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INSECTS OBSERVED IN THE STATE OF ARAGUA, VENEZUELA, SOUTH AMERICA *

By LUIS F. MARTORELL.

INTRODUCTION

Venezuela is still an almost virgin field for naturalists, with vast regions quite unexplored by botanists or zoologists. The older naturalists, such as Loeffling, Von Jacquin, Humboldt, Bondplant, Pleé, Vargas, Moritz, Spruce and others, collected mostly flowering plants and the larger or more conspicuous animals, but even their botanical records are far from complete.

Some of the naturalists who visited Venezuela early in the last century not only collected flowering plants, but also fungi and insects. Short papers based on, or listing, these collections were published in various parts of Europe in a wide variety of publications, many of which are now obscure or forgotten, and the task of collecting them all is almost hopeless.

The writer had the opportunity of making entomological collections in the State of Aragua, Venezuela, for fourteen months. The last seven months were spent at La Providencia, in the Aragua Valley, where the school of agriculture (Escuela de Expertos Agro-Pecuarios) is situated. La Providencia is nine kilometers from Maracay, the Capital of the State, and three kilometers from Turmero, the largest near-by town.

While at La Providencia, a fairly large collection of insects was made by the writer, in collaboration with many of his pupils, not only there, but also in the near-by towns. Also, many specimens from outside of Aragua were obtained in Caracas (Capital of Venezuela), Los Teques, Río Chico, San José de Río Chico, Ocumare del Tuy and Cúa (Estado Miranda). The insects listed in this paper represent only a small portion of those which could be obtained by more intensive collection in this region.

* This annotated list, with minor changes, was presented in partial fulfillment of the requirements for the degree of Master in Science at Ohio State University.

As some of the insects were collected by Mr. Eliseo Serres Domínguez, the initials E. S. are used for his specimens. No collector's name appears on the specimens of the collections made by the writer. The initials M. & S. indicate a joint collection by Martorell and Serres.

Some of the insects here listed are new to Venezuela. Many of them, however, have been cited before by other workers, but collected in different localities.

Among the Diptera, new species were found and in the family *Scarabaeidae* (*Coleoptera*) there is probably a new genus and species. Some of the specimens were new to the United States National Museum Collection and were retained there. Specimens of a number of species have been deposited in the Insect Collection of the Ohio State University, Columbus, Ohio.

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The writer expresses his sincere gratitude to his pupils of the School of Agriculture in Maracay who aided in collecting, particularly to Mr. Eliseo Serres Domínguez, Mr. Raúl de Armas, Mr. Anselmo Escalona Salas, Mr. José L. Maury, Mr. Manuel Palma, Mr. Juan Ramón Jurado and Mr. Fernández. To Mr. Jaime Guiscafré Arrillaga, Mr. Hipólito Soltero, Mr. Juan Gunther Fortman, members of the Faculty and to Dr. Germán Buroz, Civil Engineer of the Ministry of Health and Agriculture, in Caracas, Venezuela, the writer is indebted for help. Mr. Claudio Urrutia took interest and made efforts in classifying the insects in the collection. Both he and Mr. José L. Colom, of the Pan-American Union were helpful in transmitting insect specimens to the U. S. National Museum.

Without the classification of the insects this work would not have been possible. The following specialists in the U. S. National Museum, at Washington, D. C., contributed greatly to the success of this work: Dr. E. A. Chapin, Mr. H. S. Barber, Mr. W. S. Fisher, and Mr. L. L. Buchanan, for the Coleoptera; Mr. H. G. Barber, Mr. P. W. Oman and Dr. H. Morrison, for the Heteroptera; Mr. A. N. Caudell, for the Orthoptera; Dr. J. M. Aldrich, Mr. C. T. Greene, and Mr. Alan Stone for the Diptera; Dr. W. Schaus for the Lepidoptera; Miss Grace A. Sandhouse, Mr. R. A. Cushman, Mr. C. F. W. Muesebeck, Dr. W. M. Mann and Mr. A. B. Gahan for the Hymenoptera. Dr. Herbert Osborn and Dr. D. J. Borror, of the Ohio State University determined the Homoptera and Odonata respectively. To the former and to Dr. Alvah Peterson, Dr. C. H. Kennedy and Dr. J. Knull the writer is indebted for their suggestions, criticisms and advice.

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THYSANURA

Lepisma sp. (Det. L. F. Martorell)

Common in trunks, cases and boxes with books and old clothes.
At La Providencia and Caracas.

DERMAPTERA

(All determinations by A. N. Caudell.)

Doru lineare Esch.

Abundant under dead stumps, leaves and branches, at Samán de Guere, La Providencia and Gonzalito. Col. Serres, Palma and Martorell.

Anisolabis maritima Gené

Found under the same situation as the above species, at La Providencia.

Prosparratta humilis Hebard.

Under logs and stones near Samán de Guere and Turmero.

ORTHOPTERA

(All determinations by A. N. Caudell.)

BLATTIDAE

Blaberus discoidalis Serv.

Very common in houses. The specimens collected were found under stored seed bags, at La Providencia. Col. M. & S.

Blaberus trapezoides Burm.

Specimens collected abundantly at lights near Samán de Guere. Col. Martorell, Serres and Palma.

Dendroblatta sobrina Rehn

These small roaches are very common below logs, dry leaves and other debris on the soil, in humid places. Near La Providencia and Samán de Guere.

Leucophaea maderae Fabr.

A common pest in the region. The writer has observed this same species not only at Turmero, La Providencia and Maracay, but also in Caracas. Specimens collected at La Providencia.

Panchlora nivea Linn.

Common usually in plantain and banana groves, near La Providencia and Turmero.

Periplaneta australasiae Fabr.

A common species in Aragua, in kitchens, dining rooms, toilets, cellars, etc. At La Providencia and Gonzalito extremely abundant. The writer had found them also at Turmero, Maracay, Caracas, Los Teques and Ocumare del Tuy. Col. M. & S.

Periplaneta americana Linn.

As common as the preceding species. Collected at La Providencia, Gonzalito and Turmero.

Pycnoscelus surinamensis Linn.

Common under logs, stones, in tree cracks, etc., in the forest near La Providencia.

PHASMIDAE

Calynda sp.

A female of this genus was collected by the writer on the dry branch of a forest bush, near La Providencia. The specimen measured 6 inches from the tip of the head to the posterior end. Does not seem to be a common insect in this region.

MANTIDAE

Acontista cayennensis Sauss. & Zehnt.

The specimen was collected while resting on a plant of *Salvia splendens* Sell., at La Providencia.

Musonia surinama Sauss.

Abundant species at La Providencia. Also found at Caracas; Turmero and Los Teques.

Phyllovates chlorophaea Blanch.

Collected during flight in the fields near La Providencia.

Stagomantis carolina var. *irrorata* Linn.

This species is not very abundant in the region. Only two or three specimens were seen during the time the writer stayed in Aragua. At La Providencia; also observed at Caracas and Los Teques (1,000 to 1,300 meters in altitude).

GRYLLIDAE

Anurogryllus muticus var. **fuscus** Caudell

Abundant in fields and pastures near La Providencia and Samán de Guere. Sometimes they come inside houses and annoy with shrill chirping. Collected at La Providencia by M. & S.

Hemigryllus ortonii Scudder

Collected at night at La Providencia. Fairly common.

Miogryllus convolutus Joh.

In great numbers in pastures, under dry leaves, stones, or cracks in the soil. Extremely common species at Turmero, Maracay, La Providencia and Samán de Guere.

Nemobius longipennis Sauss.

A common species in the fields around La Providencia and Turmero.

Phylloscirtus elegans Guerin.

Only one specimen collected at light at La Providencia.

Scapteriscus didactylus Latr.

A common name in the Aragua region for this insect is "perro de agua" (water dog). A pest in vegetable gardens at La Providencia, Maracay, Turmero and Caracas. The cabbage plants were badly injured by this insect, but the use of insecticides kept them under control. The plants mostly attacked at the garden of the School of Agriculture, were: tomatoes, cabbages, lettuce, peppers, cucumbers and an ornamental plant of the genus *Kochia*. Near Turmero, tobacco was also attacked.

Tridactylus apicalis Say

Common in pastures, orchards, vegetable gardens, along the banks of streams, etc., at La Providencia, Turmero, Maracay, and Samán de Guere.

TETTIGONIDAE

Conocephalus saltator var. **meridionalis** Seud.

In the pastures near La Providencia. Col. M. & S.

Homocoryphus sp.

Abundant in the pastures at La Providencia.

Meroncidius innotatus Walk.

An extremely abundant species during the rainy season. In fields, vegetable gardens and sometimes attracted to lights during the night. At La Providencia and near Samán de Guere.

Microcentrum sp.

At La Providencia.

Neconocephalus sp. (Det. L. F. Martorell)

Found in great numbers in the pastures and corn plantations near La Providencia and Turmero.

Peucestes dentatus Stal

This gigantic katydid is extremely common in the valley, also making its appearance during the rainy season. It is not so common as *Tropidacris dux* Drury (Locustidae), but is second in rank. La Providencia and Samán de Guere.

Philophyllia latior Brunn.

Common in the fields near La Providencia.

Stilpnochlora marginella Serv.

At La Providencia by M. & S.

ACRIDIDAE

Agriacris triceristata Serv.

Only one specimen was collected in the region of Aragua. The writer noted several specimens in the collection of the Ministry of Health and Agriculture in Caracas. (These collections were made by an old naturalist, by name Grisol). The specimens were labelled, "locality, Antimano".

Chromacris psittacus Gerst.

This insect is common near La Providencia often appearing in the fields in great numbers. The writer observed a swarm of several hundred moving in a field, among the weeds as if they were a single unit. Specimens were collected near Samán de Guere by Martorell & Maury.

Micronotus caudatus Sauss.

A very abundant species in the pastures near La Providencia, Maracay, Turmero and La Trinidad. Specimens collected at La Providencia and Samán de Guere. Col. M. & S.

Orphulella punctata De Geer

Abundant in pastures at La Providencia, Maracay and Turmero.
Col. M. & S.

Osmilia flavolineata De Geer

Common species at La Providencia.

Paradichroplus sp.?

Fairly abundant in pastures near La Providencia.

Paulinia acuminata De Geer

Collected at Turmero and La Providencia, on weeds.

Tropidacris dux Drury

The most abundant locust during the rainy season in the region. Sometimes we had the opportunity to collect as many as thirty or forty in a few hours, attached to the wire screens in the tennis courts of the School of Agriculture at La Providencia. This species is also found at Maracay, Turmero, Cagua, Tejerías (Estado Aragua) and in Valencia (Estado Carabobo). When they migrate in great swarms, the damage done to the cultivated fields and other vegetation is considerable, but fortunately large migrations are not frequent in the region. The species is said to be very common in the Orinoco River region, where it is a real pest, sometimes flying across to the Island of Trinidad. The specimens in the collection are four to five inches in length and with a wing expanse of eight to nine inches. The insect is one of the most beautiful species of tropical locusts.

ISOPTERA

KALOTERMITIDAE

Cryptotermes brevis Walk. (Det. L. F. Martorell)

Very abundant in furniture and wooden buildings. It is a very destructive pest found in many regions of Venezuela, (Caracas, Ocumare del Tuy, Río Chico, San José de Río Chico, Los Teques and Cúa). Also common at La Providencia, Turmero, Maracay and Cagua.

TERMITIDAE

Nasutitermes sp. probably **costalis** Holmgren

A representative species of this genus is one of the most destructive pests of cacao in many sections of Venezuela. At San

José de Río Chico nearly all the cacao plantations were infested. Not only attacking cacao, *Theobroma Cacao* L., but also *Mangifera indica* L., *Spondias dulcis* Frost and *Terminalia Catappa* L. Near La Providencia several trees of *Samanea Saman* (Willd.) Merrill and *Bixa Orellana* L. were also found attacked by the same insect.

ODONATA

ZYGOPTERA

Damselflies were very common in the small streams and ponds in the region. Several specimens are in the collection, but they were not identified.

ANISOPTERA

AESCHINIDAE

Gynacantha mexicana Selys (Det. by D. J. Borror)

Common in the dark forest region of the locality, flying near streams.

LIBELLULIDAE

Erythemis attala Selys (Det. D. J. Borror)

Fairly common near La Providencia, flying along the banks of creeks.

Erythrodiplax connata fusca Rambur (Det. D. J. Borror)

The most common species of dragon-fly in the region. Very common near ponds, along the banks of rivers, small creeks and even in the fields. Col. M. & S.

ANOPLURA

PEDICULIDAE

Pediculus humanus humanus Linn. (Det. L. F. Martorell)

The common species of lice among unclean people. At La Providencia and Gonzalito.

Pediculus corporis De Geer (Det. L. F. Martorell)

Common in places where many people are crowded together, as in prisons and cheap boarding houses. At Maracay and Caracas.

Phthirius pubis Linn. (Det. L. F. Martorell)

Common in the public region of humans. Sometimes going to the underarms, head and even the eyebrows. At Caracas, Maracay, Turmero and probably the whole country.

● **HEMIPTERA**

In the systematic arrangement of the group the writer follows Van Duzee in his "Catalogue of the Hemiptera of America, North of Mexico". (24)

HETEROPTERA

SCUTELLERIDAE

Pachycoris torridus Scopoli (Det. L. F. Martorell)

Collected at La Providencia. Not a very common insect in the region.

Symphylus spp. (Det. H. G. Barber)

Two different species of this genus are represented in the collection. This insect seems to be very abundant around La Providencia and Maracay. Col. & S.

Tetyra pinguis Germ. (Det. H. G. Barber)

Common at La Providencia and Samán de Guere.

CYDNIDAE

(Determinations in this group made by H. G. Barber.)

Aethus sp.

At light at La Providencia.

Cyrtomenus sp.

At light at La Providencia.

Scaptocoris terginus Schioedte ●

This insect becomes a real nuisance during the rainy nights at La Providencia. It is the favorite food of the toad, *Bufo marinus* L., during the season. About 90 % of the stomach contents of toads, during the time that these insects were abundant, consisted of *S. terginus*, according to dissections made by the writer. The toads do not seem to mind the repugnant odor of these bugs. During the first hours of the evening, when the bright lights inside the hall of the School of Agriculture were turned on, these insects would come in great numbers, attracted to the lights.

PENTATOMIDAE

(Determinations in this family, as well as in the succeeding ones were made by H. G. Barber, unless otherwise stated.)

Alcaeorrhynchus grandis Dallas

At La Providencia.

Arocera apta Walk.

At La Providencia.

Arvelius albopunctatus De Geer

On weeds at La Providencia and near Maracay.

Chlorocoris depressus Fabr.

Fairly common in the vegetable garden at La Providencia. The specimens in the collection were taken from eggplant, *Solanum Melongena* L.

Edessa rufomarginata (var.) Dej.

This species is commonly found on tobacco near Turmero and La Providencia. Specimens were also obtained at El Cedral, near Caracas, at 1,500 meters in altitude, on a tobacco plant infested with these insects in all stages.

Edessa sp.

Collected at Cagua.

Euschistus triangulator H. S.

This species is fairly common at La Providencia and Samán de Guere.

Loxa flavicollis Drury

Species obtained at La Trinidad, Maracay, flying among weeds. Col. M. & S.

Mecistorhinus tripterus Fab.

A female of this species was found brooding its eggs on a grape-fruit leaf, accompanied by a male. When disturbed she did not fly, but stayed around the cluster of eggs vibrating her antennae and wings rapidly. The eggs are circular, barrel like, metallic grey in color and are arranged regularly over the leaf surface. Specimens collected at Caracas and Turmero.

Mormidea ypsilon Linn.

On grasses at Maracay and La Providencia. Col. M. & S.

Nezara viridula Linn.

Fairly numerous on tomato plants in the vegetable garden at La Providencia.

Pahrypia pulchella Drury

At La Providencia.

COREIDAE

Acidomera rustica Stal

On grasses near Maracay.

Anasa bellator Fab.

Common on pigeon-pea, *Cajan Cajan* (L) Millsp., near La Providencia.

Catorhintha guttula Fabr.

On grasses, near Maracay and La Providencia.

Leptoglossus stigma H. S.

Common on tomato, at La Providencia. Also collected at Caracas.

Leptoglossus vexillatus Stal

Collected while resting on the leaves of *Clerodendrum fragans* Vent., at La Providencia.

Mozena lunata Brum.

Collected at La Providencia.

Zicca taeniola Dall.

Very abundant on corn plants near La Providencia and Turmero.

LYGAEIDAE

Oncopeltus cingulifera Stal

This species is very common on milkweed, *Asclepias curassavica* L., not only at Turmero, La Providencia and Maracay, but also in Caracas.

Oncopeltus sandarachatus Say

Collected in Turmero, flying among grasses.

PYRRHOCORIDAE

Dysdrus peruvianus Linn.

In corn plantations near La Providencia, Cagua and Turmero. Species extremely common on *Punica Granatum* L., in Caracas.

Dysdercus ruficollis Linn.

At Maracay.

Dysdercus sp.

Collected near Maracay, on weeds.

Euryophthalmus varians Stal

On coffee, near La Providencia.

TINGIDIDAE

Corythucha fuscigera Stal

On wild eggplant, *Solanum torvum* Sw., near Cagua.

Corythaica monacha Stal (Det. L. F. Martorell)

Very abundant on *Solanum Melongena* L., at the vegetable garden of the School of Agriculture. The undersides of the leaves were heavily infested with this insect.

REDUVIIDAE

Heza similis Stal

Common on corn plants, near La Providencia and Samán de Guere.

Rasahus hamatus Fabr.

On weeds, at La Providencia.

Zelus rubidus Lep. & Serv.

On leaves of *Clerodendrum fragans* Vent., and other weeds at La Providencia and at Cagua.

Zelus spp.

Very abundant on tomato, *Lycopersicon Lycopersicon* (L) Karst., at La Providencia.

CIMICIDAE

Cimex lectularius Linn. (Det. L. F. Martorell)

This cosmopolitan insect occurs in the whole region of Aragua; at Turmero, Maracay and La Providencia. Specimens had been observed in Caracas, Ocumare del Tuy, Los Teques and Tejerías. It is of common occurrence at boarding houses and unclean rooms.

MIRIDAE

Collaria sp. (Det. H. G. Barber)

On corn plants at La Providencia and Samán de Guere. The same species was collected in Caracas.

GERRIDAE

Gerris sp. (Det. L. F. Martorell)

Very abundant insect in pools of stagnant water and in the small streams around La Providencia, Maracay and Turmero.

● NOTONECTIDAE

Belostoma anura H. S.

In pools near La Providencia. Attracted to bright light during the night.

Belostoma mayri Berg.

Attracted to lights, at La Providencia.

Belostoma micantula Stal

Fairly common in pools near La Providencia. Attracted to bright lights at night.

HOMOPTERA

CICADIDAE

The members of this family are very common in the Aragua region. They inhabit the forest and spend their lives singing morning and evening. Usually found resting on the trunks of such trees as *Mangifera indica* L., *Swietenia Candollei* Pittier, *Coffea arabica* L., and *Inga* spp. They are specially abundant during the rainy season. At Caracas, Los Teques and Antimano, they are also abundant even in the "patios", inside the houses.

Determinations in this family as well as in the Cercopidae, Membracidae, Cicadellidae, and Fulgoridae were made by H. Osborn of Ohio State University and P. W. Oman, of the National Museum.

Proarna grisea Fabr.

Rather abundant species in the Valley. Also collected at Caracas.

Calyira telifera Walk.

Collected near La Providencia.

● **Cicada pallida** Dist.

Collected near Samán de Guere. Not a very common species.

Proarna germari Dist.

At Samán de Guere.

Quesada gigas Dist.

This gigantic cicada, sometimes with a wing expanse of 13 centimeters, is one of the most common species in the forest region of Aragua. Collected in great numbers during the rainy season. Very common at Caracas also.

Tympanoterpes serricosta Germ.

Fairly common in the surroundings of La Providencia.

CERCOPIIDAE

Cephus siccifolius Walk.

Collected near Samán de Guere by E. Serres.

Tomaspis varia Fabr. (Det. L. F. Martorell)

This insect is called in certain regions of Venezuela, the "fire-blight of the pastures" (la candelilla de los pastos), for grasses when badly infested look as if they were burned. Fortunately, they are not very abundant in Aragua. Collected near Turmero.

MEMBRACIDAE

Aethalion reticulatum Linn.---

In Caracas the writer saw a camphor tree, *Camphora Camphora* (L) Karst., completely infested by this pest. Nearly all the branches were filled with mature and immature stages of the insect. The immature stages were in masses, along the branches. Recorded from La Providencia also.

Antianthe expansa Germ.

At La Providencia on grasses. Col. M. & S.

Ceresa vitulus Fabr.

In a coffee plantation, near Samán de Guere.

Ceresa sp.

Collected near Maracay. Col. E. S.

Enchenopa nutans Germ.

Collected near La Providencia by M. Palma.

Membracis albo-limbata Dist.

At Samán de Guere by E. S.

Membracis alta Walk.

On grasses at La Providencia.

Membracis c-album Fairm.

Collected near Turmero.

Polyglypta dorsalis (var.) Burm.

Collected near Maracay.

Sphongophorus balista Germ.

A very uncommon species in the region. Collected in a coffee plantation near La Providencia.

Umbonia spinosa Fabr.

Many of the specimens in the collection were obtained in coffee plantations at La Providencia, Turmero and Los Teques. In this last place, the insects were doing damage to the shade trees of the genus *Inga*. The damage was caused by the female of the species, especially on the young shoots, where they bored small holes or crescent shaped slits to lay their eggs. Not only the tender shoots were attacked, but also the older ones.

CICADELLIDAE

Although these insects were very common in every place in the region, very few specimens are represented in the collection. Most of the specimens collected were attacked by moulds and were thrown away. The following only remain:

Cicadella maculicollis Sign.

A fairly abundant species in the region.

Cicadella spp.

Two different species under this genus are present, without further identification. These were collected on grasses, at La Providencia.

Oncometopia fusca Melichar

Collected at lights at La Providencia.

FULGORIDAE

Copicerus irroratus Swartz

Attracted to lights at La Providencia.

Dictyophora sp.

On grasses in a coffee plantation near Samán de Guere. Col. M. & S.

Domitia neotropicalis Dist.

At La Providencia, by J. L. Maury.

Flatoides sp.

At lights, at La Providencia.

Ormenis sp.

On coffee trees, near Turmero and La Providencia.

Poeciloptera phalaenoides Stal.

On *Cajan Cajan* (L) Millsp., at La Providencia.

APHIDIDAE

(Determinations in this family by L. F. Martorell.)

Aphis maidis Fitch

Very abundant in the corn plantations, near La Providencia, Turmero and Maracay. This species is also abundant at Caracas.

Aphis gossypii Glover

An extensive infestation in the vegetable garden at the School of Agriculture, on cucumbers and melons, especially on the former.

Brevicoryne brassicae Linn.

Very abundant on cabbage plants at La Providencia. Fortunately, no insecticides were needed for its control, for they were naturally controlled by the coccinellid, *Cycloneda sanguinea* Linn., which was very abundant at that time.

COCCIDAE

(All determinations in this group by L. F. Martorell.)

Ceroplastes floridensis Comstock

Very abundant in all kinds of *Citrus* near La Providencia, Turmero and Maracay. This scale has been recorded by the writer also from Caracas and Valencia (Estado Carabobo). On *Citrus sinensis* (L) Osbeck., *Citrus Aurantium* L., and *Citrus maxima* (Burm.) Merrill.

Chionaspis citri Comstock

Very common on all kinds of *Citrus* in the Aragua region, as well as in Caracas, Los Teques and Valencia.

Coccus hesperidium Linn.

From leaves of *Citrus maxima* (Burm.) Merrill. Collected at Valencia (Estado Carabobo) in the Hacienda of Coronel Fonseca and on coffee leaves at La Providencia.

Lepidosaphes beckii Newman

Another pest of citrus orchards in Aragua, as well as in Caracas, Ocumare del Tuy, Río Chico, Los Teques, etc. At La Providencia, trees of sweet orange, *Citrus sinensis* (L) Osbeck., sour orange, *Citrus Aurantium* L., and *Citrus maxima* (Burm.) Merrill., were heavily infested on both twigs and leaves.

Pseudococcus citri Risso.

Common on sweet orange at La Providencia and Maracay.

Pseudococcus longispinus Targ.

Abundant on sweet orange at La Providencia. Also on same host at Valencia. (Hacienda of Coronel Fonseca.)

Pseudococcus sacchari Cock.

Common in sugar-cane fields, near Turmero and at San Jacinto, Maracay.

Saissetia hemisphaerica Targ.

Common on *Citrus*, ferns and guava, *Psidium Guajava* L., also on *Solanum Melongena* L., at La Providencia. An ornamental plant, *Porana paniculata* Roxb., was heavily infested by this scale in Valencia.

Saissetia oleae Bernard

This scale, although not as common as the preceding one, also attacks many plants, for example: wild eggplant, *Solanum torvum* Sw., guava, *Psidium Guajava* L., and *Ixora acuminata* Roxb. All these were found at La Providencia.

Toumeyella sp. (Det. H. Morrison)

This scale was found in small numbers in a coffee plantation near Turmero, and also on coffee roots in a plantation at Los Teques. The insects were very abundant in the infested trees and apparently they were in association with the hemispherical scale, *Saissetia hemisphaerica* Targ. The trees were turning yellow, then wilting and finally dying. Many hundreds of plants were infested in the same area. The specimens of the scales as well as the coffee roots were collected by Mr. Ríos, of Caracas.

ALEYRODIDAE

Dialeurodes sp. (Det. L. F. Martorell)

Common at La Providencia and Valencia, on sweet orange, sour orange and grapefruit.

COLEOPTERA

In the arrangement of this group the writer follows Charles Leng, in his work, "Catalogue of the Coleoptera of America, North of Mexico". (18)

CICINDELIDAE

(Determinations in this family as well as in the two following by L. L. Buchanan.)

Megacephala affinis Dej.

Only two specimens were collected at lights.

Phaeoxantha aequinoctialis Dej.

At La Providencia.

Cicindela sp.

Quite common along the banks of small rivers and streams near La Providencia and Turmero. One specimen of this same genus was collected by H. Soltero, in the Orinoco River region (Estado Bolivar).

CARABIDAE

Brachinus sp.

Only one specimen collected at lights at La Providencia.

Calosoma alternans Fabr.

This is a very common carabid in the region. They are attracted to lights, during the night, especially during the rainy season. Collected at La Providencia and Turmero. Col. M. & S.

Pherosophus aequinoctialis L.

Collected near Samán de Guere under dead leaves, on the ground. Col. E. S.

Polpochila sp.

Under the bark of old trees and dry leaves on the soil, at Turmero and La Providencia.

Scarites sp.

At light at Cagua.

Selenophorus sp.

Under dry leaves and twigs, near Samán de Guere. Col. M.
Palma and J. L. Maury.

Scythropasus sp.

Very rare. Collected near Turmero.

HYDROPHILIDAE

Berosus sp.

Common in water pools near La Providencia. Col. M. & S.

Neohydrophilus medius Brullé

Common in nearly every pool of stagnant water in the surroundings of La Providencia and Turmero.

Stethoxus ater Fabr.

An extremely common species in water pools near La Providencia, Turmero and Maracay. Attracted to lights during the night. Col. M. & S.

STAPHYLINIDAE

Cordylaspis pilosa Nordm.

The only representative of this family in the collection was taken under the bark of a mango tree, *Mangifera indica* L., near Maracay.

LAMPYRIDAE

(Determinations in this family and in the two following by H. S. Barber.)

Aspisoma dilatatum Cast.

Collected beneath dry bark near Samán de Guere.

Aspisoma ignitum Linn.

On corn plants at La Providencia.

Aspisoma spp.

A series of specimens under this genus were collected, but further identification could not be made for lack of males. Collected near Samán de Guere and La Providencia.

Cratomorphus sp.

Not further identified for lack of male specimens. Collected at La Providencia.

Photuris sp.

Collected in corn plantations during night. Specimens retained in the U. S. National Museum.

Photinus sp.

A series of this beetles were collected of several different species. They are very common in the corn plantation near La Providencia and Turmero. During the night the fields are illuminated by glowing lights and thousands of these insects can be seen flying all over the place. A series was kept for further studies and identification in the U. S. National Museum.

CANTHARIDAE

Cantharis spp.

A series of these beetles was collected in the corn plantations near La Providencia. Very common during daytime, flying among the corn leaves. One specimen of this genus was collected at El Cedral, near Caracas, on *Coffea arabica* L. The species is new to the U. S. National Museum collection.

Diaphron proteum Gorh.

A series of about ten to twelve specimens were collected. This insect shows a wide range of variation in color. Collected on corn at La Providencia and also near Turmero. Col. M. & S.

MELOIDAE

Epicauta albicincta Haag.

Collected in the vegetable garden, flying among beets and chard, near La Providencia.

Epicauta grammica Fisch.

Very abundant in the surroundings of La Providencia and Samán de Guere, on weeds and grasses. Col. M. & S.

ELATERIDAE

(Determination in this family as well as in the **Buprestidae** by W. S. Fisher.)

Chalcolepidius limbatus Esch.

This gigantic click beetle was collected on a wild fern at El Cedral, near Caracas, at 1,500 meters in altitude and also at La Providencia, resting on the trunk of a shade tree of the genus *Inga*, in a coffee plantation. Col. Martorell, Serres and Aguilera.

Pyrophorus luminosus Illiger

Quite common at La Providencia, Cagua and Turmero. During the night they fly in the fields, and frequently are attracted to bright lights.

Pyrophorus ignitus Fabr.

At light, at Samán de Guere.

Drasterius sp.

Collected at La Providencia.

Dilobitarsus bidens Fabr.

On corn leaves, near Samán de Guere, by M. Palma.

Semiotus ligneus Linn.

Collected near La Providencia on coffee, during daytime, in a very shady spot of the plantation.

BUPRESTIDAE

Pachyscelus sp.

The species of the genus are leafminers. The specimen represented in the collection was taken at lights at Turmero.

Polycesta aequinoctialis Thoms.

At La Providencia.

Psiloptera (Lampetis) variolosa Fabr.

This beautiful, iridescent, metallic blue-green species is very common at La Providencia. The specimens were collected during flight.

DRYOPIDAE

Pelonomus sp. (Det. H. S. Barber)

Collected at La Providencia.

HELODIDAE

Ptilodactyla sp.

At La Providencia.

Telon cucullatus Champ.

A female specimen was collected at La Providencia. Apparently this Venezuelan female seems to be the third known, in the world. This insect was described in 1897 from a female collected in Panama. In the U. S. National Museum collection there is a specimen collected in Panama in 1909 and this is the third one.

DERMESTIDAE

Anthrenus scrophulariae Linn. (Det. L. F. Martorell)

Attacking insect collections in Caracas and at La Providencia.

About two hundred larvae were collected by the writer in the insect collection of the Ministry of Health and Agriculture in Caracas (Ministerio de Salubridad y de Agricultura y Cría).

OSTOMIDAE (TEMNOCHILIDAE, TROGOSTIDAE)

(Determinations in the **Ostomidae**, **Erotylidae** and **Endomychidae** by W. S. Fisher.)

Lophocateres pusillus Klug.

At La Providencia.

Tenebroides mauritanicus Linn.

On vegetable seeds stored at La Providencia. Also obtained from wheat, in Caracas and La Providencia.

EROTYLIDAE

Brachysphaenus spp.

"This is a very wide genus, with approximately two hundred and fifty species described from different parts of the world, the majority of these being found in the northern part of South America. The species among themselves are very difficult to separate and the genus requires a revisional study before any attempts can be made to classify them. Moreover, there are four other genera which are scarcely distinguishable from *Brachysphaenus*, and the species among themselves are also badly confused. The specimens in the collection were all new to the U. S. National Museum, and were kept there for further studies. Apparently four different species are present in the series." Collected at La Providencia and Turmero, always on gill fungi.

Coccimorphus dichrous Lec.

Specimens collected on gill fungi, in a coffee plantation near La Providencia. Sometimes four or five adults were collected in a single mushroom.

Cypherotylus debauvei Demay.

This peculiar looking insect was collected at La Providencia and near Maracay. Col. M. & S.

ENDOMYCHIDAE

Ephebus cardinalis Gerst.

This is the only specimen representing the family in the collection. Taken on gill fungi with three other red beetles (*C. dichrous* Lec.) near Samán de Guere.

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COCCINELIDAE

(Determinations in this family and in the **Tenebrionidae** by E. A. Chapin.)

Camptodes ? foreli ? Group.

At La Providencia on grapefruit leaves, *Citrus maxima* (Burm.) Merrill.

Ceratomegilla maculata De Geer

Abundant species at the vegetable garden of the School of Agriculture at La Providencia. On cabbage, peppers, cucumbers and beans. Specimens also collected in Caracas.

Cycloneda sanguinea Linn.

The most common of all the coccinelids in the region. Found in almost any place, at La Providencia, Turmero, Cagua, Maracay, Ocumare de la Costa (Estado Aragua), at Ocumare del Tuy, Cúa, San José de Río Chico and Los Teques (Estado Miranda). The abundance of this species, in association with the preceding one, kept the cabbage aphid under control at the vegetable garden of the School of Agriculture.

Epilachna borealis Fabr.

Very abundant on cucumber plants and beans, in the vegetable gardens at Maracay and La Providencia.

Exochomus sp.

On citrus trees in Caracas and La Providencia. Specimens retained by the U. S. National Museum.

Hyperaspis albicollis Gorb.

Collected on sour and sweet oranges at La Providencia and Turmero.

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Hyperaspis sp.

On citrus leaves.

Pentilia insidiosa Muls.

On citrus trees at Turmero and La Providencia.

Psyllobora confluens Fab.

Very abundant in the Aragua region, in almost every citrus tree. Specimens collected at Turmero, La Providencia and Caracas. Col. M. & S.

Scymnus sp.

Collected near Turmero, on grapefruit.

TENEBRIONIDAE

Epitragus aurulentus Kirsch.

A very common species at La Providencia. Found under decayed leaves and twigs. One specimen was brought to the collection by H. Soltero, from the Orinoco River region (Estado Bolivar).

Strongylium sp.

Collected by E. Serres, near Samán de Guere.

Tribolium confusum Duval

Wheat and corn seeds badly infested at La Providencia. Also specimens from Caracas, on wheat.

Zophobas morio Fabr.

Several bags of grass seed were infested with this insect, in the store room of La Providencia. About twenty specimens were collected, the rest were destroyed. Col. Martorell & Maury.

Goniadera sp.

Collected at La Providencia.

BOSTRICHIDAE

Schistocerus cornutus Pallas (Det. W. S. Fisher)

This insect is a common borer in southwestern United States of America, where it attacks the twigs of fruit trees, such as grapes, almonds, figs, etc. The host tree in Aragua is unknown to the writer.

SCARABAEIDAE

(Determinations in this family and in the **Passalidae** by E. A. Chapin.)

The greater part of the specimens in the collection were obtained at night, at La Providencia. The economic importance of the species is unknown, but the presence of white grubs in great numbers was

noticed in the vegetable garden at La Providencia. Apparently they were not doing any considerable damage, in spite of their abundance. Most of the insects were collected during the rainy season, which perhaps is the most favorable time for flights of adults. The following is the list of the insects in the collection.

Anomala cincta Say

Collected at light. Col. J. G. Fortmann, at La Providencia.

Anomala cupricollis Chevr.

Not very abundant. Collected at light at La Providencia. Col. M. Palma.

Astaena sp.

At light at La Providencia and Turmero. Col. M. & S.

Canthidium sp.

Under dry leaves and twigs near Samán de Guere.

Canthon sp.

In cow dung in decomposition, near La Providencia.

Coelosis hippocrates B. L.

At light, at La Providencia.

Cyclocephala pallens ?

At light, at Turmero.

Cyclocephala testacea Burm.

Collected at light at La Providencia, by E. S.

Euethola humilis Burm.

A very common insect in the region. Attracted to lights. Specimens at La Providencia and Cagua.

Gymnetis dysoni Schaum.

Collected on banana leaf, *Musa sapientum* L., in a coffee plantation near Samán de Guere. There is a closely related species to this one in Venezuela, readily distinguishable from *G. dysoni*, by its grey color instead of the black underside. Col. L. Maury.

Gymnetis stellata Latr.

One specimen collected near Maracay, at San Jacinto.

Heterogomphus rugicollis Prell.

Rather common species in the region. Attracted to lights, at La Providencia and Turmero.

Leucothyreus minutus Ohaus.

Collected at light at Turmero.

Ligyris fossor Latr.

The most common of all the scarabs in the region. Attracted to lights. Specimens from Maracay, Cagua, La Providencia and Caracas. One specimen was brought to the collection by H. Soltero from the Orinoco region (Estado Bolivar). Col. Serres, Soltero, Palma and Martorell.

Ligyris sp.

At light at La Providencia.

Liogenys quadridens Fabr.

Common species in the vicinity of La Providencia. Attracted to lights.

Macraspis lucida Oliv.

Species collected in Samán de Guere and La Providencia. Col. M. & S.

Ontherus sp.

Collected under a bunch of banana leaves on the ground in a coffee plantation near La Providencia. Col. Martorell.

Onthophagus sp.

In decomposed organic matter, garbage, cow dung and soil. Also on wire screens at La Providencia and La Trinidad. Col. Serres, Maury and Martorell.

Pelidnota (Pelidnota) fuscoviridis Ohaus

One specimen collected at lights at La Providencia.

Pelidnota (Pelidnota) lucida Burm.

One of the most common scarabs in the region. Attracted to lights. Specimens from La Providencia, Turmero and Maracay.

Pelidnota (Chalcoplethis) chamaeleon Voet.

Fairly common. Collected at lights at La Providencia and Samán de Guere. Col. Serres and J. R. Jurado.

Pinotus sp.

Collected near Cagua.

Phileurus didymus Linn.

Collected at La Providencia.

Scaptophilus complanatus Burm.

Attracted to lights at La Providencia.

Strategus jugurtha Burm.

Collected at La Providencia.

PASSALIDAE

Passalus interruptus Linn.

Living in associations or colonies under decayed logs and humid places. A log, near Samán de Guere, showed a colony of thirty-five or forty of these beetles in adult and pupal stages. Also found at La Providencia and Turmero.

CERAMBYCIDAE

(Determinations in this family by W. S. Fisher.)

Acanthoderes circumflexa Jacq. Duval.

Collected at La Providencia, while resting on the bark of a mango tree, *Mangifera indica* L., by Martorell.

Cridion cinereum ? Oliv.

The most common of the long-horned beetles in the region. Collected at lights at Samán de Guere and La Providencia. "The identification of this particular species is doubtful, because both sexes are needed to separate the species correctly. There is another species, *Cridion antennatum*, described from Venezuela, which is supposed to have 12 joints in the antennae, but there are no specimens present in the Museum collection. One specimen was kept for future study."

Estola ignobilis Bates

Only one specimen collected near Cagua.

• **Ibidion** sp.

This insect seems to be very common. There are four specimens in the collection and Mr. Serres has three more in his own collection. W. S. Fisher, of the National Museum says, "This species is not represented in our collection and I am

unable to identify it with the descriptions before me. This is a very large genus and the older species'' are badly confused under *Ibidion*, *Compsa* and *Heterachthes*.'' Col. Seres, Jurado and Martorell.

Lagochirus araneiformis Linn.

Only one specimen collected near Turmero and the other near Samán de Guere, in a coffee plantation, resting on the trunk of a guamá tree (*Inga* sp.).

Oncideres lebasi Dupont

One of the most common cerambycids in the region. Collected near Samán de Guere, Maracay and La Providencia. Col. M. & S.

Oncideres (Lochmaeodes) tessellata Thoms.

Collected near La Providencia, on flight.

Ptychodes trilineatus Linn.

This beautiful beetle, which is found also in the southern part of the U. S. of America, is an inhabitant of the Aragua region. The common name for it in North America is "fig borer". Only three specimens were collected, near La Providencia and Turmero. Col. Briceño and Serres.

Rhopalophora pustulosa White

One specimen collected at La Providencia.

Steirastoma brevis Sulzer

Collected during flight at Ocumare de la Costa. This insect is very common in the cacao regions of Miranda State, where it is supposed to do considerable damage to the cacao trees. The writer collected some specimens at Río Chico and San José de Río Chico (Estado Miranda).

Steirastoma histrionicum White

Three specimens are present at the collection. Two were collected at La Providencia and the third one in a cacao plantation, at San José de Río Chico, (Hacienda of General Gómez).

Stenodontes (Mallodon) dasystemus subsp. *bajulus* Er.

Collected at lights at Samán de Guere.

Trachyderes nigripes (var.)

At La Providencia.

CHRYSOMELIDAE

(Determinations in this family by H. S. Barber.)

Altica sp. near **amethistinus** Oliv.

This insect was collected from a weed of the genus *Sida*. The plant was infested with the beetles, and a series were taken and pinned. Unfortunately, all the specimens present were females, and males are needed for the exact identification. Collected near La Providencia by J. G. Fortmann.

Asphaera **lunata** (Fabr.)

On carrots. One specimen also was collected in Caracas and the rest at La Providencia. Col. M. & S.

Calligrapha sp.

Collected near Samán de Guere.

Chalcophana sp.

At La Providencia.

Chalepus spp.

On corn leaves, at La Providencia and near Samán de Guere.

Chelymorpha **rufipennis** Boh.

Collected near Maracay and La Providencia.

Chelymorpha sp.

Collected near La Providencia.

Chirida **insubida** Boh.

On sweet potato, near Samán de Guere. Col. M. & S.

Colaspis sp. near **prasina**

Very abundant in the region on grasses and on *Solanum Melongena* L.

Colaspis sp.

At La Providencia.

Coelomera sp. near **cayennensis**

Collected at La Providencia by M. Palma.

Diabrotica **centralis** Jac.

This species was very abundant on field beans.

Diabrotica sp. near **bivittata** Fabr.

Collected on cucumbers, *Cucumis sativus* L., at La Providencia. Very common on this crop.

Diabrotica speciosa ? Germ.

On grasses at Maracay.

Diabrotica viridis Fabr. (var.)

On weeds near La Providencia.

Diphaulaca aulica Oliv.

A pest of beets, *Beta vulgaris*., and chard, *Beta* sp., in the vegetable garden of La Providencia. The young tender plants were the ones which suffered most. These beetles were extremely abundant. Col. Jurado and Martorell.

Disonycha austriaca Schauf.

On weeds, near Samán de Guere.

Disonycha glabrata Fabr.

On weeds, near Maracay and Samán de Guere.

Disonycha sp.

At La Providencia.

Epitrix sp.

On weeds, specimens from Maracay and La Providencia. Col. M. & S.

Eumolpus sophiae ? Kolbe

“The determination of this insect is doubtful, for all the male specimens were immature and its identification is uncertain. The specimen looks very much like *E. surinamensis* Fabr., but it is not.” This insect is another pest of beets and chard. Fortunately, they did not become abundant until the plants were mature. Very common at La Providencia.

Glyptoscelis fascicularis Baly

Collected at La Providencia.

Homophoeta sp.

Attacking field beans and beets at La Providencia.

Lactica scutellaris ? Oliv.

Collected on weeds near Maracay and at Samán de Guere. Col. M. & S.

Metriona judaica Fabr.

On weeds, near La Providencia.

Metriona 6-punctata Fabr.

On corn near La Providencia. Col. J. L. Maury.

Metriona sp.

Collected on grasses, near Turmero.

Myochrous explanatus Baly

Collected on weeds at Turmero.

Oedionychis decimguttata (var.) Fabr.

Common on field beans at La Providencia. One specimen from Caracas, also on beans. Col. M. & S.

Oedionychis spp.

Three different species of this genus are present in the collection. From La Providencia and Maracay, on grasses.

Oxyodera lanuginosa Boh.

Collected near Turmero.

Poecilaspis sp.

Collected near La Providencia.

MYLABRIDAE

Mylabris quadrimaculatus Fabr. (Det. L. F. Martorell)

Extremely abundant on field beans in Caracas, Maracay and La Providencia.

BRENTHIDAE

(Determinations in the **Brenthidæ** and **Curculionidæ**
by L. L. Buchanan.)

Brenthus anchorago Linn.

Very common at La Providencia. All specimens collected during flight. Also one specimen from Caracas.

Brenthus armiger Hbst.

Only a few specimens collected near Samán de Guere. Col. E. S.

CURCULIONIDAE

Brachyomus ? 4-nodosus Klug.

Many collected on cacao, *Theobroma Cacao* L., at Río Chico, San José de Río Chico, where they were very common; some specimens at Ocumare de la Costa.

Compsus 18-signatus Champ.

At La Providencia. Col. M. & S.

Dynamis borassi Fabr.

This beautiful, large weevil was collected near Maracay. Col. M. Palma.

Geraeus sp.

On weeds near Samán de Guere.

Neocyphus sp.

Collected on guava, *Psidium Guajava* L., near la Providencia.

Phyrdenus sp.

Collected near La Providencia.

Sitophilus granaria Linn. (Det. L. F. Martorell)

Very common on corn in storage. All the bags were infested. Collected at La Providencia.

Sitophilus oryzae L.

On rice, in the storage rooms of La Providencia.

Sitophilus (Calandra) setulosa (var.) Gyll.

Collected on grasses, in the hills, near La Providencia.

Sternechus decussatus Chevr.

Collected near Samán de Guere. Col. J. G. Fortman.

Zabrotes subfasciatus Boh.

Collected on grasses at Cagua.

DIPTERA

TIPULIDAE

Tipula sp. (Det. C. T. Greene)

A fly of this genus is very common around La Providencia and Samán de Guere. It is found in shady places, flying very low by the sides of tree trunks. Sometimes three and four are found in the same place. The writer collected the same fly in a cacao plantation at San José de Río Chico, Estado Miranda.

PSYCHODIDAE

Psychoda sp. (Det. L. F. Martorell)

They are commonly found in dark, unclean toilet rooms at La Providencia, Turmero and Maracay.

CHIRONOMIDAE

Culicoides paraensis Goeldi

Of great economic importance, the only representative of this family in the region. This troublesome fly becomes a nuisance during the rainy season, attacking people with great aggressiveness and voracity. It is very abundant and initiates its attacks during the first hours of the morning as well as at dusk. Its common name among the people of the Valley is "jején".

The writer has noticed this insect not only in the region of the Valley (La Providencia, Gonzalito, Samán de Guere, Turmero, Maracay, La Trinidad) but also at Río Chico, San José de Río Chico, Cúa, Ocumare de la Costa, Ocumare del Tuy and Maiquetía.

CULICIDAE

This family is widely represented in the valley by a great number of species belonging to different genera. When Dr. Adolpho Lutz and Dr. Nuñez Tovar, published their works, (19-21) the vicinity of La Providencia, Turmero, Cagua and Maracay, etc., was heavily infested. The Government has since taken care of the situation and by means of drainage and canalization, etc., the number of mosquitoes has been considerably reduced. The writer tried to obtain specimens of *Anopheles*, in the surroundings of La Providencia, with negative results, for all the specimens obtained were *Culex*. This was due to the fact that with the establishment of the School of Agriculture in the place, the nearby ponds and swamps were carefully drained and filled with earth. Before this was done the place was a center of *Anopheles* infection and many cases of malaria were reported some four or five years ago.

The writer refers to the works of Dr. Lutz and Dr. Nuñez Tovar for discussion of this Family. The following are the species recorded from the regions of Aragua.

Anopheles albimanus Wied.

One of the most common species in Venezuela. Had been found in the Federal District, Aragua, Guarico, Falcón, Monagas and Carabobo. In Caracas (J. M. Romero Sierra, Col. 1 (06); in Camaguán (E. Carrizales, 1911); in Calabozo (C. Madera, 1911); in Coro (Comisión Rockefeller, 1917); in Maturín, Maracay, Guacara and La Rubiera (Nuñez Tovar, 1911, 1916 and 1918). This species is one of the common vectors of the malarial organism in this country.

Anopheles apicimaculus Dyar & Knab.

Obtained from larvae collected at Rancho Grande (Estado Aragua). Was also collected by the Rockefeller Commission, in Coro, Estado Falcón.

Anopheles argyritarsis Rob-Desv.

The common name for this mosquito in Venezuela is "puyón". The most abundant culicid in the "pampas" or "llanos", during the rainy season. Had been collected in Aragua, Carabobo, Guárico and Monagas. In Cagua (M. Rangel, 1911), in Maturín and Caño Colorado (M. Núñez Tovar, 1911.) Supposed to exist in other States of the Republic. It is the principal vector of malarial organisms in Venezuela.

Anopheles pseudopunctipennis Theo.

This species, which is very similar to *A. punctipennis*, is also a vector of *Plasmodium*. Has been collected by Dr. Núñez Tovar, 1916, in Maracay and Mariara.

Anopheles punctipennis Say

Collected inside the houses in Aragua and Carabobo. In Maracay, Turmero and Güigüe (M Núñez Tovar, 1916). It is also a vector of the disease.

Anopheles tarsimaculatus Goeldi

Another malarial mosquito. Has been collected in Maracay (M. Núñez Tovar, 1916), Maracaibo and La Vela (Rockefeller Commission, 1917).

Aedes aegypti L.

This mosquito is the vector of the agent which causes the yellow fever and according to Legendre & Brumpt, may serve also as the intermediate host to the ethiological agent of "dengue" and also to *Filaria bancrofti*. Supposed to exist in every town in the Republic, as well as in the open country.

Aedes (Howardina) sexlineatus Theobald

Collected by Dr. Lutz at Turmero and La Providencia.

Culex amazonensis Lutz

Collected at La Providencia by Dr. Lutz.

Culex imitator Theobald

Very common in the Aragua region. Specimens were collected by Martorell & Serres.

Culex (Carrollia) iridescens Lutz

Collected in Aragua by Dr. Lutz.

Dendromyia bicompressa Lutz

Described from specimens obtained at Turmero.

Dendromyia luteoventralis Theobald

Specimens collected by Dr. Lutz at Cagua.

Dendromyia personata Lutz

Collected by Dr. Lutz at La Hacienda La Guayabita (Estado Aragua).

Haemogogus equinus Theobald

Specimens obtained at La Providencia and Turmero by Dr. Lutz.

Mansonia pseudotitillans Theobald

From specimens collected by Dr. Lutz in Tucupito, Estado Aragua.

Megarhinus trinidadensis Dyar & Knab

Collected by Dr. Lutz in Aragua.

Megarhinus portoricensis Roeder

Collected by Dr. Lutz in Aragua.

Psorophora champerico Dyar & Knab

Found in Aragua by Dr. Lutz.

Psorophora cyanescens Coquillet

Very common near the city of Maracay. Collected by Dr. N. Tovar and Dr. Lutz, at the airport of this city.

Psorophora discruciensis Walk.

Species common in Aragua and Carabobo. Collected by Lutz & Tovar.

Psorophora ferox Humboldt

Collected by Nuñez Tovar in 1910 and 1916 in Maturín and Maracay.

Psorophora funiculus Dyar

Collected at San Jacinto, Maracay by Lutz and Tovar.

Psorophora genumaculata Neiva

Collected by Lutz and Tovar in Aragua.

Psorophora lineata Humb.

A very common species in the vicinity of La Providencia, called by the people of the region "puyón". They fly in swarms at dusk and early morning. The bite of this insect is very painful. Specimens collected by M. & S.

Psorophora Lutzi Theobald

Collected by Dr. N. Tovar in Maturín (Estado Monagas) and in Maracay, 1910 and 1916.

Sabethoides chloropterus Humboldt

Collected by Lutz and Núñez Tovar at Turmero.

Trichoprosopon pusillum Lutz

Collected at Hacienda Guayabita, by Lutz and Tovar.

Uranotaenia pulcherrima Arribalzaga

Collected by Dr. Lutz and N. Tovar at Rancho Grande, Estado Aragua.

Wyeomyia celeanocephala Dyar & Knab

Collected by Dr. Lutz and N. Tovar at Rancho Grande, Estado Aragua.

SIMULIIDAE

All records from Dr. Adolpho Lutz's work, "Estudios de Zoología y Parasitología Venezolanas", published at Río de Janeiro, Brazil, in December 1928 (18). Nearly all the specimens collected are from Maracay, Turmero and El Limón.

Simulium incrustatum Lutz

This species has been observed in its three stages of metamorphosis by Dr. Lutz. Specimens were obtained near Maracay and at the Hacienda Guayabita, near Turmero. Attacks man, but has marked preference for equines.

Simulium lugubre Lutz & Tovar

Specimens collected by Dr. Lutz along the Maracay River and in the vicinity of La Providencia.

Simulium ochraceum Walker

Along the Limón River, by Dr. Lutz. This species does not attack man.

STRATIOMYDAE

Cyphonmyia leucocephala Wied.

On weeds near La Providencia.

Hermetia illucens Linn.

A common species at La Providencia.

Heteracanthia ruficornis Macq.

Flying around leaves of agave, *Agave americana* L., in the hills near La Providencia.

TABANIDAE

(Determinations in this family by A. Stone.)

Chrysops costatus Fabr.

This species is very common in the region, especially on horses, sometimes attacking man. Observed at Río Chico, San José de Río Chico, Cúa, Ocumare del Tuy (Estado Miranda), and also at Maracay, Caracas, Cagua, Turmero and La Providencia.

Dicladocera caloptera Schiner

Not represented in the collection, but cited by Dr. Lutz in his work. Females collected at Maracay.

Lepiselaga crassipes Fabr.

Not very common in the region. Only two specimens collected by E. S. and the writer at La Providencia. Dr. Adolpho Lutz, cites this insect in his work, from specimens collected at the Experimental Fields at Maracay.

Tabanus sp. near **albocirculus** Hine

This insect is very common in the region. Found on horses and cattle, in great abundance. Three specimens were collected at La Providencia and one at Maracay.

Tabanus ferrifer Walk.

Rather scarce. Collected at La Providencia, Cagua, and Turmero. Col. M. & S.

Tabanus leucaspis Wied.

Only one specimen collected by E. S. on wire screens, at La Providencia.

Tabanus testaceus Macq.

Specimens collected in Cagua.

Tabanus trilineatus Latr.

A fairly common species in nearly all the Valley. Collected at La Providencia and Maracay by M. & S.

ASILIDAE

(Determinations in this family by C. T. Greene.)

Atomosia sp. near **puella** Wied.

Common in the coffee plantations near La Providencia and Turmero.

Erax sp.

Only one specimen collected by E. Serres at La Providencia.

Ommatius apicalis Schiner

On wire screen at La Providencia.

Promachus sp.Fairly common in the region. The writer often observed one of these flies carrying a wasp in its jaws. The wasp was always of the same species, *Polybia fasciata* Sauss., which seems to be the favorite prey. Collected at Turmero and La Providencia.

DOLICHOPODIDAE

Psilopus sp. (Det. L. F. Martorell)

Flies of this genus are very common throughout the country flying among the leaves of coffee, bananas and plantains. Observed at El Cedral, near Caracas, 1,500 meter in altitude; at Cúa. Río Chico, San José de Río Chico (Estado Miranda), La Providencia, Samán de Guere, Turmero, Ocumare de la Costa (Estado Aragua). Col. M. & S.

SYRPHIDAE

(Determinations in this family by C. T. Greene.)

Allograpta sp.

Collected in Maracay. Very common among flowering weeds. Col. M. & S.

Baccha sp.

These flies are very common in shady, humid places, under trees, in groups, flying suspended in space, while their wings are vibrating at high speed. In La Providencia and Samán de Guere. Col. E. S.

Meromacrus sp. near **panamensis**

A rare species in the region. Two specimens collected on wire screens, at La Providencia.

Toxomerus sp. near *geminata*

A very common fly in the corn fields in the vicinity of La Providencia, Gonzality and Turmero. Col. M. & S.

Toxomerus sp.

Common in corn fields. From La Providencia and Caracas.

Volucella esuriens Fabr.

This is the so called "Mexican cactus fly". The scavenger larvae feed on decayed cactus. The adult in the collection was taken at light at La Providencia.

Volucella obesa Fabr.

Abundant on the flower of citrus, *Citrus aurantium* L., *C. sinensis* (L) Osbeck and of *Chalcas exotica* (L) Millsp., at La Providencia and Caracas.

OESTRIDAE

Dermatobia cyaniventris Macq. (*Cuterebra noxialis* Goud.) (Det. L. F. Martorell)

Known as "gusano de monte" in nearly all the regions of Venezuela. Specimens reared from larvae obtained on cattle at Maracay, Cagua and Turmero.

TACHINIDAE

(Determinations in this family by J. M. Aldrich.)

Belvosia bicincta R. D.

This is the largest tachinid in the collection, measuring 15 mm. in length. The species is not very common in the region. Col. M. & S.

Calodexia sp. near *fasciata* Curran

One of the most common tachinids in the vicinity of La Providencia and Gonzalito. Col. E. S.

Leskiopalpus sp.

A common tachinid around La Providencia, Gonzalito and Turmero. Col. E. S.

Myiophasia globosa Tns.

Quite abundant at La Providencia and Gonzalito. Col. E. S.

Winthemia sp.

Abundant. Collected at Gonzalito, La Providencia and La Trinidad. Col. M. & S.

SARCOPHAGIDAE

The following specimens were determined by J. M. Aldrich of the National Museum.

***Sarcophaga lambens* Wd.**

A very common species. Col. E. S.

***Sarcophaga plinthopyga* Wd.**

Very common in garbage cans and kitchens at Gonzalito, Turmero and La Providencia.

The following three species were described by David G. Hall, Bureau of Entomology and Plant Quarantine, U. S. D. A., Washington, D. C., in his publication, "New South American Sarcophagidae (Diptera)", in the Journal of Agriculture of the University of Puerto Rico, Vol. XXII, April 1938, pp. 171-176.

***Sarcophaga camura* Hall**

Type from La Providencia, Maracay, Venezuela. Col. M. & S.

***Sarcophaga rimosa* Hall**

Type from La Providencia, Maracay, Venezuela.

***Abacantha* (gen. nov.) *zygox* Hall**

Type from La Providencia, Maracay, Venezuela. Col. Martorell.

***Tripanurga albicans* (Wiedemann)**

One male and one female collected at La Providencia by M. & S.

CALLIPHORIDAE

(Determinations by J. M. Aldrich.)

***Calliphora vomitoria* L.**

At La Providencia, Gonzalito and La Trinidad.

***Cochliomyia macellaria* Fabr.**

A very common species at La Providencia and Gonzalito. Specimens were collected in the kitchens and in garbage cans, by E. S.

***Hemilucilia fuscipennis* Meq.**

A rather abundant species at La Providencia and Gonzalito. Col. M. & S.

***Lucilia* spp.**

Several species of this genus were collected in garbage cans, and on horse and cow manure, at La Providencia, La Trinidad, Gonzalito and Maracay, by M. & S.

ANTHOMYIDAE

(Determinations by J. M. Aldrich.)

Clinopera sp.

Collected while flying among weeds at La Providencia. Col. M. & S.

Limnophora sp.

One specimen collected by E. S. on wire screens at La Providencia.

Morellia scapulata Big.

Observed at La Trinidad, La Providencia, Gonzalito, and Turmero. Commonly found flying around garbage cans, manure and kitchens, as well as on wire screens. Col. M. & S.

Morellia violacea Fabr.

Very similar to the preceeding species. Collected on wire screens by E. S.

Musca domestica L.

Found in all the Aragua region, as well as in Caracas (Distrito Federal), Los Teques, Cúa, Ocumare del Tuy, Río Chico, San José de Río Chico, Carenero and Paparo (Estado Miranda).

The abundance of this insect was more noticeable during the rainy season, at least at La Providencia, Maracay and Turmero. Specimens from the places named above. Col. M. & S.

Neomuscina tripunctata V. d. W.

A rather abundant species at La Providencia. Col. E. S.

Stomoxys calcitrans Linn.

Found in stables and surroundings at La Providencia, Turmero, Cagua, Maracay and La Trinidad. Col. M. & S.

ORTALIDAE

(Determinations by J. M. Aldrich.)

Euxesta sp.

Flies of this genus are very common in La Providencia, Turmero and Maracay, flying around decomposed cow and horse manure, and rotten stumps, usually in shady places. Also very abundant on corn plants.

Pterocalla tarsata Schiner

Quite abundant on tree trunks, fence posts and in shady places. The species is very peculiar in its habits. When from ten or fifteen in a group, flying very low and close to the surface of tree trunks and posts, alight they walk slowly, always keeping their wings in a constant slow motion. Specimens collected at La Providencia by E. S. & José L. Maury.

Richardia podagrica Fabr.

Not every common, one specimen collected by E. S., at La Providencia.

Stenopterina brevipes Fabr.

A common species. Collected near Turmero by E. S.

PIOPHILIDAE

Piophila sp. (Det. by J. M. Aldrich)

In garbage cans. Very common at La Providencia. Col. E. S.

RHOPHALOMERIDAE

Rhophalomera sp. (Det. by J. M. Aldrich)

At La Providencia by M. & S.

TRYPETIDAE

(Determinations by C. Greene.)

Anastrepha striata Schiner

This species is very common in the region. It seems to be widely distributed through many sections of the country, for the writer has had the opportunity to obtain adults from larvae infesting fruits in different parts of Venezuela.

In the city of Caracas (1,000 meters in altitude), the pupal stage of the fly under laboratory conditions varies from 11 to 14 days. At Maracay and San José de Río Chico the pupal stage period is reduced a little, due to the higher temperatures in these low places. The fly was reared from the following hosts: guava, *Psidium Guajava* L., malayan apple, *Jambos malacensis* (L) D. C., sweet orange, *Citrus sinensis* (L) Osbeck and *Prunus persica* (L) Stokes, in Caracas; *Psidium Guajava* and *Prunus persica*, at El Cedral 1,500 meters in altitude, (Hacienda of Mr. Luis París); *Psidium Guajava*, at La Providencia, Turmero, Cagua and Maracay; *Psidium Guajava*, and *Citrus sinensis*, at San José de Río Chico, Río Chico, Ocumare del Tuy and Cúa.

Ceratitis capitata Wied.

From a peach, *Prunus persica* (L) Stokes, bought by the writer at Caracas, ten fruit fly larvae were obtained. Several pupae were formed, but only one adult fruit fly emerged, which was determined by C. T. Greene, of the National Museum.

This is not the first record of the Mediterranean fruit fly in Venezuela as in the Service Regulation Announcements of the Plant Quarantine and Control Administration, U.S.D.A., published in 1931, on page 242, the record is given of this fly being intercepted at the San Juan Harbor from peaches in baggage of a transit passenger coming from Venezuela.

On requesting further information concerning this interception from the San Juan Office of the Bureau of Entomology and Plant Quarantine, it was found that a passenger on board the S. S. "Caracas" en route to New York, on 9-10-31, carried 23 peaches in his baggage. These were confiscated and destroyed after examination. The inspector reported 25 per cent of the peaches as infested and sent 5 larvae to Washington. These were identified by C. T. Greene as *Ceratitis capitata* Wied.

Hexachaeta sp.

On wire screens, by E. S.

Toxotrypana curvicauda Gerst.

Two adults reared from larvae infesting papaya, *Carica Papaya* L., at La Providencia. The fly does not seem to be very common in the Araguan orchards. Infested fruits were observed also in Ocumare del Tuy full of immature larvae.

MICROPEZIDAE

Grallomyia flavipes Mcq. (Det. by J. M. Aldrich)

Flying in abundance around tree trunks in shady places, near La Providencia and Turmero. Col. Serres and Maury.

SEPSIDAE

Sepsis sp. (Det. by J. M. Aldrich)

Specimens collected on wire screens at La Providencia by M. & S.

DROSOPHILIDAE

Drosophila sp. (Det. by L. F. Martorell)

Very abundant in the region. Seen on rotten fruits such as mangoes, bananas, oranges, etc., at La Providencia, Maracay, Caracas, Río Chico, San José de Río Chico, Cúa and Ocumare del Tuy.

HIPPOBOSCIDAE

This family is represented in the Valley by the following species according to the studies of Dr. Lutz. The writer only had the chance to observe the presence of the species which attacks the common pigeons.

Lynchia palustris L. M. & C. L.

On egrets.

Lynchia raptatorum Lutz, Nieva & Costa Lima.

A common species on hawks.

Microlynchia pusilla Speiser

On wild pigeons.

Olfersia bisulcata Macq.

On "zamueros", (Turkey vultures.)

Pseudolynchia maura var. *lividicolor* Big.

Very abundant on domestic pigeons. This insect transmits the disease called pigeon malaria, caused by the protozoan, *Haemoproteus columbae* Celli and San Felice.

SIPHONAPTERA

(Determinations in the group by L. F. Martorell.)

ECHINOPHAGIDAE

Tunga pentrans Linn.

Extremely abundant in Maracay, La Providencia and Ocumare de La Costa. Also found in Caracas and San José de Río Chico. In this last place the writer checked the presence of the insect by personal experience.

PULICIDAE

Ctenocephalus canis Curtis

On dogs in the Aragua region. Also found at Caracas.

Ctenocephalus felis Bouché
On cats at La Providencia.

Pulex irritans Linn.
Found on dogs and men.

LEPIDOPTERA

Most of the Lepidoptera in the collection were taken at light, others reared from larvae and some collected during flight in the fields. In the systematic arrangement of the group, the writer follows Barnes and McDunnough's, "Check List of the Lepidoptera of Boreal America". (2)

All determinations in this order made by William Schaus, except as otherwise noted.

PAPILIONIDAE

Papilio sp. (Det. L. F. Martorell)
At Caracas, on grapefruit trees.

PIERIDAE

Callidryas (Catopsilia) eubule Linn. (Det. L. F. Martorell)
At La Providencia they fly around ornamental plants, and zinnias, *Crassina elegans* (Jacq.) Kuntze. Also in the fields at Maracay and Turmero.

Pieris elodia Bdv.
In pastures and among weeds at La Providencia, Turmero and Caracas.

Pieris monuste Linn. (Det. L. F. Martorell)
The worst pest of cabbages in the region of Aragua. A whole cabbage plantation at Caracas was destroyed by these insects. Nearly all the specimens in the collection were reared from chrysalids obtained at the cabbage fields in Caracas, La Providencia, and Río Chico. Col. Guiscafré and Martorell.

DANAIDAE

Danaus menippe Hübner (**Anoxia plexippus**)
A very common butterfly in Maracay, Turmero, La Providencia and also in Caracas.

Lycorea cleobaea var **atergatis** Doub. & Hew.
Near La Providencia.

NYMPHALIDAE

Ageronia marsina Fruhst.

Only one specimen of this beautiful butterfly was collected while flying low through the coffee plantation at La Providencia. Col. M. Betancourt.

Callicore clymena Hubner.

One specimen collected while flying through weeds of the genus *Sida*. Col. E. S.

Chlosyne saundersi Db. & Hew.

Flying among flowers in the garden, of the School of Agriculture.

Junonia genoveva Cramer, (Det. L. F. Martorell)

A common species through all the Aragua region and also in Caracas.

Heliconius antiochus Linn.

Collected while flying through the coffee plantation of La Providencia. Not very common. Col. M. Palma.

Morpho sp.

Butterflies of this genus are common in the Aragua region, especially in mountainous places, but are every difficult to collect. At the coffee plantation near La Providencia, they were very abundant, flying in shady places below trees, also at Petare, in Caracas.

Pteronymia asopo Felder.

At La Providencia attracted by zinnia, *Crassina elegans* (Jacq.) Kuntze. This species is as common as *Callidryas eubule* Linn.

Pteronymia fulvescens C. & S.

This species is not so common as the preceding, but occurs in the same places. At La Providencia and near Turmero.

HESPERIIDAE

Epargyreus socus Hübner.

At La Providencia.

Eudamus proteus Linn. (Det. L. F. Martorell)

A very common species at La Providencia, Turmero and Maracay. Specimens in the collection also from Caracas.

ERYCINIDAE

Anteros formosus Cram.

Collected near Samán de Guere.

RHIODINIDAE

Rhetus laonome Morisse

Collected near La Providencia, while flying very low among weeds.

SPHINGIDAE

Amplipterus gannascus Stoll.

At lights at La Providencia.

Erinnyis ello Linn. (Det L. F. Martorell)

Attracted to lights in great numbers. The caterpillar of the species feeds upon the leaves of cassava, *Manihot Manihot* (L) Cock. One specimen was reared from a caterpillar collected while feeding on this plant, near Turmero. Col. M. & S.

Herse cingulata Fabr. (Det. L. F. Martorell)

At lights at La Providencia. One specimen from San José de Río Chico (Estado Miranda). Col. Martorell & Palma.

Phlegethontius occulta Roths. & Jord.

One specimen collected at lights at La Providencia.

Pholus labruscae Linn.

A fairly abundant species in Aragua. One specimen also from Caracas. Col. Martorell & Aguilera.

SATURNIIDAE

Arsenura armida Cramer.

At lights at La Providencia. Fairly abundant.

Automeris auletes Bdv.

At lights at La Providencia.

Automeris angulatus Conte.

At lights at La Providencia. Col. A. Escalona.

Automeris pamina Newn.

Probably var. *aurosea* Newm. Very common at La Providencia. Collected at lights here and at Turmero.

Hylesia falcifera Hübn.

Common in the region. Specimens from Samán de Guere, Turmero and La Providencia. Col. Serres, Maury & Martorell.

Hylesia margarita Dogn.

At lights at La Providencia.

Hylesia mortifex Dyar.

Not very abundant. At lights at Samán de Guere. Col. M. Betancourt.

Ormiscodes nora Druce.

Rather common at La Providencia and Samán de Guere.

SYSSPHINGIDAE

Adelocephala anthonilis H. S.

At lights at La Providencia.

Citheronia phoronea Cram.

At lights at Samán de Guere.

Eacles magnifica Walk.

Fairly common in the region. At Samán de Guere and La Providencia.

Syssphinx molina Cram.

At lights at La Providencia. Col. Palma & Serres.

AMATIDAE

Cyanopepla alonzo Butl.

Flying among weeds in shady places, under strees, near Samán de Guere.

Dinia mena Hübner.

Attracted to light, at La Providencia. Col. J. G. Fortmann.

Macrocneme leucostigma Perty.

Collected from weeds at La Providencia.

ARCTIDAE

Ammalo helops Cram.

At light at La Providencia.

Diacrisia alcumena Berg.

At light at La Providencia.

Ecpantheria muzina Oberthur.

Collected during daylight at Samán de Guere.

Utetheisa sp. (Det. L. F. Martorell)

Flying among *Crotalaria* sp. and *Cajan Cajan* (L) Millsp., near La Providencia and Turmero.

NOCTUIDAE

Heliothis obsoleta Fabr. (Det. L. F. Martorell)

The caterpillar of this moth attacked the corn plants, at La Providencia and near Turmero. Nearly 50 per cent of the ears were badly attacked by the pest. Several specimens were reared.

Noropsis hieroglyphica Cramer

Collected at light at La Providencia. Col. M. & S.

PERICOPIDAE

Pericopis sacrificia Hübn.

At light near Samán de Guere.

LIMACODIDAE

Perola invaria Walker

Fairly common at La Providencia. Very abundant at light.

MEGALOPYGIDAE

Megalopyge lanata Stoll.

At La Providencia.

Megalopyge nuda Stoll.

Collected near Samán de Guere.

Norape variabilis Hopp.

This is a small white moth which is very common in the region. It is attracted to light in great numbers. Specimens from Samán de Guere and La Providencia.

PYRALIDAE

(Determinations in this family by L. F. Martorell.)

Diatraea saccharalis Fabr.

The caterpillar is the sugar cane stalk borer, commonly found in sugar cane regions of the country. Very common in Aragua, as well as in Caracas, Río Chico, San José de Río Chico, Ocumare del Tuy and San Casimiro.

Hypsipyla grandella Zeller

Attacking Mexican cedar and Spanish cedar, *Cedrela mexicana* Roem. and *Cedrela odorata* L., in Caracas and Maracay. A great pest of young cedar trees, not only in this region but also in many South and Central-American countries. Adults reared from larvae.

Margaronia nitidalis Cram.

The caterpillar of this completely destroyed the last crop of cucumbers, *Cucumis sativus* L., in the vegetable garden at La Providencia. As many as 8 or 9 larvae were counted in a single fruit.

Margaronia hyalinata Linn.

One specimen collected at lights at La Providencia. Col. J. L. Maury.

GELECHIIDAE

Sitotroga cerealella Oliv.

Very common in La Providencia in the seed store room, attacking corn and wheat. Also observed in Caracas.

COSSIDAE

Xyleutes pyraemon Cram.

At lights at La Providencia.

HYMENOPTERA

In the discussion of this group the writer follows the systematic arrangement presented by E. O. Essig, in his book, "Insects of Western North America". (10)

ICHNEUMONOIDEA

(Determinations for **Braconidae** and **Ichnumonidae** by C. F. W. Muesebeck.)

BRACONIDAE

Alysia analis Cress.

From weeds at Turmero.

Iphiaulax sp.

At La Providencia.

ICHNEUMONIDAE

Bassus sp.

On weeds, at La Providencia.

Ephialtes sanguineipes Cress.

At Samán de Guere.

Monarea sp.

Collected near La Providencia.

CHALCIDOIDEA

CHALCIDIDAE

Bephrata maculicollis Cam. (Det. A. B. Gahan.)

Collected at La Providencia. While the writer was stationed at Caracas, several soursops, *Annona muricata* L., were observed infested with this insect, from which adults and pupae were obtained.

Brachymeria mexicana Dalla Torre. (Det. A. B. Gahan.)

Collected near Samán de Guere. Col. E. S.

FORMICOIDEA

FORMICIDAE

(Determinations in this family by W. M. Mann, Director, National Zoological Park.)

Atta sexdens Linn. (Det. L. F. Martorell)

The most dangerous pest of nearly all crops in the Aragua region and in nearly all Venezuela. This ant is very common near La Providencia, Turmero, Cagua and Maracay. The native name for the ant is "bachaco". A whole nursery of 500 small citrus plants were devoured in a single night by these ants.

The nests are deep and long, sometimes reaching 50 or 60 yards underground. They were very successfully controlled by flooding their underground nests with water from the irrigation canals. This insect seems more abundant during the dry season, but they do most damage during the rainy months when there is plenty of plant food to satisfy their voracity.

Eciton burchelli Westw.

Very common near Samán de Guere, running over the ground. Some species are also from La Hacienda, La Estrella, near Petares, Estado Miranda.

Eciton vagans Oliv.

At La Providencia and Turmero. Col. M. & S.

Eciton sp.

Several specimens of this genus are present in the collection, all of them winged. Usually after a rainy spell these insects fly out of their nests in great swarms, during the late hours of the day, 3 o'clock or later.

The writer never saw one of these swarms during the morning hours. The insects were so abundant that the tennis courts of the School of Agriculture, had to be cleaned to play on them. As soon as these winged adults alighted on the ground, each began to make a nest. It started by taking soil from a certain spot, until a small hole is made, going inside the hole, and in a few seconds, returning with a small amount of earth between its jaws. This is done repeatedly until a small but deep nest is completed with a fairly large mound of earth surrounding it.

Camponotus sp.

Common in the region. At La Providencia and near Samán de Guere.

Dolichoderus (Monacis) hispinosus Oliv.

Collected near Maracay.

Ectatoma ruidum Roger.

At Turmero.

Neoponera villosa Fabr.

This species is extremely abundant at Samán de Guere. They sting like wasps. One specimen from Turmero also. Col. Palma & Martorell.

SPHECOIDEA

Tachysphex sp. (Det. G. Sandhouse)

At La Providencia.

BEMBECIDAE

Bembecinus sp. (Det. G. Sandhouse)

At La Providencia.

EVANIDAE

Evania appendigaster L. (Det. R. A. Cushman)

Not very common. One specimen obtained at La Providencia.

VESPOIDEA

SCOLIDAE

(Determinations for this family and the next ones by G. Sandhouse.)

Campsomeris costalis (Lep.)

Collected near La Providencia.

Campsomeris dorsata (Fabr.)

Very common near La Providencia and Turmero. Flying among weeds. Male and female specimens in the collection.

MUTILLIDAE

Traumatomutilla sp.

Only one specimen collected near Samán de Guere.

PSAMMOCHARIDAE

Pepsis sp.

Common in the region.

Collected near Saman de Guere.

VESPIDAE

Apoica pallida (Oliv.)

Found dead near a glass panel, on a window at La Providencia.

Megacanthopus indeterminabilis var. **basimacula** (Cameron)

At La Providencia. A very abundant species.

Parachartergus colobopterus Web.

Collected near Samán de Guere. Col. Serres and Martorell.

Polistes canadensis Linn.

These wasps are called horse killers by the people of the vicinity, perhaps because they are very large and their sting is very painful. Very common in the Aragua region. Collected in Turmero, La Providencia and near Maracay. Col. M. & S.

Polybia diguetana Buysson

At La Providencia.

Polybia fasciata Sauss.

Commonly called "carniceras" (butchers). Their sting is very painful. Some specimens in the collection are from San José de Río Chico (Estado Miranda).

Polybia nigra Sauss.

This is a domestic social wasp which often makes its nest inside houses and buildings. At La Providencia they are a real nuisance in the classrooms and living rooms. Observed at Turmero, Maracay and Caracas.

Polybia occidentalis (Oliv.)

Common at La Providencia and Turmero.

Polybia occidentalis var.

Collected near Samán de Guere.

Polybia sericea Fabr.

Fairly abundant in the vicinity at La Providencia.

Synoecca surinama var. **cyanea** (Fabr.)

This beautiful, large, black wasp, is very abundant at La Providencia and Maracay. Also one specimen collected in Caracas.

APOIDEA

EUGLOSSIDAE

Euglossa variabilis Friese

Collected visiting a flower of *Punica Granatum* L., at La Providencia.

ANDRENIDAE

Agapostemon nasutus Smith

On flower of *Punica Granatum* L., at La Providencia.

MELIPONIDAE

Trigona cupira Smith

On flowers of *Punica Granatum* L., at La Providencia.

Trigona silvestriana Vachal.

On flowers near La Providencia and Samán de Guere. Col. M. & S.

Nannotrigona testaceicornis (Lep.)

From weeds near Turmero. Col. E. S.

APIDAE

Apis mellifera Linn.

Collected near an apiary at Gonzalito. Beekeeping is a small industry in many parts of the State. Near Maracay, at a Catholic School directed by German monks, beekeeping has been an industry for many years. Every year an abundance of honey and wax is obtained from these apiaries and sold for local use. In Caracas also there are commercial apiaries.

Bombus kohlii Cockerell

Collected at La Providencia.

Ceratina laeta Spin.

On flowers of *Punica Granatum* L., at La Providencia.

Ceratina sp.

Collected as the preceeding species.

Melipona interrupta var. **oblitescens** Cock.

Very common among weeds near Samán de Guere and La Providencia.

Tetralonia spp.

From weeds near La Providencia and Samán de Guere.

NEUROPTERA *

ASCALAPHIDAE

Ululodes cajennensis Fabr.—(det. Nathan Banks)

At Caracas and at La Providencia.

* Record received too late for insertion on p. 135.