PROVINCE OF BRITISH COLUMBIA

REPORT

OF THE

PROVINCIAL MUSEUM

OF

NATURAL HISTORY

FOR THE YEAR 1927

PRINTED BY
AUTHORITY OF THE LEGISLATIVE ASSEMBLY.

VICTORIA, B.C.:
Printed by CHARLES F. BANFIELD, Printer to the King's Most Excellent Majesty.
1928.

To His Honour ROBERT RANDOLPH BRUCE,
Lieutenant-Governor of the Province of British Columbia.

MAY IT PLEASE YOUR HONOUR:

The undersigned respectfully submits herewith the Annual Report of the Provincial Museum of Natural History for the year 1927.

T. D. PATTULLO,
Provincial Secretary.

Provincial Secretary's Office,
Victoria, B.C., February, 1928.

PROVINCIAL MUSEUM OF NATURAL HISTORY,
VICTORIA, B.C., February 18th, 1928.

The Honourable T. D. Pattullo,
Provincial Secretary, Victoria, B.C.

SIR,—I have the honour, as Director of the Provincial Museum of Natural History, to lay before you the Report for the year ended December 31st, 1927, covering the activities of the Museum.

I have the honour to be,
Sir,
Your obedient servant,

FRANCIS KERMODE,
Director.

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DEPARTMENT *of the* PROVINCIAL SECRETARY.

The Honourable T. D. PATTULLO, *Minister.*

J. L. WHITE, *Deputy Minister.*

PROVINCIAL MUSEUM OF NATURAL HISTORY.

Staff:

FRANCIS KERMODE, *Director.*

GEORGE A. HARDY, *Assistant Biologist.*

WINIFRED V. REDFERN, *Recorder.*

NANCY STARK, *Stenographer.*

FRANK A. RISSER, *Attendant.*

WILFRED H. GIBSON, *Apprentice.*

REPORT *of the*
PROVINCIAL MUSEUM OF NATURAL HISTORY
FOR THE YEAR 1927.

By Francis Kermode, *Director.*

OBJECTS.

(*a.*) To secure and preserve specimens illustrating the natural history of the Province.

(*b.*) To collect anthropological material relating to the aboriginal races of the Province.

(*c.*) To obtain information respecting the natural sciences, relating particularly to the natural history of the Province, and diffuse knowledge regarding the same.

ADMISSION.

The Provincial Museum is open, free, to the public daily throughout the year from 9 a.m. to 5 p.m. (except New Year's Day, Good Friday, and Christmas Day); it is also open on Sunday afternoons from 1 p.m. to 5 p.m. from May 1st until the end of October.

VISITORS.

The following figures show the difference between those who registered their names in the book and those who were checked by the attendants. While only 27,499 people registered, the total of the check was 48,761.

	Registered.	Checked.
January	1,224	2,083
February	1,137	2,228
March	1,031	1,871
April	1,251	2,217
May	1,866	2,957
June	1,633	4,589
July	6,661	10,342
August	7,024	12,245
September	2,787	4,787
October	1,355	2,476
November	655	1,278
December	875	1,688
Totals	27,499	48,761

The year 1927 being the Sixtieth Anniversary of Confederation, British Columbia joined in the Dominion celebrations, and in this connection was honoured by a visit from Their Royal Highnesses the Prince of Wales and Prince George, who were touring the Dominion of Canada.

While Their Royal Highnesses were in Victoria arrangements were made for a trip to Saanich Inlet for the purpose of obtaining salmon of the Pacific Coast, in which success was attained; the largest fish caught being sent to the Museum, where a cast was made at the request of His Honour Lieutenant-Governor Robert Randolph Bruce.

This was forwarded to His Royal Highness the Prince of Wales through the Honourable F. A. Pauline, Agent-General for British Columbia in London, England. The following letter was received by His Honour the Lieutenant-Governor of British Columbia:—

"St. James' Palace, S.W., January 6th, 1928.

"Dear Mr. Bruce,—The cast of the salmon has now arrived from British Columbia House.

"The Prince of Wales wishes me to thank you for it; it is beautifully set up, and is a perfect model of a Pacific salmon.

"Yours sincerely,

"A. Lascelles.

"*His Honour the Lieutenant-Governor of British Columbia,*
Victoria, B.C."

His Honour Lieutenant-Governor Bruce, who takes a keen interest in the Museum, several times brought distinguished visitors from Government House to visit the collections, among whom were His Excellency The Viscount Willingdon, Governor-General of Canada, and Her Excellency the Viscountess, and Premier Stanley M. Bruce and Mrs. Bruce of Australia.

ACTIVITIES.

During the year 1927, although no field expeditions were sent out, the work in the office materially increased, as collectors and students throughout British Columbia who were interested in natural history constantly sent in specimens for examination and identification, and this entailed a great deal of study and investigation.

A number of new wall-cases were installed on the stairway between the first and second floors. These cases contain specimens showing the life-histories of some of the beetles and the damage which they do to our forest trees and shrubs.

Two bulletins were published during the year, one being by Dr. E. M. Walker, of the University of Toronto, on the "Odonata of the Canadian Cordillera" (Dragonflies); the other, "A List of the Macrolepidoptera of British Columbia" (Butterflies and Moths), by E. H. Blackmore, which had been in preparation for some time.

Corrections and additions to these will be published in this report (*see* page 20) and following annual reports.

Professor Harold St. John, of the State College of Washington, Pullman, Wash., has described two new species of plants, *Juncus fucensis* (page 14) and *Draba acinacis* (page 14).

Mr. E. R. Buckle, Vernon, B.C., presented the Museum with a named collection of Orthoptera, a detailed list of which will be found on page 19.

The Museum has also been favoured with the presentation of a collection of North American Odonata from Mr. F. C. Whitehouse, Vernon, B.C.

Mr. T. T. McCabe, Barkerville, B.C., presented a collection of small mammals taken in that district, also a black wolf in good pelage for mounting (*see* page 18).

ANTHROPOLOGY.

The following is an annotated list of the anthropological collection mentioned in the Provincial Museum Report, 1926, page C 8, which was purchased by the Department. This was for many years known as part of the "Dr. W. F. & J. Tolmie Collection."

Tlingit.

4127. Part of a marmot-trap of carved whalebone, bird holding fish-head.
4128. Skin-scraper, etched design.
4129. Charm, fine sandstone, incised design of a whale.
4133. Shaft-handle, whalebone, double-notched for seal and sea-otter spear.
4169. Basket (wallet) of spruce-root, twined weave with false embroidery design of grass representing "War-club" and "Tree-shadow" on the top and bottom, and "Fireweed" in the centre.
4170. Basket (wallet) of spruce-root, twined weave with false embroidery design of rye-grass, representing "salmon-berry."
4171. Basket, globular, spruce-root, twined weave with false embroidery perpendicular "shadow" design in bleached and Vaccinium dyed grass.

Haida.

4104. Ladle, sheep-horn, plain with a wide bowl.
4105. Spoon, wooden, painted head inside the bowl in red and black.
4110. Dish, wooden, two pieces, carved and painted. Bowl is supported by a halibut with a human figure in the mouth and an eaglet on tail; on the lid is an eagle feeding the eaglet of the bowl.
4111. Dish, wooden, flat wide bowl, carved seal.
4112. Dish, wooden, plain bowl with upturned ends, the rim painted green.
4113. Box, circular, whalebone sides, pegged on yellow-cedar bottom with copper.
4114. Dish, yellow-cedar sides in one piece pegged on red-cedar bottom, carved on four sides, with opercula on the rim.
4115. Mortar, stone (hard black), circular with protruding carved head, wings and legs on side of bowl and a small tail.
4124. Charm, soapstone, carved bear's head and forepaws.
4125. Pipe, Skidegate slate, carved face on bowl and portion of a figure on the stem.
4136. Halibut-hook, V-shaped yew-knot, spruce-root wrapping and bone barb.

4163. House and totem model, house with painted front, pole with three figures, bird, man and bird.
4188. Canoe model, cedar dugout, stained black on the outside and red inside; carved figure of hunter with a cape and hat, a killed seal, and two yew paddles in the canoe; thwarts sewn with spruce-root. A hunting and fishing model.

TSIMSHIAN.

4102. Spoon, sheep-horn bowl and carved goat-horn handle with the killer whale, bird, and a man's head.
4103. Spoon, goat-horn, two pieces, handle carved.
4107. Dish, alder, carved and painted red, black, and green; inlaid with abalone; carving of a beaver holding a stick, face on breast and eagle on the tail.
4108. Dish, wooden, carved, bird with a human figure on the breast and human face on the tail.
4109. Dish, wooden, small cup-shaped bowl supported by a carved and painted frog.
4116. Rattle, chief's, two pieces, wooden, carved and painted red, black, and green, abalone eyes. Carvings are a horizontal bird with beaked bird on chest, demon and frog on the back, and a hawk on the tail.
4117. Rattle, wooden, two-piece, six-sided, painted red and black.
4118. Chief's head-dress (amalite), wooden, carved human face surrounded by eleven small faces painted red, black, and green, with outer rim of abalone, and abalone eyes and teeth.
4119. Mask, wooden, carved eagle painted red and dark green; eyes and mouth inlaid with abalone, the head support of skin.
4120. Mask, wooden, carved raven painted red, black, and blue, with movable eyes and beak and copper eyebrows.
4121. Mask, wooden, carved bear painted red, black, and green (latter colour stone paint), with lower jaw-teeth and ears of separate wood, carved faces on ears.
4122. Charm, carved whale-tooth, dark brown, polished, carved broad face.
4123. Charm, carved bone, otter or wolf, with nine holes down the back.

KWAKIUTL.

4186. Hat, wide brim, high crown, twined weave, spruce-root, painted design of killer whale in red, black, and green.

NOOTKAN.

4137. Hook, cod, bone barb and whalebone shank with split-twig lashing.
4182. Basket, circular with knob lid, wrapped twine weave, cedar-bark warp, weft of rush, horizontal band of plain and dyed eel-grass.
4183. Basket, circular with knob lid, wrapped twine weave, cedar-bark and rush bottom, bleached and dyed eel-grass on sides, designs of whales and birds.
4184. Basket, circular, flat lid, wrapped twine weave, cedar-bark and rush bottom, eel-grass bleached and dyed sides, design of "birds."
4185. Hat, conical, twined weave of split root, partly lined with twined weave of cedar-bark.

SALISHAN (COAST).

4126. Pipe, soapstone, plain.
4134. Arrow, cedar shaft, point of chipped stone, feathered, wrappings of cherry-bark.
4135. Spear, fir shaft, four hardwood prongs, cherry-bark wrappings, used for ducks.
4138. Blanket-pin, bone, pointed, slender.
4139. Blanket-pin, copper, large eye at one end.
4140. Spear-point, bone, flat, four barbs on one edge.
4141. Dagger-point, bone, flat, double-edged point, broken off a large dagger.
4142. Chisel, bone, flat, sharpened from both sides, tapering from the middle.
4143. End of a whalebone club, flat, rounded.
4144. Skin-dressing stone, triangular piece, chipped make for scraping.
4145. Skin-dressing stone, chipped make for scraping.
4146. Skin-dressing stone, globular, greenish, with one face polished.
4147. Skin-dressing stone, globular, whitish, with one face polished.
4148–49. Skin-dressing stones, two flat faces with rounded ends for softening and smoothing skins.
4150–51. Sinker stones or duck weights, round granite stones.

4152–53. Sinker stones or net weights, small round stones with chipped grooves for lashings.
4154. Hammer-stone, flat, oval, with chipped depression for grip.
4155. Hammer-stone or unfinished anchor-stone, rough piece of hard sandstone, with deep chipped depressions on opposite sides.
4156. Mortar, unfinished, rough hard stone with a deep chipped depression.
4157. Spear-head, large, black, chipped make, tapering from centre both ways.
4158. Chisel, green jade.
4160. Head-band, wool on fibre foundation, zigzag design in red and black.
4161. Head-band, wool on fibre foundation, perpendicular, alternate bands in red and brown.
4162. Blanket or mat, wool on fibre foundation with various designs in dyed wools.
4164. Basket, large trunk-shaped with lid of split root, coiled weave imbricated throughout with grass and arrow and half-arrow in cherry-bark.
4165. Basket, box-shaped square corners, overlapping lid, split root, coiled weave imbricated perpendicular bands in straw and cherry-bark.
4166. Basket with cover woven to body on one edge. Flanged rim on bottom. Split root, coiled weave, imbricated throughout with grass and horizontal bands of cherry-bark.
4167. Basket, trunk-shaped, small, no lid, coiled weave, split root, imbricated throughout, zigzag design.
4168. Basket, creel-shaped, no lid, coiled weave, split root, imbricated on three sides with alternate perpendicular bands of green, red, and black cherry-bark.
4187. Canoe, model, alder dugout, roughly painted whale design on side, a travelling-canoe.

SALISHAN (INTERIOR).

4130. Skin-scraper handle of elk-horn, brown-polished, L-shaped.
4131. Mocassin last or skin-stretcher, wooden, flat, one end tapering to a rounded end.
4178. Bag or wallet, perpendicular twined weave of rush edged with pleated rush and cedar-bark.
4179. Bag, buffalo-hide pack-bag, fringed with dressed deer-hide, painted red and green.

DENE OR ATHAPASCAN.

4106. Spoon, horn, with a wide bowl and a short carved handle. Otter carved on the handle and a carving on the bowl.
4132. Skin-scraper, iron, S-shaped, two-bladed.
4180. Basket, birch-bark, tall, oval-mouthed, willow twig sewn to rim, and side joins with spruce-root.
4181. Basket, birch-bark, willow twig on rim sewn with spruce-root, scratched cross designs on the sides.

KLIHITAT.

4172. Bag, flat, for gambling-counters, cedar-bark foundation, wrapped twined weave of grass bleached and dyed. "Dog" design on the rim and three horizontal zigzag patterns.
4173. Basket, large, rounded, cedar-root, coiled weave imbricated throughout with squaw-grass, bleached and dyed with Oregon grape and willow-bark. "Dogs" on the rim, "wave" pattern on the body.
4174. Basket, rounded body, circular top, cedar-root coiled weave with imbricated perpendicular stripes of squaw-grass and willow-bark.
4175. Basket, rounded body, circular top, coiled weave cedar-root imbricated throughout with squaw-grass and inverted V-pattern in willow and cherry bark.
4176. Basket, oblong, coiled weave, cedar-root imbricated throughout with bleached squaw-grass with designs in cherry and willow bark; "net" design on one side, human figures on the other. Tanned skin covers the start of the basket on the bottom.
4177. Basket, circular, with lid, cedar-bark foundation, twined weave with false embroidery of grass and cedar-bark, design representing "wave" or "ripples" on the water.

BOTANY.

BY G. A. HARDY.

While the number of specimens donated this season shows a great falling-off as compared with the last, it by no means indicates a proportionate decrease in interest shown by the public. Several factors have contributed to this state of affairs. The absence of any field-trip might be the chief cause, and the fact that some of our most reliable contributors have

not been in a position to augment our collection as previously, either from lack of opportunity, or because little or anything not already presented on previous occasions had turned up.

In all, 250 specimens have been recorded; of these, twenty-eight are new to the Herbarium and include nine new to the Province, two new to Canada, and four new to science.

The following contributors to the collection are cordially thanked for their interest and public-spiritedness in helping to build up what is, after all, their own Herbarium; the number in brackets referring to the specimens donated: J. R. Anderson (2), W. B. Anderson (59), A. S. Barton (1), J. C. Bennett (11), Miss N. Bittancourt (1), T. H. Bond (8), W. Burton (1), Rev. R. Connell (3), G. V. Copley (3), E. P. Eldridge (3), H. Fowkes (2), W. H. Gibson (2), M. Grant (1), V. E. L. Goddard (13), G. A. Hardy (22), Miss G. Hopkins (1), F. Kermode (1), Miss L. Koyl (8), Mrs. J. P. MacFadden (80), Mrs. Mackenzie (5), A. Morkill (1), H. Nation (1), W. A. Newcombe (5), C. P. H. Newcombe (1), C. C. Pemberton (1), Miss W. Redfern (3), A. R. Sherwood (3), E. Teit (1), H. Toms (1), P. deNoe Walker (1), and Miss N. Wollaston (1).

As hithertofore, without the help of specialists a considerable portion of our work would be null and void; we therefore take this opportunity of publicly thanking the following for the invaluable assistance so courteously rendered: Professors W. R. Maxon, A. S. Hitchcock, P. C. Standley, C. R. Ball, and S. F. Blake, of the Smithsonian Institution, Washington, D.C.; Professor H. St. John, Pullman, Wash.; Dr. C. P. Smith, San Jose, Calif.; and Mr. A. H. Brinkman, Craigmyle, Alta.

The living wild-flower exhibit has become a permanent institution, as it meets with marked approval. It is not always easy to keep consistently up-to-date, owing to the very nature of the subject; easily accessible plants being a *sine qua non* of first importance. In this connection we are greatly indebted to interested parties in occasionally providing us with fresh specimens, not available in our immediate vicinity.

No inconsiderable part of our work consists in the identification of plants, for students and others, a service which is being increasingly taken advantage of not only by local residents, but from inquirers from all parts of the Province. This is as it should be, more than any other one thing justifying the time and work involved.

New to Science.

Juncus fucensis St. John. Comox, V.I., June 20th, 1915 (John Macoun).

Draba acinacis St. John. Mount Garibaldi, B.C., July 31st, 1926 (G. A. Hardy).

The names of two others by the same authority are withheld, pending the publication of the descriptions, one of which is from the Washington side of the border.

New to Canada.

Castilleja ardifera Macbr. & Payson. Fairmont, B.C., July 22nd, 1927. (W. B. Anderson).

Haplopappus Bloomeri Gray. Westbridge, B.C., August 8th, 1924 (G. V. Copley).

New to British Columbia.

Draba incerta Payson. Gentian Ridge, Mount Garibaldi, B.C., August 8th, 1926 (G. A. Hardy).

Castilleja Cusickii Greenman. Paradise Valley, B.C., July 24th, 1927 (W. B. Anderson).

Tragopogon dubius Scop. Near Salmon Lake, Nicola, B.C., July, 1927 (T. H. Bond). Rydberg's "Flora of the Rocky Mountains and Adjacent Plains" records *T. dubius* from Colorado as "escaped from cultivation."

Scabiosa arvensis L. Five miles north of Salmon Lake, Nicola, B.C., July, 1927 (T. H. Bond). Probably introduced with fodder.

Of Special Interest.

Cornus suecica L. Douglas Channel, B.C., June, 1927 (C. P. H. Newcombe, per W. A. Newcombe). This is worthy of note as being the only record for British Columbia, as far as known, since the visit to the Coast by Archibald Menzies, Botanist on Captain Vancouver's ship, who collected the first specimen in the same locality on August 14th, 1792.

Hepaticæ of the Selkirk and Rocky Mountains of Canada.

A correction: *Diplophyllum taxifolium* (Wahl.) Dumort., recorded in the Mus. Rep. for 1925, page 16, should be *Diplophyllum apiculata.*

Plants which are supplementary additions to the Provincial Museum Preliminary Check-list, "The Flora of Vancouver and Queen Charlotte Islands," 1921 (introduced plants being printed in italics in conformity with the printing of the Check-list):—

EUPHORBIACEÆ (SPURGE FAMILY).

Euphorbia Helioscopia L. Victoria, V.I., August 18th, 1926 (A. R. Sherwood).

COMPOSITÆ (COMPOSITE FAMILY).

Tragopogon pratensis L. Oak Bay, V.I., May 22nd, 1927 (E. P. Eldridge).

THE GENUS LUPINUS IN THE HERBARIUM OF THE PROVINCIAL MUSEUM.

The Museum was fortunate in being favoured during the summer of 1927 with a visit from Dr. Charles Piper Smith, the authority on the North American lupines; as a result of his inspection of the material in the above collections, it has been deemed desirable to take advantage of the revision and to list the species as they stand to date, together with the synonymy, in the hopes it will help to unravel some of the confusion existing regarding the status of some of the species. Dr. Smith has kindly examined the list, which thus renders it correct beyond question.

The arrangement of the species is in alphabetical order in agreement with the "Flora of Vancouver and the Queen Charlotte Islands," a natural sequence being beyond the scope of this article. A list of the publications by Dr. Smith in which any of the following species are mentioned is placed at the end.

The Museum would like to take this opportunity of soliciting specimens of lupines from all parts of the Province in order to work out the exact limits of distribution, or to acquire more material of uncertain forms, with the added possibility of finding new species or varieties.

The lupines are a conspicuous and well-known group of plants belonging to the Leguminosæ or Pea-flower family. They possess a marked resemblance to one another, often to a degree where differentiation is difficult and depends on minute characters.

In general the leaves are digitately palmate; that is, a number of separate leaflets radiate from a common origin. The flowers are most often bright blue, or blue and white, while others are yellow; certain species are widely used as ornamental plants in gardens and parks.

They inhabit diverse regions; from the sea-shore to high alpine districts, often forming large masses of bloom outranking everything else in the vicinity.

Lupinus (Tournefort) Linnaeus.

arboreus Sims (Yellow-flowered Bush Lupine).

Yellow, also white; perennial. Zone, Humid Transition. B.C.–Calif. and Chile, So. Amer. Our largest lupine, much used for ornamental purposes; for this reason sometimes difficult to state the limits of its natural occurrence.

bicolor Lindl. (Lindley Annual Lupine).

sabulosus Heller.
trigulosus Gendoger.
micranthus bicolor (Lindl.).

Blue and white, occasionally pure white; annual. Zone, Transition. B.C.–Calif.

bingenensis Suksdorf (Bingen Lupine).

Blue; perennial. Zone, Upper Sonoran. B.C.–Oregon. A plant of the dry interior region in B.C. Creston.

Burkei Wats. (Burke Lupine).

apodotropsis Heller.

Blue; perennial. Zone, Arid Transition. B.C.–Montana. Fish Lake.

formosus var. *bridgesii* (Wats.) Greene (Villous Summer Lupine).

Blue; perennial. Zone, Upper Sonoran and Transition. B.C.–Northern Lower California. A strong and persistent grower, very difficult to eradicate when once established; flowering from June to September near Victoria. The only B.C. records are Victoria and Shawnigan, Vanc. Is.

latifolius var. *canadensis* C. P. Smith (Vancouver Broad-leaved Lupine).

Previously confused with *columbianus* Heller (*see* "Flora of Vancouver and Queen Charlotte Islands"). Blue; perennial; leaflets "consistently pubescent above." Zone, Humid Transition. B.C. (only).

latifolius var. *columbianus* (Heller) C. P. Smith (Columbian Broad-leaved Lupine).

confusus Heller.
columbianus Heller.
agninus Gandoger.

Has also been called: *nootkatensis; arcticus; laxiflorus.* Blue; perennial; leaflets glabrous above. Zone, Humid Transition. B.C.–California.

latifolius var. *subalpinus* (Piper & Robinson) C. P. Smith (Subalpine Broad-leaved Lupine).

subalpinus P. & R.

Blue; perennial. Zone, Hudsonian. B.C.–Oregon.

lepidus Dougl. (Prairie Lupine).

Blue; perennial. Zone, Humid Transition and Upper Sonoran. B.C.–Wash. Victoria, Langford Plains, Goldstream.

littoralis Dougl. (Chinook Licorice).

Blue; perennial. Zone, Humid Transition. B.C.–Calif., along the sea-coast. The roots were formerly used as food by the natives.

lyalli Gray (Lyall Low Lupine).

Blue; perennial. Zone, Arctic. B.C.–Oregon.

micranthus Dougl. (Small-flowered Annual Lupine).

polycarpus Greene.

Blue, sometimes white; annual. Zone, Arid Transition and Upper Sonoran. B.C.–Calif.

microcarpus var. *scopulorum* C. P. Smith (Vancouver Platycarpos).

densiflorus scopulorum C. P. Smith.

Listed as *microcarpus* in the "Flora of Vancouver and Queen Charlotte Islands." Yellow; annual. Zone, Upper Sonoran. Vanc. Is., B.C.; Whidby Is., Wash. On clay cliffs. In its typical form, Chile.

nanus var. *apricus* (Greene) C. P. Smith (Greene Annual Lupine).

apricus Greene.

vallicola apricus (Greene) C. P. Smith.

hirsutulus Greene.

Blue and white; annual. Zone, Upper Sonoran and Transition. B.C.–Calif. Victoria.

nootkatensis Donn. (Nootka Lupine).

Blue; perennial. Zone, Canadian, Humid Transition. Queen Charlotte Is.

oreganus Heller (Oregon Lupine).

amabilis Heller.

Blue; perennial. Zone, Arid Transition. B.C.–Oregon. Previously listed as *laxiflorus.* Victoria.

polyphyllus var. *pallidipes* (Heller) C. P. Smith (Eugene Large-leaved Lupine).

pallidipes Heller.

Blue; perennial. Zone, Lower Transition. A very large species. This subspecies has upper surface of leaves pubescent; in *polyphyllus* they are glabrous.

rivularis Dougl. (River-bank Lupine).

lignipes Heller.

Blue; perennial. Zone, Humid Transition. B.C.–California. Nootka. Has been confused with *nootkatensis* and the *latifolius* subspecies.

sericeus Pursh. (Pursh Silky Lupine).

Blue; perennial. Zone, Arid Transition. B.C., Wash., Oregon, Idaho. Dry Interior of B.C.

sericeus var. *flexuosus* (Lindl.) C. P. Smith (Lindley Silky Lupine).

flexuosus Lindl.

ornatus bracteosus Robinson.

subulatus Rydb.

Blue; perennial. Zone, Arid Transition and Upper Sonoran. B.C.–Utah and Colorado. Cranbrook. Recorded in Museum Report, 1916, as *argenteus.*

wyethii S. Watson.

humicola tetonensis E. Nelson.

Blue; perennial. Zone, Arid Transition. B.C.–Wyoming. Wilson Creek, Atlin. Recorded as *arcticus* in Prov. Mus. Report, 1916, page 19.

Works by Dr. Charles Piper Smith, in which references are made to B.C. Lupines.

Studies in the Genus Lupinus.—Bulletin of the Torrey Botanical Club: Vol. 45, 1918, Nos. 2 and 3; Vol. 49, 1922, No. 7; Vol. 50, 1923, Nos. 8 and 9; Vol. 51, 1924, Nos. 10 and 11.

Distributional Catalogue of the Lupines of Oregon.—Contributions from the Dudley Herbarium of Stanford University: Vol. 1, 1927, No. 1.

NEW PLANTS FROM BRITISH COLUMBIA.

By Harold St. John.

(Contribution from the Botany Department of the State College of Washington, No. 10.)

Juncus fucensis St. John, n. sp.

Perennial from a stout woody horizontal rhizome, which is often dichotomously branched and always scaly towards the tip; stems several (7–11), not widely spaced, erect smooth striate, 3–6 dm. tall; bladeless sheathing bracts 1–3; basal leaves 2–4, smooth; their sheaths 4–10 cm. long, loose above, hyaline-margined; auricles less than 1 mm. long, rounded; blades smooth 2–5 dm. long, 1 mm. or less in width, often equalling the stem, channelled above, acute; cauline leaves 1–2, smooth, sheaths 4–7 cm. long, loose above, hyaline-margined, the auricles less than 1 mm. long, rounded; blades, like the basal, but shorter; lowest bract with a leaf-like channelled blade that exceeds or is exceeded by the inflorescence; inflorescence narrowly paniculate, the branches and flowers strictly erect, 3–8 cm. long, 1 cm. wide; flowers sessile or short-pedicelled, not clustered, prophyllate, 3–4 mm. long; sepals lanceolate with an obtuse cucullate tip, markedly coriaceous, stramineous on the back, the tip and margins with a broad band of dark-brown or almost black colour; petals equalling the sepals, ovate-lanceolate, obtuse, coriaceous on the back, the margins thinner, but similarly dark brown in colour; stamens 6, two-thirds to three-quarters the length of the perianth, the anther three times as long as the filament; capsule equalling the perianth, ellipsoid bluntly trigonous, short-beaked by the remnant of the style, 3-celled or nearly so; seeds asymmetrically barrel-shaped, truncate at the distal end, somewhat tapering and apiculate at the proximal end, about 14-ribbed longitudinally, with distinct fine cross-lines between the ribs, chestnut-brown, 0.5 mm. long.

Rhizoma horizontale, internodiis brevibus. Caules erecti, 3 usque 6 dm. alti, laeves. Folia basilaria et caulina frondosa, laminis acutis linearibus canaliculatis. Flores ca 3–4 mm. longi discreti; tepala petalaque aequilonga obtusa; stamina 6; antherae triplo filamentis longiores; semina 0.5 mm. longa doliforma 14-costata.

British Columbia: Salt marsh, Comox, Vancouver Island, June 20th, 1915, *John Macoun* 845 (B.C. Prov. Mus.).

Washington: Salt marsh, Port Discovery, Jefferson Co., September 13th, 1921, *Harold St. John* 5858 (Type in Herb. State College of Washington); Lopez, San Juan Co., June 25th to August 1st, 1917, *S. M. & Mrs. E. B. Zeller* (1235 (Herb. Gray).

This new halophytic rush is a member of the Section *Poiophylli*, and is most closely related to *J. Gerardi* Loisel., of the Atlantic coastal salt marshes of eastern North America, Europe, northern Africa, and of the alkaline marshes and steppes of the interior of Europe and Asia. *J. Gerardi* has frequently been reported from the Pacific Coast. A collection from the salt marshes at Nanaimo, Vancouver Island, July 2nd, 1914, *John Macoun* 846 (605), remains the only evidence seen for its occurrence there. This has the slender inflorescence and thus approaches the Pacific species, but it has the short perianth exceeded by the broad capsule, so it must be accepted as genuine *J. Gerardi*. All of the other specimens from the Pacific Coast reported as this species, when studied, have proved to be the new *J. fucensis*. From the several differences, the following may be selected to differentiate the two species: *J. Gerardi* has the perianth 2–2.5 mm. long, exceeded by the capsule, the inflorescence open broad usually ovate in outline; *J. fucensis* has the perianth 3–4 mm. long, the capsule equalling the perianth, and the inflorescence narrowly oblong in outline, the branches strictly erect.

The writer wishes to express his thanks for the loan of specimens to Dr. B. L. Robinson, of the Gray Herbarium, and to Director F. Kermode, of the Provincial Museum of Natural History, Victoria, British Columbia.

Draba acinacis St. John, n. sp.

Cæspitose perennial, branching at the surface of the ground into several short branches, these covered with the marcescent remnants of old leaves, and bearing a rosulate tuft of the leaves of the present season; leaves spatulate entire acute, with a few strong simple cilia at the very base, pubescent throughout with white branched or stellate hairs, 7 mm. long, 3 mm. wide; cauline leaves about two, borne on the lower part of the stem, elliptic sessile, about equalling the basal ones, entire and similarly stellate pubescent; stems several sub-scapose, the few cauline leaves nearly basal and soon withering; scapes terete smooth and shining, sparsely stellate pubescent below and nearly glabrate above, 8–9 cm. tall; inflorescence a short raceme, 3–4-flowered; pedicels 3–5 mm. long, ascending; flowers unknown; pods linear flat curved or

sabre-shaped, strongly flattened, perfectly glabrous and shining, 10–15 mm. long, 1–1.5 mm. broad, with a distinct midrib and several interweaving lateral veins, style obsolete; seeds about 12 in each cell, in two rows, light brown, elliptic, with a marked caruncle, wingless, 0.8 mm. long.

Planta perennis, scapis bifoliatis pubescentibus, foliis spatulatis integris stellato-hispidis, siliculis acinaciformibus glabris 10–15 mm. longis, 1–1.5 mm. latis.

British Columbia: 5,300 feet alt., Black Tusk Slope, (Mt.) Garibaldi, July 31st, 1926, *G. A. Hardy* 8028 (Type in Provincial Museum of Nat. Hist., and a fragment of it in the Herb. of the State College of Washington).

The specific name is taken from the Latin *acinaces*, meaning a short Persian sabre, in allusion to the curved sabre-shaped pods. The material on which this new species is based is rather scanty, consisting of a single tuft with root, rosulate basal tufts, and six stems each bearing mature fruit. The specimen was submitted to the late Dr. E. B. Payson, who agreed that it certainly represented an undescribed species. It has not been possible to obtain more complete material showing the flowers, so the description is drawn from fruiting material only, and the details of the flowers must be added later.

The new *Draba acinacis* is perhaps closest to *D. aurea* Vahl. The latter has its stems more leafy, the leaves 1–2 cm. long, the pods pubescent 2–3 mm. wide and often twisted. *D. acinacis* has not over two cauline leaves and these subbasal leaves 7 mm. long the pods glabrous 1–1.5 mm. wide and flat. *D. lonchocarpa* Rydb. has scapose stems, the leaves obovate or spatulate 3–5 mm. long and densely stellate and the pod more or less twisted. *D. acinacis* has the stems with usually two cauline leaves, the leaves spatulate 7 mm. long and only moderately stellate, and the pod flat. *D. deflexa* Greene is an annual with the leaves oblong-lanceolate nearly glabrous superficially, but the margins hirsute-ciliate, the stem more leafy, the inflorescence becoming very elongate, the pedicels widely spreading and deflexed in fruit much exceeding the pods. On the other hand, *D. acinacis* is a perennial with the leaves spatulate stellate pubescent throughout with a few basal cilia, the stems with not more than two leaves, the inflorescence very short, and the pedicels strongly ascending even in fruit and less than half the length of the pods. *D. stenoloba* Ledeb. is an annual with ciliate leaves, the basal obovate-oblong 6–9 mm. wide, and the pods contorted. *D. acinacis* is a perennial with the leaves ciliate only at the very base, the leaves spatulate 3 mm. wide, and the pods flat.

Pullman, Washington.

ENTOMOLOGY.

British Columbia Orthoptera.

Presented by E. R. Buckle, Salmon Arm, B.C. Sequence of families according to Essig's "Insects of Western North America, 1926."

Family Locustidæ.

Acrydium granulatum Kby. Penticton.
Acrydium brunneri (Bolivar). Barkerville; Chilcotin.
Amphitornus nanus R. & H. Chilcotin.
Chlœaltis abdominalis (Thomas). Chilcotin.
Chorthippus curtipennis (Harris). Creston; Canal Flats.
Bruneria brunneus (Thomas). Chilcotin.
Arphia pseudonietana (Thomas). Vernon.
Arphia frigida Scudder. Cranbrook.
Chortophage viridifasciata (De Geer). Cranbrook.
Camnula pellucida Scudder. Chilcotin.
Xanthippus corallipes leprosus Saussure. Cranbrook.
Xanthippus neglectus Thomas. Chilcotin.
Dissosteira carolina (Linnæus). Vernon.
Spharagemon æquale (Say). Chilcotin; Kamloops.
Metator nevadensis (Bruner). Chilcotin.
Mestobregma kiowa (Thomas). Kamloops.
Trimerotropis cœruleipes Scudder. Salmon Arm.
Trimerotropis campestris McNeil. Chilcotin.
Trimerotropis pallidipennis Burmeister. Chilcotin.

Circotettix undulatus (Thomas). Chilcotin.
Circotettix suffusus (Scudder). Cranbrook; Salmon Arm.
Aerochoreutes carlinianus Thomas. Chilcotin.
Hesperotettix pratensis Scudder.
Melanoplus bruneri Scudder. Chilcotin; Canal Flats.
Melanoplus mexicanus atlanus Riley. Vernon.
Melanoplus dawsoni Scudder. Cranbrook.
Melanoplus washingtonius (Bruner).
Melanoplus fasciatus (F. Walker). Chilcotin.
Melanoplus borealis monticola Scudder. Canal Flats.
Melanoplus femur-rubrum (De Geer). Creston; Vernon.
Melanoplus cinereus Scudder. Oliver.
Melanoplus packardii Scudder. Chilcotin.
Melanoplus alpinus Scudder. Chilcotin.
Melanoplus infanlilis Scudder. Chilcotin; Cranbrook.
Melanoplus confusus Scudder. Chilcotin.
Melanoplus bivittatus (Say). Chilcotin.
Asemoplus montanus (Bruner). Cranbrook.
Bradynotes chilcotinæ Hebard. Chilcotin.

Family TETTIGONIIDÆ.

Phaneroptera furcata (Bruner). Vernon; Oliver.
Conocephalus fasciatus (De Geer). Vernon; Salmon Arm.
Anabrus simplex Haldeman.
Anabrus longipes Caudell. Vernon.
Steiroxys trilineata (Thomas). Vernon.
Cyphoderris monstrosa Uhler. Lumby.
Cyphoderris piperi Caudell. Chilcotin.

Family GRYLLIDÆ.

Gryllus ossimilis Fab. Creston.
Œcanthus nigricornis argentinus Saussure. Chilcotin.
Œcanthus nigricornis quadripunctatus Beutenmuller. Vernon; Salmon Arm.

Family GRYLLOBLATTIDÆ.

Grylloblatta campodeiformis E. N. Walker. Invermere.

VANCOUVER ISLAND ELATERIDÆ.

BY G. A. HARDY.

The Elateridæ, or Click-beetle, is a family of considerable economic importance, the larvæ inflicting damage to many plants and vegetables.

The adults are remarkably uniform in general appearance and are characterized by the structure of the under-surface of the thorax, which is adapted to enable them to suddenly spring with a faint clicking sound when disturbed.

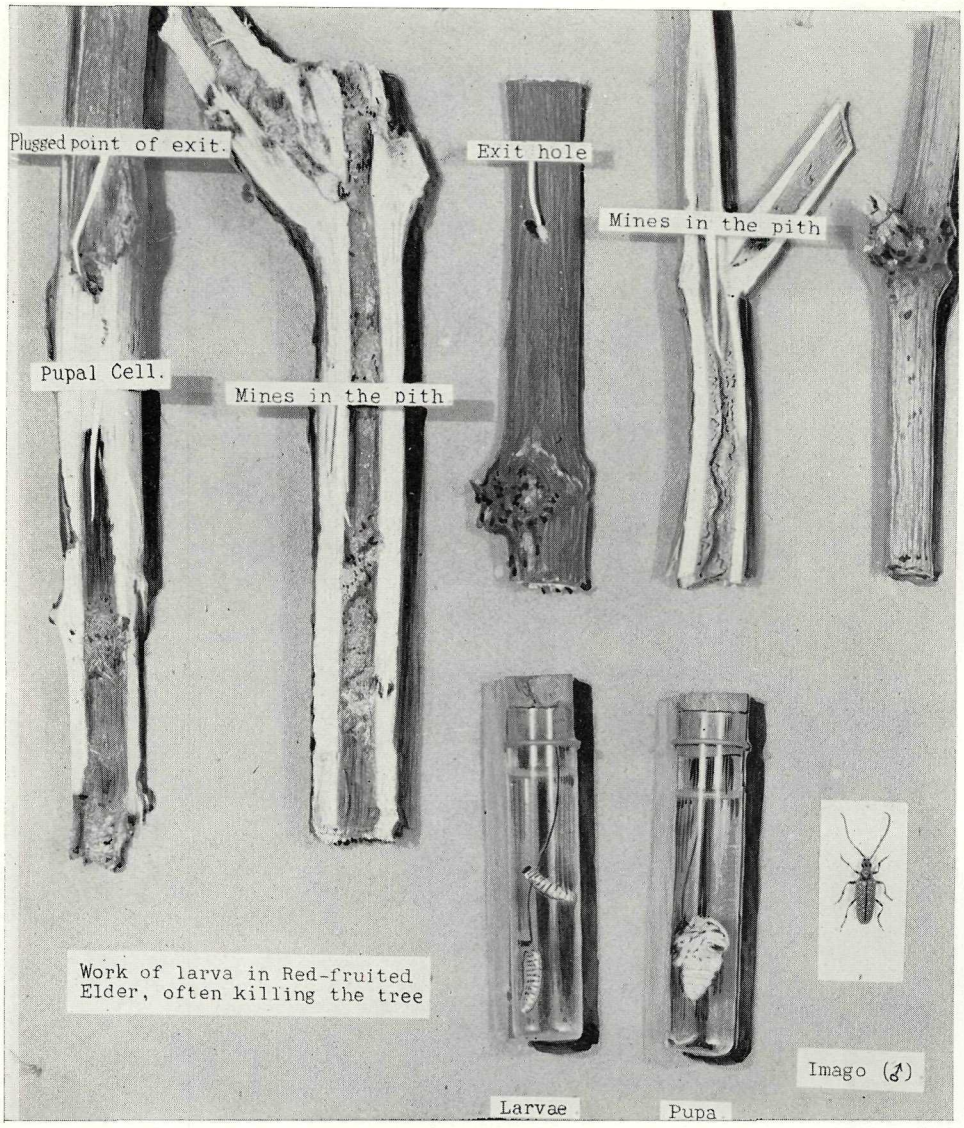
The larvæ are elongate cylindrical, horny-integumented grubs, and from their appearance have aptly received the popular name of "Wireworms." They feed on the roots of grasses, vegetables, etc., or in decaying wood.

The species listed were collected in the vicinity of Victoria and surrounding district by G. A. Hardy, and were named by Dr. E. C. Van Dyke, of Berkeley, California. No pretence of completeness is suggested, as very many more are under investigation, but it was thought desirable to publish these while opportunity offered.

Arrangement is in accordance with Leng's Catalogue, 1920.

ELATERIDÆ (CLICK-BEETLES).

Adelocera
profusa Cand.
Alaus
melanops Lec.
Limonius
infuscatus Mots.
Pheletes
consimilis (Walk.).

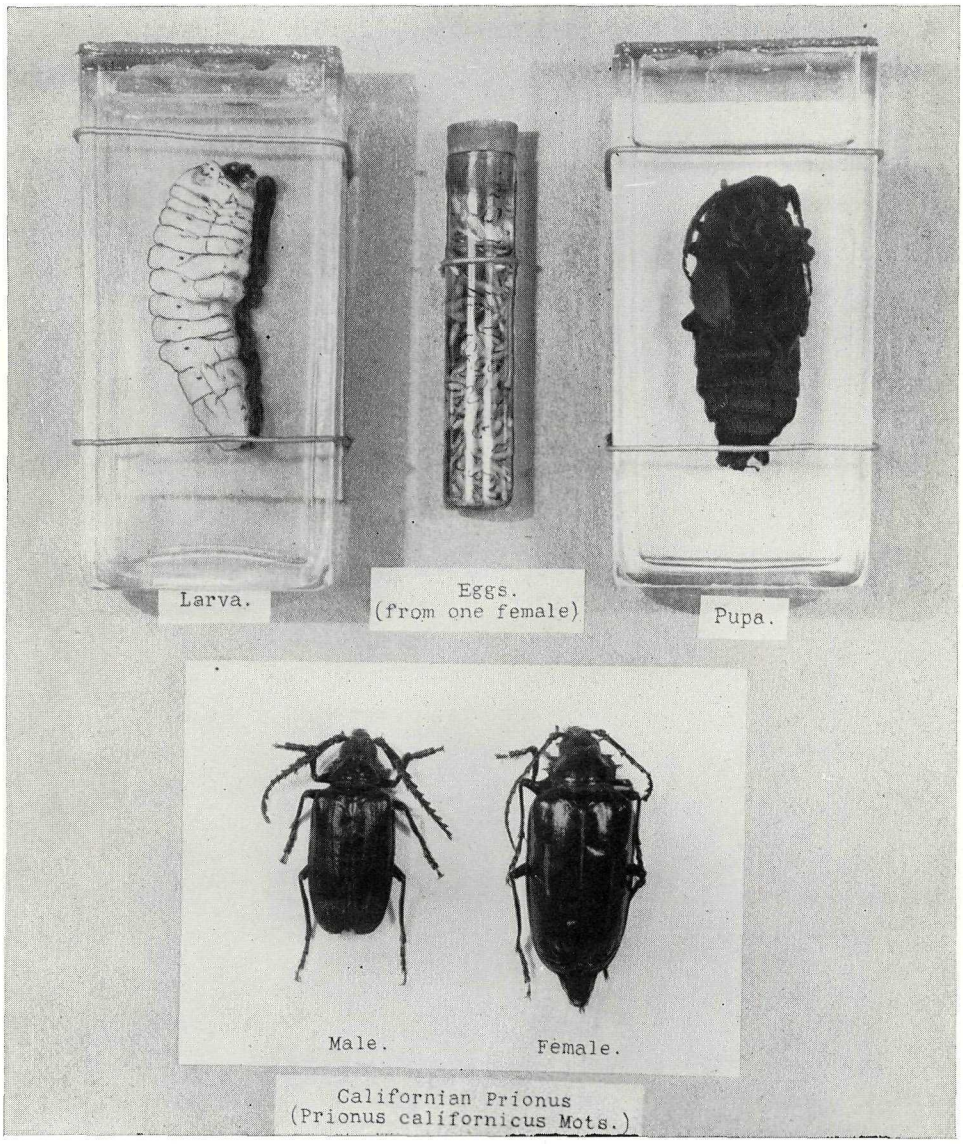


SHAGREENED GEM.

DESMOCERUS CRIBRIPENNIS LEC.

This species effects the Red-fruited Elder *(Sambucus callicarpus)*. The eggs are laid in the angle of the upper branches. The *larva* feeds within the central pith of the stem working down towards the basal part as it grows larger; this stage extends over a period of two or three years. The pupal stage is of short duration and is passed within the end of the burrow, the larva having first bored to the inner surface of the bark. The beetle emerges during May and June and frequents the leaves and flowers of its host plant.

Occurs from British Columbia to California.

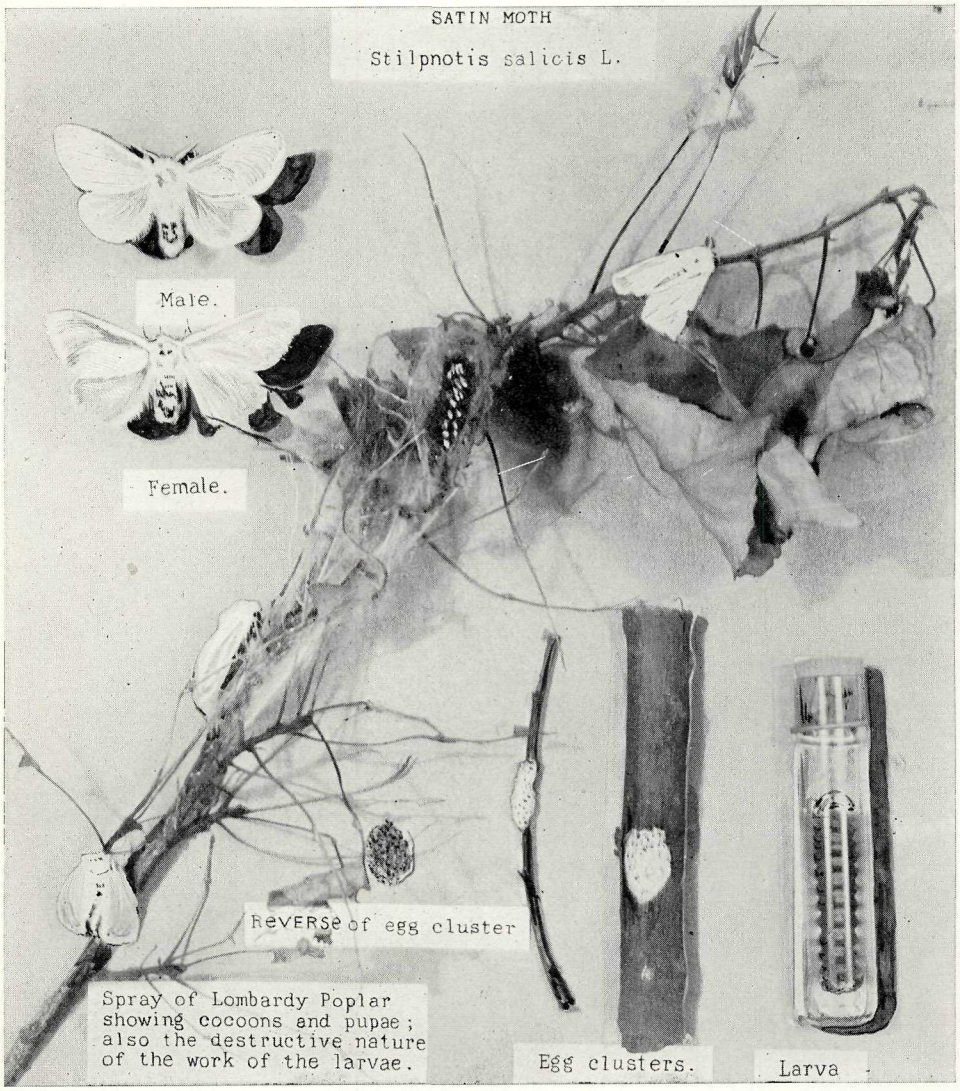


These large beetles appear somewhat commonly during July and August. They are night-flying, and by day may be met with under boards, etc., or near electric lights, to which they had been attracted during the previous evening.

The eggs are laid in the ground at the base of various living or decaying trees; Oak, Firs, etc., the larvae feeding on and within the roots. Occasionally the underground portion of fence posts are affected. The larval stage continues over several years.

The pupal stage is passed in the ground, a cocoon of packed earth being formed for this purpose.

Occurs on the west coast from British Columbia to California.



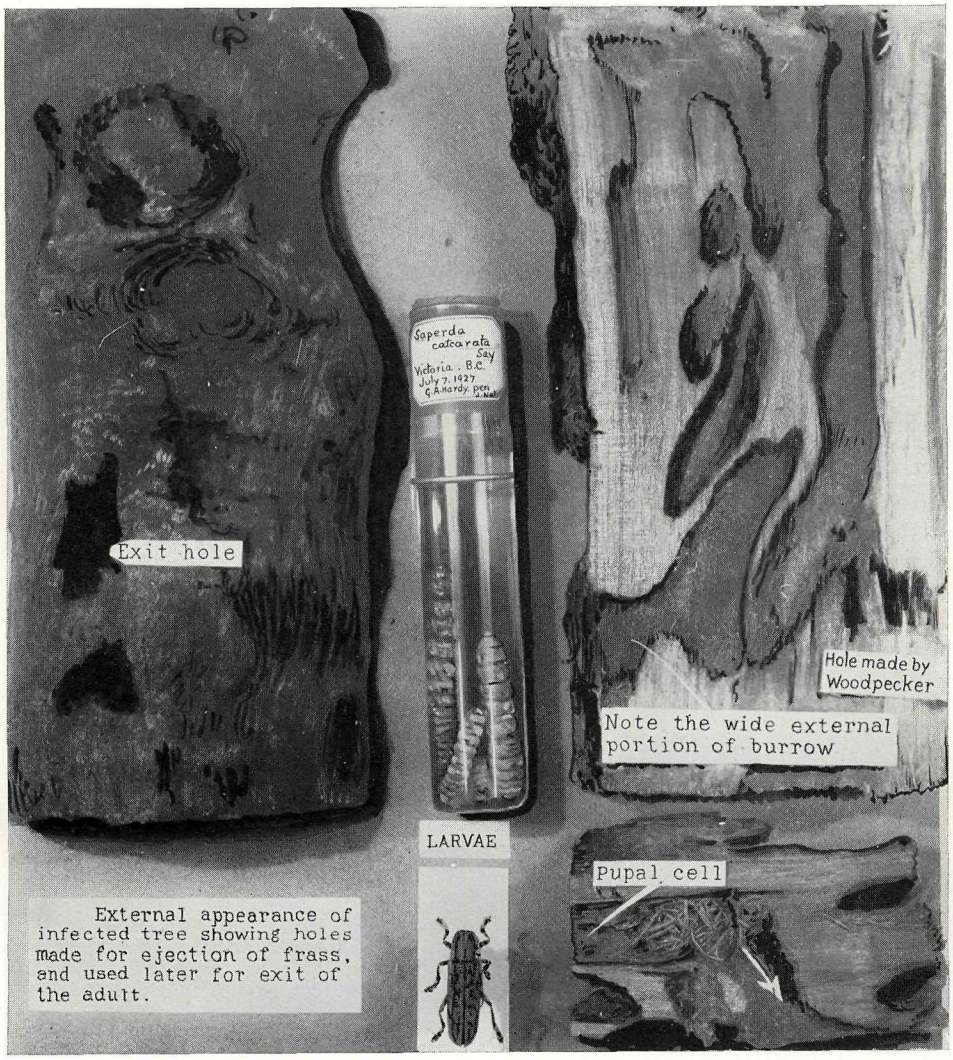
A destructive pest of Poplars and Willows, attacking the Lombardy Poplars most noticeably in Victoria. It is a native of Europe, and has been introduced through commerce into America.

The eggs are laid in clusters on the bark and twigs of the tree and are covered with a light frothy substance secreted at the time of oviposition.

The larva or caterpillar hatches in about 10 days and grows but slowly until the fall when it hibernates, singly as a rule, in the crevices of the bark or other similar shelter. In the spring it resumes feeding, becoming full-fed early in July.

The chrysalis form is assumed in a light transparent cocoon constructed among the twigs, or under the coping of fences, etc., in the vicinity; after a short period the Moth emerges in July, and thus completes the life cycle.

An early spraying with an arsenical poison, with some sticker added is suggested as a means of control (Felt).



POPLAR LONGHORN.

Saperda calcarata Say.

Sometimes of considerable economic importance, where Poplars and Aspens are planted for shade or ornamental purposes, as the trees are stunted or deformed and often killed by its ravages.

The egg is laid in an incision in the bark made by the female, the resultant larva or grub feeds under the bark for a short period before entering the wood where extensive burrows are excavated. During the spring and early summer a large amount of "sawdust" or frass is ejected from a hole made for the purpose.

Pupation takes place during the spring, of the third or fourth year at the internal extremity of burrow, a cell being formed by plugging the outer part with a wad of coarse wood fibre. The pupal stage is of short duration the adults emerging in July and August of the same year.

Widely distributed throughout the continent.

Athous
ferruginosus Esch.
vittiger Lec.
Ludius
tenebrosus Lec.
furtivus (Lec.).
opaculus (Lec.).
propola Lec.
medianus (Germ).
æreipennis (Kby.).
carbo var. *lateralis* (Lec.).
suckleyi (Lec.).
Hemicrepidius
morio (Lec.).
Dolopius lateralis Esch.
theveneti Horn.
Elater
apicatus var. *phoenicopterus* Germ.
bimaculatus Van Dyke.
Ectamenogonus
rhodopus (Lec.).
Megapenthes
stigmosus (Lec.).
Melanotus oregonensis (Lec.).

MELASIDÆ.

Melasis
tsugæ Hopping. (Collected by W. H. A. Preece.)
Epiphanis
cornutus Esch.
Anetastes
druryi Kyi.

Additions to literature having reference to Vancouver Island Cerambycidæ:—

Further Notes on Cerambycidæ of Vancouver Island. Pan-Pacific Entomologist, Vol. 4, pages 61–67, Hardy & Preece.

Previously omitted: Ontario Entomological Society, 1913.

AMPHIBIA OF BRITISH COLUMBIA.

ADDITIONAL NOTES AND CORRECTIONS.

(Prov. Mus. Report, 1925, page C 21, and 1926, page C 37.)

Ambystoma decorticatum Cope.

This species is represented in the collection by a single young specimen from Prince Rupert, and is the most southerly B.C. record; the type was taken at Port Simpson, B.C., and described by Cope in 1886.

For the identification and information concerning this rare species we are indebted to Mr. J. R. Slevin, of California, and Dr. E. R. Dunn, Smith College, North Hampshire, Mass., through the courtesy of the Smithsonian Institution, Washington, D.C.

Rana aurora aurora Cope.

Several specimens of this species were taken in a woodland pond near Florence Lake, V.I., in July this year by Hardy and Gibson, and is the second record, as far as known, for Vancouver Island.

Other specimens were donated by Mrs. Leavens, of Vedder Crossing, on the Mainland, in July.

Living examples from both localities are thriving in the vivarium, and seem to be very adaptable to confinement, becoming quite tame and feeding on any small insects and worms.

ACCESSIONS.

The following additions have been received during the past year and cordial thanks are extended to the donors:—

ANTHROPOLOGY.

Spear-point and two bone wedges. Mill Bay, V.I. (H. Toms).
Compressed skull. Crofton, V.I. (Mrs. W. H. Hamersley).
Stone sinker, rubbing-stone, and arrow-head. Victoria (E. A. Cooke).
Tolmie collection, purchased from Mr. W. A. Newcombe (*see* page 8).

PALÆONTOLOGY.

Portion of Crinoid stem, Missourian carboniferous. Sardis, B.C. (Miss Nora Edwards).
Orthoceras, cretaceous. Saltspring Island (P. deNoe Walker).
Plant remains. Princeton (Rev. John Goodfellow; Coll. F. T. Willway).

Red ochre from Red Bluff, Tulameen River, 1½ miles east of Princeton (Rev. John Goodfellow; Coll. F. T. Willway).

Leaf impressions—*Taxodium dubium; Juglans* sp. Tranquille (P. deNoe Walker).

Leaf impressions. Mouth of Whipsaw Creek (H. Nation).

Mammalogy.

Brown Bat (*Vespertilio fuscus* Beauv.). Esquimalt (W. S. Dawes).

Muskrat (*Fiber zibethicus* Cuvier). Captured in a lumber-yard, Victoria (Messrs. Moore & Whittington).

Columbian Ground-squirrel (*Citellus c. columbianus* Ord). Indian Point, Barkerville, B.C. (T. T. McCabe).

Elk or Wapiti (*Cervus canadensis* Erxleben). Shushartie Bay (Provincial Police Office).

Coast Deer (*Cariacus columbianus* Rich.). Mount Arrowsmith, V.I. (Game Department).

Collection of small mammals from Indian Point Lake and Barkerville, presented by T. T. McCabe, consisting of:—

One Coyote (*Canis latrans* Say).
Two Mink (*Mustela vison energumenos* (Bangs)).
One Sayi Spermophilus (*Callospermophilus lateralis tescorum* Hollister).
One Jumping Mouse (*Zapus t. trinotatus* Rhoads).
One Skunk (*Mephitis occidentalis occidentalis* Baird).
Three Weasels (*Mustela c. cicognanii* Bonaparte).
Two Chipmunks (*Eutamias amœnus affinis* Allen).
One Flying Squirrel (*Glaucomys volans* Lin.).

Mr. McCabe also presented the Museum with a fine specimen of a Black Timber-wolf (*Canis nubilis* Say), which is being mounted for exhibition.

Ornithology.

Hungarian or European Partridge (*Perdix perdix* L.). Gordon Head, V.I. (F. Kermode).

California Quail (*Loportyx c. californica* Shaw). Gordon Head (F. Kermode).

California Murre (*Uria troille californica* Bryant). Victoria (W. H. Gibson).

Virginia Rail (*Rallus virginianus* Linn.). Chemainus (R. B. Halhed).

Cooper's Hawk (*Accipter cooperi* L.). Gordon Head (F. Kermode).

Golden-crowned Sparrow (*Zonotrichia coronata* Pall.). Victoria (F. Maynard).

Saw-whet Owl (*Cryptoglaux a. acadia* Gmelin). Victoria (M. Greenwood).

Sharp-shinned Hawk (*Accipiter velox* Wilson). Gordon Head (F. Kermode).

Fork-tailed Petrel (*Oceanodroma furcata* L.). Esquimalt (J. W. Tharratt).

Northern Shrike (*Lanius borealis* Vieillot). Tranquille (P. deNoe Walker).

Kennicott's Screech-owl (*Otus asio maxwelliæ* Ridgway). Gordon Head (F. Kermode).

Robin's nest with two eggs. Mount Tolmie, V.I. (W. H. Gibson).

Nest and thirteen eggs of California Quail. Gordon Head (G. A. Hardy).

Lichtenstein's Kingbird (*Tyrannus melancholicus satrapa* (Cabanis & Heine)). French's Beach, Renfrew District, Vancouver Island, February, 1923 (J. G. French). This Flycatcher was determined as above by Major Allan Brooks, through the interest of Mr. J. A. Munro, and constitutes a new record for the Province and Canada. The normal habitat of the species is Mexico and southwards; it may have strayed so far north through the medium of a steamer.

Albescent Specimens.

Western Robin (*Planesticus m. propinquus* Ridgway). Metchosin, V.I. (W. Mawle).

American Scoter (*Oidemia americana* Swainson). Mayne Island (J. Aitken).

Western Meadowlark (*Sturnella neglecta* Audubon). Gordon Head (W. Holmes).

American Crow (*Corvus b. brachyrhynchos* Brehm.). Kenfalls, V.I. (H. Berryman).

None are true albinos, but pale fawn with normal-coloured iris.

Reptilia.

Garter-snake (*Thamnophis o. ordinoides* B. & G.). Gordon Head (G. A. Hardy).

Alligator Lizard (*Gerrohotus principis* B. & G.). Vedder Crossing, B.C. (Miss E. Leavens).

Amphibia.

Oregon Red-legged Frog (*Rana a. aurora* B. & G.). Florence Lake, V.I. (G. A. Hardy and W. H. Gibson).

Oregon Red-legged Frog (*Rana a. aurora* B. & G.). Vedder Crossing (Mrs. H. K. Leavens). New locality record.

Young Toad (*Bufo boreas boreas* Baird & Girard). Tranquille, B.C. (P. deNoe Walker).

Rusty Salamander (*Ancides ferreus* Cope). Sooke, V.I. (E. A. Cooke); Sidney, V.I. (W. H. A. Preece).

Ichthyology.

Cirrus Sculpin (*Blepsias cirrosus*). Victoria (D. Bowles).

Pipe-fish (*Syngnathus* sp. yg.). Nitinat Lake (per C. Tatham).

Egg-case, "Mermaid's Purse," of Giant Ray (*Raja linoculata*). Cadboro Bay (Miss N. Bittancourt).

Entomology.

Considerable additions have been made to the collection in this division, as the following particulars will testify.

While much remains to be done in the identification of specimens, especially in the Hymenoptera, our thanks are here recorded for the help so far received in this connection from the following:—

Coleoptera: Mr. C. F. Frost, of Massachusetts; Messrs. R. and G. R. Hopping, Vernon, B.C.; and Dr. E. C. Van Dyke, Berkeley, Calif.

Orthoptera: Mr. E. R. Buckle, Vernon, B.C.

Odonata: Dr. E. M. Walker, Toronto, Ont.

Lepidoptera: Mr. E. H. Blackmore, Victoria, B.C.

Orthoptera.

Mr. E. R. Buckle, of Vernon, B.C., has kindly donated a named collection of the typical B.C. species; this consists of ninety specimens of forty-seven species. In view of the abundance of many of this family and the great economic importance of others, it is an especially welcome addition. For detailed list *see* page 15.

Neuroptera.

Several specimens of *Hemerobeidæ* from Nanoose, V.I., 1923 (W. A. Newcombe).

Odonata.

A collection of North American specimens, approximately 400 specimens, which included very many B.C. species, was presented by Mr. F. C. Whitehouse, of Nelson, B.C. This collection is particularly desirable as material in this order had hitherto been very poor as compared with other orders.

Lepidoptera.

Loganberry Borer (*Bembicia marginata* Harris), including larvæ and work. Gordon Head (G. A. Hardy).

Eyed Hawk-moth (*Smerinthus cerisyi* Kirby). Victoria (C. Baldwin; N. F. Pite).

Miscellaneous collection of Moths. Victoria (E. A. Cooke).

Æmilia roseata Wlk. Vancouver, B.C. (G. H. Larnder).

Coleoptera.

A small collection of aquatic Coleoptera from Vancouver Island was taken by G. A. Hardy, and identified by J. B. Wallis, of Winnipeg. Mr. Wallis also donated a number of Canadian species of which many occur in B.C.

G. A. Hardy, Victoria; W. H. A. Preece, Sidney, V.I.; and G. Stace Smith, of Creston, B.C., have continued to add many specimens to the collection during the year.

The following specimens were also contributed:—

Scolytidæ, etc. (J. L. Alexander).

Zacotus matthewsi (W. J. Lowther).

Weevils (R. Warren).

Prionus californicus Mots. (larva, C. Strable; Miss E. Florence; R. Johns).

Saperda calcarata Say infecting *Populus tremuloides* Michx. (J. Noble).

Larva of 10-lined Chafer *Polyphyllus decemlineata* (Say) found attacking roots of cherry-trees and geraniums, Victoria (W. Walker).

Various specimens of different families, Sidney (V. E. L. Goddard).

Rosalia funebris Mots. on plant in garden, Victoria (Mrs. G. Liddle).

Monochamus oregonensis Lec. Belmont (E. A. Cooke).

Amphizoa striata Lec. Duncan (P. J. Darlington).

Rosalia funebris Mots. taken on newly felled alder, noticed gnawing the bark. Nanoose Bay (C. Hole).

Anobium larvæ and adults. Working in wood of old box and beams of building. Victoria (W. A. Newcombe).

Diptera.

Larvæ of Bibio fly "March Bibio" taken from crop of pheasant, per Major Furber, collected by Mr. Olds, Vancouver.

Hymenoptera.

Ichneumon sp. Cobble Hill (Dr. O. B. Beale).

A large number of unnamed specimens. Sidney (W. H. A. Preece).

Several specimens from Gordon Head (G. A. Hardy).

Marine Invertebrates.

Porifera.

Sponge (*Esperella adherens* Lambe) on pecten; Sponge (*Mysilla parasitica* Lambe) on pecten. Victoria (from W. Harvey per W. A. Newcombe). Identified by Dr. McLean Fraser.

Two large sponges from Queen Charlotte Islands (*Eperiopsis vancouverensis* Lambe) (W. N. Dempster per W. A. Newcombe).

Echinodermata.

Green Sea-urchin. Dallas Road, Victoria (W. H. Gibson).

Crustacea.

Freshwater Crayfish (*Astacus*). Colquitz (per F. E. L. Philp).

Mollusca.

Moniliopsis incisa Cpr.

Thracia curta Conrad. Additions to Museum Collection (W. A. Newcombe).

Acmæa triangularis Cpr.

Various shell-bearing Mollusca. Victoria (Humphrey Toms).

Sandstone with borings of *Pholadida*. Victoria (Bunny Carter).

A number of specimens of considerable interest, including:—

Chysodomus liratus Martyn.

Spisula falcata Gould. Saanichton Spit, the most southern record for Canada; and several other shells not yet fully determined (from W. Harvey per W. A. Newcombe).

Cryptochiton stelleri Midd. Dallas Road, Victoria (W. H. Gibson).

Miscellaneous Collection. Victoria (W. Harvey per W. A. Newcombe).

Miscellaneous Collection. Sidney (W. H. A. Preece).

MACROLEPIDOPTERA.

The Check-list of the Macrolepidoptera of British Columbia, by E. H. Blackmore, was issued by the Department in September, 1927.

The following additions and corrections have come to hand since the list was published:—

Additions.

Page 6. After eurymedon *Luc.*

ab. cocklei *Gunder.*

insert *ab.* columbiana *Gunder.* Kaslo.

This new aberration or transitional form, as Mr. Gunder prefers to call it, was described in the "Entomological News," Vol. 38, page 67, Nov., 1927, from a specimen taken by the late J. W. Cockle at Kaslo.

Page 12. After Family SPHINGIDÆ

insert Protoparce Burm.

quinquemaculata *Haw.* Summerland.

Page 23. After levis *Grt.*

insert occata *Grt.* Summerland; Oliver; Osoyoos.

Page 36. After formosa *Hulst.*

insert *form* admiranda *McD.* Keremeos; Seton Lake.

This new form was described in Can. Ent., Vol. 59, page 240, Oct., 1927, from four specimens. Three taken at Keremeos (Garrett) and one at Seton Lake (McDunnough).

Page 37. Insert lacustrata *Gn.* Vernon; Penticton

before designata *Hufn.*

after takuata *Tayl.*

insert lagganata *Tayl.* Mount McLean.

Page 40. After perplexa *McD.* add the following localities: Nicola (type), Keremeos, and Field.

CORRECTIONS.

Dr. J. McDunnough, who is working on the B.C. species of the genus *Eupithecia*, has found that several of Taylor's species are synonymous. His published investigations (Can. Ent., Vol. 59, page 243, Oct., 1927) so far indicate that *insignificata* Tayl., *sublineata* Tayl., and *scelestata* Tayl. are synonyms of *misturata* Hulst., and that *slocanata* Tayl. is a synonym of *alberta* Tayl. Therefore the alterations on page 39 of the Check-list will be as follows:—

misturata *Hulst.* So. Vanc. Isl.; L.F.V.; Lillooet; Field; Kaslo.

insignificata Tayl.

sublineata Tayl.

scelestata Tayl.

alberta *Tayl.* Lillooet; Kaslo.

slocanata Tayl.

PUBLICATIONS RECEIVED FROM OTHER INSTITUTIONS.

(Alphabetically arranged.)

Art Historical & Scientific Society, Vancouver	1
Bernice Bishop Museum, Honolulu	1
Boston Society of Natural History	8
Bristol Museum and Art Gallery, England	1
British Columbia Government Publications	7
British Museum, London, England	2
Bureau of Science, Manila, Philippine Islands	2
California Academy of Sciences, San Francisco, Calif.	29
Cardiff Naturalists' Society	3
Carnegie Institute, Pittsburgh, Pa.	1
Children's Museum of Boston, Boston, Mass.	1
Cincinnati Museum Association	1
City Art Museum, St. Louis	2
Cleveland Museum of Natural History, Ohio	1
Colorado Museum of Natural History, Denver, Colo.	4
Cornell University, Ithaca, N.Y.	2
Dominion Government Publications	51
Dominican Republic, Agricultural Department of	3
Field Museum of Natural History	11
Grand Rapids Public Library, Mich.	1
Gray Herbarium, Harvard University, Mass.	1
Illinois Natural History Survey	3
Instituto General Y Tecnico De Valencia, Spain	1
Carried forward	137

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Lloyd Library, Cincinnati, Ohio	3
Los Angeles Museum, Los Angeles, Calif.	3
Manchester Museum	2
Minnesota Historical Society, St. Paul, Minn.	1
Museum of Fine Arts, Boston, Mass.	6
National Museum, Melbourne, Australia	1
Nebraska State Museum, Lincoln, Neb.	1
Newark Museum Association, Newark, N.Y.	1
New York Botanical Garden	1
New York Zoological Society	5
Ohio Agricultural Experiment Station	6
Peabody Museum, Yale University	12
Pennsylvania Museum, Philadelphia, Pa.	12
Philadelphia Academy of Natural Science	2
Philadelphis Museums, Philadelphia, Pa.	2
Public Museum, Milwaukee, Wis., U.S.A.	2
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Rochester Academy of Science, Rochester, N.Y.	2
San Diego Natural History Museum	6
San Diego Society of Natural History	7
Scripps Institution of Oceanography of the University of California	8
Smithsonian Institution, Washington, D.C.	94
Southwest Museum, Los Angeles, Calif.	2
St. Louis Public Library Monthly Bulletin	1
Staten Island Institute of Arts & Sciences	8
United States Department of Agriculture	12
University of California, Berkeley, Calif.	27
University of Illinois, Urbana, Ill.	2
University of Montreal, Montreal, P.Q.	3
University of Oklahoma	2
University of Toronto, Toronto, Ont.	2
University of Washington, Seattle, Wash.	6
Vancouver City Museum	5
Wagner Free Institute of Science, Philadelphia	5
Zoological Society of Philadelphia	1
Total	402

We are also indebted to the following for pamphlets received during the year: Dr. Charles Piper Smith, San Jose, Calif.; Dr. John K. Small, New York Botanical Gardens; and Mrs. Leslie Spier, Seattle, Wash.

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