

and posteriorly; legs ochreous, anterior and middle tibiae and tarsi and posterior tarsi fuscous marked. Forewings brownish fuscous, with three dorsal outwardly-oblique white streaks widened at base and margined with a few black scales, somewhat curved apically, the third one nearly connected with a white slender outwardly-oblique black-margined line at three-fourths of costa, beyond this white line three or four white costal spots; a round black spot at apex with a few pale bluish scales, a few pale bluish scales between this spot and the third dorsal white streak, sometimes this area ochreous; apical and terminal cilia brownish, paler near base and black at extreme base, tornal cilia very pale brown. Hindwings and cilia pale brown. Abdomen pale brownish. Expanse of wings, 7.5-8 mm.

Resembles *epibathra* Walsm. and *hibiscella* Sw., but a smaller species, the ground color of forewings darker, and slight differences in apical markings. Described from 6 specimens reared from mines in leaves of *Neraudia melastomaeifolia*.

HAB. Two specimens Punaluu, Oahu, June 11, 1916, and 4 specimens Waiahole, Oahu, August 13, 1916 (Swezey). A series of five specimens reared from leaves of *Pipturus albidus* at Pahoa, Puna, Hawaii, September 20, 1918 (Swezey) seems to be the same species. *Neraudia* and *Pipturus* are near related trees, and it is not unlikely that the same species might attack both plants, tho of three species of *Philodoria* mining *Pipturus* leaves, not one of them has yet been found mining *Neraudia* leaves.

Miscellaneous Notes on Hymenoptera, 2nd Paper, With Descriptions of New Species.

BY JOHN COLBURN BRIDWELL.

25. *BATHYMETIS* sp., A CRYPTINE PARASITE OF SIPHONA STIMULANS AND OTHER DUNG FLY LARVAE.

Among the parasites of dung flies secured by Mr. A. Koebele in Germany and Switzerland in his search for parasites of the hornfly and sent to Honolulu for liberation, was a species of *Bathymetis* which the literature at hand does not permit us to identify. Specimens in the collection of the

Hawaiian Sugar Planters' Association show that it was bred from material sent in 1908, 1909, and 1911.

Mr. Swezey (Planters' Record 2:360-366, 1910) records breeding it from some lots of material received October 15, 1909. Some parasites had already emerged and died, twelve were still living and twenty more emerged during the following week and a new generation was secured, and by November, eight adults of a new generation were secured from dipterous puparia in cow dung, the parasite ovipositing in the puparia. Subsequent sendings received from Oct. 28 to Jan. 7, 1910, produced about 475 parasites and from these and the parasites secured by breeding, colonies of 20 females and 20 males were liberated in Manoa Valley (Nov. 1909); 21 females and 39 males in Nuuanu Valley (Nov. 1909); 26 females and 34 males at Waialae Dairy; 26 females and 34 males (Nov. 1909) and about 12 females and 30 males (May, 1910) also on Oahu, the exact locality not designated, and on Maui, at the Grove Ranch, 11 females and 17 males (Jan. 1910); and a colony of 16 females and 34 males were sent to the Parker Ranch on Hawaii for liberation (Dec. 1909). Mr. Swezey also records (*Op. Cit.* 7:258, 1912) receiving a shipment from Switzerland on Nov. 29, 1911, from which 14 females and 30 males emerged during the next two months of which some were liberated.

He found that with the advent of the winter season with its slight reduction of temperature most of the parasites went into a hibernating condition on reaching full larval growth, some keeping dormant in this way from December until May.

It is interesting to note that there is a single male of this species in the collection referred to, bred out January 4, 1912, from a puparium brought down from Manoa Valley by Mr. Muir. I cannot find that the species has been seen since. It does not seem that the species could in any case prove very important in the control of the hornfly, since it attacks the puparium and this in the horn fly is tightly enclosed in the hardened dung so that the parasite would have

great difficulty in penetrating to it, its ovipositor being too short to penetrate to any great distance. It is also not in any way a special enemy of the hornfly but apparently attacks any muscoid puparia it encounters.

26. *ASPILOTA KONAE* Ashmead.

This species has been taken in recent years on Oahu only in the mountains; on Mt. Kaala, in Wailupe, Palolo, Waimano and Opaepa valleys by Swezey, and from Mt. Kaala, Palolo and Kuliouou by Timberlake.

In January or February, 1914, the tree shells of the genus *Achatinella* were found down on the paths along the Castle trail in large numbers and from them were bred the Sarcophagid *Dyscritomyia* sp. From one of the puparia of this fly 5 or 6 Alysids were bred. In the press of other work at the time this material was probably all lost, but I am inclined to believe that it was this species which emerged. In any case it has so far always been taken in the regions where these flies are found. It would not be surprising if it should prove to be an endemic species.

The variation in the number of antennal joints in the species is most remarkable. I have seen females with 26 joints and others with but 18 while the type was described as having 28 joints.

27. TABLE OF SOME SPECIES OF HAWAIIAN BRACONIDAE.

With the exception of one or two species, the Braconidae found in the Hawaiian Islands are immigrant forms brought in by the ordinary operations of commerce or, in some instances, purposely introduced in the effort to control obnoxious insects. In all about forty species are now known to be established and it is desirable for the use of local workers to have the species tabulated. The writer has recently tabulated* the species falling into the sub-family long known as the Braconinae but which through the vicissitudes of type

*Proc. Haw. Ent. Soc., IV, No. 1, p. 113, 1919.

fixation have required a new group name. For this group Gahan has proposed the name *Vipiinae*** . This name apparently cannot stand. In the first place the genitive of *Vipio* is *Vipionis*, and the subfamily name based on it is correctly *Vipioninae* which the writer used in the place referred to. But the name of the genus which is the type of the subfamily is now *Microbracon* and the subfamily should then be called the *Microbraconinae*.

The Braconidae tabulated here have been placed in various subfamilies but to the writer they seem to belong together. However, in default of opportunity for thorough consideration of the matter he does not wish to give them at present any common designation.

They have the following characters in common: the head is completely margined behind and there is a sinus between the clypeus and the mandibles. In all but the wingless endemic *Ecphylopsis nigra* Ashmead the parapsidal furrows are strongly impressed, there are two closed cubital cells in the front wing and in the hind wing there are two cross veins extending backward from the mediellan vein, a nervellus near the middle of the mediellan cell and a postnervellus interstitial with the basellus. All the species so far as their habits are known are parasites of beetle larvae and all of these but *Heterospilus prosopidis*, the *Bruchus* parasite, attack wood-boring beetles. The habits of the endemic *Ecphylopsis* are unknown.

TABLE OF SPECIES.

1. Wingless, a very small mountain species. 1. <i>Ecphylopsis nigra</i> .	
Winged species -----	2.
2. Abdomen petiolate or subpetiolate, the first tergite much longer than broad and its sides parallel-----	3
Abdomen not petiolate, first tergite with the sides converging in front, its posterior margin but little if at all shorter than a side -----	4

**Proc. U. S. Nat. Mus., 53:196, 1917.

3. Abdomen distinctly petiolate, the first tergite subcylindrical, hind femora simple, not toothed-----2. *Spathius perdebilis* Perkins
Abdomen with the first tergite flattened, but little narrower than the third, hind femora incrassate and toothed beneath.
3. *Euscelinus peregrinus* Perkins
4. First tergite about one and one half times as broad as long, abdomen oval, hind wings of male with pseudostigma.
4. *Heterospilus prosopidis* Viereck
First tergite not broader than long, abdomen more elongate, hind wings without a pseudostigma----- 5
5. Subdiscoidal nervure continuing in the same line with the discoidal, abdomen with transverse row of crenulate sulci on tergites 3-5-----5. *Hormiopterus vagrans* n. sp.
Subdiscoidal nervure arising from the interbrachial nervure, abdomen without transverse row of crenulate sulci except on tergite three ----- 6
6. Female and male pale testaceous, thorax and abdomen often much infuscate but the parapsidal furrows always pale, third tergite without a crenulate furrow.
6. *Ischiogonus palliatus* (Blackburn)
Female with the head pale, thorax and abdomen black, male pale testaceous, third tergite with a crenulate furrow.
7. *Ischiogonus pallidiceps* Perkins

28. A NEW IMMIGRANT HORMIOPTERUS.

Hormiopterus vagrans n. sp.

Female: Head brownish-yellow, eyes black, mandibles and antennae infuscate toward apex; thorax and abdomen dull reddish brown, propodeum and first tergite black, the other tergites more or less dark on the disk; legs pale testaceous, the tarsi a little infuscate at apex; ovipositor sheaths black apically, paler at base; wings subhyaline, iridescent, the nervures blackish, paler apically, stigma and costa except at apex pale testaceous.

Antennae about 35-jointed, about as long as the entire body, all the joints longer than broad, first flagellar joint a little longer than the second; face thinly hirsute, finely granular, with shallow indefinite punctures; eyes rounded, exceedingly slightly emarginate opposite the antennae, malar space broad; genae a little broader below; ocelli in a very small triangle, separated from each other by but little more than the diameter of one, much nearer to each other than to the eye margin; front, vertex, and occiput minutely tessellate; occiput and vertex with the hairs directed forward.

Mesonotum roughly tessellate or granular, hirsute, the parapsidal furrows converging behind and meeting at about two-thirds of the distance to the scutellum and continued to it in a broad shallow rugulose

furrow with three longitudinal carinae; sides of pronotum rugulose with a longitudinal carina near the middle reaching to the front and hind margins; mesopleura and mesosternum margined in front, a deep smooth furrow on either side separating the sternum from the pleura, the vertical furrow broad and rugose, mesopleura tessellate granulate above, smooth below and shining as is the sternum, middle line of mesosternum crenulate; prescutellar sulcus not deeply impressed, divided by about five raised longitudinal lines; propodeum with two well defined lateral areas touching in front and each bounded by a raised consute line, the rugose petiolar area therefore narrowed.

Abdomen slightly longer than head and thorax combined, widest across the fourth segment, the ovipositor about two-thirds as long; pedicel about as long as its apical width and longitudinally, coarsely rugoso-striate; second tergite short, transverse and closely fused with the third, its apical margin broadly raised and polished, its broad margin more narrowly raised and smooth, between is a transverse row of longitudinal sulci and coarse striae; third and fourth tergites each with a transverse row of crenulate sulci at the basal margin, the striae separating the sulci radiating obliquely outward especially towards the sides of the disk and gradually becoming obliterated before reaching the apical margin, which is smooth, the striae sometimes branching or more often with secondary finer striae in the interstices but these generally do not reach quite to the basal margin; fifth tergite similar to the preceding two but the striae are wholly longitudinal and parallel; second to fifth tergites moreover become rugoso-striate on the vertical sides and slightly more finely sculptured here than on the disk; sixth tergite minutely tessellate at base and finely, transversely lineolate at apex; last two tergites mostly concealed beneath the sixth and apparently wholly smooth.

Length, 3.6; wing, 2.8; ovipositor, 1.1 mm.

Male: Similar to the female, but the abdomen is much slenderer, the second tergite no shorter than the following segments; each of the first five tergites, including the pedicel, with coarse striae reaching nearly to the apex of the segments, the interstices rugose with fine cross lines; antennae with about 27 to 29 joints.

Length, 2.6; wing, 2.3 mm.

Described from 16 females, 11 males reared from larvae of *Neoclytarlus euphorbiae* from Ewa Coral Plain, Oahu, June, 1919 (Bridwell), and 12 females, 4 males collected in Honolulu, on Mt. Tantalus, and in Palolo, Niu, Wailupe, Kuliouou and Waianae Valleys, Oahu (Giffard, Swezey and Timberlake), the earliest specimen having been taken in Niu, Feb. 1, 1914 (Swezey).

Type and allotype in the collection of the Hawaiian En-

tomological Society. Paratypes in the collection of the Hawaiian Sugar Planters' Association, and in the collections of Mr. Timberlake and the author.

29. OVIPOSITSON OF *ISCHIOGONUS PALLIATUS* (Blackburn).

A lot of three females and males were bred from a larva of *Plagithmysus pulverulentus* under the bark of *Acacia koa* from Oahu brought in by Mr. Swezey. These emerged about June 15, and were fed and seen to mate and were placed with a branch of *Euphorbia* containing larvae of *Neoclytarlus* and on July 7 four males and three females had emerged. These were placed with material containing larvae of *Neoclytarlus*. A female was seen ovipositing July 8, the oviposition being similar to that of *Heterospilus prosopidis*, the ovipositor being grasped by the apical two-thirds of the sheaths, the bases of the sheaths and ovipositor being widely separated. The sheaths are strongly bent and served to brace the ovipositor while in operation. The oviposition was nearly complete when noticed and no details further were observed.

This species has been recorded by Dr. Perkins as attacking the Plagithmysine beetles in the native forests. My observations show that these attacks are responsible for a very heavy mortality among them, particularly in the case of species attacking thin-barked trees.

30. *MYRMOSULA* Bradley.

Myrmosa parvula Fox and *M. rufiventris* Blake were originally included. The former may be considered the type. Probably the group is better considered as generic.

***Myrmosula rufiventris* (Blake).**

This species has apparently been represented in collections by the unique type in the collection of the American Entomological Society from Nevada.

It is represented in the author's collection by a single

male collected at Corvallis, Oregon, June 30, probably 1907 or 8 (J. C. Bridwell).

This has since remained in my collection unidentified, the peculiar structure of the mandibles having been undescribed. The mandibles are rather elongate and slender and bidentate at apex, the lower tooth being much longer than the upper. When the mandibles are closed, doubtless the huge median tooth is concealed. This is sub-triangular, a little recurved, acute at apex, and a little longer than its distance from the upper (or inner) apical tooth.

In *Myrmosa unicolor* the mandible is tridentate at the apex and the inner broad triangular tooth is much nearer the apex of the mandible.

31. ODYNERUS PSEUDOCROMUS Perkins.

Occasionally this species has the angles of the propodeum reddish and a large round spot on either side of the second tergite.

The male varies also with clypeus with an encircling yellow margin as well as the red spots on the second tergite. Either of these variations may exist independent of the other.

Pseudochromus may be distinguished from *leidemas* by the smooth lateral area on the dorsal face of the propodeum. This species employs the pupal chambers of Anobiid beetles from which the beetles have emerged as well as the pith cavities of the twigs. In either case the cavity containing the cells is closed by a mud plug at the entrance some distance away from the last cell. Two or three cells fill the Anobiid pupal chamber while I have seen nests of a dozen cells in pith cavities.

32. TWO NEW NEARCTIC SPECIES OF HYPOMISCOPHUS COCKERELL FROM THE PACIFIC COAST.

Hypomiscophus Cockerell and *Miscophinus* Ashmead are synonymous and were published upon the same day. Prof.

Cockerell has apparently shown that his genus was published a few hours earlier and his name is accordingly used here.

Hypomiscophus aenescens n. sp.

Male: Length 4.25 mm.; wing 3 mm.

Black; face, front, and vertex, and thorax with dull bronzy reflections; mandibles rufopiceous apically, flavotestaceous basally as is the anterior margin of the clypeus; legs with the incisures and the hind tarsi obscurely testaceous; wings subhyaline, iridescent, apically infuscated; the nervures brownish except costa which is blackish. Face to front, occiput, and margins of tergites with conspicuous appressed pubescence appearing silvery in certain lights, elsewhere there generally lies conspicuous fine appressed pubescence. Clypeus with the middle lobe truncate apically, convex on the disk, not carinate; front with a feeble impressed line reaching two-thirds the distance from the antennal sockets to the anterior ocelli. Eyes convergent above; ocelli in an acute triangle, anterior ocellus larger, posterior ocelli a little nearer the eye-margin than to each other.

Pronotum about as long as the mesoscutum, its sculpture microscopically wrinkled longitudinally in front, transversely behind; the mesonotal sculpture is granulo-punctate; mesopleura similar; scutellum and metanotum similar; propodeum finely transversely striolate, the median longitudinal raised line distinct; sides of propodeum longitudinally striolate; the posterior face with a triangular fovea above, on either side of which are three or four strong short parallel transverse ridges.

Abdomen with the tergites tessellate; apices of sternites 2-6 with a few erect spines.

Hind and middle tibiae with a few black spinules; nervulus inserted nearly its length before the basal nerve.

Described from a single male with the antennae missing taken at Pamelia Lake on Mt. Jefferson, Oregon, July 16, 1917 (Bridwell). Type in author's collection.

Evidently related to *nigrescens* Rohwer, but the propodeum appears from the description to be much more strongly striolate in *aenescens* as well as the head and thorax being bronzy in *aenescens* and black in *nigrescens*.

Hypomiscophus timberlakei n. sp.

Female: Length 6.75 mm.; wing, 4 mm.

Black; scape piceous apically; tegulae black, piceous apically; mandibles obscurely flavotestaceous, rufopiceous at apex; abdomen ferruginous apically and the basal segment more blackish; tarsi dull reddish;

wings hyaline iridescent, infusate apically; venation brownish. Face and occiput and apices of tergites with some appressed silvery pubescence, with some less conspicuous fine similar short hairs elsewhere generally.

Anterior margin of middle lobe feebly rounded out, impressed in the middle and slightly emarginate, the disk convex; front with a short, faintly impressed median line nearly midway between the antennal sockets and the anterior ocellus. Eyes rather strongly convergent above, ocelli in an acute triangle, the hind ocelli distinctly nearer the eye margin than to each other and nearer each other than to the occipital margin, three times the width of an ocellus in front of the summit of the eyes.

Front, vertex, pronotum, mesonotum, mesopleura, scutellum and metanotum appearing finely granular under a hand lens, really very closely minutely punctulate, propodeum very finely transversely obliquely striolate, the longitudinal raised line obscure, placed in a shallow groove, the sides obliquely longitudinally striolate, the posterior face with a triangular fovea above, with short transverse ridges on either side similar to those in *aenescens* but more numerous; abdomen tessellate.

Anterior tibiae with a comb composed of a few elongate setae; posterior and middle tibiae with a few spines. Sternites 2-5 with a few erect black setae on the margins.

Nervulus interstitial with the basal nervure. First joint of flagellum a little longer than second.

Described from two females collected at Idylwild, Mt. San Jacinto, California, July, 1912, the type collected by P. H. Timberlake for whom the species is named, and the other by the writer.

Type in the author's collection.

Two other species are described as having the abdomen more or less ferruginous. *H. arenarum* Cockerell is a smaller species (3 mm.), the tibiae are red and the longitudinal raised line of the propodeum is distinct. *H. texanus* (Ashmead) has the legs entirely red, the petiole of the 2nd cubital cell is described as only a third as long as the side of the cell while in *timberlakei* it is more than half as long. *Texanus* is a smaller species (3 mm.) and the propodeal raised longitudinal line is distinct, the collar is said to be brownish ferruginous and the two or three apical segments are said to be dark. These differences may be inconstant, since in the two individuals of

timberlakei before me, one has the apical segment black and the other is dark only at the apex.

33. A NEW NITELINE GENUS FROM SOUTH AFRICA.

Mutillonitela new genus.

Head transverse, oblong, the eyes elongate, convergent above occupying the entire side of the head from the vertex to the base of the mandible. Mandibles edentate, strongly notched before the middle. Clypeus transverse, broadly expanded in front, entire along the whole margin, with about six strong flattened blunt parallel spines beneath the margin in the middle. Antennae inserted just above the clypeus, the sockets in a line with the anterior margin of the eyes, scape stout and excavated at apex. Ocelli in an obtuse triangle, the hind ocelli in front of the summit of the eyes. A deep fovea between the ocelli and eye margin, wings somewhat abbreviated with completely closed costal, median, submedian, one cubital, one discoidal, and brachial cell. Radial cell very short, variably open at apex or closed, barely extending beyond the apex of the short first cubital cell, nervellus inserted before the basal, nervellus far before the margin of the radiellus.

Hind and middle tibiae spinose, the anterior tibiae of female with a well developed tarsal comb.

Abdomen of female without a defined pygidial area.

Head and thorax clothed with two kinds of pubescence, peculiar erect setae and the ordinary fine pubescence. Wings strongly pubescent, subhyaline to beyond the venation then strongly infusate.

Related to *Saliostethus* and *Miscophoides* of Brauns but differs by the venation.

Type: *Mutillonitela mimica* Bridwell.

Mutillonitela mimica n. sp.

Female: Length 5 mm.; wing 3 mm. more or less.

Black; legs, venter of abdomen and apical tergite dull ferruginous, the abdominal color darker; posterior margin of scutellum, metanotum and outer half of wing base whitish; anterior calcar pale; middle (1) and hind (2) calcaria black; mandibles yellowish ferruginous at base, piceous apically; antennae brownish; venation of wing yellowish.

Face, front, vertex, pronotum and mesonotum with stout erect yellowish setae, mingled on the head and thorax above with finer silvery pile; coarse silvery hairs on mesopleura, propodeum, epipleura of tergite one, sternite two on the sides and margins of tergites and sternites.

Head, pronotum, mesonotum, scutellum, mesopleura and metanotum opaque and granular.

Collar about twice as broad as long, rounded down to the declivity; propodeum without a well defined basal area, the superior face with a

feeble longitudinal raised line in a shallow ill defined furrow, surface coarsely tessellate, with feeble radiating striolae basally and transverse ones apically, sides of propodeum obliquely striolate, posterior face narrow, with a shallow furrow and impressed line above, transversely strongly striolate throughout; middle and hind tibiae with stout white spines on the outer face as long as the width of the tibiae; front tarsi grooved beneath, the comb strongly developed; hind and middle tarsi strongly spinose.

Abdomen with the tergites not contracted at the sutures, very finely strongly punctate, the punctures separated by about two or three times their diameter.

Described from two females collected at the Mowbray Golf Links, Rappenberg, near Capetown, Feb., 1915 (Bridwell). Type in the South African Museum, paratype in the author's collection.

Mutillonitela lounsburyi n. sp.

Female: Similar to *mimica*. Length 5 mm.; wings 3 mm.

Clypeus pale, ferruginous, legs brownish piceous; scutellum and metanotum black; tergites 1-3 rufescent; apical two-thirds of tergite 6 whitish yellow; sternites 2-6 dark; pubescence of head much feebler and sparser; the setae reduced to pointed hairs.

Pronotum longer, punctate, the surface between more transversely rugulose; mesonotum similar; scutellum with the punctures very distinct, well separated; mesopleura shining, the punctures irregularly disposed; propodeum similar to that of *mimica* but the surface more rugose; sides of propodeum shining with strong, well separated punctures, the posterior face like that of *mimica*.

Abdomen shorter, more compact, first tergite broader, the punctures larger, stronger, and more separated.

Described from one female collected in the same locality as *mimica* Feb.-April, 1915 (Bridwell).

Type in the author's collection.

Both species were taken running along the bare sand and resemble closely the small *Mutillidae* which are found there, until disturbed when they escape by flying. I am disposed to consider this a real case of mimicry. A Nyssonid not yet studied was found under the same circumstances and even more closely resembling the *Mutillidae*.

Named in compliment to C. P. Lounsbury, the head of

the entomological service of South Africa, who extended me many courtesies during my stay in South Africa.

34. A NEW SILAON FROM THE HAWAIIAN ISLANDS WITH DESCRIPTIONS OF TWO OTHERS FROM CALIFORNIA.

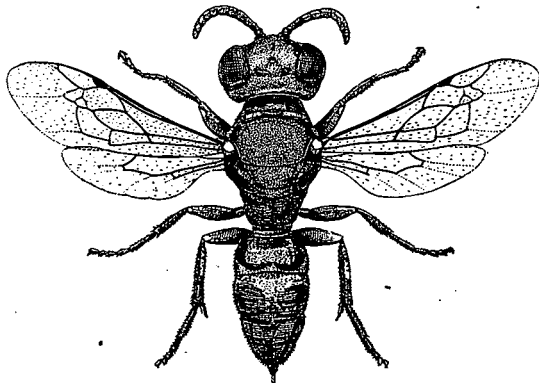
Silaon rohweri n. sp.

Female: Length 4.5 mm.; wing 3.5 mm.

Black; mandibles piceous at apex; transverse spots on either side of collar, apex of tubercles, small spots on tegulae, small spot on either side of metanotum, oval spot posteriorly at apex of front and middle tibiae, interrupted stripe on dorsal surface of hind tibiae not attaining base or apex, and calcaria yellowish-white; wings dusky subhyaline, strongly iridescent, venation dark brown.

Body with fine silvery pile covering the surface on the sides of the clypeus and sides of face.

Mandibles simple, clypeus produced in the middle and rounded with a rounded median longitudinal ridge continued as a fine carina to about the middle of the eyes, disappearing at the protuberance of the front; front vaguely and indefinitely impressed longitudinally in front of the anterior ocellus; eyes somewhat convergent above; ocelli in an obtuse triangle, the posterior ones in front of a line connecting the summit of the eyes, nearer to the eye margin than to each other; process and median ridge of clypeus smooth and shining, a few coarse punctures



Silaon rohweri.

on the edge of the pubescence which conceals the sides; front and vertex strongly confluent punctured, the genae and occiput more finely so.

Collar not margined or carinate anteriorly; mesonotum, scutellum, and mesopleura closely and subconfluent punctate; basal margin of

propodeum consute; superior face with irregular transverse well separated fine rugae; the surface between tessellate; with an imperfectly defined triangular basal area extending over on the declivity; posterior face transversely rugose or striate divided by the longitudinal sulcus; sides of propodeum finely longitudinally striate.

Tergites very finely but strongly punctate the interspaces, two or three times as wide as a puncture; first, second, and third tergites with margins depressed, more narrowly laterally; the depression of second and third is not quite one-third the length of the tergite. Sternite shining, more coarsely punctured, the margins testaceous.

Nervulus nearly interstitial, first recurrent received by the first cubital cell.

Male: Similar to female but the hind tarsi with the first and second joints pale.

The clypeus produced into a narrowly rounded tooth. The last joint of antennae longer than broad about as long as the three preceding joints. Next to last and preceding joint shorter above than below. Basal area of propodeum more definitely finely rugostriate, the striae radiating from the central furrow. Seventh sternite entirely concealed, eighth produced in the middle into a broad, flat truncate process a little longer than broad and about 1-3 the width of the sclerite.

Described from a single female specimen secured by sweeping at Waianae village, Oahu, at sea level, May 23, 1919 (Bridwell), and a male from Ewa Coral Plain bred from a cocoon in the borings of *Neoclytarlus euphorbiae*.

It is not absolutely certain that this is an immigrant species, since several endemic Hymenoptera occur in the locality where it was found. It is, however, probable that it is introduced through commerce, possibly from Central America or Mexico.

Named in honor of Mr. S. A. Rohwer, who has described a majority of the North American species.

Some dead *Euphorbia* wood containing the borings of *Neoclytarlus euphorbiae* Bridwell was taken at Sisal on the Ewa Coral Plain on August 31, 1919. The examination of two pieces of the main stem of a bush, probably from the same bush, revealed four cells constructed by this wasp. Each cell occupied the pupal chamber of the *Neoclytarlus* and the opening through which the adult beetle had emerged was plugged up with bits of coral, mud and vegetable debris, in one in-

stance some small dried leaves of the *Euphorbia* were used, in another the glumes of a grass. Apparently the mud is placed without much order within the chamber and there is no definite cell wall surrounding the prey and larva of the *Silaon*.

In two of the cells the larva had died and the dried up prey remained. This consisted of the nymphs of the Lygaeid bug, *Nysius*, belonging to an undetermined species. One contained 12 nymphs and a small dried up larva of the *Silaon*. But one of the nymphs had been fed upon. The other contained a larger dried up larva and four nymphs, two of which had been fed upon somewhat.

The other two cells contained a cocoon of the *Silaon*. These cocoons are nearly elliptical in outline with one end a little larger than the other. The cocoon is earthy, commingled with a little silk and sand grains. They are about 2 mm. thick by 5 mm. long.

The nesting place is similar to that described by Xambeau for *S. xambeaui* André and the cocoon resembles that of that species. *S. compeditus* of Europe was found by Ferton burrowing in the ground and making a series of cells containing nymphs of Lygaeid, while Williams found *Silaon inerme* (Cresson) in Kansas storing Capsid (Mirid) nymphs in a hole in the ground apparently in a spider's burrow.

Since the description above was written Dr. F. X. Williams has taken additional material from the Ewa Coral Plain and observed the habits of the species in the field. I am greatly obliged to him for the opportunity to include this material in the type series: 6 females, 9 males taken at Sisal, March and April, 1920.

Type and allotype in the collection of the Hawaiian Entomological Society. Paratypes in the collection of the Hawaiian Sugar Planters' Association, and in the private collections of Dr. Williams and the author.

Through the kindness of Dr. Williams I am permitted to use the accompanying figure of the female which is his work.

Silaon blaisdelli n. sp.

Female: Length 3.5 mm.; wing 2.5 mm.

Nervulus interstitial with the basal nervure, first recurrent nervure received by the first cubital cell.

Black; mandibles more or less piceous at apex; interrupted line on collar, tubercles, spot on tubercles, tegulae, spot on apex of front and middle tibiae behind, stripe on tibiae outwardly, calcaria, and stripe on metanotum yellowish-white; margins of tergites and sternites pale testaceous. Body with appressed silvery pubescence, more conspicuous on sides of face, and on the margins of the tergites laterally. Clypeus shining not carinate, produced into a short rounded process in the middle, front below with a tectiform ridge; gibbosity of front not impressed; eyes but little divergent below; ocelli in an obtuse triangle; the posterior ocelli in front of the summit of the eyes, about one half as far from the eye margin as from each other.

Face, front, vertex, occiput, collar, mesoscutum, scutellum and metanotum finely, closely and distinctly punctate, the metanotum more finely so; mesopleura with the surface sculpture similar in general but somewhat concealed by the pubescence, above the impressed pit on the mesepimeron is an ill-defined, glabrous shining spot with the surface microscopically tessellate. Propodeum with the basal area well defined by a U-shaped raised line, basally are some weak radiating striae not one-fourth the length of the area, apically the rugosity of the surface is transverse; sides of propodeum finely longitudinally striolate; fovea of posterior face shallow, the parallel transverse ridges feeble but numerous and reaching well toward the sides.

Wings subhyaline, iridescent, the venation brownish. The petiole of the second cubital cell short, not more than a fourth the length of the sides of the cell, the cell triangular.

Abdomen shining, finely, discretely punctate.

Described from a single female collected at San Diego, California, March 29, 1891 (Dr. F. E. Blaisdell). Type in the author's collection.

Similar to *rohveri*. From *rohveri* it differs by the well-defined propodeal area and longer propodeum. The basal area is V-shaped in *rohveri*. *Parvus* (of which the female is undescribed) is described as having the radial cell not appendiculate while it is distinctly so in *blaisdelli*. The basal area of the propodeum of *parvus* is described as triangular while it is distinctly rounded behind in *blaisdelli*. Otherwise from the description the species are very near each other.

***Silaon similis* n. sp.**

Length: 6.5 mm.; wing 4 mm.

Nervulus inserted distinctly beyond the basal (about the width of the vein), first cubital cell receiving both recurrents.

Black; transverse spot on either side of collar, tubercles, narrow apical line at apex of trochanters behind and spot on the middle of hind tibiae behind yellowish-white; calcaria whitish; mandibles piceous at apex; tegulae, tarsi, and margins of abdominal segments brownish; wings subhyaline, nervures yellowish except costa and stigma, blackish.

Appressed silvery pubescence very conspicuous on clypeus and face, less so on cheeks, collar, mesopleura, sides of propodeum and base and apex of tergites (interrupted medially), continued along the sides of the abdomen. Middle tibiae with a few whitish spinules, sternites 2-5 with the usual erect whitish setae on the margins.

Clypeus strongly carinate, the apical margin of the middle lobe thickened and shining, subtruncate, a little rounded out; eyes strongly convergent above; carina extending from the clypeus over the front, not strong, connecting a little above the antennal sockets with an impressed line which deepens into a shining fovea on the middle of the front and is continued faintly to the anterior ocellus. Front rather strongly, coarsely and closely punctured, becoming striate in the depression in front of the large front ocellus, vertex longitudinally striate between the ocelli, smooth and shining obliquely in front of the hind ocelli with a few fine punctures on the orbits there; the head behind the ocelli and the occiput transversely striatopunctate; ocelli in an equilateral triangle, the hind ocelli a little nearer the eye-margin than to each other and further than this from the occipital margin.

Pronotum very short, a little notched in the middle, abruptly declivous in a plane in front but not carinate. Mesonotum closely, coarsely subconfluently punctured, the parapsidal and median lines indicated but not impressed; mesopleura without an impressed pit, more discretely punctured on its disk; scutellum strongly discretely punctured, more sparsely on the disk; metanotum very finely and closely punctured; propodeum with the basal area ill-defined, bare, opaque, with a few radiating wrinkles more distinct at base and an imperfect raised line, the general surface subreticulate, with smooth shallow punctures in the interspaces; the basolateral areas with the surface concealed by pubescence; sides of propodeum glabrous shining, obliquely striolate, posterior face transversely striate, the fovea rather shallow.

Abdomen shining, the first tergite strongly finely rather deeply punctate, the others more finely and less distinctly so; sternites similar.

Closely related to *S. plenoculoides* (Fox) but the middle tibiae have some spinules, and the details of the head and propodeal sculpture seem different. Rohwer describes the pro-

notum of *plenoculoides* as carinate, which certainly does not apply to the present species.

Described from a single female collected at Berkeley, California, May 12, 1912 (Bridwell). Type in author's collection.

Notes on the Bruchidae (Coleoptera) and their Parasites in the Hawaiian Islands, 3rd Paper.

BY JOHN COLBURN BRIDWELL.

Bruchus prosopis Leconte.

This species has been increasingly numerous and destructive in its attacks upon the seeds of *Prosopis juliflora*. This condition led to the problem being taken up by the Union Feed Co. of Honolulu, who made possible the continuance of investigation on the weevil injury to the algaroba beans. An economic report upon these injuries was submitted to Mr. F. W. Mcfarlane, the president of this company, on December 24, 1919, and this is soon to be printed in a slightly altered form in the Hawaiian Sugar Planters' Record. On Feb. 1, 1920, these investigation were taken up by the Bureau of Entomology of the U. S. Department of Agriculture, and these notes are designed to bring up my records regarding the Bruchids to that date.

The attack by this species upon the young pods begins soon after they are set, when the seed is very small and the whole pod is only about one-eighth of an inch in thickness. The eggs are laid singly or in small masses of two or three, or perhaps more, cemented lightly to the pod.

The puncture made by the hatching larva results in a copious exudation of gum which is at first clear but later becomes brownish. This seals the entrance hole and often dislodges the egg mass so that the other larvae are unable to enter the pod.

The eggs of this species being usually laid at a time