

OBSERVATIONS UPON THE HETEROPTEROUS HEMIPTERA OF LOWER CALIFORNIA, WITH DESCRIPTIONS OF NEW SPECIES.

BY P. R. UHLER.

A collection of Hemiptera from Lower California has been placed at my disposal for study by Dr. H. W. Harkness, President California Academy of Sciences, where the types now are. Through the zealous interest of Dr. Gustav Eisen, who made the largest part of this collection, under the auspices of the California Academy of Sciences, our knowledge of the fauna of Lower California has been greatly extended and increased. Hitherto, the collections made by Mr. John Xanthus de Vesey, Baron von Osten Sacken and Henry Edwards, have been almost the only sources of reference for information relative to the Hemiptera of that country. The assemblage of forms now known from the region near Cape St. Lucas numbers somewhat over one hundred species. Doubtless many more species will yet be secured when sufficient time can be devoted to close collecting. From the entire peninsula, including a few of the islands along the coast, as well as some of those in the Gulf of California, about three hundred species have thus far been collected. Taken as a whole, the assemblage of species is Mexican, and it forms a part of that which extends into Arizona, to which the name Sonoran has been applied. A very small percentage, embracing such forms as *Pachycoris torridus* Scop., *Pachylis gigas* Burm., and *Sphictyrtus bugabensis* Dist., which form no necessary part of the Sonoran, but which belong to an overflow of the tropical, has been made possible by the long stretch of coast, the sufficiently prolonged high temperature, and the not distant lands from which tropical forms could be readily transported. Accordingly, the writer does not regard

these forms from the region of Cape St. Lucas as autochthonous, but as incidental, and not well settled. Forms affecting cacti and plants of the dry wastes hold their position to a remarkable degree; but they are so few in number as to form only a small exception to the truly indigenous fauna.

The list given below embraces all the species which have been examined by the writer from any part of the great peninsula of Lower California, excepting only such new forms as were too mutilated to be referred to their genera. About thirty species, known to me only by fragments, still remain to be recorded, among which are some interesting *Capsidæ*, collected by Dr. Edward Palmer, on the islands along the coast.

An enumeration of the well recognized species shows that the peninsula is inhabited by 5 Pachycoridæ; 6 Corimelænidæ; 7 Cydnidæ; 39 Pentatomidæ; 42 Coreidæ; 2 Berytidæ; 41 Lygæidæ; 7 Largidæ; 56 Capsidæ; 3 Anthocoridæ; 6 Tingidæ; 4 Aradidæ; 2 Phymatidæ; 20 Reduviidæ; 1 Limnobatidæ; 4 Hydrobatidæ; 6 Veliidæ; 3 Saldidæ; 3 Galgulidæ; 3 Naucoridæ; 6 Belostomatidæ; 2 Nepidæ; 6 Notonectidæ, and 5 Corisidæ.

PACHYCORIDÆ.

TETYRA BIPUNCTATA H. Schf. One specimen was taken near Cape St. Lucas by John Xanthus de Vesey.

PACHYCORIS TORRIDUS Scop. Numerous specimens were collected at Cape St. Lucas by Mr. Xanthus, and others were taken by Dr. Gustav Eisen, at San José del Cabo, and other localities.

SPHYROCORIS OBLIQUUS Germ. One specimen is in the collection from San José del Cabo, and I have examined others from the vicinity of Cape St. Lucas. It is a com-

mon species in Mexico, the West Indies, Texas and Florida.

HOMÆMUS PROTEUS Stal. A few specimens of this common Mexican insect were obtained near Cape St. Lucas by Mr. Xanthus.

ZOPHOESSA POROSA Germar. A single specimen was secured in the vicinity of Cape St. Lucas by Mr. Xanthus.

CORIMELÆNIDÆ.

CORIMELÆNA ATRA Amyot. Specimens have been collected at several localities on the peninsula by various persons.

CORIMELÆNA PULICARIA Germ. Specimens were secured near Cape St. Lucas and at San José del Cabo. It occurs from British America to Central America.

CORIMELÆNA CÆRULESCENS Stal. This species appears to be less abundant on the peninsula than the smaller ones, as specimens usually occur singly, or only in pairs, at the localities from which they have been taken. From San José del Cabo by Dr. Gustav Eisen, and from Cape St. Lucas by John Xanthus.

CORIMELÆNA LATERALIS Fab. This species spreads on the Pacific coast from British Columbia to Cape St. Lucas.

CORIMELÆNA EXTENSA Uhler. This species appears to be quite common throughout a long stretch of country extending from Vancouver Islands to Cape St. Lucas, and farther south in Mexico, on the coast of the Pacific Ocean.

CORIMELÆNA OBTUSA n. sp.

Obtusely oval, bronze-black, remotely but coarsely punctate above, strongly ciliated on the borders of the pronotum and abdomen; the scutellum much shorter

than the abdomen; the propectus smooth, minutely and sparsely obsolete-punctate, with the postpectus and venter rastrate-punctate. Head tinged with cupreous purple, scabrous and coarsely punctate, except upon the convex base; antennæ with the two basal joints fulvo-testaceous, the others piceous; apex of the tylus fulvo-piceous; rostrum piceous, fulvo-testaceous upon the second joint; eyes margined interiorly with pale yellow. Pronotum transversely depressed before the humeral prominences, and excavated behind them; the surface smooth coarsely punctate, but densely and roughly punctate each side, the humeral region and posterior border almost impunctate. Scutellum bluntly rounded, smooth tinged with copper-reflections, remotely and finely punctate, indented each side near the base. Corium broad and blunt, ivory yellow, with a blackish oblong small spot before the end, placed inwardly, the surface very remotely punctate in patches, and the apex oblique, but a little curved. Legs blackish-piceous. Venter blackish, more rufo-piceous posteriorly, with the lateral margins interruptedly yellow, and the genital segments a little margined with yellow. Length to end of venter, 3 mm. Width of base of pronotum, 2 mm. Two specimens of this interesting species were collected at San Jorge, in March, by Mr. Charles D. Haines.

CYDNIDÆ.

CYRTOMENUS MIRABILIS Perty. This is a common species near Cape St. Lucas, and it is widely distributed from the region as far south as Rio de Janeiro, Brazil, northward through Central America and Mexico to southern Texas, and from thence through the Gulf States to Florida.

AMNESTUS PUSILLUS Uhler. Specimens were obtained

from the vicinity of Cape St. Lucas by Mr. Xanthus. This small insect lurks beneath rubbish in sandy places, where it matches the color of the ground and is thus easily overlooked.

TRICHOCORIS CONFORMIS Uhler. One specimen was secured near Cape St. Lucas by Mr. Xanthus, and Henry Edwards had other specimens which were collected farther north on the peninsula. A single specimen was obtained at Comondu, in March, by Mr. Charles D. Haines.

MICROPORUS TESTUDINATUS Uhler. One specimen was taken near Cape St. Lucas by Mr. Xanthus, and another was in the collection of Henry Edwards, which came from the more northern part of the peninsula of California.

MELANÆTHUS ELONGATUS Uhler. One specimen was obtained at San José del Cabo by Dr. Gustav Eisen.

HOMALOPORUS CONGRUUS Uhler. A single specimen from the northern part of the peninsula was given to me by Henry Edwards.

PANGÆUS BILINEATUS Say. A few specimens were secured by Dr. Gustav Eisen at San José del Cabo, and others were taken near Cape St. Lucas by Mr. Xanthus.

PENTATOMIDÆ.

STIRETRUS ANCHORAGO Fab. var. Specimens appear to be uncommon on this peninsula. But I have examined one obtained from near Cape St. Lucas, and another from some point farther north on the peninsula.

OPLOMUS DICHROUS H. Schf. var. A beautiful male of this species was taken near Cape St. Lucas by John Xanthus.

OPLOMUS RUTILUS Dallas, var. A single specimen of

this insect, from near Cape St. Lucas, was in the collection of Mr. Henry Edwards.

PERILLUS CLAUDUS Say. I have examined specimens of this common insect which were collected in the northern part of the peninsula of California.

PERILLUS SPLENDIDUS Uhler. Two specimens of this insect were taken on the peninsula by John Xanthus.

PERILLUS VIRGATUS Stal. A specimen was in the collection from San José del Cabo, and others were collected near Cape St. Lucas, by Mr. John Xanthus.

PODISUS SAGITTA Fab. A few specimens were collected near Cape St. Lucas, by Mr. John Xanthus.

PODISUS PALLENS Stal. A single specimen was secured on the southern part of the peninsula, by Mr. John Xanthus.

PODISUS ACUTISSIMUS Stal. One specimen was captured near Cape St. Lucas, by Mr. John Xanthus.

EUTHYRHYNCHUS FLORIDANUS Linn. One adult and several larvæ were collected near Cape St. Lucas by Mr. John Xanthus.

PRIONOSOMA PODOPIOIDES Uhler. Two specimens were taken near Cape St. Lucas by Mr. John Xanthus. It is common in Southern California and Arizona.

BROCHYMENA OBSCURA H. Schf. Obtained at Cape St. Lucas by Mr. John Xanthus. It seems to be common in most parts of temperate Mexico, and to extend north in California and Oregon. Specimens were taken at Comondu, in March, by Mr. Charles D. Haines.

NEOTTIGLOSSA SULCIFRONS Stal. One specimen was secured by Mr. John Xanthus near Cape St. Lucas.

COSMOPEPLA DECORATA Hahn. Numerous specimens

were collected at San José del Cabo by Dr. Gustav Eisen. It is a common Mexican form, which is found also near Cape St. Lucas and on the northern part of the peninsula.

COSMOPEPLA CONSPICILLARIS Dallas. This form occurs in the northern part of the peninsula, but no specimens were secured at Cape St. Lucas. It seems to be more common in Oregon and Washington.

CEBALUS PUGNAX Fab. A few specimens were brought from near Cape St. Lucas by Mr. John Xanthus.

MORMIDEA PICTIVENTRIS Stal. var. The variety with small white dots is quite common at Cape St. Lucas, from which place Mr. Xanthus brought numerous specimens.

EUSCHISTUS TRISTIGMUS Say. A form of this species is distributed over various parts of the peninsula of California, even as far south as Cape St. Lucas.

EUSCHISTUS IMPICTIVENTRIS Stal. This species is also to be found as far south as to near Cape St. Lucas.

EUSCHISTUS CRENATOR Fab. This species has become settled over a wide extent of territory, but it does not seem to have yet become very common in Lower California. It is common in Brazil, Central America, the West Indies and Mexico, and southern Arizona seems to be its most northern limit in the United States.

PROXYs PUNCTULATUS Pal. Beauv. This species was collected at San José del Cabo, and Mr. John Xanthus secured a few specimens near Cape St. Lucas. It appears to be more common in the warm parts of Mexico and it is not rare in southern Florida and the Antilles.

HYMENARCYS ÆQUALIS Say. Specimens were in the collection of Mr. Henry Edwards, which were taken on some part of the peninsula not indicated. It has not been reported from Cape St. Lucas, and although found in

Mexico, it belongs rather to the highlands and more temperate parts of the country.

LIODERMA LIGATA Say. This species extends from Washington and Utah, all the way down the Pacific territory to Cape St. Lucas. It is common in Arizona and southern California, from many parts of which I have examined specimens, as also from Mexico, as far south as into Sonora.

LIODERMA VIRIDICATA Uhler. I have examined specimens from the collection of Mr. Henry Edwards, which were collected in Lower California.

LIODERMA SAYI Stal. A few specimens were collected near Cape St. Lucas by Mr. John Xanthus. Specimens were found by Mr. C. D. Haines at Comondu, Calamajuet, and on Margarita Island.

PERIBALUS LIMBOLARIUS Stal. One specimen was captured in the vicinity of Cape St. Lucas by Mr. John Xanthus. It has been brought from other parts of the peninsula by several collectors.

HOLCOSTETHUS ABBREVIATUS Uhler. A single specimen from the peninsula was obtained from Mr. Henry Edwards.

THYANTA PERDITOR Fab. This species lives on low weeds in barren grounds, and so we may expect to find it in most parts of Lower California. It is already known from Cape St. Lucas and from the northern part of the peninsula. It is common in Mexico, Arizona, Colorado, the Gulf States, Central America and the Antilles. In Hayti it lives on bushes and low weeds along the roads.

THYANTA CUSTATOR Fab. This is the commonest and most variable species of the genus. It varies in size, as well as in color. By its adaptability to varieties of climate,

it has been able to hold its own in the province of Quebec, as readily as on the torrid sands of the region of Cape St. Lucas. It is almost everywhere to be found on the American continent where weeds can grow and low plants can secure a hold in the soil.

THYANTA RUGULOSA Say. Several specimens of this small form were secured at Cape St. Lucas by Mr. John Xanthus. It seems to be local, as it has not been reported from many localities in California which are similar to others from which it has been taken.

THYANTA CASTA Stal. This species is common in Mexico, California, Arizona and New Mexico. It was taken at San José del Cabo by Dr. Gustav Eisen, and likewise from the vicinity of Cape St. Lucas by Mr. John Xanthus.

THYANTA PALLIDO-VIRENS Stal. This is a Mexican insect, which was collected at Cape St. Lucas by Mr. John Xanthus.

CHLOROCORIS DEPRESSUS Fab. One specimen was secured at San José del Cabo by Dr. Gustav Eisen.

CHLOROCORIS RUFISPINUS Stal. A few specimens were collected near Cape St. Lucas by Mr. John Xanthus.

MURGANTIA HISTRIONICA Hahn. This extremely common insect has spread into vegetable gardens, and may be expected to occur on most parts of the peninsula where man has settled. I have examined specimens from Cape St. Lucas, San José del Cabo, the island of Santa Cruz, of Guadaloupe, etc., and from many parts of Central America, Mexico, California, and from the western and southern States generally.

NEZARA VIRIDULA Linn. This ubiquitous species occurs likewise at Cape St. Lucas, San José del Cabo, and on the islands of Santa Cruz and Guadaloupe.

NEZARA STICTICA Dallas. Two specimens of this fine insect were collected at San José del Cabo by Dr. Gustav Eisen, and others were found at Cape St. Lucas by Mr. John Xanthus.

NEZARA MARGINATA Pal. Beauv. This Mexican species occurs at Cape St. Lucas, San José del Cabo, etc.

BANASA CALVA Say. Specimens of this species were collected near Cape St. Lucas by Mr. John Xanthus.

B. VARIANS Stal. One specimen was secured at Cape St. Lucas by Mr. John Xanthus.

ARVELIUS ALBOPUNCTATUS De Geer. Numerous specimens of various sizes were collected by Mr. John Xanthus, at Cape St. Lucas. Two specimens of large size, from Mexico, are in the collection sent to me by Dr. Gustav Eisen.

EDESSA BIFIDA Say. A few specimens of the normal type of this insect were collected near Cape St. Lucas by Mr. John Xanthus.

COREIDÆ.

SPARTOCERA FUSCA Thunb. One specimen and some larvæ were found at Cape St. Lucas by Mr. John Xanthus.

CHARIESTERUS ANTENNATOR Fab. This is a species widely distributed in Mexico, of which a few specimens were taken at Cape St. Lucas by Mr. John Xanthus.

CORYNOCORIS DISTINCTUS Dallas. This is also a species not uncommon in Mexico, which occurs at Cape St. Lucas, and on other parts of the peninsula.

PACHYLIS GIGAS Burm. This is a Mexican and Central American species, which was captured in large numbers by Dr. Gustav Eisen, at San José del Cabo and other

places, and which was found equally abundant near Cape St. Lucas by Mr. John Xanthus. It is said to live on various species of the cactus family.

MOZENA AFFINIS Dallas. Specimens were taken at San José del Cabo by Dr. G. Eisen, and at Cape St. Lucas by Mr. John Xanthus.

MOZENA LUNATA Burm. One specimen was found at Cape St. Lucas by Mr. John Xanthus.

ARCHIMERUS CALCARATOR Fab. Specimens were taken near Cape St. Lucas by Mr. John Xanthus. This is a widely distributed species which belongs more particularly to the temperate parts of North America. In the middle parts of the United States it occurs in most places where weeds and bushes grow thickly along the borders of woods.

SAGOTYLUS CONFLUENTUS Say. This is a Mexican insect, which occurs sparingly in Arizona and California. Mr. Henry Edwards sent to me a specimen which was obtained on some part of the peninsula not reported in his memoranda.

METAPODIUS GRANULOSUS Dallas. This large and conspicuous form is widely distributed, being found in Central America and extending north from Honduras to northern Arizona. Specimens were taken near Cape St. Lucas by Mr. Xanthus, and in the collection belonging to the California Academy of Sciences there are three specimens labelled "Texas."

LEPTOGLOSSUS ZONATUS Dallas. Specimens of this species were taken at San José del Cabo, at Comondú, in March, and at Patrocinio, in April, by Mr. C. D. Haines and by Dr. Gustav Eisen.

LEPTOGLOSSUS CORCULUS Say. A single specimen of

this insect was collected near Cape St. Lucas by Mr. John Xanthus. It has also been taken in nearly all the southern and southwestern States, as well as in Mexico.

LEPTOGLOSSUS STIGMA Herbst. A few individuals have been brought from the southern part of the peninsula by different collectors. It does not appear to be very common in any one locality, although several specimens have been brought to my notice from Cuba.

NARNIA FEMORATA Stal. Several specimens were taken at Comondu, in March, by Mr. Charles D. Haines. Others were secured at Cape St. Lucas by Mr. John Xanthus, and at San José del Cabo by Dr. Gustav Eisen.

NARNIA PALLIDICORNIS Stal. A few specimens were found at Comondu and San Julio, in March and April, by Mr. Charles D. Haines.

CHELINIDEA VITTIGERA Uhler. Two specimens were obtained in the vicinity of Cape St. Lucas by Mr. John Xanthus.

MARGUS INCONSPICUUS H. Schf. This Mexican species was found at various points on the Peninsula of California, including San José del Cabo and Cape St. Lucas.

CATORHINTHA GUTTULA Fab. Taken at San José del Cabo by Dr. Gustav Eisen, and at Cape St. Lucas by Mr. John Xanthus.

ANASA TRISTIS De Geer. No doubt found at all the settlements on the peninsula. It is common at San José del Cabo and Cape St. Lucas. Specimens from Southern and Lower California are often of a paler color and much larger size than we have seen from any of the other regions where they are abundant.

ANASA UHLERI Stal. A single specimen of this species was taken near Cape St. Lucas by Mr. John Xanthus.

ANASA ANDRESII Guer. A few specimens of this common Mexican and Cuban species were taken near Cape St. Lucas by Mr. John Xanthus.

ANASA SCORBUTICA Fab. Only one specimen of this Mexican and West Indian species collected on the peninsula has come to my notice, and it was found near Cape St. Lucas by Mr. John Xanthus.

FICANA APICALIS Dallas. Specimens of the nearly black variety, with the pale ring at the apex of the fourth joint of the antennæ, were taken at San José del Cabo by Dr. Gustav Eisen.

HYPSELONOTUS FULVUS DeGeer. One specimen and a larva was collected at Cape St. Lucas by Mr. John Xanthus. It is a common species in Mexico and Central America.

SPHICTYRTUS BUGABENSIS Dist. Specimens of this splendid species were collected at Cape St. Lucas, by Mr. John Xanthus, and I have examined others from Panama and Central America. I find the length of the rostrum to be quite inconstant in the specimens. In some it reaches to between the middle coxæ, while in others it extends upon the second ventral segment. The extent of red upon the head, pronotum and scutellum is also very variable. It appears to me to be only a variety of *S. sumtuosus* Stal. The black color of the tergum of abdomen is an evanescent element, depending upon the maturity of the specimen. The *S. longirostris* Dist., has a much longer rostrum, but it possesses no other permanent character to separate it from the *S. bugabensis*. More specimens are needed in order to settle the true identity of these so-called species.

BURTINUS FEMORALIS Dist. Specimens were collected

near Cape St. Lucas by Mr. John Xanthus. A specimen is in one of the bottles labelled San José del Cabo. This insect agrees so nearly with darker colored specimens of *Burtinus notatipennis* Stal, from Mexico, that I take it to be the same species.

TIVARBUS DIVERSIPES Hope. One specimen is in the collection made by Dr. Gustav Eisen, at San José del Cabo. Others were secured at Cape St. Lucas by Mr. John Xanthus. It is a common Mexican species.

TOLLIUS CURTULUS Stal. This is a common insect in parts of southern California. A specimen was found near Cape St. Lucas by Mr. John Xanthus.

LEPTOCORISA FILIFORMIS Fab. This widely distributed species seems to be common near Cape St. Lucas, where it was taken by Mr. John Xanthus.

DASYCORIS NIGRICORNIS Stal. Specimens were captured near Cape St. Lucas by Mr. John Xanthus.

CERALEPTUS AMERICANUS Stal. Specimens were taken at San Jose del Cabo, by Dr. Gustav Eisen, and others were found by Mr. John Xanthus near Cape St. Lucas.

SCOLOPOCERUS SECUNDARIUS Uhler. One specimen from Lower California was sent to me by Mr. Henry Edwards.

HARMOSTES REFLEXULUS Say. Specimens of this species have been collected on various parts of the peninsula. Mr. John Xanthus sent forward a considerable number from the vicinity of Cape St. Lucas.

HARMOSTES SERRATUS Fab. This species has not been found in numbers in any part of California. I have examined a single specimen from Cape St. Lucas.

CORIZUS HYALINUS Fab. This European insect swarms

in many parts of California, Arizona, New Mexico and Colorado. I have seen many specimens from various parts of Lower California. It was taken on Margarita Island and at San Julio by Mr. C. D. Haines.

CORIZUS SIDÆ Fab. A few specimens were collected near Cape St. Lucas by Mr. John Xanthus. Others were secured at Patrocinio, Comondu and Calmalli mines by Mr. C. D. Haines.

CORIZUS LATERALIS Say. Common in various parts of California. Specimens were taken at Cape St. Lucas by Mr. John Xanthus; and at San Julio, in April, by Mr. C. D. Haines.

CORIZUS NIGRISTERNUM Signoret. Common in southern California and Arizona. Specimens from Lower California were sent to me by Mr. Henry Edwards.

CORIZUS VALIDUS Uhler. One specimen was taken at San José del Cabo by Dr. Gustav Eisen.

CORIZUS PUNCTIVENTRIS Dallas. A few specimens of this species were collected near Cape St. Lucas by Mr. John Xanthus.

CORIZUS new sp.? A specimen too poor to describe is in the collection from San José del Cabo. It seems to be closely related to *C. punctiventris* Dallas.

LEPTOCORIS TRIVITTATUS Say. This species inhabits most parts of lowland California, and is common in Arizona, New Mexico and on the plains of Colorado, as far north as Denver. Mr. John Xanthus captured specimens of it near Cape St. Lucas.

JADERA HÆMATOLOMA H. Schf. This is a subtropical species which inhabits Central America, Mexico, the West Indies, Texas and southern Florida. Specimens of it were taken at Cape St. Lucas by Mr. John Xanthus.

BERYTIDÆ.

NEIDES MUTICUS Say. This very slender species inhabits many parts of the region near the coast of the Pacific Ocean. Mr. John Xanthus secured specimens of it near Cape St. Lucas. As this is a highland species which extends north into British Columbia, it is inferred that it was found in the mountains inland from Cape St. Lucas.

ACANTHOLÆNA ANNULATA Uhler. This neat little species was found at San Borgia, in May, by Mr. C. D. Haines. Collections made in the early summer would, no doubt, add other tropical species to those already recognized, especially among the forms which inhabit damp places and the fresh or brackish waters.

LYGÆIDÆ.

NYSIUS CALIFORNICUS Stal. The specific name here given is unfortunate, for this insect inhabits all the herbaceous regions from Central America to British Columbia, and from New Jersey to Florida and Cuba. Specimens were secured by Mr. John Xanthus at Cape St. Lucas.

NYSIUS ANGUSTATUS Uhler. Specimens of this small insect were collected by Mr. John Xanthus, near Cape St. Lucas, and others were found at San Jorge, in March, by Mr. C. D. Haines.

NYSIUS STRIGOSUS n. sp.

Form similar to *N. angustatus* Uhl., but a little shorter and more curved on the sides of corium. Color dull fulvotestaceous made gray by the black punctures of the surface; the head not as long, and the pronotum shorter and not as concave on the sides as in *N. angustatus*. Head moderately convex, minutely punctate, tinged with reddish brown, minutely pubescent, with a longitudinal black

line each side next the eyes, and with a few slender black borders of the sutures; the tylus and a line of corresponding width behind it blackish; labrum pale brown, the rostrum piceous and reaching to behind the middle coxæ; antennæ brownish testaceous, obscured with fuscous above, and more especially upon the basal and apical joints. Pronotum wider than long, pale brownish, a little tinged with fulvous, deeply punctate in blackish, somewhat transversely, in confluent rows, the lateral margin slenderly reflexed, diagonal in a direct line, which is interrupted behind by the over-swelling of the end of the callosities; callosities blackish, the constriction before them pale fulvous, sunken and very minutely punctate, the middle line black raised, and a trace each side also black; humeral angles tumid, oblique, pale, punctate in part. Scutellum roughly punctate, the raised y-shaped line blackish, with a testaceous tip. Prostethium chiefly dull black, punctate, margined behind with testaceous, the meso- and meta-sternum black, and this color is carried over upon the basal segment of the venter; the pleural segments and first ring of venter each with a large black spot exteriorly, the osteolar piece ivory white. Legs fulvo-testaceous, the femora faintly flecked with brown. Hemielytra pale testaceous, remotely and finely punctate; the costal margin strongly reflexed, moderately carinate; the veins thick, the inner and apical bounding veins of the clavus each with a dark piceous streak, and the radial and discoidal veins with a larger dark streak on the middle of each, the posterior border with three dark brown streaks. Venter with three yellow spots each side which are bordered with black.

Length to end of abdomen, $2\frac{3}{4}$ –3 mm. Width of pronotum, 1 full mm.

Several specimens were taken at San Julio, in April, by Mr. C. D. Haines.

ISCHNORHYNCHUS DIDYMUS Zett. Specimens of this cosmopolitan species were found by Mr. Xanthus in the region of Cape St. Lucas. It is common in many parts of California.

ISCHNORYHNCHUS CHAMPIONI Dist. One specimen was obtained at San José del Cabo by Dr. Gustav Eisen. It has also been taken at Cape St. Lucas and in southern California.

CYMUS LURIDUS Stal. Specimens from Cape St. Lucas have been brought to my notice.

CYMODEMA TABIDA Spin. Two specimens were taken at San Ignacio, in April, by Mr. C. D. Haines.

ISCHNODEMUS FALICUS Say. A few specimens of this insect were taken near Cape St. Lucas by Mr. John Xanthus.

BLISSUS LEUCOPTERUS Say. Specimens of the usual varieties were collected at Lower Purisima, in April, by Mr. C. D. Haines.

GEOCORIS PUNCTIPES Say. Specimens were captured at Comondu, in March, by Mr. C. D. Haines.

GEOCORIS ULIGINOSUS Say. A few specimens were taken near Cape St. Lucas by Mr. John Xanthus. It inhabits, also, many parts of southern as well as northern California, Arizona, Mexico, etc.

PACHYGRONTHA CEDANCALODES Stal. Specimens of this species were secured near Cape St. Lucas by Mr. John Xanthus.

LIGYROCORIS SYLVESTRIS Linn. One specimen of this common species was collected at San José del Cabo by Dr. Gustav Eisen, others were found at Cape St. Lucas by Mr. John Xanthus.

LIGYROCORIS CONSTRICTUS Say. Specimens were found at the same localities as the preceding species.

CNEMODUS SOBRIUS n. sp.

Stouter than the other described species of this genus. Piceous black, not highly polished, rufo-piceous beneath. Head thick, closely pubescent and set with numerous long bristles, the antenniferous lobes stout and prominent; tylus acutely prominent, fulvo-testaceous, with the rostrum a little paler, reaching between the middle coxæ; the eyes placed a little farther back than in *C. mavortius*, base of head almost abruptly contracted. Pronotum only moderately long, contracted into a narrow, striated column on the front margin, the anterior subglobose, but longer than wide, with a few scratched spots on the disk, and set with a few erect bristles; the posterior lobe much wider than the anterior, rufo-testaceous, remotely punctate, with the humeri callous and pale. Breast and underside of head a little scabrous, the sternum, coxæ and legs castaneous, with the femora darker, the front tibiæ of the male a little curved, armed on the middle with a stout tooth, and with a few smaller teeth towards the tip. Hemelytra nearly flat, pale castaneous, coarsely and remotely punctate throughout, the costal margin paler, widely reflexed, a little curved; the cuneous yellowish with a black spot at tip; the membrane and adjoining border black. Scutellum long, narrow, acute, blackish piceous, remotely and finely punctate, with the extreme tip pale testaceous. Venter mostly rufous, or rufo-piceous, tergum dark piceous.

Length to tip of abdomen, $7\frac{1}{2}$ mm. Width of base of pronotum, $1\frac{3}{4}$ mm.; width of anterior lobe, $1\frac{1}{2}$ mm.

One specimen from Lower California was sent to me by Mr. Henry Edwards. Several specimens in the col-

lection of the California Academy of Sciences are labeled "Cal. 7."

All the specimens which have thus far been reported have the membranes short and unfinished, leaving the two apical rings of tergum exposed.

PAMERA BILOBATA Say. A specimen is in the collection secured at San José del Cabo by Dr. Gustav Eisen. It is not rare in Mexico and California.

PAMERA NITIDULA Uhler. Two specimens were taken at San José del Cabo. Mr. John Xanthus found it near Cape St. Lucas, and in my collection there are specimens from Arizona and Texas.

OZOPHORA BURMEISTERII Guerin. This is a West Indian species which is somewhat common in Mexico and Central America, and which is now known to inhabit Lower California.

OZOPHORA UNICOLOR n. sp.

Dark brown, broader than usual, almost flat on the hind lobe of the pronotum and the hemelytra. Head short, strongly convex, rufescent along the broadly grooved middle line, each side of which the raised surface bounded by an impressed line opens more widely behind and is almost black, the general surface dull, indistinctly pubescent and not distinctly punctate; the eyes large, subreniform, vertical, coarsely granulated; antennæ stout, reddish brown, the second and third joints long, subequal, the fourth a little shorter, almost black, with the basal one-third white, the first joint thick, closely pubescent, dark brown; rostrum rufo-castaneous, reaching to the posterior coxæ. Pronotum subcampanuliform, the anterior lobe about one-half as long as the posterior, with the sides curving anteriorly and the margin sharply reflexed, the callosities impunctate, moderately tumid,

with an indented spot between them, and with the surrounding surface punctate; collum contracted, distinct, posterior lobe distinctly, not closely, punctate, the lateral margins curved and expanding posteriorly, a little contracted next the anterior lobe, the edge strongly reflexed, and the humeral callosities prominent, pale, and long, the posterior margin a little waved, faintly testaceous. Scutellum mostly impunctate, but closely punctate exteriorly. Legs and coxæ dusky fulvous, the anterior femora long and straight, armed with but a few slender spines, tibiæ of the same legs long, straight, slender, armed with long spines and bristles and with two stout spines at tip. Hemelytra dark clear brown, the corium punctate in lines, the clavus and the costal areole more coarsely and deeply punctate, costal margin to beyond the middle, base of ulnar vein and outer margin of clavus pale testaceous, membrane fuliginous, bordered with testaceous at base. Middle of venter pale reddish brown.

Length to tip of venter, 8-8½ mm. Width of base of pronotum, 2-2¼ mm.

A few specimens were collected at San José del Cabo by Dr. Gustav Eisen, and others were brought from Cape St. Lucas by Mr. John Xanthus.

PTOCHIOMERA OBLONGA Stal. Single specimens have been picked up at several stations near the southern part of Lower California.

CARPILIS FERRUGINEA Stal. One specimen was captured near Cape St. Lucas by Mr. John Xanthus.

SCOLOPOSTETHUS sp.? A single specimen was secured near Cape St. Lucas by Mr. John Xanthus, but it is too much altered to be fit for description.

TRAPEZONOTUS NEBULOSUS Fallen. A few specimens of this common European insect were captured near Cape St. Lucas by Mr. John Xanthus.

EMBLETHIS ARENARIUS Linn. A specimen is in the collection from San José del Cabo, and some others from the Calmalli mines.

PERITRECHUS FRATERNUS Uhler. This species was found near Cape St. Lucas by Mr. John Xanthus.

EREMOCORIS FERUS Say. One specimen was collected at San José del Cabo by Dr. Gustav Eisen. Others were found near Cape St. Lucas by Mr. John Xanthus.

MEGALONOTUS UNUS Say. A single specimen of this obscure species was secured near Cape St. Lucas by Mr. John Xanthus.

MICROTOMA CARBONARIA Rossi. This European species is now known to be widely distributed on both sides of North America. It occurs in Massachusetts and extends from thence to Florida. On the western side it is found in Colorado, near Denver, and from that point southwest, at various stations, to Arizona, California and Lower California. It was also collected at El Paraiso by Dr. Gustav Eisen.

PHYGADICUS BEHRENSII Uhler. Specimens were secured near Cape St. Lucas by Mr. John Xanthus. It was also found at the same place by Dr. Gustav Eisen.

PELIOPELTA ABBREVIATA Uhler. A few specimens were secured at Cape St. Lucas by Mr. John Xanthus.

CROPHIUS DISCONOTUS Say. This species was taken at Cape St. Lucas and at San José del Cabo.

MELANOCORYPHUS BICRUCIS Say. Found at San José del Cabo and elsewhere in Lower California.

MELANOCORYPHUS RUBICOLLIS n. sp.

Dull black, broad, becoming gradually more narrow anteriorly; the collum both above and below, the thick

lateral margins of the posterior lobe of the pronotum and sometimes the posterior part of the medial carinate line red. Head moderately long, subacute, minutely and obsoletely scabrous, very minutely pubescent; antennæ stout, finely pubescent, the second joint long, about equal to the fourth, the third short and a little longer than the basal joint; rostrum reaching the posterior coxæ. Pronotum depressed behind the collum, and back of the curved impressed line between the lobes, the callosities almost obsolete, the lateral margins prominently elevated and growing thicker posteriorly, the medial carinate line sharply defined; the anterior lobe remotely and more coarsely punctate, and the posterior lobe obsoletely and more finely so. Scutellum with a thick scabrous raised line on the middle. Hemelytra densely and minutely scabrous, with the veins of the corium and its claval boundary thick and very prominent. Collum of the prosternum notched in the middle. Underside rendered a little grayish by the minute sericeous pubescence; the legs tinged with gray in the same manner. Venter a little tinged with red along the connexivum. Membrane smoke black.

Length to tip of venter, $5\frac{1}{2}$ –8 mm. Width of base of pronotum, 2–3 mm.

This species closely resembles *Lygæus lateralis* Dallas, as figured by Mr. Distant in the *Biologia Cent. Amer.*, plate 18, fig. 1. But the figure seems to give a much narrower insect with longer head, corium bordered with red, and joints of antennæ relatively longer.

Numerous specimens were collected at Cape St. Lucas by Mr. John Xanthus. Another was secured at San José del Cabo by Dr. Gustav Eisen.

MELANOCORYPHUS CIRCUMPLICATUS Dist. A single specimen of this species was found at Lower Purisima, in April, by Mr. Charles D. Haines. It is No. 484 of the collection.

LYGÆUS BISTRIANGULARIS Say. Specimens were collected at the Calmalli mines, in April, by Mr. Charles D. Haines.

LYGÆUS RECLIVATUS Say. Several specimens were collected at Comondu, San Fernando and San Quentin, in March and May, by Mr. Charles D. Haines. It is also in the collection from San José del Cabo secured by Dr. Gustav Eisen.

LYGÆUS COSTALIS H. Schf. Specimens have been brought in from nearly every part of Lower California. It was collected at San José del Cabo by Dr. Gustav Eisen, and at Comondu, Calmalli mines and San Jorge, in March and April, by Mr. Charles D. Haines.

LYGÆUS TURCICUS Fab. A few specimens of this form were included in a large bottle of *L. reclivatus* Say, which were collected near Cape St. Lucas by Mr. John Xanthus. These two so-called species are but forms of a true single species for which the name *Lygæus turcicus* Fab. has priority. It is convenient, however, to label them with the two names in our cabinets, since the western one is generally marked with the two white dots on the membrane, while in the eastern form the two white dots are usually absent. We now possess series from both sides of the continent, taken from a single brood, which not only include these two varieties, but others, to which European entomologists have given other names. That very wise closet naturalist, M. Montandon, insists upon keeping the species separate, because one or two specimens that I sent to him have the red color of the head widely spread, instead of being confined to the middle of the vertex. The pattern of marking and spread or depth of color in specimens of this insect are extremely variable, and not one-half of the varieties of either col-

ors or form have yet been published. It is interesting to record that melanism is quite common in specimens from Washington State, and that I have seen a few from Vancouver in which the two white spots were exceptionally large and convergent on the inner sides.

ONCOPELTUS FASCIATUS Dallas. Specimens were collected at San José del Cabo and other stations by Dr. Gustav Eisen, and Mr. Charles D. Haines found it at the Calmalli mines in April. Mr. John Xanthus secured numerous specimens at Cape St. Lucas, and it has been taken at many localities in Lower California.

ONCOPELTUS GUTTA H. Schf. This form is moderately common in many parts of Lower California. It was found at San José del Cabo and other stations by Dr. Gustav Eisen, and at San Quintin in May by Mr. Charles D. Haines. Mr. John Xanthus collected many specimens of it near Cape St. Lucas.

ONCOPELTUS CINGULIFER Stal. This is a common Mexican and Central American species. It was collected at San José del Cabo by Dr. Gustav Eisen, and at Cape St. Lucas by Mr. John Xanthus.

PYRRHOCORIDÆ.

ACINOCORIS LUNATUS Hahn. A dwarf specimen of this curious insect was taken at Cape St. Lucas by Mr. John Xanthus.

LARGUS LONGULUS Stal. One specimen was secured at Cape St. Lucas by Mr. John Xanthus.

LARGUS CONVIVUS Stal. Numerous specimens were captured at San José del Cabo and at other stations by Dr. Gustav Eisen. Mr. John Xanthus secured many specimens of it near Cape St. Lucas. Mr. Charles D. Haines also found it at Comondu in March.

LARGUS CINCTUS H. Schf. This common Mexican insect was collected near Cape St. Lucas by Mr. John Xanthus.

STENOMACRA MARGINELLA H. Schf. This species extends from Arizona through California to southern Mexico. One specimen was found near Cape St. Lucas by Mr. John Xanthus.

DYSDERCUS MIMUS Say. One specimen was secured near Cape St. Lucas by Mr. John Xanthus. It extends through Arizona into Mexico, and is common in many parts of the last-named country.

DYSDERCUS OBLIQUUS H. Schf. Only a single specimen has come to my notice from Lower California. It was sent to me by Mr. Henry Edwards. Numerous specimens of it have been collected in southern Mexico, and it is not rare in the vicinity of Orizaba.

CAPSIDÆ.

MEGALOCERÆA DEBILIS Uhler. A few badly damaged specimens were brought from Lower California by Dr. Edward Palmer.

TRIGONOTYLUS PULCHER Reuter. This species is distributed throughout most parts of the Southern and Western States and extends south into Mexico. Specimens were collected at Lower Purisima in April, and at San Fernando in May by Mr. C. D. Haines. Others were found at San José del Cabo by Dr. Gustav Eisen. A few specimens were also taken near Cape St. Lucas by Mr. John Xanthus.

COLLARIA EXPLICATA Uhler. One specimen was secured at San José del Cabo by Dr. Gustav Eisen, and some broken remains of specimens were in the collection made near Cape St. Lucas by Mr. John Xanthus.

RESTHENIA CIRCUMCINCTA Say. Fragments of a specimen of this species were in a bottle from Cape St. Lucas secured by Mr. John Xanthus.

RESTHENIA DIVISA H. Schf. A variety of this species, from some unrecorded part of Lower California, was given to me by Mr. Henry Edwards.

RESTHENIA LATIPENNIS Stal. One specimen was found near Cape St. Lucas by Mr. John Xanthus.

ONCEROMETOPUS NIGRICLAVUS Reut. Specimens of this insect were taken at San José del Cabo by Dr. Gustav Eisen. It spreads through the Southern States west of Texas and Arizona, and from thence into Mexico and Lower California.

LOPIDEA MEDIA Say. A few specimens of this widely distributed form were collected near Cape St. Lucas by Mr. John Xanthus.

LOPIDEA MARGINATA n. sp.

Form rather more slender than in *L. media* Say. Bright red, almost parallel-sided. Head narrow, with the vertex short and moderately convex, black on the middle, or with a double, black curved mark there. Antennæ black, very slender. Eyes brown, subglobose, very prominent. Costal margin of corium and cuneus pale yellow. The other features and form of the pronotum are the same as in *L. media* Say. The legs, membrane and disk of corium blackish.

Length to tip of venter, $4\frac{1}{2}$ –5 mm. Width of pronotum, $1\frac{1}{3}$ – $1\frac{2}{3}$ mm.

A few specimens were collected at San Julio, in April, by Mr. C. D. Haines. It inhabits also California, Arizona, Colorado and the eastern United States.

Possibly this may eventually prove to be but a form of

L. media Say, but at present we have no evidence upon which to establish this possibility.

LOMATOPLEURA CÆSAR Reut. Specimens of this insect have been secured in many parts of California, as well as in the eastern United States. A damaged specimen was in the collection made at Cape St. Lucas by Mr. John Xanthus. The fusiform second joint of the antennæ will distinguish this from the similar species in the genus *Lopidea*.

HADRONEMA ROBUSTA n. sp.

Shorter and more convex anteriorly than *H. militaris* Uhler. Black, tinged with gray by the sericeous minute pubescence; the pronotum, scutellum and breast bright red. Head dull black, nearly vertical, strongly convex above; rostrum black, reaching between the posterior coxæ; antennæ short and stout, black, the second joint very long, the third about two-thirds as long, while the fourth joint is very short, acute at tip. Pronotum wider than long, a little sinuated on the sides, minutely scabrous, transversely and finely wrinkled, with the anterior margin distinctly reflexed between the oval callosities; the callosities sometimes black; the posterior margin broadly curved, slenderly reflexed, and the humeral angles rounded but not raised. Scutellum short, subequilateral. Hemelytra opaque, closely and minutely pubescent, obsoletly scabrous, with the clavus shallowly punctate. Legs blackish or smoke-brown. Venter dull black, the segments fringed with sericeous prostrate pubescence. Membrane long, smoke blackish.

Length to tip of venter ♂, $3\frac{1}{2}$ – $3\frac{3}{4}$; ♀, $4\frac{1}{2}$ –5 mm. Width of pronotum, $1\frac{1}{4}$ – $1\frac{3}{4}$ mm.

Specimens were collected at San José del Cabo by Dr. Gustav Eisen. A specimen from Crystal Springs, Cal.,

July 9th, was given to me Mr. Henry Edwards. I have also seen specimens from Los Angeles, San Bernardino and other parts of California. The male is far more slender than the female, and has very prominent eyes and longer antennæ. The macropterous male has sometimes exceptionally long hemielytra.

Hadronema princeps Uhler from northern California, Oregon and Washington State, is of a narrow form, with nearly the same colors, antennæ more slender and reaching upon the cuneus, besides having a slender yellow costal border and a lunule of yellow or red on the cuneus.

HADRONEMA MILITARIS Uhler. One specimen from Lower California was given to me by Mr. Henry Edwards. It is also found in Arizona, Mexico, etc.

HADRONEMA DECORATA n. sp.

Dull black, minutely pubescent, broader than either of the other species. Head wide, moderately convex, acutely triangular in front, sometimes rufous or fulvous at base, also next the eyes, middle of front, the cheeks and throat; eyes very large and prominent, smoke-brown or black, vertex finely pubescent, minutely scabrous; antennæ long, tapering, but not abruptly narrowing, black, the second joint long, the third a little shorter, the fourth more than half the length of the third; rostrum black, sometimes fulvous at base, reaching between the middle coxæ. Pronotum about as long as wide, moderately convex, slenderly reflexed on both the anterior and lateral margins, the surface obsolete or little punctate and transversely wrinkled, the callosities transverse, small, black, sometimes enclosed by a pale band which crosses the anterior lobe, the posterior margin a little curved down, with the humeri a little tumid. Scutellum a little swollen, rufous, scabrous. Legs black, with a tinge of

grey, or dull tawny at base, and sometimes with the coxæ pale testaceous. Propleura and prosternum pale yellowish. Hemelytra dull black, flat, minutely pubescent, faintly scabrous, the costal margin almost straight, narrowly yellow in concurrence with the border of the pronotum, the inner edge of the clavus, a wider line running diagonally back to the inner angle of the corium and the clavus, bluish white; membrane long, smoke-black. Venter black, a little polished, much narrower and shorter than the hemelytra, finely pubescent, the exterior margin white, and the base with a subquadrate white spot.

Length to tip of venter, $3\frac{1}{2}$ –4 mm. Width of base of pronotum, $1\frac{1}{4}$ – $1\frac{1}{2}$ mm.

A few specimens were collected at San Luis and at the Calmalli mines, in April, by Mr. C. D. Haines. Nos. 756, 777 and 554. The males are very much narrower than the females, and this gives greater apparent amplitude to the wing-covers. Immature varieties have much of the black color above substituted by a pale lead-color, and the legs more or less fulvous or testaceous. Two specimens were taken at San José de Gracias.

PHYTOCORIS EXIMIUS Reuter. One specimen was found on Magdalena Island, in March, by Mr. C. D. Haines. It is a common species in many parts of the United States, and spreads from Arizona and California into Mexico.

PHYTOCORIS RAMOSUS n. sp.

Dull fulvous, robust, finely pubescent. Head moderately thick, convex, with the usual incised line on the middle, face vertical, the eyes dark brown, very large, occupying most of the side of the head; antennæ long, not very slender, pale fulvous, the basal joint flecked with brown and remotely set with dusky hairs, the second

joint paler, minutely bristly, a little longer than the clavus, the third joint scarcely more than half as long; rostrum pale fulvous, darker at tip, reaching to the posterior coxæ. Pronotum short and very convex, infuscated each side and across the base, the callosities dark brown, transverse, wide apart, the surface minutely pubescent, and the posterior edge yellow, curved, indented in the middle and next the humeral angles; the pleural flap dusky, broadly pale beneath. Anterior coxæ pale yellowish, the femora pale fulvous, a little sprinkled with brown, especially towards the tips, tibiæ paler, set with pale bristles; tarsi dark at tip including the nails. Scutellum tumid, indented at base, bright fulvous. Hemelytra bright fulvous, long, not much curved on the costal margin; cuneus of the same color; membrane yellowish white, spread with branching brown lines on the sides and tip, the looped vein deep yellow. Venter a little dusky on the disk, sometimes pale fulvous sprinkled with rufous.

Length to tip of venter, $4\frac{1}{2}$ –5 mm. Width of pronotum, 2 mm.

One specimen was taken near Cape St. Lucas by Mr. John Xanthus. In the present collection there are a few specimens marked Cal. 11, and I have examined others which were collected at San Bernardino, Los Angeles and at Flagstaff, Arizona.

COMPSOCEROCORIS ROSEUS n. sp.

More slender than the preceding species, with the outer margin of the corium nearly straight; color roseus, or pale yellow tinged with rufous. Head moderately long, very convex, finely hoary pubescent, distinctly contracted into a neck behind the eyes, the eyes large and very prominent, dark brown; rostrum slender, pale yellow, reaching over the second ventral segment. Antennæ

long and slender, black, the basal joint crossed on the upper side by numerous irregular white bands; the second joint much narrower than the first, with a white band at base and another beyond the middle; the third almost setaceous, white at base, a little shorter than the second; the fourth still shorter and a little more slender; border of the antennal sockets black. Neck with two black stripes each side behind the eyes. Pronotum long and narrow, very moderately convex, more or less luteous, or with the posterior lobe entirely luteous, obsoletely and most minutely scabrous, remotely pubescent; the collum distinct, the anterior lobe but little wider than the collum and not much longer, with an indistinct carina on the middle; the posterior margin very slightly sinuated, fringed with whitish hairs; the pleural flap pale and reflexed below. Legs pale testaceous, the anterior and middle femora flecked with black near the tip, posterior femora pale fulvous, or rosy, minutely flecked with brown over most of the surface, and more distinctly pubescent; tibiae with the knees, tip and two bands black, tarsi mostly piceous, with the nails black. Scutellum pale fulvous, tumid, finely whitish pubescent. Hemelytra luteous, tinged with rose pink, finely whitish pubescent, the costal margin faintly sprinkled with brown; the cuneus deeper rosy, sometimes bounded in front by a pale luteous spot which is sprinkled with red; membrane whitish testaceous, marbled with smoke-brown and at tip broadly clouded with the same color; wings pale fuliginous. Venter rosy, fringed with pale silky hairs, and the borders of the segments pale luteous.

Length to tip of venter, 5 mm. Width of base of pronotum, $2\frac{1}{3}$ mm.

One specimen was secured at San Borgia, in May, by Mr. C. D. Haines. It is No. 778. A pair in my collec-

tion was kindly sent to me from Los Angeles by Mr. D. W. Coquillett.

NEUROCOLPUS NUBILUS Say. Syn. *N. mexicanus* Dist. One specimen was taken at Cape St. Lucas by Mr. John Xanthus. A single specimen in the collection of the California Academy of Sciences is marked "Cal. 9."

This species is one of the most variable of the inconsistent Phytocoraria. It is distributed all over the North American continent from Quebec to Panama, and it seems to be about as variable in Mexico as it is in Maine or Maryland. As I have compared specimens with Mr. Distant's types, I find them to be precisely like varieties of *N. nubilus* Say, which I have collected with my own hands, and some of which I have raised from the newly excluded condition to the fully matured state. A permanent variety has the posterior femora dark gray, with a small pale spot on the upper side. The other extreme of color has the hind femora yellowish or fulvous, with the apex broadly black. The basal joint of the antennæ is also variable in thickness. In some specimens the tip of this joint is knobbed and smooth.

CALOCORIS SUPERBUS Uhler.

This common species occurs near Cape St. Lucas, as well as in Mexico and the western United States.

CALOCORIS RUBRINERVE Dist. This is a common species in Mexico, southern Florida, Texas and the Lesser Antilles. Specimens were found at Lower Purisima in April, and on Margarita Island in March, by Mr. C. D. Haines.

CALOCORIS VIGENS n. sp.

Clear green, opaque, more robust than *C. rubrinerve*, minutely pubescent. Head greenish-yellow, almost vertical in front, the eyes moderately prominent, dark brown,

placed nearly vertical, vertex broadly grooved on the middle, transversely impressed between the upper corners of the eyes; the front tumid, subpentagonal, nearly flat on the middle, the outline strongly curved when viewed from the side; the sockets of the antennæ seated in a cavity. Antennæ long and slender, the basal joint longer than the pronotum, the second longest, as long as the clavus, the third not much more than half as long, the fourth more slender and a little shorter than the third. Rostrum slender, pale greenish, dusky at tip, reaching behind the middle of venter. Pronotum wider than long, paler anteriorly, the collum prominent, confined to the width between the eyes, callosities oval, low, tinged with reddish-brown, the posterior margin broadly curved, a little uneven, with the humeral angles a little reflexed and the adjoining surface indented; the surface uneven around the callosities, pale pubescent near the sides, the lateral margin not distinctly carinated, very slightly sinuated; lower margin of pleural flaps pale, reflexed. Chest and venter greenish-white, silky pubescent. Legs yellowish, the femora a little dusky near the tip, with the nails black. Scutellum green, a little convex, sometimes red at base, with the tip acute. Corium pubescent, either entirely green or bordered with red inwardly, the costal margin pale yellowish-green; the clavus red or reddish-brown, sometimes clear green; cuneus green, occasionally bordered inwardly with red; membrane fuliginous with the vein darker. Tergum more or less rufous.

Length to tip of venter, 5-5½ mm. Width of pronotum, 1¾-2 mm.

A few specimens of this beautiful form were collected at San José del Cabo by Dr. Gustav Eisen. As the alcohol in which these specimens were placed had disintegrated them for the most part, the study of their legs and antennæ had to be derived from detached members.

MELINNA ELONGATA n. sp.

Resembling *M. modesta* Uhler, male, in form, but narrower than any other species yet described, pale chestnut-brown, sometimes fulvous, distinctly pubescent. Head narrow, eyes large, black, far apart, face vertical, vertex very short, minutely punctate, antennæ stout, long, extending to the base of the cuneus, the second joint almost as long as the third and fourth united, the fourth piceous. Rostrum pale luteous, darker at tip, reaching to the posterior coxæ. Pronotum short, moderately convex, closely punctate, clothed with erect, yellowish pubescence, breast paler. Legs pale honey-yellow, the coxæ almost white, with a brown spot above each. Scutellum very moderately convex, pubescent, closely punctate. Corium, clavus and cuneus unevenly punctate, clothed with erect yellowish pubescence, the costal area nearly straight, wide, pale luteous, the cuneus mostly rufous. Venter pale fulvous, polished, pubescent, with bundles of longer hairs at tip. Membrane with a large dusky spot at tip.

Length to tip of venter, 2-2½ mm. Width of pronotum, ¾-1 mm.

One specimen was taken near Cape St. Lucas by Mr. John Xanthus; another was secured at the Calmalli mines in April (No. 759), by Mr. C. D. Haines. It inhabits also Texas, Arizona, California and Florida.

MEGACÆLUM CATULUM n. sp.

Dull testaceous, mixed with gray pubescence, and marked with black, oval, broader than the related species of this genus and the surface more opaque. Head blunt, vertical, dull testaceous, the vertex a little depressed and sloping forward, incised on the middle, the front almost vertical, fuscous at base, marked before the base with diagonal lines of dark brown punctures which converge

on the sunken and punctate middle line, the lower part of this surface punctate generally, and the base of the tylus also punctate as above; occiput acute-edged; the eyes large, pale, placed nearly vertical, sinuated inwardly, with very coarse facets. Antennæ stout, so closely sprinkled with piceous as to appear blackish, the basal joint stouter and nearly all black, the second joint longest, about as long as the clavus, the third a little longer than the basal one and the fourth a little shorter than the basal, very acute at tip. Rostrum mostly dull testaceous, piceous at base, reaching between the middle coxæ; the tylus white from near base to next the tip, the base and tip marked with black. Pronotum convex, the outline concurring with the oval curve of the hemielytra, the surface irregularly and deeply punctate, having a large subquadrate black spot anteriorly which includes the convex callosities, the transverse impression deep, sunken in the middle; collum narrow, deeply contracted, marked with a small black knob in the middle; lateral carina very slender, pale, slightly sinuated posteriorly, a little reflexed next the humeri; more or less spotted with black near the posterior margin. Scutellum polished, black, with two triangular yellowish spots at base, the tip acute, whitish. Legs testaceous, pointed and spotted with brown, more especially towards the tip of the femora, the tarsi piceous at base and tip, the nails black; the coxæ and sternum whitish. Pleural segments piceous black. Hemielytra grayish testaceous, minutely pubescent, the costal area wide, pale testaceous, edged with brown rugulæ, the corium unevenly punctate, with small brown spots scattered about and a large blackish spot at the inner tip overlapping the base of cuneus; embolium whitish, fringed with hairs; cuneus ivory-yellow, margined and tipped with black; membrane pale smoke-

brown, darker behind the middle and on the nervule. Venter highly polished greenish-yellow, freckled with red, the submargin with a broad black stripe which sends off slender streaks on the borders of some of the segments; connexivum broadly red interrupted with black at the sutures, minutely shagreened, the apical segments set with erect hairs.

Length to tip of venter, 5-6 mm. Width of pronotum, $2-2\frac{1}{4}$ mm.

Only three specimens of this insect have thus far been brought to my notice. They are all females, and differ in the depth of color and amount of marking upon the upper and under surfaces. One specimen was taken near Cape St. Lucas by Mr. John Xanthus, a second was found in southern Texas by Mr. Andrew Bolter and the third was secured in York County, Pa., by Dr. F. E. Melsheimer.

The insects of this genus occur on the branches and twigs of young pine trees in early summer; and it is likely that this new species will be found in moderate numbers when attention is paid to collecting from the young pine trees. The male is now a desideratum. The tibiae of this species are sometimes marked with three whitish incomplete bands.

LYGUS SALLEI Stal. This is a common species which includes several varieties. It has been found in Texas, Colorado, Arizona, California and in Mexico, as far south as Orizaba. One or two damaged specimens are in the collection from San José del Cabo. Several specimens are labeled "Cal."

LYGUS PRATENSIS Fab. This species has been widely dispersed through the agency of commerce. It is found at the seaports of every part of North America, on the

west as well the east; and it is now distributed over the whole width of the continent from the mouth of Mackenzie River in Arctic America to Panama and northern Brazil. It dwells on weeds and grasses of many kinds. Mr. John Xanthus brought specimens from Cape St. Lucas, and in the present collection there are specimens labeled "Cal. 2" and "Cal. 9."

LYGUS VIVIDUS n. sp.

Elongate suboval, bright tender green, beneath greenish-white, minutely pubescent. Head yellow, nearly vertical, short, blunt, polished, longitudinally indented anteriorly; eyes large, black, prominent, with coarse facets, the space between them narrow; the tylus thick, moderately curved, the rostrum yellow, reaching to behind the middle coxæ. Legs pale luteous, finely pubescent, the posterior femora thick, somewhat flattened, obsoletely bicarinated beneath; the nails and tip of tarsi dark piceous. Pronotum convex, short, with the anterior lobe, collum and margins all around, yellow, indented space between the callosities slightly carinate across the front, the collum cylindrico-convex, almost in contact with the corner of the eye, lateral margins steep, the carinate edge almost obliterated, the surface generally clothed with yellow, almost erect, pubescence, and obsoletely scabrous. Scutellum longer than wide, pubescent and scabrous like the pronotum, moderately convex, yellow across the depressed base. Hemelytra densely minutely scabrous, closely pubescent, with the broad almost straight costa pale greenish-yellow, the long cuneus of the same color; membrane long, dusky whitish with the vein green. Venter greenish white, minutely sericeous pubescent.

Length to tip of venter $3\frac{1}{2}$ –4 mm. Width of pronotum $1\frac{3}{4}$ –2 mm.

A single male from Comondu (No. 318) was obtained by Mr. C. D. Haines, in March, 1889. The only other specimens that I have examined were collected in southern California; they were, however, too much damaged to afford characters for description. This type of structure is exceptional in the genus *Lygus*, and when specimens of both sexes can be obtained for dissection, it is possible that this species will have to be transferred to another genus. It has several characteristics which recall relationship with the genus *Orthotylus*.

LYGUS sp.? Fragments of four other species, apparently undescribed, are known from Cape St. Lucas and other parts of Lower California, but they do not afford sufficient materials for description.

ORTHOPS SCUTELLATUS Uhler. Specimens were collected near Cape St. Lucas by Mr. John Xanthus. The species is distributed over many parts of the West, including California, Arizona, Colorado, Illinois, Minnesota and Canada.

PÆCILOSCYTUS BASALIS Reuter. This species occurs on small plants in various parts of California, Arizona, Texas and Colorado, as well as in most parts of the eastern United States. A few specimens were collected near Cape St. Lucas by Mr. John Xanthus. In the present collection there are specimens from California.

PÆCILOSCYTUS INTERMEDIUS n. sp.

A little more robust than *P. basalis* Reuter, with stouter antennæ; oval, pale brownish-yellow or chestnut-brown, minutely pubescent. Head a little oblique, highly polished, luteous, with a black circle on the face between the eyes which is interrupted below, but carried back posteriorly to the base of the head, below this the tylus is deep black, except at base; cheeks below the anten-

næ bright yellow, highly polished, swollen; front set with erect yellowish hairs; occipital carina narrow, dull yellow, black in the middle; rostrum slender, piceous at base and tip, reaching between the middle coxæ. Pronotum convex, dark brown, bronze pubescent, often bordered posteriorly with yellow, and with an oblong dull yellow spot on the middle, collum more or less dull yellow, the surface scabrous and transversely wrinkled, the posterior margin regularly curved. Scutellum dark brown, pubescent, wrinkled, broadly yellow at tip. Legs dull yellowish, the two anterior pairs of femora paler, crossed by about two piceous bands, the posterior femora crossed by broader and darker bands, tibial knees and apex of tarsi blackish piceous. Hemelytra pale dull tawny or obscure chestnut-brown, with the costal margin and cuneus pale yellow, the base of corium shaded and streaked with pale dull yellow, the coarse vein of inner apical margin next behind the clavus conspicuously yellow; the surface mostly covered with prostrate bronze-yellow pubescence; membrane dusky, with the veins yellow. Sternal and pleural pieces black above and between the coxæ, elsewhere yellow. Venter yellow, with a black disk and an interrupted black stripe next the connexivum. In the male the black color is sometimes spread over most of the venter.

The antennæ are longer and stouter than in *P. basalis* Reuter, and the second joint is as long as the corium.

Length to end of venter, ♂ 4; ♀ $5\frac{1}{2}$ –6 mm. Width of pronotum, $2-2\frac{1}{2}$ mm.

A specimen, ♂, is in the collection from San Quintin (No. 814), collected in May by Mr. C. D. Haines, and others are marked "Cal. 9." The species inhabits many parts of California, and it is found also in Arizona. No. 813 from El Rosario, collected in May by Mr. C. D. Haines, is a faded variety of the same species.

PÆCILOCAPSUS MARMORATUS n. sp.

Pale yellow, short, moderately robust, hardly polished, very minutely scabrous, most minutely and remotely pubescent. Head polished, impunctate, nodding, strongly convex in front, with the eyes quite small, pale brown, tylus long, tapering, continuing almost the same curve as the front; antennæ moderately slender, long, rod-shaped, and very gradually tapering after the apex of the second joint, dark brown, the basal joint longer than the head, marked with several irregular or diagonal yellow bands, the second joint as long as the clavus, about uniformly thick throughout, crossed by a narrow yellow band before the middle, the third and fourth joints short, subequal, each with a narrow whitish band at base; rostrum pale yellow, very slender towards the tip, reaching beyond the posterior coxæ, a little piceous both at base and tip. Pronotum a little wider than long, convex, marbled with dark brown on the sides and posterior two-thirds, the lateral margin slenderly carinate, with a slender brown line on it and another above it, collum narrow but clearly defined, bounded before and behind by a slender brown margin, on the middle behind the callosities are two round, brown dots, humeral angles more projecting than the lateral margin, the posterior margin a very little curved, but bending down towards the scutellum; pleural flaps quite narrow, scabrous. Legs yellow, the femora flecked with brown, and the tibiæ with the knees, two bands and the tip also brown, apex of the tarsi, and the nails piceous. Scutellum moderately convex, usually marked with two longitudinal brown streaks, the tip minutely acuminate. Underside whitish yellow. Hemelytra pale luteous, spread with close golden-yellowish pubescence, irrorated and marbled with brown in such a way as to leave numerous dots and irregular spots of the surface exposed, the base

of cuneus occasionally almost covered by one or two brown patches, also the tip and middle with brown streaks; the membrane pale, marked with a smoky bord, band and base, the veins coarse, and yellow excepting the base. Venter with two submarginal curved, very slender, interrupted stripes of red. The dark color is sometimes concentrated against the tip of the corium and the base of the pronotum.

Length to tip of abdomen, ♂, $4\frac{1}{4}$; ♀, $4\frac{3}{4}$ –5 mm. Width of pronotum, 2– $2\frac{1}{4}$ mm.

This beautiful little species was found at San José del Cabo by Dr. Gustav Eisen. Fragments of specimens from Texas and Maryland have been for a long time in my collection, but not in condition for identification. It mimics in markings of thorax, and somewhat in figure, certain varieties of Phytocoridæ related to *P. colon* Say.

NEOBORUS SAXEUS Dist. Specimens in this collection are marked "Cal. 9." A specimen more closely resembling the variety described by Mr. Distant was taken by Mr. John Xanthus near Cape St. Lucas. This insect presents all the varieties of color and marking possible to its plan of development. It is met with entirely of a yellowish-white, then nearly all black, others are greenish-yellow with a black face and mostly black pronotum and clavus, and with a large black spot near the apex of each corium; these markings are sometimes replaced by brown, purplish, or rosy red. Another variety has the face marked with crimson, four stripes of the same color on the pronotum, and the clavus and large spots of the corium also crimson.

It is sometimes very common in Maryland and the District of Columbia on the linden tree. It occurs as far north as the central part of Maine.

CAMPTOBROCHIS NEBULOSUS Uhler. Two specimens are in the collection, marked "Cal. 4." A few specimens were found near Cape St. Lucas by Mr. John Xanthus. This species is now known from most parts of North America. It is distributed from Quebec to northern Florida, and on the Pacific side of the continent it has been found in British Columbia, Washington State, and from thence to San Bernardino, California, and farther south.

DERÆOCORIS CERACHATES n. sp.

Broad ovate, more deeply convex than usual, form nearly like *Camptobrochis nebulosus* Uhl., but much larger; honey-yellow, polished, closely and unevenly punctate, many of the punctures brown. Head highly polished, strongly convex, of medium length, sloping obliquely, with the tylus continuing the curve of the front and distinctly cut at base; antennæ slender, the second joint a little longer than the pronotum, black and slightly thickened at tip, the remaining joints short, yellow, the fourth about of the same length as the first; rostrum reaching over the posterior coxæ; the occipital collar very small and almost hidden. Pronotum wider than long, very convex, deeply, coarsely deeply and unevenly punctate, dark honey-yellow or fulvous, clouded with fuscous across the base, and with a slender dark submarginal line, the callosities smooth impunctate, swollen, dark brown, column wide, depressed, whitish-yellow, with the posterior margin white and sinuated in the middle. Pectoral segments, sternum and legs uniform pale honey-yellow. Scutellum unusually swollen, highly polished, impunctate, with the basal angles and tip pale yellow. Hemelytra deeply but not closely set with brown punctures, the apex of clavus, and disk, and apex of the corium broadly, irregularly brown, the costal margin with a slender brown

line, and the raised lines mostly pale yellow; cuneus orange, tipped with clear brown; membrane pale smoky with the veins yellow at base and brown at tip. Venter rufo-fulvous, with an arcuated dark brown band before the middle.

Length to tip of venter, $5-5\frac{1}{2}$ mm. Width of pronotum, $2\frac{1}{4}-2\frac{3}{4}$ mm.

This species is not rare at Los Angeles and various parts of southern California. A single specimen (♀) of the large variety was secured at San José del Cabo by Dr. Gustav Eisen.

THYRILLUS gen. nov.

General aspect of *Rhopalotomus*; hairy, head thick, nearly vertical, the face prominently tumido-convex, the throat swollen, the eyes projecting laterally and superiorly, vertex somewhat depressed above, having a short broad middle groove, the occipital carina rising high above the surface of the vertex, the base of antennæ placed some distance below the eyes, with the basal joint but very little thicker towards the apex, the second joint long and rod-shaped and the following joint not abruptly more slender; superior cheeks oval and swollen, the space below the eye almost flat; basal joint of rostrum wide and thick, reaching to near the middle of the anterior coxæ. Mucro of the prosternum long triangular, depressed; lateral margin continuously but irregularly carinate; column wide, sharply defined, more or less depressed; the pleural flaps carried down long and almost triangular. Scutellum a little longer than wide, bluntly ridged and acuminate at tip. The costal border strongly and sharply recurved at base and sunken on the submargin. Cuneus depressed, the inner border at base thickened. Legs long.

THYRILLUS PACIFICUS Uhler. The specimens in this collection are labeled "Cal. 9." A few broken specimens from Lower California were given to me by Mr. Henry Edwards. This species seems to be fairly common at Los Angeles, San Bernardino and in the neighborhood of San Francisco. I have also seen a few specimens from southern Nevada, and others from Yakima, Washington.

THYRILLUS BRACHYCERUS Uhler. This is also a common insect in various parts of California. One specimen is in the bottle labeled San José del Cabo, and it was collected by Dr. Gustav Eisen. Other specimens in the collection are labeled "Cal. 9." Both of these species were placed in the genus *Rhopalotomus* when first described, but they seem to constitute a new genus, for which the above name is proposed.

PYCNODERES QUADRIMACULATUS Guerin. This is a common insect which inhabits sandy localities on both sides of the North American continent south of the latitude of New Hampshire on the east, and probably of San Francisco on the west. It occurs, also, in Cuba and other islands of the West Indies. A single specimen was taken near Cape St. Lucas by Mr. John Xanthus.

CYRTOCAPSUS CALIGINEUS Stal. One specimen was taken near Cape St. Lucas by Mr. John Xanthus. The species is widely distributed in California, and it appears to be moderately common in the vicinity of San Francisco.

MALACOCORIS IRRORATUS Say. A soiled and damaged specimen (No. 755) of this common insect is in the collection which was made at Calmalli mines, in April, by Mr. Charles D. Haines.

ILNACORA CHLORIS Uhler. Formerly placed in the genus *Sthenarops* Uhler, which genus is now seen to be preoccupied by *Ilnacora* Reuter. It is No. 744 of the collection from San Julio, and it was secured in April by Mr. Charles D. Haines.

LABOPIDEA CHLORIZA Uhler. An unusual variety of this species (No. 665) was found at San Esteban, in April, by Mr. Charles D. Haines. Most likely this specimen was found in the highlands of the region, since the species has previously been known from the mountains and hills of Washington State and remote northern parts of the northwest.

STIPHROSOMA ATRATA n. sp.

This species is closely related to *S. stygica* Say, deep black, polished, closely and mostly roughly punctate; base of head not so strongly grooved as in the species of Say, the antennæ are more slender, deep black, excepting only the immediate points of articulation, which are indistinctly pale; the legs are black, excepting only the very tip of femora and the base of tarsi, which are testaceous, and the membrane is smoke-black, with the base next the cuneus narrowly whitish.

Length to tip of venter, 3-3½ mm. Width of pronotum, 1¾-2 mm.

Several specimens were collected at San Julio, in April, by Mr. Charles D. Haines. It is common in many parts of southern California, notably at Los Angeles and near San Bernardino.

MACROCOLEUS COAGULATUS Uhler. Specimens were secured at the Calmalli mines and at San Julio and El Paraiso, in April and May, by Mr. Charles D. Haines. This is a widely distributed western and northern form.

MALTHACUS n. sp.?

A pair of these insects are in the collection labeled "Cal. 2," but they are too much altered to bear description.

ONCOTYLUS GUTTULATUS n. sp.

Pale whitish or yellowish-green, robust, form of a stout *Lygus*; the upper surface distinctly pubescent, minutely flecked with black, which is finer and closer on the corium, but forms remote round dots on the head, pronotum, legs and antennæ. Head small, pale green, the vertex and front conformly convex, the tylus continuing the curve, tapering toward the tip; the basal joint of antennæ short, second joint rod-shaped, about as long as the inner margin of the clavus; rostrum reaching upon the middle coxæ, pale testaceous, piceous at tip. Pronotum strongly convex, moderately polished, a little wider than long, not obviously punctate, a little wrinkled next the humeri, the callosities very large, tumidly convex, transverse, the middle line obsoletely carinated with an indent at the front of the line on the margin, the humeri broadly rounded; the lateral margins almost directly oblique, sharp-edged. Scutellum moderately convex. Hemelytra remotely, finely and obsoletely punctate, the costal margin very feebly curved, with the veins prominent, and the area a little deflexed; the membrane whitish, clouded unevenly with fuliginous behind the middle and towards the tip. Tibiæ pale yellowish with numerous streaks and a few dots black.

Length to tip of venter, $4\frac{1}{2}$ – $4\frac{3}{4}$ mm. Width of pronotum, 2 mm.

Several specimens, all more or less damaged, are in the collection. They were collected at San Julio in April, and El Rosario in May, by Mr. Charles D. Haines. There is much difference in the amount of spotting upon the hemelytra and pronotum.

ONCOTYLUS PUBERUS n. sp.

Delicate green, brighter in the male, all above closely sericeous pubescent, the females often have the dorsum beneath base of pronotum fulvous or rosy. Head short, almost vertical, the eyes large and very prominent, front moderately convex, often rufous, vertex a little depressed, transversely impressed next the very high occipital carina; the tylus very thick and prominent; rostrum reaching between the middle coxæ, pale testaceous; antennæ thick, yellowish, pubescent, the second joint nearly as long as the outer margin of the clavus. Pronotum wider than long, depressed behind and each side of the distinct callosities; lateral margin with a thick feebly sinuated carina, the humeral margins indented, a little rounded. Scutellum very feebly elevated, depressed across the exposed base, a little scabrous, pale yellowish pubescent. Hemielytra darker green, closely yellowish pubescent, obsoletely scabrous; the cuneus long and subacute, coarsely wrinkled; membrane translucent, yellowish-white, closely wrinkled. Legs pale greenish-yellow, the tibiæ armed with long spines. Beneath pale dull yellowish or greenish-white, with the mesosternum more or less widely black, sometimes uncolored in the female. Membrane of male much elongated.

Length to tip of venter, $3-3\frac{1}{2}$ mm. Width of pronotum, $1\frac{1}{2}$ mm.

Numerous specimens are in the collection of the California Academy of Sciences, labeled "Cal. II."

MACROTYLUS LINEOLATUS n. sp.

Pale greenish-testaceous tinged with fuscous, form of *M. luniger* Fieb., of Europe, finely pubescent, the surface dull. Head of the usual conical form as seen from above, greenish-yellow, the vertex and front united in

one suborbicular, hairy prominence, of a fuscous color, which extends from behind the middle of the eyes to their lower line; the neck of medium length, bounded anteriorly by a row of black bristles, sides of the head more or less infuscated, erect pubescent; tylus long, fuscous; eyes prominent, dark brown, placed almost vertical; rostrum pale greenish, dusky at base and tip, reaching upon the first ventral segment; antennæ moderately stout, blackish, pale at the joints, the first joint short, the second a little shorter than the anterior tibiæ. Pronotum trapeziform, almost flat above, the sides distinctly sinuated, obliquely narrowing towards the front, with the edge clearly carinated; the surface either yellow or green, set with black bristles, the transverse line distinctly depressed, with two subquadrate dark spots behind it, which cover most of the posterior lobe, the callosities distinct, large, oval, prominent, brown. Scutellum yellow, set with blackish bristles, feebly convex, the base exposed and marked with fuscous. Legs greenish, blackish above and dotted on the sides of the femora, the tibiæ mostly blackish. Clavus fuscous and together with the corium spread with erect black hairs, corium greenish, the costa, a diagonal stripe on the middle and an uneven band at tip blackish; cuneus pale greenish-yellow, sparsely set with dark hairs, the inner basal angle with a small triangular black spot; membrane dusky, the vein greenish-yellow. Venter and pleural segments green, the apex of the venter sometimes blackish.

Length to tip of venter, $2\frac{3}{4}$ -3 mm. Width of base of pronotum, $1\frac{1}{4}$ mm.

Specimens in this collection are labeled "Cal. 9." A damaged specimen from Lower California was sent to me several years ago by Mr. Henry Edwards.

MACROTYLUS VERTICALIS n. sp.

More ovate, shorter and convex than the preceding species, with no contracted neck behind the eyes, pale yellowish testaceous, minutely and closely pubescent. Head short, very moderately convex, with a brown oval mark on the face, which is sometimes broken; eyes larger than in the preceding species, brown; tylus and cheeks black, polished; rostrum piceous at base and tip, reaching between the posterior coxæ; the throat and bucculæ testaceous. Pronotum convex, a little longer than wide, with the anterior lobe more fulvous, and the callosities sometimes darker, pubescence of the sides longer and blackish. Base of scutellum exposed, and yellow in each angle. Legs testaceous yellow, sometimes dusky, dotted with black. Hemelytra sometimes a little greenish testaceous, pubescent like the pronotum, the middle of cuneus more or less dusky, and the membrane dusky or clouded, with the vein pale. Middle of pleural flap in front of depression, upper angle of mesopleural piece, and upper end of middle and posterior coxæ polished black. Venter dusky, yellow at tip, and with a bright yellow spot on the border of each of the segments.

Length to tip of venter, $3\frac{1}{2}$ – $3\frac{3}{4}$ mm. Width of pronotum, $1\frac{1}{2}$ mm.

Several specimens are in the collection, labeled "Cal. 2." Varieties of this species occur at San Diego and other places in southern California, and I have examined a pair from the vicinity of Cape St. Lucas, taken by Mr. John Xanthus.

MACROTYLUS ANGULARIS n. sp.

Form broader and less convex than in *M. verticalis*, with the head shorter and wider, and no appreciable neck; smoky-blackish, marked with yellowish-white. Head orange yellow, polished, pubescent at base and on

the sides, base of vertex a little bluntly arched, the face marked with an uneven, curved, black line each side of the middle; the tylus moderately long and tapering, with a black line each side; tip of suture between the cheeks also black; the rostrum slender, reaching to the posterior coxæ, piceous at base, and the two apical joints piceous; the eyes large, dark brown, prominent, almost in contact with the pronotum; the antennæ stout, black, with the second joint nearly as thick as the short first joint, and not quite as long as the clavus, the third more slender, and about half as long as the second. Pronotum short and wide, trapezoidal, a little sinuated at the side of the front lobe, the callosities large, connected, prominent, deeply impressed behind, yellow, with a black dot each side, and the suture more or less black; surface dusky, clothed with erect blackish hairs. Scutellum black, pubescent, having a yellow stripe on the middle. Legs yellow, speckled with black, and with black spines, knees, and tarsi. Sternum and pleural segments yellow, with a black bead-like spot at the upper end of each coxæ and of two lateral orifices. Hemelytra dull blackish, minutely yellowish pubescent, with the costal margin, an oblique line next inward which forks at the posterior end, another oblique line parallel with the clavus, the posterior border of the corium, and the border all around the cuneus pale yellow; the costal margin moderately curved; membrane smoke-blackish, with the veins pale yellow. Venter yellow, with a submarginal curved line of black dots along its length.

Length to tip of venter, 5 mm. Width of pronotum, $2\frac{1}{4}$ mm.

One specimen is in the collection, labeled "Cal. 10."

Fragmentary specimens have passed my inspection, which were taken at San Bernardino, and at Cape St.

Lucas by Mr. John Xanthus. It is quite desirable to have series of these insects, since the full characters of the species cannot be well known until both sexes have been carefully examined.

FULVIUS ANTHOCOROIDES Uhler. Specimens have been brought from Los Angeles and San Bernardino, and from Cape St. Lucas by Mr. John Xanthus. This species is now known from many places on both sides of North America. It is also found in the West Indies, Central America and Mexico.

CLOSTEROCORIS ORNATUS Uhler. This is a common species in many parts of California and Arizona. Two specimens were secured at San Quintin, in May, by Mr. C. D. Haines. Others are labeled "Monterey Co., Cal., M. K. Curran." Other specimens are labeled "Cal. 2 and Cal. 9."

DICYPHUS CALIFORNICUS Stal. Numerous specimens are in the collection, and from various localities. A series is labeled "Cal. 2 and Cal. 9." One or two specimens were in the bottles from San José del Cabo, collected by Dr. Gustav Eisen. It was found also near Cape St. Lucas by Mr. John Xanthus.

ENGYTATUS GENICULATUS Reuter. Several damaged and faded specimens are in the collection (numbers 69 and 317). They were taken at Comondu and on Magdalena Island, in March, by Mr. C. D. Haines. This species is common, and is now seen to be very widely distributed in the Southern States, Mexico and the West Indies.

RHINACLOA FORTICORNIS Reuter. Specimens were secured at San Julio and on Margarita Island in March and April, by Mr. C. D. Haines (Nos. 54 and 749). It is a common insect in the Southwestern States.

AGALLIASTES DECOLOR Uhler. Two specimens of this inconspicuous little species were collected near Cape St. Lucas by Mr. John Xanthus.

PSALLUS DELICATUS Uhler. Several specimens were collected at the Calmalli mines in April by Mr. C. D. Haines.

PSALLUS BIGUTTULATUS n. sp.

Yellowish-white, milk-white on the membrane, with two small angular black spots on its exterior border; the surface finely pubescent. Head subtriangular as seen from above, smooth, yellow, moderately convex, directed obliquely, the eyes long, brown, placed almost vertically; the tylus parallel-sided, a little curved; antennæ short, slender, black, the basal joint short, white, with a subapical band and exterior stripe black; rostrum testaceous, tinged with fulvous, reaching between the intermediate coxæ. Pronotum wider than long, moderately convex, the lateral margin sinuated, reflexed, the anterior margin very delicately reflexed and notched in the middle, the outer border of the callosities posteriorly with an indented line, humeral angles subacute, a little granulated, bordered inwardly by a depression, the posterior margin almost straight. Scutellum almost flat, a little punctate, and obsoletely carinate on the middle line. Legs whitish-yellow, with a very slender black line on the femora and tibiæ. Clavus and corium obsoletely punctate in longitudinal series. Beneath whitish, unpolished.

Length to tip of venter $3\frac{1}{2}$ mm. Width of pronotum $1\frac{1}{4}$ mm.

Specimens were collected at the Calmalli mines in April, at El Paraiso in May, and on Margarita Island in March by Mr. C. D. Haines. The antennæ are incomplete in all the specimens examined.

PSALLUS GUTTULOSUS Reuter. One specimen, No. 804, was taken at San Fernando in May by Mr. C. D. Haines.

PSALLUS n. sp.?

Two specimens, No. 307, from Comondu, March, were collected by Mr. C. D. Haines. The condition of the insects would give only misleading characters for description.

Several other species related to *Psallus* are in the collection from Lower California, but they do not furnish proper material for description.

A most interesting and peculiar type of Capsid, related to *Pilophorus*, is in the collection and labeled "Cal. 9." It seems important to add a description of it in this article, since the same insect, or one much like it, was collected in Lower California by Mr. John Xanthus.

MYRMECOPSIS n. gen.

In form much resembling the common black *Formica* which inhabits the wood of trees in the eastern United States. Head long, thick, almost vertical, much thicker than the swollen middle of the pronotum; the front continuous with the vertex, and both occupied by a broad ridge down the middle, which grows obsolete below the line of the antennæ, the tumid head growing narrower behind the eyes and ending in a short and much contracted neck, the face wide to the base of the tylus, conical below that line; eyes large, placed nearly vertical, prominent above and laterally; antenniferous basal support starting slender below the middle of the eye and projecting to near the lower line of the eye; the basal joint of antennæ reaching almost to the tip of the tylus, the second joint clavate towards the tip, as long as from the middle of the eye to the base of pronotum, the third joint abruptly slender; about half as long as the second; ros-

trum broad at base, the basal joint remote from the throat and scarcely extending beyond the middle of the throat, remaining joints very slender, not extending beyond the posterior coxæ; the throat deep and the upper cheeks long and triangular. Pronotum curved upwards, subcylindrical, but swollen on the middle and much contracted behind this swelling, the middle of posterior margin very prominently reflexed-folded, so as to leave an acute notch there, surmounted by a thick spine. Hemielytra beginning very narrow, gradually widening posteriorly and finishing in a bluntly rounded tip, coriaceous, closely pubescent, with the basal vein gradually spreading away from the costal as it proceeds backwards. Legs long and rather stout. The abdomen inflated beyond the contracted base.

MYRMECOPSIS INFLATUS n. sp.

Formiciform, piceous-black, dull, not apparently punctate. Head long and thick, subconical at lower end; antennæ rufo-fulvous, blackish on the apical third of the second joint. Rostrum reaching to the posterior coxæ, piceous at base and tip. Pronotum blackish-piceous, tinged with rufo-castaneous beneath and in front, medial hump curving diagonally upwards and forwards, the depression behind it deep and the flexure of the posterior border almost abrupt, the posterior edge white, with the spine black. Legs dull rufo-castaneous, with the femora somewhat darker. Hemielytra velvety blackish-brown, pale lead-color at base and along the inner border, the membrane pale, with an ivory-yellow border at base. Venter piceous-black, with a large angular white patch at base.

Length to end of venter 6 mm. Width of base of pronotum 1 mm.

This wonderful insect deserves to be studied to dis-

cover its habits. That it should be so much like an ant without requiring the protection suggested by such mimicry is well worthy of ardent attention.

ACANTHIIDÆ.

ANTHOCORIS ANTEVOLENS B. White. A few specimens were secured at Cape St. Lucas by Mr. John Xanthus. It is in the collection from some other part of California, but it is a widely-distributed form which is known from various parts of Arizona, Mexico and southern California.

TRIPHLEPS TRISTICOLOR B. White. Several specimens were collected at the Calmalli mines and on Margarita Island in March and April by Mr. C. D. Haines. No. 742, three specimens from San Quintin, are too much deformed to be recognizable.

ACANTHIA LECTULARIA Linn. The common bed-bug is distributed in Lower California as actually as it is in Mexico and California farther north.

TINGITIDÆ.

PIESMA CINEREA Say. One specimen from Lower California received from Mr. Henry Edwards. The species is found also at Los Angeles, in the vicinity of San Bernardino, and in California farther north, besides the United States generally.

TELEONEMIA SACCHARI Fab. Specimens were taken at San Jorge in March by Mr. C. D. Haines.

GARGAPHIA OPACULA Uhler. A few specimens were secured at San Luis and on Magdalena Island in March and April by Mr. C. D. Haines.

CORYTHUCA FUSCIGERA Stal. This species is distributed over most parts of California and Mexico. Specimens were taken at Cape St. Lucas by Mr. John Xanthus.

CORYTHUCA DECENS Stal. A specimen was taken at Comondu, in March, and another at San Luis, in April, by Mr. C. D. Haines.

CORYTHUCA HISPIDA n. sp.

Dull white, with the eyes and body black, the antennæ a little lurid yellow, and darker at tip. Pronotal hood long, tapering rapidly toward the front, with comparatively long spines all over, pointing in all directions, provided with mostly circular small cells, the anterior division separated from the globose base by an abrupt constriction; the lateral lamellæ bean-shaped, mostly opaque, but with small circular cells, separated anteriorly from the hood by a narrow triangular space, the surface and particularly the margins armed with mostly close-set spines. Scutellum with the medial carina low, armed with spines pointing outwards from both sides, as is the case with the reflexed outer margins. Hemelytra comparatively narrow, with three rows of circular variable cells between the discoidal flexed carina and the outer border, the costal margin set with long straight spines which decrease in length near the tip, these continue to within three cells of the tip; discoidal carinate bulla low, spread with about four rows of almost quadrangular cells. Legs fulvotestaceous.

Length to apex of hemelytra, $2\frac{3}{4}$ -3 mm. Width across pronotal lamellæ, $1\frac{2}{3}$ mm.

This novel species was taken at San Esteban, in April, by Mr. C. D. Haines.

CORYTHUCA CÆLATA n. sp.

White, mostly translucent, the pronotal lamellæ, the discoidal area with the globular bullæ and the hood opaque. Antennæ a little dusky, with the apical joint fuscous. Pronotum with the hood moderately short, com-

pressed and narrow anteriorly, not high, carrying about three series of cells, anterior part of carinate ridge with erect spines, sides with shorter spines, the posterior globular portion not much wider than the division next in front of it; lateral lamellæ almost triangularly narrowed anteriorly, reaching forward almost as far as the tip of the hood, areoles small, arranged in four series, margined along the full length with straight, long, nearly equidistant spines, the posterior margin not far from the front border of the hemielytra. Base of mesonotum like a transverse, interrupted collar, with the middle between the swellings longitudinally carinate, the space each side of this, the hollows at base of hood, the center of bulla on the disk of hemielytra, and the veins of the marginal cells black. Scutellum almost flat, with the middle carina thicker than the marginal ones. Hemielytra a little wider behind, somewhat bent outwards, with six rows of chiefly quadrangular cells; the base a little wider than the lamellæ, deeply notched in the middle, armed with spines which gradually decrease in size until arrested at about one-third from the tip. Legs, rostrum, bucculæ, and sternal carinate pieces testaceous. Venter a little rufo-fulvous on the middle.

Length to tip of hemielytra, $3\frac{1}{2}$ mm. Width of pronotal lamellæ, $1\frac{2}{3}$ mm.

Specimens in this collection are labeled "S. Cal."

I have examined one specimen from Cape St. Lucas.

This species comes near *C. decens* Stal in appearance, but it has more of the form of *C. fuscigera* Stal, and differs from both in the characters given above.

CORYTHUCA INCURVATA n. sp.

Dull murky testaceous, pellicular, obscurely translucent. Pronotal hood high and short, the globular portion

occupying nearly all of it, the cells very large, chiefly hexagonal, above stained with dark brown; lateral lamellæ short, sunken and with a brown spot anteriorly, bent upwards posteriorly, the edge with very short, close set spines. Scutellum simple at base and brown there, the carinate middle line high, with a brownish spot each side. Hemielytra with large, mostly subquadrangular areoles, the outer border deeply sinuated, the costal row of cells stopped at one-third from the tip, and the very minute spines hardly extending that far, base feebly notched; the inner margin, a band before the apex, and the bullate portion of the disk brown. Antennæ, excepting the dark apical joint, the rostrum, bucculæ, and legs testaceous. Apical third of the venter rufous.

Length to tip of hemielytra, 3 mm. Width of pronotal lamellæ, $1\frac{1}{2}$ mm.

This species is labeled in the collection "Cal. 7."

It is, however, an inhabitant of Lower California, Mexico and Arizona.

ARADIDÆ.

ARADUS AMERICANUS H. Schf. One specimen is in the collection which was made at Cape St. Lucas by Mr. John Xanthus.

ARADUS ÆQUALIS Say. A single specimen is in this collection, labeled "S. Cal." It has been taken at Cape St. Lucas and on the island of Santa Cruz.

ARADUS LUGUBRIS Fallon. This species has also been taken at Cape St. Lucas and in Mexico.

BRACHYRHYNCHUS EMARGINATUS Say. Specimens were collected at San José del Cabo, by Dr. G. Eisen; and near Cape St. Lucas, by Mr. John Xanthus.

PHYMATIDÆ.

PHYMATA FASCIATA G. R. Gray. *P. Wolffii* Stal. (*syn.*) This species is now distributed over the greater part of North America. Doubtless it has been distributed by hurricanes and less violent storms of wind from region to region, and through the distribution of garden plants by commerce it has unquestionably been transported to distant localities. At length it may be expected to occur wherever roses and herbaceous garden plants shall be carried from North America.

Specimens were collected on Magdalena Island, also in Siskiyou County and in southern California.

In the eastern United States as well as in Colorado, Kansas, etc., it enters between the florets of the golden rod and the heads of other flowers, where it matches the pollen-spread surfaces, and seizes the unwary insects which come within its reach.

REDUVIOIDEA.

CORISCUS FERUS Linn. This species is dispersed throughout almost every region of North America. It is found in Lower California, as well as in Arizona, California and New Mexico.

CORISCUS PALLESCENS Reuter. A few specimens in the collection were taken at the Calmalli mines, San Luis, San Esteban in April, and on Margarita Island in March, by Mr. C. D. Haines.

SINEA UNDULATA n. sp.

Brownish-cinereous, pale gray, pubescent, similar to *S. diadema* Fab., but wider, with a shorter neck and femora, with the spines more numerous and crowded together on the front division of the head, with the carinate lines of the middle of pronotum prominent and sharply

defined, and the knobs each side of base elevated, and surmounted by a little tubercle; three double series of spine-like, black tubercles on the anterior lobe of the pronotum. Venter with a series of oblique, white spots on each side near the border; scallops of the lateral border more prominent and placed further back than in *S. diadema*; the inner margin of corium white.

Length to tip of venter, 14-15 mm. Width of pronotum, 3 mm.

This appears to be a common species in southern California and in Lower California. Specimens were collected at San José del Cabo, and at the Calmalli mines by Mr. C. D. Haines.

PRIONIDUS CRISTATUS Linn. One or two specimens were collected at San José del Cabo by Dr. Gustav Eisen.

HEZA ANNULICORNIS Stal. One specimen was taken near Cape St. Lucas by Mr. John Xanthus.

ROCCONOTA sp.? Fragments of a large fuscous species, apparently of this genus, were sent from Cape St. Lucas by Mr. John Xanthus.

MILYAS ZEBRA Stal. A mutilated specimen of this insect is in one of the bottles from San José del Cabo.

ZELUS SPECIOSUS Burm. A specimen was taken by Dr. Gustav Eisen at San José del Cabo. Mr. John Xanthus captured several specimens at Cape St. Lucas.

DIPLODUS RENARDII Kolenati. Specimens were taken at Comondu by Mr. C. D. Haines.

DIPLODUS EXSANGUIS Stal. A few specimens of this insect were captured at Cape St. Lucas by Mr. John Xanthus.

PINDUS SOCIUS Uhler. This species was also found at Cape St. Lucas by Mr. John Xanthus.

APIOMERUS CRASSIPES Fab. Specimens in this collection are labeled "S. California." I have examined a variety of this species from Cape St. Lucas.

APIOMERUS FLAVIVENTRIS H. Schf. This species is in the collection of the California Academy of Sciences, labeled "Mex." It is a well-known Mexican species, which inhabits Cape St. Lucas, southern California and Arizona.

RASAHUS BIGUTTATUS Say. This is a common species in California and Mexico, which extends as far south as to the vicinity of Cape St. Lucas. It was taken at San Luis by Mr. C. D. Haines.

RASAHUS SULCICOLLIS Serv. This species was found at Cape St. Lucas by Mr. John Xanthus.

MELANOLESTES PICIPES H. Schf. A few specimens of this insect were found at Cape St. Lucas by Mr. John Xanthus.

MELANOLESTES ABDOMINALIS H. Schf. This species was also secured at Cape St. Lucas by Mr. John Xanthus.

CONORHINUS PROTRACTUS n. sp.

Piceous-black, narrow, approaching nearest to *C. rubrofasciatus* DeG., but much narrower and with the eyes small, deep-seated and placed low down on the side of the head. The head long and narrow, thicker in the female than in the male, with the posterior lobe almost as wide as the eyes; the surface minutely scabrous and feebly pubescent, the basal joint of antennæ not reaching near the tip of the head; the third and fourth joints slender, pilose, dull testaceous; space behind the eye densely

and coarsely granulated; rostrum thick, fuscous, closely pubescent, reaching to the middle of the prosternum. Pronotum obsoletely rugose, narrower than in *C. rubrofasciatus*, less deeply sinuated on the sides, and having the carinate line closely uniting with the humeral tubercle, coarsely and obsoletely punctate. The scutellum moderately granulated on the carinate flaps. Corium minutely pubescent, very finely and closely scabrous. Venter but little wider than the corium, with the notches of the segments marked by a pale streak; underside paler brown, minutely wrinkled. Tarsi and end of tibiæ dull pale fulvous.

Length to tip of venter, 16-17 mm. Width of pronotum, 3-3½ mm.

Two specimens are labeled "Cal. II." One specimen from Lower California (Santa Cruz?) was sent to me by Dr. J. L. Le Conte. It is common at San Diego, southern California.

CONORHINUS RUBIDUS n. sp.

Narrow, a little wider than the preceding species, with a long narrow head and prominent eyes, dark smoke-brown, with the basal part of pronotum and the outer part of the connexivum more or less widely red, or reddish, and with the costal margin red, but more broadly so at base. Head subcylindrical, the anterior portion not tapering, rugulose; antennæ thick, longer than in the preceding species, the basal joint just reaching to the apex, second joint longer than in *C. protractus*, the two apical joints also long, obscurely testaceous, space behind the eyes almost smooth, the constricted neck red; rostrum short, chestnut-brown, banded with white at the joints, reaching to middle of the short prosternum, ciliated with long hairs. Pronotum short and moderately wide, obsoletely wrinkled and roughened, the anterior lobe

short, simply a little convex on each division separated by the longitudinal deep line, with the carinate longitudinal lines divaricating and subobsolete; lateral margin distinctly constricted and a little sinuated behind the anterior lobe, with the exterior margin carinated and the carina extending along the outside of the humeral tubercle. Scutellum filled up in the middle, coarsely transversely wrinkled, with the tip acutely protracted, long, and rufous. Corium very minutely scabrous, with a short pale streak on the middle of the posterior border; veins of the membrane blackish on a pale brown surface. Feet and tip of tibiæ pale dull fulvous. Abdomen broadly bordered with red both above and below, incisures of the tergum more or less red; the margin not covered by hemelytra narrow.

Length to tip of venter, 19-21 mm. Width of pronotum, 4-4 $\frac{2}{3}$ mm.

A few specimens were collected at Cape St. Lucas by Mr. John Xanthus.

CONORHINUS MAXIMUS n. sp.

Coal black, shining, narrower than *C. dimidiatus* Lat. Head much thicker than in any other species known to me, rough and transversely wrinkled, somewhat pubescent, the tip of tylus projecting over a notch, each side of which the cheek projects in a produced point, base of this cheek long triangular and scooped out; the buccular tip knob-like and protracted anteriorly; rostrum barely reaching upon the sternum; space behind the eye very short, coarsely wrinkled; antennæ mutilated. Pronotum moderately short, with a strongly constricted collum directly behind the head, the outer ends of which are drawn out and knob-like; anterior lobe very short and narrow, deeply sunken on the middle, with the tumid elevations each side set with sinuous series of

coarse grains, the posterior lobe thick and wide, coarsely and unevenly wrinkled in several separate divisions, the divaricating lines almost obsolete; the lateral border thick, broadly curved, coarsely tuberculated below the slender, waved carina, the humeral tubercle long, tumid, absorbing the lateral carina; posterior margin almost straight and abruptly steep against the base of scutellum, each side of this obliquely curved. Scutellum coarsely knobbed at base, more finely towards the tip, deeply scooped out, the apical portion narrow, subcylindrical, ending in a knoblike tip. Corium minutely scabrous, and the clavus more coarsely so. Abdomen long ovate, wider than the wing-covers, but not broadly expanded, with the margin bright red all around; venter highly polished, transversely wrinkled.

Length to tip of venter, 35 mm. Width of pronotum, $8\frac{1}{2}$ mm.

Only one specimen, a male, has thus far been brought to my notice. It was kindly given to me by Dr. George H. Horn, as having been taken in Lower California. It differs from all species known to me by having the outer edge of the connexivum thickened, not sharp-edged, as is common to the large Mexican forms.

STENOPODA CULICIFORMIS Fab. Specimens were captured at Cape St. Lucas by Mr. John Xanthus.

EMESA LONGIPES DeGeer. Several specimens of this insect were secured at San José del Cabo by Dr. Gustav Eisen. After careful comparison of several specimens with my types from the eastern United States, I can find no important differences to separate them.

Specimens were secured also at Cape St. Lucas by Mr. John Xanthus.

LIMNOBATIDÆ.

LIMNOBATES LINEATA Say. One specimen of this form was brought from Cape St. Lucas by Mr. John Xanthus.

HYDROBATIDÆ.

HYGROTRECHUS ROBUSTUS Uhler. Specimens of this species were captured at San José del Cabo by Dr. Gustav Eisen; others were taken at El Paraiso, Comondú and San Jorge, in March, by Mr. C. D. Haines. A few others in the collection were taken at other localities in California. Numerous specimens were secured near Cape St. Lucas by Mr. John Xanthus.

HYGROTRECHUS n. sp.?

A single damaged specimen was in the set from Cape St. Lucas. It appeared to be near *H. remigis* Say, but its identity could not be established from such meagre material.

LIMNOTRECHUS MARGINATUS Say. Specimens of this species were taken near Cape St. Lucas by Mr. John Xanthus. It is found also near San Diego, Los Angeles and at other localities in southern California.

HALOBATES WUELLERSTORFII Frauenf. Specimens of this marine insect were secured near Cape St. Lucas by Mr. John Xanthus.

VELIIDÆ.

HEBRUS SOBRINUS Uhler. One specimen was brought from near Cape St. Lucas by Mr. John Xanthus. It seems to be distributed over most parts of southern California and Arizona.

MICROVELIA SIGNATA n. sp.

This species has somewhat the form of *M. modesta* Uhler, but it is a longer and much more conspicuous in-

sect; the color is a dark brown, with more or less bluish bloom, and minutely pubescent. Head short subconical, with a smooth grooved line on the middle; antennæ russet-brown, paler towards the tip, the joints long; rostrum dull testaceous, dark at tip, reaching behind the anterior coxæ. Pronotum moderately long, convex, feebly sinuated on the sides, the anterior submargin with a bright orange band which does not reach the sides; sternum and pleural segments dark plumbeous, bordered with testaceous. Legs pale testaceous, obscured above with fuscous, and the tarsi more or less fuscous. Hemelytra velvety, long, and much narrower than the pronotum, clavus with a white streak, corium with a longer white streak at base which grows wider posteriorly, the membrane long, marked with one or two faint spots near base, with a clear long spot beyond and another, longer, near the tip. Venter dull yellow, brighter on the connexivum, and dusky along each side of disk.

Length to tip of venter, 3 mm. Width of pronotum, $1\frac{1}{3}$ mm.

This beautiful little species was taken at San Esteban, in April, by Mr. Charles D. Haines.

MACROVELIA HORNII Uhler. One specimen was secured near Cape St. Lucas by Mr. John Xanthus. It is a common insect in southern California and Arizona.

MESOVELIA BISIGNATA Uhler. Specimens were collected at Lower Purisima, in April, by Mr. C. D. Haines.

VELIA STAGNALIS Burm. This Mexican species was brought from the vicinity of Cape St. Lucas by Mr. John Xanthus.

RHAGOVELIA OBESA Uhler. Specimens were found

near San José del Cabo by Dr. Gustav Eisen, and others were taken near Cape St. Lucas by Mr. John Xanthus.

SALDIDÆ.

SALDA INTERSTITIALIS Say. Specimens were collected at Cape St. Lucas by Mr. John Xanthus.

SALDA PALLIPES Fab. One specimen is in the bottle from San José del Cabo; and there are others in the collection labeled "Cal. 2."

SALDA EXPLANATA Uhler. I have examined specimens from Lower California, kindly sent to me by Mr. Henry Edwards. In the collection there are a few specimens labeled "Cal. 2."

GALGULIDÆ.

GALGULUS OCULATUS Fab. Numerous specimens have been brought from Cape St. Lucas; and the insect is in one of the bottles from San José del Cabo, collected by Dr. Gustav Eisen. This insect inhabits nearly the whole continent of North America. How such a clumsy and merely leaping insect could become distributed so generally, beyond mountain ranges and at various altitudes, from the tropics to the Laurentian hills, is a mystery not easy to solve.

GALGULUS VARIEGATUS Guérin. A few species of this silver-spangled form are included with the others from Lower California. This does not seem to me as a good species. It is more clearly marked and a cleaner insect than the other, but there are varieties which very nearly connect the extremes of color and marking.

MONONYX STYGICUS Say. One specimen was taken near Cape St. Lucas by Mr. John Xanthus; others were secured at San José del Cabo by Dr. Gustav Eisen, also at El Paraiso. On the eastern side of the continent its

northern limit of distribution is about the latitude of Wilmington, N. C. On the Pacific slope it has not yet been reported from as far north as San Francisco.

NAUCORIDÆ.

AMBRYsus signorethi Stal. This is a common species in Arizona and California, especially in the vicinity of San Bernardino and Los Angeles. One specimen was secured at Lower Purisima, in April, by Mr. Charles D. Haines.

AMBRYsus pudicus Stal. Specimens were collected at San José del Cabo by Dr. Gustav Eisen. It occurs also at Los Angeles and San Bernardino.

PELOCORIS femorata Pal. Beauv. This widely distributed species was taken at San Ramundo and at San Ignacio, in April, by Mr. C. D. Haines. It is common on both sides of the continent, from Canada to Florida, and from thence into the Antilles and Mexico.

BELOSTOMATIDÆ.

BELOSTOMA annulipes H. Schf. A pair of these insects was secured near Cape St. Lucas by Mr. John Xanthus. Specimens in this collection of the California Academy were taken in the vicinity of San Francisco.

ZAITHA anura H. Schf. Specimens were collected at San José del Cabo by Dr. Gustav Eisen, and at Cape St. Lucas by Mr. John Xanthus.

ZAITHA fusciventris Stal. This common Mexican species was found at Cape St. Lucas by Mr. John Xanthus. Specimens in this collection are labeled "Cal. 2."

ABEDUS ovatus Stal. Several specimens were secured at San José del Cabo and other parts of the peninsula by Dr. Gustav Eisen; and Comondu, in March, by Mr. C. D. Haines.

PEDINOCORIS MACRONYX Mayr. A few specimens have been brought from various parts of Lower California by different collectors.

SERPUS DILATATUS Say. Several specimens were secured at Santa Maria and San Fernando, in May, by Mr. C. D. Haines.

NEPIDÆ.

RANATRA QUADRIDENTATA Stal. Several specimens of this form were taken at San José del Cabo by Dr. Gustav Eisen; and at Comondu, in March, by Mr. C. D. Haines.

RANATRA FUSCA Pal. Beauv. A specimen of this species was secured at Comondu, in March, by Mr. C. D. Haines.

NOTONECTIDÆ.

NOTONECTA MEXICANA Am. et Serv. Numerous specimens of several varieties were taken at Comondu and El Paraíso, in March, April and May, by Mr. C. D. Haines.

NOTONECTA UNDULATA Say. Several specimens of this insect were collected near Cape St. Lucas by Mr. John Xanthus. A specimen in the collection is labeled "Shasta County, Cal."

NOTONECTA SHOOTERII n. sp.

Shorter and more robust than *N. impressa* Fieber, but not so thick anteriorly as *N. mexicana* Amyot; ground color dull ivory-white, with the scutellum, inner margin and apex of the clavus, streak near the basal angle of the corium, posterior half of corium, excepting a triangular spot on middle of apex, the outer submargin, and the membrane, omitting a large space next the tip, black. Head of medium breadth, the face gradually narrowing towards the lower end of the eyes, wider at base than in *N. mexicana*, and granulated in a space there which is

carinated on the middle, the occiput bordered with a thick carinate edge; the inner submargin of the eyes marked by a line of punctures which terminate in a group set in an oval fossa near the lower end of the eye; the clypeus distinctly, obliquely depressed each side of the ridge-like tylus and sparsely punctate and wrinkled there; the basal margin of the eyes almost truncate; the apical joint of rostrum dark piceous. Pronotum obsoletely impressed across the middle, transversely indented behind the vertex and remotely punctate there, behind this the surface is more or less wrinkled; the lateral impressed submargin punctate, and the margin strongly reflexed and a little curved, the anterior angle subacuminately produced; the humeral margin long, a little sinuated. Scutellum and hemielytra covered with prostrate bronze-yellow pubescence. Legs greenish yellow, with the nails and incisures of the joints, the spines, and some minute specks on the femora and tibiæ, black; femora and tibiæ with some obscure stripes; the middle coxæ and pectoral segments more or less black. Ventral segments broadly bordered with black, this color sometimes expands into spots on the connexivum, and each side of the middle line.

Length to tip of venter, 8-9 mm. Width of pronotum, $4\frac{1}{2}$ - $4\frac{3}{4}$ mm.

One specimen was found at San José del Cabo by Dr. Gustav Eisen. The types were found near San Diego, October 19, by Mr. Shooter, to whom I take great pleasure in dedicating this species. Specimens have since been found at Los Angeles by Mr. Coquillett.

ANISOPS ELEGANS Fieber. A few specimens were collected at Cape St. Lucas by Mr. John Xanthus.

ANISOPS sp.? A specimen of unusually large size was taken at Comondú, in March, by Mr. C. D. Haines.

CORISIDÆ.

CORISA ABDOMINALIS Say. This species was found at Comondu, in March, and at El Paraíso, in May, by Mr. C. D. Haines.

CORISA INSCRIPTA n. sp.

Elongate, with a short head and long, nearly triangular pronotum, the ground color pale dull testaceous marked with dark brown very slender short lines in uneven longitudinal series. Head highly polished, moderately convex, a little triangularly expanded against the pronotum, with the occipital submargin linearly impressed, and the middle acuminate; middle of vertex of female with a few scattered punctures and a feebly elevated longitudinal line; face a little hairy, a little depressed in the female, with the front of vertex correspondingly convex, fossa of the male ovate, with the narrow end below, occupying nearly all of the width between the lower end of the eyes and most of the face. Pronotum highly polished, with the medial carina barely suggested, the surface convex and crossed by about fourteen brown slender lines, the anterior angle with a yellow bare spot, and behind it the submargin is broadly impressed. The pleural pieces pale dull yellow, the sternum of the same color, but the prosternum and a streak outside of the middle coxæ black in the male. Palæ of male short, wide depressed, very broad-cultrate with the lower margin concave, set with very long bristles, and an acute tip; palæ of female a little longer, deeply excavated. Clavus wide and long, with the yellow bands at base straight, broad and almost complete, those continuing back form two submarginal series of more slender wavy, uneven lines; lines of the corium slender, continuing back in about four wavy stripes, which continue less regularly upon the mem-

brane; costal area dusky on the middle and at tip. Venter pale dull fulvous, sometimes dusky at tip.

Length to tip of wing-covers, ♂, 8; ♀, $8\frac{1}{2}$ –9 mm. Width of pronotum, $2\frac{1}{2}$ mm.

Specimens were collected near Cape St. Lucas by Mr. John Xanthus. Numerous specimens in the collection of the California Academy are labeled "Cal. 2." The species is also known to me from specimens collected in Texas, Orizaba and elsewhere in Mexico, Arizona, New Mexico and southern Colorado.

CORISA LÆVIGATA Uhler. A specimen of this common insect was sent to me by Mr. Henry Edwards, as having been collected in Lower California. It has been collected at various places in southern California, as for example, San Bernardino, San Diego and Los Angeles; farther north it occurs near San Francisco.

CORISA sp.? One, or perhaps two other, species have been taken in the vicinity of Cape St. Lucas, but they were too much damaged to admit of identification.