kelton/Thorpe) [all specimens CNC]. **Québec:** Le Pinnacle, 8 km east of Frelighsburg, 2335 ft, 21.vi.1991 (M. Sharkey); Quyon, 23.vi.1958 (C.H. Mann) [all specimens CNC].

Atractotomus cercocarpi Knight

Material examined. CANADA, **British Columbia:** Fort Nelson, 2.viii.1982 (G.G.E. Scudder) [UBC].

Atractotomus cooperi Stonedahl

Material examined. CANADA, **British Columbia:** Alta L., Mons, 11.vi.1926 (J. McDunnough) [CNC]; Anarchist Mt., Osoyoos, 6.vii.1959 (R. Madge) [CNC]; Apex Mt., 15.vii.1974 (L.A. Kelton) [CNC]; Aspen Grove, 25.vii.1970 (L.A. Kelton) [CNC]; Blackwall, Manning Prov. Pk., 23.vii.1970 (L.A. Kelton) [CNC]; Diamond Head Trail, Squamish, 25.viii.1953 (G.J. Spencer) [CNC]; Duncan, 16.vii.1959 (L.A. Kelton) [CNC]; Duncan, *Pseudotsuga menziesii*, 26.vi.1990 [PFC]; Falkland, 10 mi S, *Galium* sp., 1.vii.1959 (L.A. Kelton) [CNC]; Glacier Nat. Pk., 15.vii.1970 (L.A. Kelton) [CNC]; Hope, 20 mi E, Western hemlock, 26.vii.1957 (N. Anderson) [CNC]; Ladysmith, 13.vii.1959 (L.A. Kelton) [CNC]; Langford, 23.vi.1959 [CNC]; Madden L., Oliver, *P. menziesii*, 8.vii.1959 (L.A. Kelton) [CNC]; Merritt, 19.vii.1959 (L.A. Kelton) [CNC]; Mt. Douglas, Victoria, *Salix* sp., 3.vi.1959 (MacDougall, Kelton, Madge, Leech) [CNC]; Mt. Kobau, 11 km NW, 1834 m, *Abies lasiocarpa*, 30.viii.1993 (M.D. Schwartz) [CNC]; Mt. Kobau summit, Osoyoos, *A. lasiocarpa*, 13.viii.1997, 28.vii.1997 (G.G.E. Scudder) [UBC]; Mt. Kobau summit, 1,860 m, Osoyoos, *A. lasiocarpa*, 3.viii.1997 (G.G.E. Scudder) [UBC]; Mt. Revelstoke Nat. Pk., 6,000', in meadow, 1.viii.1952 (G.J. Spencer) [CNC]; Mt. Revelstoke Nat. Pk., *A. lasiocarpa*, 30.vii.1970 (L.A. Kelton) [CNC]; Oliver, 7 mi E of Indian Res., sage, 8.vii.1959 (L.A. Kelton) [CNC]; Quesnel, 14.vi.1949 (R.S. Smith) [CNC]; Richter

Pass, Osoyoos, *P. menziesii*, 25.vi.1959 (L.A. Kelton) [CNC]; Rosslund, 8 mi W, alpine spruce, 20.vii.1959 (L.A. Kelton) [CNC]; San Juan R., Vancouver Is., *P. menziesii*, 16.vii.1954 [CNC]; Summerland, 10 mi W, *P. menziesii*, 12.vii.1974 (L.A. Kelton) [CNC]; Upper Carmanah Valley, 4.vii.1991, 16.vii.1991 (N. Winchester) [RBCM]; Victoria, 23.vi.1923 (K.F. Auden) [CNC].

Atractotomus kolenati (Flor)

Material examined. CANADA, **British Columbia:** Anarchist Mt., Osoyoos, *Picea*, 13.vii.1970 (L.A. Kelton) [CNC]; Blackwall, Manning Prov. Pk., *P. glauca*, 23.vii.1970 (L.A. Kelton) [CNC]; Buckinghorse R., 4.viii.1982 (G.G.E. Scudder) [UBC]; Kinaskan L., 22.vii.1983 (G.G.E. Scudder) [UBC]; Mt. Revelstoke Nat. Pk., *Abies lasiocarpa*, 30.vii.1970 (L.A. Kelton) [CNC]; Quiniscoe L., Cathedral Prov. Pk., 27.vii.1988 (S.G. Cannings) [UBC]; Rosslund, 11.vii.1970 (L.A. Kelton) [CNC]. **Yukon Territories:** Destruction Bay, spruce, 26.vii.1982 (L.A. Kelton) [CNC].

Atractotomus ramentum Stonedahl

Material examined. CANADA, **Ontario:** Kingsville, 7.vii.1962 (L.A. Kelton) [CNC]; McGregor, 7.vii.1962 (L.A. Kelton) [CNC]; Tillsonburg, 14.vii.1955 (L.A. Kelton) [CNC].

Europiella consors (Uhler)

Material examined. CANADA, **Alberta:** Irvine, 11.vi.1952 (L.A. Konotopetz) [CNC]; Onefour, *Artemisia cana*, 14.vi.1952 (A.R. Brooks) [CNC]. **British Columbia:** Mount Kobau, Osoyoos: 22.v.1996 (J. Jarrett) VK, MSxh, Pitfall Trap K4-A-1; 22.v.-23.vi.1996 [UBC], *A. tridentata*, 1885m, 26.viii.1986 (G.G.E. Scudder) [UBC], *A. tridentata*, 1,885 m 27.viii.1986 (G.G.E. Scudder) [UBC], 27.viii.1988 (G.G.E. Scudder) 1,865 m [UBC], and VK, MSxh, Pitfall Trap K4-A-1, 22.viii.1997 (J. Jarrett) [UBC]; Mount Kobau Road, Osoyoos, IDFdk1, 2RO/6VK: F/2DYd4 Pitfall trap K3-B-4 and K3-A-4, 18.viii.1996 (J. Jarrett) [UBC]. **Manitoba:** Russell, 17.vii.1954 (Brooks, Wallis) [CNC]. **Saskatchewan:** Elbow, 20.vi.1960 (A.R. Brooks) [CNC]; Willow Bunch, 27.vii.1955 (A.R. Brooks) [CNC].

Discussion. The majority of the specimens reported by Kelton (1980) as *Europiella yampae* Knight [a junior synonym of *E. angulata* (Uhler)] are correctly identified as *E. consors*. Some of the specimens from Willow Bunch, SK and all those from Elkwater Park, AB are *E. angulata*.

Europiella pilosula (Uhler)

Material examined. CANADA, **British Columbia:** Chopaka, 30.vi.1981 (G.G.E. Scudder) [UBC]; Haynes Ecology Reserve, Osoyoos Lake, 30.vi.1981 (S.G. Cannings) [UBC]; Kamloops, sagebrush, 25.vi.1950 (B.P. Beirne) [CNC]; Mount Kobau Road, Osoyoos, km 8.2, 1150 m, IDFxh1, 2SP4/5DP4/3DP2, sweeping K2, 3.viii.1997 (G.G.E. Scudder) [UBC]; Naramata, 8 km N of, swe/2, 12.vi.1992 (G.G.E. Scudder) [UBC]; Nicola Lake, alfalfa field, 26.vii.1970 (L.A. Kelton) [CNC]; Osoyoos, NE end, 30.vi.1981 (S.G. Cannings) [UBC]; Penticton, West

Bench, 23.vi.1983 (S.G. Cannings) [UBC]; Princeton, 25.vii.1970 (L.A. Kelton) [CNC].

Knightomiroides contortae Stonedahl & Schwartz

Material examined. CANADA, **British Columbia:** Princeton, 20 mi W, *Pinus ponderosa*, 26.vii.1957 (N. Anderson) [CNC].

Lepidaryrus ancorifer (Fieber)

Material examined. CANADA, **British Columbia:** Chilliwack, 20.vii.1965 (G.J. Spencer) [UBC]; Duncan, Koksilah Nursery, suction trap in *Picea* seedlings, 11.vii.1991 (L. Humble) [CNC]; Langley, 17.vii.1959 (L.A. Kelton) [CNC]; Port Alberni, 22.vii.1986, 24.vii.1988, 29.vii.1988 (G.G.E. Scudder) [UBC]. **Ontario:** Hastings Co., 21.vi.1947 (J.F. Brimley) [CNC]; Rainy R. Dist., 30.vi.1924, 1.vii.1924 (J.F. Brimley) [CNC].

Plagiognathus delicatus (Uhler)

Material examined. CANADA, **Ontario:** Fonthill, Fabaceae, 8.vi.1962 (Kelton and Thorpe) [CNC]; Niagara Falls, *Gleditsia* sp., (Fabaceae), 8.vi.1962 (Kelton and Thorpe) [CNC]; Pt. Pelee, 23.vi.1931 (G.S. Walley) [CNC].

Plagiognathus fusciflavus Knight

Material examined. CANADA, **British Columbia:** Bowser, 20.vi.1955 (G.E. Shewell) [CNC].

Plagiognathus fuscipes Knight

Material examined. CANADA, **British Columbia:** Leancoil, 5.viii.1970 (L.A. Kelton) [CNC]; Oliver, 27.v.1959 (R.E. Leech) [CNC]; Vaseux L., Oliver, 23.v.1959 (R.E. Leech) [CNC]; Yoho Nat. Pk., 16.vii.1970 (L.A. Kelton) [CNC].

Plagiognathus mundus Van Duzee

Material examined. CANADA, **British Columbia:** Christina Lake, *Symphoricarpos* sp., 12.vii.1970 (L.A. Kelton) [CNC]; Fruitvale, 11.vii.1970 (L.A. Kelton) [CNC]; Kelowna, *Ceanothus* sp., 7.vii.1975 (L.A. Kelton) [CNC]; Lac du Bois, Kamloops, 29–31.viii.1954 (G.J. Spencer) [UBC]; McIntyre Creek, Oliver, 4.vii.1959 (L.A. Kelton) [CNC]; Merritt, 10 mi S of, 19.vii.1959 (L.A. Kelton) [CNC]; Meyer Flats, Oliver, *Symphoricarpos* sp., 24.vi.1954 (L.A. Kelton) [CNC]; Meyer Flats, Oliver, 29.vi.1959 (L.A. Kelton) [CNC]; Oliver, *Lupinus* sp., 2.vii.1975 (L.A. Kelton) [CNC]; Quesnel, 12.viii.1947 (G.J. Spencer) [CNC]; Rossland, 8 mi W of, 20.vii.1959 (L.A. Kelton) [CNC].

Plagiognathus tinctus Knight

Material examined. CANADA, **New Brunswick:** Sheffield, *Salix* sp. Salicaceae, 14.vi.1966 (L.A. Kelton) [CNC]. **Ontario:** Exeter, *Salix* sp., Salicaceae, 12.vii.1962

(Kelton and Thorpe) [CNC]; Burtch, 11.vii.1961 (L.A. Kelton) [CNC]; Thornhill, 15.vi.1961 (L.A. Kelton) [CNC]; Dunnville, *Salix* sp., Salicaceae, 9.vii.1962 (Kelton and Thorpe) [CNC]; Tillsonburg, *Salix* sp., Salicaceae, 20.vi.1962 (G. Thorpe) [CNC]; Vienna, *Salix* sp. Salicaceae, 18.vii.1962 (Kelton and Thorpe) [CNC]. **Québec:** Mt. Albert, 25.vii.1954 (W. J. Brown) [CNC]; Mt. Pleasant, *Salix* sp., Salicaceae 10.vii.1958 (L.A. Kelton) [CNC].

Plesiodema sericea Heidemann

Material examined. CANADA, **Ontario:** Kingsville, basswood, 19.vi.1962 (L.A. Kelton) [CNC].

Sthenarus cuneotinctus (Van Duzee)

Material examined. CANADA, **British Columbia:** Champion Lakes, 9.viii.1970 (L.A. Kelton) [CNC]; Kelowna, 10 km S of, N end of road into Okanagan Mountain Park, *Ceanothus velutinus* Dougl. ex Hook. 29.viii.1993 (M.D. Schwartz) [CNC]; Okanagan Falls, *Purshia tridentata*, 8.vii.1975 (L.A. Kelton) [CNC]; Oliver, *P. tridentata*, 18.vi.1956 (N.H. Anderson) [CNC]; Osoyoos, East Bench, 19.vi.1997 (N.C. Scudder) [CNC]; Osoyoos, East Bench, *P. tridentata*, 12.vii.1997 (G.G.E. Scudder) [CNC]; Richter Pass, Osoyoos, *P. tridentata*, 28.vi.1959 (L.A. Kelton) [CNC]; Trail, 21.vii.1959 (L.A. Kelton) [CNC]; Vaseaux Lake, Oliver, 26.vi.1959 (L.A. Kelton) [CNC]; Vaseaux Lake, Oliver, *P. tridentata*, 10.vii.1959 (L.A. Kelton) [CNC]; Vaseaux Lake Wildlife Reserve, *P. tridentata*, 8.vii.1997 (G.G.E. Scudder) [CNC].

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