

RECORDS OF BEES FROM BRITISH COLUMBIA: *Megachilidae*<sup>1\*</sup>

E. R. BUCKELL

Dominion Laboratory, Kamloops, B. C.

This list of 115 species and subspecies of the family *Megachilidae* has been compiled from collections in the Field Crop Insect Laboratory, Kamloops, the University of British Columbia, Vancouver, and the National Collection at Ottawa.

A map is included showing the locations of collection points. It should be realized that the scarcity of records from the northern half of the province does not necessarily denote the absence of these bees in that area, but is due to the fact that it is practically uninhabited and without transportation facilities. There are doubtless interesting distribution records to be obtained in the north, when transportation becomes available.

(C.N.C.) placed before the locality records denotes that all the specimens for

that particular locality are to be found in the Canadian National Collection at Ottawa. The collector is designated by initials only in the text, but a list of collectors' names is included at the end of the paper.

The author wishes to thank Dr. T. B. Mitchell, University of North Carolina, and Dr. C. D. Michener, American Museum of Natural History, for the determination of material; Dr. O. Peck, Systematic Entomology, Ottawa, for supplying the records of British Columbia material in the genus *MEGACHILE* and *COELIOXYS*, in the National Collection, and Professor G. J. Spencer for the loan of the University collections.

<sup>1\*</sup> Contribution No. 2565, Division of Entomology, Science Service, Department of Agriculture, Ottawa, Canada.

Family **MEGACHILIDAE**Subfamily **MEGACHILINAE**

To the *Megachilidae* belong the mason-bees, as well as the leaf-cutter bees with the bees parasitic upon them.

Their nests are built in solid, or in rotten wood, in hollow plant stems, attached to stones or twigs, or in the soil.

Tribe **ANTHIDIINI**Genus **DIANTHIDIUM** Cockerell

The species of this genus use resin in cementing the linings of their nests and are known as "resiniers."

**Dianthidium pudicum** (Cresson)

LYTTON, July 19, 1931, 1♂ (G.J.S.).

Genus **ANTHIDIELLUM** Cockerell**Anthidiellum robertsoni** (Cockerell)

VERNON, March 19, 1945, 1♂ (H.B.L.).  
Reared from a pupal cell. Leech (1948).

**Anthidium divisum** Cockerell

CHILCOTIN, June 26, 1930, 1♂ (E.R.B.);  
July 29, 1930, 1♂ (G.J.S.). ALEXIS  
CREEK, June 30, 1943, 1♂ (E.R.B.).  
KASLO, June 3, 1♀, 21, 1♀, 1906 (L.W.C.).  
OSOYOOS, July 5, 1920, 1♂ (E.R.B.). PEN-  
TICTON, June 29, 1919, 1♀ (E.R.B.).  
CRANBROOK, May 12, 1939, 1♂ (E.R.B.).

**Anthidium tenuiflorae** Cockerell

CHILCOTIN, July 20, 1930, 1♂; June 12,  
1931, 1♀ (G.J.S.). LYTTON, July 19, 1931,  
1♀ (G.J.S.). WALHACHIN, June 29, 1918,  
1♀. MT. MCLAINE, July 12, 1926, 1♀.

MINNIE LAKE, Aug. 4, 1942, 1♂. ALEXIS  
CREEK, June 30, 1943, 1♂ (E.R.B.).

**Anthidium mormonum** Cresson

KASLO, May 28, 1906, 1♂ (L.W.C.).

**Anthidium nebrascense** Swenk

KASLO, June 11, 1905, 1♂; June 3, 1906,  
1♂ (L.W.C.).

**Anthidium wallisi wallowana** Schwarz

KASLO, June 3, 1910, 1♀ (L.W.C.).

**Anthidium palliventre** Cresson

PENTICTON, June 29, 1919, 1♀ (E.R.B.).

**Anthidium emarginatum** Say

KASLO, June 11, 1905, 1♀ (L.W.C.).

**Anthidium banningense** Cockerell

KASLO, May 28, 1♂; June 23, 1♀, 1906;  
June 24, 1913, 1♀ (L.W.C.). PENTICTON,  
May 30, 1919, 1♀; June 3 and 7, 1919, 2♂  
(E.R.B.).

**Anthidium wyomingense** Schwarz

KASLO, June 5, 1906, 1♀ (L.W.C.).

Genus **STELIS** Panzer**Stelis (Chelynia) rubri** Cockerell

CHILCOTIN, June 5, 1930 1♀ (E.R.B.).  
KASLO, June 3, 1906, 1♀ (L.W.C.).

**Stelis (Chelynia) monticola** Cresson

HAT CREEK, June 27, 1943, 1♀ (E.R.B.).

**Stelis (Pavostelis) montana** Cresson

OLIVER, June 9, 1943, 2♀ (E.R.B.).

Tribe **MEGACHILINI**Genus **HERIADES** Spinola**Heriades (Neotrypates) variolosa** Cresson

KASLO, July 23, 1906, 1♂ 2♀ (L.W.C.).

**Heriades (Physostetha) carinata** Cresson

LYTTON, July 19, 1♀, 26, 4♀ (G.J.S.).  
KAMLOOPS, June 13, 1943, 1♂ (G.J.S.).

LILLOOET, July 27, 1943, 11♂ (E.R.B.).  
CRANBROOK, June 21, 1926, 1♂ (A.A.D.).  
INVERMERE, July 29, 1♀, 1926 (A.A.D.).  
VERNON, July 10, 2♂, 23, 5♀, 1920  
(N.L.C.); July 23, 1♀, 25, 1♂ (M.H.R.).  
PENTICTON, June 21, 1919, 1♂ (M.H.R.).

The 11♂ taken at Lillooet were caught from a swarm of these little bees flying low over the soil around a plant of Russian thistle, *Salsola kali* Linn.

Genus ASHMEADIELLA Cockerell

**Ashmeadiella curriei curriei** Titus

Michener (1939) records that typical *curriei* occurs from British Columbia to California and Colorado and that the type ♀ in the U.S. Nat. Museum, was from Kaslo, B. C. This would no doubt have been collected by Mr. L. W. Cockle.

**Ashmeadiella buconis denticulata** (Cresson)

VERNON, July 6, 1929, 4♂ 3♀ (H.B.L.);  
June 12, 1936, 1♂ (I.J.W.). PENTICTON,  
July 21, 1916, 1♀ (R.C.T.). WALHACHIN,  
July 21, 1917, 2♀ (E.R.B.).

**Ashmeadiella cactorum cactorum** (Cockerell)

KASLO, July 23, 1906, 1♀ (L.W.C.).

**Ashmeadiella californica californica** (Ashmead)

CRANBROOK, June 21, 1926, 1♀ (A.A.D.).  
VERNON, July 6, 1929, 1♂ (H.B.L.).

Genus HOPLITIS Klug

**Hoplitis albifrons** Kirby

CHASE, June 6, 1937, 2♂ (E.R.B.). ALEXIS  
CREEK, June 30, 1943, 1♀ (E.R.B.). PENTICTON,  
June 7, 2♂, 21, 1♂ (E.R.B.). KAMLOOPS,  
June 13, 1♀; Aug. 8, 4♂, 1943  
(E.R.B.); June 12, 1943, 1♂ (G.J.S.).  
CHILCOTIN, June 13, 1929, 3♂ 1♀; June  
5, 2♂, 26, 3♂ 1♀, 1930 (E.R.B.). June 7,  
1931, 1♂ (G.J.S.). CRANBROOK, June 15,  
1♂ 1♀, 21, 1♂, 1926 (A.A.D.). VICTORIA,  
V. I., June 10, 1916, 2♀ (R.C.T.). KASLO,  
May 30-July 1, 1905, 1♂ 3♀; May 6-June  
30, 1906, 5♂ 7♀ (L.W.C.).

**Hoplitis fulgida** (Cresson)

CHILCOTIN, June 5-14, 1929, 1♂ 5♀; June  
26, 1930, 3♂ (E.R.B.). PENTICTON, June  
5, 1♂, 2♀, 1919; July 4, 1930, 2♂  
(E.R.B.). VERNON, May 1, 1929, 1♀  
(E.R.B.). KASLO, June 20, 1905, 1♀  
(L.W.C.).

**Hoplitis louisae** Cockerell

CHILCOTIN, May 28, 1929, 1♂ (E.R.B.).

Dr. C. D. Michener, who determined this bee, stated that it had hitherto been unknown north of Oregon and Idaho. The specimen was collected at an elevation of 3,500 ft. Lat. 52.

**Hoplitis producta subgracilis** Michener

CHILCOTIN, June 13, 1929, 1♀ (E.R.B.).  
VERNON, July 7, 1930, 1♀ (I.J.W.).

**Hoplitis grinnelli septentrionalis** Michener

CRANBROOK, May 12, 1926, 1♀ (A.A.D.).

**Hoplitis sambuci** Titus

OLIVER, June 9, 1937, 1♂ (E.R.B.). KEREMEOS,  
June 20, 1943, 1♀ (E.R.B.).

Genus ANTHOCOPIA Lepeletier and Serville

**Anthocopa copelandica** Cockerell

PENTICTON, July 4, 1930, 1♀ (E.R.B.).

Genus OSMIA Panzer

The bees of this genus are known as mason-bees. They construct nests of clay and sand in holes in fence posts, trees, walls, etc.

**Osmia (Osmia) lignaria** Say

VERNON, May 1, 1920, 1♂ 4♀ (R.C.T.);  
April 25, 1♀; May 8, 1♀, 1920; May 14,  
1921, 1♀ (M.H.R.); April 15, 1906, 3♂  
(E.P.V.); June 4, 1929, 1♀ (E.R.B.);  
April 22, 1♂ 1♀, 24, 2♂; May 6, 2♂, 1929  
(I.J.W.); May 10, 1♀, 16, 1♂, 1927  
(D.G.G.). SALMON ARM, April 25, 3♀;  
May 1-8, 2♀, 1929 (H.B.L.); April 26,  
1943, 1♂ 2♀ (E.R.B.); Aug. 9, 1920, 1♀;  
April 5, 1925, 1♂ (W.R.B.). NANAIMO,  
V. I., May 11, 1930, 13♀ (G.J.S.); June  
23-24, 1920, 2♀ (E.P. Van Duzee). PENTICTON,  
April 10-13, 1919, 2♂ 1♀; April  
24, 1929, 11♂ 23♀ (E.R.B.). KASLO, April  
20, 1904, 1♀; April 7-June 11, 1905, 1♂  
3♀; April 28-June 5, 1906, 1♂ 7♀; April  
26, 1♂; May 9, 1♀, 1908; May 6-June 24,  
1910, 2♂ 2♀ (L.W.C.). KAMLOOPS, April  
18, 1929, 3♂ 3♀; April 17, 1943, 2♂ 2♀  
(E.R.B.). NICOLA, May 2, 1♂ 1♀, 3, 1♂  
1♀, 1943 (E.R.B.). CHILCOTIN, May 28,  
2♀; June 13, 1♀, 1929 (E.R.B.); July 23,  
1♂, 1929; June 9, 1931, 1♂ (G.J.S.).  
COURTENAY, V. I., April 2, 1931 (J.D.G.).  
MILNER, May 4, 1930, 1♀ (K.G.). GOLDEN,  
May 17, 1915, 1♀ (F.W.L.S.). GRINDROD,  
May 27, 1927, 1♀ (D.G.G.). OKANAGAN  
FALLS, April 24, 1919, 1♀ (E.R.B.); May  
24, 1920, 1♂ (M.H.R.). VANCOUVER, May  
22, 1930, 1♀ (H.B.L.).

This is by far the most numerous species of *Osmia* found in British Columbia.

**Osmia (Chalcosmia) coeruleascens** Linnaeus

(C.N.C.) CHILCOTIN, May 15, 1920, 1♀  
(E.R.B.). KEREMEOS, June 18, 1919, 1♂  
(E.R.B.). VICTORIA, May 20, 1906, 1♂  
(R.C.T.). ROYAL OAK, May 13, 1917, 1♂  
(R.C.T.).

**Osmia (Chalcosmia) coloradensis** Cresson

SALMON ARM, May 10, 1928, 1♀ (H.B.L.);  
May 26, 1943, 1♀ (E.R.B.). CHILCOTIN,  
July 8, 1931, 1♀ (G.J.S.). OLIVER, July  
9, 1943, 1♀ (E.R.B.). KASLO, June 20,  
1905, 1♀; June 30, 1906, 2♀; June 18,  
1910, 2♀ (L.W.C.). VERNON, July 23-28,  
5♀; Aug. 3, 1♀, 1920 (M.H.R.); July 27,  
1920, 1♀ (R.C.T.). PENTICTON, April 23,  
1920, 1♂ (M.H.R.). INVERMERE, May 19,  
1915, 4♀ (F.W.L.S.). GOLDEN, May 17,  
1915, 1♀ (F.W.L.S.). REVELSTOKE, May  
16, 1915, 1♀ (F.W.L.S.). FAIRVIEW, May  
18, 1919, 1♀ (E.R.B.). LILLOOET, June  
10, 1920, 1♀ (A.W.A.P.). SHAWNIGAN  
LAKE, June 7, 1914, 1♀ (F.W.L.S.).

- Osmia** (*Chalcosmia*) **texana** Cresson  
OLIVER, July 9, 1943, 2♀ (E.R.B.).
- Osmia** (*Cephalosmia*) **montana** Cresson  
VERNON, May 15, 1920, 1♀ (R.C.T.); May 14, 1921, 3♀ (M.H.R.); April 25, 1932, 1♂; May 31, 1929, 1♀ (E.R.B.). CHILCOTIN, May 28, 1929, 1♀ (E.R.B.). PENTICTON, June 7, 1919, 1♀ (E.R.B.). OKANAGAN FALLS, June 3, 1919, 1♀ (E.R.B.). KELOWNA, May 20, 1917, 1♀ (R.C.T.). INVERMERE, May 30, 1914, 1♀ (F.W.L.S.). OLIVER, July 9, 1943, 1♀ (E.R.B.).
- Osmia** (*Cephalosmia*) **subaustralis** Cockerell  
CHILCOTIN, June 15, 1920, 1♀ (E.R.B.). INVERMERE, June 30, 1914, 1♀ (F.W.L.S.).
- Osmia** (*Cephalosmia*) **pascoensis** Cockerell  
CHILCOTIN, June 14, 1929, 1♀ (E.R.B.). KALEODEN, April 14, 1919, 1♂ (E.R.B.). OLIVER, May 4, 1943, 1♀ (E.R.B.). KAMLOOPS, May 11, 1935, 1♂ (E.R.B.). PENTICTON, April 13, 1♂, 23, 1♀, 1919; April 24, 1929, 10♂ 2♀ (E.R.B.); April 12, 1♂, 23, 2♂, 30, 1♂, 1920 (M.H.R.). VERNON, April 17-25, 2♂; May 31, 2♀; June 4, 1♀, 1929 (E.R.B.); April 25, 2♂; May 9, 1♀, 15, 1♀; July 20, 1♀, 1920; May 14, 1921, 1♂ 1♀ (M.H.R.); April 24, 1929, 1♂ (I.J.W.); April 14, 1♀, 15, 1♂, 1906 (E.P.V.). VASEAUX LAKE, April 9, 1921, 2♀ (F.W.L.S.). LILLOEET, May 28, 1917, 1♀ (A.W.A.P.).
- The male taken at Kamloops (11.V.35) was found in a cell in a dead jack-pine, *Pinus contorta* Loud.
- This appears to be an early species and most of the collection dates are in April and May.
- Osmia** (*Cephalosmia*) **californica** Cresson  
(C.N.C.) OKANAGAN LAKE, April 23, 1914, 2♀ (T.W.). LYTTON, July 6, 1913, 1♀ (T.W.).
- Osmia** (*Cephalosmia*) **marginipennis** Cresson  
KEREMEOS, May 5, 1943, 1♂ (E.R.B.). PENTICTON, April 30, 1919, 1♂ (E.R.B.). VASEAUX LAKE, April 19, 1921, 2♂ (F.W.L.S.). SUMMERLAND, April 7, 1921, 1♂ (F.W.L.S.). VERNON, May 25, 1919, 1♂ (W.B.A.). KAMLOOPS, Aug. 8, 1943, 1♀ (E.R.B.). NICOLA, May 16, 1922, 1♂ (P.N.V.). CHILCOTIN, May 12, 1920, 1♂ (E.R.B.).
- Osmia** (*Melanosmia*) **nigriventris** (Zetterstedt)  
KAMLOOPS, Aug. 8, 1943, 1♀ (E.R.B.).
- Osmia** (*Melanosmia*) **bucephala** Cresson  
CHILCOTIN, July 12, 1921, 1♀ (E.R.B.). KASLO, May 10, 1905, 1♀ (L.W.C.). DEPARTURE BAY, v. l., June 27, 1925, 1♂ (G.J.S.). PRINCE GEORGE, Aug. 12, 1946, 1♀ (G.J.S.). INVERMERE, May 8, 1915, 1♀ (F.W.L.S.).
- Osmia** (*Acanthosmioides*) **odontogaster** Cockerell  
VICTORIA, May 6, 1919, 5♂ (W.D.); April 6, 1916, 1♀ (R.C.T.). SIDNEY, May 8, 1915, 1♂ (F.W.L.S.). SAANICH, May 4, 1914, 1♀ (T.W.). SALMON ARM, May 10, 1930, 1♂ (H.B.L.). KAMLOOPS, May 13, 1943, 1♂ (E.R.B.).
- Osmia** (*Acanthosmioides*) **longula** Cresson  
CHASE, June 6, 1937, 1♀ (E.R.B.). NICOLA, June 29, 1922, 1♀ (P.N.V.). VERNON, May 24, 1946, 1♀ (H.B.L.). INVERMERE, June 30, 1914, 3♀ (F.W.L.S.). ROYAL OAK, May 24, 1917, 1♀ (R.C.T.).
- Osmia** (*Acanthosmioides*) **hicksi** Sandhouse  
OSOYOOS, June 10, 1919, 1♂ (E.R.B.). Sandhouse (1939).
- Osmia** (*Acanthosmioides*) **physariae** Cockerell  
CHILCOTIN, June 13, 1929, 1♂ (E.R.B.). VICTORIA, v. l., May 5, 1919, 1♂ (W.D.).
- Osmia** (*Acanthosmioides*) **nifoata** Cockerell  
(C.N.C.) PENTICTON, June 5, 1919, 1♂ (E.R.B.). VICTORIA, May 5, 1919, 2♀ (W.D.). CHILCOTIN, June 9, 1920, 1♂ (E.R.B.).
- Osmia** (*Acanthosmioides*) **integra** Cresson  
KAMLOOPS, May 26, 1935, 1♂ (G.J.S.). REVELSTOKE, May 16, 1915 (F.W.L.S.). CHILCOTIN, May 14, 1920, 1♀ (E.R.B.).
- Osmia** (*Acanthosmioides*) **hendersoni** Cockerell  
CRESTON, May 28, 1926, 1♀ (A.A.D.).
- Osmia** (*Acanthosmioides*) **kenoyeri** Cockerell  
(C.N.C.) ROYAL OAK, May 20, 1917, 2♀ (R.C.T.).
- Osmia** (*Acanthosmioides*) **nigrifrons** Cresson  
PENTICTON, May 7, 1919, 1♀ (E.R.B.). VERNON (White Man's Creek), July 1, 1920, 1♀ (N.L.C.). SALMON ARM, May 21, 1915, 1♀ (W.R.B.). CHILCOTIN, July 29, 1930, 1♀ (G.J.S.). VANCOUVER, April 15, 1920, 1♀ (G.J.S.). NANAIMO, v. l., June 24, 1920, 1♀ (E. P. Van Duzee; Sandhouse, 1924). INVERMERE, May 19, 1915, 1♀ (F.W.L.S.). OSOYOOS, June 10, 1919, 1♀ (E.R.B.).
- Osmia** (*Acanthosmioides*) **sedula** Sandhouse  
NANAIMO, v. l., June 4, 1920 (Mrs. E. P. Van Duzee; Sandhouse, 1924). PENTICTON, April 5, 1920, 1♀ (M.H.R.).
- Osmia** (*Acanthosmioides*) **giliarum** Cockerell  
ALEXIS CREEK, June 30, 1943, 1♀ (E.R.B.).
- Osmia** (*Acanthosmioides*) **pellax** Sandhouse  
LILLOEET, June 16, 1929, 1♀ (E.R.B.).
- Osmia** (*Nothosmia*) **brevis** Cresson  
KAMLOOPS, June 13, 1943, 1♀ (E.R.B.). CRANBROOK (St. Mary's Lake), July 12, 1926, 1♀ (A.A.D.). KASLO, July 3, 1916, 1♀ (F.W.L.S.). MARA, June 15, 1920, 2♀ (R.C.T.). VERNON, May 20, 1907, 3♀ (R.C.T.). PEACHLAND, July 21, 1909 (J.B.W.). PENTICTON, June 29, 1♀, July 5, 1♀, 1919 (E.R.B.). VICTORIA, May 27, 1915, 1♀ (R.C.T.). SIDNEY, July 6, 1914, 2♀ (F.W.L.S.). NANAIMO, July 21, 1917, 1♀ (F.W.L.S.).
- Osmia** (*Nothosmia*) **penstemonis** Cockerell  
(C.N.C.) KASLO, July 3, 1916, 1♀ (F.W.L.S.).
- Osmia** (*Nothosmia*) **universitatis** Cockerell  
(C.N.C.) PENTICTON, June 5, 1919, 1♂ (E.R.B.).
- Osmia** (*Nothosmia*) **integrella** Cockerell  
NICOLA, May 2, 1943, 1♂ (E.R.B.).

- Osmia** (*Nothosmia*) **pagosa** Sandhouse  
VERNON, May 25, 1930, 1♀ (I.J.W.).
- Osmia** (*Nothosmia*) **simillima** Smith  
CHILCOTIN, May 24, 1♂, 27, 1♂, 1929 (E.R.B.). VERNON, July 2, 1920, 2♀ (M.H.R.); July 28, 1920, 1♀ (R.C.T.). PENTICTON, June 21, 1919, 1♂ (E.R.B.).
- Osmia** (*Nothosmia*) **seclusa** Sandhouse  
VANCOUVER, June 16, 1896 (Livingston). Sandhouse (1924).
- Osmia** (*Nothosmia*) **nemoris** Sandhouse  
VASEAUX LAKE, June 14, 1919, 1♂ (E.R.B.). FAIRVIEW, May 18, 1919, 1♂ (E.R.B.). Sandhouse (1924).
- Osmia** (*Nothosmia*) **densa** Cresson  
KASLO, May 30, 1905, 1♀; June 3, 1906, 2♀; May 10, 1909, 1♀ (L.W.C.). KAMLOOPS, July 25, 1943, 1♀ (E.R.B.). OLIVER, May 4, 1943, 1♂ (E.R.B.). PENTICTON, April 24, 1929, 2♂ (E.R.B.). LYTTON, June 28, 1931, 1♀ (G.J.S.). TOFINO IS., May-July, 1926, 1♀ (G.J.S.). CHILCOTIN, June 13, 1929, 1♀ (E.R.B.); July 15, 1♀, 29, 2♀, 1930 (G.J.S.). VERNON, June 6, 1903, 1♀ (E.C.V.D.); May 25, 1919, 1♂ (W.B.A.). NANAIMO, June 24, 1920, 1♀ (E.C.V.D.); July 18, 1912, 1♀ (W.B.A.). NEWCASTLE, July 18, 1913, 1♀ (W.B.A.). INVERMERE, June 30, 1916, 8♀ (F.W.L.S.). GOLDEN, May 17, 1915, 4♂ (F.W.L.S.). REVELSTOKE, May 16, 1915, 1♀ (F.W.L.S.). SICAMOUS, May 16, 1916, 1♂ (F.W.L.S.). SALMON ARM, July 4, 1914, 1♀ (F.W.L.S.). PRINCETON, June 7, 1916, 1♀ (W.B.A.). OKANAGAN FALLS, June 3, 1919, 1♀ (E.R.B.). LILLOOET, June 11, 1916, 1♀ (E.M.A.).
- Osmia** (*Nothosmia*) **juxta** Cresson  
VERNON, July 26, 1920, 1♀ (R.C.T.); June 23, 1926, 1♀ (I.J.W.); May 13, 1930, 1♀ (A.A.D.). CHILCOTIN, June 15, 1920, 1♀; May 28, 1929, 1♀; June 5, 1930, 1♀ (E.R.B.); July 29, 1930, 2♀ (G.J.S.). KASLO, July 1, 1905, 2♀; June 3, 1906, 1♀ (L.W.C.). PENTICTON, April 24, 1929, 3♂ (E.R.B.). KAMLOOPS, June 13, 1943, 1♂ (E.R.B.). NANAIMO, June 24, 1920, 1♀ (E.C.V.D.). KEREMEOS, June 18, 1919, 1♀ (E.R.B.). LILLOOET, May 21, 1916, 1♂ (E.M.A.). CRANBROOK, May 16, 1922, 1♂ (C.B.G.).
- Osmia** (*Nothosmia*) **atrocyanea** Cockerell  
VERNON, July 23, 1920, 1♀ (M.H.R.). KASLO, Aug. 3, 1916, 2♀ (F.W.L.C.). ROYAL OAK, May 13, 1917, 1♂ (R.C.T.). SHAWNIGAN LAKE, July 7, 1914, 1♀ (F.W.L.S.).
- Osmia** (*Nothosmia*) **vallicola** Cockerell  
(C.N.C.). CRANBROOK, May 18, 1922, 3♂ (C.B.G.).
- Osmia** (*Nothosmia*) **cyarella** Cockerell  
(C.N.C.) VICTORIA, May 20, 1918, 1♂ (R.C.T.). VANCOUVER, April 12, 1934, 1♀ (W.M.).
- Osmia** (*Nothosmia*) **tersula** Cockerell  
BRITISH COLUMBIA, Sandhouse (1939).
- Osmia** (*Nothosmia*) **trevoris** Cockerell  
VERNON, May 25, 1930, 1♀ (I.J.W.). WALHACHIN, July 8, 1918, 1♀ (E.R.B.).
- Osmia** (*Nothosmia*) **albolateralis** Cresson  
CLINTON, Aug. 10, 1943, 1♀ (E.R.B.). ALEXIS CREEK, June 30, 1943, 1♀ (E.R.B.). VERNON, May 31, 1929, 1♀ (E.R.B.); May 26, 1923, 1♀ (M.H.R.); July 17, 1926, 1♀ (D.G.G.). PENTICTON, April 5, 1920, 1♀ (M.H.R.). CRANBROOK, May 12, 1926, 1♂ (A.A.D.). VICTORIA, v. l., June, 1916, 1♀ (R.C.T.). DEPARTURE BAY, v. l., June 10, 1925, 1♀ (G.J.S.). NEWCASTLE IS., June 10, 1925, 1♀ (G.J.S.). KAMLOOPS, June 12, 1943, 2♂ (G.J.S.). KASLO, May 6, 3♀, 28, 1♀; June 3, 3♀, 1906 (L.W.C.). INVERMERE, May 27, 1915, 1♂ (F.W.L.S.).
- Osmia** (*Nothosmia*) **dolorosa** Sandhouse  
Sandhouse (1939) gives the following records for British Columbia: KASLO, 1903, 4♀ (R.P.C.). BON ACCORD, May 10, 1909, 1♀ (R.). REVELSTOKE, July 4-6, 1905, 4♀ (J.C.B.). HOWSER LAKE, June 24, 1905, 1♀ (J.C.B.). HOWSER, Selkirk Mountains, June 22, 1905, 1♀ (J.C.B.). DOWNIE CREEK, Selkirk Mountains, Aug. 14, 1905, 1♀ (J.C.B.). GOLDSTREAM, Selkirk Mountains, Aug. 7-11, 1905, 1♀ (J.C.B.). CARBONATE, Columbia River, July 7-12, 1908, 1♀ (J.C.B.). VANCOUVER, June 26, 1896, 1♀ (L.).
- Osmia** (*Nothosmia*) **atriventris** Cresson  
(C.N.C.). SIDNEY, April 23, 1915, 1♂ (F.W.L.S.).
- Osmia** (*Nothosmia*) **inurbana** Cresson  
(C.N.C.). VERNON, June 18, 1917, 1♂ (R.C.T.). VICTORIA, May 6, 1919, 3♂ (R.C.T.); May 16, 1916, 1♂ (W.D.). ROYAL OAK, May 20, 1917, 1♂ (R.C.T.). SIDNEY, April 23, 1915, 1♂ (F.W.L.S.).
- Osmia** (*Nothosmia*) **nanula** Cockerell  
(C.N.C.). KASLO, July 3, 1916, 1♀ 1♂ (F.W.L.S.). OSOYOOS, June 10, 1919, 1♀ (E.R.B.). PENTICTON, July 21, 1919, 1♀ (E.R.B.). SALMON ARM, July 4, 1914, 1♀ (F.W.L.S.). VICTORIA, June 3, 1916, 1♀ (R.C.T.). SIDNEY, May 8, 1915, 1♀ (F.W.L.S.). SAANICH, June 3, 1919, 1♀ (W.D.). NANAIMO, June 23, 1920 (E.C.V.D.). Sandhouse (1924).
- Osmia** (*Nothosmia*) **proxima** Cresson  
KASLO, May 3, 1906, 1♂ (L.W.C.). CHILCOTIN, June 7, 1920, 1♀ (E.R.B.). SIDNEY, June 18, 1916, 1♀ (F.W.L.S.). SHAWNIGAN, July 8, 1914, 1♀ (F.W.L.S.).
- Osmia** (*Nothosmia*) **tristella** Cockerell  
(C.N.C.). INVERMERE, June 30, 1914, 3♀ (F.W.L.S.). KASLO, July 3, 1916, 2♀ (F.W.L.S.). AGASSIZ, May 11, 1915, 1♀ (F.W.L.S.).
- Osmia** (*Nothosmia*) **mertensiae** Cockerell  
(C.N.C.) LILLOOET, May 3, 1916, 1♂ (E.M.A.).
- Osmia** (*Nothosmia*) **bruneri** Cockerell  
KEREMEOS, May 5, 1943, 1♂ (E.R.B.). KASLO, May 6, 1906, 1♂ (L.W.C.). VASEAUX LAKE, June 14, 1919, 1♀ (E.R.B.). PENTICTON, April 30, 1919, 1♂ (E.R.B.). ARMSTRONG, May 20, 1915, 1♂ (F.W.L.S.). LILLOOET, May 25, 1916, 1♂ (E.M.A.).
- Osmia** (*Nothosmia*) **cobaltina** Cresson  
KASLO, May 6-June 23, 5♂ 7♀, 1906; May

14, 1905, 1♂ 1♀ (L.W.C.); July 3, 1916, 4♀ (F.W.L.S.). OLIVER, June 4, 1943, 1♀ (E.R.B.). PENTICTON, June 7, 1919, 1♀; July 4, 1930, 2♀ (E.R.B.). PEACHLAND, July 24, 1909, 1♀ (J.B.W.). VERNON, July 9, 1920, 1♀ (M.H.R.). WALHACHIN, June 27, 1918, 2♀ (E.R.B.). LYTTON, June 30, 1931, 1♀ (G.J.S.). LILLOOET, May 3, 1916, 1♀ (E.M.A.). CHILCOTIN, May 29, 1♀, 30, 1♀, 1921 (E.R.B.). SHAWNIGAN LAKE, July 7, 1914, 1♀ (F.W.L.S.).

**Osmia** (*Nothosmia*) **callo** Cockerell  
VERNON, July 10, 1920, 1♀ (N.L.C.).

**Osmia** (*Nothosmia*) **kincaidii** Cockerell  
VERNON, June 6, 1903, 1♀; April 21, 1906, 1♂ (E.P.V.); May 6, 1907, 1♀; May 14, 1921, 2♀ (M.H.R.). OLIVER, May 4, 1943, 1♀ (E.R.B.). PENTICTON, April 30, 1919, 1♂; April 30, 1919, 1♂; April 24, 1929, 1♂ (E.R.B.). KASLO, June 1, 1♀, 2, 1♀, 1905 (L.W.C.); Aug. 3, 1916, 2♀ (F.W.L.S.). CRANBROOK, May 16, 1919, 1♀ (C.B.G.). SUMMERLAND, Aug. 10, 1916, 1♀ (F.W.L.S.). LYTTON, May 21, 1919, 1♂ (W.B.A.). VICTORIA, June 3, 1916, 2♀ (R.C.T.). ROYAL OAK, May 5, 1917, 1♂ (R.C.T.).

**Osmia** (*Nothosmia*) spp.

In addition to the above named species Dr. T. B. Mitchell marked three as new species, and several others were undetermined.

#### Genus MEGACHILE Latreille

The bees of this genus are leaf-cutter bees that make tubular cells out of semi-circular pieces of leaves which they cut out of various plants.

Some of the species are of great economic importance to farmers as they are among the few insects that are able to trip and pollinate the flowers of alfalfa, thereby increasing the seed yield.

Sladen (1918) observed these bees tripping the flowers of alfalfa at an average rate of 17 per minute. In observations made at Summerland and Keremeos, B. C., he found that *M. perihirta* Ckll. was by far the most valuable species in this respect, but that *M. melanophoea calogaster* Ckll. and *M. brevis* also were active in alfalfa fields and assisted in the tripping of blossoms.

**Megachile** (*Xanthosarus*) **perihirta** Cockerell  
VERNON, Aug. 13-20, 1923, 4♀; Aug. 6-23, 1926, 1♂ 2♀ (D.G.G.); July 9-27, 5♂ 25♀; Aug. 3-9, 6♀, 1920 (R.C.T.); Aug. 28, 1♂ 1♀; Sept. 9-10, 1♂ 1♀, 1926 (I.J.W.); Aug. 8-24, 1♂ 10♀, 1904 (E.P.V.); July 11, 1929, 1♀ (H.B.L.); July 7-24, 3♀; Aug. 5, 1♀, 1920 (N.L.C.); Aug. 13, 1918, 1♀; July 21-28, 12♀; Aug. 2-23, 10♀, 1920; July 19-27, 8♀; Aug. 1,

1♀, 1921; July 26, 4♀; Aug. 13-23, 4♀, 1922 (M.H.R.); July 13-25, 4♂ 5♀, Aug. 25, 4♀, 1917 (F.W.L.S.). KAMLOOPS, July 4, 1937, 1♂; June 26, 1938, 1♂ (G.J.S.); July 25, 2♂, Aug. 8, 1♂, 1943 (E.R.B.). NICOLA, Aug. 28, 1923, 1♀; July 26, 1925, 1♂ 1♀ (P.N.V.). MERRITT, July 20, 1918, 1♀ (W.B.A.). OSOYOOS, June 10, 1919, 2♂ (E.R.B.). OLIVER, June 3, 1923, 1♀ (C.B.G.); July 9, 1943, 1♂ (E.R.B.). FAIRVIEW, July 8, 1919, 3♀ (E.R.B.). WALHACHIN, June 27, 1917, 2♀; July 17, 1918, 1♂ (E.R.B.). MINNIE LAKE, Aug. 12, 1942, 1♀ (E.R.B.). SALMON ARM, July 4, 1928, 1♀ (H.B.L.); June 4, 1943, 1♂ (E.R.B.). PENTICTON, June 7-19, 1♂ 1♀; Aug. 7, 1♀; Sept. 3-7, 6♂ 3♀, 1919 (E.R.B.); Aug. 7, 1916, 1♀ (F.W.L.S.). SUMMERLAND, Aug. 10, 1916, 1♂ 7♀; Aug. 20, 1919, 2♂ 6♀ (F.W.L.S.); Aug. 22, 1914, 1♂ (T.W.). KEREMEOS, July 2, 1917, 1♂ (F.W.L.S.). CRESCENT, July 14, 1916, 1♂ (F.W.L.S.). INVERMERE, Aug. 11, 1914, 1♂ (F.W.L.S.). VANCOUVER, Aug. 15, 1916, 1♂ (F.W.L.S.). LILLOOET, June 9, 1921, 2♂ (A.P.); June 28, 1926, 2♂ (J.D.McD.). VASSEAUX LAKE, June 19, 1919, 1♂ (W.B.A.); June 13, 1919, 1♂ (R.C.T.). OKANAGAN FALLS, July 21-24, 1917, 2♂ 2♀ (F.W.L.S.); June 16, 1919, 1♀ (W.B.A.). PEACHLAND, Aug. 21, 1904, 1♀ (J.B.W.). AGASSIZ, July 24, 1922, 1♀ (R.G.); July 22, 1926, 1♀ (H.H.R.). ENDERBY, Aug. 3, 1918 (W.B.A.). CHILCOTIN, June 20, 1♂; July 12, 1♂ 1920 (E.R.B.); July 1, 1929, 1♂; July 29, 1930, 4♀ (G.J.S.). HAT CREEK, Aug. 26, 1933, 1♀ (R.D.B.). CRANBROOK, June 12, 1926, 1♂ (A.A.D.). KASLO, June 25, 1905, 1♂; July 10, 1906, 1♀ (L.W.C.). LYTTON, June 21-28, 2♀; July 5, 1♂, 1931 (G.J.S.). QUESNEL, Aug. 12-19, 1♂ 1♀, 1946 (G.J.S.). VICTORIA, v. l., July 17, 1909, 1♀ (J.B.W.); Aug. 13, 1916, 1♂ 5♀ (F.W.L.S.); Sept. 16, 1♂ 3♀; 30, 1♂ 1♀, 1917 (W.B.A.); Aug. 3, 1938, 2♂ (G.S.W.); July 5, 1927, 2♀ (G.J.S.). DEPARTURE BAY, v. l., June 4, 1925, 1♀ (G.J.S.). SIDNEY, v. l., July 22, 1925, 1♂ 12♀ (G.J.S.); Aug. 15, 1916, 1♀ (F.W.L.S.).

This bee is probably the commonest of the genus *Megachile* in British Columbia and is found on Vancouver Island, the dry southern interior, the Kootenay district, and as far north as collecting has been done. As it has been taken at Fort Simpson, at the junction of the Liard and Mackenzie Rivers, Northwest Territories, July 14, 1946, A. G. Dustan, it no doubt occurs also throughout northern British Columbia. The elevation of the collection points varies from sea level to 4,000 ft. It nests in colonies in gravelly places and is the most valuable alfalfa pollinator of this genus in British Columbia.

**Megachile** (*Litomegachile*) **texana** Cresson  
MINNIE LAKE, July 4, 1♀; KAMLOOPS, July 19, 1♀, 1942; July 25, 1♂, 1943 (E.R.B.); July 3, 1938, 1♂ (G.J.S.). WALHACHIN, Aug. 10, 1943, 1♀ (E.R.B.). PEACHLAND, July 24, 1907, 1♀ (J.B.W.). SUMMERLAND, July 20, 1917, 1♀ (F.W.L.S.). PENTICTON, June 19, 1918, 1♀ (W.B.A.).

**Megachile** (*Litomegachile*) **texana** var. **cleomis** Cockerell

VERNON, July 25, 1920, 1♂ (R.C.T.); July 5, 1943, 1♂ (E.R.B.); July 11, 1923, 1♂ (M.H.R.); July 26, 1929, 1♀ (H.B.L.). SUMMERLAND, July 20, 1917, 2♀ (F.W.L.S.). OKANAGAN FALLS, July 21, 1917, 1♀ (F.W.L.S.). OLIVER, July 10, 1929, 2♀ (E.R.B.). WALHACHIN, July 12, 1918, 1♀; Aug. 10, 1943, 1♀ (E.R.B.). KAMLOOPS, July 3, 1938, 2♂ (G.J.S.); July 19, 1942, 1♂ (E.R.B.). LILLOOET (Seton Lake), June 25-28, 1926, 3♂ (J.D.McD.). SIDNEY, V. I., July 22, 1925, 1♀ (G.J.S.).

**Megachile** (*Litomegachile*) **texana** var. **lippiae** Cockerell

SUMMERLAND, July 20, 1917, 2♀ (F.W.L.S.). LILLOOET (Seton Lake), June 2-28, 1926, 3♀ (J.McD.).

The locality records for *M. texana*, and its varieties *cleomis* and *lippiae*, are all from the interior dry-belt with the exception of Sidney, which is on Vancouver Island.

**Megachile** (*Litomegachile*) **coquilletti** Cockerell  
KASLO, June 11, 1905, 1♂ (L.W.C.). OKANAGAN FALLS, July 21, 1917, 2♂. VERNON, July 25, 1917, 1♂ (F.W.L.S.).

**Megachile** (*Litomegachile*) **gentilis** Cresson  
OKANAGAN FALLS, July 21, 1917 (F.W.L.S.).

**Megachile** (*Litomegachile*) **brevis** Say  
OSOYOOS, June 10, 1919, 1♂ (E.R.B.). FAIRVIEW, Aug. 21, 1919, 1♂ 1♀ (E.R.B.). VASEAUX LAKE, June 14, 1919, 1♀ (E.R.B.). PENTICTON, June 22, 1919, 1♂ (E.R.B.). WALHACHIN, June 29, 1918, 1♂ (E.R.B.). SUMMERLAND, Aug. 10, 1916, 2♂ 3♀; July 20, 1917, 2♀ (F.W.L.S.). OKANAGAN FALLS, July 20-24, 2♂ (F.W.L.S.).

**Megachile** (*Litomegachile*) **brevis** var. **onobrychidis** Cockerell

LYTTON, June 28, 1♂, Aug. 16, 2♂, 1931 (G.J.S.). WINSLOW, Sept. 14, 1925, 1♀ (G.J.S.). VERNON, Sept. 10, 1926, 1♀ (J.W.). OSOYOOS, Aug. 13, 1942, 1♀ (E.R.B.). FAIRVIEW, Aug. 7, 1919, 2♀ (E.R.B.). OKANAGAN FALLS, July 21, 1917, 1♂ (F.W.L.S.). SUMMERLAND, July 9, 1916, 1♀; July 21, 1917, 3♀ (F.W.L.S.). KFREMEOS, July 16, 1923, 1♂ (C.B.G.). NARAMATA, June 21, 1919, 1♂ (E.R.B.).

All the locality records for *brevis* and var. *onobrychidis* are from hot, dry, interior points, with the exception of

Winslow, which is in the Lower Fraser Valley.

**Megachile** (*Anthemois*) **nivalis** Friese  
VERNON, Aug. 1, 1923, 1♀ (D.G.G.). CRANBROOK, June 21, 1926, 1♀ (A.A.D.).

**Megachile** (*Anthemois*) **centuncularis** Linnaeus  
NICOLA, Aug. 28, 1923, 1♀ (P.N.V.).

**Megachile** (*Anthemois*) **montivaga** Cresson  
VERNON, July 26-28, 1920, 1♂ 13♀; July 21, 1♂, Aug. 1, 1♀, 1921 (M.H.R.); July 26-27, 16♀, Aug. 9, 2♀, 1920 (R.C.T.); Aug. 2, 1923, 1♀ (D.G.G.); July 21-25, 1917, 2♂ 7♀ (F.W.L.S.). PEACHLAND, Aug. 2, 1907, 1♀ (J.B.W.). SIDNEY, V. I., 1♂, no data; July 22, 1925, 1♂ (G.J.S.). OLIVER, Aug. 9, 1943, 1♂ 2♀ (E.R.B.). ARMSTRONG, July 25, 1913, 1♀ (T.W.). SALMON ARM, June 26, 1925, 1♂ (A.A.D.). LYTTON, July, 1913, 1♀. AGASSIZ, July 8, 1914, 1♂ (F.W.L.S.). PRINCE GEORGE, Aug. 12, 1946, 1♀ (G.J.S.). ROLLA, July 23, 1927, 1♀ (P.N.V.).

This species, from the locality records available, has a wide distribution in British Columbia. It has been recorded from the southern Okanagan, through the dry interior north to Prince George, and from Rolla, on the banks of the Peace River north of latitude 56°, as well as from Agassiz, in the Fraser River delta, and Sidney on Vancouver Island.

**Megachile** (*Anthemois*) **relativa** Cresson  
SICAMOUS (Shuswap Narrows), Aug. 31, 1943, 1♀ (G.J.S.). REVELSTOKE, July 17, 1931, 2♀ (A.W.G.); REVELSTOKE MT., 6,000 ft., Aug. 12, 1923, 1♀ (P.N.V.). SALMON ARM, July 4, 1914, 3♂ (F.W.L.S.). KASLO, May 14-July 24, 1906, 7♂ 1♀ (L.W.C.); Aug. 3, 1916, 2♀ (F.W.L.S.). CRESTON, Sept. 10, 1923, 2♀ (C.S.L.); Aug. 11, 1927, 2♂ (A.A.D.). LARDO, Sept. 26, 1913, 1♀ (C.G.H.). FORT STEELE, June 20, 1922, 1♂ (W.B.A.). INVERMERE, June 30, 1914, 6♂ (F.W.L.S.). KAMLOOPS, July 19, 1942, 1♂ (E.R.B.). ARMSTRONG, July 3, 1914, 1♂ (F.W.L.S.). VERNON, July 28, 1923, 1♀ (M.H.R.); July 24, 1917, 1♂ (F.W.L.S.); July 31 and Aug. 2, 1923, 2♂ (D.G.G.). PEACHLAND, Aug. 2-7, 1909, 2♀ (J.B.W.). PENTICTON, June 7 and 21, 1919, 3♂ (E.R.B.). KERE MEOS, June 18, 1919, 2♂ (E.R.B.). OLIVER, June 3, 1923, 1♂ (C.B.G.). FAIRVIEW, May 18, 1919, 2♂ (E.R.B.). OSOYOOS, June 10, 1919, 1♂ (E.R.B.). AGASSIZ, June 27, 1923, 1♀ (R.G.). MILNER, May 26, 1930, 1♀ (K.G.). VANCOUVER, Aug. 12, 1916, 2♀ (F.W.L.S.). VICTORIA, V. I., Aug. 28, 1924 (W.B.A.). SIDNEY, V. I., July 15, 1916, 1♂. SHAWNIGAN, V. I., July 7, 1914, 2♀ (F.W.L.S.). HAZELTON, June 20, 1925, 1♂ (W.B.A.). ROLLA, Aug. 2, 1927, 1♂ 1♀ (P.N.V.).

*M. relativa* occurs throughout British Columbia from the East Kootenays and



southern interior north to Rolla, in the Peace River District (north of latitude 56°) and on Vancouver Island. On Revelstoke Mountain it was taken at an elevation of 6,000 ft.

**Megachile** (*Anthemois*) **inermis** Provancher  
CRESTON, Aug. 11, 1927, 1♀ (A.A.D.).  
SAANICHTON, V.I., June 27 1937, 1♀  
(Univ. B. C. Coll.). CHILCOTIN, July 16,  
1921, 1♀ (E.R.B.). SMITHERS, Aug. 4,  
1944, 2♀ (E.R.B.). ROLLA, July 2-21,  
1927, 3♀ (P.N.V.).

While the records of *inermis* are few, they are widely distributed; extending from the West Kootenays and Vancouver Island in the south, through central B. C., to Rolla in the northeastern corner of the Province.

**Megachile** (*Sayapis*) **fidelis** Cresson  
VERNON, July 26, 1929, 1♂ (H.B.L.);  
Aug. 13, 1904, 1♂ (E.P.V.); July 27 and  
Aug. 3, 1920, 1♂ 3♀ (R.C.T.); Aug. 31,  
1943, 1♀ (D.G.G.). SICAMOUS (Shuswap  
Narrows), Aug. 31, 1943, 1♀ (G.J.S.).

**Megachile** (*Sayapis*) **mellitarsis** Cresson  
WESTBANK, July 20, 1919, 1♀ (E.R.B.).

**Megachile** (*Sayapis*) **pugnata** Say  
VANCOUVER, Aug. 25, 1902, 1♀. INVER-  
MERE, June 30, 1914, 1♂ 1♀ (F.W.L.S.).  
KASLO, June 23, 1905, 1♀; June 23, 1♀;  
July 10, 2♀, 1906; July 4, 1916, 1♂  
(L.W.C.); Aug. 3, 1916, 1♀ (F.W.L.S.).  
CRANBROOK, June 21, 1926, 1♀ (A.A.D.).  
CROWS NEST, July 23, 1926, 1♀ (A.A.D.).  
KAMLOOPS, July 25, 1♀, Aug. 24, 1♀ 1943  
(E.R.B.). WALHACHIN, June 17 and 27,  
1918, 2♂ (E.R.B.). SALMON ARM, June  
30, 1♀, July 4, 2♀, 1914 (F.W.L.S.);  
June 14, 1913, 1♀ (W.R.B.). ARMSTRONG,  
July 8, 1931, 1♀ (A.W.G.). VERNON,  
June 20-27, 1920, 8♀ (R.C.T.); June 23-  
28, 4♀; Aug. 3, 1♂ 1♀, 1920 (M.H.R.);  
July 25, 1917, 2♂ 1♀ (F.W.L.S.); Aug. 6,  
1920, 1♀ (N.L.C.). PEACHLAND, July 21  
and 29, 1♂ 1♀; Aug. 6, 2♂ 1♀, 1909  
(J.B.W.). SUMMERLAND, Aug. 9 and 10,  
1916, 3♀; July 20, 1917, 1♀ (F.W.L.S.).  
NARAMATA, June 21, 1919, 2♂ (E.R.B.).  
PENTICTON, June 19 and 21, 1♂ 1♀; Sept.  
7, 1♂, 1919 (E.R.B.). LILLOOET, June 9,  
1921, 1♂ (A.P.); July 11, 1938, 1♂  
(J.K.J.). WILLIAMS LAKE, July 11, 1928,  
1♀ (J.K.J.). QUESNEL, Aug. 12, 1946,  
4♀ (G.J.S.). SMITHERS, Aug. 4, 1944, 1♂  
1♀ (E.R.B.). ROLLA, July 21 and 23, 1927,  
2♀ (P.N.V.).

*M. pugnata* is another of the commoner species having a wide distribution throughout the Province.

**Megachile** (*Chelostomoides*) **angelarum**  
Cockerell

PENTICTON, Aug. 7, 1916, 1♂ (F.W.L.S.).

**Megachile** (*Chelostomoides*) **subexilis** Cockerell  
SUMMERLAND, Aug. 10, 1916, 1♀  
(F.W.L.S.). KEREMEOS, July 21, 1917, 1♀

(F.W.L.S.). OKANAGAN FALLS, July 21,  
24, 1917, 7♂ (F.W.L.S.). KASLO, Aug. 3,  
1916, 2♀ (F.W.L.S.).

**Megachile** (*Argyropile*) **parallela** Smith

KAMLOOPS, July 27, 1937, 1♂ (E.R.B.).  
WALHACHIN, Aug. 16, 1942, 3♀ (E.R.B.).

**Megachile** (*Xeromegachile*) **wheeleri** Mitchell

KAMLOOPS, July 1, 1929, 3♀ (E.R.B.).  
NICOLA, Aug. 3, 1923, 1♂ (E.R.B.). MIN-  
NIE LAKE, Aug. 26, 1925, 1♀ (E.R.B.).  
VERNON, July 21, 1923, 1♂ (D.G.G.).  
PENTICTON, Sept. 3, 1919, 1♀ (E.R.B.).

**Megachile** (*Xeromegachile*) **subnigra** Cresson  
PENTICTON, June 7, 1919, 1♀ (E.R.B.).

**Megachile** (*Delomegachile*) **frigida** Smith

KASLO, June 11 and 20, 2♂; July 1, 1♂ 2♀,  
1905; May 3-Aug. 26, 7♂ 2♀, 1906; Aug.  
24, 1♀, 1907; June 11, 1♂, 1910  
(L.W.C.). INVERMERE, June 30, 1914, 3♂  
(F.W.L.S.). FAIRVIEW, Aug. 7, 1919, 1♀  
(E.R.B.). VASEAUX LAKE, June 14, 1919,  
1♀ (E.R.B.). OKANAGAN FALLS, June 3,  
1919, 1♂ 1♀ (E.R.B.). SUMMERLAND,  
July 20, 1917, 1♂ (F.W.L.S.). VERNON,  
Aug. 28, 1920, 1♀; June 18, 1923, 1♀  
(M.H.R.). REVELSTOKE, July 15, 1931,  
1♂ 1♀ (A.N.G.). SICAMOUS, July 11, 1914,  
2♂ (F.W.L.S.). SALMON ARM, Aug. 2,  
1914, 1♀ (W.R.B.); July 6, 1925, 1♂  
(A.A.D.). CHASE, July 30, 1943, 1♂  
(E.R.B.). MONTE CREEK, July 7, 1929,  
2♀ (I. McT-C). KAMLOOPS, June 13, 1♂;  
July 25, 1943, 1♀ (E.R.B.). NICOLA, July  
25, 1925, 1♂ (P.N.V.). AGASSIZ, Sept. 10,  
1926, 1♀ (R.G.). STEELHEAD, May 29,  
1934, 1♀ (K.G.). VANCOUVER, Aug. 10-15,  
1916, 3♂ 2♀ (F.W.L.S.); July 2, 1903, 1♂  
(Univ. B. C. Coll.). VICTORIA, V.I., Aug.  
13, 1916, 1♀ (F.W.L.S.). GOLDSTREAM,  
V.I., May 17, 1915, 1♂ (J.D.G.). LIL-  
LOOET (Mt. McLaine), Aug. 20, 1920, 1♀  
(R.G.); July 4, 1916, 1♀ (F.W.L.S.);  
June 12, 1926, 1♂ (E.R.B.). CHILCOTIN,  
July 17, 1920, 1♂ (E.R.B.); July 29,  
1930, 1♂ (G.J.S.). FRANCOIS LAKE, July  
5, 1924, 1♂ (E.R.B.). SMITHERS, Sept. 1,  
1915, 1♀ (H.S.). ROLLA, July 14-23,  
1927, 2♂ 1♀ (P.N.V.).

The distribution records given above for *frigida* would indicate that it is a common species, frequenting wooded and high mountainous areas more frequently than is the case with other common species. Its distribution covers the whole of the Province and Vancouver Island.

**Megachile** (*Delomegachile*) **giliae** Cockerell  
INVERMERE, May 27, 1915, 1♂ (F.W.L.S.).

**Megachile** (*Delomegachile*) **gemula** Cresson

GOLDEN, May 17, 1915, 1♂ (F.W.L.S.).  
INVERMERE, May 27, 1915, 1♂ (F.W.L.S.).  
KASLO, June 10, 1906, 1♂ (L.W.C.). KAM-  
LOOPS, Aug. 8, 1943, 1♂ (E.R.B.). ARM-  
STRONG, July 3, 1914, 1♂ (F.W.L.S.).  
VERNON, May 28, 1904, 1♂ (E.P.V.). KE-  
LOWNA, July 14, 1943, 1♂ (G.J.S.). SUM-  
MERLAND, June 4, 1919, 1♂ (E.R.B.).

**Megachile** (*Delomegachile*) **gemula** var. **fulvogemula** Mitchell

CHILCOTIN, June 13, 1929, 1♀ (E.R.B.).  
VERNON, July 23, 1920, 1♀ (N.L.C.). KE-  
LOWNA, July 9, 1918, 1♀ (R.C.W.).

**Megachile** (*Delomegachile*) **melanophoea** Smith  
KASLO, May 7-June 5, 1906, 5♂ 4♀; June  
11, 1910, 1♀ (L.W.C.). INVERMERE, May  
30, 1♂; June 30, 1♂, 1914; May 19, 1♂;  
June 1, 1♀, 1915; June 30, 1919, 1♀  
(F.W.L.S.). VASEAUX LAKE, June 12 and  
14, 1♂ 1♀, 1919 (E.R.B.). SUMMERLAND,  
July 20, 1917, 1♂ (F.W.L.S.). VERNON,  
May 28 and 31, 1904, 2♂ (E.P.V.); May  
31, 1929, 1♂ (E.R.B.); July 2, 1930, 1♀  
(C.B.Leb.); May 25, 1930, 1♂ (I.J.W.);  
June 21, 1903, 1♀ (M.H.R.). MARA, July  
12, 1920, 1♂ (R.C.T.). SALMON ARM,  
July 4, 1914, 1♂ (F.W.L.S.); June 27,  
1925, 1♂ (A.A.D.). CHASE, June 6, 1937,  
1♀; June 19, 1946, 1♀ (E.R.B.); July 11,  
1931, 1♂ (G.J.S.). HAT CREEK, June 26  
and 27, 1943, 4♂ 1♀ (E.R.B.). PRINCE-  
TON (Copper Mt.), July 21, 1928, 1♂  
(G.S.S.). VANCOUVER, Aug. 18, 1916, 1♀  
(F.W.L.S.); April 15, 1920, 1♂ (G.J.S.).  
VICTORIA, v. l., June 17, 1917, 1♀  
(E.P.V.). SHAWNIGAN, v. l., July 7, 1914,  
1♂ (F.W.L.S.). NEWCASTLE, v. l., June  
29, 1926, 1♂ (G.J.S.). 100 MILE HOUSE,  
July 1, 1943, 1♂ (E.R.B.). CHILCOTIN,  
June 16, 1920, 1♂ (R.C.T.); May 30,  
1921, 1♀; June 20, 1926, 1♂ 1♀; June 13  
and 14, 1929, 2♂; June 3-26, 1930, 4♂  
(E.R.B.); July 29, 1930, 3♀ (G.J.S.).  
ROLLA, July 23, 1927, 1♂ (P.N.V.).

**Megachile** (*Delomegachile*) **melanophoea** var. **calogaster** Cockerell

INVERMERE, June 30, 1914, 1♂ 1♀  
(F.W.L.S.). ARMSTRONG, July 3, 1914,  
2♀ (F.W.L.S.). SIDNEY, v. l., July 7, 1914,  
1♀ (F.W.L.S.). PRINCE GEORGE, Aug. 11,  
1917, 1♀ (W.B.A.).

**Megachile** (*Delomegachile*) **melanophoea** var. **wooteni** Cockerell

INVERMERE, June 1, 1915, 1♀ (F.W.L.S.).  
OKANAGAN FALLS, June 3, 1914, 1♀  
(E.R.B.). PENTICTON, June 19, 1918, 1♀  
(W.B.A.); June 7, 1919, 3♀ (E.R.B.).  
SALMON ARM, June 25, 1925, 1♀ (A.A.D.).  
LILLOOET, July 2, 1920, 1♀ (A.B.B.). VAN-  
COUVER, Aug. 12, 1916, 1♀ (F.W.L.S.).

*M. melanophoea*, with its colour forms *calogaster* and *wooteni*, is one of the commonest and most widespread of the genus in British Columbia. Locality records show that it occurs from the southern interior and the Kootenays to Vancouver Island and north through Central B. C. to the Peace River District at Rolla.

It also occurs in the Northwest Territories, where it was collected by Mr. A. G. Dustan (July 14, 1946) at Fort Simpson, north of latitude 60°.

Dr. T. B. Mitchell states that a num-

ber of colour forms have been distinguished, but that their limits are obscure. According to Sladen (1918) this species is a valuable alfalfa pollinizer in British Columbia.

Genus **COELIOXYX** Latreille

The bees of this genus are parasitic on species of *Megachile* and appear later in the season than their hosts.

**Coelioxys sayi** Robertson (*rufitarsus* Sm.)

KASLO, Aug. 10, 1909, 1♀ (L.W.C.).  
OSOYOOS, June 10, 1919, 4♂ (E.R.B.); July  
26, 1925, 2♂ (F.W.L.S.). FAIRVIEW, Aug.  
7, 1♂ 1♀; 21, 1♀, 1919 (E.R.B.). KERE-  
MEOS, July 21, 1917, 1♂ (F.W.L.S.).  
VASEAUX LAKE, June 14, 1919, 1♂ 1♀  
(E.R.B.). OKANAGAN FALLS, July 21, 1917,  
1♂ (F.W.L.S.). PENTICTON, Aug. 7, 1916,  
1♂ 4♀ (F.W.L.S.); June 19, 1♀; Sept. 7,  
1919, 2♂ (E.R.B.). SUMMERLAND, Aug.  
10, 1916, 3♀; July 20, 1917, 2♀  
(F.W.L.S.). VERNON, Aug. 9, 1903, 1♂;  
Aug. 8 and 13, 1904, 1♂ 1♀; July 28,  
1920, 1♂; Aug. 10, 1921, 2♂ 1♀  
(M.H.R.); July 24, 1913, 4♂; Aug. 25,  
1914, 1♀; July 25, 1917, 5♂ 1♀  
(F.W.L.S.); July 27, 1920, 1♂ (R.C.T.);  
July 7, 1920, 1♀ (N.L.C.); July 31, 1923,  
1♀ (D.G.G.). ARMSTRONG, Aug. 25, 1923,  
1♀ (T.W.). SALMON ARM, June 25 and 26,  
2♂; July 6 and 27, 1♂ 1♀, 1925 (A.A.D.).  
KAMLOOPS, July 7, 1936, 1♂; July 25,  
1943, 1♂ (E.R.B.). WALHACHIN, June 27,  
1918, 1♂ (E.R.B.). NICOLA, Aug. 3 and  
25, 1923, 1♂ 2♀ (E.R.B.). LYTTON, June  
21, 1931, 2♀; July 26, 1939, 1♀ (G.J.S.).  
LILLOOET, May 31, 1926, 1♂ 1♀ (J.McD.).  
AGASSIZ, June 5, 1925, 1♀ (R.G.). VAN-  
COUVER ISLAND, 1♂ (G.W.T.). VICTORIA,  
v. l., July 14, 1916, 8♀ (F.W.L.S.); Sept.  
25, 1916, 1♀ (H.H.); June 21, 1928, 1♂  
(W.D.); Sept. 12, 1937, 1♀ (Univ. B. C.  
Coll.). DUNCAN, v. l., July 26, 1902, 1♀;  
July, 1939, 1♀ (Univ. B. C. Coll.). SID-  
NEY, v. l., Aug. 15, 1916, 2♂ (F.W.L.S.).  
COMOX, v. l. (Point Holmes), July 5, 1933,  
3♂ 1♀ (J.McD.). SAANICH DISTRICT, v. l.,  
Aug. 2, 1917, 1♀ (W.D.). ROLLA, July 2,  
1927, 1♂ 1♀ (P.N.V.).

This bee is far more plentiful than any of the other species of *Coelioxys* in British Columbia, and has been taken throughout the southern interior and on Vancouver Island. The only northern record is from Rolla, in the B. C. Peace River District.

**Coelioxys ribis** Cockerell

EDGEWATER, July 16, 1939, 1♀ (I.J.W.).  
KASLO, June 5, 1906, 1♂ 2♀ (L.W.C.).  
CRESTON, June 29, 1924, 1♀ (C.S.L.).  
PENTICTON, June 19, 1919, 1♀; April 24,  
1929, 1♀ (E.R.B.). VERNON, June 6, 1900,  
1♂ (M.H.R.); Aug. 7, 1920, 1♀ (N.L.C.);  
May 28-31, 1904, 3♂ (E.P.V.). MARA,  
July 12, 1920, 1♀ (R.C.T.). SALMON ARM,



July 4, 1914, 1♀ (F.W.L.S.); July 20, 1925, 1♂ (A.A.D.). CHASE, June 6, 1937, 1♂ (E.R.B.). NICOLA, Aug. 3, 1923, 3♂ (E.R.B.). KAMLOOPS, June 13, 1943, 1♀ (G.J.S.). CHILCOTIN, June 13, 1929, 1♂; June 26, 1930, 1♀ (E.R.B.); Aug. 10, 1930, 2♂ (G.J.S.). VICTORIA, V.I., June 21, 1928, 1♀ (W.D.). SHAWNIGAN, V.I., July 7, 1914 (F.W.L.S.). COMOX, V.I., July 5, 1933, 1♀ (J.McD.). FITZGERALD, V.I., June 25, 1922, 1♀ (W.R.C.).

**Coelioxys ribis kincaidi** Cockerell  
NANAIMO, V.I. (Biological Station), June 28, 1♂ (Van Duzee). Cockerell (1925).

**Coelioxys octodentata** Say  
PENTICTON, Aug. 22, 1920, 1♀ (W.R.B.). WALHACHIN, June 27, 1918, 1♂ (E.R.B.).

**Coelioxys lucrosa** Cresson  
KASLO, Sept. 1, 1909, 2♀ (L.W.C.). PEACHLAND, Aug. 7, 1909, 1♂ (J.B.W.). VERNON, July 21, 1923, 1♀ (D.G.G.); Aug. 25, 1925, 1♀ (M.H.R.). SICAMOUS (Shuswap Narrows), Aug. 31, 1943, 1♀ (G.J.S.). LILLOOET, Aug. 25, 1921, 1♀ (A.P.).

**Coelioxys moesta** Cresson  
FT. STEELE, Aug. 15, 1921, 1♀ (W.B.A.). PEACHLAND, Aug. 4 and 9, 1909, 2♀ (J.B.W.). VERNON, Aug. 25, 1919, 1♀ (F.W.L.S.). VANCOUVER, Aug. 21, 1932, 1♀ (H.B.L.). FITZGERALD, V.I., Aug. 21, 1921, 1♀ (W.R.C.). SHAWNIGAN, V.I., July 7, 1914, 1♀ (F.W.L.S.).

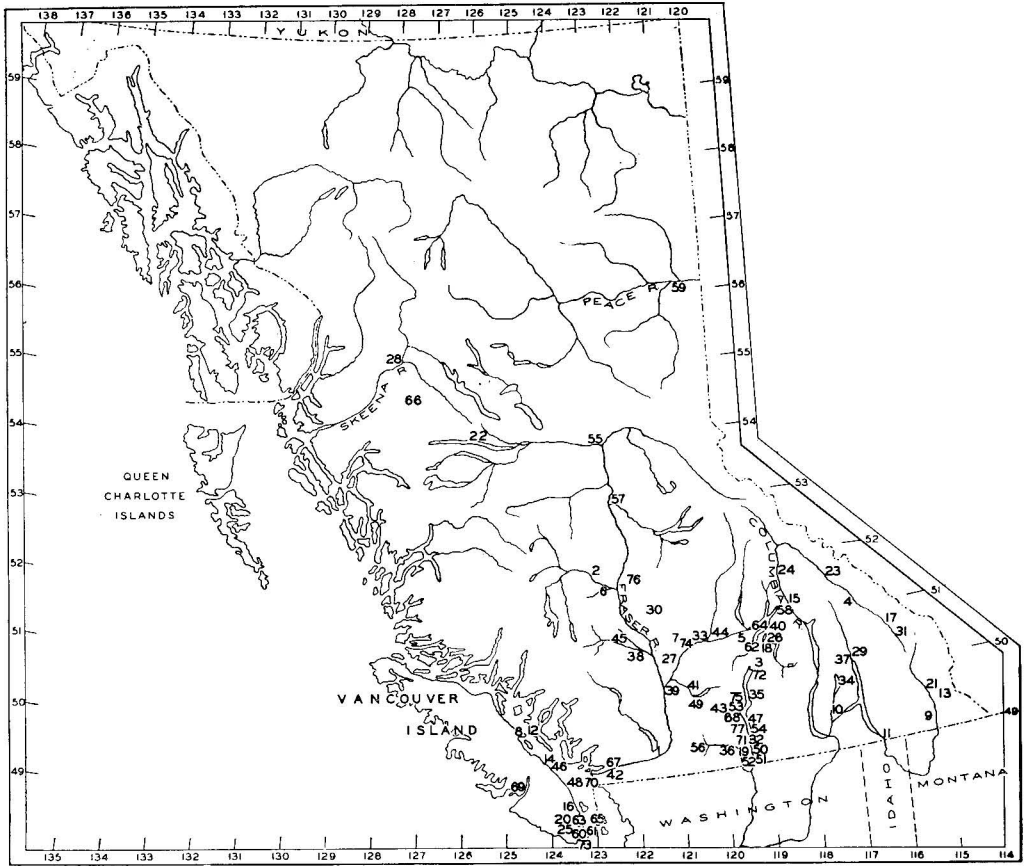
**Coelioxys alternata** Say  
KASLO, July 24, 1906, 1♀ (L.W.C.). OLIVER, July 22, 1923, 1♂ (E.R.B.). VERNON, July 25, 1919, 1♀ (F.W.L.S.). SALMON ARM, July 4, 1914, 1♀ (F.W.L.S.). LILLOOET, July 9, 1921, 1♀ (A.P.). CHILCOTIN, July 14, 1920, 1♂ (E.R.B.). DUNCAN, V.I., Aug. 4, 1920, 1♀ (W.D.). FITZGERALD, V.I., Aug. 7, 1921, 1♀ (W.R.C.).

**Coelioxys grindeliae** Cockerell  
NICOLA, Aug. 3, 1923, 1♂ (E.R.B.). OKA-NAGAN VALLEY, 1♂.

**LIST OF COLLECTORS**

Mentioned by initials in the text

A.A.D.—Dennys, A. A.  
A.B.B.—Baird, A. B.  
A.P.—Phair, A.  
A.W.G.—Gartrell, A. W.  
C.B.G.—Garrett, C. B.  
C.B.LeB.—LeBlond, C. B.  
C.G.H.—Hewitt, C. G.  
C.N.C.—Canadian National Collection  
C.S.L.—Lallamande, C. S.  
D.G.G.—Gillespie, D. G.  
E.C.V.D.—Van Dyke, E. C.  
E.M.A.—Anderson, E. M.  
E.P.V.—Venables, E. P.  
E.R.B.—Buckell, E. R.  
F.W.L.S.—Sladen, F. W. L.  
G.J.S.—Spencer, G. J.  
G.S.S.—Stace Smith, G.  
G.S.W.—Walley, G. S.  
G.W.T.—Taylor, G. W.  
H.B.L.—Leech, H. B.  
H.H.—Hugh, H.  
H.H.R.—Ross, H. H.  
H.S.—Smith, Harlan  
I.J.W.—Ward, I. J.  
I.McT.-C.—McTaggart-Cowan, I.  
J.B.W.—Wallis, J. B.  
J.C.B.—Bradley, J. C.  
J.D.G.—Gregson, J. D.  
J.D.McD.—McDunnough, J. D.  
J.K.J.—Jacob, J. K.  
K.G.—Graham, K.  
L.—Livingstone  
L.W.C.—Cockle, L. W.  
M.H.R.—Ruhmann, M. H.  
N.L.C.—Cutler, N. L.  
P.N.V.—Vroom, P. N.  
R.—Russell  
R.C.T.—Treherne, R. C.  
R.C.W.—Woodward, R. C.  
R.D.B.—Bird, R. D.  
R.G.—Glendenning, R.  
R.P.C.—Currie, R. P.  
T.W.—Wilson, T.  
W.B.A.—Anderson, W. B.  
W.D.—Downes, W.  
W.M.—Mathers, W.  
W.R.B.—Buckell, W. R.  
W.R.C.—Carter, W. R.



## LIST OF LOCALITIES

Arranged alphabetically: the numbers corresponding to those on the accompanying map. (V. I. = Vancouver Island).

- |                          |                       |                      |                           |
|--------------------------|-----------------------|----------------------|---------------------------|
| 1. Agassiz               | 21. Fort Steele       | 41. Merritt          | 61. Saanich, V. I.        |
| 2. Alexis Creek          | 22. Francois Lake     | 42. Milner           | 62. Salmon Arm            |
| 3. Armstrong             | 23. Golden            | 43. Minnie Lake      | 63. Shawnigan Lake, V. I. |
| 4. Carbonate             | 24. Goldstream        | 44. Monte Creek      | 64. Sicamous              |
| 5. Chase                 | 25. Goldstream, V. I. | 45. Mount McLaine    | 65. Sidney, V. I.         |
| 6. Chilcotin             | 26. Grindrod          | 46. Nanaimo, V. I.   | 66. Smithers              |
| 7. Clinton               | 27. Hat Creek         | 47. Naramata         | 67. Steelhead             |
| 8. Courtenay, V. I.      | 28. Hazelton          | 48. Newcastle, V. I. | 68. Summerland            |
| 9. Cranbrook             | 29. Howser Lake       | 49. Nicola           | 69. Tofino, V. I.         |
| 10. Crescent             | 30. 100 Mile House    | 50. Okanagan Falls   | 70. Vancouver             |
| 11. Creston              | 31. Invermere         | 51. Oliver           | 71. Vaseaux Lake          |
| 12. Comox, V. I.         | 32. Kaleden           | 52. Osoyoos          | 72. Vernon                |
| 13. Crows Nest           | 33. Kamloops          | 53. Peachland        | 73. Victoria, V. I.       |
| 14. Departure Bay, V. I. | 34. Kaslo             | 54. Penticton        | 74. Walkhachin            |
| 15. Downie Creek         | 35. Kelowna           | 55. Prince George    | 75. Westbank              |
| 16. Duncan, V. I.        | 36. Keremeos          | 56. Princeton        | 76. Williams Lake         |
| 17. Edgewater            | 37. Lardo             | 57. Quesnel          | 77. Winslow               |
| 18. Enderby              | 38. Lillooet          | 58. Revelstoke       |                           |
| 19. Fairview             | 39. Lytton            | 59. Rolla            |                           |
| 20. Fitzgerald, V. I.    | 40. Mara              | 60. Royal Oak, V. I. |                           |

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## ENTOMOLOGICAL NOTES FROM THE DIVISION OF PLANT PROTECTION

W. D. TOUZEAU

Division of Plant Protection, Science Service, Department of Agriculture, Vancouver, B. C.

The following scientific notes are presented as being of interest to the members of the Entomological Society of British Columbia.

The Oriental Fruit Moth survey was carried on during the summer of 1948 in the lower Okanagan Valley. The method of approach and the results were the same as the three years previous, and we are happy to report that up to the end of the survey there had been no interception of the moth in British Columbia. The survey will be carried on in 1949, due largely to the outbreak of the moth that has occurred in the Lombard Loop district, near Yakima, Washington. San Jose and European Scale have been receiving a great deal of attention by the Dominion and Provincial Departments of Agriculture, as well as the B. C. Fruit Growers' Association. Through the co-operation of these three bodies, and as a result of winter spraying, a grader inspection of apples from Kelowna south to Osoyoos and into

Keremeos has shown a considerable decrease in the amount of scale. Some 50 per cent reduction was noted in 1948 over 1947. While inspecting the Greek ship s.s. "Olga" on February 26, 1949, C. R. Cunningham was told by members of the crew that in warm weather Hold No. 2 was filled with constant chirping. Investigation led to the finding of a slight infestation of crickets along the forward bulkhead. The ship had arrived from the Orient. It is thought that the crickets came aboard ship in the Philippines. The s.s. "Orato" was examined on February 4, 1949, by C. R. Cunningham, prior to loading from the port of Vancouver. Her previous cargoes had been maize from the Argentine, followed by sulphate from Chile. A collection of resident insects was examined by P. Zuk, and among them were found a few false scorpions, apparently feeding on mites.

Contribution No. 74, Division of Plant Protection, Science Service, Dominion Department of Agriculture, Ottawa, Ontario.