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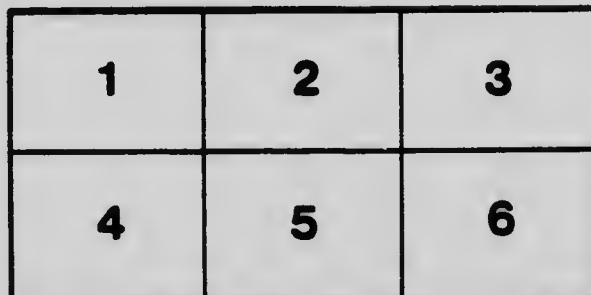
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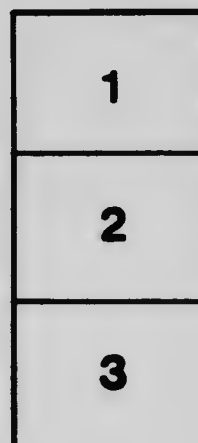
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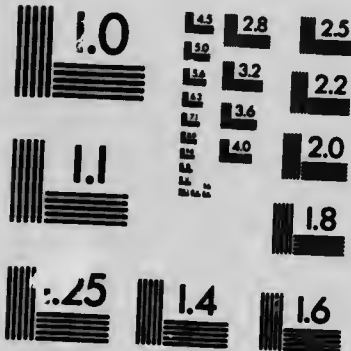
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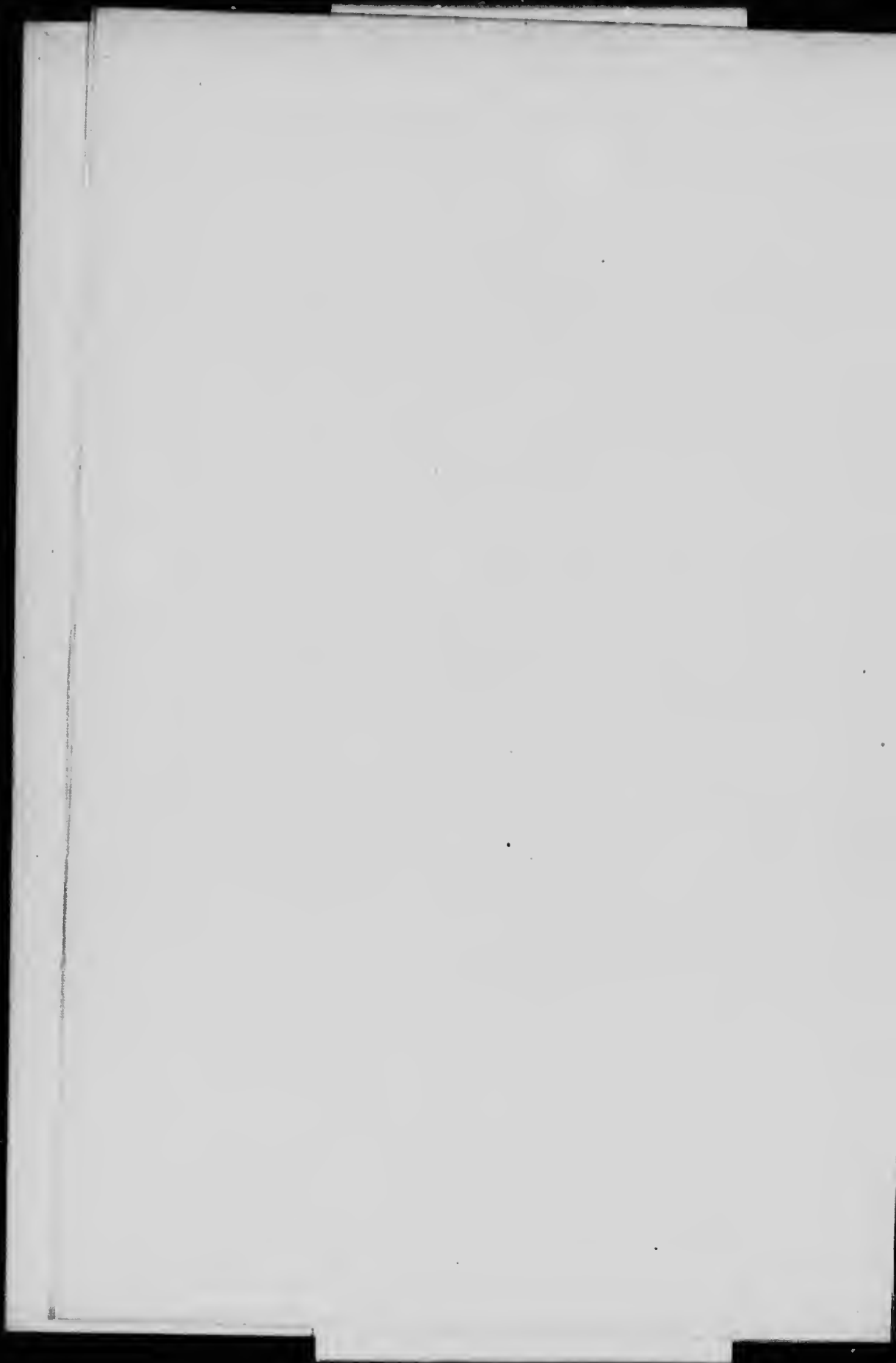
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DOMINION OF CANADA
DEPARTMENT OF AGRICULTURE
ENTOMOLOGICAL BRANCH

G. GORDON HEWITT, DOMINION ENTOMOLOGIST

CANADIAN BARK-BEETLES

PART I.

DESCRIPTIONS OF NEW SPECIES

BY

J. M. SWAINE

Assistant Entomologist in Charge of Forest Insect Investigations

BULLETIN No. 14

(Technical Bulletin)

Published by direction of Hon. MARTIN BURRELL, Minister of Agriculture, Ottawa.

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30. 5. 17



OTTAWA, February 14, 1917.

To the Honourable,
The Minister of Agriculture,
Ottawa, Ont.

SIR,—I have the honour to submit for your approval Entomological Bulletin No. 14 entitled "Canadian Bark-beetles; Part I: Description of New Species," which has been written by Mr. J. M. Swaine, Assistant Entomologist in charge of Forest Insect Investigations.

The Bark-beetles constitute the chief insect enemies of our coniferous forests, and it is impossible to give even an approximate estimate of the enormous annual loss caused by their depredations throughout Canada. Much of the dead timber whose destruction is attributed to fire is the result of outbreaks of bark-beetles; this is particularly true in British Columbia. In consequence of their great economic importance, Mr. Swaine has been devoting the greater part of his attention for a number of years to a study of the species of bark-beetles, their life-histories and bionomics. We are now in a position to commence the publication of the practical and scientific results of these investigations, and it is proposed to issue them in a short series of bulletins, of which the present is the first part.

There is a constant demand on the part of practical lumbermen, foresters, and others for the practical and scientific information that this series of bulletins will contain. Their publication and distribution will materially assist in the efforts that are being made to conserve our forests.

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

C. GORDON HEWITT,
Dominion Entomologist.

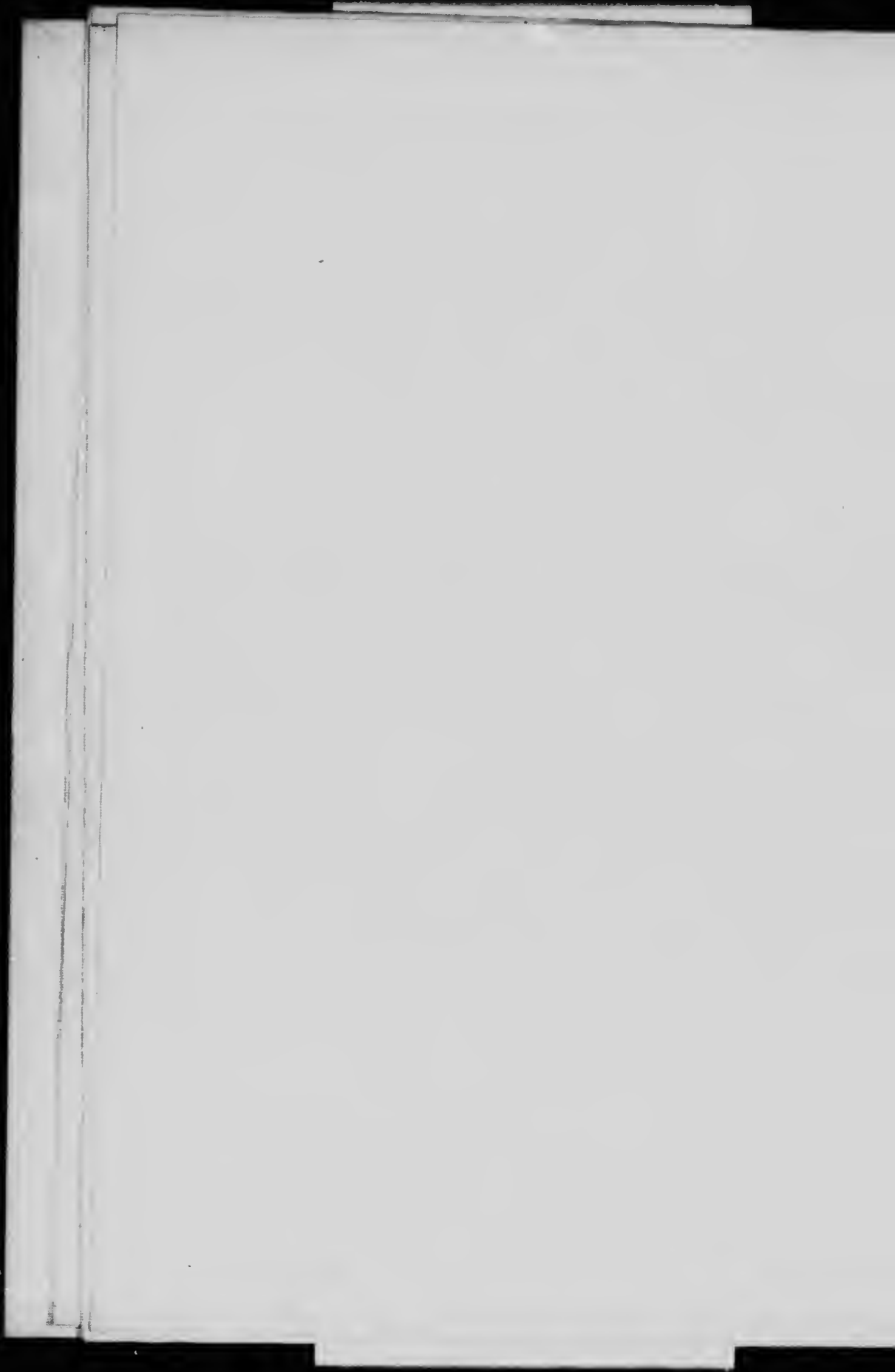


TABLE OF CONTENTS.

	PAGE.
<i>Anisandrus populi</i>	22
<i>Carphoborus carri</i>	16
<i>Crypturgus borealis</i>	7
" <i>corrugatus</i>	7, 8
<i>Eccoptogaster monticola</i>	32
" <i>tsuga</i>	32
<i>Hylastes asper</i>	19
" <i>nitidus</i>	19
" <i>scaber</i>	18
<i>Hylurgops grandicollis</i>	17
" <i>knausi</i>	17
" <i>lecontei</i>	16
<i>Ips englemanni</i>	30
" <i>hunteri</i>	31
" <i>yohoensis</i>	31
<i>Leperisinus cinereus</i>	15
<i>Phloeosinus canadensis</i>	8, 9, 10
" <i>juniperi</i>	10
" <i>minutus</i>	9
" <i>rugosus</i>	10
<i>Pityophthorus canadensis</i>	24
" <i>confertus</i>	27
" <i>granulatus</i>	28
" <i>intextus</i>	29
" <i>lateralis</i>	27
" <i>nitidus</i>	25
" <i>nudus</i>	28, 30
" <i>ramipera</i>	28
" <i>rhois</i>	26, 27
<i>Pseudocryphalus</i> , n. gen.	20
" <i>brillaini</i>	20
" <i>criddlei</i>	21
<i>Pseudohylesinus</i> , n. gen.	11
<i>Pseudohylesinus sericeus</i>	14
" <i>grandis</i>	11, 12, 13, 14
" <i>nobilis</i>	12
" <i>obesus</i>	15
" <i>sitchenis</i>	12
" <i>tsuga</i>	11
<i>Trypodendron borealis</i>	21
" <i>rufitarsis</i>	22
" <i>ponderosa</i>	22
<i>Xyleborus affinis</i>	24
" <i>canadensis</i>	24
" <i>inermis</i>	24
" <i>xylographus</i>	23



Canadian Bark-beetles.

PART I. DESCRIPTIONS OF NEW SPECIES.

By J. M. SWAINE.

Assistant Entomologist in Charge of Forest Insect Investigations.

INTRODUCTION.

The descriptions of new species composing this paper are presented at this time in order that the names may be used, without being accompanied by long descriptions, in a short series of technical and practical bulletins now in course of preparation. The types and paratypes of the new species described are in the National Collection of insects at Ottawa, unless otherwise stated in the text.

Cryptus borealis, n. sp.

Description of the female.—Closely related to *corrugatus*, but with the sides of the elytra more distinctly parallel, the elytra noticeably coarsely granulate, and the body much more hairy; the length, 1.2 mm.

The head is minutely reticulate; the front convex, sparsely setose-punctate, strongly reticulate-granulate, with a large obliquely impressed triangular postepistomal area very strongly reticulate, bearing numerous long, coarse hairs; with a small circular fovea in the centre of the front; the median epistomal lobe strongly protuberant; the eyes coarsely granulate and circularly emarginate.

The pronotum slightly longer than wide, 27:23, broadly rounded behind and in front, the sides rounded less strongly than in *atomus*, widest behind the middle, more strongly narrowed in front; the disc moderately convex, the surface minutely and strongly reticulate, finely, feebly, moderately closely but not densely punctured, the punctures a little smaller than in *atomus* and very shallow, and the pubescence somewhat more distinct.

The elytra have the sides straight and parallel to beyond the middle, strongly narrowed on the caudal third; the striae wide, feebly impressed; the sutural striae a little more strongly impressed throughout and rather coarsely, very closely punctured; the interspaces narrow, subconvex, densely coarsely granulate, with a row (sometimes confused) of fine, closely placed setose punctures; the setae from striae and interstriae punctures similar on the disc, the striae setae shorter on the declivity, on the disc and sides longer in this species than in *atomus*, and the interstriae punctures being so much more numerous, this species is quite noticeably hairy. The last three striae are more deeply impressed in this species than in *atomus*. The declivity has the apical half covered by a subcircular, glabrous, somewhat swollen, brownish, spongy area, formed by extremely minute and densely placed pores bearing minute setae.

The male has the postepistomal area of the front plano-concave, strongly reticulate, and setose-punctate as in the female, but lacking the definite frontal pit; the elytral declivity is normally rather strongly rugulose-punctate and hairy, without the spongy apical area. Of 28 specimens from Manitoba and Alberta, 27 are of the female type, with the spongy apical tips and frontal pit; one is of the male type.

The type locality is Winnipeg, Man.; J. B. Wallis; found westward to the Coast, and south to Colorado, in species of *Picea*.

***Cryturgus corrugatus*, n. sp.**

Pale yellow brown, length 1.1 mm.; evidently pubescent on the elytra; the *head* wide, the front quadrate, plano-convex, densely strongly reticulate-granulate and sparsely pubescent, strongly pubescent on the sides; the eyes coarsely fascetted; the *pronotum* slightly longer than wide, very broadly rounded in front and behind, suboval, feebly rounded on the sides, widest about the middle, little more strongly narrowed in front, with numerous, small, indistinct punctures, the surface very strongly reticulate, the pubescence minute, not very distinct; the *elytra* as wide as the pronotum, the sides parallel to beyond the middle, narrowly rounded behind, moderately shining, alutaceous, the elytral striae very wide, moderately impressed, the sutural striae a little more strongly impressed throughout, the striae punctures very coarse, shallow with slender hairs on the disc, becoming very short on declivity, the interspaces extremely narrow, with a row of closely placed setose, granulate, small punctures, the setae rather long, similar, to those of the striae punctures on the disc; the declivity reddish opaque.

Described from six specimens from "North Mt., Pa."

***Phloeosinus canadensis*, n. sp.**

A small black species with the grey pubescence short but rather conspicuous for this genus; length, 2.5 mm.; width 1.25 mm. Relative proportions: pronotum, width 29, length 24; elytra, width 31-32, length 45.

Description of female.—The *head* has the front plano-convex, shining, moderately, rather closely granulate-punctate, densely in front, densely and less coarsely upon the vertex, with the punctured area arcuate behind as usual; with a moderate median epistomal lobe, and a fine median carina on the cephalic half, terminating behind at the faint transverse impression; the genae and occiput minutely aciculate, punctulate, with larger scattered punctures; the eyes deeply not very widely emarginate, more than half divided.

The *pronotum* is slightly wider than long, about one-half as long as the elytra; widest at the hind margin, which is a little narrower than the base of the elytra; the hind margin bisinuate; the sides gradually arcuately narrowed towards the front, moderately constricted beyond the middle, with the constriction distinctly impressed across the disc; very broadly rounded on the front margin; the discal punctures of medium size and only moderately close, not granulate; the median line faintly very finely carinate; with a moderate, transverse, arcuate, subbasal impression and an indistinct sub-elevated lateral callus behind the middle; the pubescence fine and short. The *mesonotum* is finely reticulate, with the apex pubescent; the scutellum extremely minute. The mesosternum is precipitous between the coxae.

The *elytra* are stout, slightly less than one-half longer than wide, shining, with the bases strongly arcuate, elevated, acute and finely crenulate as usual; the sides faintly arcuate, slightly wider behind; broadly rounded on the hind margin as viewed from above; with the discal striae very narrow but rather deeply impressed, finely and indistinctly punctured, outcurved near the base; the lateral striae wide and deeply impressed; the interspaces wide on the disc and slightly convex, narrower and rather strongly convex on the sides; the second interspace moderately widened near the base; the interspaces coarsely not very closely granulate-punctate, somewhat more coarsely near the base, the granules reduced in size towards the declivity, excepting those of the middle line which develop into a subregular row of small serrations; the declivity

shining, rather finely and not very closely punctured, except the median side of the first interspace which is densely punctured; with the first and third interspaces moderately convex, each with a regular row of rather sparse, acute, small serrations; the second interspace narrower than the third, flat, not closely punctured, shining and unarmed; the fifth, seventh and ninth convex and each with a few small acute serrations; the fourth, sixth, and eighth less convex and with the serrations slightly developed; the pubescence grey, fine, a little longer and more conspicuous than usual in this genus.

The male has the front moderately concave, and the frontal carina better developed; the first and third interspaces on the declivity are carinate and rather coarsely but sparsely toothed, those of the first much coarser and somewhat sparser than those of the third.

The type is from Ste. Anne de Bellevue, Que., in *Thuya occidentalis*. The common species of Eastern Canada, heretofore confused with *P. dentatus* Say.

Phloeosinus minutus, n. sp.

A small species, allied to *hoppingi* Sw., but stouter and black, with the pubescence sparse, short and reddish. Length, 2 mm.

Description of the female.—The head has the front plano-concave, coarsely granulate-punctate, with an acute median carina on the cephalic half. The pronotum is stout, wider than long, arcuate on the caudal half, very strongly narrowed and constricted in front; closely, deeply, moderately punctured, the pubescence short and less evident than in *hoppingi*. The elytra are very stout, but little longer than wide, stouter than *hoppingi*; the bases arcuate, finely elevated and serrate, the sides parallel, the hind margin very broadly rounded; the striae moderately deep on the disc and rather narrow, deeper on the sides; the stria punctures rather small but distinct; the interspaces moderately convex, much wider than the striae, closely granulated, with many fine and fewer somewhat uniseriate coarser granules intermixed; the declivity closely granulate-punctate with the coarse granules larger and acute on interspaces 1 and 3, interspace 2 narrowed towards the apex and finely granulate; the pubescence short and reddish, denser and shorter on the declivity than on the disc but not scale-like. The mesosternum is steep, and the venter of the abdomen moderately oblique, elevated behind.

The male has the declivity shining, finely punctured but hardly granulate, with interspaces 1 and 3 slightly but distinctly elevated and sparsely, acutely serrate, with one or two similar coarse granules on interspace 5.

Fairfax, Cypress Ridge. Marin Co., Calif., 5-10-14; Dr. E. C. Van Dyke and Mr. Ralph Hopping.

Phloeosinus rugosus, n. sp.

Description of the female.—A rather small species, length 3mm., width 1.3mm., a little more elongate than *dentatus*, with the stria punctures distinct and coarser than in *dentatus* and *canadensis*, but smaller than in *punctatus*; black with the elytra very dark brown; the pubescence minute and inconspicuous, yellowish, more evident and minutely scale-like on the declivity; the pronotum and elytra shining.

The head has the front moderately convex, with a broad transverse arcuate impression in front; a short acute median carina; densely, coarsely granulate-punctate; the pubescence very fine, erect, but indistinct; the eyes deeply emarginate; the antennal club with the sutures oblique.

The pronotum is stout, wider than long, as wide as the elytra at the base, widest at the hind margin which is bisinuate as usual; the sides broadly arcuate and narrowed, constricted beyond the middle with the constriction impressed

across the dorsum; broadly rounded on the front margin; the disc polished, deeply rather coarsely and closely punctured; the smooth median line faintly indicated, distinct only on the middle third; the lateral callus feebly indicated; the transverse, subbasal, arcuate impression very faint; the basal median prominence distinctly compressed as usual; the pubescence very minute. The meso-sternum is oblique between the coxae.

The *elytra* are more than one-third longer than wide; with the base arcuate, elevated and finely crenulate as usual; the striae on the disc moderately narrow, distinctly wider than in *dentatus* and *canadensis*, with the punctures distinct and wider, but the striae narrower and the punctures smaller than in *punctatus*; the striae moderately impressed, more strongly than in *dentatus*, less so than in *canadensis*; the lateral striae widely and deeply impressed only near the side margins; the discal interspaces rather wide, distinctly outcurved towards the base, the second moderately widened basally; moderately convex, the last three on the sides very strongly convex; coarsely not very closely granulate-punctate, with a few transverse rugosities near the base and uniseriately finely serrate near the declivity; the declivity closely and roughly punctured; the first and third interspaces moderately elevated, each with a regular row of small, blunt, moderately close serrations; the second as wide as the first or third, not narrowed towards the tip, nearly flat, closely roughly punctured; the outer interspaces finely rather closely serrate, the fourth hardly serrate, the ninth carinate to the apex; the pubescence yellow, minute and almost invisible except on the declivity where it becomes much closer and minutely scale-like.

This species resembles *punctatus* in many respects, but has the elytral punctures smaller, the interspaces a little more closely granulate, the second interspace on the declivity as wide as the others, and the pronotum more sparsely and coarsely punctured. The mesonotum is oblique in the few specimens examined, and it is therefore placed in the *cristatus* group.

Described from five specimens: Scaffold Meadow, Tulare Co., Cal., Juniper, Hopping. Two of these have the declivital serrations noticeably coarser and sparser and may possibly be the males; there is no decided frontal or pronotal difference.

Phloeosinus juniperi, n. sp.

A species of moderate size, hitherto confused with *dentatus*; readily distinguished from *dentatus* by its larger size, (usually), the more coarsely and more sparsely punctured frontal disc, with usually strongly developed carina and lateral calli, the coarser striae punctures and the oblique mesosternum.

Description of the female.—Length, 3.8mm.; width, 1.7mm. Relative proportions: pronotum, width 41, length 30; elytra, width 43-45, length 60.

The head has the front plano-convex, with a broad transverse postepistomal impression, the median carina and epistomal median lobe nearly obsolete; very densely, coarsely granulate-punctate; the eyes deeply, broadly emarginate; the antennal club elongate with the sutures oblique; the pubescence fine and indistinct.

The pronotum is one-fourth wider than long, widest at the extreme base, which is very slightly narrower than the base of the elytra; bisinuate behind: the sides regularly arcuately narrowed from base to apex, except a faint constriction behind the front margin, the constriction distinct across the dorsum; the front margin very broadly rounded; the disc brightly polished with the punctures of moderate size and only moderately close, with traces of irregular rows in front; the median carina distinct except in front, slightly elevated and shining, widest on the median third; without a distinct subbasal, arcuate, transverse impression; with a polished lateral callus on each side behind the middle, midway between the median line and the lateral margin; the pubescence very fine, short and indistinct.

The *elytra* stout, slightly less than one-third longer than wide, the bases arcuate, elevated and finely crenulate as usual; the sides faintly arcuate, semicircularly rounded behind as viewed from above; shining; the striae very narrow and finely punctured, moderately regularly outcurved towards the base on the disc, moderately but distinctly impressed on the disc, wider, slightly more coarsely punctured, and rather strongly impressed on the sides; the interspaces wide, slightly convex on the disc, more distinctly so on the sides, densely granulate-punctate with a few very coarse and many finer granules intermixed, the coarser ones confused on the middle, becoming transverse rugosities near the base, the smaller granules disappearing and the coarser granules becoming uniseriate small acute serrations towards the declivity, the coarse granules uniseriate on the first interspace throughout becoming obsolete at the base; the second interspace hardly widened at the base; the *declivity* very closely punctured; the first and third interspaces slightly elevated, each with a regular row of rather small acute serrations, those of the first more sparsely placed; the second slightly wider than the first or third, not narrowed towards the tip, with two or three very small serrations near the apex, very closely punctured; the outer interspaces finely serrate; the pubescence yellow, fine and short on the disc becoming moderately thick, stout and somewhat scale-like on the declivity.

Variations: The second interspace on the declivity has in some specimens a few very small serrations at the top or on the face of the declivity, sometimes on one side only; these are evidently nearly obsolete in this species. The smooth median line, and the lateral calli are distinct in all the specimens available, and are usually well developed. The length varies from 3mm. to 3.8mm.

Described from ten specimens; Seaffold Meadow, Tulare Co., Cal.; Hopping.

***Pseudohylesinus*, new genus.**

Hitherto included in *Hylesinus*; suboval from above; elytra densely scaly; the declivity normal; the forecoxae narrowly separated; the elytral bases strongly arcuate, slightly elevated and regularly serrulate; the mesosternum somewhat inflated, the venter of the abdomen somewhat oblique; ventral segments, 1, 2 and 5 subequal in length; the proventriculus with the diagonal lines rather feebly developed; the ligula wide, from a convex chitinated base.

The type of the genus is *Pseudohylesinus grandis*, described herewith.

***Pseudohylesinus tsugae*, n. sp.**

Description of female.—A stout species, of moderate size and reddish-brown colour, sparsely clothed with short stout hairs, with tufted hairs on the sides and narrow scales on the declivity; length 4.5 mm.; width 2mm.

The head has the front convex, shining, the punctures dense, rather coarse, shallow, granulate above; the beak short, twice as wide as long; the transverse arcuate impression semicircular, narrowly impressed, deepest at the middle line; the epistoma deeply, transversely impressed and strongly margined; the median carina fine, acute, disappearing between the eyes; the antennal club with the first segment equal to the next two.

The pronotum is slightly less than one-half wider than long; slightly but distinctly narrower than the elytra, strongly bisinuate behind; the sides slightly arcuate, moderately narrowed from the base to slightly beyond the middle, then constricted and broadly rounded on the front margin, the constriction extending over the disc as a broad impression; the punctuation small with a few larger punctures intermixed, dense, finely rugose, faintly asperate at the sides, smaller and closely granulate in front; the median line faintly, finely carinate; the pubescence of short, stout, reclinate hairs, becoming longer on the sides in front, longer and penniform in front of the scutellum.

The *elytra* are slightly, distinctly wider than the pronotum, one-half longer than wide, strongly arcuate individually at the base, acute and serrate; the sides subparallel to the middle, then arcuately narrowed and narrowly rounded behind; the striae narrow, moderately impressed nearly to the base, more strongly on the sides behind; outcurved at the base; the first stria and first interspace rather strongly impressed behind the scutellum; the stria punctures very small, deep and close, indistinct at the base; the interspaces wide, moderately convex, more strongly behind; the first and third more strongly elevated on the declivity; the ninth carinate and more strongly asperate about the sides of the declivity; the interspaces finely asperate, densely towards the base, except the first, uniseriately behind; the pubescence of stout hairs at the base, becoming short and scale-like on the declivity, with longer tufted hairs on the sides; the second abdominal sternite nearly as long as the first and fifth.

The type is from Stanley Park, Vancouver, B.C., in *Tsuga heterophylla*; widely distributed along the British Columbian coast.

***Pseudohylesinus sitchensis*, n. sp.**

This species is barely distinct from *grandis*. The size and shape are practically the same, slightly more slender; the front rather coarsely and closely punctured, not so densely as in *grandis*; the transverse impression deeper than usual.

The *pronotum* is wider than long, 13:10; the sides strongly arcuate on the caudal two-thirds, strongly constricted in front of the middle; broadly rounded on the front margin; the median carina nearly obsolete; the punctuation small, dense and finely granulate, with larger setose punctures intermixed, more numerous on the sides; the pubescence on the disc of intermixed clavate setae and very stout scale-like hairs, with greyish clavate setae and palmate or tufted scales on the sides; sparsely, finely asperate on the sides.

The *elytra* are one-half longer than wide, slightly narrower than in *grandis*; the striae narrow, with small, close punctures, moderately impressed; the interspaces wide, moderately convex, finely uniseriately asperate and setose as usual, rather irregularly towards the base; the scales less dense than in *grandis*, and elongate, becoming tufted behind the scutellum and notably so on the sides; the marking of the *grandis* type, but more regular, an elongate whitish mark behind the scutellum, followed by a dark and then by a light-coloured elongate V-shaped marking, with the caudal third mottled in sections of the interspaces.

This species appears to be distinct from *grandis*, particularly in the elongate scales and the different shape of the pronotum.

Our specimens are few in number; probably the species is rare. The type is a male; the female has the pronotum less strongly constricted in front.

Menzies Bay, B.C.; also Port Renfrew and Stanley Park, B.C. A rare species, in *Picea sitchensis*.

***Pseudohylesinus nobilis*, n. sp.**

Description of female.—Allied to *grandis*, but more coarsely punctured, more deeply striate and somewhat stouter, with the scales almost obsolete on the pronotum and small on the elytra; length, 3.9 mm.; width, 1.8 mm.

The *head* has the front very coarsely, sparsely punctured on the disc, moderately and more closely on the beak, finely and very densely on the vertex, less roughened than usual; the antennal club as in *grandis*.

The *pronotum* is rather stouter than in *grandis*, finely, very densely punctured with larger punctures intermixed, and indistinctly asperate on the sides.

The *elytra* have the general form of *grandis*; but with the striae deeper and wider; the stria punctures rather coarse, slightly smaller on the sides, the

interspaces strongly convex, rather strongly uniseriately asperate and setose; the scales of the elytra small and rather elongate, much smaller towards the base, not very evident except on the sides and declivity where they are dense, and variegated with a few light coloured patches.

It differs from *grandis* in the slightly stouter form, the punctuation of the front, pronotum and elytra, the finer elytral scales and deeper and wider elytral striae, which are also deeper, and coarser than in *tsugæ*.

I have seen a few specimens through the kindness of Prof. H. F. Wilson, labelled, "Santiam, N.F., Orc.; 8-21-14; *Abies nobilis*; W. J. Chamberlain, collector; Or. Ex. Sta., No. 1428."

***Pseudohylesinus grandis*, n. sp.**

Description of female.—An elongate-oval species, rather stout, 3.5 mm. long, and 1.8 mm. wide; clothed with scales and short hairs, the elytra variegated, distinctly stouter than *nebulosus* Lec.

The *head* has the front convex above, the transverse impression wide, straight and strongly margined in front, with a narrow, acute, medium carina extending to the level of the anterior angle of the eyes; the front, vertex, and genae closely, roughly, not very coarsely punctured, more densely on the vertex, more sparsely on the epistoma; the front clothed with numerous short, stout, erect hairs; the vertex and a band behind the eyes with tufted hairs, the latter more strongly and densely; the lateral margins of the epistoma acute and over-hanging the deep antennal scrobes; the antennal club with the basal segment slightly longer than the outer two which are subequal; the eyes elongate, slightly wider above.

The *pronotum* is distinctly narrower than the elytra, one-fourth wider than long, the sides moderately arcuate, and narrowed towards the front on the hinder two-thirds, then moderately constricted; the front margin strongly rounded; the disc transversely impressed in front; densely rather roughly not coarsely punctured; the punctures shallow and irregular in size; with a narrow, shining median carina; densely clothed above with fringed scales interspersed sparsely with short suberect hairs, the scales passing into plumose hairs at the front and hind margins, and the scales light coloured except in a large irregular patch on each side the median line behind, on which they assume the ground colour; the scales very easily removed.

The *elytra* are moderately, distinctly wider than the pronotum, one-half longer than wide; strongly rounded at the base, and margined with close, wide crescentic serrations; the sides parallel to the middle then strongly narrowed and narrowly rounded behind; the striae narrow, faintly impressed on the disc, more strongly on the sides; the striae punctures small, shallow; the interspaces wide, faintly convex, more noticeably behind; the first and third more strongly on the declivity and the ninth carinate about the sides of the declivity as usual; closely, finely punctured, with a somewhat regular row of subacute lunular asperities becoming more numerous and confused near the base, the asperity overhanging a larger puncture bearing a rather long slender hair, the smaller punctures bearing short, wide, fringed scales which give the colour to the elytra; the ground colour a deep rich brown to nearly black; with the scales on sections of each interspace grey to yellowish, each interspace variegated individually; the light patches forming a wide V-shaped marking about the middle of the elytra; the interstitial asperities larger and more acute on the sides of the declivity the ninth interspace earinate and dentate behind about the declivital margin.

The *prosternum* is short, the process acute, the forecoxae narrowly separated; the venter closely punctured, clothed with small light palmate scales; the metasternum and base of the abdomen moderately inflated.

The *male* differs in the shape of the pronotum, which is very much wider than long, strongly rounded on the sides behind, very strongly constricted in

front of the middle, strongly rounded on the narrow front margin, and has the front and sides with the scattered coarse punctures sparsely rather coarsely asperate.

Variations.—There is a moderate variation in length, from 3 mm. to 3.8 mm. in our material. The colour pattern, formed by the light-scaled sections of the interspaces, is rather variable. In some the elytra are almost entirely grey; in many the light sections form a broad transverse V-shaped band about the middle of the elytra. There is usually some trace of this transverse band on perfect specimens, and the grey patches in front of and behind the scutellum are constant.

Pseudohylesinus sericeus Mannh.

Original Description.—Bull. Mosc., 1843, 296: *Hylugus sericeus* Eschscholtz. Brevis, rufopiceus, griseo-sericeus, thorace carinato, elytris squamulis, brunneis, cinereisque variegatis, antennis pedibusque rufis."

"Longit $1\frac{1}{2}$, $1\frac{1}{2}$ lin. Latit. $\frac{1}{2}$, $\frac{3}{4}$ lin.

"Dejean. Cat. 3 me. edit. p. 331.

"Habitat in insula Sitkha, D.D. Eschscholtz et Blaschke."

Bull. Mosc., 1852, 356, "Var. b, minor, niger, atrolispidus, pedibus piceis, elytris obsolete cinereo-squamulosis. Sitkha truncis pini subcortice rarius." This is possibly distinct.

It was referred to by Leconte, Trans. Ent. Soc. 1868, 169, 170, as with thorax feebly constricted in front. He describes it in Rhynch, page 380, as follows: "*H. sericeus* Mannh., Bull. Mosc. 1852, 385, *Hylugus ser.* Mann., ibid, 1843, 296, ibid, 1852, 356. Var. *H. nebulosus* Lec., Proc., Ac. Nat. Sc. Phil, 1859, 285."

"Alaska to California. Length 3 mm., .12 inch. The outer interspaces of the elytra are marked with a row of small acute tubercles. The bristles of the elytra are longer in the type than in the variety, and the sides of the prothorax seem a little more rounded, but otherwise there is no special difference. The elytra are not banded as in the preceding species, but confusedly tessellated. I observe no sexual characters, and the front is finely carinate in the four specimens examined. The head is more prolonged than in the other species. The club of the antennae is subovate pointed, about twice as long as wide, annulated with straight sutures."

The type of Leconte's description is probably distinct from mine described here as *grandis* and differs chiefly as follows: a more slender species, with longer hairs; a male, with the pronotum almost transversely oval, the frontal lobe of the pronotum less distinct; the elytral hairs much longer. Otherwise it agrees closely with *grandis*. I have seen only the one example. There are four specimens under this name in the Leconte collection. The second is *nebulosus* Lec., a good species; the third *granulatus* Lec. ♀, and the fourth the species here described as *grandis*. The type of his description was from California.

The species referred to by Hopkins, U. S. Div. Ent., Bul. 48, page 20: "The Shore Pine Hylesinus (*Hylesinus sericeus* Mannh.) excavates one short longitudinal gallery from the entrance burrow and small cavity in the living bark of injured, dying, and recently felled shore pine. Newport and Seaside, Oreg. Common. Also recorded from California and Alaska," is probably distinct from *grandis*, and possibly the same as Leconte's first specimen.

The species *grandis* is known to us only from grand fir and Douglas fir, neither of which occurs in the region of Alaska from which Mannerheim's specimen probably came, while shore pine, from which Dr. Hopkin's species was taken, is a common Alaskan coast tree. While it is possible that *grandis* may breed in Alaskan species of *Abies* or even in pine or spruce, it seems at present more

likely that the shore pine species is the true *sericeus* of Mannerheim. I have one specimen of *grandis* taken from the surface of the bark of a Sitka spruce, and one specimen from Queen Charlotte Islands where neither Douglas fir nor grand fir have been found, nor, so far as we know, any other species of *Abies*.

I have never taken any species of this genus from shore pine and am assuming that Hopkin's species is the same as Leconte's first specimen, which, if from a tree indigenous to the Alaskan coast, should be accepted as fixing the species.

***Pseudohylesinus obesus*, n. sp.**

A stout species, gradually wider behind, the pubescence scale-like only on the declivity; length 4.5 mm.; width, 2 mm.

The head has the front shining, punctuation moderately close, not coarse; the transverse impression deep, but narrow; the carina strong and acute; the beak twice as wide as long, deeply impressed on each side of the carina in front; the median lobe very large, excavated above as usual; clothed with short slender reclining hairs.

The pronotum is slightly wider than long, 17:14; the hind margin strongly bisinuate; the sides subparallel, slightly convergent for over half the length, then suddenly, strongly constricted, broadly rounded on the front margin; the punctuation dense, shallow, smaller and large intermixed, somewhat granulate, sparsely asperate on the sides; the pubescence rather abundant, short, slender, and reclining, somewhat tufted in front of the scutellum.

The elytra are one-half longer than wide; strongly rounded and finely erenulate at the base, more distinctly towards the sides; somewhat dilated behind, widest behind the middle; rather narrowly rounded behind; the striae very narrow and faintly impressed on the disc, distinctly impressed on the sides, the stria punctures rather small, and very closely placed; the interspaces very wide, faintly convex, the ninth carinate about the declivity as usual, and the first and third distinctly convex near the tip, minutely, not roughly punctured, rather finely asperate, uniseriately except near the base and on the basal half of the third and fifth; the pubescence very short and rather dense, in the form of stout hairs on the disc, tufted on the sides, and elongate scales on the declivity; the hairs from the asperate punctures present but very short and indistinct.

The type is from Inverness, B.C. It is apparently a rare species.

***Leperisinus cinereus*, n. sp.**

This species is very closely allied to *aculeatus*, Say, but somewhat stouter with the elytra more convex at the middle; the pronotum with elongate, transverse asperities arranged much as in *aculeatus*, with the pronotal surface less strongly rugose; the elytral striae wider and distinct, the interstitial asperities much smaller than usually found in *aculeatus*, hardly distinct even on the declivity; the vestiture of scales as in *aculeatus*, but the colour everywhere very pale, cinereous, with the red surface showing at the margin of the pronotum and about the bases of the elytra; very indistinctly marked with yellowish brown on the usual diamond-shaped median stripe, and the irregular lateral stripe of each side on the pronotum, with very indistinct traces of the same colour on the elytra. In some specimens the colour is more distinct, and there is a tendency towards two angulated transverse lines on the elytra.

The species was found first among material of *aculeatus* taken from ash at Hudson, Que. It is also represented from Cambridge, Roxbury, and Brookline, Mass.

Carphoborus carri, n. sp.

Description of female. Length, 1.7 mm.; width, .7 mm.; black greyish scale-like pubescence. The head is finely, transversely aciculate behind, with the front clothed on a subcircular area with stout, close, yellow hairs, shorter towards the centre, which is shining, broadly transversely impressed on the cephalic half, fringed with long yellow hairs on the epistomal margin; the median epistomal process as long or rather longer than wide, subtruncate apically with the sides parallel; the eyes wide, coarsely granulate, deeply emarginate; the antennal club subtruncate apically, with three nearly straight sutures.

The *pronotum* has the sides straight and subparallel on the caudal margin, strongly constricted in front of the middle; the front margin very broadly arcuate, the median line finely carinate; the disc closely, strongly, rather finely punctured, with small, very stout scale-like pubescence.

The *elytra* have the sides subparallel to beyond the middle, slightly widened behind the middle, arcuately narrowed on the caudal third to the narrowly rounded apex, subtruncate from above owing to the elevated third interspace; the bases arcuate, strongly elevated and margined with a row of strongly developed recurved lunar rugosities, followed upon the disc by an irregular series of rows; the striae moderately impressed, as wide as or wider than the narrowly developed interspaces; the striae punctures coarse, close and subquadrate, the second interspace much widened, strongly elevated, and coarsely rugose at the base; the interspaces densely punctured, and clothed with small, subcircular granules; the scales similar to those of the pronotum; the first, third, fifth, seventh and ninth somewhat carinate behind, the intervening interspaces becoming very narrow behind; the declivity with first interspace moderately elevated, the second very narrow, nearly obsolete, the third strongly carinate and serrate, but little widened behind, parallel to the first, united with the similarly carinate margin near the apex, with which it is connected by a very short obliquely transverse ridge; the fourth, sixth, and eighth normal; the fifth and seventh carinate and united at the tips within the angle made by the third and ninth. The ventral pubescence hairy, more scale-like on the middle segments of the abdomen; the fore coxae narrowly separated.

The *male* has the front more broadly impressed, conspicuously clothed with yellow hairs, very dense, rather long and incurved about the margins.

Collected in *Picea canadensis*, near Edmonton, Alta., by Mr. F. S. Cresson, after whom it is named; the type, a female, in the collection of the Entomological Branch, under No. 2268. Also, Aweme, Man., Mr. Norman Criddle.

Hylurgops lecontei, n. sp.

This species is represented by the second specimen mentioned by Leconte under the name *porosus*. The type of this description agrees exactly with the Leconte specimen.

Description of the adult.—Allied to *porosus* Lec., but smaller, with pronotal punctures coarser and denser and the striae less deeply impressed on the declivity; length, 4.1 mm.; width, 1.6 mm.

The head is as in *porosus*.

The *pronotum* is arcuate on the sides, strongly narrowed towards the front, slightly narrowed behind; coarsely, densely granulate-punctate, with very small punctures intermixed.

The *elytra* are much as in *porosus* Lec., but the striae only moderately impressed on the disc, faintly impressed towards the base, hardly more deeply impressed on the declivity than on the disc; the interspaces but little more prominent on the declivity than on the disc; uniseriately asperate and set

on the hinder half, but rather less strongly than in *porosus*; with the first interspace on the declivity more prominent than the others, the third not more so than the second, so that the declivity appears from above distinctly more narrowly rounded than in *porosus*; similarly clothed with minute pubescence becoming scale-like behind and forming a crust on the declivity.

The type is from Colorado. This species is represented in our collection also from Nevada, New Mexico, and British Columbia.

Hylurgops knausi, n. sp.

An elongate species allied to *porosus* but differing in the small, regular, pronotal punctation, small strial punctures and wide flat, finely, densely granulate interspaces. Length, 5mm.; width, 1.6mm.

The head is as in *porosus*, but more finely, very densely punctured with the punctures rather coarse in front, and sparse on the middle line immediately behind the acute median epistomal carina.

The pronotum is slightly longer than wide, a little narrower than the elytra, with the sides moderately converging cephalad on the caudal half, then more strongly narrowed to the broadly arcuate front margin; moderately bisinuate behind; the caudal transverse carina acute only near the sides; the punctuation small, regular, dense, granulate only at the side margins; the median line finely carinate.

The elytra have the base nearly straight; about twice as long as wide; the sides nearly straight and parallel to well behind the middle, then rounded to the narrowly rounded apex; the declivity steep; the striae impressed moderately upon the disc and declivity, the sutural striae deeper at the base; the lateral striae faintly impressed in front, except the last two, which are rather deeply impressed; the strial punctures small, hardly decreasing in size on the sides; the interspaces moderately convex on the disc behind and more strongly so upon the declivity, flattened at the base and on the sides, somewhat wider than the striae on the disc, much wider on the sides; finely, very densely, strongly granulate-punctate, rather feebly uniseriately asperate and hairy on the declivity only; the pubescence from the numerous fine punctures very minute, almost obsolete on the disc, minute and somewhat scale-like on the declivity.

A series that probably represents the other sex of this species has the pronotum somewhat less densely punctured and less granulate, with the declivity distinctly more feebly sculptured, and with the uniseriate hairs very short and inconspicuous.

Cloudcroft, N.M., 9,000 ft.. W. Knaus.

Hylurgops grandicollis, n. sp.

An aberrant *Hylurgops* with a very wide depressed prothorax, as wide as the elytra, subacutely margined at the side; abundantly hairy throughout. Length, 5.2mm.; width, 1.9mm.

The head has the front rather closely subgranulately punctured with small and large scattered punctures intermixed, with rather numerous long erect hairs; the transverse arcuate impression deep; the epistomal lateral impressions deep, separated by a short, acute, median carina; the epistomal lobe short, wide, and deeply concave from above as usual; the antennal scrobes very deep and acutely margined above; the club shorter than usual with the first segment comprising rather more than one-half the mass.

The pronotum is very large, slightly longer than wide, with the sides subparallel, faintly arcuate for over three-fourths of the length, then strongly narrowed to the narrow but broadly rounded front border, which is strongly recurved and finely margined; the hind angles rounded; the hind margin very

broadly arcuate, nearly truncate, not bisinuate; with a strongly developed acute, basal, transverse carina towards the sides; the side margin produced, acute from the hind angle forward for two-thirds the length, excavated on under side below the subacute margin; the disc only moderately convex, finely punctured and densely granulate or finely rugulose, the granulation pointing chiefly towards the meson which is a fine raised line; densely clothed with red pubescence of two lengths, long erect hairs increasing in length from base to apex and beneath these a vestiture of very short suberect bristles. Scutellum is circular, extremely minute and not depressed.

The *elytra* have the base only slightly arcuate, not serrate; the sides parallel, slightly arcuate for two-thirds of the length, then gradually arcuate to the narrowly rounded apex; rather narrowly rounded behind as viewed from above; the declivity steep; the striae very finely and not strongly impressed almost obsolete near the base, gradually stronger to the declivity where they are moderately but finely impressed; the last stria deeply impressed about the middle of the declivity; the sutural striae together with the sutural interspaces marked and impressed towards the base; the striae punctures small on the disc and declivity, very small on the sides; the interspaces wide and flat becoming gradually moderately convex upon the declivity; the interspaces closely indistinctly punctured and very densely and coarsely granulate, except upon the declivity which has the interspaces densely, minutely punctured, not granulate, and uniseriate finely tuberculate; the sutural interspaces much narrowed towards the base; rather densely clothed with long red hairs and finer pubescence; uniseriate hairs of each interspace numerous, long and erect, extending from base to apex; the remaining pubescence rather long and erect towards the base becoming shorter behind, and minute and somewhat scale-like upon the declivity.

The *ventral surface* rather closely and rather finely punctured and moderately hairy; the venter of the prothorax very densely granulate-punctate; the first and fifth visible abdominal segments longest, the second little shorter than the first and hardly as long as the next two combined; the mesosternum moderately protuberant; the third tarsal segments moderately widened and deeply bilobed; the prosternum deeply excavated with the ridges acute; the legs black, the tibiae very wide and very coarsely toothed.

We have two specimens from Clouderoft, N.M., obtained through the kindness of Mr. W. Knaus. A third specimen from the Cornell collection "S. Fe Canon N.M., 7,000 ft., Aug., 1880 (Snow)", is evidently the same species but has the long hairs somewhat shorter than in the type and the declivity more noticeably scaly. It is possibly the male. We have also seen specimens from California.

Hylastes scaber, n. sp.

Allied to *porculus* Er. but much more coarsely punctured, with the *elytra* striae more strongly impressed, and the interspaces rugose; distinctly more slender than in *salebrosus* Eichh., with wide striae, not so deeply impressed, less coarsely rugose interspaces, pronotum more coarsely punctured and straight on the sides behind, and with moderately toothed tibiae. Length, 4 mm.; width 1.4 mm.

The *head* has the front rather coarsely, very closely, roughly punctured; the transverse impression moderate; the epistoma broadly impressed on each side, with the median carina well developed and reaching to the transverse impression.

The *pronotum* is but little longer than wide, moderately but distinctly narrower than the *elytra*, the hind angles rounded, the sides parallel, nearly straight to beyond the middle, then constricted, moderately bisinuate, and broadly rounded on the front margin; the disc extremely coarsely and not ver-

closely punctured, more closely on the sides and more finely in front; the median carina narrow but elevated on the caudal two-thirds.

The *elytra* are twice as long as wide, the bases nearly straight; the sides nearly parallel to beyond the middle, then gradually arcuate, and somewhat constricted just before the rather narrowly rounded caudal margin, as seen from above, and very narrowly rounded at the apex; the striae well impressed on the disc, the sutural striae widest and deepest, moderately, distinctly impressed on the sides, wider than the narrow interspaces; the punctures very coarse, deep, quadrate, close, small at the front margin, somewhat reduced on the sides and declivity; the interspaces moderately convex on the sides, densely rather coarsely rugose, and uniseriately, rather finely tuberculate behind. The tibiae have a few moderately coarse teeth.

The type is from the Cornell Collection, labelled Virginia; other localities are Tennessee and District of Columbia.

Hylastes nitidus, n. sp.

A small, black, elongate species, very brightly polished; length, 4 mm.; width, 1.3 mm.

The *head* has the front evenly convex from the vertex to the epistomal impression; minutely, rather closely punctured; the transverse arcuate impression faint; the epistomal region very deeply abnormally impressed; the median carina fine and faint extending to the transverse impression; glabrous on the disc, with a few yellow hairs on the epistoma; the eyes very wide above and very narrow below.

The *pronotum* is one-half longer than wide, nearly as wide as the *elytra*, broadly rounded behind; the hind angles rounded; the sides straight and subparallel forward to the widest point which is beyond the middle, then strongly narrowed to the rather broadly arcuate front margin; very finely, rather closely punctured throughout, not roughened at the sides; the punctures smaller at the sides and minute at the front margin; *very brightly polished*.

The *elytra* are elongate, rather more than twice as long as wide, straight and acute at the base; the sides parallel to behind the middle, then gradually evenly arcuate behind as viewed from above, narrowly rounded at the apex; the striae distinctly impressed throughout, more strongly behind, the sutural striae a little wider and deeper; the striae punctures of medium size, very deep and closely placed; the interspaces moderately convex, more strongly behind and on the declivity; brightly polished except on the declivity; minutely punctured and somewhat coarsely sparsely roughened; densely granulate at the base; very densely granulate, finely uniseriately tuberculate and dull on the declivity; with very minute scale-like hairs on the declivity. The venter is polished, sparsely, moderately punctured, the last ventral convex, coarsely, densely, roughly punctured.

The type is from Las Vegas, N.M., near Hot Springs, 7,000 feet, July, 82, F. H. Snow.

Hylastes asper, n. sp.

A small dark brown species, somewhat similar to *longus*, Lec., but slightly smaller, the epistomal carina distinct, the pronotum slightly shorter, the *elytral* interspaces more convex and more strongly granulate.

The *head* has the front convex, finely, closely granulate-punctate on the disc, minutely, densely punctured on the vertex; the transverse arcuate impression moderately deep; the epistoma broadly concave on each side; the median carina acute, fine, from the epistomal margin to the transverse impression; the pubescence minute, longer on the epistoma.

The *pronotum* is elongate, much narrower than the elytra, one-third longer than wide; broadly rounded behind; the sides subparallel on the hinder half, somewhat wider at the middle, rather strongly narrowed in front of the middle, and very broadly rounded in front; the punctures moderate and very close on the disc, very dense and strongly granulate on the sides, much smaller, dense and finely granulate at the front margin; the median line smooth and slightly elevated, stronger behind.

The *elytra* are twice as long as wide; slightly arcuate at the base; the sides nearly parallel for over half the length then gradually arcuately narrowed to the rather narrowly rounded hind margin as viewed from above, narrowly rounded at the apex; the striae narrow, but rather deeply impressed on the disc and declivity, finely but distinctly impressed on the sides; the stria punctures small and closely placed, becoming very small on the declivity; the interspaces wider than the striae, moderately convex on the disc and declivity, flattened on the sides, strongly granulate, with a few small tubercles uniserially placed on the declivity.

The venter is rather coarsely sparsely punctured, the last ventral strongly convex, rather finely, closely, roughly punctured; the prothorax below finely asperate in longitudinal rows, the punctures indistinct.

The type is from Colorado. Only one sex is represented.

***Pseudocryphalus*, new genus.**

The form very stout; the pronotum feebly arched; the head slightly visible from above; the pubescence of the dorsal area scale-like; the antennal funicle 5-segmented, the club narrow, compressed, elongate, with three transverse sutures; the eyes narrow, elongate and feebly sinuate in front; the *pronotum* much wider than long, very strongly constricted in front, the cephalic margin practically unarmed, not acutely margined on the sides or behind, the rugosities of the disc very few; the *elytral* base very strongly elevated at the scutellar region; evidently punctate-striate; the two first ventral sternites of the abdomen subequal in length and each as long as the next two united; fore-coxae contiguous, prosternum very short; the mentum as wide as long, with very long plumose hairs; the tarsi slender, retractile; the tibial teeth long and slender.

The type is *P. brittaini*, n.sp., described herewith.

***Pseudocryphalus brittaini*, n.sp.**

Length, 1.9 mm.; stout, black, with brown and gray scales; the front piano-concave, with a strong transversely arcuate impression behind the epistoma, the middle line impressed, clothed with stout pubescence, becoming long, dense and pale on the epistomal margin, with a rather coarse granule behind the impression on each side the middle line; the eyes long, narrow, extending upon the ventral surface.

The *pronotum* twice as wide as long; the sides very strongly rounded behind and very strongly constricted in front; the front margin broadly emarginate at the middle; very densely subgranulately punctured, clothed with brown and grey, very stout pubescence, the grey predominating on the sides and behind; the cephalic margin unarmed or nearly so, somewhat elevated, with pale fine pubescence and brown, elongate, elevated scales; with three pairs of elongate recurved rugosities in a longitudinal row on the middle of each side in front, the first pair on the front margin.

The *elytra* as wide as the pronotum, slightly less than one half longer than wide, the basal margin very strongly elevated, recurved and coarsely serrate in the scutellar region; the sides subparallel on the basal half, broadly rounded behind; the striae distinctly rather strongly impressed, the stria punctures

rather coarse, not close, deep and distinct, bearing very minute setæ; the interspaces feebly convex, minutely punctured and with a median row of granules, bearing very small elongate scale which hardly cover the surface, and a median row of longer, erect, very stout bristles; the pubescence brown, with numerous scattered white scales, more abundant towards the base and forming a narrow band along the suture. The first two abdominal sternites subequal in length, each longer than the next two united.

Salmon Arm, B.C.; apple trees, in dying bark. First examined in company with Prof. W. H. Brittain.

Pseudocryphalus criddlei, n.sp.

This species is very closely allied to *brittaini*; with the same size, form, and colour; but it is apparently distinct through the very feebly impressed elytral striæ, and the small, very closely placed stria punctures.

We have very few examples of *brittaini* and a longer series may show intergradations with this species.

Described from a series of 108 specimens from Aweine, Man., *Prunus virginiana*; collected by Mr. Norman Criddle.

Trypodendron borealis, n. sp.

A series of males and females from Athabaska Landing, Alta., and Prince Albert, Alta., is closely allied to *bivittatum*, but represents a distinct species, differing chiefly in the colouration of the pronotum, the shape of the male pronotum, and the less impressed declivital striæ.

Description of the female.—Very closely similar to *bivittatum* in size and colour, but with the light-coloured band of the caudal border of the pronotum wider and extending to the side margins; and with the median black stripe on each elytron nearly obsolete except at the top of the declivity. The elytral striæ are not impressed on the disc; the stria punctures small, but deeper than in *bivittatum*; the interstria punctures almost obsolete; the declivity with the first and third interspaces elevated and finely uniseriately granulate, the first and second striæ together with the second interspace, which is there narrower, impressed on the declivity to form a sulcus much as in *bivittatum*: the remaining striæ not impressed; the declivity brightly shining.

The male is quite distinct from *bivittatum*. The head is similar, broadly, deeply excavated above, with the cavity closely punctured and hairy about the sides forming a close fringe about the sides and in front, smooth and shining at the bottom with a distinct longitudinal carina. The pronotum is subquadrate, wider than long, slightly but distinctly longer than in *bivittatum*; the proportions, length 11, width 14; nearly truncate and finely margined behind, the hind angles narrowly rounded, subangulate; the sides faintly arcuate, subparallel; the front angles rather narrowly rounded, the front margin broadly, distinctly emarginate on the median half, strongly recurved in front so that the front of the pronotum projects beyond the anterior foramen, which lies therefore entirely upon the ventral side of the pronotum; the disc shining, the asperities as in *bivittatum*, but rather less numerous, broad and very short, larger in front, distinct to the hind margin on the disc, nearly obsolete on the sides, closely punctured in front with close stiff hairs chiefly from the under side of the frontal projection; with the pale caudal band very wide, extending to the side margins, projecting cephalad on the middle of the sides nearly to the front margin, leaving the front margin, the summit and the anterior half of the lateral margins black; the sides hairy only about the margin, the hairs from the front margin long and erect. The elytra are as in the female.

This species is known to the writer only from northern Alberta and northern Saskatchewan, where it breeds in *Picea canadensis*. Its habits are similar to those of *bivittatum*.

Trypodendron rufitarsis, Kirby.

This species is closely allied to *bivittatum* and has long been considered a synonym. It is apparently a distinct species. Our material was compared with Kirby's type in the British Museum by Mr. R. N. Chrystal, and found to be the same.

Description of the female.—Of the size and shape of *T. bivittatum* Kirby, except that the elytra are distinctly narrower towards the base, and wider behind the middle; *bivittatum* usually has the elytra slightly widest about the middle. The structural characters of the head and pronotum are practically as in *bivittatum* except that the pronotum is more minutely and nearly obsoletely punctured on the sides behind, and the front of the head is much less densely, and on the upper half very much more coarsely granulate. The elytral striae are very narrow and slightly impressed, a little more strongly on the declivity; the stria punctures small and closely placed; the interspaces flat, smooth, with faint traces of a median stria, the interstria punctures sparse, uniseriate, faintly impressed, with short slender setae. The elytral interspaces of *bivittatum* are usually somewhat transversely wrinkled and the stria punctures are usually coarser. The colour in *rufitarsis* is black, with the antennae and legs dark reddish brown; the pronotum with a median band, less than one-third the width, extending from the base across the summit to the apex, dark smoky red, the colour stronger towards the basal margin. The elytra are without stripes, dark smoky red, becoming darker on the sides and nearly black on the sides towards the base. The declivity has the second interspace very narrow, impunctate, moderately impressed, so that the sulcus is narrow and shallow, with the third and first interspaces not strongly elevated and with the granules practically obsolete.

Distinguished from the allied species by the colour, the coarsely and rather sparsely granulate front, the shallow declivital sulcus, with impunctate second interspace, and the nearly obsolete punctures on the hinder half of the sides of the pronotum and nearly obsolete declivital granules.

Trypodendron ponderosae, n. sp.

This species is very closely allied to *rufitarsis* Kirby, but is distinguished by its constantly darker colour, deep shining black, with an indefinite area on the disc of the pronotum and elytra very dark reddish brown; the interstria punctures very small; the declivital striae very strongly impressed, with the second interspace deeply sulcate.

Southern Coast and Interior of British Columbia, in *Pinus ponderosa*, *Picea engelmanni*, and *Pseudotsuga mucronata*.

Anisandrus populi, n. sp.

This species belongs to the *obesus* group and is intermediate in characters between *obesus* Lec. and *minor* Swaine.

Description of female.—Length, 3.2 mm.; of the shape of *obesus*, slightly, but distinctly more slender, with the sides of the elytra parallel as far as the abrupt angle of the declivity.

The head has the front plano-convex, shining, opaque towards the vertex, coarsely, rather sparsely punctured, more closely and finely on the sides in front, transversely impressed on the epistoma on each side of the distinct median carina.

The *pronotum* is wider than long, 33:29, rather strongly arcuate on the sides, and narrowly rounded on the middle line in front; sculptured and pubescent almost exactly as in *obesus*, subconcentrically asperate in front, with four median asperities on the apical margin; very finely rather closely punctured behind.

The *elytra* have nearly the same shape as *obesus*, but are slightly more slender. The punctuation is nearly as in *obesus*, but the stria punctures are relatively somewhat larger and rather widely separated; the interstitial punctures at the base nearly as large as those of the striae and confused, elsewhere on the disc very small, variably confused to nearly uniseriate, very densely confused along the side margins. The *declivity* has the striae impressed; the stria punctures larger than on the disc; the interspaces narrower than in *obesus* and rather regularly uniseriate granulate, with few interspersed punctures; the ridge of the seventh interspace well-developed and acute, but less so than in *obesus*, more distinctly arcuate in outline, and bearing four or five small, widely separated granules; with the caudo-lateral impressions as in *obesus*. The pubescence is rather abundant, light coloured, long, slender, and erect.

Description of the male.—Length, 1.6 mm.; smaller, more slender, and distinctly more fragile than the male of *obesus*.

The head has the front convex, coarsely, not closely punctured; the epistoma depressed, densely punctured, with the usual fringe of hairs.

The *pronotum* is subcircular, slightly wider than long, finely, not densely punctured, with scattered small acute granules on the cephalic half, almost exactly as in *obesus*, and similarly clothed with long slender pubescence.

The *elytra* are wider than the pronotum, arcuate on the sides, widest slightly before the middle, arcuately narrowed from there to the apex, elongate, with the apex very narrowly rounded, very strongly convex, shaped practically as in *obesus*; the striae hardly impressed, the stria punctures moderately coarse, deep, more widely separated than in *obesus*; the interstitial punctures nearly as large as those of the striae, the interspaces about the sides very densely punctured and sub-granulate, those of the declivity faintly granulate; the pubescence as in *obesus*, long, slender, curved, erect and longer about the margin. The ridge of the seventh declivital interspace is obtusely carinate, not subacute as in the male of *obesus*.

Distinctive characters: The female is distinguished from *obesus* by the constantly smaller size, slightly but distinctly more slender form, and chiefly by the declivital ridge of the seventh interspace being less acute and without the elongate serrations of *obesus*. The male is extremely rare and is represented in our collection by four bred specimens. It appears to be rather more slender than the male of *obesus*, and is very much smaller, with the front coarsely punctured and the punctures of the elytral interstriae nearly as large as those of the striae.

Variations: The size is constant in our large collection of females. The chief variations are in the details of the elytral punctuation and these are within moderate limits.

Ste. Anne de Bellevue, Que., in trunks of *Populus*. Abundant in weakened and dying trees in the region about Montreal Island and in the Ottawa Valley.

***Xyleborus xylographus*, Say.**

So far as we can learn the type is not in existence and has apparently not been seen since the time of Dr. Harris. There is a single metatype in the Harris collection at Boston, labelled, "744, N.C.," "*Tomicus xylographus* Say, 744, teste Say." This specimen should apparently be accepted as fixing the species.

Length 2.7 mm., rather slender, the pronotum rather strongly and closely punctured behind, the punctures of varying size, the elytral striae slightly

impressed, stria punctures moderate, interstria punctures smaller, uniseriate, punctures distinct on the sides; declivity flattened, moderately opaque, the punctures shining, the suture wide and slightly elevated, with about three widely separated small acute granules, the second interspace flat, hardly impressed, with small granules above the face of the declivity; the third interspace slightly elevated and granulate as on the first.

Host trees: Probably various hardwood species.

Distribution: New York state from Buffalo to New York City, New Jersey, Wisconsin, Washington, D.C., North Carolina, Virginia, Missouri. Not known to occur in Canada.

Xyleborus inermis Eichh. is very closely allied to and possibly identical with *xylographus* Say. The lateral interspaces of *inermis* are described by Eichhoff as "sparsely, lightly, punctured."

Xyleborus affinis Eichh. has the pronotum very lightly and sparingly punctured behind, and is apparently distinct thereby. I have not recognized either *inermis* or *affinis* from Canada or the Northern States.

***Xyleborus canadensis*, n. sp.**

Length, 2.6 mm.; moderately stout, differs from *xylographus* chiefly in the distinctly stouter form, the sides of the elytra parallel far beyond the middle, hardly narrowed before the declivity, rather broadly rounded behind, broadly flattened on the declivity, the striae only very faintly impressed.

Host tree: *Quercus*.

Distribution: -Isle Perrot, Que., 29-VIII-1910. Apparently very rare.

***Pityophthorus canadensis*, n. sp.**

This species is very closely allied to *cariniceps* Lec. and differs chiefly in characters of the female front and declivity of both sexes. The length is 2.5 mm.

Description of the female.—The head has the front with a large subcircular median area convex, impressed about the margins, minutely and densely punctured and densely finely pubescent, most densely on an elongate oval area on each side of the median line which is less densely punctured and pubescent particularly on the epistoma; the pubescence reddish yellow and longest on the middle part of the oval area; the remainder of the front, including the narrow band between the central pubescent area and the eyes, sparsely, moderately punctured and shining; the antennal club longer than the funicle, nearly as wide as long, with the sutures broadly, strongly arcuate and bisinuate on the outer face, the second and third more strongly, the sutures fringed with stiff hairs, the margin of the club with a few long erect hairs.

The pronotum is but little longer than wide, with the sides nearly parallel on the hinder half, strongly narrowed on the anterior half and rather narrowly rounded in front; the front margin finely serrate; coarsely and rather sparsely asperate on the cephalic third, more finely and densely towards the summit; transversely impressed immediately behind the summit so that the latter is subcarinate; moderately, deeply, not closely punctured and shining on the caudal half; the median line and a small area on the middle of each side behind the middle impunctate; finely acutely margined immediately in front of the caudal border.

The elytra are slightly narrower than the pronotum with the sides faintly arcuate, nearly parallel, a little narrowed on the caudal fourth and very broadly rounded behind as seen from above; the striae hardly impressed except the sutural striae which are faintly indicated; the stria punctures moderate, deep, in not very regular rows, less regular near the suture and near the lateral

margins; the interstrial punctures as large as those of the striae, sparsely and not very regularly placed, more numerous on the first two interspaces and on the sides, the sutural interspace with the punctures smaller behind and disappearing on the declivity, confused near the lateral margins; the *declivity* retuse, the sutural interspace fine, slightly elevated; the sutural area strongly sulcate, smooth and shining, widened near the apex; the prominence with a row of small acute teeth on the third interspace along the mesal margin of the summit, the teeth becoming sparse and a little coarser towards the apex; with a few very minute granules on the outer margin of the caudal half of the declivity; the disc of the elytra nearly glabrous with a few hairs on the sides, becoming longer behind, and longer, sparser and stiff on the declivity.

The *male* has the front flattered on a large subcircular area, roughly punctured, with a strongly elevated, acute median carina, highest and abruptly terminated on the epistoma. The *declivity* has the row of small teeth on the third interspace nearly obsolete, with the retuse lateral elevations ending nearly half way down the declivity in a distinct but broad and very blunt prominence, behind which the smooth sulcus is abruptly strongly widened. This blunt tooth is directed meso-caudad; it is in the same position as the declivital tooth of *cariniceps*, but is not elongate and only slightly overhangs the sulcus, not attaining the suture.

This species is abundant in twigs of *Pinus* in Ontario and Quebec. We have specimens from Marquette, Mich., and from Buffalo, N.Y. It probably extends throughout the northern section of the Eastern States.

Pityophthorus nitidus, n. sp.

Description of female.—The length, 2.1mm.; $2\frac{1}{2}$ times as long as the width; the elytral striae not impressed, the striae punctures small; the declivity sulcato-retuse, not acuminate.

The *head* has the front flattened, the flat area bounded by a semicircular line behind, very densely, minutely punctured and densely pubescent with short yellow hairs; the median carina nearly obsolete except the cephalic end which forms a rather prominent carinate tooth on the epistoma; the eyes rather finely granulate, deeply narrowly emarginate; the antennal club very wide, short oval, almost subcircular, the sutures broadly arcuate, the third most strongly, the first two segments each distinctly shorter than either of the last two, rather closely pubescent.

The *pronotum* is as long as wide; very broadly rounded behind, strongly arcuate on the sides behind, moderately constricted before the middle, broadly rounded on the front margin, which is finely serrate, the asperities slightly stronger at the middle; the summit slightly in front of the middle, with a wide transverse impression across the disc immediately behind the summit; finely subconcentrically asperate in front, rather coarsely, very densely, subgranulately punctured behind, the punctures smaller towards the lateral margins; with a small impunctate spot on the middle of the side, and a smooth median space.

The *elytra* are slightly less than twice as long as the pronotum, 9:5, faintly narrower than the pronotum; truncate at the base; the sides subparallel for over two-thirds the length then narrowed and rather broadly rounded behind, very faintly sulcato-retuse as viewed from above; the upper part of the declivity distinctly sulcato-retuse; the sutural striae finely impressed; the remaining striae only very faintly indicated, except near the lateral margins; the last two strongly impressed, especially behind; the striae punctures very small, fairly close and deep, in only moderately regular rows; the interspaces not convex, sparsely uniseriately punctured on the alternate interspaces of the disc, more closely punctured about the base and lateral margins; the ninth interspace moderately convex behind. The *declivity* is broadly sulcate above, the sulcus wide, not deep,

not widened behind, shining, the sides feebly retuse, with a row of minute granules on the suture and along the region of the third interspace; the whole declivity smooth and brightly shining, with the punctures extremely minute, hardly visible except towards the sides. The disc and the declivity are almost glabrous, with only minute, very sparse pubescence; the pubescence about the lateral margins very short but distinct. The last sternite is rather deeply broadly emarginate.

The *male* has the front flattened as above, but coarsely, fairly closely punctured with a well-developed median carina, and the pubescence almost invisible; the last ventral is emarginate as in the female.

Quebec province, Tullochgoram; *Picea canadensis*.

***Pityophthorus rhois*, n. sp.**

Description of adult.—Length, 1.6mm.; the width three-eighths of the length; with the declivity very steep and retuse on the sides.

The *head* has the front coarsely punctured above, very distinctly flattened on the cephalic half, this area distinctly margined by an acute semicircular line, coarsely punctured, with slender hairs of moderate length, with an acute median denticle on the front margin; the vertex and genæ nearly impunctate, finely transversely aciculate; the eyes rather deeply emarginate, coarsely granulate; the antennal club very large, the first two sutures straight, the third arcuate and near the apical margin.

The *pronotum* is as long as wide with the hind margin very broadly rounded, subtruncate, and finely margined; the sides faintly arcuate, subparallel on the caudal half, feebly constricted in front of the middle and rather broadly rounded on the front margin, which is very finely serrate; the cephalic half concentrically asperate, in fairly distinct rows, the first distant from the serrate front margin; the caudal half rather coarsely and closely punctured on the disc, more sparsely on the sides, with a small irregular lateral impunctate area and a narrow, slightly elevated, smooth median line; the venter of the prothorax coarsely punctured in front, smooth and shining behind.

The *elytra* are as wide as the pronotum, three-fifths as wide as long; with the base truncate; the sides nearly parallel to beyond the middle then moderately narrowed and finally subtruncate on the caudal margin, as viewed from above; the striae moderately impressed, the stria punctures moderately coarse, deep and closely placed; the interspaces narrow, impunctate on the disc, punctured on and near the declivity and on the sides, and the sutural interspaces sparsely punctured. The *declivity* is very steep with the suture raised, sparsely uniseriately granulate and hairy, the first and second striae together with the intervening second interspace distinctly impressed, smooth and shining; the second striae strongly punctured; the lateral portions of the declivity strongly convex, the intervals granulate-punctate and setose. The interstria punctures bear rather long erect hairs, which are therefore sparse and not present on the disc except along the suture. The last ventral segment is very deeply emarginate.

The type was taken by the writer at Ithaca, N.Y., in dead sumach limbs. It is a common species throughout the eastern part of the United States and Canada, usually confused in collections with Leconte's *consimilis*.

There is a series in our collection from Biscayne, Key West, and Haw Creek, Florida, which is left as a smaller race of *rhois*. It is slightly but distinctly smaller than the northern material, but of the same proportions and sculpture.

Pityophthorus lateralis, n. sp.

There is a short series of this species in the Cornell University Collection, all from Key West, Florida. It is very closely allied to *rhois* and can be described best by comparison. It is of the size, general shape and sculpture of *rhois* but differs specifically as follows: The pronotum has the sides straight and parallel on the hinder half and narrowly rounded on the front margin, with the marginal serrations larger, becoming much longer on the middle line, and the perfectly concentric asperities forming acute, serrate ridges; the punctures of the hinder half distinctly sparser and smaller; the elytra have the punctures on the sides very much smaller than those on the disc, with the lateral interspaces smooth and shining, the sides parallel farther behind the middle, the sulcus of the declivity deeper, the lateral convexities more strongly produced and more compressed.

The type is in the Cornell University Collection, and paratypes are placed in the collection of the Entomological Branch.

Pityophthorus confertus, n. sp.

Description of the female.—The length is 2 mm., the width about one-third the length, 5:14; the elytra densely, rather coarsely, apparently confusedly punctured, with the declivity sulcato-retuse and finely granulate on the suture and lateral prominences.

The head has the front subcircularly plano-concave, closely very finely punctured and closely pubescent, the hairs bright-yellow and short except about the margin of the pubescent area which bears a much longer fringe; with a faint trace of a median, longitudinal, less evidently punctured line, somewhat elevated on the epistomal margin; the antennal club with the sutures deep, very broadly areuate, and strongly chitinized.

The pronotum is as long as wide; with the hind margin very broadly rounded; the hind angles rounded; the sides faintly areuate, subparallel to beyond the middle, then faintly constricted, and broadly rounded on the cephalic margin, which is only very finely serrate, hardly noticeably so from above; the cephalic half moderately subconcentrically asperate; rather closely and somewhat roughly punctured behind, with the punctures very deep, rather coarse on the disc, very much smaller on the sides, the smooth median space narrow, subcarinate near the summit; the ventral surface of the thorax finely punctured behind.

The elytra are nearly twice as long as wide, 9:5; with the sides subparallel for three-fifths the length, narrowed behind, then strongly rounded at the hind angles, with the declivity somewhat produced and the suture projecting beyond the outline as viewed from above, not acuminate at the actual apex; the sutural striæ impressed, gradually more strongly behind, becoming deeply sulcate on the declivity; the suture raised and nearly smooth on the disc; the other striæ not impressed except the last; the punctures rather coarse and very close, apparently rather confused, but actually with very irregular stria and interstria rows, the punctures of the latter as large and nearly as numerous as those of the stria rows, more strongly confused near the suture and the side margins; the pubescence short, erect and indistinct. The declivity is sulcato-retuse with the punctures much smaller than on the disc, those of striæ 1 and 2 nearly obsolete; the sulcus moderately wide and deep, widest slightly behind the middle, narrowed towards the apex, smooth and shining; the suture rather well developed, finely uniseriately granulate-hairy; the second striæ of punctures minute, curving outward along the dorso-lateral margin of the sulcus; the convexity somewhat compressed, finely, densely, and roughly punctured; the third interspace has a row of about six small granules forming the margin of

the sulcus, with the accompanying long hairs, which in this species are directed caudo-mesad, with shorter sparse stiff hairs on the sides and ventral margin of the declivity; the apical margin narrowly rounded but not acuminate. The ventral surface is finely, not closely punctured, and finely pubescent; the last sternite is very deeply emarginate.

The male has the front flattened, semi-circularly margined behind, very strongly so across the middle; closely, deeply and roughly but not coarsely punctured; with a small median tubercle on the epistoma; rather closely pubescent with fine short hairs of equal length; the pronotum more distinctly constricted, with the sides straighter behind. The declivity has the granules and setæ somewhat coarser.

A long series from *Pinus contorta* of British Columbia Coast Region. The type series was collected by Mr. Tom Wilson at Adams Lake, B.C.

***Pityophthorus granulatus*, n. sp.**

This species is so closely allied to *nudus* that a detailed description is unnecessary. It differs from *nudus* chiefly in the usually more coarsely punctured pronotum and elytra, with the elytral interspaces transversely rugose, and the strongly, uniseriately granulate-setose suture and lateral convexities of the declivity. The secondary sexual characters appear to be the same as in *nudus*.

It is abundant in jack pine in Manitoba, and occurs in pine and balsam in Quebec province, and in Nova Scotia.

***Pityophthorus ramiperda*, n. sp.**

Description of adult.—The form is rather stout, $2\frac{1}{2}$ times as long as wide; with the pronotum strongly arcuate on the sides, and the declivity very steep and only slightly retuse; the length, 2.1mm.

The head has the front moderately convex, closely rather finely, deeply punctured, with a median carina on the cephalic half extending to the epistomal margin; the vertex smooth; the antennal club very large, short oval, the first two sutures faintly arcuate, the second before the middle, the third strongly arcuate, the first two segments short, subequal, the third and fourth equal in length and together longer than the first two united, sparsely pubescent with short erect hairs, the sutures not septate.

The pronotum is about as wide as long, more strongly arcuate behind than usual, the hind angles rounded, strongly arcuate on the sides, constricted before the middle and broadly rounded on the front margin, which is serrate with the median asperities longest; the summit slightly in front of the middle; the cephalic portion concentrically finely asperate; the caudal portion rather coarsely, subgranulately punctured, more finely near the lateral margin; with a strong well-defined median carina from the summit to the caudal margin, and the basal marginal line fine across the disc but distinct. The ventral surface of the prothorax is smooth and shining, with a few small punctures near the front margin.

The elytra are almost exactly twice as long as the pronotum, $75:39$; three-fifths as wide as long; about as wide as the pronotum, slightly wider at the middle; the base truncate; the sides faintly arcuate, subparallel for about four-fifths the length, then broadly rounded to the hind margin, which is sulcate-truncate as viewed from above; the suture elevated on the disc; the punctures in regular rows, the sutural striæ moderately impressed, the remaining discal striæ hardly impressed, the lateral striæ from the eighth outward deeply impressed, the ninth very deep and wide; the stria punctures regular, small deep and closely placed; the interspaces slightly transversely wrinkled, in places smooth and shining, rather finely, sparsely punctured, more coarsely and closely

near the lateral and basal margins, convex on the sides, the ninth strongly convex. The *declivity* is very steep, the caudal margin broadly rounded, not at all produced; the suture finely, feebly developed, faintly granulate; sulcate and distinctly but not strongly retuse on each side; the sulcus impunctate except at the apex, comprising the second interspace, slightly impressed, rather wide but hardly widened behind, smooth and shining; the third interspace very minutely uniseriately granulate on the convexity and faintly convex below, where it joins the convex ninth interspace; the narrowly curved elevation thus produced forming the ventral margin of the lateral convexity; the striae rows distinct on the declivity but the punctures very minute; the interstriae punctures almost obsolete. The pubescence of the dorsal surface is minute, nearly obsolete. The abdominal sternites subequal in length, the last broadly emarginate. I have not yet isolated any secondary sexual characters. The front in some individuals is much more coarsely punctured and is plainly somewhat flattened, with the carina nearly obsolete.

The type is from Isle Perrot, Que., in twigs of living *Pinus strobus*; also collected at Ste. Anne de Bellevue, Que., and Stony Creek, Ont.

***Pityophthorus intextus*, n. sp.**

Description of male.—The length is 1.8mm.; the width slightly more than one-third the length; the declivity sulcato-retuse, with long bristles, not acuminate.

The head has the front shining, coarsely punctured, a transverse impression on the cephalic half bounded behind by a rough transverse carina; the longitudinal median carina very faint; with fine pubescence in front of the transverse carina; the antennal club very wide with the sutures transverse, slightly arcuate.

The pronotum is as long as wide, broadly rounded and margined behind; the hind angles rounded; the sides arcuate on the hinder half, rather strongly constricted in front of the middle and semicircularly rounded in front; the cephalic margin very finely serrate, the serrations recurved; the cephalic half finely concentrically asperate, the rows becoming irregular on the sides; behind shining, sparsely punctured, the punctures rather coarse, hardly smaller on the sides; with a smooth median space, wider behind and carinate towards the summit.

The elytra have the base truncate, narrower than the pronotum at the base, but becoming of the same width towards the middle; the sides somewhat arcuate, subparallel for two-thirds the length; broadly rounded behind as viewed from above, with the suture raised above the outline at the middle; punctured in fairly regular rows; the striae not impressed on the disc, except the sutural striae, those near the sides irregularly impressed; the striae punctures coarse and deep, so that the surface is strongly roughened; the interspaces with coarse, deep, setigerous punctures, sparse and irregular on the disc, rather close and uniseriate towards the declivity and near the side margin; the punctures decidedly confused about the scutellum. The declivity is strongly sulcato-retuse, with the apex moderately rounded on the ventral margin, not acuminate; the sulcus deep, wide, smooth and shining, slightly wider behind; the suture feebly developed, very finely uniseriately granulate and with a row of fine hairs; the lateral convexities with the third interspaces there strongly, uniseriately, rather sparsely granulate, each granule preceding a long stiff bristle-like hair, with a few smaller granules and a few similar long hairs on the remaining interspaces of the convexity, and more numerous long hairs about the margin.

The female has the front coarsely punctured above and on a narrow space in front of the eyes, with the lower half of the front covered by a sub-circular patch, extremely finely, densely punctured and very densely clothed with fine, short, erect, yellow hairs of equal length; the patch bounded in front

by the straight marginal fringe, circularly rounded on the sides and behind. The sides of the pronotum from above are nearly evenly arcuate, only faintly constricted in front of the middle, and more elongate.

The type is from Athabaska Landing, Alta.; in *Picea canadensis*. Abundant throughout northern Alberta and northeastern British Columbia in spruce and larch.

***Pityophthorus nudus*, n. sp.**

Description of male.—The length, 1.6mm.; the width slightly more than one-third the length, 4:11; nearly glabrous; the elytral striae in 11; the declivity sulcate with the apex acuminate.

The head has the front plano-convex, closely, rather coarsely, roughly punctured, with a moderate median carina terminated in front by a median postmarginal granule; the pubescence fine and inconspicuous; with the usual postepistomal transverse groove from which arises a sparse epistomal fringe of short yellow hairs; the eyes rather short oval, very coarsely granulate, deeply narrowly emarginate in front, margined above and in front by a row of setigerous punctures; the antennal club with the sutures nearly straight, strongly chitinized, the first two recurved at the sides, the third procurved, the outer part of the funicle a little longer than the pedicel.

The pronotum is as long as wide, nearly truncate behind, feebly arcuate on the sides to beyond the middle, faintly constricted in front of the middle, broadly rounded in front, and rather strongly regularly serrate on the cephalic margin; the cephalic half concentrically asperate, the first row distant from the margin, the remaining rows less perfectly concentric and broadly curved; the summit prominent; the caudal half shining, sparsely and rather finely punctured on the disc, much more weakly on the sides, with an impunctate median space and an impunctate area on the middle of each side. The ventral surface of the prothorax is coarsely punctured in front, smoothly shining and excavated behind.

The elytra are slightly narrower than the pronotum; with the sides nearly parallel, faintly arcuate, suddenly narrowed beyond the bend of the declivity, and rapidly convergent to the strongly acuminate tip; the suture elevated on the disc; the punctures in regular striae rows; the striae hardly at all impressed; the striae punctures moderate in size, deep and closely placed; the interstriae impunctate except near the side margin, narrow, shining, slightly transversely rugose in places. The declivity is steep, triangular as viewed from above, with the suture very strongly elevated behind, acuminate at the tip; with the second interspace sulcate, moderately impressed, very wide at the middle, brightly shining, narrowed at the tip; the sides of the declivity retuse on the upper half, the convexity with two subregular rows of minute granules, without long hair; the suture similarly rather confusedly minutely granulate and not hairy; the elytra nearly glabrous except for the few long hairs of the declivity, and a few near the side margin. The last ventral segment is very broadly and deeply emarginate; the ventral segments coarsely punctured.

The female has the front densely finely punctured towards the epistoma in front of a more or less distinct transverse ridge, and densely clothed with fine short pubescence.

This species is found in twigs of *Picea canadensis* in Ontario, Quebec, and in New York state.

***Ips englemanni*, n. sp.**

This species agrees with *tridens* in all characters of the pronotum and elytra; it differs only in the nature of the frontal tumulus, which is much less elevated, with its cephalic face densely clothed with very long, incurved, light yellow hairs.

Ips pilifrons Sw. is entirely distinct from *engelmanni* in its larger size, with the stria punctures very coarse, close and usually quadrate, the frontal tumulus still less elevated, with its cephalic face more oblique, longer, and clothed with extremely dense, short, orange to brownish hairs, resembling the pile on velvet. *Engelmanni* has variations in punctuation, depth of striae and in the stoutness of the third declivital tooth. Ten specimens were dissected, representing all variations, but all were females. The male is thus far unknown. This species is found in the same sticks with *tridens* and, probably through the wandering of the autumn-feeding adults, even in the same tunnels during the winter.

The egg-tunnels were not distinguished from those of *tridens*.

Host trees: *Picea engelmanni*, and probably also *Picea canadensis*.

Distribution: Known to us from the Selkirks and Rockies of central British Columbia and from Alberta.

Ips yohoensis, n. sp.

A species with the pronotal and elytral characters of *tridens* Mannh., but distinct by the characters of the front. The front is very finely and very densely granulate and finely pubescent on the cephalic half, slightly but distinctly transversely elevated behind the epistoma, which is broadly triangularly impressed medially, immediately in front of the elevation, the epistomal margin and the median impression bearing long yellow hairs; the elevation more evidently pubescent than the remainder of the granulate part of the front, with a trace of a smooth median line. The punctuation of the pronotum is usually coarse and close; the elytral striae are usually deeply impressed and coarsely punctured with sparser interstria punctures nearly as large as those of the striae. The male has the front somewhat more strongly granulate and the third declivital tooth usually somewhat longer and more evidently capitate.

Variations in the size of the punctures and in the depth of the striae are found. The median line is in some individuals smooth, shining, sulcate from the epistomal impression to the vertex, and guarded on each by a small tubercle at the summit of the epistomal elevation. A considerable number of our specimens have the front entirely or almost entirely free of pubescence. They were taken from the same sticks as the typical series and are probably abraded.

Host trees.—*Picea engelmanni* and probably *P. canadensis*.

Distribution.—Known to us only from the Yoho valley, British Columbia.

Ips hunteri, n. sp.

Very closely allied to *I. interruptus* Mannh. in size and sculpture, from which it differs most noticeably by the regularly impressed elytral striae, and the feebly granulate first and second elytral interspaces.

The front of the head is convex, opaque, densely granulate with coarser granules intermixed, closely hairy; the club with the first two sutures bisinuate. The pronotum about as wide as long, narrowly rounded in front, slightly wider at hind angles (this character variable); rather finely and densely asperate in front, moderately, not closely punctured behind, more closely and coarsely on the sides. The elytral striae narrow, regularly, distinctly impressed, the sutural striae deeper; the stria punctures small and close; the interspaces finely, uniseriately punctured, somewhat confused and granulate near the declivity, the punctures of interspaces 1 and 2 granulate behind but hardly so on the basal half; the declivity coarsely punctured, not closely, with four spines, the third stout, capitate and acute in the male, more slender and less distinctly capitate in the female.

Described from a series of about 180 specimens collected by Prof. S. J. Hunter, at Creede, Colo., 8,844 ft.

I *ptogaster tsugae*, n. sp.

A small black species; length, 3.4 mm. The *female* has the front convex, aciculate-punctate and finely hairy, deeply impressed on the middle line behind, strongly transversely impressed on the epistoma. The *pronotum* is as wide as long, arcuate on the sides, narrowed towards the front, constricted behind the front margin, finely punctured on the disc, more coarsely and densely along the cephalic constriction and on the sides; finely margined about the sides and behind. The *elytra* have the striae rather strongly impressed, the punctures rather coarse but not densely placed and somewhat irregular; the interspaces evidently striate with the punctures fine and somewhat irregular on the disc towards the suture; all the punctures moderately coarser and scabrous towards the base. The venter of the abdomen is finely, moderately closely punctured, the second segment vertical, convex, with the ventral border finely margined and nearly semicircular, the third and fourth segments as long as the fifth, which is deeply concave and strongly elevated on the caudal margin. The *male* has the front flat, more strongly and coarsely aciculate-punctate, the elytra hardly scabrous at the base, and the second visible abdominal sternite is somewhat more coarsely margined in front.

Host trees.—*Tsuga mertensiana*, *Pseudotsuga mucronata*.

Distribution.—Cherry Creek valley, Vernon District, British Columbia; Glacier, B.C., Jasper Park, Alta. (*P. mucronata*). Probably generally distributed. Found in dying bark.

***Eccoptogaster monticolae*, n. sp.**

A small black species allied to *subscaber*, but constantly much smaller and with distinct elytral and ventral characters. The length is 2.8 mm. The elytral punctures are small and variably somewhat scabrous and coarser at the base; the interstitial punctures usually distinctly smaller than those of the striae, which are feebly impressed; the ventral declivity with the second visible sternite convex, shining, vertical, with the caudal fifth slightly oblique, finely sparsely punctured, feebly margined in front or below, with no trace of a ventral spine; the other sternites sericeous, finely punctured, the third and fourth short the fifth hardly longer than the third and fourth together, and strongly margined behind; the first visible sternite with the median part of the disc strongly convex when viewed from the side. The *male* has the front flattened and strongly aciculate, the second visible abdominal sternite more strongly margined, and the elytra less scabrous at the base. The series from Douglas fir, is apparently the same species.

Host trees.—*Pinus monticola*; *Pseudotsuga mucronata*.

Distribution.—Arrowhead, B.C., White pine; Creighton valley, British Columbia (Douglas fir).



