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A SURVEY OF THE FOREST INSECTS OF PUERTO RICO

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A SURVEY OF THE FOREST INSECTS OF PUERTO RICO*

PART I

(An Annotated List of the Insects Affecting Forest, Shade and Ornamental Trees in Puerto Rico.)

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INTRODUCTION

Tropical Forest Entomology is a science in its embryo stage in the American tropics. Very little investigation has been conducted in tropical America and yet so much needs to be done. Undoubtedly, research in Forest Entomology will develop parallel to the investigations in the scientific development of tropical forest resources.

During the last decade, Forestry has been playing a very important role in the agricultural development of Puerto Rico. New forest units have been added to the existing forest areas, hundreds of thousands of trees have been planted, new forest management and research methods have been used, all tending towards a main objective: the successful development of insular forest resources.

The U. S. Forest Service, the Insular Forest Service, and the Tropical Forest Experiment Station are the institutions that will be responsible for the future development of our forests. These organizations working in coordination are trying to solve the existing problems hindering the expansion of forestry in the Island.

One of the main problems with which the foresters deal is the forest insects. These small but highly destructive creatures are the cause of serious depredations in tropical forests, all the more serious because so little is known about them. Gundlach, Wolcott, DeLeón, Seín, are among the scientists which have contributed to the knowledge of our forest fauna.

The writer has been making observations on forest insects since 1934. During 1940, this work was proposed as a special off-campus research project under the approval of the Graduate School of the Ohio State University and the supervision of Dr. Dwight M. DeLong, Professor of Entomology in that institution. This survey is thus the result of almost eight years of observations, the greater part of the work being done during the last two years, at which time the writer devoted his spare time, week ends and holidays to the field work.

* This dissertation with minor changes and additions was presented in partial fulfillment of the requirements for the degree of Doctor of Philosophy in the Graduate School of the Ohio State University, in June 1943.

The survey is admittedly far from complete, but is intended to include all available information concerning the insects affecting forest, shade and ornamental trees of Puerto Rico.

The work consists of two parts, the first of which is an annotated list of the insects affecting the trees. The host trees are mentioned by their scientific names in alphabetical order, and the insects are listed under each tree. Directly under the name of each tree, the family to which it belongs is cited, followed by notes on distribution, uses or economic importance and common names of the tree species. Then the insects are listed or recorded, following more or less this sequence: insects affecting the flowers, fruits or seeds, leaves, twigs, branches, trunk and roots. Often species attacking the decayed wood or resting on the tree will be mentioned at the end of each tree discussed.

The second part is a discussion of the most important insects affecting the trees. Whenever possible the following information will be given about each insect species: general distribution of the insect; description of the adults, eggs, larval or nymphal and pupal stages; habits, natural enemies, artificial control and host trees attacked.

In the arrangement of the Orders and Families of the Insecta, the writer follows Wolcott's, "Insectae Borinquenses", with a few minor changes, and the work of Britton & Wilson, "Botany of Porto Rico and the Virgin Islands.—Descriptive Flora—Spermatophyta", (with a few changes) for the botanical terminology. Only those insects directly affecting the trees will be discussed, the parasitic or predatory forms will be only mentioned and few of the most important briefly discussed. Those insect forms which occur in trees, but whose role is unknown, will be mentioned in the first part of the work, but will not be discussed in the second. Some of these include predatory insects, others living in decayed wood, or acting as scavengers, etc. In many instances one will find in "Insectae Borinquenses" insects recorded as: "resting on the tree", "on a leaf", "on a branch", "in flowers", etc., without stating specifically what the insect was doing on the tree or host plant. Such records have been omitted in this work.

For the references cited most often, the initials EEWI, standing for "Economic Entomology of the West Indies", will be used; IP, for "Insectae Portoricensis", IB, for "Insectae Borinquenses", and SIB, for "Supplement to Insectae Borinquenses". In the references to authors, the name, year of publication and in most cases the page number will be given. The complete reference will be included in the Bibliography. The initials LFM and GNW will denote Luis F. Martorell and George N. Wolcott respectively.

Many of the records were taken from "Insectae Borinquenses" or from

its Supplement. Even if the record has been already published in the Supplement, but the collection and observations were made by the writer, the initials (LFM.) will follow those of the references.

It has been the aim of the writer in making this Survey to serve a dual purpose:

(1) As a help for foresters and men interested in Forestry and its allied branches, in which it could be used as a guide or manual to the forest insects of our Island.

(2) To serve as a basis for future investigations in Forest Entomology, not only in Puerto Rico, but in the West Indies and tropical America.

ORIGIN OF OUR INSECT FAUNA

Many authoritative biogeographers have studied and discussed in detail the distribution of the fauna and flora of the West Indies. Nearly all come to the definite conclusion that the Antillean fauna is purely South and Central American in origin. In some insect groups this thesis is very clearly seen and supported by means of the comparison of our actual living species. In others there are blank pages, questions to be answered and problems to be solved, before an attempt is made to unveil the mysteries of the past.

Before going further, it seems desirable to give a short review of the geologic history of Puerto Rico.

According to Meyerhoff (1933) the geologic eras known as the Archeozoic, Proterozoic and Paleozoic combined account for eighty-five percent of all geologic history.

"It is surprising to discover that nearly all the rocks comprising the Greater Antilles were formed within the last twelve percent of geologic time. Archeozoic, Proterozoic and Paleozoic rocks play so small a part in the Island's visible framework that their very existence is debatable. But the conviction that the history of the Antillean region dates back into the past is deep-rooted, and attempts are constantly being made to lift the veil that enshrouds its beginnings." (Meyerhoff 1933, p. 25.)

The geology of Puerto Rico is intimately related with that of the other islands of the Greater Antilles and all seems to share the same geologic changes since the beginning of Antillea. As far as geologists know, the history of Puerto Rico began during the middle of the Cretaceous period, in which the Island was what can be called a boiling cauldron, that is, in the midst of volcanic eruptions. From that time up to the Recent period the geological events can be summarized as shown in the accompanying tabular outline.

A controversy exists among geologists as to the existence of land bridges between Central America and the Antilles in early geologic ages. Meyer-

hoff does not believe in the presence of land bridges connecting the Antilles with Central or South America. His conclusions are based purely on geological facts. On the other side Schuchert (1935) is an ardent supporter of the land bridge theory. Most biogeographers favor the theory of land

TABULAR OUTLINE OF THE PHYSIOGRAPHIC HISTORY OF PUERTO RICO AND THE VIRGIN ISLANDS. (After Meyerhoff 1927, p. 560)

| | | |
|------------------|--------|--|
| RECENT | | Slight emergence Maximum submergence |
| | | <hr/> BLOCK FAULTING <hr/> |
| | | Partial submergence east of P. R., with migratory stand line during glacial stages. |
| PLEISTOCENE | | Uplift, with warping, followed by youthful to mature dissection of Caguana peneplane. |
| | | <hr/> Uplift, followed by extensive peneplanation of costal plain and oldland (Caguana peneplane). |
| PLIOCENE | | Uplift, followed by extensive peneplanation (upper, or St. John, peneplane). |
| MIOCENE | Upper | <hr/> |
| | Middle | |
| | Lower | Costal plain accumulation |
| OLIGOCENE | Upper | |
| | Middle | <hr/> |
| | Lower | Partial peneplanation (lower pene-peneplane, or subcostal-plain erosional surface). |
| EOCENE | | Record not preserved, but probabilities of earlier cycles of erosion strong. |
| PALEOCENE | | <hr/> Intrusion, folding, uplift, making complex mountainous oldland. |
| UPPER CRETACEOUS | | Accumulation of andesitic volcanics and sediments. |

bridges, basing their beliefs on the homogeneity of the Antillean fauna and flora and its close resemblance to that of Central and South America.

What are the factors contributing to the distribution of life on the different lands of the world? The dispersal of organisms has been possible through the agency of winds, storms, ocean currents, rivers, floods, and even by the seasonal migration of birds and other animals.

Many noted biogeographers have discussed the probable means of the distribution of life on the globe. Mathew (1930) does not believe in land

bridges but in the fortuitous introduction and emigration of mammals, reptiles and invertebrates. He lists the means of such emigrations as windblown, by the action of hurricanes, sea storms, floods of inland rivers bringing from the interior of islands and continents high masses of vegetation containing flora and fauna, and these masses or rafts floating and being driven thousands of miles away by oceanic currents. Mathew's work should be read by all students interested in biological sciences, especially on the distribution of animal life in the present and past.

Guppy (1917) also has the same theories as Mathew on the fauna and flora and its subsequent distribution through the islands and continents of the world.

Pilsbry (1930) is in support of the Central-Antillean bridge. In discussing the land snails of the Caribbean he comes to the conclusion that they are of purely South and Central American origin. He says, "Of North American genera, few occur in the West Indies. With Central America there are many more genera in common, and these are largely of South American affiliation; these migrants have come by three distinct routes: (1) the oldest, by the northeastern extension of Honduras-Nicaragua towards Jamaica; (2) by a similar approximation to Yucatán peninsula and the west end of Cuba (3) the youngest, by way of Trinidad, Tobago and the Lesser Antilles."

C. T. Simpson (1894) believes that the snail fauna has been scattered in the Antilles by means of (1) land bridges (2) and water drifting.

Petrunkevitch (1928-29) on the other hand gives great importance to the air currents as a natural means of migration and distribution of the spider fauna of the Greater Antilles. He also accepts the fact that the spider fauna of the Greater Antilles (Puerto Rico included) originated from land migrations from Central America.

Writing about the spider fauna of the Lesser Antilles he says, "There are two distinct faunas, that of the Greater Antilles and that of the Lesser Antilles. The former represents the eastern outgrowth of the Central American fauna presumably by way of an earlier land connection. The fauna of the Lesser Antilles has South America and particularly Venezuela for its origin and developed along the path of the air-currents, especially of the hurricanes. In Porto Rico we find the last traces of this fauna, admixed to the fauna which came from the west. Species characteristic of certain islands and not found anywhere else, wherever chance importation is reasonably excluded, may be regarded as having originated on the respective islands and therefore indicative of the evolutionary trend of such isolated faunas."

Barbour (1916) in discussion of Mathew's theories writes: "Now I do not believe, with Mathew, that the Antilles are oceanic islands—lands

which have received their fauna by fortuitous transportal. My reasons for thinking as I do are these: first, I believe that the islands of the Antillean chain have too evenly distributed and homogeneous a fauna for it all to have been fortuitously derived; secondly, I consider the fauna to be composed of too many different animal phyla; and thirdly I believe that many of these elements are not of a nature to have withstood "flotasm or jetasm" dispersal. We must now consider Mathew's exposition of the natural raft hypothesis (page 37 et seq.). He states: "Natural rafts have been several times reported as seen over a hundred miles off the mouths of the great tropical rivers such as the Ganges, Amazon, Congo and Orinoco. For one such raft observed, a hundred has probably drifted out that far unseen or unrecorded before breaking up." This is obvious and undoubted. But, and this is important, these rafts, even the very large ones, float low in the water; they soon become soaked with salt water in a calm sea, rippled over or broken over if the sea be choppy or rough as it is in the trade wind or monsoon belts. Only organisms or their eggs which are encapsulated or otherwise naturally resistant can withstand these conditions." (Barbour 1916, p. 153.)

"Let us consider for a moment the Antillean chain as a whole; it is utterly impossible that ocean currents could now or in the past have brought rafts with equal frequency to all parts of this island arc, and yet the same types reappear upon island after island all the way from Cuba to Grenada. Rafting from island to island certainly could not have occurred, since there never have been large rivers on them had they always retained their present size. The fauna is far larger in number of species upon the Greater Antilles than upon the Lesser, as the conditions favorable for the survival of species are obviously better upon the large islands with their luxuriant vegetation than upon such barren islets as, for example, Sombrero or Redonda. The types, however, which have been able to survive upon Sombrero or Saba are just those which are found, along with many others, upon Cuba or Haiti. In my "Herpetology of Jamaica" and "Zoogeography of West Indian Reptiles," I have gone into this matter in detail and there is no need of repeating what has been said there. This homogeneity of the fauna is the best possible proof that winds (tornados, hurricanes, etc.), birds, small floating drift, etc., have played no considerable part in populating the island by carrying eggs or adults, since it is inconceivable that by these means the same improbable choice of passengers would be carried to so many islands." (Barbour 1916, p. 156-7.)

More and more cases could be cited of distinguished students of the interesting problem facing the facts about the distribution of animal and plant life in the Antilles. All of them, with a few exceptions, seem to believe in the existence of land bridges or connections between Central

America and the Antilles. Most of them deny any connection of the Greater Antilles with the Lesser, but, in reference to the latter, there is a chance that they were connected with some part of northern Venezuela sometime during the geologic history of Antillea. If they were not really connected the proximity of these islands to the South American mainland was such that part of the fauna and flora could easily have access to them.

The student interested in the different geologic phases of Puerto Rico, especially in reference to its connection with the rest of the Antilles should consult the maps at the end of Schucherts's book (1935).

According to previous studies, scientists have come to the following conclusions: That Jamaica was the first section of Antillea to become insular, then was followed by Cuba. Puerto Rico and Hispaniola retained their connections for a very long time, until finally they were divided in two, and lastly Puerto Rico was separated from the Virgin Islands.

All the above discussion about the distribution of life in the Antilles, has been based on faunistic studies on reptiles, mammals, crustaceans, molluscans, etc. Very little has been said about insects, which is our main point of interest.

Fossil molluscans, foraminiferans, plants, mammals, etc., have been collected in Puerto Rico but as far as I know not a single insect fossil has been recorded from the Island. Thus it would be difficult to give definite statements about the origin of our insect fauna, altho theories have been advanced concerning the possible origin of the Lepidopteran and Homopteran fauna of the Antilles, some with special reference to Puerto Rico.

Osborn (1932) in a discussion of the geographic and ecologic factors in the distribution of the neotropical Homoptera is puzzled by the poverty of the Puerto Rican homopterous fauna, as compared with the other islands of the Greater Antilles, South and Central America. In discussing the different families of the group, he gives special emphasis to the scarcity of representatives of the families Cicadidae, Membracidae and Cercopidae in Puerto Rico.

Forbes (1930) in discussing the origin of the Puerto Rican insect fauna, says: "Geologically the island of Porto Rico is one of the newer units of area of the earth's surface, being, so far as we know now, probably not quite as old as the order Lepidoptera itself. . . . In the late Miocene the island was again raised, and was presumably connected to neighboring islands, producing a condition where migration may have been relatively free from island to island in the West Indies and also from Central America; if, indeed, the islands had been separated at all before the Pliocene (?) faulting. In the Pliocene this region was again partially submerged, leaving only a fringe of the limestones of Oligocene to late Tertiary age above water. Finally after several oscillations of sea-level during the glacial epochs, the

present level was reached. There is no evidence that during any part of the time after its first emergence Porto Rico was ever wholly under water; but for a time, in the Oligocene and Miocene, it must have had only about half of its present area, and for a time in the late Tertiary it must have been part of a much larger land mass." In another paragraph he continues: "During the Oligocene time of reduced area there is no reason to believe that any substantial addition was made to the fauna of Porto Rico, or even to that of the Greater Antilles as a whole, but with the later Tertiary emergence room was provided for a much more extensive fauna, and no doubt a large part of our now characteristic Antillean fauna arrived at that time. There are three possible sources for these newcomers: The United States, Mexico (or rather Yucatán and Honduras), and South America via the Lesser Antilles."

Bates (1935), arguing about the Antillean butterfly fauna, considers the island of Hispaniola as a center of dispersal for the butterflies in the Antilles.

Comparing the homogeneity of the Antillean butterfly fauna with reference to North, South and Central America, Bates presents a chart showing such similarities. The original chart does not include the butterfly fauna of Puerto Rico, but the chart on the next page, amplified by addition of Puerto Rican fauna and others for North America, gives data not included by Bates in his original chart (see chart I).

It would be difficult to try to prepare a similar chart for different groups of families in the other orders of the Insecta, since the fauna of such islands as Jamaica, Hispaniola and perhaps Cuba has not been completely studied in detail. It is very fortunate that the butterflies of the Antilles have been so well studied as to establish the comparison.

Puerto Rico's position in respect to the other islands of the Greater and Lesser Antilles is most remote: farthest east of the Large islands (with the exception of the small group of the Virgin Islands) and farthest north of the group of the Lesser Antilles. Thus, if during past ages there were land migrations from Central and South America, undoubtedly our Island was the last to get the benefit of such migrations. The writer believes that Puerto Rico acquired its present fauna by the following ways:

(1) Land migrations from other islands of the Greater Antilles, South and Central America by the early land connections of the main land with Antillea.

(2) By the migratory habits of certain species of insects, such as the butterflies and moths.

(3) By the activities of man: particularly the early natives living in those islands, long before the coming of white men; by the early settlers themselves.

CHART I
Antillean Fauna

| | Puerto Rico | Cuba | Hispaniola | Jamaica | Central America | South America | North America |
|---|-------------|------|------------|---------|-----------------|---------------|---------------|
| 1. <i>Pieris</i> | X X | X X | X | X X | X X | X X | X X |
| 2. <i>Appias</i> (<i>Tachyris</i>)..... | X | X X | X X | X X | X X | X X | X X |
| 3. <i>Metis</i> | X | X X | X X | X X | X X | X X | X X |
| 4. <i>Eurema</i> | X | X X | X X | X X | X X | X X | X X |
| 5. <i>Phoebis</i> | X X | X X | X X | X X | X X | X X | X X |
| 6. <i>Anteos</i> | X X | X X | X X | X X | X X | X X | X X |
| 7. <i>Kricogonia</i> | X | X X | X X | X X | X X | X X | X X |
| 8. <i>Zerene</i> | | X X | X X | X X | X X | X X | X X |
| 9. <i>Nathalis</i> | | X X | X X | X X | X X | X X | X X |
| 10. <i>Dismorphia</i> | X | X X | X X | X X | X X | X X | X X |
| 11. <i>Danaus</i> | X X | X X | X X | X | X X | X X | X X |
| 12. <i>Lycorae</i> | X | X X | X X | X X | X X | X X | X |
| 13. <i>Aneides</i> | | X X | X X | X X | X X | X X | X |
| 14. <i>Hymenitis</i> | | X X | X X | X X | X X | X | X |
| 15. <i>Calisto</i> | X | X X | X X | X X | X X | X | X |
| 16. <i>Heliconius</i> | X X | X X | X X | X X | X X | X X | X |
| 17. <i>Eudeides</i> | X | X | X X | X | X X | X X | X |
| 18. <i>Metanandana</i> | | X X | X X | X | X X | X X | X |
| 19. <i>Colaenis</i> | | X X | X X | X X | X X | X X | X X |
| 20. <i>Dione</i> | X X | X X | X X | X X | X X | X X | X X |
| 21. <i>Euploia</i> | X X | X X | X X | X X | X X | X X | X X |
| 22. <i>Physiodes</i> | X X | X X | X X | X X | X X | X X | X X |
| 23. <i>Chlossyne</i> (<i>Synchlœe</i>)..... | X X | X X | X X | X X | X X | X X | X X |
| 24. <i>Vanessa</i> | X X | X X | X X | X X | X X | X X | X X |
| 25. <i>Hyparitia</i> | X X | X X | X X | X X | X X | X X | X X |
| 26. <i>Prees</i> (<i>Junonia</i>)..... | X X | X X | X X | X X | X X | X X | X X |
| 27. <i>Anartia</i> | X X | X X | X X | X X | X X | X X | X X |
| 28. <i>Metamorpha</i> (<i>Victorina</i>)..... | X X | X X | X X | X X | X X | X X | X X |
| 29. <i>Athene</i> (<i>Tinætes</i>)..... | X X | X X | X X | X X | X X | X X | X X |
| 30. <i>Hypolimnas</i> | X X | X X | X X | X X | X X | X X | X X |
| 31. <i>Historis</i> | X X | X X | X X | X X | X X | X X | X X |
| 32. <i>Coela</i> (<i>Historis</i>)..... | X X | X X | X X | X X | X X | X X | X X |
| 33. <i>Colobura</i> (<i>Gynaecta</i>)..... | X X | X X | X X | X X | X X | X X | X X |
| 34. <i>Lucinia</i> | X | X X | X X | X X | X X | X X | X X |
| 35. <i>Eunice</i> | X | X X | X X | X X | X X | X X | X X |
| 36. <i>Dynamine</i> | | X X | X X | X X | X X | X X | X X |
| 37. <i>Cystineura</i> | | X X | X X | X X | X X | X X | X X |
| 38. <i>Didoris</i> | X X | X X | X X | X X | X X | X X | X X |
| 39. <i>Ageronia</i> | X X | X X | X X | X X | X X | X X | X X |
| 40. <i>Myscelia</i> | X | X X | X X | X X | X X | X X | X X |
| 41. <i>Adelpha</i> (<i>Heterochroa</i>)..... | X | X X | X X | X X | X X | X X | X X |
| 42. <i>Doracopa</i> | X X | X X | X X | X X | X X | X X | X X |
| 43. <i>Asterocampa</i> (<i>Apatura</i>)..... | X X | X X | X X | X X | X X | X X | X X |
| 44. <i>Prepona</i> | X X | X X | X X | X X | X X | X X | X X |
| 45. <i>Siderone</i> | X X | X X | X X | X X | X X | X X | X X |
| 46. <i>Anaea</i> | X X | X X | X X | X X | X X | X X | X X |

Distribution of Antillean Genera of Pieridae, Danaeidae and Nymphalidae.

(4) By wind drift or air currents. I consider this the least important, taking in consideration the geographical position of the Island.

LAND MIGRATION

I believe, as do many other investigators, that the greatest percentage of our insect fauna came to us by land migration little by little from west to east. Since the beginning of the Paleocene, or perhaps a little earlier, somewhere at the end of the Cretaceous, our Island was supposed to be covered with vegetation, altho there is no evidence from Cretaceous formations concerning the nature of this early flora. However, several deposits of our fossil flora were discovered during the years 1915 to 1926, all of them being identified by Mr. Arthur Hollick (1928). This early flora has been said to have been in existence sometime during the lower Miocene to the upper Eocene. If this is true, undoubtedly by that time the Island was entirely covered by large forests in their primeval stages. Of course, there is no reason to doubt that forests existed in the Island long before the lower Eocene; perhaps they started just at the end of the Cretaceous. It is also to be taken into consideration that the Island has been emergent since its first uplift during the late Cretaceous. It had only slight submergences afterwards but its main range of mountains continued to the present to stay above the surface of the seas. Taking in consideration that the known geologic history of Puerto Rico really started sometime during the middle of the Cretaceous, this will serve as a starting point to trace the migrations of fauna from Central America to Antillea. During the largest part of the Mesozoic era, Honduras and Nicaragua were probably connected with the Greater Antilles (including Puerto Rico). Of course, the effect of the faunal migrations during those ages should not be taken into consideration, because most of it disappeared during the great inundations of the Antillean Revolution, which ended the Mesozoic. Right at the end of the Mesozoic, Antillea was a huge land mass again connected to Central America by means of the Nicaraguan Banks. This connection lasted all through the early Eocene, early Oligocene and early Pliocene. During all these millions of years fauna and flora were constantly flowing from west to east by way of Jamaica, Hispaniola to Puerto Rico and the Virgin Islands. Puerto Rico kept its connections with Hispaniola continuously from its emergence during the middle Cretaceous up to late Pliocene times, about 4 or 5 millions years ago, roughly speaking. A little after, the connections between Puerto Rico and the Virgin Islands were broken, and it has been so up to the present time. Most biogeographers believe that Hispaniola and Jamaica were the main centers of dispersion of the Antillean fauna and flora.

When we compare the small size of our Island and study its flora and fauna, we must come to the conclusion that we have an extremely large number of species both in insects and plants. Of course, in modern times, it would be rather difficult to judge this statement. How many hundreds of species have disappeared from this Island, due to the environmental changes produced artificially by man? Nobody knows so far and probably nobody ever will know the answer. Long before naturalists began to study the insect fauna in this Island, man was already changing the environmental conditions for insect life by clearing of lands, by the destruction of our forests, particularly those on the hillsides. What became of those insect species which used to dwell in the semi-darkness of a low tropical forest? Were they all extinguished, long before scientists started their collections in Puerto Rico?

Why do we not have in Puerto Rico this species or this group of insects represented in our fauna, if they are so abundant in South America, Central America and other of the West Indian islands?

Dr. Osborn (1932) specifically cites the case of the genus *Tomaspis* of the Cercopidae, where he points to the fact that the number of species in the genus is reduced in number in the Greater Antilles from west to east, until it comes to Puerto Rico where not a single one has been recorded. This question is as difficult to answer and as puzzling as the following. Why is it that *Phyllophaga portoricensis* (Smyth) and *P. vandinei* (Smyth), two of our most common May-beetles, each of which lives in its own section of the island of Puerto Rico, the species *portoricensis* with a limited distribution in the eastern two-thirds of the Island and *vandinei* on the rest of the western part do not intermingle? Yet this is on the same island and more or less under the same ecological conditions. The recent importations of parasites to Puerto Rico, has taught us many strange things about insect behavior.

Why is it that some insect parasites are introduced into Puerto Rico from tropical regions of the World, like Brazil, Trinidad Venezuela, etc., and behave as if they were in their native country? On the other hand, others do not. They might subsist for a few months and then disappear never to be recovered again.

There are yet, many strange things in insect behavior which science has to solve and it is going to be a very hard task. When these questions are answered, then we will be in a position to understand certain puzzling problems of our past insect life.

Gleason & Cook (1927) in their discussion of the origin of our insular flora and its evolution bring out the following points, which can be applied to the origin and evolution of our insect fauna. They say (pages 14-15):

If the various possibilities of migration and evolution are collated, it

will be seen that the species of Porto Rico may be divided into several different categories:

A. Species common to Puerto Rico and other parts of the world.

1. Originating elsewhere by evolution and reaching Puerto Rico by immigration.
2. Originating in Puerto Rico by evolution and reaching other lands by emigration.
3. Originating both in Puerto Rico and in other lands by evolution from a common ancestral stock.

B. Species endemic to Puerto Rico.

4. Originating elsewhere by evolution, reaching Puerto Rico by immigration and becoming extinct in their original habitats.
5. Originating in Puerto Rico and not at present colonized on other lands by emigration.

As stated before, the trend of migration was from west to east, Puerto Rico and the Virgin Islands being the last ones to receive the current of migrations. What were the barriers that stopped in part the greater migration of insects to Puerto Rico and the Virgin Islands? Such factors as migrating against the trade winds, meeting with high mountains on their travel to the east, perhaps differences in rainfall, humidity and temperatures might be considered.

The Antillean trade winds all come from the east or northeast. If this has been the situation since early geologic times when the fauna started to be distributed on the Antilles, undoubtedly it was a handicap to insect flight. It certainly did not help in the distribution of insects in a west to east direction. Of course, a million years ago by the beginning of the Pleistocene, glaciation took place in other parts of the world. What effect this sudden cooling of the earth's surface had in the wind currents of the Antilles is not known, but by that time the form and shape of the land mass formerly known as Antillea was changed and the islands appeared more or less as they are today. Any change which might have taken place in wind drift during the Glacial epochs might only affect the drifting of insects from island to island across the seas.

Supposing that during the beginning of the Pleistocene we had hundreds of more species than the ones we have now in Puerto Rico and supposing our insect fauna was as large as that of Hispaniola or Jamaica, what effect had the sudden changes of temperatures during the glaciation in the insect fauna of the Antilles? Did it extinguish forever more species in Puerto Rico than in Hispaniola, Jamaica or Cuba? Questions like these might give a clue to the inquisitive tendencies of scientists to account for our poverty in insect fauna, not only in Puerto Rico, but in the Antilles in general.

MIGRATORY HABITS

Some species of insects, especially butterflies, show migratory habits. This may account for the homogeneous distribution of some species of butterflies throughout the Antilles. Many species of butterflies as well as moths are very strong fliers. The islands of the Greater Antilles as well as those of the Lesser are fairly close, so most of these strong fliers could possibly pass from island to island by means of their flight, others by their power of flight plus their migratory instincts.

ACTIVITIES OF MAN

Long before the coming of white men to the New World, the Caribs were known to make frequent trips from one island to another in the Caribbean region. In this way they introduced scores of plants and with them undoubtedly many insects. Then came the arrival of the Europeans four centuries ago and the subsequent introduction of plants and trees from the Old World to the Antilles. Moreover, interisland commerce was fostered on a more or less small scale. All these human activities helped in the introduction of new insect pests from one place to another. Even in modern times we have noticed the recent accidental introduction of insect species which were never recorded from Puerto Rico until the last few years, but known to be common in the other islands of the Antilles. This is particularly obvious when we take into consideration the large amount of wood and tree trunks, which have been imported recently from Hispaniola to Puerto Rico. Undoubtedly this has helped to increase our forest insect fauna somewhat.

The activities of man, on the other hand have contributed in a certain way in the destruction of our insect fauna. Many insect species which were very common fifty years ago are so rare now as to be considered nearly extinguished. The complete destruction of our lowland forests as well as the partial deforestation in our mountains has undoubtedly brought a tremendous upset in the ecological conditions for insect life. This is particularly noticeable in those insect species which were the sole inhabitants of our lowland and hillside forests.

Why is it that such species as *Kricogonia castalia* (Fabr.), *Anteos maerula* (Fabr.) and *Acolastus amyntas* (Fabr.) are so rare? There is only one reason to account for their nearly complete extermination in the Island: the destruction of their original host plants or trees. Other specific cases could be cited in almost every group of insects and all tending towards one main clue: the changing of environmental conditions by man since he settled the Island four centuries ago.

How many insect species that possibly inhabited the island of Puerto Rico had already disappeared and never were recorded by early scientists?

We will never be able to tell. The same can not be said about Hispaniola, or Cuba, where there are still thousands of acres of forests more or less in the virgin state, which man has not yet had the chance to destroy or change in any way.

AIR CURRENTS

As Osborn says (1932) the continuous trade winds from east to west and the westward movements of storms through the West Indies can easily be conceived as a powerful agent in preventing the eastward movement of insects and also of carrying such insects as are present on the eastern islands to those of the west.

The air currents have prevented the eastward movement of insects but in part have helped a little to the introduction of perhaps a small percentage of our insect forms which have a South American origin. I believe, as Petrunkevitch says (1928) referring to the spider fauna, that the last traces of the spider fauna of the Lesser Antilles which is purely South American in origin is found admixed in Puerto Rico with the one that came from the west. The same probably is true with some of our insects which supposedly were introduced from the Lesser Antilles by air currents. Of course the greater section of the Lesser Antilles is too far south of Puerto Rico and thus the trade winds coming from those islands never have a chance to touch the Island directly. Only during cyclonic disturbance are the wind currents disturbed in the Caribbean. It is very possible that a cyclonic disturbance starting in these islands could travel hundreds of miles in a northwestern direction or on a nearly northern direction and then change its course towards the west to hit our Island.

We know of a particular instance where a species appeared in Puerto Rico soon after a hurricane: the wasp, *Polistes major* Beauvois. Never recorded from Puerto Rico, but yet present on the islands east of Puerto Rico, it was first noted after the San Felipe hurricane of the 13th. of September 1928. At present this species is almost as common as our native species, *Polistes crinitus* (Felton).

How many insects have been introduced in this way from the islands of the Lesser Antilles is a problem yet to solve.

In closing this discussion the writer presents the following conclusions:

- (1) That our insect fauna is purely of Central and South American affinities.
- (2) That this fauna came to Puerto Rico by land migrations from Central America to Jamaica, Hispaniola and Puerto Rico.
- (3) In a smaller degree by the migratory habits of certain groups of insects; by the activities of man and in a lesser degree by air currents.
- (4) The endemic species originated by means of evolution in the Island,

or else originated elsewhere by evolution reaching Puerto Rico by immigration and becoming extinct in their original habitats.

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Acnistus

Acnistus arborescens (L.) Schlecht.

(Solanaceae)

DISTRIBUTION: A shrub or a small tree, growing in woods and thickets, in wet or moist sections in the central districts of Puerto Rico, ascending to higher elevations. Also recorded from St. Thomas, Jamaica, Saba, Guadeloupe, from Trinidad to Montserrat and continental tropical America.

COMMON NAMES: "Gallinero," "Galán arbóreo" and "Palo de gallina."

INSECT RECORDS

Insects Affecting the Leaves

COLEOPTERA

Diaprepes abbreviatus (Linnaeus)

(Curculionidae) Adults feeding on the leaves of a tree (IB:298) Guánica, 1913.

Acrocomia

Acrocomia media Cook

(Arecaceae)

DISTRIBUTION: A palm, growing on plains and hillsides, at lower and middle elevations in moist and dry districts of Puerto Rico, rare or absent in the wet eastern parts of the island. Recorded also from St. Thomas, Jamaica, Hispaniola, St. Kitts, Antigua, Guadeloupe, Dominica, Martinique, Grenada and Trinidad. (In Britton & Wilson, Vol. 5, p. 115 as: *Acrocomia aculeata* (Jacq.) Lodd.)

USES: Its wood is used in the manufacturing of walking sticks.

COMMON NAMES: "Corozo," "Palma de corozo" and "Grugrú."

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

(Coccidae)

Ischnaspis longirostris (Signoret)

Attacking leaves of palms, at Río Piedras (IB:143), 1914.

Pinnaspis buxi (Bouché)

Attacking leaves of palms, at Río Piedras (IB:136), 1914.

Agati

Agati grandiflora (L.) Desv.

(Fabaceae)

DISTRIBUTION: A tree, growing along roadsides and in thickets, spontaneous after cultivation in Puerto Rico, Vieques, St. Croix, St. Thomas and St. Jan. Native to tropical Asia.

USES: The white, soft, light and not durable wood is used for poles, posts of native houses and firewood. Parts of the tree are used medicinally and as food.

COMMON NAMES: "Gallito," "Cresta de gallo," "Báculo" and "Sesbán."

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

(Cicadellidae)

Agallia albidula Uhler

Causing considerable injury to the foliage (IB:75), 1921.

Cicadella sirena Stål

(IB:79), 1921.

Empoasca fabalis DeLong & Wolcott

All stages abundant, attacking the foliage and causing yellowing and shedding of leaves. (IB:91), 1913.

COLEOPTERA

Diaprepes abbreviatus (Linnaeus)

(Curculionidae) Adults feeding on the foliage (IB:298), 1913.

LEPIDOPTERA

(Phalaenidae)

Anticarsia gemmatilis (Hübner)Caterpillars feeding on the foliage (IB:437), 1916. (Recorded as *Thermesia gemmatilis* Hüb.)*Alauca flavicapilla* (Möschler)

Caterpillar on host tree (IB:437), 1912.

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) A tree about 25 ft. high, with nest and tunnels on the trunk. Manatí, Aug. 30, 1941. (LFM.)

Agati

COLEOPTERA

Chrysobothris megacephala Castelnau & Gory

(Buprestidae) Larvae obtained from trunk of tree, reared to adults by Mr. E. G. Smyth. (IB:215), Guánica, July 1931.

Albizia

Albizia lebbbeck (L.) Benth.

(Mimosaceae)

DISTRIBUTION: A tree, growing along roadsides, in fields and on hillsides, in Puerto Rico, Culebra, Vieques, St. Croix and St. Thomas. A native of the Old World tropics, widely naturalized in the West Indies.

USES: Locally it is mainly used for shade and ornamental purposes. The dark brown wood is hard, strong and durable. Elsewhere it is used for house and boat construction, furniture, sugar-cane crushers, etc. Its gum, is employed as an adulterant of gum arabic in calico printing.

COMMON NAMES: "Amor platónico," "Acacia amarilla," "Cassia amarilla," Thibet tree, Women's tongue, East Indian walnut and Siris tree.

INSECT RECORDS

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Nest on tree at Lares (SIB:43), 1940. Also several large trees with nests and tunnels on the trunks, at Santurce, Sept. 14, 1940. (LFM.)

COLEOPTERA

Chalcolepidius silbermanni Chevrolat

(Elateridae) Reared from the trunk of a dead tree, infested with Cerambycid beetles larvae, at Ponce (SIB:88), 1939. (LFM.)

Chlorida festiva (Linnaeus)

(Cerambycidae) Tree completely bored by larvae and adults. One dead adult collected at entrance of bore. Ponce, Aug. 23, 1940. (LFM.)

Albizia

Elaphidion irroratum (Linnaeus)

(Cerambycidae) Reared from the trunk of a dead tree, boring in trunk, at Ponce (SIB:99), 1939. (LFM.)

Elaphidion spinicorne (Drury)

Reared from the trunk of a dead tree, at Ponce, (SIB:99), 1939. (LFM.)

Xyleborus affinis Eichhoff

(Scolytidae) Apparently killing a previously sound and healthy tree. Rio Piedras, Jan. 5, 1945 (F. Seín).

Insects Affecting the Leaves

COLEOPTERA

Diaprepes abbreviatus (Linnaeus)

(Curculionidae) Adults defoliating trees at Río Blanco, Naguabo, altitude 250 ft., May 27, 1941. (LFM.)

Albizia procera (Willd.) Benth.

(Mimosaceae)

DISTRIBUTION: This tree is native to southern Asia and has only been recently introduced into Puerto Rico. It is planted along roadsides and in gardens. Also recorded from St. Thomas.

USES: The brown heartwood is used in India for posts, agricultural implements and other types of construction.

COMMON NAMES: "Albizia" and White siris.

INSECT RECORDS

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Tunnels on trunk of a tree, at Río Piedras, Dec. 1940. (LFM.)

Albizia

HYMENOPTERA

Xylocopa brasilianorum Linnaeus

(Xylocopidae) One adult collected in bore, in a trunk of a partly dead tree, at Santurce, Feb. 6, 1941. (LFM.)

Alchornea

Alchornea latifolia Sw.

(Euphorbiaceae)

DISTRIBUTION: A tree, growing in forests and on wooded hills in wet or moist districts of Puerto Rico, ascending at least 700 meters. Also recorded from Tortola, Jamaica, Cuba, Hispaniola, Mexico and Central America.

COMMON NAMES: "Achiotillo," "Palo de cotorra" and "Jobillo."

INSECT RECORDS

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Tunnels on trunk of tree, at Luquillo, 1941. (LFM.)

Aleurites

Aleurites moluccana (L.) Willd.

(Euphorbiaceae)

DISTRIBUTION: A tree, native to the East Indies. Introduced into Puerto Rico and afterwards widely planted on the island. Also recorded from St. Croix and St. Thomas.

Aleurites

USES: The nuts produced by this tree, yield a valuable oil. The tree is planted along roadsides and gardens.

COMMON NAMES: "Nuez," "Nuez de India," Otaheite walnut, Candle-nut, Candleberry tree and Indian walnut.

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

Aspidiotus cyanophylli Signoret
(Coccidae) Listed (IB:137).

Amomis

Amomis caryophyllata (Jacq.) Krug & Urban
(Myrtaceae)

DISTRIBUTION: A tree, growing on hillsides and in forests, at lower and middle elevations in moist districts of Puerto Rico. Recorded also from Vieques, St. Croix, St. Jan, Tortola, Cuba, Hispaniola, St. Martin to Trinidad and northern South America.

USES: The leaves have the taste and odor of lemon, from which an essential oil or bay oil is obtained by distillation. The dark wood is strong, very hard and durable. It is utilized for rollers, sills, posts and to some extent in carpentry.

COMMON NAMES: "Malagueta," "Ausú," "Guayavita," "Limoncillo," "Pimienta malagueta," Wild cinnamon, Bayberry tree and Bay rum tree.

INSECT RECORDS

Insects Affecting the Leaves

COLEOPTERA

Diaprepes abbreviatus (Linnaeus)
(Curculionidae) Adults feeding on young trees, about a year and a half old, at Río Piedras, altitude 200 ft., June 1, 1941. (LFM.)

Amyris*Amyris elemifera* L.

(Rutaceae)

DISTRIBUTION: A shrub or a tree, growing in thickets and on hillsides at low elevations, most abundant in the dry southern districts of Puerto Rico. Also recorded from Mona, Desecheo, Icaos, Culebra, Vieques, St. Croix, St. Jan, St. Thomas, Anegada, Florida, Cuba, Jamaica, Hispaniola and Central America.

USES: The yellow, hard, strong and durable wood, is used for furniture. People in the country use the wood for making torches, for fishing at nights and also for lighting their huts.

COMMON NAMES: "Tea," "Palo de tea," "Cuabilla" and Torchwood.

INSECT RECORDS

Insects Affecting the Leaves

COLEOPTERA

Artipus monae Wolcott

(Curculionidae) Observed adults feeding on the tender leaves, Mona Island, April 5, 1944. (GNW.)

Insects Affecting the Twigs

HOMOPTERA

Pseudoparlatoria parlatorioides (Comstock)

(Coccidae) At Dorado, (SIB:62).

Insects Affecting the Trunk

ISOPTERA

Kalotermes (K.) *snyderi* Light

(Kalotermitidae) Trunk of tree infested at Mona Island. (Martorell, 1941, p. 81.)

Anacardium*Anacardium occidentale* L.

(Anacardiaceae)

DISTRIBUTION: A tree, growing on hillsides and plains at lower elevations in moist and dry districts of Puerto Rico. Also recorded from Cule-

Anacardium

bra, Vieques, St. Croix, St. Thomas, St. Jan, Tortola, Virgin Gorda, Jamaica, Cuba, Hispaniola, St. Martin to Trinidad and continental tropical America.

USES: The tree is often planted for its fruits and nuts.

COMMON NAMES: "Pajuil," "Cajuil," "Acajú," "Marañón," Cashew nut or Cashew tree.

INSECT RECORDS

Insects Affecting the Fruits

DIPTERA

Anastrepha mombinpraeoptans Seín

(Tephritidae) Reared from fruits, at Dorado, (SIB:119).

Insects Affecting the Leaves

THYSANOPTERA

Selenothrips rubrocinctus (Giard)

(Thripidae) On cashew (IB:65). Heavy infestation, causing yellowing of leaves, on several trees, at Yabucoa, Feb. 1939. (LFM.)

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) costalis (Holmgren)

(Termitidae) Large tree killed by attack of termites, on which the nest rested. All the upper branches were covered with tunnels, except where the bark had fallen away, and the only sign of life was watershoots coming up from the base. Vega Baja beach, March 14, 1941. (GNW.)

Andira

Andira jamaicensis (W. Wright) Urban

(Fabaceae)

DISTRIBUTION: A tree, growing in woodlands, on hillsides and river banks, ascending to higher elevations, in Puerto Rico. Also recorded from

Andira

Vieques, St. Croix, St. Thomas, St. Jan, Tortola, Jamaica, Cuba, Hispaniola, from St. Kitts to Trinidad and continental tropical America. (In Britton & Wilson, Vol. 5, p. 409 as: *Andira inermis* H.B.K.)

USES: The wood is used in carpentry and construction, for canes and handles, piles and boats. It is reddish yellow, hard, strong and durable, with a specific gravity of about 0.8.

COMMON NAMES: "Moca," "Moca blanca," Angelin tree, Bastard mahogany, Cabbage tree and Bastard cabbage tree.

INSECT RECORDS**Insects Affecting the Leaves****ORTHOPTERA****Microcentrum triangulatum** Brunner

(Tettigonidae) Nymphs and adults, feeding voraciously on leaves of trees, at Cayey, 1940. (LFM.)

COLEOPTERA**Phyllophaga vandinei** (Smyth)

(Scarabaeidae) Adults defoliating trees, at San Sebastián (SIB:96), 1940 (LFM.) Also (IB:249) 1923.

Exophthalmodes roseipes (Chevrolat)

(Curculionidae) At Algarrobo (IB:293), 1932. Presumably feeding on the foliage. (Listed as *Prepodes roseipes* Chevrolat.)

Diaprepes abbreviatus (Linnaeus)

(Curculionidae) At Ponce, Patillas and Isabela (IB:298), 1931. Heavy defoliation of trees, at Santa Isabel, Oct. 15, 1940; also at Quebradillas, May 22, 1941. (LFM.)

LEPIDOPTERA**Phostria originalis** (Lederer)

(Pyraustidae) Caterpillars on host trees, at Aibonito and Barranquitas, causing heavy defoliation. (SIB:130), 1936. An outbreak of the same insect, at Cayey, on the Cayey-Salinas road, during February and March of 1940, altitude 2500 ft. (LFM.)

Megalopyge krugii (Dewitz)

(Megalopygidae) At Cayey (SIB:138), 1940. Outbreak of caterpillars attacking many trees, causing complete defoliation at Ponce, Sept. 19, 1940. On April 17, 1942 on the Ponce-Sta. Isabel road, near Ponce, about 20 trees in a row, were completely defoliated by tremendous numbers of larvae. (LFM.)

Andira

Insects Affecting the Twigs

HOMOPTERA**Saissetia oleae** (Bernard)

(Coccidae) Very heavy infestation on twigs and smaller branches. Terminals dead and scales so thick that the twigs looked brown. Patillas, Aug. 27, 1940. (LFM.)

Insects Affecting the Trunk

ISOPTERA**Nasutitermes** (N.) *costalis* (Holmgren)

(Termitidae) Tunnels and nests in small and large trees, along roadsides at Ponce, Salinas, Santa Isabel, Guayama, Cayey, Sept. 1940. Large nest on trunk of tree, at El Verde, Río Grande, Aug. 1941. (LFM.)

COLEOPTERA**Synchita granulata** Say

(Colydiidae) Few specimens collected under the bark of a living tree, near Ponce, at El Pastillo. What appeared to be the larva of this species, was also present. It seems possible that they prey on the weevil larvae found in the bark of the tree. May, 1940. (Notes by D. DeLeón.)

Platypus rugulosus Chapuis

(Platygodidae) Adults fairly common in early May, boring into broken limbs of trees, at Ponce, May 1940. (D. DeLeón.)

Xyleborus confusus Eichhoff

(Scolytidae) A single adult collected from branch of host tree, at El Pastillo, near Ponce, May, 1940. (D. DeLeón.)

Annona*Annona diversifolia* Safford

(Annonaceae)

DISTRIBUTION: Introduced and planted at the Río Piedras Agricultural Experiment Station.

Annona

USES: The tree is planted for its fruit.

COMMON NAMES: "Anona blanca."

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

Empoasca minuenda Ball

(Cicadellidae) Listed in (IB:91).

Annona glabra L.

(Annonaceae)

DISTRIBUTION: A tree, growing in coastal swamps, along the borders of marshes and on stream banks, at low elevations in Puerto Rico. Also recorded from Vieques, St. Thomas, St. Jan, St. Croix, Virgin Gorda, Tortola, Florida, Cuba, Jamaica, Hispaniola, Panama, South America, west coast of Africa and Galapagos Is.

USES: The brownish wood is soft, weak and not durable. It is very light in weight, with a specific gravity of only 0.5; thus it is mainly used for floats, rafts and stoppers.

COMMON NAMES: "Cayur," "Corazón cimarrón," Cork wood, Alligator apple, Pond apple, Monkey apple, Mangrove annona and Dog apple.

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

Aspidiotus destructor Signoret

(Coccidae) At Algarrobo (IB:138), 1914. Presumably on the leaves of tree. At Punta Picúa, Mameyes, infesting undersides of leaves, causing yellow mottling. Sept. 27, 1944. (GNW. & LFM.)

LEPIDOPTERA

Gonodonta maria Guené

(Phalaenidae) The caterpillar feeds on this tree, according to Möschler, 1890, p. 183.

Annona*Annona muricata* L.

(Annonaceae)

DISTRIBUTION: A tree, growing in thickets and on hillsides, in Puerto Rico. Also recorded from Vieques, St. Thomas, St. Croix, St. Jan, Virgin Gorda and Tortola.

USES: The soft, light, brown and not durable wood is of little use except for fuel. The tree is widely cultivated in tropical regions for its fruit, which can be eaten raw when ripe or used to make a cooling drink. An infusion of the leaves is used as a remedy for dysentery.

COMMON NAMES: "Guanábana" and Sour sop.

INSECT RECORDS

Insects Affecting the Fruits

HYMENOPTERA**Bephrata cubensis** Ashmead

(Eurytomidae) Reared from the fruits, the larvae attack the seeds, destroying a large percentage of them. (IB:534), 1925. (LFM.)

Insects Affecting the Leaves

HEMIPTERA**Corythucha gossypii** (Fabricius)

(Tingitidae) At Maricao, Isabela, Aguada, Cabo Rojo and Río Piedras, (IB:162). In altitudes from sea level to more than 2,000 ft. (LFM.)

LEPIDOPTERA**Cocytius antaeus antaeus** (Drury)

(Sphingidae) According to Möschler, p. 111, the caterpillar of this moth, breeds on *Annona muricata* L. (IB:445).

Protambulyx strigilis (Linnaeus)

(Sphingidae) The larvae (? of this species) on tree (IB:447), 1919.

Insects Affecting the Leaves and Twigs

HOMOPTERA

(Coccidae)

Asterolecanium pustulans (Cockerell)

Recorded by Mr. A. Busck, on tree, Feb. 21, 1889 at San Juan. (IB:122).

Annona

Pseudococcus nipae (Maskell)

At Corozal, Ponce, Añasco, Mayagüez and Maricao (IB:126). Heavy infestation on leaves, twigs and sometimes on fruits, at Yabucoa and Santurce, June 1941. (LFM.)

Saissetia hemisphaerica (Targioni)

At Maricao (IB:131-2):

Saissetia oleae (Bernard)

At Maricao (IB:133). Trees heavily infested at Santurce and Yabucoa, June 1941. (LFM.)

Pinnaspis minor (Maskell)

At Ponce (IB:137). Listed as *Hemichionaspis minor* Maskell.

Selenaspidus articulatus (Morgan)

At Río Piedras (IB:138). Listed as *Pseudaonidia articulatus* Morgan

Chrysomphalus aonidum (Linnaeus)

Listed in (IB:139).

Aonidiella aurantii (Maskell)

Collected by Mr. A. Busck at Ponce and San Juan on Feb. and January 1899 (IB:138).

Chrysomphalus personatus (Comstock)

Collected by Mr. A. Busck, at San Juan, Feb. 5, 1899 (IB:140).

Annona reticulata L.

(Annonaceae)

DISTRIBUTION: A small tree, growing along roadsides, in woods, pastures and on hillsides, in Puerto Rico. Recorded also from St. Thomas, St. Croix, St. Jan, Cuba, Jamaica and Hispaniola.

USES: The tree is widely cultivated for its fruit in tropical regions. The brownish wood is light and weak; the bark contains a strong fiber.

COMMON NAMES: "Corazón," Custard apple and Bullock's heart.

Annona

INSECT RECORDS

Insects Affecting the Fruits

DIPTERA

Anastrepha unipuncta Seín

(Tephritidae) Reared from the fruit (IB:378).

HYMENOPTERA

Bephrata cubensis Ashmead

(Eurytomidae) Reared from fruits, the larvae attacking the seeds, at Villalba (IB:534).

HOMOPTERA

Pseudococcus nipae (Maskell)

(Coccidae) Heavy infestation, nearly covering the whole fruit, at Cayey and Guayama; also at San Sebastián. Not so abundant at higher elevations. Feb. 1941. (LFM.)

Insects Affecting the Leaves and Twigs

HOMOPTERA

(Coccidae)

Asterolecanium pustulans (Cockerell)

Listed in (IB:122).

Pseudococcus nipae (Maskell)

Listed in (IB:126), 1914.

Ceroplastes floridensis Comstock

Listed in (IB:129). Collected by Mr. A. Busck, in 1889.

Saissetia hemisphaerica (Targioni)

At Mayagüez (IB:132). Few scales observed on twigs of tree at Lares, Dec. 11, 1941. (LFM.)

Pinnaspis minor (Maskell)

Listed as *Hemichthonaspis minor* Maskell, in (IB:137), 1915.

Selenaspis articulatus (Morgan)

Listed as *Pseudaonidia articulatus* Morgan, in (IB:139).

Ardisia

Ardisia obovata Desv.

(Myrsinaceae)

DISTRIBUTION: A shrub, growing in woodlands, forests, thickets and on river banks, at lower and middle elevations, in Puerto Rico. Also recorded from Vieques, St. Jan, St. Thomas, St. Croix, Tortola, Virgin Gorda, Bahamas, from Saba to St. Lucia. (In Britton & Wilson, Vol. 6, p. 57 as: *Icacorea guadalupensis* (Duch.) Britton.)

USES: Its wood is light reddish brown, hard and heavy. It has been used for furniture.

COMMON NAME: "Mameyuelo."

INSECT RECORDS

Insects Affecting the Leaves and Twigs

HOMOPTERA

Saissetia hemisphaerica (Targioni)

(Coccidae) Infesting branches and leaves, at Guajataca Gorge, near Quebradillas, Nov. 24, 1940. (LFM.)

Areca

Areca catechu L.

(Arecaceae)

DISTRIBUTION: A palm, introduced and planted in Puerto Rico and St. Thomas. Native of Asia.

USES: Locally of no use. In its native country the nuts or seeds are used for medicinal purposes, tooth paste and powder and as a vermifuge for dogs.

COMMON NAMES: "Nuez de areca," "Palma de indio," Betel nut, Betel palm and Areca nut.

INSECT RECORDS

Insects Affecting the Leaves

Areca

LEPIDOPTERA

Atrytone vitellius (Fabricius)

(Hesperiidae) Male and female reared from larvae feeding on leaves of palm (SIB:124, 1938). Listed as *Choranthus hübnéri* Plotz, in synonymy.

COLEOPTERA

Hypolampus inornata Jacoby

(Chrysomelidae) at Adjuntas, (IB:275). Perhaps feeding on the foliage.

Artocarpus

Artocarpus communis Forst.

(Moraceae)

DISTRIBUTION: A tree, growing in valleys and on hillsides, spontaneous after cultivation in Puerto Rico, St. Thomas, St. Jan and St. Croix. Native to the southern islands of the Pacific Ocean.

USES: Widely cultivated for its fruit and seeds in all tropical regions; some races seedless. The strong yellowish wood, with a specific gravity of about 0.49, is used for furniture and in construction.

COMMON NAMES: "Pan," "Palo de pan," "Mapén," "Pana forastera," "Panapén," "Pana de pepita" and Breadfruit.

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

Coccus mangiferae (Green)

(Coccidae) Listed in (IB:131).

Corythucha gossypii (Fabricius)

(Tingitidae) Listed in (IB:162), 1933.

Insects Affecting the Trunk

Artocarpus

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) A very large tree with tunnels around the trunk and branches, at Aguadilla, Oct. 4, 1940. Also at Guajataca, at low altitude and at Aguas Buenas, at 1,000 ft. high, May and August 1941. (LFM.)

COLEOPTERA

Pycnarthrum sp.

(Scolytidae) Probably an undescribed species, identified by Dr. Blackman. Tremendous infestation, on the trunk of a very recently cut tree, at Guajataca Gorge, near Quebradillas. Beetles boring and breeding in the bark. Altitude 20 ft., Nov. 17, 1940. (LFM.)

Avicennia

Avicennia nitida Jacq.

(Verbenaceae)

DISTRIBUTION: A tree, growing in lagoons and costal swamps, in Puerto Rico. Recorded also from Vieques, Culebras, St. Croix, St. Thomas, St. Jan, Tortola, from Florida to Texas, Bermuda, Cuba, Jamaica, Hispaniola, continental tropical America and the Old World tropics.

USES: The dark brown wood is very hard and durable. It is locally used for foundations, under pinning for houses, fence posts, drains, fuel and charcoal.

COMMON NAMES: "Chifle de vaca," "Mangle bobo," "Mangle blanco," Black mangrove, Olive mangrove and Salt pond.

INSECT RECORDS

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Nests and tunnels common on the trunk of trees, at Camp Piñones, Boca de Cangrejos, Sept. 15, 1940. Tunnels observed on the trunk of trees, at El Pastillo, near Juana Díaz, June 1941. (LFM.)

Bambos

Bambos vulgaris Schrad.

(Poaceae)

DISTRIBUTION: A tree-like woody grass, growing in moist grounds and along water courses, at lower elevations, in Puerto Rico, St. Croix and St. Thomas. Widely naturalized in the West Indies and in continental tropical America, from the Old World tropics.

USES: Employed as windbreaks in citrus plantations, although not highly recommended for this use; fence posts; when dry, the wood is polished and varnished and is used in the construction of fancy or artistic articles, such as frames, pin holders, boats and other ornamental pieces.

COMMON NAMES: "Bambú," "Bambúa" and Bamboo.

INSECT RECORDS

Insects Affecting the Leaves and Twigs

HOMOPTERA

(Coccidae)

Asterolecanium bambusae (Boisduval)

At Bayamón and Utuado, collected by Mr. A. Busck, Feb. 1899. At Villalba, listed (SIB:57), 1940. Also at Trujillo Alto, Cidra, Manatí, Maricao and Mayaguez, listed (IB:122). The scale insect very abundant on leaves and twigs and in culms of host plant, at El Yunque Mts., 1,800 ft. altitude, 1940 and also at the mountains north of Villalba, 1,400 ft. in altitude, 1941. (LFM.)

Asterolecanium longum (Green)

On leaves, listed (IB:122), 1914.

Asterolecanium miliaris miliaris (Boisduval)

On three species of bamboo, especially on *Bambos vulgaris* Schrad., at Mayaguez, listed (SIB:57).

Asterolecanium pustulans (Cockerell)

On culms and larger branches of bamboo, listed (SIB:57). (Bartlett.)

Antonina bambusae (Maskell)

At Mayaguez, listed (SIB:58).

HEMIPTERA

Leptodictya bambusae Drake

(Tingitidae) From bamboo leaves at Mayaguez, collected by Mr. Van Zwualuwenburg, July 11, 1914. This species is also found in Haiti.

Bambos

COLEOPTERA

Scymnillodes cyanescens violaceus Sicard

(Coccinellidae) Feeding on scale insects, *Asterolecanium pustulans* (Cockerell), at Vega Alta, (IB:230), 1917. Also recorded by Bartlett, (SIB:92).

Egius platycephalus Mulsant

(Coccinellidae) Introduced from Cuba, predaceous on bamboo scales, listed (SIB:93).

Chilocorus cacti (Linnaeus)

(Coccinellidae) Introduced from Texas and Cuba, reared on papaya scales in Puerto Rico, released on scale-infested bamboo (SIB:93). Observed feeding on bamboo scales at Mayaguez, Arecibo and Maricao, May 1942. In the last locality mentioned, at more than 2,000 ft. altitude. (LFM.)

LEPIDOPTERA

Panoquina nero (Fabricius)

(Hesperiidae) Larvae feeding on bamboo leaves, listed (IB:411). (*Prenes nero* Fabricius.)

Perichares coridon (Fabricius)

(Hesperiidae) Larvae feeding on leaves, at Mayaguez, listed (SIB:125). (as *Perichares corydon* Fabricius)

Epitomiptera orneodalis (Guenée)

(Phalaenidae) Caterpillar feeding on leaves, at Mayaguez, listed (SIB:128).

Insects Affecting the Roots

THYSANURA

Lepisma sp.

(Lepismidae) Producing pits in the roots of trees, listed (IB:20).

Nicoletia sp.

(Lepismidae) Causing larger pits in the roots of bamboo (SIB:20).

Insects Affecting the Trunk or Culms

COLEOPTERA

Dinoderus minutus (Fabricius)

(Bostrychidae) In dry bamboo (IB:242), 1911. *Peregrinator bianulipes*, as a predator of this insect in Puerto Rico, (SIB:94). (Plank.)

Lyctus caribeanus Lesne

(Lyctidae) In stored bamboo, at Mayaguez (SIB:95).

Barringtonia

Barringtonia speciosa Forst.

(Lecythidaceae)

DISTRIBUTION: A tree, native to the East Indies, introduced and planted at the Río Piedras and Mayagüez Agricultural Experiment Stations. Also on Mona Is.

USES: The tree is chiefly planted as an ornamental.

INSECT RECORDS

Insects Affecting the Leaves

THYSANOPTERA

Heliothrips haemorrhoidalis Bouché

(Thripidae) Listed (IB:65). Feeding on the leaves.

HOMOPTERA

(Coccidae)

Pseudococcus adonidum (Linnaeus)

Listed in (IB:123), 1935; *Averrhoa carambola* Linn. as host tree. (a misidentification, it should be *B. speciosa* Forst.) Few specimens on the undersides of leaves, on large tree at Río Piedras, Oct. 31, 1941. (LFM.)

Pseudococcus nipae (Maskell)

Listed in (IB:127), 1935; *Averrhoa carambola* Linn. as host tree. (a misidentification, it should be *B. speciosa* Forst.) Very heavy infestation on the undersides of the leaves, of large tree, at Río Piedras, Oct. 7, 1940. (LFM.)

Saissetia nigra (Nietner)

On the undersides of leaves, of large tree, at Río Piedras; infestation slight. Oct. 31, 1941. (LFM.)

Aspidiotus cyanophylli Signoret

Listed (IB:137).

Aspidiotus destructor Signoret

Listed in (IB:138), 1935; *Averrhoa carambola* Linn. as host tree. (a misidentification, it should be *B. speciosa* Forst.) Very heavy infestation on the undersides of leaves, of a large tree, at Río Piedras, causing yellowing and shedding of the leaves on the lower branches. Oct. 7, 1940. Also on trees at Mona Island (SIB:61), 1939. (LFM.)

Barringtonia

COLEOPTERA

Chilocorus cacti (Linnaeus)

(Coccinellidae) Adults and larvae abundant; feeding on scale insects attacking the leaves of a large tree, at Río Piedras, Oct. 28, 1941. (LFM.) Feeding on scale insects *Aspidiotus destructor* Signoret on *Barringtonia* tree at Mona Island, April 5, 1944 (GNW & LFM.)

Bixa

Bixa orellana L.

(Bixaceae)

DISTRIBUTION: A shrub or a small tree, growing in woods, and on hill-sides, at lower elevations, in Puerto Rico, often spontaneous after planting. Recorded also from Vieques, St. Thomas, St. Croix, Jamaica, Cuba, Hispaniola, from Saba to Trinidad, Margarita and continental tropical America. Neutralized in tropical regions of the Old World.

USES: The wood is little used. A coloring matter extracted from the arillus of the seed is widely used locally for coloring rice, soup, etc., and as the "anatto" of commerce it is extensively used for coloring cheese, chocolates, butter and varnishes.

COMMON NAMES: "Achiote," "Achote," Bixa, Biji, Arnatta and Anatto.

INSECT RECORDS

Insects Affecting the Fruits or Pods

HEMIPTERA

Leptoglossus zonatus (Dallas)

(Coreidae) Attacking pods, at Adjuntas (IB:170), 1925.

Insects Affecting the Twigs

HOMOPTERA

(Coccidae)

Inglisia vitrae Cockerell

Listed (IB:130), 1914.

Bixa

Coccus acuminatus (Signoret)

At Salinas (SIB:59).

Howardia biclavis (Comstock)

Collected by Mr. A. Busck, at San Sebastián and Añasco, January, 1899. Later recorded at Bayamón (IB:135) 1912, and recently in (SIB:60).

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Four adults, apparently starting a colony in rotten twigs of tree, at Lares (IB:49) 1921. Tunnels on trunk of trees, at Santurce and Yabucoa, 1940. (LFM.)

COLEOPTERA

Apate monachus Fabricius

(Bostrychidae) An outbreak at Lares, and among other trees, this species was also attacked. Beetles boring in the trunk. (IB:244.)

Derancistrus thomae (Linnaeus)

(Cerambycidae) Larvae in rotten twig of tree, at Lares, June 14, 1921. (IB:259.)

Insects Resting on the Tree

THYSANOPTERA

Selenothrips rubrocinctus (Giard)

(Thripidae) Listed (IB:65). Presumably attacking the foliage.

HEMIPTERA

Leptoglossus stigma (Herbst)

(Coreidae) At Arecibo (IB:170), listed. Possibly doing some damage.

Buchenavia

Buchenavia capitata (Vahl) Eichl.

(Terminaliaceae)

DISTRIBUTION: A large tree, growing in woodlands and forests, in wet or moist districts, mostly at middle and higher elevations, in Puerto Rico.

Buchenavia

Also recorded from Jamaica, Cuba, Hispaniola, from Montserrat to St. Vincent and continental tropical America.

USES: The wood is satiny, hard, strong and heavy, valued for furniture and in general construction.

COMMON NAMES: "Granadillo" and Yellow sanders (Br. W. I.).

INSECT RECORDS

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) costalis (Holmgren)

(Termitidae) Nest on tree, at Las Marias (SIB:43), 1939. Also several trees, with tunnels on trunk, at the Luquillo Mts., altitude 2,000 ft., 1941. (LFM.)

Bucida

Bucida buceras L.

(Terminaliaceae)

DISTRIBUTION: A tree, growing on plains, hillsides and river banks; also in woods near the coast, at lower elevations, in Puerto Rico. Also recorded from Mona, Vieques, St. Thomas, St. Croix, St. Jan, Florida, Cuba, Hispaniola, Jamaica and Panama.

USES: The light brown or nearly white wood is used for shelves in houses, for mallets, wooden cogs and shingles. It was formerly used for knees in boat building. It is durable, hard, heavy, strong and tough, with a specific gravity of 1.04. A resin exudes from cuts in the trunk; the astringent bark has been used in tanning.

COMMON NAMES: "Ucar," "Ucar blanco," "Bucayo," Wild olive wood of Jamaica and "Bois grisgris" (Haiti).

INSECT RECORDS

Insects Affecting the Leaves

COLEOPTERA

Phyllophaga guanicana (Smyth)

(Scarabaeidae) Feeding on the leaves of trees, at Guánica, (IB:251), 1917. (E. G. Smyth.)

Bucida

Insects Affecting the Twigs

HYMENOPTERA

Myrmelachista ramulorum Wheeler

(Formicidae) In hollow twigs of host tree, listed (IB:554).

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Tunnels and nests abundant on trees at Guajataca Gorge, Ponce, Salinas, Coamo, Guayama and Guánica, 1940. (LFM.)

Nasutitermes (*Tenuirostritermes*) *wolcottii* Snyder

(Termitidae) On dead wood of tree, at Boquerón (IB:48), 1923.

COLEOPTERA

Petalium puertoricensis Fisher

(Anobiidae) Reared from log of host tree, at Guánica, April, 1940. (D. DeLeón) (LFM.)

Trichodesma sp.

(Anobiidae) Adults reared between April 22 and May 9, 1940, from logs at Guánica. (D. DeLeón) (LFM.)

Chrysobothris tranquebarica (Gmelin)

(Buprestidae) On dead tree, at Guayanilla (SIB:89) 1937. Boring in the trunk. (LFM.)

Apate monachus Fabricius

(Bostrychidae) Female beetles boring into trunk of trees, at Guayanilla, (SIB:94), 1937. (LFM.)

Cylindera flava (Fabricius)

(Cerambycidae) All stages infesting logs, at Guayanilla, (SIB:99), 1937. (LFM.)

Neoclytus araneiformis (Olivier)

(Cerambycidae) All stages in logs, at Guayanilla (SIB:99), 1937. (LFM.)

HYMENOPTERA

Callihormius sp.

(Braconidae) Two males and ten females were reared between April 23 and May 9, from a dead tree, which probably was this species. The

Bucida

anobiid, *Petalium puertoricensis* Fisher was reared from the same log, and is probably the host of this parasitic wasp. (D. DeLeón.) Guánica, 1940. (LFM.)

Insects Resting on the Tree

COLEOPTERA

(Chrysomelidae)

Metachroma antennalis Weise

Listed (IB:270), at Ponce. Possibly feeding on the leaves.

Metachroma wolcottii Bryant

At Juana Díaz, listed (IB:270). Possibly feeding on the foliage.

Bursera

Bursera simarouba (L.) Sarg.

(Burseraceae)

DISTRIBUTION: A tree, growing in woodlands, on hillsides and along creeks, at lower and middle elevations, most abundant in the dry districts of Puerto Rico. Recorded also from Mona, Desecheo, Icacos, Culebra, Vieques, St. Jan, St. Croix, St. Thomas, Tortola, Florida, Cuba, Jamaica, Hispaniola, Mexico and continental tropical America. (In Britton & Wilson, Vol. 5, p. 461 as: *Elaphrium simaruba* (L.) Rose.)

USES: Often planted as a roadside tree, for shade. The wood is light brown, often with bark discolorations, fine grained, very soft, spongy, light, weak and not durable. The tree is much used in domestic medicine, the gum and sometimes the leaves being the parts employed. Diaphoretic, purgative, diuretic and expectorant properties are attributed to it; so it is employed for dysentery, dropsy, venereal diseases, yellow fever and other affections.

COMMON NAMES: "Almácigo," "Gumbolimbo," West Indian birch, Turpentine tree and Gum tree.

Bursera

INSECT RECORDS

Insects Affecting the Leaves and Twigs

HOMOPTERA

Ceroplastes ceriferus (Anderson)

(Coccidae) At Guánica, listed (IB:129), 1911.

Aleurothrixus floccosus (Maskell)(Aleyrodidae) Infesting trees, and kept under control by means of the parasitic wasp, *Eretmocerus portoricensis* Dozier, (IB:146).

HYMENOPTERA

Eretmocerus portoricensis Dozier(Aphelinidae) Reared from *Aleurothrixus floccosus* (Anderson), infesting tree, at Bayamón, (IB:528).

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Tunnels and nests on many trees at the Guánica Insular Forest, Oct. 25, 1940. Trees infested at Guayama, Cayey, Yabucoa, Ponce, Salinas, Mayagüez, June-Aug. 1940. (LFM.) at Vega Baja; (SIB:43).

Kaloterme (K.) *snyderi* Light

(Kalotermitidae) Listed, from Mona Island (Martorell, Jan. 1941, p. 81.).

COLEOPTERA

Chalcolepidius silbermanni Chevrolat(Elateridae) Reared from "almacigo" logs infested by the long-horned beetle *Lagochirus araneiformis* (Linn.), collected at Camuy and Quebradillas. The larvae are predators on the larvae of long-horned beetles. (GNW. & LFM.)*Lyctus caribeanus* Lesne

(Lyctidae) Collected under the bark of logs, at Guayama, April 1940. (De León & LFM.)

Lyctus curtulus Casey

Collected under the bark of logs, at Guayama, April 1940. (De León & LFM.)

Bursera

Lagochirus araneiformis (Linnaeus)

(Cerambycidae) Larvae and adults infesting trees at Quebradillas, Camuy, Guajataca and Salinas. The pest is controlled in part by the predaceous insect, *Chalcolepidius silbermanni* (Chevrolat). (GNW. & LFM.)

Cossonus caniculatus (Fabricius)

(Curculionidae) Under bark and chips of wood of trees, recently cut, at Salinas (SIB:105), 1936. (GNW.)

Cossonus impressus Boheman

Many beetles boring in the bark of logs, in trees which were killed by the attacks of cerambycid beetles, August 4, 1941. (det: Buchanan, as "near *impressus* Boheman") (LFM.)

Xyleborus fuscatus Eichhoff

(Scolytidae) Boring into logs of trees, collected at Guayama, near Central Guamaní, May 1940. (DeLeón & LFM.)

Xyleborus grenadensis Hopkins

Boring into logs, adults collected at Guayama, near Central Guamaní, May 1940. (DeLeón & LFM.)

HYMENOPTERA

Zethus rufinodus (Latreille)

(Eumenidae) Nesting in rotten fence posts, at Laguna Tortuguero, Vega Baja, in (SIB:156), 1940. This insect attacks the rotten wood, but sometimes, it also attacks posts which are sprouting and ready to start out as a new tree. Manatí, Jan. 28, 1941. (GNW.)

Byrsonima

Byrsonima spicata (Cav.) Rich.

(Malpighiaceae)

DISTRIBUTION: A tree, growing in woods and forests, at lower and middle elevations in wet or moist districts of Puerto Rico. Also recorded from St. Croix, St. Thomas, St. Jan, Tortola, Cuba, Hispaniola and continental

Byrsonima

tropical America. (In Britton & Wilson, Vol. 5, p. 447 as: *Byrsonima spicata* (Cav.) DC.).

USES: Its wood is reddish brown, hard, strong and heavy, valued for furniture and for construction. The astringent bark is sometimes used in tanning.

COMMON NAMES: "Maricao" and "Doncella."

INSECT RECORDS**Insects Affecting the Leaves****HOMOPTERA**

Icerya montserratensis Riley & Howard
(Coccidae) Listed (IB:119).

COLEOPTERA

Diaprepes abbreviatus (Linnaeus)
(Curculionidae) Adults feeding on the foliage, of trees, at Km. 11.5 of the Cayey-Salinas road, altitude 1,900 ft., Oct. 19, 1940. (LFM.)

LEPIDOPTERA

Megalopyge krugii (Dewitz)
(Megalopygidae) Considerable damage caused by the larvae, feeding on the foliage of trees, at Aguas Buenas, altitude 800 ft., (Río Piedras-Aguas Buenas Rd.) Dec. 15, 1940. (LFM.)

Monoleuca albicollis Forbes
(Limacodidae) Cocoons very abundant on leaves of host trees, from which many moths were reared. Collected at Doña Juana Camp, on the mountains north of Villalba, altitude 1,900 ft., Oct. 19, 1940. (DeLeón & Martorell.) At same locality, on April 30, 1940. Cocoon also abundant at Cayey-Salinas road, altitude 2,000 ft., 1941. (LFM.) The caterpillar of this moth, presumably breeds on this tree.

Insects Affecting the Trunk**COLEOPTERA**

Hypothenemus eruditus Westwood
(Scolytidae) A single adult collected from a small dead tree, identified as *B. spicata* (Cav.) Rich., at Doña Juana Camp, altitude 1,900 ft., April 1940. (DeLeón.) (LFM.)

Calophyllum

Calophyllum calaba Jacq.

(Clusiaceae)

DISTRIBUTION: A tree, growing in woodlands, forests and on river banks at lower and middle elevations, mostly in wet or moist districts of Puerto Rico. Also recorded from Vieques, St. Croix, St. Thomas, Cuba, Jamaica, Hispaniola and Bermuda. (In Britton & Wilson, Vol. 5, p. 584 as: *Calophyllum antillanum* Britton.)

USES: Commonly planted for shade and ornament. The hard, nearly white, durable wood, with a specific gravity of about 0.7, is valued for construction and for posts. Elsewhere it has a variety of uses, such as construction work, ship building, heavy machine work, furniture, felines of wheels and shingles. The seeds yield an oil, which is used in lamps.

COMMON NAMES: "María," "Palo de María," "Galba," "Calaba," "Santa María," and "Aceite de María."

INSECT RECORDS

Insects Affecting the Leaves and Twigs

HOMOPTERA

Toxoptera aurantii (Fonsecolombe)

(Aphididae) Listed (IB:117).

(Coccidae)

Icerya montserratensis Riley & Howard

At Punta de Cangrejos, Santurce, listed (IB:120), 1916.

Pseudococcus adonidum (Linnaeus)

Listed (IB:123).

Pseudococcus nipae (Maskell)

At Guajataca (SIB:58), 1940. (LFM.)

Eucalymnatus tessellatus (Signoret)

Infesting tree, the coccid parasitized by *Aneristus ceroplastae* Howard. (IB:130). Also at Lares, (SIB:59), 1940.

Aonidiella orientalis (Newstead)

Listed as *Aspidiotus cocotiphagus* Marlatt in (IB:137), 1933.

Selenaspidus articulatus (Morgan)

At Lares (SIB:61), 1940.

Chrysomphalus personatus (Comstock)

Listed (IB:140), 1915.

Calophyllum

(Aleyrodidae)

Aleurodicus antillensis Dozier

Pupal cases on tree, at Santurce, Dec. 21, 1924 (IB:144). (Dozier.)

LEPIDOPTERA

Episimus sp.

(Tortricidae) Caterpillar a leaf-folder on trees, attacking the young leaves, at Vega Baja (SIB:134), 1940. (det: W. M. T. Forbes as: "sp. nov.") (LFM. & GNW.)

HYMENOPTERA

Euderomphale vittata Dozier(Entedontidae) Reared from large white fly, *Aleurodicus antillensis* Dozier, on host tree, at Santurce, (IB:524), 1924.*Aneristus ceroplastae* Howard(Aphelinidae) Reared from scale insect, *Eucalymnatus tessellatus* (Signoret), on tree, (IB:529).

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Large tree infested at Guajataca, near Camp Guajataca and also at Guajataca Gorge, near Quebradillas, Oct. 24, 1940 and August 5, 1941, respectively. Low altitudes. (LFM.)

Calotropis

Calotropis procera (Ait.) R. Br.

(Asclepiadaceae)

DISTRIBUTION: A tree-like plant, growing in fields, on hillsides and waste grounds in Puerto Rico. Also recorded from Vieques, St. Croix, St. Thomas, St. Jan, Cuba, Jamaica, Hispaniola and continental tropical America. A native of the Old World tropics.

Calotropis

USES: Locally used for ornamental purposes. The fibers of the seeds are twisted into thread by some of the African tribes; the bark is used as a medicine, and from the milk, an inferior rubber or rubber substitute has been obtained.

COMMON NAMES: "Algodón de seda," "Mata de seda," "Bomba," "Mudar" and Giant milkweed.

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

Aphis nerii Fonscolombe

(Aphidae) On trees, on the dry sections of the island; at Yauco, (IB:116), 1914.

LEPIDOPTERA

Danaus plexippus (Linnaeus)

(Nymphalidae) The caterpillars feeding on the foliage of trees at Yauco and Ponce, (IB:397). (GNW.)

Insects Affecting the Twigs

HOMOPTERA

Pseudaulacaspis pentagona (Targioni)

(Coccidae) Listed (SIB:60). As *Aulacaspis pentagona*.

Capparis

Capparis baduca L.

(Capparidaceae)

DISTRIBUTION: A shrub or a small tree, growing in woods and thickets in moist districts of Puerto Rico. Also recorded from Vieques, Culebra, St. Croix, St. Thomas, St. Jan, Tortola, Cuba, Hispaniola, Jamaica, Trinidad, Central and South America.

COMMON NAMES: "Palo de burro," "Sapo" and Rat-bean.

Capparis

INSECT RECORDS

Insects Affecting the Leaves

HEMIPTERA

Corythucha gossypii (Fabricius)

(Tingitidae) On the foliage of tree, at Guánica Insular Forest, (SIB:71), 1940. (LFM.)

Capparis coccolobifolia Mart.

(Capparidaceae)

DISTRIBUTION: A shrub or a small tree, growing in woods, thickets and along creeks, in the eastern and southern districts of Puerto Rico, at lower elevations. Also recorded from Vieques, Culebra, St. Croix, St. Thomas, St. Jan, from Anegada to Trinidad, Curacao and northern South America.

COMMON NAMES: "Burro" and Broad-leaved caper tree.

INSECT RECORDS

Insects Affecting the Leaves

LEPIDOPTERA

Ascia monuste (Linnaeus)

(Pieridae) Adults reared from eggs laid on the foliage of trees. Larvae or caterpillars voracious feeders. Collected at Salinas and Cayey, at altitudes ranging from 1,500 to 2,000 ft., Dec. 24, 1940. (LFM.)

Capparis cynophallophora L.

(Capparidaceae)

DISTRIBUTION: A shrub or a small tree, growing on coastal hills and in thickets, in Puerto Rico. Also at Mona, Desecheo, Icacos, Culebra, St. Croix, St. Thomas, St. Jan, Tortola, Florida, West Indies, Mexico, Central and northern South America.

Capparis

USES: The hard, heavy wood is of a fine texture, yellow in color with a faint tinge of red. It is used locally as a fuel, or for making charcoal.

COMMON NAMES: "Burro," "Sapo," "Bejuco inglés," "Burro prieto," Black willow and Black wattle.

INSECT RECORDS

Insects Affecting the Leaves and Pods

LEPIDOPTERA

Dichogamma gudmanni von Hedemann

(Pyraustidae) The caterpillar is a pod borer and a leaf-webber, causing considerable damage to trees, on the Salinas-Santa Isabel area, at low altitudes, Aug. 20, 1940. (LFM.)

Capparis flexuosa L.

(Capparidaceae)

DISTRIBUTION: A shrub or tree growing in woods, thickets and on hillsides near the coasts, mostly in dry districts of Puerto Rico. Also in Mona, Desecheo, Icacos, Vieques, St. Croix, St. Thomas, St. Jan, Tortola, Virgin Gorda, Florida, West Indies and continental tropical America.

COMMON NAMES: "Palo de burro," "Palinguán" and Caper tree.

INSECT RECORDS

Insects Affecting the Leaves and Pods

LEPIDOPTERA

Dichogamma fernaldi Möschler

(Pyraustidae) Caterpillars feeding on the leaves and also boring in pods of trees, at Salinas and Sta. Isabel, altitude 100 ft., Aug. 20, 1940. (LFM.)

Dichogamma redtenbackeri Lederer

Caterpillars feeding on the foliage and webbing leaves. Moths reared from material collected at the following localities: Salinas, Santa Isabel, Yauco, Guánica and Arecibo. Infestations more serious during the months of June-September, at Santa Isabel. Altitudes 100 to 400 ft., 1940. (LFM.)

Capparis

HEMIPTERA

Corythucha gossypii (Fabricius)

(Tingitidae) Nymphs and adults abundant on the undersides of leaves
Mona Island, April 5, 1944. (LFM.)

Insects Affecting the Branches

COLEOPTERA

Chrysobothris sp.

(Buprestidae) One specimen reared from infested branches of tree, at
Santa Isabel, altitude 50 ft., Nov. 15, 1940. (LFM.)

Corticeus sp.

(Tenebrionidae) Beetles reared from dry branches of tree, at Santa
Isabel, June 20, 1941. (LFM.)

Heterarthron gonagrum (Fabricius)

(Bostrychidae) Reared from dry branches of tree, at Santa Isabel,
altitude 50 ft., June 20, 1941. (LFM.)

Xylomeira torquata (Fabricius)

(Bostrychidae) Reared from dry branches of tree, at Santa Isabel,
June 20, 1941. (LFM.)

Lepturges guadeloupensis Fleutiaux & Sallé

(Cerambycidae) Reared from dry branch of tree, at Santa Isabel,
June 20, 1941. (LFM.)

Stephanoderes sp.

(Scolytidae) Reared from dry branch of tree, at Santa Isabel, June 20,
1941. (LFM.)

Capparis indica (L.) Fawc. & Rendle

(Capparidaceae)

DISTRIBUTION: A shrub or a small tree, growing in thickets, woods and
hillsides at lower elevations, in the eastern and southern districts of Puerto

Capparis

Rico; Vieques, St. Croix, St. Thomas, St. Jan, Tortola, Virgin Gorda; Jamaica and from St. Barts to Barbados. Also in continental tropical America.

COMMON NAMES: "Linguan."

INSECT RECORDS

Insects Affecting the Leaves

HEMIPTERA

Corythucha gossypii (Fabricius)

(Tingitidae) Nymphs and adults abundant on the undersides of leaves. Many trees infested at Sardinero Beach, Mona Island, April 5, 1944. (LFM.)

Capparis portoricensis Urban

(Capparidaceae)

DISTRIBUTION: A tree, growing in woods and thickets, in the dry southwestern districts of Puerto Rico, at lower elevations. Also at Vieques, St. Jan and Dominica.

USES: The wood is nearly white, rather hard and heavy. It is of no use, locally.

COMMON NAMES: "Burro" and "Burro blanco."

INSECT RECORDS

Insects Affecting the Leaves

LEPIDOPTERA

Ascia monuste (Linnaeus)

(Pieridae) Reared from eggs laid on tender shoots of trees. Larvae voracious feeders, destroying large part of the foliage. Pupation period 7 days. Altitude ranging from 1,500 to 2,000 ft., Cayey, Dec. 24, 1940. (LFM.)

Capparis

Dichogamma redtenbackeri Lederer

(Pyraustidae) Adults reared, from caterpillars webbing leaves of trees, at Salinas, altitude 800 ft., Dec. 24, 1940. (LFM.)

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) costalis (Holmgren)

(Termitidae) Tunnels and large nest on trunks of large trees, at Salinas, Oct. 24, 1941. (LFM.)

Casearia

Casearia aculeata Jacq.

(Flacourtiaceae)

DISTRIBUTION: A shrub or a small tree, growing in thickets, woods and on hillsides at lower and middle elevations, in the southern and western districts of Puerto Rico. Also recorded from Jamaica, Cuba, Hispaniola, and continental tropical America.

COMMON NAME: "Cambrón."

INSECT RECORDS

Insects Affecting the Twigs

HOMOPTERA

Crypticerya rosae (Riley & Howard)

(Coccidae) At Ponce (IB:119).

Casearia arborea (L. C. Rich.) Urban

(Flacourtiaceae)

DISTRIBUTION: A tree, growing in woodlands and forests in wet or moist

Casearia

districts of Puerto Rico, ascending to 1,000 meters in altitude. Also recorded from St. Thomas, Cuba, Hispaniola and northeastern South America.

COMMON NAMES: "Rabo de ratón," "Gía verde" and "Rabojunco."

INSECT RECORDS

Insects Affecting the Twigs

HOMOPTERA

Howardia biclavis (Comstock)
(Coccidae) Listed (IB:134), 1913.

Casearia decandra Jacq.

(Flacourtiaceae)

DISTRIBUTION: A shrub or tree, growing in woods, thickets and on hill-sides, mostly in wet or moist districts of Puerto Rico, ascending to middle or higher elevations. Recorded also from Vieques, St. Croix, St. Thomas, St. Jan, Tortola, Virgin Gorda, St. Martin, from Saba to Trinidad, Margarita and northern South America.

COMMON NAMES: "Gía mansa," "Caracolillo," "Palo blanco," "Cereza," "Cotorrerillo," "Coreho blanco," Wild honey tree and Wild cherry.

INSECT RECORDS

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)
(Termitidae) Tunnels on the trunk of a large tree at Guajataca Gorge, near Quebradillas, Nov. 17, 1940. (LFM.)

Casearia

Casearia sylvestris Sw.

(Flacourtiaceae)

DISTRIBUTION: A shrub or tree, growing in woods, forests, thickets, and on hillsides, at lower and middle elevations, in wet or moist districts of Puerto Rico. Also recorded from Vieques, St. Croix, St. Thomas, St. Jan, Tortola, Jamaica, Cuba, Hispaniola, from St. Martin to Trinidad and continental tropical America.

COMMON NAMES: "Laurel espada," "Cafeillo cimarrón" and "Sarna de perro."

INSECT RECORDS

Insects Affecting the Leaves and Twigs

HOMOPTERA

Icerya montserratensis Riley & Howard

(Coccidae) Listed (IB:119).

LEPIDOPTERA

Oiketicus kirbyi Guilding

(Psychidae) One bag worm feeding on the foliage of a small tree, at Río Piedras, Dec. 15, 1941. (LFM.)

Cassia

Cassia fistula L.

(Caesalpiaceae)

DISTRIBUTION: A tree, growing along roadsides, in pastures and on hillsides, in Puerto Rico. Also recorded from Vieques, St. Croix, Cuba, Jamaica and Hispaniola. A species native to tropical Asia.

USES: The wood is reddish, hard, strong and durable. It has a specific gravity of about .93 and is used for posts, agricultural implements and general house construction. The purgative pulp of the fruit or pod, yields a drug.

Cassia

COMMON NAMES: "Cañafistula," "Cañafistulo," Golden shower, Indian laburnum and Purging Cassia.

INSECT RECORDS

Insects Affecting the Leaves

LEPIDOPTERA

Erebus odora (Linnaeus)

(Phalaenidae) The caterpillar feeding, on the foliage of trees, according to Mr. Van Zwaluvenburg (IB:434).

Gynaecia dirce (Linnaeus)

(Nymphalidae) According to Möschler, the caterpillar feeds on the foliage of tree. (Listed as *Cassia fistulosa* in Möschler, p. 97.)

Insects Affecting the Branches and Twigs

HOMOPTERA

(Coccidae)

Asterolecanium pustulans (Cockerell)

One of the worst pests of this tree, causing considerable injuries and often the death of young as well as large trees. At Barceloneta, (IB:122) 1923. Trees near Quebradillas, infested by this scale insect, June 1941. (LFM.)

Howardia biclavis (Comstock)

At Aguirre, (IB:135), 1916.

HYMENOPTERA

Alaptus borinquensis Dozier

(Mymaridae) Reared from *Asterolecanium pustulans* (Cockerell) on trees, May 1925, (IB:519).

Marietta busckii (Howard)

(Alphelinidae) Reared from *Asterolecanium pustulans* (Cockerell) on trees, (IB:528), 1925.

Euaphycus portoricensis Dozier

(Encyrtidae) Reared from *Asterolecanium pustulans* (Cockerell) on trees, (IB:530).

Cassia

Cassia nodosa Hamilt.

(Caesalpiaceae)

DISTRIBUTION: A tree native to the Chittagong tropical forests of the north of Upper Burma and the Andamans. Introduced into Puerto Rico.

USES: Grown in gardens and "patios" as an ornamental.

COMMON NAMES: "Casia rosada," Pink casia and Red and pink shower.

INSECT RECORDS

Insects Affecting the Leaves

LEPIDOPTERA

Acrobasis crassisquamella Hampson

(Phycitidae) Caterpillars folding leaves. Two adults reared by Mr. Sefin, Río Piedras, Feb. 1944. Det.: Mr. Carl Heinrich (J. A. Bonnet, Coll.).

Castilla

Castilla elastica Cerv.

(Moraceae)

DISTRIBUTION: An introduced tree, occasionally planted in Puerto Rico. Native of the lowland forests of Mexico and Honduras.

USES: The milky sap of the tree, contains caoutchouc or rubber and is the main source of the Central American rubber. The wood is pale brown, light, fairly soft, not strong, thus not utilized. The large tree has been recommended as a suitable shade tree for coffee and cacao.

COMMON NAMES: "Goma," "Palo de goma" and Rubber tree.

INSECT RECORDS

Insects Affecting the Twigs

HOMOPTERA

Howardia biclavis (Comstock)

(Coccidae) At Bayamón (IB:135), 1916.

Castilla

Insects Affecting the Leaves

LEPIDOPTERA

Pachylia ficus (Linnaeus)

(Sphingidae) Caterpillar feeding on the foliage of tree, (IB:448)
(Wolcott, 1914).

Casuarina

Casuarina equisetifolia Forst.

(Casuarinaceae)

DISTRIBUTION: An introduced tree, locally spontaneous after planting along the coasts in Puerto Rico, St. Thomas, and St. Croix. More or less naturalized in Florida, Cuba, Jamaica, Hispaniola and Yucatán. Native to Australia.

USES: Much planted for ornament, hedges and windbreaks; valued for its wood which is used for ox-cart tongues, posts and beams (not underground); also it is an excellent timber for fuel and charcoal.

COMMON NAMES: "Casuarina," "Pino australiano," "Pino," Beef wood, Australian pine and She-wood.

INSECT RECORDS

Insects Affecting the Leaves

COLEOPTERA

Artipus monae Wolcott

(Curculionidae) Adults abundant on the foliage of trees, at Mona Is. (SIB:102), 1939. (LFM.)

Sitophilus oryza (Linnaeus)

(Curculionidae) At Guánica (IB:316), 1914. Probably the adults feeding on the foliage.

LEPIDOPTERA

Oiketicus kirbyi Guilding

(Psychidae) On host tree at Arecibo; at Mona Island, 1939, (SIB:137). The caterpillars feeding on the foliage. (LFM.)

Casuarina

Insects Affecting the Branches and Twigs

HOMOPTERA

(Coccidae)

Crypticerya rosae (Riley & Howard)

At the base of a young shoot, a single scale or coccid collected, June 1, 1942, at Guánica.

Icerya montserratensis Riley & Howard

At Isabela, (IB:120), 1934. At Mayaguez, (SIB:56), 1940.

Icerya purchasii Maskell

For first time reported on trees, at Puerta de Tierra, near San Juan, June 1932; also at Bayamón and Dorado, during 1932-34, (IB:120-21). Since that date recorded from many localities and considered a pest of Australian pines. At Manatí, Trujillo Alto, Arecibo, Camuy, Guajataca, Isabela, Río Grande, Mayaguez, Guánica and Mona Is., (SIB:56). (LFM.)

Howardia biclavis (Comstock)

At Arecibo, listed (IB:135).

COLEOPTERA

Decadiomus pictus Chapin

(Coccinellidae) Larvae predaceous on *Icerya purchasii*. Maskell, infesting trees, at Dorado, (IB:228), 1932.

HYMENOPTERA

Solenopsis geminata (Fabricius)

(Formicidae) Attending cottony cushion scales, *Icerya purchasii* Maskell, on trees, at Mona Is., (SIB:149). (LFM.)

Dorymyrmex pyramicus var. *niger* Pergande

(Formicidae) Attending cottony cushion scales, *Icerya purchasii* Maskell, on trees, at Mona Is., (SIB:150). (LFM.)

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Several large trees, at the main entrance to Central Los Caños, Arecibo, infested with nests and tunnels. May 21, 1941,

Casuarina

altitude 100 ft. Also large nest on tree, at Hipódromo Las Monjas, Hato Rey, near sea-level, May 25, 1941. (LFM.)

HOMOPTERA

Crypticerya rosae (Riley & Howard)

(Coccidae) Infesting trunks of trees, at Ponce and Guánica (SIB:56), 1936-39. Observed also on trees at Guánica Insular Forest, on May 22, 1940. (LFM.)

COLEOPTERA

Chrysobothris tranquebarica (Gmelin)

(Buprestidae) Larvae, presumably of this species, attacking trees at Vega Baja (IB:215). (GNW.)

Tenebroides sp.

(Ostomidae) Collected at Guánica, on the pupal stage, from a pupal cell of the cerambycid, *Cylindera flava* (Fabricius), April 18, 1940. (D. DeLeón) (LFM.).

Bothrioderes dentatus Chevrolat

(Colydiidae) Fairly common species under the bark of trees, at Guánica, April 1940 (D. DeLeón & Martorell).

Gnathocerus maxillosus (Fabricius)

(Tenebrionidae) An adult collected on host tree at Guánica, April 15, 1940 (D. DeLeón) (LFM.).

Apate monachus Fabricius

(Bostrychidae) Females attacking young trees 4 years old, at Guayanilla, (SIB:235), 1937. (LFM.)

Chlorida festiva (Linnaeus)

(Cerambycidae) Larvae in casuarina fence posts at Naguabo (SIB:98), 1939.

Elaphidion nanum (Fabricius)

(Cerambycidae) Larvae of this species associated with larvae of *Cylindera flava* (Fabr.) mentioned below, breeding in trunks, at Guánica Insular Forest, April 18, 1940. (DeLeón & Martorell.)

Cylindera flava (Fabricius)

(Cerambycidae) Adults, larvae and pupae were collected from logs of trees, at Guánica, April 26 and 27, 1940. The larvae of a saffron

Casuarina

yellow color, work between the wood and the bark, later pupating under the bark. (D. DeLeón & Martorell.)

DIPTERA

Syneura cocciphila Coquillet

(Phoridae) Reared from *Crypticeria rosae* (Riley & Howard) on trunk of trees, at Ponce, (SIB:115), 1937. (GNW. & LFM.)

LEPIDOPTERA

Noropsis hieroglyphica (Cramer)

(Phalaenidae) Larvae boring in trunk of trees, causing severe injury, at Guánica, 1923 (IB:435).

Cecropia

Cecropia peltata L.

(Moraceae)

DISTRIBUTION: A tree, growing on hillsides, in forests and ravines, in moist and wet districts of Puerto Rico, ascending to at least 900 meters. Also recorded from Vieques, St. Thomas, St. Croix, St. Jan, Cuba, Jamaica to Trinidad and northern South America.

USES: The branches are hollow, the old trunks solid, the soft wood nearly white. It is used for rafts, fuel and charcoal. The inner bark of the tree supplies a useful fiber.

COMMON NAMES: "Yagrumo," "Grayumo," "Guarumbo," "Sarumba" (Mexico), Trumpet tree and Trumpet wood.

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

Aphis gossypii Glover

(Aphidae) At Lares (IB:113), 1932.

Cecropia

COLEOPTERA

Prepodes sp.

(Curculionidae) A beautiful greenish-blue curculionid, collected on a tender leaf, at Maricao Insular Forest, altitude 2,200 ft., May 31, 1942. (det: Buchanan) (LFM.).

Compsus maricao Wolcott

(Curculionidae) Adult feeding on leaf, at Doña Juana Camp, altitude 1,900 ft., Villalba, 1940. (LFM.)

LEPIDOPTERA

Gynaecia dirce (Linnaeus)

(Nymphalidae) According to Möscher, p. 97, the caterpillar of this species, lives on the foliage of tree. (IB:399). Sixteen caterpillars were collected feeding on the leaves of *Cecropia*, at El Yunque Mts., 2,500 ft. high, Nov. 30, 1944. Reared to adults. (LFM.) Det: W. P. Comstock.

Historis odius (Fabricius)

According to Möscher, p. 98, the caterpillar of this species, lives on *Cecropia*, also specifying that they are not very abundant. The larva has been described by Mr. E. G. Smyth, collected on tree, (IB:400-401), 1920.

Correbidia terminalis (Walker)

(Amatidae) According to Dr. Gundlach, the caterpillar lives on the undersides of the *Cecropia* leaves. (IB:414.)

Sylepta silicalis (Guenée)

(Pyraustidae) Larvae feeding on buds at terminal of branches, causing considerable damage. Collected on El Yunque Mts., Mt. Britton trail, about 1,900 ft., in altitude. (det: Heinrich) (LFM.).

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) costalis (Holmgren)

(Termitidae) Large trees infested at Río Abajo Plantations, Utuado, altitude 1,200 ft., April 20, 1941. Also trees infested at Quebradillas, Arecibo, Lares, El Yunque Mts., altitudes up to 1,200 ft., June 16, 1940. (LFM.)

Cedrela

Cedrela mexicana Roem.

(Meliaceae)

DISTRIBUTION: A very large tree, introduced and planted along roadsides and in different forest units of the island. A species very closely resembling our native species *C. odorata* L. Native of Central America and Mexico.

USES: Locally we do not have large and old enough trees to be used. In British Honduras, the fragrantly scented, durable, and easily worked timber, is used for dugout canoes and furniture, and is also exported for boat building and cigar box manufacturing.

COMMON NAMES: "Cedro," "Cedro hembra," Spanish cedar, Cedar and "Kulche" (Yucatán, Maya).

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

Dikraneura cedrelae Oman

(Cicadellidae) One of the worst pests of cedars, causing yellowing and heavy defoliation. At Yabucoa, Maunabo, Camp Doña Juana, (mountains north of Villalba), Aibonito, Maricao and Patillas. Ranging in altitudes from sea-level up to 2,000 ft. or more (LFM.). On Sept. 17, 1943, leafhoppers were found attacked by a fungus. Miss Vera K. Charles states: "The fungus on leafhoppers, *Dikraneura cedrelae*, is the fungus which I described as *Hirsutella verticillioides* on insects on rubber from Brazil. Dr. Petch, the English specialist on entomogenous fungi, has suggested that this species is the same as his *Cephalosporium fuliginosum*, but I have no material for comparison. However, I do not feel that the two organisms are identical. An ascogenous stage appears to be developing on the specimens and I would be very glad to have additional material should it become available at any time."

At Cayey, altitude 1,600 ft., Sept. 17, 1943. (LFM.)

COLEOPTERA

Diaprepes abbreviatus (Linnaeus)

(Curculionidae) Attacking the foliage of trees at Río Grande, (SIB: 103), 1940. Same injury at Cayey, on the mountain road to Salinas, 1,700 ft., altitude Dec. 30, 1940, eggs also found between leaves. During Feb. 1941, in the same locality an outbreak causing intense defoliation. Adults on the foliage of trees at Río Piedras, May 9, 1942. (LFM.)

Cedrela

LEPIDOPTERA

Cosmosoma auge (Linnaeus)

(Amatidae) A beautiful, bright yellow cocoon found on cedar leaf, near El Peñón del Collao, altitude 1,800 ft., Cayey, Dec. 30, 1940. Moth reared. (LFM.)

Sabulodes sp.

(Geometridae) One moth reared from caterpillars feeding on the foliage of tree, near Peñón del Collao, altitude 1,800 ft., Dec. 30, 1940. Not very abundant. Presumably feeding on the foliage.

Insects Affecting the Twigs and Branches

HOMOPTERA

(Coccidae)

Pulvinaria psidii Maskell

Heavy infestation on trunk and branches, on trees 4 to 5 years old, at El Peñón del Collao 1,800 ft. altitude, Cayey, Feb. 5, 1941. (LFM.)

Ceroplastes cirripediformis Comstock

Few scale insects on twigs, at Cayey, altitude 1,700 ft., Dec. 30, 1940. (LFM.)

Saissetia oleae (Bernard)

On trees at Doña Juana Camp, in the mountains north of Villalba (SIB:60) 1940. At Cayey, a slight infestation on branches, few trees attacked, Oct. 13, 1940. Many branches of trees killed, at Cayey, near El Peñón del Collao, altitude 1,800 ft., Feb. 2, 1941. (LFM.)

Howardia biclavis (Comstock)

On dead branches of trees, completely covered by the scale insect, at El Verde, Río Grande, (SIB:60), 1940. (LFM.)

COLEOPTERA

Ambrosiodmus lecontei Hopkins

(Scolytidae) Adults abundant, reared from dead branches and twigs of trees, at El Verde Plantation, Río Grande, May 1940. (D. DeLeón) (LFM.).

DIPTERA

Agromyza sp.

(Agromyzidae) Small flies, whose larvae live in the young bark of

Cedrela

twigs and smaller branches, at El Peñón del Collao, Cayey, altitude 1,800 ft., June 20, 1940. (det: Greene) (LFM.).

LEPIDOPTERA**Hypsipyla grandella (Zeller)**

(Phycitidae) The worst pest of cedars in Puerto Rico. Heavy infestations on trees, in all sections of the island where the trees are planted. Recorded from Villalba, Yabucoa, Maricao, Aibonito, Cayey, Salinas, etc., ranging in altitude from sea-level to 2,000 ft. and up, 1937-42. (LFM.)

Calliephialtes sp.

(Ichneumonidae) An undescribed species, 2 females reared from caterpillars of *Hypsipyla grandella* (Zeller), found in bores, on twigs of tree, at El Peñón del Callao, Cayey, May 22, 1940, (det: Cushman). (LFM.)

Cedrela odorata L.

(Meliaceae)

DISTRIBUTION: A tree, growing in forests, river valleys, on hillsides and along streams in Puerto Rico. Also recorded from Jamaica and continental tropical America.

USES: The reddish brown, fragrant wood, now scarce, is used for cigar boxes, in carpentry, for furniture and various ornamental articles. It is soft, durable, rather strong, with a specific gravity of about 0.5.

COMMON NAMES: "Cedro," "Cedro hembra," West Indian cedar and Spanish cedar.

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA**Dikraneura cedrelae Oman**

(Cicadellidae) Causing yellowing of leaves and intense defoliation.

Cedrela

A pest of trees, at Yabucoa, Villalba, Aibonito, Maricao, Lares, Toa Alta, Patillas and Cayey (SIB:52), 1936-40. (LFM.)

COLEOPTERA***Diaprepes abbreviatus* (Linnaeus)**

(Curculionidae) At Río Grande (SIB:103), 1940. Adults feeding on the foliage of an old tree at Cayey, on the Salinas road, altitude 1,600 ft., March 1941. (LFM.)

Insects Affecting the Twigs

HOMOPTERA***Howardia biclavis* (Comstock)**

(Coccidae) On twigs of trees, killing them, at El Verde, Río Grande (SIB:60), 1940. (LFM.)

LEPIDOPTERA***Hypsipyla grandella* (Zeller)**

(Phycitidae) Becoming abundant during the Spring, at Doña Juana plantations, north of Villalba, (SIB:133), 1940. The worst pest of cedars in Puerto Rico, wiping out complete plantings. (LFM.)

Insects Affecting the Trunk

ISOPTERA***Nasutitermes* (N.) *costalis* (Holmgren)**

(Termitidae) Large tree, about 30 ft. high and a trunk diameter of 12 inches, infested by termites, at Lares, altitude 1,270 ft., Dec. 10, 1941. Also trees infested at Guajataca, Aug. 15, 1941. (LFM.)

HOMOPTERA***Pulvinaria psidii* Maskell**

(Coccidae) Great infestation on trunk of trees, at Cayey, on the Salinas road, altitude 1,700 ft., (SIB:58), 1939. (LFM.)

LEPIDOPTERA***Ecpantheria icasia* (Cramer)**

(Arctiidae) Egg-mass on trunk of tree, at Doña Juana Camp, north of Villalba (SIB:125), 1940. (LFM.)

Ceiba

Ceiba pentandra (L.) Gaertn.

(Bombacaceae)

DISTRIBUTION: A tree, growing in forests, on hillsides and river-banks at lower elevations in Puerto Rico; largest and most abundant in the dry southern districts. Also recorded from Vieques, St. Thomas, St. Croix, St. Jan, Cuba, Jamaica, Hispaniola, northern South America and the Old World tropics.

USES: Often planted for shade; the wooly seeds are used for stuffing pillows. The wood is soft, light brown, weak, light in weight, not durable in contact with the soil. It is used for boats, canoes, tubs, basins and in construction.

COMMON NAMES: "Ceiba," "Ceibo," Silk-cotton, Cotton tree, Kapok tree, Cork wood (Br. W. I.) and "Fromager" (Haiti).

INSECT RECORDS

Insects Affecting the Seeds

HEMIPTERA

Dysdercus andreae (Linnaeus)

(Pyrrhocoridae) Feeding on seeds of trees, on the ground, at Salinas, (IB:164), 1924.

Insects Affecting the Leaves

COLEOPTERA

Diaprepes abbreviatus (Linnaeus)

(Curculionidae) At Loiza (IB:298). Heavy defoliation caused by adults, near Salinas, on the Cayey road, altitude 1,300 ft., Oct. 8, 1940. Few days later Oct. 15, an outbreak at Salinas, many trees attacked. Eggs collected between the leaves. At Naguabo, very large tree, totally defoliated by adults, altitude 250 ft., May 27, 1941. (LFM.)

LEPIDOPTERA

Brachycorene arcas (Drury)

(Hesperiidae) Larva feeding on leaves of host tree, near Peñón del Collao, altitude 1,700 ft., Cayey-Salinas Rd., Oct. 24, 1940. Larva identified by G. N. Wolcott. No adult emerged. (LFM.)

Oiketicus kirbyi Guiding

(Psychidae) Defoliating small trees at Laguna de San José, (IB:502), 1935.

Ceiba

Bucculatrix sp.

(Tineidae) Injury to the foliage by very small caterpillars from which minute moths were reared. Pupation in long, ribbed, white silken cocoons, attached to the midrib, on undersides of leaves, at Aguadilla, 1940. (Wolcott & Martorell.)

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N) *costalis* (Holmgren)

(Termitidae) Nest and tunnels on large tree at Aguadilla, Sept. 4, 1940. Also at Ponce, May 1941. (LFM.)

Cestrum

Cestrum diurnum L.

(Solanaceae)

DISTRIBUTION: A shrub, growing on banks and along roadsides at lower elevations, in Puerto Rico. Probably an introduced species, recorded also from Jamaica, Cuba, Cayman Islands, Hispaniola, Mexico and Florida (after introduced).

USES: Grown locally in gardens, as an ornamental.

COMMON NAME: "Dama de día."

INSECT RECORDS

Insects Affecting the Leaves and Twigs

HOMOPTERA

Monobelus fasciatus (Fabricius)

(Membracidae) At Guajataca, near the Lake, (SIB:50), 1938. (GNW. & LFM.)

Aleurodicus minimus Quaintance

(Aleyrodidae) Listed (IB:145).

Cestrum

Cestrum laurifolium L'Her.

(Solanaceae)

DISTRIBUTION: A shrub, growing in thickets, woods and on hillsides, at lower and middle elevations, mostly in wet or moist districts of Puerto Rico. Also recorded from Vieques, St. Croix, St. Jan, St. Thomas, Tortola, Virgin Gorda, Cuba, Hispaniola, and from Saba to Trinidad.

COMMON NAME: "Galán del monte."

INSECT RECORDS

Insects Affecting the Twigs

HOMOPTERA

Howardia biclavis (Comstock)

(Coccidae) Many twigs killed on account of the heavy infestation of the scale insect, at Aibonito, March 9, 1941, at more than 2,000 ft. in altitude. (LFM.)

Chione

Chione venosa (Sw.) Urban

(Rubiaceae)

DISTRIBUTION: A tree, growing in woods and on hillsides in moist or wet districts, ascending to higher elevations in Puerto Rico. Also recorded from St. Croix, St. Thomas, Tortola, Hispaniola, from Montserrat to Tobago and British Guiana.

USES: The tree is not very abundant in the island, thus very little is known about its properties and uses. However, in the past, it has been used for lumber.

COMMON NAMES: "Martín Avila," "Santa Olalla," and "Palo blanco."

INSECT RECORDS

Insects Affecting the Twigs or Leaves

HOMOPTERA

Orthezia insignis Douglas

(Coccidae) Listed (SIB:56).

Chlorophora

Chlorophora tinctoria (L.) Gaud.

(Moraceae)

DISTRIBUTION: A tree, growing in woodlands and on hillsides, in Puerto Rico. Also recorded from Mona, Vieques, St. Thomas, St. Croix, St. Jan, Cuba, Jamaica, Trinidad, Curacao and continental tropical America.

USES: The hard, strong, durable, yellowish wood is used for furniture and in construction. The tree yields a valuable dye.

COMMON NAMES: "Mora," "Palo de mora," and Fustic.

INSECT RECORDS

Insects Affecting the Leaves

LEPIDOPTERA

Timetes chiron (Fabricius)

(Nymphalidae) According to Möschler, p. 98, the caterpillar of this butterfly feeds on the leaves of this tree. (IB:400.)

Chrysobalanus

Chrysobalanus icaco L.

(Amygdalaceae)

DISTRIBUTION: A tree or shrub, growing in thickets and on hillsides, mostly at lower elevations near the coasts, in Puerto Rico, Icacos, Vieques, St. Thomas, St. Croix, St. Jan and Tortola. Also recorded from Florida, Cuba, Jamaica, Hispaniola, from Mexico to northern South America and tropical Africa.

USES: The light brown wood, hard and heavy, and with a specific gravity of about 0.77, is not used locally. The leaves and bark are astringent; the fruit is used for "dulces" or preserves; the seeds are edible and yield an oil.

COMMON NAMES: "Hicaco" and Coco-plum.

INSECT RECORDS

Insects Affecting the Fruits

DIPTERA

Anastrepha unipuncta Señ

(Tephritidae) Reared from fruits, at Bayamón, listed (SIB:120).

Chrysobalanus

LEPIDOPTERA

Ephestia cautella (Walker)(Phycitidae) At Bayamón (SIB:133). Listed as "prob." *cautella*.*Platynota rostrana* (Walker)

(Tortricidae) From the fruits (SIB:134).

Insects Affecting the Leaves

HOMOPTERA

Joruma neascripta Oman

(Cicadellidae) On tree, at Manatí (SIB:52). Presumably on the foliage.

COLEOPTERA

Exophthalmodes roseipes (Chevrolat)(Curculionidae) At Punta de Cangrejos (IB:293), 1922. Listed as *Prepodes roseipes* Chevrolat.*Diaprepes abbreviatus* (Linnaeus)

(Curculionidae) At Punta Cangrejos, many records, years 1913 to 1915; eggs of weevil between leaves of trees, 1914. (IB:298-99.)

HYMENOPTERA

Sterictiphora krugii (Cresson)

(Tenthredinidae) Larvae feeding on foliage of trees, according to Mr. Van Zwaluwenburg. (IB:509).

Insects Resting on the Tree

THYSANOPTERA

Selenothrips rubrocinctus (Giard)

(Thripidae) At Trujillo Alto, listed (IB:65).

HOMOPTERA

Nessorhinus vulpes Amyot & Serville

(Membracidae) At Arecibo (IB:74).

Ormenis quadripunctata (Fabricius)

(Fulgoridae) At Joyuda (SIB:53).

COLEOPTERA

Cryptocephalus nigrocinctus Suffrian

(Chrysomelidae) At Punta Salinas (IB:267), 1923.

Chrysophyllum

Chrysophyllum argenteum Jacq.

(Sapotaceae)

DISTRIBUTION: A tree, growing in woodlands, forests and on hillsides, at lower and middle elevations in wet or moist districts of Puerto Rico. Recorded also from St. Thomas, Tortola, Cuba, Hispaniola and from Saba to Trinidad.

COMMON NAME: "Caimito verde."

INSECT RECORDS

Insects Affecting the Leaves and Twigs

HOMOPTERA

Icerya montserratensis Riley & Howard

(Coccidae) Listed in (IB:120).

Pseudococcus nipae (Maskell)

(Coccidae) (IB:127), 1912. Infestation on the undersides of foliage of trees, at Guajataca, altitude 300 ft., Nov. 17, 1940. (LFM.)

Chrysophyllum cainito L.

(Sapotaceae)

DISTRIBUTION: A tree, growing in forests and on hillsides in Puerto Rico. Also recorded from St. Croix, St. Thomas, Jamaica, Cuba, Hispaniola, from St. Kitts to Trinidad and continental tropical America.

USES: The red-brown wood is hard, heavy, strong, tough and durable, and is used in construction. Its edible fruit is highly esteemed.

COMMON NAMES: "Caimito," "Cainito," "Caimito morado," Cainit and Star apple (Br. W. I.).

INSECT RECORDS

Insects Affecting the Fruits

Anastrepha unipuncta Señ

(Tephritidae) Reared from the fruit (IB:378).

Chrysophyllum

Insects Affecting the Leaves and Twigs

HOMOPTERA

(Coccidae)

Pulvinaria psidii Maskell

Listed (IB:128).

Howardia biclavis (Comstock)

Listed (IB:134), 1912.

Selenaspidus articulatus (Morgan)

At Garrochales (IB:139), 1916. Listed as *Pseudaonidia articulatus* Morgan.

COLEOPTERA

Diaprepes abbreviatus (Linnaeus)

(Curculionidae) Eggs laid between leaves of trees, at Camuy, (SIB: 103), 1936. (GNW. & LFM.)

Chrysophyllum pauciflorum Lam.

(Sapotaceae)

DISTRIBUTION: A tree, growing on hillsides at lower elevations in the dry southern districts of Puerto Rico. Also recorded from Vieques, St. Jan, St. Thomas, and St. Croix. Endemic.

COMMON NAME: "Caimito de perro."

INSECT RECORDS

Insects Affecting the Leaves

LEPIDOPTERA

Oiketicus kirbyi Guilding

(Psychidae) One bag worm collected, while feeding on the foliage of a tree, at Guajataca Hills, altitude 120 ft., Nov. 17, 1940. (LFM.)

Cicca

Cicca disticha L.

(Euphorbiaceae)

DISTRIBUTION: A tree, planted along roadsides and waste grounds, spontaneous after planting in Puerto Rico. Also recorded from St. Thomas, St. Croix, St. Jan, and Tortola. Perhaps a native of the East Indies.

USES: The tough, strong and durable wood is not used locally. Planted for its fruit, which is used in the preparation of preserves or jellies.

COMMON NAMES: "Cereza amarilla," "Grosella," "Grosella blanca," "Cerezas" and Otaheite gooseberry.

INSECT RECORDS

Insects Affecting the Leaves

LEPIDOPTERA

Melanchroia cephalis (Cramer)

(Geometridae) Van Zwaluwenburg reports, "a local outbreak at Camuy, where the larvae practically stripped the host trees," (IB:453).

HOMOPTERA

Pseudococcus virgatus (Cockerell)

(Coccidae) At Santurce, listed (IB:128), 1933.

Coccus hesperidum Linnaeus

(Coccidae) Listed, (IB:131), 1933.

HYMENOPTERA

Pseudaphycus sp.

(Encyrtidae) Reared from *Pseudococcus virgatus* (Cockerell), infesting trees at Santurce, (IB:529), 1933.

Cinnamomum

Cinnamomum zeylanicum Nees

(Lauraceae)

DISTRIBUTION: A tree, occasionally planted in Puerto Rico and the Virgin Islands. Native to Southern Asia.

Cinnamomum

USES: The bark which is used as a spice, yields by distillation the cinnamon oil. A fragrant wax is obtained from the ripe fruits and a volatile oil is also the product of distillation of the bark, leaves, fruits and young shoots. Locally the tree has no use.

COMMON NAMES: "Canela," "Palo de canela," "Canela legítima" and Cinnamon.

INSECT RECORDS

Insects Affecting the Leaves and Twigs

HOMOPTERA

Coccus mangiferae (Green)

(Coccidae) Listed in (IB:131).

Citharexylum

Citharexylum caudatum L.

(Verbenaceae)

DISTRIBUTION: A shrub or tree, growing in the mountain forests at middle and higher elevations in Puerto Rico. Also recorded from the Bahamas, Jamaica, Cuba, Hispaniola and Mexico.

COMMON NAMES: "Higüerillo" and "Péndula."

INSECT RECORDS

Insects Affecting the Leaves

LEPIDOPTERA

Pyrausta cerata (Fabricius)

(Pyraustidae) Larvae infesting trees at Carite Insular Forest, near Cayey, 2,000 ft. in altitude and at El Yunque Mts., in the Luquillo National Forest, at 1,800 ft. altitude, Sept. 1940. Also caterpillars webbing leaves, on young trees, at Cerro de Punta, Jayuya, altitude 3,600 ft., Jan. 26, 1941. (LPM.)

*Citharexylum**Citharexylum fruticosum* L.

(Verbenaceae)

DISTRIBUTION: A tree, growing in woods, thickets and on hillsides, at lower and middle elevations, in Puerto Rico. Also recorded from Desecheo, Icacos, Culebra, Vieques, St. Thomas, St. Croix, St. Jan, Tortola, Virgin Gorda, Anegada, Florida, Bahamas, Cuba, Jamaica, Hispaniola, Guadeloupe and Dominica.

USES: Its red wood is hard and strong, with a specific gravity of about .87, and is used for furniture and in construction.

COMMON NAMES: 'Péndula,' 'Péndola,' 'Péndula colorada,' 'Palo de guitarra,' 'Bálsamo,' 'Higüerillo,' 'Péndulo colorado,' 'Fiddle wood' and Old woman's bitter.

INSECT RECORDS

Insects Affecting the Leaves

LEPIDOPTERA

Agathodes designalis Guenée

(Pyraustidae) Listed in (IB:463), 1917.

Pyrausta cerata (Fabricius)

(Pyraustidae) Abundant on host trees at Aibonito and Trujillo Alto, (IB:467), 1923. Caterpillars abundant on trees at Yabucoa, Maunabo, Cayey, Bayamón, Isabela, Aguadilla, Cabo Rojo, Guánica (1937), Maunabo, Patillas, Isabela, San Sebastián and other localities (SIB:131), 1937-40. Eggs of moth, collected on leaves of host tree, at San Sebastián, Nov. 25, 1940. Adults reared from these eggs. (LFM.)

Acrocercops inconspicua Forbes

(Gracilariidae) Larva a leaf miner on trees, listed (IB:499).

Insects Affecting the Twigs

HOMOPTERA

(Fulgoridae)

Colpoptera maculata Dozier

Listed, at Salinas (IB:99).

Ormenis quadripunctata (Fabricius)

Particularly abundant on trees, near Salinas, (IB:103).

Citharexylum

Flatoides punctata (Walker)

Near Salinas, (IB:105).

(Coccidae)

Pulvinaria psidii Maskell

On twigs and petioles (IB:128), 1923.

Coccus viridis (Green)

Large infestation on old tree, many twigs killed on account of scale insect, at Patillas, March 11, 1941, altitude 100 ft. (LFM.)

Ischnaspis longirostris (Signoret)

At Naguabo, listed (IB:143), 1914.

Clibadium

Clibadium erosum (Sw.) DC.

(Carduaceae)

DISTRIBUTION: A shrub or tree, growing in the mountain forests, at the eastern and central districts of Puerto Rico. Also recorded from Saba, St. Kitts, Montserrat, Guadeloupe, Dominica, Martinique and St. Thomas.

COMMON NAME: "Turma de toro."

INSECT RECORDS

Insects Affecting the Trunk

HOMOPTERA

Pseudaulacaspis pentagona (Targioni)

(Coccidae) Small tree, with trunk as well as branches, totally covered by this whitish scale insect. El Yunque Mts., near the Recreational Area, 1,500 ft. altitude, Sept. 23, 1940. (LFM.)

Clusia

Clusia rosea Jacq.

(Clusiaceae)

DISTRIBUTION: A tree, growing in woods, on hillsides and river-banks, mostly at lower elevations, in Puerto Rico. Also recorded from Mona, Desecheo, Vieques, Culebra, St. Croix, St. Thomas, St. Jan, Tortola, Cuba, Jamaica, Hispaniola and continental tropical America.

USES: The reddish brown wood is hard and durable, with a specific gravity of about 0.8. It is used for railroad ties, fence posts, fuel and in general construction.

COMMON NAMES: "Cupey," "Palo de cupey," Pitch Apple, Wild mamee and Scotch Lawyer (Trinidad) and Balsam tree (Br.W.I.).

INSECT RECORDS

Insects Attacking the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Nest on tree, at Isabela, (SIB:43), 1940. Large tree at Guajataca, with nest and tunnels on the trunk, Oct. 24, 1940. (LFM.)

COLEOPTERA

Elaphidion tomentosum Chevrolat

(Cerambycidae) Larva in trunk of tree, (IB:260), 1933.

Coccolobis

Coccolobis grandifolia Jacq.

(Polygonaceae)

DISTRIBUTION: A tree, growing in the forests at middle and higher elevations at the western districts of Puerto Rico. Also recorded from Hispaniola, Barbuda, Antigua, Guadeloupe, Montserrat, Martinique, Barbados, Mexico and Guianas.

Coccolobis

USES: The red, hard and durable wood, was highly prized for building purposes, furniture and cabinet work, but now is very scarce.

COMMON NAME: "Moralón."

INSECT RECORDS

Insects Affecting the Leaves

COLEOPTERA

Attelabus coccolobae Wolcott

(Curculionidae) At Maricao, (SIB:102), 1940. (LFM.)

HYMENOPTERA

Sterictiphora krugii (Cresson)

(Tenthredinidae) Listed (SIB:138), 1940. (LFM.)

Coccolobis laurifolia Jacq.

(Polygonaceae)

DISTRIBUTION: A tree, growing in thickets and woodlands, at lower elevations, mostly in dry districts of Puerto Rico. Also recorded from Vieques, Mona, St. Croix, Florida, Bahamas, Jamaica, Cuba and Hispaniola.

USES: The reddish brown wood is hard, very heavy, its specific gravity about 1.00.

COMMON NAMES: "Uvillo," "Gateado," "Cucubano," "Uverillo," "Glateado" and "Uvilla."

INSECT RECORDS

Insects Affecting the Leaves

ORTHOPTERA

Microcentrum triangulatum Brunner

(Tettigoniidae) About 25 eggs laid in a row around the edge of a leaf, at Guajataca, Nov. 17, 1940, altitude 30 ft. (LFM.)

Coccolobis

HOMOPTERA

(Coccidae)

Pseudococcus nipae (Maskell)

Infestation on the undersides of leaves, at Guajataca, Quebradillas, altitude 30 ft., Nov. 17, 1940. (LFM.)

Vinsonia stellifera (Westwood)

Listed, (IB:130), 1914.

Coccus viridis (Green)

On the undersides of leaves and on twigs, at Mona Island, (SIB:59), 1939. (LFM.)

COLEOPTERA

Attelabus coccolobae Wolcott

(Curculionidae) At Guánica, (SIB:102), 1940. Many trees attacked at Guajataca Gorge, near Quebradillas, altitude 20 ft., Oct. 24, 1940. (LFM.)

HYMENOPTERA

Sterictiphora krugii (Cresson)

(Tenthredinidae) At Maricao Insular Forest (SIB:138), 1940. At Quebradillas, infesting many trees; larvae, adults and eggs very abundant on the foliage of trees. Oct. and Nov. 1940. (LFM.)

Insects Affecting the Branches and Twigs

HOMOPTERA

Ormenis marginata (Brunnich)

(Fulgoridae) On branches and twigs, breeding, adults and nymphs abundant, at Mona Island, (SIB:53), 1940. (LFM.)

Ormenis pygmaea (Fabricius)

On twigs and branches, but not so abundant as *O. marginata* (Brunnich). Numerous nymphs and adults, on the twigs, sometimes going to the undersides of leaves, (SIB:53), 1940. (LFM.)

Ormenis quadrípunctata (Fabricius)

At Mona Island, (SIB:53), 1940. (LFM.)

Coccus viridis (Green)

(Coccidae) On twigs of trees, infestation extending up to the undersides of leaves, at Mona Island, (SIB:53), 1940. (LFM.)

Coccolobis

ISOPTERA

Kalotermes (K.) snyderi Light

(Kalotermitidae) Infesting the dead branches of live trees, abundant. Mona Island, April 5, 1944. (GNW. & LFM.)

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) costalis (Holmgren)

(Termitidae) Tunnels on trunk of medium sized tree, at Guajataca, Nov. 17, 1940; also at El Vigía, Arecibo, Dec. 1, 1940. (LFM.)

Insects Resting on the Tree

THYSANOPTERA

Selenothrips rubrocinctus (Giard)

(Thripidae) At Dorado, (SIB:40). Possibly on the foliage.

HEMIPTERA

Sphictyrtus whitei (Guérin-Ménéville)

(Coreidae) Adults on tender leaf, possibly feeding; at top of cliff on Mona Island. (SIB:76), 1939. (GNW.)

Coccolobis pirifolia Desf.

(Polygonaceae)

DISTRIBUTION: A tree, growing in woodlands and on hillsides, ascending into the mountain forests at higher elevations, in wet or moist districts of Puerto Rico. Also recorded from St. Thomas and Jamaica.

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

Chrysomphalus sp.

(Coccidae) On leaves and twigs, at the Maricao Insular Forest, about 1,900 ft. high, (SIB:333), 1917. (LFM.)

Coccolobis

DIPTERA

Cecidomyia coccolobae (Cook)

(Itonididae) From small cone-shaped galls on the leaves of trees, (IB:333), 1917.

HYMENOPTERA

Sterictiphora krugii (Cresson)

(Tenthredinidae) Eggs, adults and caterpillars on the foliage of several trees, at Carite Unit Mts., altitude 2,500 ft., May 17, 1940. (LFM.)

Coccolobis wifera (L.) Jacq.

(Polygonaceae)

DISTRIBUTION: A tree, growing in coastal thickets and on hillsides near the coasts in Puerto Rico. Also recorded from Icacos, Culebra, Vieques, Mona, Desecheo, St. Croix, St. Thomas, St. Jan, Tortola, Virgin Gorda, Anegada, Florida, Bermuda, Cuba, Jamaica, Hispaniola, and continental tropical America.

USES: The heavy, hard, dark brown wood, having a specific gravity of about 0.96, is used for furniture and cabinet work. The fruits are used for making jelly and in the preparation of an alcoholic drink.

COMMON NAMES: "Uva," "Uva de playa," "Uva de mar," "Uvero," Sea grape and Pigeon wood. (Jamaica.)

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

(Aphiidae)

Aphis rumicis Linnaeus

At Ponce, listed (IB:116).

Toxoptera aurantii (Fonscolombe)

At Punta Salinas, attended by *Monomorium destructor* (Jerdon), (IB:117), 1922.

Coccolobis

(Coccidae)

Pseudococcus nipae (Maskell)

Listed (IB:126).

Coccus viridis (Green)

On leaves and twigs of trees, at Mona Island, (SIB:59), 1939. (LFM.)

Chrysomphalus (Melanaspis) portoricensis (Lindinger)

At Luquillo, (SIB:61), 1940. Also observed at Río Piedras, on seedlings brought from Luquillo, June 30, 1944. (GNW.)

Aspidiotus lataniae Signoret

On the undersides of leaves, at Quebradillas, Jan. 1945. (GNW.)

Det: H. Morrison.

(Aleyrodidae)

Aleurothrixus floccosus (Maskell)Infested trees, controlled by the parasitic wasp, *Eretmocerus portoricensis* Dozier, listed (IB:146). On the undersides of leaves, Mona Island, April 7, 1944. (GNW.) (Det: Russell).*Aleurotrachelus* sp.

On leaves of trees, at Quebradillas, (SIB:63), 1938-39. Slight infestation on young leaves, on trees at cliff near the coast, at Isabela, 200 ft. altitude, Sept. 10, 1941. (GNW. & LFM.)

HEMIPTERA

Jadera rubrofusca Barber

(Coreidae) At Dorado, (IB:174).

COLEOPTERA

Phyllophaga portoricensis (Smyth)

(Scarabaeidae) Adults feeding on leaves, in mid-April, no rain (SIB:91), 1938. (GNW.) Feeding on tender leaves of trees at Río Piedras, May 20, 1944. (GNW.)

Cryptocephalus nigrocinctus Suffrian

(Chrysomelidae) At Playa de Humacao, (IB:267), 1923.

Cryptocephalus perspicax Weise

(Chrysomelidae) Feeding on the foliage, at Quebradillas, (IB:268), 1922.

Coccolobis

Attelabus coccolobae Wolcott

(Curculionidae) One of the most important pests of sea-grape. Found all around the coast, wherever the tree grows. (LFM.)

Exophthalmodes roseipes (Chevrolat)

(Curculionidae) On tender leaves, at Loíza (IB:293), 1922. Listed as *Prepodes roseipes* Chevr.

Diaprepes abbreviatus (Linnaeus)

(Curculionidae) Adults feeding on the foliage, on trees near the coast, at El Vigía, Arecibo, Oct. 23, 1940; very abundant. (LFM.)

Lachnopus curvipes (Fabricius)

(Curculionidae) At Loíza (IB:301-02), 1922.

DIPTERA

Cecidomyia coccolobae (Cook)

(Itonididae) From small shaped galls on leaves of trees, (IB:333), 1917. Making small cone-shaped galls in leaves, on Mona Island, (SIB:112), 1939. (LFM.)

Ctenodactylomyia watsoni Felt

(Itonididae) From galls, on leaves, (IB:333).

LEPIDOPTERA

Eunebristis zingarella (Walsingham)

(Gelechiidae) Reared by Mr. A. Busck, from tree at San Juan, Feb. 1899. Caterpillar a leaf-miner in leaves, forming round mines, listed (IB:489).

Acrocercops sp.

(Gracilariidae) Reared from serpentine mines in leaves of trees at Mameyes, (IB:499), 1936.

HYMENOPTERA

Sterictiphora krugii (Cresson)

(Tenthredinidae) One of the worst insect pests of sea-grape trees. Very common, and recorded from many localities: Camuy, Guajataca, San Germán, Patillas, Maunabo, Bayamón, Joyuda, Fajardo and Salinas, (SIB:138), 1937-40.

Coccolobis

Neocatolaccus livii Girault

(Pteromalidae) Reared from galls, produced by *Ctenodactylomyia watsoni* Felt, listed (IB:524).

Eretmocerus portoricensis Dozier

(Aphelinidae) Reared from the coccid *Aleurothrixus floccosus* (Maskell) on sea grape tree, (IB:146).

Eurytoma ctenodactylomyii Girault

(Eurytomidae) From galls in sea-grape, caused by the dipterous *Ctenodactylomyia watsoni* Felt, (IB:534).

Insects Affecting the Branches and Twigs

ISOPTERA

Kalotermes (K) *snyderi* Light

(Kalotermitidae) Infesting the dead branches of trees, abundant. Mona Island, April 5, 1944. (GNW. & LFM.)

HOMOPTERA

(Fulgoridae)

Bothriocera venosa Fowler

At Añasco, listed (IB:94).

Neurotmeta viridis Walker

At Loíza (IB:97), 1922.

Thionia borinquensis Dozier

Nymphs abundant, and a few adults, on tree, at Loíza, (IB:98), 1922.

Colpoptera maculata Dozier

At Salinas and Cataño, (IB:99).

Colpoptera maculifrons Muir

At Punta de Cangrejos (IB:100).

Ormenis marginata (Brunnich)

At Añasco (IB:102); at Mona Island, (SIB:53), 1939. (LFM.)

Ormenis pygmaea (Fabricius)

At San Juan, Salinas, Añasco, Isabela, Hatillo, (IB:103). All stages abundant, on twigs, sometimes going under the leaves, at Mona Is., (SIB:53), 1939. (LFM.)

Coccolibis

Ormenis quadripunctata (Fabricius)

At Isabela (IB:104), 1921.

Flatoides punctata (Walker)

At Isabela (IB:104), 1921. At Mona Island, listed (SIB:53), 1939. (LFM.)

(Coccidae)

Pulvinaria urbicola Cockerell

At Punta Cangrejos, listed (SIB:59), 1921.

Coccus viridis (Green)

On twigs and leaves, at Mona Island, (SIB:59), 1939.

COLEOPTERA

Cylindera flava (Fabricius)

(Cerambycidae) Larvae boring in twigs. One adult collected. Mona Island, April 6, 1944. (GNW.)

HYMENOPTERA

(Formicidae)

Myrmelachista ramulorum Wheeler

In hollow twigs of trees, (IB:554).

Camponotus ustus Forel

In hollow twigs, listed (IB:555).

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Large tree with nest and tunnels at Guajataca, Nov. 17, 1940. At Maunabo, many trees with tunnels on the trunks, Oct. 20, 1940. Same at Salinas, Nov. 1940. (LFM.)

Kaloterme (K.) *snyderi* Light

(Kalotermitidae) Infesting trunk of trees at Mona Island, Jan. 1941. (LFM.)

Coccolobis*Coccolobis venosa* L.

(Polygonaceae)

DISTRIBUTION: A tree, growing in thickets and on hillsides at lower and middle elevations, in dry or moist districts of Puerto Rico. Also recorded from Mona, Vieques, St. Croix, St. Thomas, Tortola, Jamaica, Hispaniola and from St. Barts to Trinidad.

COMMON NAMES: "Calambrefia" and Chigerry grape.

INSECT RECORDS

Insects Affecting the Leaves and Twigs

HOMOPTERA

(Coccidae)

Coccus viridis (Green)

Heavy infestation of leaves and twigs, particularly on the undersides of leaves, near the midrib, at Guánica, May 22, 1940. (LFM.)

Chrysomphalus (*Melenaspis*) *portoricensis* Lindinger

In tree, near Las Cruces, Cayey, listed (SIB:61).

HYMENOPTERA

Sterictiphora krugii (Cresson)

(Tenthredinidae) Larvae on foliage of trees, at Maunabo, June 1942. (LFM.)

Cocos*Cocos nucifera* L.

(Arecaceae)

DISTRIBUTION: A palm, locally spontaneous after cultivation in Puerto Rico, St. Croix, St. Thomas, St. Jan, Tortola and also found in all the tropical islands and coastal regions of the world. The palm is unknown anywhere in a wild state, but presumably is of American origin.

USES: Extensively planted and of great economic importance. The

Cocos

"milk" or "Agua de coco" of the green fruit is in great demand locally. The ripe fruit is exported in large quantities. The wood is used in walking sticks, umbrella handles, posts, piles, etc. The fiber of the husk, known as coir and the dried meat of the nut, known as copra, are important articles of export from the East Indies to Europe.

COMMON NAMES: "Palma de coco," "Coco," "Cocotero," Coconut palm, Coconut, Coco palm and Porcupine wood. (Br. W. I.)

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

(Coccidae)

Icerya montserratensis Riley & Howard

Listed, (IB:119).

Pseudococcus nipae (Maskell)

At Santurce, Arecibo and Sta. Isabel, (IB:126).

Ceroplastes denudatus Cockerell

At Puerta de Tierra, listed (SIB:59).

Ceroplastes floridensis Comstock

Listed (SIB:59).

Aonidiella orientalis (Newstead)

At Punta de Cangrejos (IB:137); also in (SIB:60).

Aspidiotus destructor Signoret

The most injurious pest of coconut palms in the island of Puerto Rico. At Ponce, many of the coconut palms were killed by the coccid (Barrett). Many locality records listed in (IB:137-8). Also recorded from Mona Is., (SIB:61).. (LFM.)

Chrysomphalum aonidum (Linnaeus)

Listed (IB:139).

Chrysomphalus dictyospermi (Morgan)

Listed, (IB:140), 1914.

Chrysomphalus personatus (Comstock)

At Punta de Cangrejos (IB:140), 1921.

Cocos

Ischnaspis longirostris (Signoret)

At Caguas, Cataño, Mayagüez and Arroyo, recorded by Mr. A. Busek, Jan. and Feb., 1899. At Mayagüez, but on the outside of the husk, listed (IB:142-43).

(Aleyrodidae)

Aleurodicus cocois (Curtis)

Adults and pupae abundant on the undersides of coconut palms foliage at Río Piedras, Dec. 11, 1924. Also at Guayama, 1930, (IB:144). (Dozier.)

COLEOPTERA

(Coccinellidae)

Decadiomus pictus Chapin

Feeding on coconut scales, listed (SIB:92).

Psorolyma maxillosa Sicard

Listed in (IB:230). Possibly feeding on coconut scales.

Scymnillus nunenmacheri Sicard

Feeding on *Aspidiotus destructor* Signoret, on palms, listed (IB:230), 1921.

Scymnillus variipennis Sicard

Feeding on *Aspidiotus destructor* Signoret, on palms, at Ponce (IB:230), 1913.

Scymnillodes cyanescens violaceus Sicard

Feeding on the coconut scale, *Aspidiotus destructor* Signoret, (IB:230), 1921.

Chilocorus cacti (Linnaeus)

Feeding on coconut scales, both larvae and adults very abundant, on palm fronds, at Río Piedras, March 2, 1940. Pupae also attached to the undersides of leaves. (LFM.)

LEPIDOPTERA

Homaledra sabalella (Chambers)

(Cosmopterygidae) Caterpillars common on the leaves of palms, at Punta de Cangrejos, Manatí, Mayagüez, Naguabo and Vieques Is., listed (IB:486).

Cocos

HYMENOPTERA

Aphytis chrysomphali (Mercet)

(Aphelinidae) An important parasite, responsible for the control of the coconut scale, *Aspidiotus destructor* Signoret, (IB:526). Listed as *Aphelinus chrysomphali* Mercet.

Brachymeria incerta (Cresson)

(Chalcididae) From *Homaledra sabalella* (Chambers), the coconut leaf caterpillar, listed (IB:535), 1923.

Spilochalcis homaledrae Wolcott

(Chalcididae) From coconut palm fronds, infested with *Homaledra sabalella* (Chambers), in (IB:536), 1923.

Spilochalcis cocois Wolcott

From coconut palm fronds, infested with *Homaledra sabalella* (Chambers), in (IB:537), 1923.

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Nest in palm (IB:49), 1915. Nest and tunnels on the trunk of a very high palm, at Lares, altitude 1,270 ft., Dec. 10, 1941. At Guajataca, Maunabo, Yabucoa, Luquillo beaches, many palms infested, 1941. (LFM.)

LEPIDOPTERA

Megalopyge krugii (Dewitz)

(Megalopygidae) Cocoons on the trunk of palms, very abundant, Sept. 14, 1940, at Ponce. Whether the caterpillars were feeding on the foliage of the palm or they came to pupate there, from adjoining host trees, is not known. (LFM.)

COLEOPTERA

Strataegus quadrifoveatus Palisot de Beauvois

(Scarabaeidae) One of the worst pests of coconut palms in the Island. Attacking the trunk and roots of palms. Very common on coconut groves. Extended account on (IB:254-255).

Cocos

Xyleborus affinis Eichhoff

(Scolytidae) From dying coconut palms (IB:318), 1935.

Xyleborus confusus Eichhoff

From coconut palm at Cabo Rojo (IB:318), 1923.

Colubrina

Colubrina arborescens (Mill.) Sarg.

(Rhamnaceae)

DISTRIBUTION: A shrub or tree, growing in woodlands, thickets and on hillsides at lower and middle elevations, in dry and moist districts of Puerto Rico. Also recorded from Mona, Icacos, Vieques, Culebra, St. Croix, St. Jan, St. Thomas, Tortola, Virgin Gorda, Anegada, Florida, Cuba, Jamaica, Hispaniola, Antigua and Barbados. (In Britton and Wilson, Vol. 5, p. 536 as: *Colubrina Colubrina* (Jacq.) Millsp.)

USES: The yellowish brown wood is hard, strong and durable and is sometimes used in construction.

COMMON NAMES: "Abejuelo," "Abeyuelo," "Aguacatillo," "Mabí," "Achiotillo," "Ratón," "Aguaytarán," "Guitarán," "Sanguinaria," Snake wood, Snake bark, West Indian green heart, Iron wood and Soap tree.

INSECT RECORDS

Insects Affecting the Leaves

COLEOPTERA

Apodrosus argentatus Wolcott

(Curculionidae) Mr. E. G. Smyth, records this species as, "Feeding on leaves of tree, at Guánica," (IB:303), 1914. Also collected at Mayaguez. Abundant on young shoots, at Mona Is., probably feeding on the tender foliage. (LFM.) 1940.

LEPIDOPTERA

Spilomela fimbriauralis (Guenée)

(Pyraustidae) Caterpillar of this species a leaf-roller on tree; many adults reared from material collected at Guajataca and San Sebastián,

Colubrina

Oct., Nov. and Dec. 1940. Ranging in altitudes from 15 to 450 ft. (LFM.)

Insects Affecting the Trunk and Branches

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Large trees with nests and tunnels on the trunk, Km. 22 of the Camuy-San Sebastián road, at Guajataca, Oct. 19, 1941. (LFM.)

HOMOPTERA

Pinna sp. minor (Maskell)

(Coccidae) On tree, at Quebradillas (SIB:60), 1940. On the Camuy-San Sebastián road, Km. 22, many trees, with the trunks and branches infested by the scale insect. The lady-bird beetle, *Chilocorus cacti* (Linnaeus) abundant, feeding on the scales. Altitude 900 ft., Oct. 19, 1941. (LFM.)

COLEOPTERA

Chilocorus cacti (Linnaeus)

(Coccinellidae) Larvae and adults abundant, feeding on the scale insect, *Pinna sp. minor* (Maskell) infesting trees at San Sebastián, altitude 900 ft., Oct. 19, 1941. (LFM.)

HYMENOPTERA

Camponotus ustus Forel

(Formicidae) In hollow twigs, nesting and breeding abundantly. Camuy-San Sebastián road, Km. 22, altitude 900 ft., Oct. 19, 1941. (LFM.)

Insects Resting on the Tree

HEMIPTERA

Diolcus irroratus (Fabricius)

(Scutelleridae) At Mayagüez, listed (IB:182).

COLEOPTERA

(Chrysomelidae)

Nodonota wolcottii Bryant

At Mayaguez, (IB:269).

Colubrina

Asbecesta violacea Allard

? on tree, at Guánica (IB:270).

Disonycha laevigata Jacoby

At Mayagüez, (IB:277).

Aphthona compressa Suffrian

At Mayaguez, (IB:284).

Conocarpus

Conocarpus erectus L.

(Terminaliaceae)

DISTRIBUTION: A shrub or tree, growing on coastal rocks and in mangrove swamps in Puerto Rico. Also recorded from Mona, Icacos, Vieques, St. Croix, St. Thomas, St. Jan, Tortola, Virgin Gorda, Anegada, Florida, Bermuda, Cuba, Jamaica, Hispaniola, continental tropical America and western tropical Africa. (In Britton & Wilson, Vol. 6, p. 23 as: *Conocarpus erecta* L.)

USES: The brownish, hard, strong and very heavy wood is used for building boats, barges and for shelving. It is also turned into charcoal to be used in forges. The wood is very durable when the trees grow on dry soil.

COMMON NAMES: "Mangle," "Mangle botón," "Mangle botoncillo," "Botoncillo," "Mangle colorado," Button wood and Button tree.

INSECT RECORDS

Insects Affecting the Leaves

COLEOPTERA

Nodonota wolcottii Bryant

(Chrysomelidae) Abundant on host tree, at Faro de Cabo Rojo, (IB:269), 1921. Presumably feeding on the foliage.

Exophthalmodes roseipes (Chevrolat)

(Curculionidae) On beach west of Arecibo, (IB:293), 1923. Listed as *Prepodes roseipes* Chevr.

Conocarpus

Diaprepes abbreviatus (Linnaeus)

(Curculionidae) At Boca de Cangrejos, (SIB:103), 1940. Leaves of terminal shoots badly eaten, at Luquillo, May 15, 1943. (GNW.)

Lachnopus curvipes (Fabricius)

(Curculionidae) At Punta Salinas (IB:302), 1923.

LEPIDOPTERA

Jocara sp.

(Epipaschidae) A leaf-webber on trees, causing total defoliation, at El Pastillo, between Ponce and Sta. Isabel. Many pupae parasitized by the chalcid wasp, *Brachymeria incerta* (Cresson), Jan. 5, 1941. (LFM.) Leaf-webber also observed on tender leaves of trees at Mona Island, April 5, 1944. (GNW. & LFM.)

Megalopyge krugii (Dewitz)

(Megalopygidae) On trees at Martín Peña, (IB:505), 1923.

HYMENOPTERA

Brachymeria incerta (Cresson)

(Chalcididae) Reared from pupae of *Jocara* sp., the leaf-webber on "botoncillo," collected between Ponce-Sta. Isabel, at El Pastillo, Jan. 5, 1941. (LFM.)

Insects Affecting the Trunk and Branches

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Nests and tunnels on many trees at Camp Piñones, Boca de Cangrejos, Sept. 15, 1940. Also trees infested at El Pastillo, near Santa Isabel, Nov. 1941. (LFM.)

Kalotermes (K.) *snyderi* Light

(Kalotermitidae) Infesting the dead branches of live trees, abundant. Mona Island, April 5, 1944. (GNW. & LFM.)

HOMOPTERA

Asterolecanium pustulans (Cockerell)

(Coccidae) Listed in (IB:22), 1917. Also in (SIB:57), 1940. Tremendous infestation of young trees at El Pastillo, near Santa Isabel,

Conocarpus

killing many trees. Trunks and branches fully covered by the scale insects, some of the trees were just a mass of brown, dried branches and leaves. Oct. 15, 1940. (LFM.)

Cordia

Cordia alliodora (R. & P.) Cham.

(Ehretiaceae)

DISTRIBUTION: A tree, growing in forests, river valleys and on hillsides, at lower and middle elevations, ascending to about 900 meters in Puerto Rico. Recorded also from Vieques, St. Thomas, St. Jan, Tortola, Cuba, Hispaniola, from Antigua to Trinidad and continental tropical America. (In Britton & Wilson, Vol. 6, p. 123 as: *Cerdana alliodora* R. & P.)

USES: The light, but strong and durable brown wood, is used for furniture and general construction, such as doors, venetian blinds, gun carriages cots, bungs of barrels and rollers in sugar mills.

COMMON NAMES: "Capá prieto," "Capá," Capaw, Spanish elm and Prince wood.

INSECT RECORDS**Insects Affecting the Leaves****HOMOPTERA****Protalebra cordiae Osborn**

(Cicadellidae) Nymphs and adults causing yellowing of leaves, on trees attacked at San Lorenzo, on the Patillas road. Altitude 300 ft., Aug. 25, 1940. At Cayey, near El Peñón del Collao, on the Salinas road, altitude 1,900 ft., a large tree with foliage attacked by the leafhopper nymphs and adults, was nearly yellow on account of the tremendous infestation, Oct. 19, 1940. (LFM.)

HEMIPTERA**Monanthia monotropidia Stål**

(Tingitidae) A very important pest of this tree, causing considerable defoliation. All stages abundant on the undersides of leaves, at

Cordia

Cayey, 1,500 ft. altitude (SIB:71), 1940. At San Lorenzo, trees attacked, with leaves already showing the characteristic chlorosis, altitude 300 ft., Aug. 25, 1940. At Aguadilla, near Punta Borinquen, trees all around the vicinity infested by this insect, many of them partially defoliated, Oct. 4, 1940. (LFM.)

COLEOPTERA

Diaprepes abbreviatus (Linnaeus)

(Curculionidae) Adults feeding on the foliage, abundant, at Quebradillas, May 22, 1941. (LFM.)

LEPIDOPTERA

Conchylodes diphteralis (Geyer)

(Pyrastidae) A leaf-webber, caterpillars gregarious in habits. At El Peñón del Collao, Cayey, 1,800 ft., in altitude, Oct. 10, 1940. Not a common species. (LFM.)

Acrocercops sp.

(Gracilariidae) A leaf-miner causing severe damage in very young trees, along roadsides, near El Peñón del Collao, Cayey, 1,900 ft. altitude, Oct. 20, 1940. (LFM.)

Insects Affecting the Branches and Twigs

HOMOPTERA

Flatoides punctata (Walker)

(Fulgoridae) Collected on twig of tree, at San Lorenzo, altitude 300 ft., Aug. 25, 1940. (LFM.)

Saissetia oleae (Bernard)

(Coccidae) Considerable infestation on twigs and smaller branches of several trees, near Salinas, on the Cayey road, altitude 250 ft., (SIB:59), 1940. (LFM.)

HYMENOPTERA

Solenopsis geminata (Fabricius)

(Formicidae) Abundant on the twigs and branches, attending the scale insect *Saissetia oleae* (Bernard), on trees at Salinas, (SIB:149), 1940. (LFM.)

Cordia

Cordia borinquensis Urban

(Ehretiaceae)

DISTRIBUTION: A tree, growing in woods, forests and ravines, in wet or moist districts, at middle or higher elevations in Puerto Rico. Endemic.

USES: Its yellowish wood is rather hard and heavy; however it is not used locally.

COMMON NAMES: "Muñeca," "Palo de muñeca" and "Capá cimarrón."

INSECT RECORDS

Insects Affecting the Leaves

COLEOPTERA

Cryptocephalus nigrocinctus Suffrian

(Chrysomelidae) At Camuy, listed (IB:267), 1924. Possibly feeding on the foliage.

Cordia nitida Vahl

(Ehretiaceae)

DISTRIBUTION: A tree, growing in woodlands, forests, on hillsides and along streams, at lower and middle elevations, in dry and moist districts of Puerto Rico. Also at Vieques, St. Thomas, St. Jan, St. Croix, Tortola, Jamaica, Cuba and Hispaniola.

COMMON NAMES: "Cerezo," "Cereza," "Cereza cimarrona," "Muñeca," West Indian cherry and Red manjack.

INSECT RECORDS

Insects Affecting the Leaves

HEMIPTERA

Pachycoris fabricii (Linnaeus)

(Scutelleridae) Adults and eggs on leaves of trees, at Maricao Insular Forest 1,900 ft. in altitude, (SIB:80), 1940. Also on same host tree, near Peñón del Collao, eggs, nymphs and adults, breeding on the foliage, Dec. 24, 1940, altitude 2,000 ft. (LFM.)

Cordia

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Tunnels and nests on host trees, at Islote, Arecibo, Dec. 1, 1940. (LFM.)

Cordia sulcata DC.

(Ehretiaceae)

DISTRIBUTION: A tree, growing in woodlands and forests in wet and moist districts, at lower and middle elevations in Puerto Rico. Also recorded from Vieques, St. Croix, St. Thomas, St. Jan, Tortola, Hispaniola and from Saba to Trinidad.

USES: Wood little used locally; in Jamaica however, it is claimed to be a good timber.

COMMON NAMES: "Moral," "Moral de paz" and White manjack.

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

Protalebra aureovittatus DeLong

(Cicadellidae) At El Verde, Río Grande, (SIB:52), 1940. Also nymphs and adults very abundant, on the undersides of leaves, at Barrio Guayabota, Yabucoa, 1,300 ft. altitude, Aug. 25, 1940. Also at Aguas Buenas, 1,000 ft., but not so abundant, June 2, 1940. (LFM.)

HEMIPTERA

Paracarnus cubanus Bruner

(Miridae) Quite common, on the undersides of leaves, at El Verde, Río Grande and at Cayey, altitude 1,300 ft., (SIB:66), 1940. (LFM.)

COLEOPTERA

Galerucella varicornis Weise

(Chrysomelidae) Feeding on the leaves of tree, making numerous holes, at Mayagüez, (IB:270), 1923.

Cordia

LEPIDOPTERA

Oiketicus kirbyi Guilding

(Psychidae) At Cayey, on foliage, (SIB:137), 1940. (LFM.)

Megalopyge krugii (Dewitz)

(Megalopygidae) Caterpillar on foliage at Cayey, Nov. 1940. (LFM.)

HYMENOPTERA

Crematogaster steinheili Forel

(Formicidae) Sheds built over coccids on leaves, by ants, at Culebra Is., (IB:546).

Insects Affecting the Twigs

HOMOPTERA

Saissetia oleae (Bernard)

(Coccidae) Branches of large tree and twigs infested by the insect, at Aibonito, altitude 1,800 ft., Oct. 13, 1940.

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) costalis (Holmgren)

(Termitidae) Nest on tree, at Cayey, about 1,500 ft., in altitude (SIB:43), 1940. Nest on one tree and tunnels on many at Aguas Buenas, June 2, 1940. Also at Río Abajo, Utuado, 1,200 ft. altitude, April 4, 1941. (LFM.)

Crescentia

Crescentia cujete L.

(Bignoniaceae)

DISTRIBUTION: A tree, growing on hillsides and plains at lower elevations in Puerto Rico. Also recorded from Desecheo, St. Thomas, St. Croix, St. Jan, Tortola, Florida, Cuba, Jamaica, Hispaniola and continental tropical America.

USES: The wood is light brown, tough and durable, with a specific gravity of about 0.8. It is not known to be of any use locally, but the

Crescentia

rind or bony outside of the fruit, like the shell of the coconut, finds a multiplicity of domestic uses, as for cooking utensils, drinking cups, tableware, etc. In Jamaica, the wood is used for tool handles, carriage parts, felloes of wheels, saddles and chairs. It is also employed for ship knees and cabinet work in Mexico and Central America.

COMMON NAMES: "Higüero," "Higüera," Calabash and Calabash tree.

INSECT RECORDS

Insects Affecting the Leaves

LEPIDOPTERA

Eulepte concordalis Hübner

(Pyraustidae) Larvae on leaves of tree at Ciales (IB:459), 1912 and 1916. Larvae on leaves at Ponce (SIB:130), 1940. (Listed in both, as *Mesocondyla concordalis* Hübner). The caterpillar of this species is a leaf-webber, and attacks the trees, the whole year in all parts of the Island. (LFM.)

Insects Affecting the Twigs

HOMOPTERA

Saissetia oleae (Bernard)

(Coccidae) Collected by Mr. A. Busck, at Lares, January 25, 1899, in (IB:133).

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Large tree attacked by termites, at Aguadilla, Dec. 19, 1940. (LFM.)

Cupania

Cupania americana L.

(Sapindaceae)

DISTRIBUTION: A tree, growing in wooded hills, on river banks and

Cupania

along creeks, at lower and middle elevations in Puerto Rico. Also recorded from Cuba, Hispaniola, Martinique, Trinidad and Venezuela.

USES: The light brown, soft wood, is largely used for posts.

COMMON NAMES: "Guara" and "Guara blanca."

INSECT RECORDS

LEPIDOPTERA

Nyridela chalciope (Hübner)

(Amatidae) According to Möschler, p. 113, the caterpillar of this species, lives on this tree, (IB:412).

Ophisma tropicalis Guenée

(Phalaenidae) According to Möschler, p. 201, the caterpillar of this species, lives on this tree, (IB:430).

Hippia insularis (Grote)

(Notodontidae) According to Möschler, p. 123, the caterpillar of this species, lives on this tree. (IB:444). Listed as *Edema insularis* Grote.

Oiketeticus kirbyi Guilding

(Psychidae) Dr. Möschler, p. 122, says that the caterpillar of this species lives on *Cupania*, not specifying which species, (IB:502).

Insects Affecting the Twigs

HOMOPTERA

(Coccidae)

Asterolecanium pustulans (Cockerell)

Many terminal branches and twigs killed by an intensive attack of this scale insect, on several trees, at Manatí, Sept. 27, 1940. (det: Morrison) (LFM.).

Howardia biclavis (Comstock)

On twigs of trees, at Manatí, Sept. 27, 1940. (det: Morrison) (LFM.).

Aulacaspis (Pseudalacaspis) major (Cockerell)

On twigs of trees, at Manatí, Sept. 27, 1940. (det: Morrison) (LFM.).

Cyrilla

Cyrilla racemiflora L.

(Cyrillaceae)

DISTRIBUTION: A very large tree, growing in thickets and mountain forests in wet or moist districts of Puerto Rico. Also recorded from Cuba, Jamaica, Hispaniola, southeastern United States, Guadeloupe to St. Vincent and northern South America.

COMMON NAMES: "Colorado," "Colorao," "Palo colorado," and Southern leatherwood.

INSECT RECORDS

Insects Affecting the Trunk

ISOPTERA

Kalotermes (Glyptotermes) pubescens Snyder

(Kalotermitidae) Termites on wooden logs of trees, very recently cut, about a week ago. Very heavy infestation, which with all the probabilities started while the tree was living. El Yunque Mts., altitude 1,800 ft., Sept. 29, 1940. (LFM.)

Dacryodes

Dacryodes excelsa Vahl

(Burseraceae)

DISTRIBUTION: A large tree, growing in the forests of Puerto Rico at high altitudes. The most majestic tree in our Island. Also recorded from Montserrat to Grenada.

USES: The brown wood is hard, heavy and strong, used for furniture, in carpentry and general construction. The trunk and roots exude a

COMMON NAMES: "Tabonuco" and Candle tree.

INSECT RECORDS

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) costalis (Holmgren)

(Termitidae) Nest on tree, at Matrullas, mountains northeast of

Dacryodes

Villalba, (SIB:43), 1939. Nests and tunnels on trees at El Yunque Mts., Luquillo Unit, altitude 1,200 ft., June and Sept. 1940. (LFM.)

COLEOPTERA

(Platypodidae)

Platypus rugulosus Chapuis

Adults collected in "tabonuco" logs, boring inside, at El Guineo Camp, Toro Negro Unit, May 1940. (det: Blackman) (D. DeLeón & LFM.).

Platypus compositus Say

A single adult taken from a log, at El Guineo Camp, Toro Negro Unit, May 1940. (det: Blackman) (D. DeLeón & LFM.).

(Scolytidae)

Pterocyclus bivittatus Blandford

Taken from logs on the ground, at El Guineo Camp, Toro Negro Unit, May 1940. (det: Blackman, as sp. near *bivittatus*) (D. DeLeón & LFM.).

Ambrosiodmus lecontei Hopkins

Adults common, boring in trunks or logs of trees, on the ground, at El Guineo Camp, Toro Negro Unit, May 1940. (det: Blackman) (D. DeLeón & LFM.).

Dalbergia

Dalbergia ecastophyllum (L.) Taub.

(Fabaceae)

DISTRIBUTION: A tree-like plant, growing in coastal thickets, mangrove swamps and along streams at lower elevations in Puerto Rico. Also recorded from Vieques, St. Croix, St. Thomas, St. Jan, Tortola, Virgin Gorda, Florida, Bahamas, Jamaica, Cuba, Trinidad, continental tropical America and tropical Asia. (In Britton & Wilson, Vol. 5, p. 406 as: *Ecastophyllum Ecastophyllum* (L.) Britton.)

COMMON NAMES: "Maraimaray" and "Palo de pollo."

Dalbergia

INSECT RECORDS

Insects Affecting the Leaves

COLEOPTERA

Cryptocephalus nigrocinctus Suffrian

(Chrysomelidae) At Humacao and Algarrobo, (IB:267), 1922-23.

Cryptocephalus perspicax Weise

Abundant, feeding on the leaves, at Punta Salinas, in (IB:268), 1923.

Exophthalmodes roseipes (Chevrolat)(Curculionidae) At Mayagüez, in (IB:293). Listed as *Prepodes roseipes* Chevrolat.*Lachnopus curvipes* (Fabricius)

(Curculionidae) At Algarrobo, 1922 and at Palo Seco, April 7, 1931, (IB:302).

Apodrosus argentatus Wolcott

(Curculionidae) Abundant on trees, at Boquerón (IB:203), 1923; also at Punta de Cangrejos, Punta Salinas and Mameyes.

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Trees near Maunabo, at Cabo de Mala Pascua, altitude 150 ft., infested by "comején." Oct. 20, 1940. (LFM.)

Dalbergia sissoo Roxb.

(Fabaceae)

DISTRIBUTION: A tree, native to Asia, planted at the Agricultural Experiment Station and at the U. S. Forest Service grounds, at Río Piedras.

COMMON NAME: "Siso."

Dalbergia

INSECT RECORDS

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) costalis (Holmgren)

(Termitidae) Nest and tunnels on trunk of a fairly large tree, growing at the Polytechnic Institute grounds, San Germán, Oct. 24, 1940.

Daphnopsis

Daphnopsis caribaea Griseb.

(Thymeleaceae)

DISTRIBUTION: A shrub or tree, growing in thickets, woodlands and on river banks, at lower and middle elevations in wet or moist districts, in Puerto Rico. Also recorded from Vieques, St. Croix, St. Thomas, St. Jan, from St. Martin to Trinidad, Tobago and Margarita.

COMMON NAMES: "Majagua de sierra" and Mahout.

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

Aleuroplatus vinsonioides (Cockerell)

(Aleyrodidae) on *Daphnopsis* sp., at Mt. Britton Trail, El Yunque Mts., May 8, 1941. (GNW.) Pupal stage of these specimens covered by a whitish wax. Same species, but with a yellow waxy covering collected on other tree species.

Insects on the Twigs and Leaves

Pachycoris fabricii (Linnaeus)

(Scutelleridae) Adults and nymphs very abundant on twigs, of tree, at Barrio Guavate, Cayey, altitude 1,500 ft., Aug. 15, 1940. (LFM.)

Delonix

Delonix regia (Bojer) Raf.

(Caesalpinaceae)

DISTRIBUTION: A tree, native to Madagascar, but after introduced, now grows spontaneously. In roadsides and gardens in Puerto Rico, at lower and middle elevations. Also recorded from St. Croix and St. Thomas.

USES: The wood is whitish or yellowish, close-grained, weak, soft and light. It is used very little locally, except as firewood. The dry pods are also used for the same purpose. The tree itself is planted as an ornamental and shade tree.

COMMON NAMES: "Flamboyán," "Flamboyán colorado," Royal Poinciana and Flame tree.

INSECT RECORDS

Insects Affecting the Leaves

COLEOPTERA

Diaprepes abbreviatus (Linnaeus)

(Curculionidae) Adults feeding on foliage, at Rio Blanco, Naguabo, altitude 250 ft., May 27, 1941.

LEPIDOPTERA

Melipotis acontioides (Guenée)

(Phalaenidae) Caterpillars on tree, at Manati; also a serious outbreak defoliating many trees between El Condado and Hato Rey, August 1933, (IB:436), (F. Sein). Larvae defoliating trees at Guánica, Ensenada and the vicinity around for many miles, (SIB:127), 1937. Also at Isabela, Dec. 11, 1941. (GNW. & LFM.)

Semiothisa sp.

(Geometridae) Larvae defoliating trees at Guánica, very abundant, listed in (IB:451), 1916.

Pococera atramentalis Lederer

(Epipaschidae) Reared from buds, in (SIB:132).

Megalopyge krugii (Dewitz)

(Megalopygidae) Thousands of cocoons attached to the trunk of trees and several caterpillars on twigs. Many trees defoliated, at Ponce, Sept. 19, 1940. (LFM.)

Delonix

Insects Affecting the Branches

Stephanoderes sp. near *brazilensis* Hopkins

(Scolytidae): Reared from branches, of tree at the School of Tropical Medicine, San Juan; W. A. Hoffman, Collector, March 1942.

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) One of the most common host trees, of this species of insect, in the island. At low and middle altitudes, up to 2,000 ft. Nearly every tree in Puerto Rico is infested. (LFM.)

HOMOPTERA

Asterolecanium pustulans (Cockerell)

(Coccidae) Rare on this tree, (IB:122). (GNW.)

COLEOPTERA

Apate monachus Fabricius

(Bostrychidae) Larvae boring in tree, (IB:243-44). Adult females boring in trees, at Guayanilla, (SIB:94), 1937. (LFM.)

Didymopanax

Didymopanax morototoni (Aubl.) Dene. & Pl.

(Araliaceae)

DISTRIBUTION: A tree, growing in the mountain forests of Puerto Rico. Also recorded from St. Thomas, St. Jan, Cuba, Hispaniola, Guadeloupe, Trinidad and northern South America.

USES: The hard and heavy, nearly white wood is used for boards and beams in house building, and has been suggested as a good material for making matches.

COMMON NAMES: "Yagrumo macho," "Yagrume," "Grayume," "Grayume macho," "Grayumo" and "Pana cimarrona."

Didymopanax

INSECT RECORDS

Insects Affecting the Leaves

COLEOPTERA

Phyllophaga portoricensis (Smyth)

(Scarabaeidae) Adults defoliating many large trees at Río Blanco, Naguabo, altitude 200 ft., on Sept. 28, 1940 and March 5, 1941. (LFM.)

LEPIDOPTERA

Sylepta silicalis (Guenée)

(Pyraustidae) Larvae a leaf-roller, at Lares, (IB:461), 1922.

Sparagmia gigantalis Guenée

(Pyraustidae) Caterpillar on trees, presumably feeding on the foliage, (IB:466), 1922.

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Many trees infested at Guavate Camp, near Cayey, Aug. 11, 1940. One tree, at the Agricultural Experiment Station grounds, with tunnels on its trunk, June 1942. (LFM.)

Dillenia

Dillenia indica L.

(Dilleniaceae)

DISTRIBUTION: A tree, introduced into Puerto Rico, and now growing at the Experiment Station grounds, at Mayagüez.

INSECT RECORDS

Insects Affecting the Leaves

Dillenia

HOMOPTERA

Aspidiotus cyanophyllii Signoret

(Coccidae) Recorded by Mr. Van Zwaluwenburg, listed in (IB:137).

Dipholis

Dipholis salicifolia (L.) A. DC.

(Sapotaceae)

DISTRIBUTION: A tree, growing in woodlands, on hillsides and along streams, at lower elevations in dry and moist districts of Puerto Rico. Also recorded from Vieques, St. Croix, St. Thomas, St. Jan, Tortola, Florida, Cuba, Jamaica, Hispaniola, Yucatán and Barbados.

USES: The red-brown wood is hard and strong, with a specific gravity of 0.93; used locally for fuel and charcoal.

COMMON NAMES: "Almendrón," "Sanguinaria" and Bustic.

INSECT RECORDS

Insects Attacking the Trunk

ISOPTERA

Kalotermes (K.) *snyderi* Light

(Kalotermitidae) Infesting tree, at Mona Is., (SIB:41), 1939. (LFM.)

COLEOPTERA

Xyleborus spinulosus Blandford

(Scolytidae) Collected from tree, at St. Johns, Virgin Is., May 29, 1940. (D. DeLeón.) (Note: This is not a Puerto Rico record.)

HYMENOPTERA

Euchrysia buscki Ashmead

(Cleonymidae) One specimen collected by D. DeLeón, April 1940, at St. Johns, Virgin Islands, on the bark of a dead branch, infested with cerambycid beetles and larvae of *Xyleborus* sp. near *spinulosus* Blandford. (Note: This is not a Puerto Rico record.)

Elaeodendrum*Elaeodendrum xylocarpum* (Vent.) DC.

(Celastraceae)

DISTRIBUTION: A tree, growing in coastal woods and thickets in Puerto Rico. Also recorded from Muertos, Icacos, Vieques, Culebra, Culebrita St. Croix, St. Thomas, St. Jan, Tortola, Virgin Gorda and Anegada.

COMMON NAMES: "Coscorrón," "Cocorrón," "Guayarote," "Guayavoto," Marble tree, Spoon tree or Nut muscat.

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA***Ceroplastes floridensis* Comstock**

(Coccidae) Abundant on the undersides of leaves and also on twigs of trees, at Arecibo, on the Vigía-Isote road, altitude near sea-level, Dec. 1, 1940. (LFM.)

COLEOPTERA***Exophthalmodes roseipes* (Chevrolat)**

(Curculionidae) Adults feeding on the foliage, not very abundant at Arecibo, on the Vigía-Isote road, Dec. 1, 1940. (LFM.)

LEPIDOPTERA***Horama pretus* (Cramer)**

(Amatidae) Caterpillars on host tree, at Punta de Cangrejos, 1916 and at Boquerón, 1923, (IB:413). Webbing leaves together, on trees, near Arecibo, on the Vigía-Isote road, Oct. 23, 1940. (LFM.)

***Hyponomeuta triangularis* Möschler**

(Hyponomeutidae) Caterpillars making nests between leaves at Boquerón, 1923 and at Punta Salinas, (IB:484). (GNW.)

Insects Affecting the Twigs

HOMOPTERA***Ceroplastes floridensis* Comstock**

(Coccidae) On twigs of tree, at Arecibo, Dec. 1, 1940. (LFM.)

Insects Affecting the Trunk

Elaeodendrum

ISOPTERA

Nasutitermes (N.) costalis (Holmgren)

(Termitidae) On trees at Guajataca Gorge, near Quebradillas, on Nov. 1940; and at Vigía-Isote road, near Arecibo, Dec. 1, 1940. (LFM.)

Erythrina

Erythrina berteriana Urban

(Fabaceae)

DISTRIBUTION: A tree, growing along roadsides and in pastures, naturalized after its introduction into Puerto Rico. Also recorded from Cuba, Hispaniola and Colombia.

USES: The wood is light, soft and weak and of very little economic importance. The tree is used for shade and also as live fences.

COMMON NAME: "Machete."

INSECT RECORDS

Insects Affecting the Leaves

COLEOPTERA

Diaprepes abbreviatus (Linnaeus)

(Curculionidae) Adults feeding on the leaves, causing heavy defoliation, at El Vigía-Isote road, near Arecibo, Sept. 27, 1940. (LFM.)

Insects Affecting the Twigs

HOMOPTERA

(Coccidae)

Saissetia oleae (Bernard)

On trees, at El Vigía-Isote road, near Arecibo, Sept. 27, 1940. (LFM.)

Pinnaspis sp.

Present on same twigs, with *Saissetia oleae* (Bernard), collected at Arecibo, Sept. 27, 1940. (det: Morrison) (LFM.).

*Erythrina**Aonidiella orientalis* (Newstead)

Also on the twigs in combination with the two scale insects named before, at Arecibo, Sept. 27, 1940. (det: Morrison) (LFM.).

LEPIDOPTERA

(Pyraustidae)

Agathodes designalis Guenée

As a leaf-folder on trees, at El Vigía-Islole road, near Arecibo, Sept. 27, 1940. Not boring in the twigs. (LFM.)

Terastia meticulosalis Guenée

Caterpillars boring in twigs of trees, at Mayagüez, in (SIB:131).

HYMENOPTERA

Myrmelachista ramulorum Wheeler

(Formicidae) Ants breeding in hollow twigs, on trees near Arecibo, Oct. 20, 1940. (LFM.)

Erythrina glauca Willd.

(Fabaceae)

DISTRIBUTION: A tree, growing on river banks and along roadsides, in the northern districts of Puerto Rico, probably an introduced species. Also recorded from St. Thomas, Cuba, Guadeloupe, Martinique, St. Vincent, Tobago, Central America and Venezuela.

USES: The wood is soft, light and weak, and has no use locally. In Venezuela the tree is used for shade in coffee and cacao plantations.

COMMON NAMES: "Bucare," "Búcar," "Bucayo" and "Gallito."

INSECT RECORDS

Insects Affecting the Leaves and Twigs

HOMOPTERA

(Membracidae)

Monobelus fasciatus (Fabricius)

Listed in (IB:74), 1913 and 1916. Presumably on the twigs of trees.

Erythrina

(Fulgoridae)

Neurotmeta angustata Uhler

Listed in (IB:97), 1921.

Ormenis quadripunctata (Fabricius)

Breeding on the undersides of the leaves, nymphs and adults very abundant, apparently not doing any noticeable damage to the foliage, on the Río Piedras-Aguas Buenas road, altitude 400 ft., Dec. 15, 1940. (LFM.)

(Coccidae)

Icerya purchasii (Maskell)

Slight infestation on the undersides of leaves, on tree, at the Río Piedras-Aguas Buenas road, altitude 400 ft., Dec. 15, 1940. (LFM.)

Pseudococcus nipae (Maskell)

Listed (IB:127), 1918. Fairly abundant on trees, at Río Piedras and Aguas Buenas, especially on the undersides of the leaves, near the midrib, 1941. (LFM.)

Pseudococcus adonidum (Linnaeus)

Heavy infestation, on the undersides of leaves and on young twigs on trees at the Río Piedras-Aguas Buenas road, altitude 400 ft., Dec. 15, 1940. (LFM.)

Saissetia oleae (Bernard)

Listed (IB:133), 1913. Slight infestation on twigs and smaller branches on trees, at the Río Piedras-Aguas Buenas road, altitude 400 ft., Dec. 15, 1940.

Pseudaulacaspis pentagona (Targioni)

Infestation on twigs of a tree, at Camp Doña Juana, mountains north of Villalba, altitude 1,900 ft., 1940, listed (SIB:60). (LFM.)

(Aleyrodidae)

Aleurodicus antillensis Dozier

Three pupal cases on leaf, at Río Piedras, Dec. 22, 1934, listed (IB:145). (Dozier.)

DIPTERA

Baccha parvicornis Loew

(Syrphidae) From leaves infested with the mealybug, *Pseudococcus nipae* (Maskell). The larva of this fly is a predator on coccids, listed (IB:348), 1923.

Erythrina

LEPIDOPTERA

Agathodes designalis Guenée

(Pyraustidae) Caterpillar of this moth, is a leaf-roller and twig borer on *Erythrina*. Sometimes fully grown caterpillars bore into the bark of trees to pupate (IB:463). At Cayey, near El Peñón del Collao, altitude 1,700 ft., (SIB:131), 1940. A very important pest of *Erythrina*. (LFM.)

Terastia meticulosalis Guenée

(Pyraustidae) Caterpillar twig and pod borer. Larva bored 90% of trees, in an experimental planting at the Río Piedras Agr. Exp. Station, (IB:464), 1921. Abundant, boring in twigs of trees, at Camp Doña Juana, altitude 1,900 ft., May 1, 1940. (LFM.) Adults reared from infested pods at Río Piedras.

Megalopyge krugii (Dewitz)

(Megalopygidae) Cocoons very abundant, attached to the trunks of trees, at Cayey, (IB:505). The caterpillar presumably feeding on the foliage.

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Nests and tunnels on large tree, at Dorado, altitude 150 ft., Dec. 1, 1940.

COLEOPTERA

Xyleborus confusus Eichhoff

(Scolytidae) Abundant under bark of dead tree, at Cayey (IB:318), 1917.

Erythrina poeppigiana (Walp.) O. F. Cook

(Fabaceae)

DISTRIBUTION: A tree, widely planted for coffee shade and along roadsides, in Puerto Rico. Recorded also from Jamaica, Cuba, Guadeloupe, Martinique and Trinidad. A native of Perú.

Erythrina

USES: The soft and perishable wood, is not locally used.

COMMON NAMES: "Bucare," "Palo de boyo," "Bucayo" and "Bois immortelle."

INSECT RECORDS

Insects Affecting the Leaves

COLEOPTERA

Diaprepes abbreviatus (Linnaeus)

(Curculionidae) At Palo Seco, April 7, 1931 and at Toa Baja, 1916, (IB:298).

LEPIDOPTERA

Ecpantheria icasia (Cramer)

(Arctiidae) Caterpillar feeding on foliage, according to Mr. Van Zwaluwenburg, (IB:416).

Agathodes designalis (Guenée)

(Pyraustidae) Caterpillar folding leaves on trees and feeding voraciously, at Aibonito, Oct. 13, 1940. (LFM.)

Insects Affecting the Twigs

HOMOPTERA

(Coccidae)

Saissetia oleae (Bernard)

At Mayagüez, listed (IB:133).

Pseudaulacaspis pentagona (Targioni)

At Mayagüez, listed (IB:135), as *Aulacaspis pentagona* Targioni.

Insects Affecting the Trunk

HYMENOPTERA

Myrmelachista ramulorum (Wheeler)

(Formicidae) Breeding in crevices in the bark of large tree. Eggs very abundant, Oct. 13, 1940, at Aibonito. (LFM.)

Eucalyptus

Eucalyptus citriodora Hook

(Myrtaceae)

DISTRIBUTION: A tree, native to Australia, introduced into Puerto Rico and the Virgin Islands.

USES: Grown experimentally for forest and firewood purposes and also as a roadside tree.

COMMON NAMES: "Eucalipto oloroso," "Eucalipto de limón" and "Eucalipto."

INSECT RECORDS

Insects Affecting the Leaves

COLEOPTERA

Attelabus sexmaculatus Chevrolat

(Curculionidae) Rolling the leaves, of small seedlings, in nurseries at Cayey, altitude 1,000 ft., and also at Camp Patillas, altitude 400 ft., (SIB :102), 1940. (LFM.)

Eucalyptus robusta Smith

(Myrtaceae)

DISTRIBUTION: A tree, native to Australia, introduced into Puerto Rico and the Virgin Islands, occasionally planted in gardens and farms in Puerto Rico.

USES: Grown experimentally for forest and firewood purposes and as a roadside tree.

COMMON NAMES: "Eucalipto de pantano" and "Eucalipto."

INSECT RECORDS

Insects Affecting the Leaves

COLEOPTERA

Attelabus sexmaculatus Chevrolat

(Curculionidae) At Guavate Camp, many trees attacked by the weevil, doing considerable damage to the leaves; also at Camp Pati-

Eucalyptus

llas, adults very abundant, many small trees affected, May and August, 1940. (LFM.)

LEPIDOPTERA

Laphygma frugiperda (Abbot & Smith)

(Phalaenidae) Caterpillars attacking small seedlings, at the Río Piedras Forest Service nurseries, Nov. 15, 1940. (det: Wolcott.) (LFM.)

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Tunnels and nests on trees, at the Polytechnic Institute grounds, at San Germán, Oct. 24, 1940. (LFM.)

Eugenia

Eugenia biflora lancea (Poir.) Krug & Urban

(Myrtaceae)

DISTRIBUTION: A shrub or a small tree, growing in thickets at lower elevations, mostly in moist districts of Puerto Rico. Also recorded from Cuba, Vieques, St. Croix, St. Thomas, Tortola, Virgin Gorda, Hispaniola and St. Martin. (In Britton & Wilson, Vol. 6, p. 35, as: *Eugenia lancea* Poir.)

COMMON NAMES: "Hoja menuda," "Pitangueira" and Black rod-wood.

INSECT RECORDS

Insects Affecting the Leaves and Twigs

HOMOPTERA

(Aleyrodidae)

Aleurodicus griseus Dozier

On leaves and twigs at Punta de Cangrejos, (IB:144), 1915. Also at Palo Seco, (SIB:62), 1939. (In all the records the host tree is listed as *Eugenia ludibunda* Bert. = *biflora lancea* (Poir.) Krug & Urban.)

Eugenia*Eugenia jambos* L.

(Myrtaceae)

DISTRIBUTION: A tree, growing in thickets and woodlands, at lower and middle elevations, abundant, especially along streams, in Puerto Rico. Also recorded from St. Croix, St. Thomas, St. Jan, Tortola, Cuba, Jamaica, Hispaniola and continental tropical America. A species native to Asia. (In Britton & Wilson, Vol. VI, p. 41 as: *Jambos Jambos* (L.) Millsp.)

USES: The wood is used for barrel hoops, fuel and charcoal. It also furnishes material from which large baskets are made.

COMMON NAMES: "Pomarrosa," Rose apple and Malabar plum.

INSECT RECORDS

Insects Affecting the Fruits

DIPTERA

Anastrepha mombinpraeoptans Seín

(Tephritidae) Reared from fruits, (IB :377-79), (SIB :119).

Anastrepha unipuncta Seín

An outbreak at Maricao, on "pomarrosa" fruits, July 1917. Reared from fruits, many localities recorded, (IB :377-79), (SIB :120).

HYMENOPTERA

Eucoila atriceps Kieffer

(Figitidae) From fruit fly larva on fruit, at Las Vegas, Mayagüez, (IB :518).

Insects Affecting the Leaves and Twigs

HOMOPTERA

Nessorhinus gibberulus Stål

(Membracidae) At Arecibo, listed (IB :74).

Philaenus fusco-varius Stål

(Cercopidae) At Bayamón, (IB :75).

Entogonia coffeaphila (Dozier)

(Cicadellidae) At Vega Alta, (IB :78).

(Fulgoridae)

Colpoptera maculifrons Muir

At Bayamón and Arecibo, (IB :100).

Eugenia**Neocolpoptera portoricensis** Dozier

At Cidra, (IB:101).

Ormenis pygmaea (Fabricius)

At Corozal, (IB:102).

(Coccidae)

Vinsonia stellifera (Westwood)

At Mayagüez; at Mameyes, (IB:130), 1912.

Coccus acuminatus (Signoret)

At Corozal, (IB:130).

Coccus mangiferae (Green)

Listed (IB:131).

Saissetia hemisphaerica (Targioni)

Listed (IB:132), 1912.

Saissetia oleae (Bernard)

At Corozal, (IB:133).

Selenaspis articulatus (Morgan)At Corozal, (IB:139), 1912. Listed as *Pseudoaonidia articulatus* Morgan.**Chrysomphalus personatus** (Comstock)

Listed (IB:140), 1913.

HYMENOPTERA**Myrmelachista ramulorum** Wheeler

(Formicidae) Ants killing shoots of tree, boring in the twigs and breeding inside the bores. Infestation causing the death of more than 50 per cent of the terminals of the trees, at Lares, June 2, 1940.

Insects Affecting the Trunk

ISOPTERA**Nasutitermes (N.) costalis** (Holmgren)

(Termitidae) Tunnels abundant on very large trees at Aguas Buenas, altitude 1,100 ft., June 2, 1940. Trees infested at Cayey and Barrio Guayabota of Yabucoa, June 1942. (LFM.)

Eugenia

COLEOPTERA

Apate monachus Fabricius

(Bostrychidae) An outbreak affecting many trees at Lares, among them: "pomarrosa," (IB :244).

LEPIDOPTERA

Psychonoctua personalis Grote

(Cossidae) Boring in the trunk of tree, reported by Tower, listed (IB :483).

Eugenia malaccensis (L.)

(Myrtaceae)

DISTRIBUTION: A tree, introduced and occasionally planted in Puerto Rico. Seen at St. Croix. (Many trees in "patios" of houses at Caracas, Venezuela: Martorell.) Native to Asia. (In Britton & Wilson, Vol. 6, O. 41, as: *Jambos malaccensis* (L.) DC.)

USES: Planted for its fruit as well as for shade and ornament.

COMMON NAMES: "Manzana Malaya," "Manzana Africana," "Ohia," "Pomarrosa Malaya" and Malayan apple.

INSECT RECORDS

Insects Affecting the Fruits

DIPTERA

Anastrepha unipuncta Seín

(Tephritidae) From fruits, collected at Trujillo Alto, (SIB :120).

Insects Affecting the Leaves

HOMOPTERA

(Coccidae)

Eucalymnatus tessellatus (Signoret)

At Trujillo Alto (IB :130).

Coccus acuminatus (Signoret)

At Trujillo Alto (IB :130).

Eugenia

Diaspis boisduvalii Signoret

At Trujillo Alto, listed (IB:135).

Aspidiotus cyanophyllii Signoret

Listed (IB:137).

Eugenia monticola (SW.) DC.

(Myrtaceae)

DISTRIBUTION: A shrub or tree, growing in thickets and woodlands, at lower and middle elevations in moist and dry districts of Puerto Rico. Also recorded from Culebra, Vieques, St. Thomas, St. Croix, St. Jan, Tortola, Virgin Gorda, Jamaica, Cuba, Hispaniola, from St. Martin to Trinidad.

COMMON NAMES: "Hoja menuda," "Biriji," Slang berry, Red rod-wood and Black cherry.

INSECT RECORDS

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) costalis (Holmgren)

(Termitidae) Infested by termites or "comejenes," at Guajataca Gorge, near Quebradillas, Nov. 17, 1940. (LFM.).

Eugenia myrtoides Poir.

(Myrtaceae)

DISTRIBUTION: A small tree, growing in coastal woods and thickets, in the dry southwestern districts of Puerto Rico. Also recorded from Mona, Muertos, Vieques, St. Croix, St. Thomas, Florida, Bahamas, Jamaica,

Eugenia

Cuba and Hispaniola. (In Britton & Wilson, Vol. 6, p. 35, as: *Eugenia buxifolia* (Sw.) Willd.)

COMMON NAMES: "Anguila" and Spanish stopper.

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

(Aleyrodidae)

Aleurodicus griseus Dozier

Numerous pupae, adults and nymphal stages, collected from the foliage of trees, at Punta de Cangrejos, July 19, 1925, listed (IB:143). (Dozier.)

Eugenia stahlii (Kiaersk.) Krug & Urban

(Myrtaceae)

DISTRIBUTION: A tree, growing in our mountain forests at middle and higher elevations. Endemic. Puerto Rico.

USES: The light colored, heavy, hard and durable wood is used for ox-cart tongues, railroad ties and general construction.

COMMON NAMES: "Guayabota" and "Limoncillo."

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

Krisna insularis Oman

(Cicadellidae) A nymph on a tender leaf of the tree, near El Yunque Rock, Luquillo Mts., about 4,000 ft. altitude, listed (SIB:51), 1940. (GNW.)

Aleurothrixus similis Sampson & Drews

(Aleyrodidae) A single leaf infested: black nymphs surrounded by a white corona. July 4, 1944, Mt. Britton, El Yunque Mts., 3,500 ft. altitude. (GNW.) Det: L. M. Russell.

Euterpe*Euterpe globosa* Gaertn.

(Arecaceae)

DISTRIBUTION: A palm, growing in our mountain forests, at middle and higher elevations, descending to about 600 meters, in Puerto Rico. Also recorded from Cuba, Hispaniola, and from Saba to Grenada.

USES: The outer portion of the trunk, split into boards is used for making huts; the leaves for thatching roofs. The fruits are eaten by wild doves.

COMMON NAMES: "Palma de sierra," "Yagua del monte" and Mountain palm.

INSECT RECORDS

Insects Affecting the Leaves

LEPIDOPTERA**Homaledra sabalella** (Chambers)

(Cosmopterygidae) On native mountain palms, at El Yunque, Luquillo Mts., (IB:486), 1934. Heavy outbreaks of the caterpillars attacking large areas, at El Yunque Mts. and Toro Negro Unit, as well as El Torito Mountains, northeast of Cayey, all at altitudes above 2,500 ft., January and February, 1940. (LFM.)

Insects Affecting the Trunk

ISOPTERA**Nasutitermes** (N.) *costalis* (Holmgren)

(Termitidae) Listed (Martorell, Jan. 1941, p. 80.)

Faramea*Faramea occidentalis* (L.) A. Rich

(Rubiaceae)

DISTRIBUTION: A tree, growing in the forests, in wet or moist districts, ascending to higher elevations, in Puerto Rico. Also recorded from Vie-

Faramaea

ques, St. Croix, St. Thomas, St. Jan, Tortola, Virgin Gorda, Jamaica, Cuba, Hispaniola, from Saba to Trinidad and continental tropical America.

COMMON NAMES: "Cafeillo" and "Palo de toro."

INSECT RECORDS

Insects Affecting the Leaves

COLEOPTERA

(Curculionidae)

Diaprepes abbreviatus (Linnaeus)

Adults feeding on the leaves, at Ponce, Sept. 1941. (LFM.)

Anthonomus sp.

Two different species of the same genus, collected by Mr. Oakley, at Ponce, July 17, 1934, listed, (IB:305).

Ficus

Ficus laevigata Vahl

(Moraceae)

DISTRIBUTION: A tree, growing in coastal thickets and on hillsides at lower elevations in Puerto Rico. Also recorded from Icaos, Culebra, Vieques, St. Thomas, St. Croix, St. Jan, Tortola, Florida, from Bahamas to Barbados and Mexico.

USES: The wood of this tree is soft, weak and not durable; occasionally used for firewood and charcoal.

COMMON NAMES: "Jagüey," "Lechesillo" and "Boislaglu."

INSECT RECORDS

Insects Affecting the Leaves and Twigs

HOMOPTERA

(Cicadellidae)

Jassus obligatus Osborn

At Quebradillas, listed (IB:86), 1921.

Ficus

(Fulgoridae)

Neurotmeta angustata Uhler

At Manatí, listed (IB:97), 1924.

(Coccidae)

Pseudococcus brevipes (Cockerell)On aerial roots of "jagüey," attended by the ants, *Myrmelachista ramulorum* Wheeler, (IB:123), 1924.*Pseudococcus nipae* (Maskell)

Heavy infestation of the coccid on leaves and twigs. Leaves all covered by a black sootie-mold. Aug. 27, 1940, Yabucoa, also at Guayama, Nov. 14, 1940. (LFM.)

Cryptostigma inquilina (Newstead)On tree, at Manatí, attended by the ant, *Myrmelachista ramulorum* Wheeler, listed (IB:129), 1923.*Ceroplastes floridensis* Comstock

At Yabucoa, listed (IB:130), 1916.

Saissetia nigra (Nietner)

Very abundant on tree, at Ponce, (SIB:59), 1936. Infestation on leaves and twigs of trees, at Maunabo, March 11, 1941, altitude 50 ft., and Salinas, March 9, 1941, altitude 700 ft.; also at Ponce, Hacienda Cintrona, Feb. 7, 1941. (GNW. & LFM.)

Saissetia oleae (Bernard)

Slight infestation on the undersides of leaves, on tree at Aibonito, Oct. 13, 1940. At Hacienda Cintrona, east of Ponce, on leaves and twigs, many of the scale insects parasitized, Feb. 7, 1941. (GNW. & LFM.)

COLEOPTERA

Diaprepes abbreviatus (Linnaeus)

(Curculionidae) At Palo Seco, feeding on leaves (IB:298), 1916. Many adults feeding on the foliage of trees, at Maunabo, Sept. 15, 1940. (LFM.)

LEPIDOPTERA

Megalopyge krugii (Dewitz)

(Megalopygidae) Caterpillars feeding on the foliage, at Ponce, Aug. 1941. (LFM.)

Ficus

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) costalis (Holmgren)

(Termitidae) Nests and tunnels on trunks of trees at Guajataca Gorge, San Sebastián, Salinas, Cayey and Yabucoa, in altitudes ranging from sea-level to 1,200 ft. 1940. (LFM.)

HYMENOPTERA

Myrmelachista ramulorum (Wheeler)

(Formicidae) Nesting in trees, at Manatí, living in crevices in the trunk, branches, etc. (IB:555), 1922. Trees infested by the same species, observed and chemical control experiments carried on, at Manatí, during 1936-42. (GNW. & LFM.)

Ficus lyrata Warb.

(Moraceae)

DISTRIBUTION: An introduced tree, having a very limited distribution in the island of Puerto Rico. Native to Africa.

COMMON NAMES: "Palo de goma" and Lyrate-leaved fig.

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

Pseudococcus nipae (Maskell)

(Coccidae) Undersides of leaves of large tree, completely covered by coccids, at least on the lower branches, Guayama, (SIB:58), 1940. (LFM.)

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) costalis (Holmgren)

(Termitidae) Tunnels on the trunk of large tree, about 50 ft. high and 18 inches in diameter, at Guayama, Dec. 12, 1940. (LFM.)

Ficus

Ficus nekbuda Warb.

(Moraceae)

DISTRIBUTION: A tree, native to the eastern part of tropical Africa, introduced and now planted occasionally in Puerto Rico and St. Croix.

USES: The tree is planted for shade and ornament.

COMMON NAME: Bark-cloth tree.

INSECT RECORDS

Homoptera

Ceroplastes denudatus Cockerell

(Coccidae) On trees, at Muñoz Rivera Park, at Puerta de Tierra. This scale insect was probably introduced along with the tree (IB:129), 1933.

Ficus nitida Thunb.

(Moraceae)

DISTRIBUTION: A tree, native to the East Indies, planted in Puerto Rico and the Virgin Islands, along avenues, in gardens and "plazas."

USES: The wood is not locally used, but the tree is a fine ornamental, and due to its densely leafy crown it is an excellent shade tree.

COMMON NAMES: "Laurel" and "Laurel de la India."

INSECT RECORDS

Insects Affecting the Leaves

THYSANOPTERA

Gynaikothrips ficorum (Marchal)

(Phleothripidae) On leaves of host trees, very common at San Juan, Rio Piedras and Caguas. Also at Manatí and Guayama (IB:69). On trees at Hacienda Catalina, El Yunque road, (SIB:50), 1939-40. (Listed as: *Gynaikothrips uzeli* Zimmerman.) Outbreak during the month of May, 1941, at Guayama, becoming pestiferous and troublesome to people walking around the "plaza" of the city. (LFM.)

Ficus

HEMIPTERA

Cardiastethus rugicollis Champion

(Anthocoridae) Predaceous on thrips, on trees, listed (SIB:67).
Listed in (IB:156) as: *Cardiastethus assimilis* (Reuter).

Macrotracheliella laevis Champion

(Anthocoridae) Feeding on thrips of trees, at Caguas, (IB:156).

Macrotracheliella nigra Parshley

Predaceous on thrips, on trees, (IB:156). Commenting about this record, Mr. H. G. Barber, p. 403, says, "Dr. H. L. Dozier (Jour. Dept. Agr. P. R. 10:280, 1927) reports *M. nigra* Parshley, determined by C. J. Drake, as feeding on thrips at Juana Diaz on Jan. 11, 1925 and at San Juan, July 2, 1925. It is possible that this may be a misidentification."

LEPIDOPTERA

Pachylia ficus (Linnaeus)

(Sphingidae) One larvae collected while feeding on the foliage of a tree at Río Piedras, May 26, 1944. (GNW.)

HYMENOPTERA

Tetrastichus tatei Dozier

(Tetrastichidae) From *G. uzeli* Zimmerman = *G. ficorum* (Marchal) on trees, at Mayagüez, recorded by Dozier, (SIB:143).

Insects Affecting the Leaves and Twigs

HOMOPTERA

(Coccidae)

Ícerya montserratensis Riley & Howard

At Manatí and Caguas, on trees, (IB:120).

Ceroplastes floridensis Comstock

At Caguas, listed (IB:130).

Saissetia oleae (Bernard)

Abundant on twigs of trees, at "plaza" of Guayama, May 30, 1941.

Selenaspis articulatus (Morgan)

At Caguas, (IB:131), 1915. Listed as *Pseudaonidia articulatus* Morgan.

Ficus

Chrysomphalus aonidum (Linnaeus)

At San Juan, (IB:139), 1915. Also at Caguas.

Chrysomphalus personatus (Comstock)

At San Juan, (IB:140), 1915.

Ischnaspis longirostris (Signoret)

At Caguas (IB:143). On trees, at El Yunque, (SIB:62), 1939-40.

On trees at Guayama, very abundant on leaves, May 30, 1941.

(LFM.)

HYMENOPTERA

Thysanus fax (Girault)

(Signiphoridae) Reared from *Chrysomphalus personatus* (Comstock) on trees, at Río Piedras, listed (IB:531), 1913.

Ficus sintenisii Warb.

(Moraceae)

DISTRIBUTION: A tree, growing in the mountain forests of Puerto Rico, at lower and middle elevations. Endemic.

USES: The wood is soft, weak and not durable. It is only used for firewood and charcoal.

COMMON NAMES: "Jagüey" and Higuillo prieto."

INSECT RECORDS

Insects Affecting the Leaves and Twigs

HOMOPTERA

Pseudococcus nipae (Maskell)

(Coccidae) Heavy infestation on a small tree, at Cayey, altitude 2,400 ft., March 11, 1941. (LFM.)

Pulvinaria psidii Maskell

(Coccidae) Infesting the leaves and twigs, slight infestation, San Sebastián, Oct. 19, 1941. (LFM.)

Ficus

Ficus stahlii Warb.

(Moraceae)

DISTRIBUTION: A tree, growing on limestone hills, at lower elevations in Puerto Rico and Mona Island. Endemic.

COMMON NAME: "Jaguey."

INSECT RECORDS

Insects Affecting the Leaves and Twigs

HOMOPTERA

Pseudococcus nipae (Maskell)

(Coccidae) Abundant on twigs and leaves, on trees at Manatí, Aug. 30, 1940. (LFM.)

Saissetia nigra (Nietner)

(Coccidae) Heavy infestation on twigs and undersides of leaves many trees attacked, Manatí, Aug. 30, 1941. (LFM.)

COLEOPTERA

Diaprepes abbreviatus (Linnaeus)

(Curculionidae) Adults feeding on the foliage, not abundant, at Camuy, on the Guajataca Lake road, Km. 5.2, Sept. 5, 1940. (LFM.)

Insects Affecting the Twigs

HOMOPTERA

Monobelus fasciatus (Fabricius)

(Membracidae) On twigs of tree, at Manatí, (IB:75), 1923.

Epicranion championi Fowler

(Cercopidae) Mostly found on twigs, although two adults were collected in a large spittle mass on the underside of a leaf, Sept. 5, 1940, at Camuy. Dr. Oman, of the U. S. National Museum, identified the species as *Epicranion* sp. nov., and in reference to it said: "This species is recorded in IB, as *E. championi* Fowler, but the true *championi* does not occur in the West Indies apparently."

LEPIDOPTERA

Azochis rufidiscalis Hampson

(Pyraustidae) Caterpillar a twig borer, fairly abundant at times; at Maunabo 1936, and at Camuy, during Sept. and Oct. 1940. Borer destroys many shoots.

Ficus

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) costalis (Holmgren)

(Termitidae) Large trees at Guajataca and Camuy with nests and tunnels on the trunk, Sept. 1940. (LFM.)

HYMENOPTERA

Xylocopa brasilianorum Linnaeus

(Xylocopidae) Breeding in the old trunk of a large tree at Sardinero Beach, Mona Island, April 6, 1944. (LFM.)

Genipa

Genipa americana L.

(Rubiaceae)

DISTRIBUTION: A tree, growing in woods and forests, in wet or moist districts, ascending to higher elevations, in Puerto Rico. Also recorded from Vieques, St. Thomas, St. Jan, Cuba, Hispaniola, from Guadeloupe to Trinidad and continental tropical America.

USES: The wood is strong, tough and elastic, with a specific gravity of 0.85. It is used for packing boxes, barrel hoops, shoe lasts, general construction and in all types of structure wherever strength and elasticity are required. The fruit is used in the preparation of a cooling drink or "refresco."

COMMON NAMES: "Jagua" and "Genipa."

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

Toxoptera aurantii (Fonscolombe)

(Aphidae) On tree, (IB:117), 1925. Presumably on the foliage. Listed as *T. aurantiae* Koch.

Ceroplastes floridensis Comstock

(Coccidae) On tree at Guayama, (IB:130).

Genipa

Howardia biclavis (Comstock)
(Coccidae) At San Germán, (SIB:60).

• LEPIDOPTERA

Aellopos tantalus (Linnaeus) var. *zonata* (Drury)
(Sphingidae) According to Möschler, p. 105, the caterpillar of this species, among other host plants lives upon *Genipa*, listed (IB:449).

Asellodes fenestraria Guenée
(Geometridae) Mr. Van Zwaluwenburg, recorded the species as breeding on tree, (IB:453). Listed as: *Hydrastocia fenestraria* Guenée.

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)
(Termitidae) Tunnels and nest in a very large tree, about 50 ft., high at Barrio Guayabota, Yabucoa, altitude 1,300 ft., Aug. 25, 1940. Also at Guaynabo, altitude 200 ft., large nest on tree, the trunk with many tunnels around, May 27, 1941. (LFM.)

Gilibertia

Gilibertia arborea (L.) E. March
(Araliaceae)

DISTRIBUTION: A tree, growing in forests and on wooded hills, mostly at middle and higher elevations, in wet or moist districts of Puerto Rico. Also recorded from St. Thomas, Tortola, Jamaica, Cuba, Hispaniola, St. Vincent, Trinidad, Margarita and continental tropical America. (In Britton & Wilson, Vol. 6, p. 47 as: *Dendropanax arboreum* (L.) Dcne & Pl.)

USES: The light yellow wood is hard, heavy, strong and tough. No uses are attributed to the wood of this tree, in our island.

COMMON NAMES: "Palo de cachimba," "Palo de cachumba," "Muñeca" and "Víbora."

INSECT RECORDS

Insects Affecting the Trunk

Gilibertia

ISOPTERA

Nasutitermes (N.) costalis (Holmgren)

(Termitidae) Trees attacked by the termite, at Guajataca Gorge, near Quebradillas, at Maunabo and Río Abajo Plantations, Utuado, in altitude ranging from sea-level to 1,200 ft., 1940. (LFM.)

Gleditsia

Gleditsia triacanthos L.

(Caesalpinaceae)

DISTRIBUTION: A North American tree, introduced and planted occasionally in Puerto Rico.

COMMON NAME: Honey locust.

INSECT RECORDS

Insects Affecting the Twigs

HOMOPTERA

(Coccidae)

Saissetia oleae (Bernard)

Recorded by Mr. A. Busck, at Adjuntas, Jan. 30, 1899, (IB:133).

Pseudaulacaspis pentagona (Targioni)

Recorded by Mr. A. Busck, at Adjuntas, Jan. 30, 1899, (IB:135).
(The locality is Adjuntas, and not Fajardo, as listed in IB.)

Gliricidia

Gliricidia sepium (Jacq.) Steud.

(Fabaceae)

DISTRIBUTION: A small tree, native to Central America and northern South America, widely naturalized in the West Indies; Puerto Rico,

Gliricidia

Jamaica, Cuba, Hispaniola, Trinidad and Curacao. Along roadsides and gardens, in some places in Puerto Rico growing spontaneously.

USES: The wood is reddish purple, hard, heavy and strong. It should have use in the manufacturing of furniture. The tree has been used in Puerto Rico as an ornamental, for fence posts; also makes a good support for vanilla, in plantations of this commercial crop.

COMMON NAMES: "Madre de cacao" and "Mata ratón."

INSECT RECORDS

Insects Affecting the Leaves

COLEOPTERA

Diaprepes abbreviatus (Linnaeus)

(Curculionidae) Adults feeding on foliage of small tree, at Barrio Aguacate, Yabucoa, May 1942. (LFM.)

Insects Affecting the Twigs

HOMOPTERA

Howardia biclavis (Comstock)

(Coccidae) At Mayagüez, listed (IB:134), 1931.

Aphis medicaginis Koch

(Aphidae) Aphids enormously abundant on stems of flower clusters and presumably responsible for no seed being set. Loiza, March 9, 1944. (GNW. & LFM.) (Det: E. O. Essig.) Few of these aphids were found to be parasitized by *Aphidius testaceipes* (Cresson).

Grevillea

Grevillea robusta A. Cunn.

(Protaceae)

DISTRIBUTION: A tree, native to Australia, introduced into Puerto Rico, occasionally seen along roadsides and gardens.

USES: The wood is light in color and very attractively marked, somewhat like oak. In Australia it is used for cabinet making, panelling and other interior work. The tree is planted in Puerto Rico, for shade and ornament.

Grevillea

COMMON NAMES: "Roble australiano," "Roble de seda," "Roble de plata" and Silk oak.

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

Aspidiotus destructor Signoret

(Coccidae) On the undersides of leaves, on a young tree, (IB:138), 1912.

COLEOPTERA

Phyllophaga citri (Smyth)

(Scarabaeidae) Adults feeding on the foliage (IB:250).

Insects Affecting the Trunk and Branches

HOMOPTERA

Asterolecanium pustulans (Cockerell)

(Coccidae) Recorded at different places on this host, (IB:122). The scale insect is responsible for nearly the total eradication of this tree species in Puerto Rico.

COLEOPTERA

Stephanoderes sp.

(Scolytidae) Reared from under the bark of a tree, listed (IB:317), 1923.

Guaiacum

Guaiacum officinale L.

(Zygophyllaceae)

DISTRIBUTION: A tree, growing in woodlands, thickets, and on plains and hillsides at low elevations in the dry southern and southwestern districts of Puerto Rico. Also recorded from Vieques, Culebra, St. Thomas, St. Croix, St. Jan, Cuba, Jamaica, Hispaniola and continental tropical America.

Guaiacum

USES: The yellowish brown, very hard and heavy wood, is strong and very durable in contact with the soil. It is valued for rollers, hubs, cogs and pulleys, furniture and general construction work.

COMMON NAMES: "Guayacán," "Guayaco" and Lignum vitae.

INSECT RECORDS

Insects Affecting the Leaves

ORTHOPTERA

Microcentrum triangulatum Brunner

(Tettigoniidae) Eggs of this species, laid in rows on the edge of leaves and also on the trunk of a tree. Young nymphs observed, feeding on the leaves of a tree, at Salinas Beach, June 7, 1940. (LFM.)

HOMOPTERA

(Coccidae)

Crypticerya rosae (Riley & Howard)

On trees, at Guánica, not very abundant, (SIB:56), 1937. (LFM.)

Ceroplastes cirripediformis Comstock

On tree, the coccid controlled by a parasitic wasp, (IB:129).

(Aleyrodidae)

Aleurothrixus floccosus (Maskell)

Listed (IB:146).

COLEOPTERA

(Curculionidae)

Diaprepes abbreviatus (Linnaeus)

Few adult weevils feeding on the foliage of a tree, at Salinas, June 7, 1940. (LFM.)

Lachnopus curvipes (Fabricius)

Abundant and causing defoliation on many trees at Salinas Beach, June 7, 1940. (LFM.)

Apodrosus argentatus Wolcott

Very abundant, on the leaves of many trees, large and small, at Salinas Beach, June 7, 1940. (LFM.)

Guaiacum

LEPIDOPTERA

Kricogonia castalia (Fabricius)

(Pieridae) Caterpillar feeds on the foliage of trees, but this butterfly is very scarce in the Island, probably due to the scarcity of its host tree.

Melipotis fasciolaris (Hübner)

(Phalaenidae) Numerous caterpillars, collected under loose bark, on the trunk of a tree, at the Guánica Insular Forest, June 1, 1942. (GNW.) Reared to adults, identified by Mr. Heinrich.

Platynota sp.

(Tortricidae) Small, shiny green caterpillars, webbing the leaves of trees and feeding on the same, at Salinas Beach, June 7, 1940. Small yellowish moth reared. (LFM.)

Megalopyge krugii (Dewitz)

(Megalopygidae) Cocoons very abundant, attached to the trunk of many trees, at Salinas Beach, presumably the caterpillars feeding on the foliage, June 7, 1940.

HYMENOPTERA

Euderomphale aleurothrixi Dozier

(Entedontidae) A single female reared by Dr. Dozier from the white fly, *Aleurothrixus floccosus* (Maskell) infesting host tree, at Central Aguirre, June 28, 1925, (IB:524).

Eretmocerus portoricensis Dozier

(Aphelinidae) Reared from the white fly, *Aleurothrixus floccosus* (Maskell), infesting trees, at Central Aguirre, (IB:528).

Plagiomerus cyanea (Ashmead)

(Aphelinidae) Reared from *Ceroplastes cirripediformis* Comstock, infesting tree at Aguirre, (IB:529).

Thysanus flavus (Girault)

(Signiphoridae) Reared from *Aleurothrixus howardi* = *floccosus* (Maskell), infesting tree, at Central Aguirre, (IB:531).

Crematogaster steinheili Forel

(Formicidae) On tree, attending the coccid, *Crypticerya rosae* (Riley & Howard), at Guánica, (SIB:149), 1937. (LFM.)

Guaiacum

Insects Affecting the Trunk

HOMOPTERA

Chrysomphalus nigropunctatus (Cockerell)

(Coccidae) Heavy infestation on trunk and larger branches, on a tree, at Salinas Beach, June 7, 1940. Other trees infested in the vicinity also.

Guaiacum sanctum L.

(Zygophyllaceae)

DISTRIBUTION: A tree, growing in coastal thickets and on hillsides, in the southwestern districts of Puerto Rico. Also recorded from Mona, Florida, Bahamas, Cuba, Hispaniola and Yucatán. Its wood resembles that of *G. officinale* L.

COMMON NAMES: "Guayancanillo," "Guayacán," "Guayacancillo," "Guayacán de vera," "Guayacán blanco," *Lignum vitae* and Bastard *lignum vitae*.

INSECT RECORDS

Insects Affecting the Leaves

COLEOPTERA

(Curculionidae)

Apodrosus argentatus Wolcott

Feeding on the leaves of tree, at Guánica, (IB:303), 1914.

Lachnopus curvipes (Fabricius)

Abundant, feeding on the leaves, at Guánica Insular Forest, May 1942.

Guarea

Guarea trichilioides L.

(Meliaceae)

DISTRIBUTION: A tree, growing in woodlands, forests, on river banks and along streams, at lower and middle elevations, mostly within the dry districts of Puerto Rico. Also recorded from St. Croix, Cuba, Hispaniola and continental tropical America. (In Britton & Wilson, vol. 5, p. 465 as: *Guarea Guara* (Jacq.) P. Wilson.)

USES: The reddish brown wood is used in carpentry, for wagons and implements and in general construction. It is hard, strong, tough and durable.

COMMON NAMES: "Guaraguao" and Musk wood.

INSECT RECORDS

Insects Affecting the Leaves

ORTHOPTERA

Microcentrum triangulatum Brunner

(Tettingoniidae) Three or four adults, feeding on the foliage of trees, at Aibonito, on the Coamo road, Km. 77, Oct. 13, 1940. (LFM.)

HOMOPTERA

(Coccidae)

Pseudococcus nipae (Maskell)

Leaves and twigs, densely covered by the coccids, at Aibonito, Oct. 13, 1940. (LFM.)

Coccus viridis (Green)

Abundant on the undersides of leaves, especially near the midrib, Aibonito, Oct. 13, 1940. (LFM.)

Saissetia oleae (Bernard)

Abundant on the leaves and twigs of a large tree about 12 inches in diameter, at Aibonito, on the Coamo road, Km. 82.8, Oct. 13, 1940. (LFM.)

Ischnaspis longirostris (Signoret)

Very abundant on the undersides of leaves, causing intense chlorosis; at Aibonito, Oct. 13, 1940. Pestiferous on trees at El Verde, Río Grande, March 22, 1942. (LFM.)

Guarea

COLEOPTERA

Diaprepes abbreviatus (Linnaeus)

(Curculionidae) Few adults feeding on the foliage of large tree, at Aibonito, on the Cayey road, Km. 77, Oct. 13, 1940. (LFM.)

LEPIDOPTERA

Astrartes talus (Cramer)

(Hesperiidae) According to Möschler, p. 102, the caterpillar of this species feeds on the foliage of this tree, (IB:407).

Megalopyge krugii (Dewitz)

(Megalopygidae) Numerous cocoons attached to the trunk of large tree, presumably the caterpillars or "plumillas" feeding on the foliage. Aibonito, Oct. 13, 1940. (LFM.)

Insects Affecting the Twigs

COLEOPTERA

Stephanoderes trinitatis Hopkins

(Scolytidae) Eight adults of this species were collected at Patillas, from a terminal of tree, apparently killed by the attack of the borer. May 1940. (D. DeLeón.) (LFM.)

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Nest and tunnels on tree at Guajataca, Km. 22, of the Camuy-San Sebastián road, Oct. 19, 1941. Trees with tunnels on trunks, at Río Abajo Plantations, 1,200 ft. altitude, April 20, 1941.

Guazuma

Guazuma ulmifolia Lam.

(Sterculiaceae)

DISTRIBUTION: A tree, growing in fields, forests, woodlands and on hill-sides, at lower and middle elevations in Puerto Rico. Also recorded from

Guazuma

Vieques, St. Croix, St. Thomas, Tortola, Cuba, Jamaica, Hispaniola and continental tropical America. (In Britton & Wilson, vol. 5, p. 575 as: *Guazuma Guazuma* (L.) Cockerell.)

USES: The brownish soft and tough wood has a specific gravity of about 0.6 and is used for posts and stakes. The bark yields a cordage fiber and the fruit is used as fodder for horses.

COMMON NAMES: "Guácima," "Guácimo," Bastard cedar, West Indian elm, and Jackocalalu (St. Thomas).

INSECT RECORDS**Insects Affecting the Leaves and Twigs****HOMOPTERA****(Coccidae)****Saissetia oleae** (Bernard)

At Guayama and Mayagüez, (IB:133).

Pinnaspis minor (Maskell)

Recorded by Mr. A. Busck, at Guayama, Feb. 4, 1899. Listed in (IB:136) as *Hemichionaspis minor* Maskell.

LEPIDOPTERA**Oiketicus kirbyi** Guilding

(Psychidae) A single bag-worm collected, feeding on the foliage of a tree, at Salinas, Oct. 24, 1941. (LFM.)

Megalopyge krugii (Dewitz)

(Megalopygidae) Cocoons attached to the trunk of a tree, at Ponce, (SIB:138), 1940. Presumably the caterpillars fed on the foliage of the host tree. (LFM.)

Insects Affecting the Trunk**ISOPTERA****Nasutitermes (N.) costalis** (Holmgren)

(Termitidae) Large tree, with many tunnels on trunk, at Salinas, on the Cayey road, Km. 14, altitude 1,750 ft., Dec. 24, 1940. (LFM.)

COLEOPTERA**Stenodontes bituberculatus** (Beauvois)

(Cerambycidae) Adults in burrow of live tree, at Salinas, (IB:258), 1916.

Guettarda

Guettarda elliptica Sw.

(Rubiaceae)

DISTRIBUTION: A tree, growing in thickets and on hillsides at lower elevations in the southern and eastern districts of Puerto Rico, mostly near the coast. Also recorded from Mona, Desecheo, Muertos, St. Thomas, Florida, Bahamas, Jamaica, Cuba and Hispaniola.

USES: No uses attributed to this species so far.

COMMON NAMES: Prickle wood (Br. Honduras).

INSECT RECORDS

Insects Affecting the Leaves

LEPIDOPTERA

Calidota strigosa (Walker)

(Arctiidae) Caterpillar on host tree; red-brown with shining black head, (IB:416).

Guettarda scabra (L.) Vent.

(Rubiaceae)

DISTRIBUTION: A shrub or tree, growing in woods, thickets and on hillsides, at lower and middle elevations in Puerto Rico. Also recorded from St. Croix, St. Thomas, St. Jan, Tortola, Virgin Gorda, Bahamas, Florida, Cuba, Jamaica, Hispaniola, Anguilla, Grenada, Trinidad, Margarita and continental tropical America. (In Britton & Wilson, vol. 6, p. 234 as: *Guettarda scabra* (L.) Lam.)

USES: Its hard wood is chiefly used for building native huts.

COMMON NAMES: "Palo de cucubano," "Serresuela" and Velvet berry.

INSECT RECORDS

Insects Affecting the Twigs

HOMOPTERA

Howardia biclavus (Comstock)

(Coccidae) At Mameyes and Dorado, listed (IB:134-5), 1913.

*Gymnanthes**Gymnanthes lucida* Sw.

(Euphorbiaceae)

DISTRIBUTION: A shrub or small tree, growing in thickets, woodlands and hillsides, at lower and middle elevations. Recorded from Puerto Rico, Desecheo, Icacos, Culebra, Vieques, Mona, St. Croix, St. Thomas, St. Jan., Virgin Gorda, south to Guadeloupe. Also found in Florida.

USES: The timber is in local demand for poles, posts, stakes, tool handles, and small articles of turnery. Occasional shipments of small lots of the logs are sent abroad and used for backs of brushes and mirrors, walking sticks and umbrella handles, and veneers for marquetry.

COMMON NAMES: "Yaití," "Tabaco" and Crabwood.

INSECT RECORDS

Insects Affecting the Seeds

LEPIDOPTERA

Ethelgoda texanana (Walsingham)

(Olethreutidae) Reared from seeds collected at Garrochales, Arecibo, July 5, 1944. (GNW.) Det: C. Heinrich.

Grapholita sp.

(Olethreutidae) Reared from seeds collected at Garrochales, Arecibo, July 5, 1944. (GNW.) Det: C. Heinrich.

Insects Affecting the Trunk

ISOPTERA

Kaloterme (*Kaloterme*) *snyderi* Light

(Kalotermitidae) Attacking trees at Mona Island. Abundant. (LFM.)

*Haematoxylon**Haematoxylon campechianum* L.

(Caesalpinaceae)

DISTRIBUTION: A tree, growing on hillsides and in coastal woods, in the southern and western districts of Puerto Rico, at lower elevations. Also

Haematoxylon

recorded from St. Croix, St. Thomas, Tortola, Cuba, Jamaica, Hispaniola and Central America.

USES: The red, hard, strong and durable wood yields a dye known as haematoxylin. The heartwood is used in medicine as a mild astringent, especially in diarrhoea and dysentery. The wood contains about 10 per cent of tannin. The seeds are sometimes employed to flavor food.

COMMON NAMES: "Campeche," "Palo de campeche" and Logwood.

INSECT RECORDS**Insects Affecting the Seeds****HYMENOPTERA****Tanaostigma haematoxyli** Dozier

(Eurytomidae) Abundant in seeds, at Mayagüez, (IB:532), (Dozier).

Insects Affecting the Leaves**COLEOPTERA****Procula ferruginea** (Olivier)

(Coccinellidae) Apparently feeding on psyllids, which was the only possible host insect present on the tree. Eggs and larvae of the coccinellid abundant. June 1, 1942. (GNW.) Guánica Insular Forest.

Diaprepes abbreviatus (Linnaeus)

(Curculionidae) Adults feeding on the foliage of trees, not very abundant, at Salinas, Oct. 20, 1940. (LFM.)

Insects Affecting the Trunk and Branches**ISOPTERA****Nasutitermes (N.) costalis** (Holmgren)

(Termitidae) Several trees with tunnels on their trunks, at Salinas, Oct. 20, 1940. (LFM.)

HOMOPTERA**Crypticerya rosae** (Riley & Howard)

(Coccidae) Few coccids on branches of a fairly large tree, at Salinas, Oct. 20, 1940. Very abundant on a young tree, and observed on others, attended by *Solenopsis geminata* (Fabr.), May 31, 1942, at the Guánica Insular Forest. (LFM.)

Haematoxylon

HYMENOPTERA

Solenopsis geminata (Fabricius)

(Formicidae) Attending coccids, *Crypticerya rosae* (Riley & Howard), on trees, at Guánica Ins. Forest, May 31, 1942. (LFM.)

Hernandia

Hernandia sonora L.

(Hernandiaceae)

DISTRIBUTION: A tree, growing in forests in the wet or dry districts, at lower and middle elevations in Puerto Rico. Also found at Cuba, from Montserrat to Trinidad and continental tropical America.

USES: The whitish wood is light and soft. It is not locally used, but in Trinidad it is in considerable demand. The sap of this tree is said to be a satisfactory depilatory.

COMMON NAMES: "Mago" and Toporite.

INSECT RECORDS

Insects Affecting the Leaves

HEMIPTERA

(Tingitidae)

Corythucha gossypii (Fabricius)

Three adults and many nymphs on one leaf. Nymphs present on the undersides of other leaves. Mameyes, Sept. 27, 1944. (LFM. & GNW.)

Monanthia monotropidia Stål

Nymphs abundant, on the undersides of leaves, causing chlorosis, at Mameyes, Sept. 29, 1940. (LFM.)

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) On large tree, at Mameyes, Dec. 4, 1940. (LFM.)

Heterotrichum*Heterotrichum cymosum* (Wendl.) Urban

(Melastomaceae)

DISTRIBUTION: A tree, growing in thickets, forests and on rocky hillsides in wet or moist districts of Puerto Rico, ascending to higher elevations. Endemic.

COMMON NAMES: "Terciopelo," "Camasey de paloma" and "Camasey colorado."

INSECT RECORDS

Insects Affecting the Leaves

DIPTERA**Leskiopalpus flavipennis** (Wiedemann)

(Larvaevoridae) One adult reared from caterpillar, which is a leaf-folder on host tree, at El Yunque Mts., altitude 1,900 ft., Sept. 29, 1940. (LFM.)

LEPIDOPTERA**Blepharomastix ebulealis** (Guenée)

(Pyraustidae) The caterpillar is a leaf-folder on this tree species. Fairly abundant, and parasitized by the fly mentioned above. El Yunque Mts., altitude 1,900 ft., Sept. 29, 1940. (LFM.)

Hura*Hura crepitans* L.

(Euphorbiaceae)

DISTRIBUTION: A tree, growing in forests and on wooded hills, at lower and middle elevations in Puerto Rico. Also recorded from St. Croix, St. Thomas, St. Jan, Cuba, Jamaica, Hispaniola and continental tropical America.

USES: The brownish white wood is soft, used for canoes and construction.
COMMON NAMES: "Havilla," "Javillo," "Javilla," "Molinillo," Sand-box tree, Monkey pistol and Monkey's dinner bell (Br. W. I.).

Hura

INSECT RECORDS

Insects Affecting the Leaves and Twigs

HOMOPTERA

Saissetia nigra (Nietner)

(Coccidae) At Mayagüez, listed (IB:133).

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) A common pest, on trees near Guayama, on the Salinas road, May and June 1940. (LFM.)

Hyeronima

Hyeronima clusioides (Tul.) Griseb.

(Euphorbiaceae)

DISTRIBUTION: A tree, growing in the mountain forests in wet or moist districts of Puerto Rico. Also recorded from Dominica, St. Vincent and Grenada. (In Britton & Wilson, vol. 5, p. 479 as: *Hyeronima clusioides* (Tul.) Muell.)

COMMON NAME: "Cedro macho."

INSECT RECORDS

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) A medium sized tree, with tunnels on the trunk, at Guajataca Gorge, near Quebradillas, Nov. 17, 1940. (LFM.)

Hymenaea

Hymenaea courbaril L.

(Caesalpiniaceae)

DISTRIBUTION: A tree, growing in forests and on hillsides, mostly in moist or wet districts of Puerto Rico. Also recorded from Vieques, St. Croix, St. Thomas, St. Jan, Tortola, Cuba, Jamaica, Hispaniola, from St. Barts to Trinidad and continental tropical America.

USES: The heavy wood with a specific gravity of nearly 1.00, is red hard and tough. It is used in cabinet work and furniture. The resin known as American copal, is used in varnishes and in ointments for medicinal purposes. The fruit sometimes is used as food.

COMMON NAMES: "Algarrobo," "Courbaril," "Cuapinole," Locust tree and "Jatopa" (Brazil).

INSECT RECORDS

Insects Affecting the Fruits or Pods

COLEOPTERA

Acanthoscelides dominicanus (Jekel)

(Bruchidae) From pods of tree at Guánica, listed (IB:287), 1911. Listed as *Bruchus dominicanus* Jekel.

Stephanoderes buscki Hopkins

(Scolytidae) From pods, at Arecibo and Ponce, (IB:317).

LEPIDOPTERA

Myelois decolor Zeller

(Phycitidae) Reared from the pods, at Arecibo, (SIB:133).

Insects Affecting the Leaves

HOMOPTERA

Howardia biclavis (Comstock)

(Coccidae) Listed (IB:134), 1914.

COLEOPTERA

Exophthalmodes roseipes (Chevrolat)

(Curculionidae) Feeding on tender leaves, at Vega Baja, (SIB:103), 1940. Listed as *Prepodes roseipes* Chevrolat.

Insects Affecting the Trunk

Hymenaea

ISOPTERA

(Termitidae)

Nasutitermes (N.) *acajutlae* (Holmgren)

Nest on tree, July 8, 1921, listed in (IB:49) as: *N. creolina* Banks (not a valid species). Listed (SIB:42).

Nasutitermes (N.) *costalis* (Holmgren)

Tunnels on trunk, on trees at Yabucoa, Ponce, Salinas and Isabela, June 1942.

Ilex

Ilex nitida (Vahl) Maxim.

(Ilicaceae)

DISTRIBUTION: A tree, growing in forests and on wooded hills in wet or moist districts, at middle and higher elevations in Puerto Rico. Also recorded from Jamaica, Montserrat, Guadeloupe, Martinique and Mexico.

USES: The wood is light-colored, fine-grained, hard and heavy. It is used for fuel and hut building.

COMMON NAMES: "Brigueta naranjo," "Cuero de sapo," "Hueso prieto" and "Palo de hueso."

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

Pseudococcus nipae (Maskell)

(Coccidae) Few coccids on the leaves of tree, at Cayey, near Peñon del Collao, Cayey-Salinas road, altitude 2,400 ft., March 11, 1941. (LFM.)

Ilex*Ilex sideroxyloides* (Sw.) Griseb.

(Ilicaceae)

DISTRIBUTION: A tree, growing in the forests of the Sierra de Luquillo, in the eastern mountains of Puerto Rico; also recorded from Montserrat to St. Vincent.

USES: The flesh colored, hard and heavy wood, has very little use in Puerto Rico.

COMMON NAMES: "Gongoli" and Central American oak.

INSECT RECORDS

Insects Affecting the Leaves

COLEOPTERA

Diaprepes abbreviatus (Linnaeus)

(Curculionidae) A single tree at El Verde, heavily defoliated by adult weevils, altitude 1,000 ft., July 25, 1941.

Inga*Inga laurina* (Sw.) Willd.

(Mimosaceae)

DISTRIBUTION: A tree, growing in woodlands, on hillsides and along streams at lower and middle elevations, mostly in moist districts of Puerto Rico. Recorded also from Vieques, St. Croix, St. Thomas, St. Jan, Tortola, Virgin Gorda, Hispaniola and from St. Kitts to Grenada.

USES: The dark gray wood is hard, a little heavier than that of *Inga vera*, and is used for firewood and charcoal. The tree is widely used as coffee shade in Puerto Rico.

COMMON NAMES: "Guamá," Pomshock and Sweet pea.

INSECT RECORDS,

Insects Affecting the Pods

HYMENOPTERA

Tanaostigmodes portoricensis Crawford

(Eupelmidae) From seed pods, listed (IB:532).

Inga

· Insects Affecting the Leaves

· HOMOPTERA

Agallia pulchra DeLong & Wolcott

(Cicadellidae) Listed (IB:76), 1922.

Entogonia coffeaphila (Dozier)

(Cicadellidae) At Cayey, Aibonito, Orocovis, Mayagüez, Jayuya, Adjuntas, mountains north of Yauco, and at El Yunque Mts., listed (IB:77).

Entogonia coffeacola (Dozier)

Listed (IB:78).

· COLEOPTERA

Procula ferruginea (Olivier)(Coccinellidae) On tree infested with psyllids, probably *Psylla minuticon* Crawford at Lares, (IB:223), 1922. Also at El Peñón del Collao, Cayey (SIB:93), 1940. Listed in both cases as *Daulis ferruginea* Olivier. (LFM.)**Exophthalmodes roseipes** Chevrolat(Curculionidae) At Lares (IB:293), 1921. Listed as *Prepodes roseipes* Chevrolat.**Diaprepes abbreviatus** (Linnaeus)

(Curculionidae) Adults feeding voraciously on foliage, especially on tender growth. Jayuya Mts. 2,500 ft. altitude, Oct. 1936. Also at Naguabo, causing heavy defoliation, altitude 250 ft., May 27, 1941. (LFM.)

· LEPIDOPTERA

Melipotis januaris (Guenée)

(Phalanenidae) Mr. Van Zwaluwenburg records: thousands of larvae on tree at Mayagüez, June 1917, (IB:436).

Megalopyge krugii (Dewitz)

(Megalopygidae) On trees throughout the coffee districts of Puerto Rico, (IB:505).

Insects Affecting the Twigs

HOMOPTERA

(Membracidae)

Monobelus fasciatus (Fabricius)

At Lares, (IB:74), 1921-22.

(Cercopidae)

Epicranion championi Fowler

Listed (IB:75).

Philaenus fusco-varius Stål

At Mayagüez, (IB:75), 1923.

(Fulgoridae)

Bothriocera venosa Fowler

At Lares, (IB:94), 1922.

Flatoides brunneus Muir

At Mayagüez, (IB:105).

(Coccidae)

Icerya montserratensis Riley & Howard

Listed (IB:119).

Cryptostigma inquilina (Newstead)

At San Juan, Mayagüez, and Lares (IB:129), 1922.

Pseudaonidia tesserata (de Charmoy)

At Lares, (IB:139), 1922.

Chrysomphalus personatus (Comstock)

Listed (IB:140)

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Nest in tree, at Cayey, 1940. (LFM.)

COLEOPTERA

Xyleborus affinis Eichhoff

(Scolytidae) Appearing in lesions on the trunk of trees, caused by water soluble salts of thallium in "hormiguilla" bait, (SIB:106). (GNW.)

Inga

Platypus ratzenburgi Chapuis

(Platypodidae) Under bark of logs of *Inga laurina* at Ciales, (IB:316), 1923.

HYMENOPTERA

(Formicidae)

Monomorium carbonarium ebenium Forel

Occupying "hormiguilla" tunnels in "guamá" tree at Mayagüez deserted by "hormiguilla" after a fight with fire ants over thallium poison bait, (SIB:149).

Solenopsis geminata (Fabricius)

So weakened colony of "hormiguilla" in raids on thallium meat bait in "guamá" tree at Mayagüez, that galleries were later occupied by *Monomorium carbonarium ebenium* Forel, (SIB:149).

Myrmelachista ramulorum Wheeler

An important pest on trees throughout the coffee districts of Puerto Rico.

Insects Resting on the Tree

COLEOPTERA

(Chrysomelidae)

Cryptocephalus nigrocinctus Suffrian

At Lares (IB:267), 1922.

Cryptocephalus perspicax Weise

Ponce, Mayagüez, Aibonito and Comerío, (IB:268).

Diachus nothus (Weise)

At Adjuntas; also on tender growth, at Lares, (IB:268-69), 1922.

Omototus ferrugineus Suffrian

On tender growth of tree, at Lares, (IB:276), 1922.

Aphthona compressa Suffrian

At Mayagüez, (IB:284), 1923.

Inga

Inga vera Willd.

(Mimosaceae)

DISTRIBUTION: A tree, growing in woodlands, on hillsides and bank streams at lower and middle elevations, in moist or wet districts of Puerto Rico. Also recorded from Jamaica, Cuba, Hispaniola, from Mexico to Venezuela: continental tropical America. (In Britton & Wilson, vol. 5, p. 347 as: *Inga Inga* (L.) Britton.)

USES: The light, grey, hard and strong wood is locally employed for fuel and charcoal. The tree is widely used as a shade tree for coffee plantations in Puerto Rico.

COMMON NAME: "Guaba."

INSECT RECORDS

Insects Affecting the Pods

LEPIDOPTERA

(Stenomidae)

Stenoma sp.

In seeds, at Mayagüez, listed (IB:498).

Insects Affecting the Leaves

HOMOPTERA

(Chermidae)

Psylla minuticonica Crawford

Common on leaves of *Inga vera*, at Lares, 1922; in mountains north of Yauco, 1923; at Adjuntas and throughout the coffee districts, in (IB:111). Very abundant on the leaves of trees, especially on the tender ones, at Camp Doña Juana, altitude 1,900 ft., in the mountains north of Villalba, 1941. (LFM.)

Psyllia martorelli Caldwell

Breeding on tender shoots of trees at Doña Juana Camp, mountains north of Villalba, altitude 1,900 ft. (Species described by Dr. J. S. Caldwell in Journ. N. Y. Ent. Soc., vol. LII, Dec. 1944, p. 339.)

(Coccidae)

Icerya montserratensis Riley & Howard

At Lares, listed (IB:120).

Inga

Pseudococcus virgatus (Cockerell)

On tree, at San Sebastián, parasitized by *Leptomastidea antillicola* Dozier, listed (SIB:145).

Inglisia vitrae Cockerell

At Guayama, (IB:130), 1921.

Lepidosaphes crotonis (Cockerell)

At Utuado, (IB:142), 1935.

COLEOPTERA

(Chrysomelidae)

Cryptocephalus tristiculus Weise

At Mayagüez, listed (IB:267), 1923.

Cryptocephalus perspicax Weise

Feeding on the leaves, (IB:268), 1923.

Diachus nothus Weise

Listed (IB:268), 1921.

Metachroma sp.

At Adjuntas, (IB:270).

(Curculionidae)

Exophthalmodes roseipes (Chevrolat)

Listed (IB:293), 1921, as *Prepodes roseipes* Chevrolat.

Diaprepes abbreviatus (Linnaeus)

At Cidra (IB:298), 1933. Adults feeding on the foliage of trees, at Manatí, Sept. 27, 1940. (LFM.)

Lachnopus curvipes (Fabricius)

At Comerío, (IB:302), 1913.

Apodrosus wolcottii Marshall

Abundant, feeding on leaves of trees, at Cayey, (IB:303), 1923.

LEPIDOPTERA

Phoebis argante (Fabricius)

(Pieridae) Caterpillars on tree, at Cayey, (IB:404), 1921.

Eulepidotis addens (Walker)

(Phalaenidae) A small green leaf-folding caterpillar, on trees at Cayey, (IB:434), 1921. Numerous caterpillars collected, attacking tender

Inga

leaves of trees, at Cayey, at El Peñón del Collao, 2,000 ft. altitude, Dec. 30, 1940. (LFM.)

Phostria humeralis (Guenée)

(Pyraustidae) Three adults reared, out of greenish caterpillars feeding on the foliage of trees, at El Peñón del Collao, 2,000 ft. altitude, Dec. 30, 1940.

Tetralopha scabridella Ragonot

(Epipaschidae) The "guaba" leaf-webber, doing the so commonly called, "nidos de mariposas" (butterfly nests), causing tremendous defoliation of trees, during the season of the year in which they are abundant. At Lares and Cayey (IB:469), 1922. Larvae very injurious to trees, at El Peñón del Collao, altitude 2,000 ft., Cayey, Feb. 15, 1941. (LFM.)

Brenthia pavonacella Clemens

(Glyphipterygidae) Caterpillars abundant, feeding on the undersides of leaves, at Lares, Nov. 1931, (IB:485).

Trichotaphe sp.

(Gelechiidae) A small grey moth with thick orange antennae, a large black spot near base of forewings; larva a leaf-roller, (IB:488), 1923. (Determined as sp. nov.)

Acrocercops dives (Walsingham)

(Gracilariidae) Larvae mining in leaves of trees, at Lares (SIB:136), 1936.

Megalopyge krugii (Dewitz)

(Megalopygidae) Common on trees, throughout the coffee districts of Puerto Rico, (IB:505). Caterpillars feeding on the foliage of trees, at Cayey, near El Peñón del Collao, 1,900 ft. altitude, 1940. (LFM.)

HYMENOPTERA

Microbracon sp.

(Braconidae) Reared from the leaf-miner *Acrocercops dives* (Walsingham), infesting trees, at Lares, (SIB:139), 1936. Listed as "sp. nov."

Yelicones sp.

(Braconidae) Reared from caterpillars of *Tetralopha scabridella* Ragonot, at Cayey, (IB:512), 1923.

Inga

Leptomastidea antillicola Dozier

(Encyrtidae) A single male, reared from *Pseudococcus virgatus* (Cockerell), on tree, at San Sebastián, (SIB:145).

Insects Affecting the Twigs

HOMOPTERA

(Membracidae)

Nessorhinus gibberulus Stål

At Mayagüez, (IB:73), 1923.

(Cercopidae)

Philaenus fusco-varius Stål

At Aibonito, listed (IB:75).

(Fulgoridae)

Bothriocera venosa Fowler

At Añasco, (IB:94), 1913.

Neurotmeta angustata Uhler

At Cayey, (IB:96), 1921.

Ormenis marginata (Brunnich)

At Cayey, (SIB:53), 1940.

Flatoides brunneus Muir

At Mayagüez, (IB:105). At San Sebastián, (SIB:54), 1938.

(Coccidae)

Asterolecanium ingae Russell

Listed (IB:122 as: "sp. nov."). Described by Miss Louise M. Russell (Nov. 1941, p. 111-112).

Asterolecanium pustulans (Cockerell)

At Cayey (IB:122), 1923. Presumably on the twigs and smaller branches.

Cryptostigma inquilina (Newstead)

In tunnels of "hormiguilla" on trees (IB:129).

HYMENOPTERA

Myrmelachista ramulorum Wheeler

(Formicidae) Very common throughout the coffee districts of Puerto Rico, boring in twigs, branches and parts of the trunk, (IB:555).

Inga

Camponotus ustus Forel

(Formicidae) In dead twigs of tree, at Utuado and Ciales, (IB:556), 1920 and 1923.

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) costalis (Holmgren)

(Termitidae) Numerous tunnels on trunk of a large tree, at Aibonito, near the Aibonito-Coamo-Barranquitas cross, Oct. 13, 1940. Also trees attacked at Río Abajo Plantation, altitude 1,200 ft., Utuado, April 20, 1941. (LFM.)

HOMOPTERA

Lecaniodiaspis sp.

(Coccidae) Trunk of tree, completely covered by the coccid, at Maunabo, on the Yabucoa road, altitude 500 ft., (SIB:57), 1937. (LFM.)

COLEOPTERA

Apate monachus Fabricius

(Bostrychidae) In trunk of small tree, at San Sebastián, (IB:244), 1932. Listed as *Apate francisca* Fabr.

Neoclytus araneiformis (Olivier)

(Cerambycidae) Ovipositing in freshly cut logs, in the mountains north of Yauco, (IB:262), 1921.

Platypus excisus Chapuis

(Platypodidae) From *Inga vera* at Aibonito (IB:316), 1923.

Platypus ratzenburgi Chapuis

(Platypodidae) Under bark of logs, at Lares (IB:316), 1921.

Xyleborus affinis Eichhoff

(Scolytidae) From tree, at Aibonito (IB:318), 1923. Appearing in lesions, on the trunk of trees caused by water soluble salts of thallium in "hormiguilla" bait, (SIB:106). (GNW.)

Xyleborus sacchari Hopkins

(Scolytidae) From tree, at Patillas, (IB:319), 1921.

LEPIDOPTERA

Agathodes designalis Guenée

(Pyraustidae) Fully grown larvae boring in bark of trees, at Cayey, (IB:463), 1922.

Inga**Mea sp.**

(Tineidae) Larvae making long tunnels of tough silk under bark of trees, dying from attack of *Xyleborus* beetles, at Juana Díaz (IB:503), 1934.

HYMENOPTERA**Trigonura sp.**

(Chalcididae) Many adults on logs of tree, at La Indiera, (Lares-Yauco road) apparently attempting to parasitize cerambycid eggs or larvae of *Neoclytus araneiformis* (Olivier), under bark, (SIB:147), 1921.

Insects on Dead Wood

ISOPTERA**Nasutitermes (Tenuirostritermes) discolor (Banks)**

(Termitidae) In rotten stump of tree at Ciales, and in a dead tree, at Lares, (IB:47), 1922. Listed as *Tenuirostritermes discolor* Banks.

COLEOPTERA**Chrysobothris tranquebarica (Gmelin)**

(Buprestidae) On dead tree, at Ciales, (SIB:89), 1926.

Isandrina

Isandrina emarginata (L.) Britton & Rose

(Caesalpiniaceae)

DISTRIBUTION: A tree, growing in woodlands and on hillsides at lower elevations in dry parts of the southcentral districts of Puerto Rico. Also recorded from Jamaica, Cuba, Hispaniola, Guadeloupe and from Mexico to Venezuela.

USES: Not used locally, but it is said to have purgative properties. In Jamaica it is used as a dye-wood. The leaves are applied to allay the pain of insect stings.

COMMON NAMES: "Vela muerto" (Puerto Rico), "Palo de chivo" (Santo Domingo), and "Palo hediondo" (Vera Cruz).

Isandrina

INSECT RECORDS

Insects Affecting the Leaves

ORTHOPTERA

Microcentrum triangulatum Brunner

(Tettigoniidae) Eighteen eggs of this species, laid on the undersides of a leaf, just around the edge in a semicircular row, at Salinas, altitude 150 ft., Oct. 20, 1940. (LFM.) Presumably the young nymphs, started by feeding on the foliage.

HEMIPTERA

Corythucha gossypii (Fabricius)

(Tingitidae) A tremendous infestation on leaves, adults and nymphal stages abundant, causing chlorosis and total defoliation of small trees, at Salinas, Oct.-Nov. 1940. (LFM.)

COLEOPTERA

Lachnopus curvipes (Fabricius)

(Curculionidae) Adults very abundant feeding on the foliage of young trees, about 10 ft., high, altitude 300 ft., Salinas, on the Cayey road, Oct. 11, 1940. (LFM.)

LEPIDOPTERA

Anteos maerula (Fabricius)

(Pieridae) Caterpillars defoliating trees, at Salinas, Oct. 11, 1940. Very abundant. (LFM.)

Insects Affecting the Twigs

HOMOPTERA

Icerya purchasii Maskell

(Coccidae) One specimen collected on a twig of tree, at Salinas, Nov. 7, 1940. (LFM.)

Saissetia oleae (Bernard)

(Coccidae) Slight infestation on twigs, at Salinas, Nov. 1, 1940. (LFM.)

Krugiodendron*Krugiodendron ferreum* (Vahl) Urban

(Rhamnaceae)

DISTRIBUTION: A tree, growing in thickets, woodlands and on hillsides at lower elevations, mostly in dry districts of Puerto Rico. Also at Mona, Desecheo, Icacos, Culebra, Vieques, St. Croix, St. Thomas, St. Jan, Tortola, Aneгада, Florida, Cuba, Hispaniola, Jamaica, Lesser Antilles south to St. Vincent and Bonaire.

COMMON NAMES: "Palo de hierro," "Bariaco," "Espejuelo," Black iron-wood and Ebony wood.

INSECT RECORDS

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) On trunk of trees, many tunnels present, at Guajataca Gorge, Quebradillas, Nov. 24, 1940. (LFM.)

Lagerstroemia*Lagerstroemia speciosa* (L.) Pers.

(Lythraceae)

DISTRIBUTION: A tree, native to the East Indies, introduced into Puerto Rico and now planted along roadsides, gardens and parks.

USES: Planted as an ornamental, for its large and beautiful violet blossoms.

COMMON NAMES: "Flor de la reina," "Reina de las flores" and Queen of flowers.

INSECT RECORDS

Insects Affecting the Leaves and Twigs

ORTHOPTERA

Microcentrum triangulatum Brunner

(Tettigoniidae) Feeding on the foliage of trees, especially on the very tender and young growth, at Santurce, May 1940. (LFM.)

Lagerstroemia

HOMOPTERA

(Coccidae)

Coccus viridis (Green)

Very heavy infestation on twigs and leaves, especially on the under sides of leaves, near the midrib, at Yabucoa, on the Maunabo road, altitude 500 ft., April 1941. (LFM.)

Saissetia hemisphaerica (Targioni)

Slight infestation on twigs and undersides of leaves, on trees at Patillas, May 1941. (LFM.)

Saissetia oleae (Bernard)

Infestation, especially on twigs of trees, at Patillas and also at Yabucoa, on the Maunabo road, altitude 500 ft., May 1941. (LFM.)

COLEOPTERA

Phyllophaga portoricensis (Smyth)

(Scarabaeidae) Adults defoliating young tree, about 10 ft. high, at Santurce, May 1942. Beetles feeding at night, some collected, while hiding in the soil at the base of the tree. (LFM.)

Diaprepes abbreviatus (Linnaeus)

(Curculionidae) Beetles feeding on the foliage of trees, at Santurce, Río Piedras and Yabucoa, Oct. 1941. (LFM.)

HYMENOPTERA

Solenopsis geminata (Fabricius)

(Formicidae) Attending scale insects, especially *Coccus viridis* (Green), on trees, at Yabucoa, altitude 500 ft., April 1941.

Laguncularia

Laguncularia racemosa (L.) Gaertn.

(Terminaliaceae)

DISTRIBUTION: A tree, growing in coastal swamps in Puerto Rico. Also recorded from Mona, Vieques, St. Croix, St. Thomas, St. Jan, Anegada,

Laguncularia

Florida, Cuba, Jamaica, Hispaniola, continental tropical America and West tropical Africa.

USES: The wood is used for fence posts and charcoal. The bark contains about 14 per cent tannin, and is used for tanning skins. It is also employed for medicinal purposes as an astringent and tonic.

COMMON NAMES: "Mangle blanco," "Mangle bobo" and White mangrove.

INSECT RECORDS**Insects Affecting the Leaves****HOMOPTERA**

(Coccidae)

Ceroplastes floridensis Comstock

At Fajardo, (IB:130), 1923.

Chrysomphalus personatus (Comstock)

Listed (IB:140), 1914.

Pseudoparlatoria parlatorioides (Comstock)

On leaves of trees, at Faro de Cabo Rojo, (SIB:62), 1937.

(Aleyrodidae)

Metaleurodicus sp.

Abundant, breeding on the undersides of leaves, many trees infested at Ponce, (El Pastillo) and Arecibo (El Vigía), during May to September 1941. (GNW. & LFM.) (The insect was determined as "sp. nov.")

Insects Affecting the Trunk**ISOPTERA**

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Nests and tunnels, on trees, at Camp Piñones, Boca de Cangrejos, Sept. 15, 1940. (LFM.)

LEPIDOPTERA

Psychonoctua personalis Grote

(Cossidae) Caterpillar abundant on tree trunks, at Boca de Cangrejos, (SIB:135), 1938.

Lawsonia

Lawsonia inermis L.

(Lythraceae)

DISTRIBUTION: A shrub, growing spontaneous after cultivation in many parts of Puerto Rico, St. Croix, and St. Thomas. Cultivated in many districts of Mexico also. A native of the Old World tropics, probably of Asia or Africa.

USES: The plant is not used locally, except as an ornamental. The leaves of this shrub are used in the Orient for staining the nails, hands and feet yellow, as well as dyeing the hair and beard. A perfume is obtained from the flowers, which was employed by the early Egyptians for embalming. The fruit has medicinal properties.

COMMON NAMES: "Resedá," Egyptian privet, Mignonette tree and Henna plant.

INSECT RECORDS

Insects Affecting the Leaves and Twigs

HOMOPTERA

Vinsonia stellifera (Westwood)
(Coccidae) Listed (IB:130), 1916.

Saissetia hemisphaerica (Targioni)
(Coccidae) Listed (IB:132), 1916. Branches and twigs of a small shrub, heavily infested, at Maunabo, Oct. 23, 1940. (LFM.)

Leptoglottis

Leptoglottis portoricensis (Urban) Britton & Rose

(Mimosaceae)

DISTRIBUTION: A shrub, growing in thickets and woodlands, in the vicinity of Coamo. Apparently local; an endemic species.

COMMON NAMES: "Zarzilla" and "Zarzarilla."

Leptoglottis

INSECT RECORDS

Insects Affecting the Leaves

COLEOPTERA

Diaprepes abbreviatus (Linnaeus)

(Curculionidae) Listed by Mr. E. G. Smyth, on this tree, presumably feeding on the foliage, (IB:298).

LEPIDOPTERA

Atethmia subusta (Hübner)

(Phalaenidae) Listed (IB:427), 1913. Presumably feeding on the foliage. (Listed as *Bagisara subusta* Hübner.)

Noropsis hieroglyphica (Cramer)

(Phalaenidae) Caterpillar on tree, according to Mr. Van Zwaluwenburg, (IB:435).

Melipotis ochrodes (Guenée)

(Phalaenidae) At Yauco, on tree, (IB:436). Presumably the caterpillar feeding on the foliage.

Leucaena

Leucaena glauca (L.) Benth.

(Mimosaceae)

DISTRIBUTION: A shrub or small tree, growing in woodlands and thickets, at lower and middle elevations, especially in the dry sections of Puerto Rico. Also recorded from Vieques, St. Croix, St. Thomas, St. Jan., Tortola, Virgin Gorda, Greater Antilles to Florida, tropical continental America and Old World tropics.

USES: Its brownish, hard and durable wood furnishes a good fuel and charcoal. The green pods are edible, the seeds are used for ornamental purposes and the tree in some parts of the World is used for hedges and coffee shade. Its foliage is said to be poisonous to horses and mules,

Leucaena

causing shedding of hairs in tails and manes, if they are allowed to feed too freely on its leaves and pods.

COMMON NAMES: "Zarcilla," "Acacia," "Acacia palida," Wild tamarind, Tantan and Lead tree.

INSECT RECORDS

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Tunnels on trunk of trees; at the Guanica Ins. Forest
Oct. 25, 1940. (LFM.)

Linociera

Linociera domingensis (Lam.) Knobl.

(Oleaceae)

DISTRIBUTION: A tree growing on wooded hills and in forests, in wet or moist districts of Puerto Rico. Also recorded from Jamaica, Cuba and Hispaniola. (In Britton and Wilson, vol. 6, p. 78 as: *Mayepea domingensis* (Lam.) Krug & Urban.)

USES: The wood is light in color, hard, and of little use in the Island.

COMMON NAMES: "Hueso blanco," "Huesillo," "Palo de hueso" and "Palo blanco."

INSECT RECORDS

Insects Affecting the Trunk

COLEOPTERA

Apate monachus Fabricius

(Bostrychidae) A borer in branches of tree, reported by Mr. Van Zwaluwenburg, (IB:243).

Livistona

Livistona chinensis R. Br.

(Arecaceae)

DISTRIBUTION: A palm, planted in gardens, in Puerto Rico and the Virgin Islands. Native of China.

USES: Planted for ornamental purposes.

COMMON NAMES: "Palma de Borbón" and Bourbon palm.

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

Cerataphis lataniae (Boisduval)

(Aphidae) Various records, listed, (IB:119), 1919 and 1923.

Pseudococcus nipae (Maskell)

(Coccidae) Listed (IB:127), 1918.

LEPIDOPTERA

Homaledra sabalella (Chambers)

(Cosmopterygidae) On palm leaves, eating the lower sides and webbing together the excrement for a shelter; at times so common, as to turn the leaves brown, (IB:486).

Lonchocarpus

Lonchocarpus domingensis (Pers.) DC.

(Fabaceae)

DISTRIBUTION: A tree, growing on hillsides and river banks, in the western and southern districts of Puerto Rico. Also recorded from Cuba, Hispaniola, Guadeloupe, Trinidad, Martinique and Jamaica.

USES: The wood is used for fuel.

COMMON NAME: "Genogeno."

Lonchocarpus

INSECT RECORDS

. Insects Affecting the Leaves

HEMIPTERA

Corythucha gossypii (Fabricius)

(Tingitidae) Trees so badly infested, as to cause chlorosis of the foliage. Nymphs in all stages and adults very abundant, on the undersides of the leaves, Sta. Isabel, altitude 60 ft., 1940. (LFM.)

COLEOPTERA

Diaprepes abbreviatus (Linnaeus)

(Curculionidae) Many small trees defoliated by the attack of the adult weevils, Santa Isabel, altitude 60 ft., 1940. (LFM.)

LEPIDOPTERA

Phostria martyralis (Lederer)

(Pyraustidae) Green caterpillars, feeding on the foliage and webbing leaves. Parasitized by braconid wasps, of the genus *Apanteles*. Many trees in the vicinity attacked, Guayanilla, Dec. 4, 1940. (LFM.)

HYMENOPTERA

Apanteles sp.

(Braconidae) One specimen reared, parasitizing the caterpillar of *Phostria martyralis* (Lederer), at Guayanilla, Dec. 4, 1940. This parasite is parasitized by a minute wasp. (LFM.) (det.: Muesebeck.)

Syntomosphyrum sp.

(Tetrastichidae) Hyperparasites reared from the cocoons of *Apanteles* sp. parasitizing the caterpillars of *Phostria martyralis* (Lederer), at Guayanilla, Dec. 4, 1940. (LFM.)

Lonchocarpus glaucifolius Urban

(Fabaceae)

DISTRIBUTION: A small tree, growing in mountain woodlands and on hillsides in the western districts of Puerto Rico. Endemic.

COMMON NAME: "Geno."

Lonchocarpus

INSECT RECORDS

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Tunnels on the trunk of trees, at Aguadilla, Nov. 26, 1940. (LFM.)

Lonchocarpus latifolius (Willd.) H.B.K.

(Fabaceae)

DISTRIBUTION: A tree, growing in woodlands, in moist or wet districts of Puerto Rico. Also recorded from Jamaica, Cuba, Hispaniola, from St. Kitts to Trinidad and continental tropical America.

USES: The wood is reddish with occasionally dark streaks and is used for the making of furniture.

COMMON NAMES: "Hediondo" and "Palo seco."

INSECT RECORDS

Insects Affecting the Leaves

LEPIDOPTERA

Phostria martyralis (Lederer)

(Pyraustidae) Leaf-webber on host tree, very abundant on trees near the coast, at Bajo de Patillas, Maunabo, 1941. (LFM.)

COLEOPTERA

Diaprepes abbreviatus (Linnaeus)

(Curculionidae) Feeding voraciously on the foliage and edges of young tender pods, at Playa de Humacao, May 27, 1941. (LFM.)

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Tunnels on the trunk of a tree, about 12 ft. high and 8 inches in diameter, at Bajo de Patillas, Maunabo, 1941. (LFM.)

Lucuma

Lucuma multiflora A. DC.

(Sapotaceae)

DISTRIBUTION: A tree, growing in forests and woodlands, in wet or moist districts, at lower and middle elevations in Puerto Rico. Also recorded from St. Croix, St. Thomas and from Saba to Trinidad.

USES: The hard, strong and durable wood, is valued for furniture, house building, frames, etc.

COMMON NAMES: "Jácana" and Contrevent.

INSECT RECORDS

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Large trees attacked at Guajataca Gorge, near Quebradillas, Nov. 17, 1940. (LFM.)

Malpighia

Malpighia fucata Ker-Gawl.

(Malpighiaceae)

DISTRIBUTION: A shrub or a small tree, growing in thickets and woodlands, at lower and middle elevations in Puerto Rico. Also in Vieques, St. Thomas, St. Croix and Jamaica.

COMMON NAMES: "Olaga" and "Palo Bronco."

INSECT RECORDS

Insects Affecting the Leaves

ORTHOPTERA

Microcentrum triangulatum Brunner

(Tettigoniidae) Eggs laid on the midrib, at the underside of a leaf, Maunabo, 1941. (LFM.)

LEPIDOPTERA

Brachycorene arcas (Drury)

(Hesperiidae) One adult reared from caterpillars feeding on the foliage, Maunabo, Dec. 27, 1940. (LFM.)

Mammea*Mammea americana* L.

(Clusiaceae)

DISTRIBUTION: A tree, growing in forests and on hillsides, in moist or wet districts of Puerto Rico. Also recorded from St. Croix, St. Thomas, St. Jan, Tortola, Cuba, Jamaica, Hispaniola and continental tropical America.

USES: Commonly planted in Puerto Rico and the Virgin Islands, for shade and for its fruit. The reddish brown, hard and durable wood, has a specific gravity of about 0.9; is used for house building, posts and piles. The gum obtained from the bark is used to extract chiggers from the skin and to kill ticks and other parasites on domestic animals. The powdered seeds as well as the leaves are said to possess medicinal properties.

COMMON NAMES: "Mamey," Mammee apple and Mammee.

INSECT RECORDS

Insects Affecting the Seeds

COLEOPTERA

Sitophilus oryza (Linnaeus)

(Curculionidae) In seed, at Isabela, (IB:316), 1932.

LEPIDOPTERA

Myelois notatilis (Walker)

(Phycitidae) Larvae completely destroying seeds, at Mayagüez, (SIB:133).

Insects Affecting the Leaves

HOMOPTERA

(Cicadellidae)

Hybla maculata McAtee

From "mamey" at Barceloneta and Punta Cangrejos, listed (IB:92). Presumably on the foliage.

(Aphiidae)

Toxoptera aurantii (Fonscolombe)

Infesting leaves, at different localities, at Plantaje, Salinas and Las Marías, (IB:117).

Mammea

(Coccidae)

Icerya montserratensis Riley & Howard

One coccid collected on a leaf, at San Sebastián, Nov. 25, 1940. Many of them on leaves, partly parasitized by *Rhyssalus brunneiventris* Ashmead, at San Sebastián, altitude 900 ft., Feb. 4, 1941. (GNW. & LFM.)

Pseudococcus nipae (Maskell)

At Barceloneta (IB:127); slight infestation on the foliage of a young tree, at Quebradillas, Sept. 5, 1940. (LFM.)

Saissetia hemisphaerica (Targioni)

At Vega Baja, (IB:132), 1916.

Howardia biclavis (Comstock)

At Barrio Mameyes, listed (IB:133), 1912.

Pseudaulacaspis pentagona (Targioni)

At Naguabo, listed (IB:136), 1914; as *Aulacaspis pentagona* Targioni.

Aspidiotus destructor Signoret

At Plantaje, listed (IB:138), 1916.

Chrysomphalus personatus (Comstock)

At Plantaje, Mameyes and Cupey Alto, (IB:140), 1912 and 1916.

HYMENOPTERA

(Formicidae)

Solenopsis geminata (Fabricius)

Attending aphids, *Toxoptera aurantii* (Fonscolombe) on "mamey," at Ciales, (IB:545), 1921.

Crematogaster steinheili Forel

Attending aphids, *Toxoptera aurantii* (Fonscolombe) on "mamey," at El Plantaje, (IB:546), 1922.

Rhyssalus brunneiventris Ashmead

(Braconidae) Parasitizing *Icerya montserratensis* Riley & Howard, on "mamey" leaves, at San Sebastián, altitude 900 ft., Feb. 4, 1941. (GNW.)

Mangifera

Mangifera indica L.

(Anacardiaceae)

DISTRIBUTION: A large tree, growing in fields, on hillsides, along roadsides and in river valleys, spontaneous after planting, in Puerto Rico. Also recorded from St. Croix, St. Thomas, St. Jan, Tortola, Florida, Cuba, Jamaica, Hispaniola, continental tropical America and the Old World tropics. Native to tropical Asia.

USES: The wood is used for the same purposes as the common american ash (*Fraxinus*); that is, for gunstocks, tool handles, window frames, etc. The tree is widely planted in Puerto Rico, for its fruit and shade, its wood also used as fuel in bakeries.

COMMON NAMES: "Mangó," and Mango.

INSECT RECORDS

Insects Affecting the Fruits

DIPTERA

Anastrepha mombinpraeoptans Seín

(Tephritidae) Reared at Río Piedras, from some mango varieties, reared in other localities, Bayamón, Guaynabo, Coamo, Guayama, Aibonito and Mayagüez, (IB:377) and (SIB:119).

Insects Affecting the Leaves

THYSANOPTERA

Selenothrips rubrocinctus (Giard)

(Thripidae) Pestiferous on mango foliage, doing considerable damage, (IB:65).

HOMOPTERA

(Aphidae)

Aphis gossypii Glover

A few on mango, (IB:114), 1933.

Toxoptera aurantii (Fonscolombe)

Listed (IB:117), 1933.

(Coccidae)

Asterolecanium pustulans (Cockerell)

Listed (IB:122).

Mangifera

Pulvinaria psidii Maskell

Listed (IB:128), 1912. Common on mango foliage, especially on the lower branches. (LFM.)

Ceroplastes floridensis Comstock

Listed (IB:130).

Vinsonia stellifera (Westwood)

At Mayagüez and Santa Isabel, listed (IB:130). Fairly abundant on the foliage, but not doing damages of economic importance, apparently. (LFM.)

Eucalymnatus tessellatus (Signoret)

Listed (IB:130).

Coccus hesperidum Linnaeus

Listed (SIB:59), 1939, on leaves of tree, at Fajardo and Mayagüez.

Coccus mangiferae (Green)

Listed (IB:131).

Chionaspis citri (Comstock)

Listed (IB:134).

Pseudaulacaspis pentagona (Targioni)

At Mayagüez, listed (IB:137); as *Aulacaspis pentagona* Targioni.

Leucaspis indica Marlatt

At Mayagüez, (IB:137).

Aspidiotus cyanophyllii Signoret

Listed (IB:137).

Chrysomphalus dictyospermi (Morgan)

Listed (IB:140), 1912.

Furcaspis biformis (Cockerell)

At Río Piedras, (IB:140). Listed as *Targionia biformis* Cockerell.

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Nest on tree, at Ponce, (IB:49). Nests and tunnels on trunks of trees, at Vega Baja, Aug. 30, 1940. A very common insect on mangoes, in nearly all sections of the Island. (LFM.)

Mangifera

COLEOPTERA

Chlorida festiva (Linnaeus)

(Cerambycidae) Larvae bores in branches of trees, and often in the trunk, listed (IB:259).

Brentus volvulus Fabricius

(Brentidae) Under bark of tree, at Añasco, (IB:288), 1913. The larva probably bored the trunk.

Xyleborus inermis Eichhoff

(Scolytidae) In mango, (IB:318).

HYMENOPTERA

Myrmelachista ramulorum Wheeler

(Formicidae) Listed (IB:555). Living in large mango tree, killing many shoots by boring in them, at Lares, altitude 1,270 ft., Dec. 10, 1941.

Manilkara

Manilkara bidentata (A. DC.) Chev.

(Sapotaceae)

DISTRIBUTION: A tree, growing in forests and on wooded hills, at lower and middle elevations in wet or moist districts of Puerto Rico. Also recorded from St. Jan and Tortola. (In Britton & Wilson, vol. 6, p. 72 as: *Manilkara nitida* (Sessé & Moc.) Dubard.)

USES: The dark-brown or brownish red wood is hard, strong and durable, and is used in construction of mallets, wheel cogs, wooden mortars, house construction, etc.

COMMON NAMES: "Ausubo" and Bullet wood.

INSECT RECORDS

Insects Affecting the Leaves and Twigs

HOMOPTERA

Entogonia coffeacola (Dozier)

(Cicadellidae) Adults and nymphs abundant on the undersides of leaves and young twigs, of small trees 4 to 10 ft., high, at the forest, Barrio Espino, San Lorenzo, altitude 1,500 ft., Aug. 25, 1940. (LFM.)

Manilkara

Neocolpoptera portoricensis Dozier

(Fulgoridae) One specimen collected on a twig, at Barrio Espino, San Lorenzo, altitude 1,500 ft., Aug. 25, 1940. (LFM.)

Saissetia oleae (Bernard)

(Coccidae) On twigs of young tree, Barrio Espino, San Lorenzo, altitude 1,500 ft., Aug. 25, 1940. (LFM.)

Manilkara pleeana (Pierre) Cronquist

(Sapotaceae)

DISTRIBUTION: A tree, growing in coastal thickets and on river banks in moist or wet districts of Puerto Rico and Vieques. Endemic. (In Britton & Wilson, vol. 6, p. 72 as: *Manilkara duplicata* (Sessé & Moc.) Dubard.)

USES: The strong and durable wood resembles that of *M. bidentata* (A. DC.) Chev., and has its same uses.

COMMON NAMES: "Sapota de costa," "Sapote," "Sapote de costa," "Zipote," "Balata" and "Mameyuelo."

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

Pulvinaria psidii Maskell

(Coccidae) Common on the undersides of leaves, at Arecibo, near sea-level, on El Vigía-Islote road, Jan. 2, 1941. (LFM.)

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Trees with tunnels on their trunks, at Guajataca Gorge, near Quebradillas, Oct. 1940. (LFM.)

Melia*Melia azedarach* L.

(Meliaceae)

DISTRIBUTION: A tree, commonly spontaneous after planting in Puerto Rico. Recorded also from Vieques, St. Croix, St. Thomas, St. Jan, Tortola, southeastern United States, Bermuda, Cuba, Jamaica, Hispaniola, Mexico and continental tropical America. Native to southern Asia.

USES: The brownish wood is weak, soft, coarse-grained, used for handles of tools and implements. The tree is used as an ornamental.

COMMON NAMES: "Alilaila," "Lilaila," "Pasilla," "Alilayo," Chinaberry, Pride of India, Hog-bush (Br. W. I.). Also called Lilac in the Virgin Islands.

INSECT RECORDS

Insects Affecting the Leaves and Twigs

HOMOPTERA**Saissetia nigra** (Nietner)

(Coccidae) At Fortuna, near Ponce and Luquillo, (IB:133), 1912-13.

Pinnaspis minor (Maskell)(Coccidae) At Luquillo and Fortuna, near Ponce, (IB:136-7) 1912-13, listed as *Hemichionaspis minor* Maskell. Fairly large tree, infested, leaves, twigs, branches and even the trunk, at Guajataca Lake, 1941. (LFM.)

Insects Affecting the Trunk

COLEOPTERA**Apate monachus** Fabricius

(Bostrychidae) Van Zwaluwenburg, reports the insect, as boring in branches of host tree, (IB:243).

Melicocca*Melicocca bijuga* L.

(Sapindaceae)

DISTRIBUTION: A tree, occasionally spontaneous after planting in Puerto Rico, along roadsides, gardens and "patios." Also recorded from St.

Melicocca

Croix, St. Thomas, St. Jan, Cuba, Jamaica and Hispaniola. Native of continental tropical America.

USES: Planted for its edible fruit and shade.

COMMON NAMES: "Quenepa," "Quenepas" (Puerto Rico), "Mamón," "Mamoncillo" (Venezuela), Knipa, Kneiper, Quenepe, Genep tree, Genipe, Ginep, Jamaica Bullace plum and Kanappy. (Jamaica and the Br. W. I.)

INSECT RECORDS**Insects Affecting the Leaves****HOMOPTERA**

Pseudococcus virgatus (Cockerell)
(Coccidae) Listed, (SIB:58).

COLEOPTERA

Diaprepes abbreviatus (Linnaeus)
(Curculionidae) Listed by Mr. E. G. Smyth, in (IB:298). Presumably feeding on the foliage.

LEPIDOPTERA

Phoebis statira neleis (Boisduval)
(Pieridae) Caterpillars on tender leaves, in July 1936, June 1937, Sept. 1939, (SIB:123).

Megalopyge krugii (Dewitz)
(Megalopygidae) Thousands of cocoons attached to the trunk of trees, at Ponce, the caterpillars feeding on the foliage previously, 1940. (LFM.)

HYMENOPTERA

Spilochalcis eubule (Cresson)
(Chalcididae) Reared from chrysalis of *Phoebis statira neleis* (Boisduval), on tree, (SIB:147), 1939.

Insects Affecting the Trunk**ISOPTERA**

Nasutitermes (N.) *costalis* (Holmgren)
(Termitidae) Many trees with tunnels on their trunks, at Ponce and Guayanilla, May 1941. (LFM.)

COLEOPTERA

Stenodontes bituberculatus (Beauvois)
(Cerambycidae) A very large tree at Ponce, with many bores, done by the larvae of this species. One adult collected Nov. 14, 1940. (LFM.)

Metopium*Metopium brownei* (Jacq.) Urban

(Anacardiaceae)

DISTRIBUTION: A tree, growing in coastal woods and thickets in the western and southwestern districts of Puerto Rico. Also recorded from Mona, Florida, Bahamas, Cuba and Hispaniola. (In Britton & Wilson, vol. 5, p. 510 as: *Metopium toxiferum* (L.) Krug & Urban.

COMMON NAMES: "Cedro prieto," "Papayo," Poison wood and Hog plum (Br. W. I.).

INSECT RECORDS

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) On tree, at Guajataca, near Quebradillas, Nov. 24, 1940. (LFM.)

Kaloterme (K.) *snyderi* Light

(Kalotermitidae) Infesting the dead branches of live trees, abundant. Mona Island, April 5, 1944. (GNW. & LFM.)

COLEOPTERA

Strataegus *barbigerus* Chapin

(Scarabaeidae) Male and female from the base of a tree, at Mona Island, (SIB:98), 1939. (LFM.)

Miconia*Miconia prasina* (Sw.) DC.

(Melastomaceae)

DISTRIBUTION: A shrub or a small tree, growing in mountain forests, thickets, valleys and on hillsides, in wet or moist districts, ascending to higher elevations in Puerto Rico. Also recorded from Tortola, Jamaica, Cuba, Hispaniola, Grenada, Trinidad, Margarita and continental tropical America.

Miconia

USES: Wood used for poles, fuel and charcoal. The plant is said to yield a black dye.

COMMON NAME: "Camasey."

INSECT RECORDS

Insects Affecting the Leaves and Twigs

HOMOPTERA

(Coccidae)

Pseudococcus nipae (Maskell)

Listed (IB:127), 1913. Abundant on the undersides of leaves, on trees at Aguas Buenas, altitude 1,000 ft., Nov. 19, 1940. (LFM.)

Coccus viridis (Green)

Heavy infestation of twigs and on the undersides of leaves, on trees at Aguas Buenas, altitude 1,000 ft., Nov. 19, 1940. (LFM.)

Miconia racemosa (Aubl.) DC.

(Melastomaceae)

DISTRIBUTION: A shrub, occasionally a tree, growing in woodlands, thickets and on banks in wet or moist districts of Puerto Rico, ascending to higher elevations. Also recorded from Jamaica, Hispaniola, Grenada, Tobago, Trinidad and northern South America.

COMMON NAME: "Camasey racemoso."

INSECT RECORDS

Insects Affecting the Leaves

COLEOPTERA

Phyllophaga citri (Smyth)

(Scarabaeidae) Adults feeding on the foliage of tree, (IB:250).

Micropholis

Micropholis garcinifolia Pierre

(Sapotaceae)

DISTRIBUTION: A tree, growing in the forests, at high altitudes and limited to the eastern mountains of Puerto Rico. Endemic.

USES: Its very hard and fine-grained wood, is used in general construction work.

COMMON NAME: "Caimitillo."

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

Pseudococcus nipae (Maskell)

(Coccidæ) Common on the undersides of leaves, many trees infested, at Camp Guavate, Cayey, May 17, 1940. (LFM.)

Montezuma

Montezuma speciosissima Sessé & Moc.

(Malvaceae)

DISTRIBUTION: A tree, growing in woods and on hillsides, at lower elevations in the central and western districts of Puerto Rico. An endemic species, erroneously attributed to Mexico.

USES: Its valuable wood is hard, durable, brown or reddish brown in color, strong and heavy; used for furniture, interior house work, musical instruments, posts and piles.

COMMON NAME: "Maga."

INSECT RECORDS

Insects Affecting the Seeds or Pods

HEMIPTERA

(Pyrrhocoridae)

Dysdercus andreae (Linnaeus)

Adults and nymphs on crushed pods, on the ground, (F. Sefn, July 1935); at Isabela on May and June (IB:164), 1932. Feeding on the seeds of trees, (SIB:71). An important pest of "maga" seeds.

Montezuma

Dysdercus sanguinarius Stål

Feeding on seeds, (SIB:71). (Fife.)

COLEOPTERA

Hypothenemus parvus Hopkins

(Scolytidae) At Vega Alta, from pods, listed (IB:318). Identified as sp. near *parvus* Hopkins.

LEPIDOPTERA

Pectinophora gossypiella (Saunders)

(Gelechiidae) An important pest, the caterpillar destroying the seeds of trees, in many sections of the Island. Many localities recorded, (IB:496) and (SIB:136).

Insects Affecting the Leaves and Twigs

HOMOPTERA

(Membracidae)

Nessorhinus gibberulus Stål

At Villalba, (SIB:50), 1940.

(Cicadellidae)

Empoasca (Idona) minuenda Ball

Listed (IB:91), (SIB:52). Presumably on the foliage.

Dikraneura (Hyoidea) depressa McAtee

On the undersides of leaves at Bayamón, both nymphs and adults abundant, also at Vega Baja, (IB:92). At Arecibo, (SIB:52), 1940. Very abundant on the undersides of leaves, at Arecibo, Isabela, Manatí, Aibonito, Cayey, from 100 ft. to 1,500 ft. altitude, Aug. 1940. (LFM.)

(Fulgoridae)

Catonia cinerea Osborn

At Arecibo, listed (IB:93) and (SIB:53).

Ormenis quadripunctata (Fabricius)

Breeding on the undersides of leaves; eggs, nymphs and adults abundant, at Aibonito, Km. 82.8, on the Coamo road, Oct. 13, 1940. (LFM.)

Cedusa santaclara Myers

At Arecibo, (IB:105) and (SIB:54).

Montezuma

(Coccidae)

Asterolecanium pustulans (Cockerell)

At Dorado, listed (IB:122), 1934. At Isabela, Arecibo, Vega Alta, Cayey and Corozal, causing withering of leaves and killing many twigs and smaller branches, (SIB:57), 1940. Many branches killed on trees, at Guajataca Lake, Quebradillas, altitude 600 ft., Feb. 4, 1941. (GNW. & LFM.)

Asterolecanium sp.

At Vega Alta, listed (SIB:57). Determined as: "sp. nov."

Pseudococcus citri (Risso)

At Vega Alta, (IB:125), and (SIB:58).

Saissetia nigra (Nietner)

At Manatí and Ciales, (IB:133), 1915. At Vega Alta (SIB:59). Scale insects on twigs, at Guajataca Lake, altitude 600 ft., Feb. 4, 1941. On leaves at Camuy, Jan. 11, 1941. (LFM.)

Saissetia oleae (Bernard)

At Vega Baja and Villalba, (SIB:59-60), 1940. (LFM.)

Pseudaulacaspis pentagona (Targioni)

At Espinosa, Bayamón (IB:136), 1915. Listed as *Aulacaspis pentagona* Targioni.

Pinnaspis minor (Maskell)

At Isabela, (IB:137) and (SIB:60). Listed as *Hemichionaspis minor* Maskell, in (IB:137).

HEMIPTERA

Hyaloides vitreus Distant

(Miridae) In (IB:154) and (SIB:66). Presumably on the foliage.

COLEOPTERA

Diaprepes abbreviatus (Linnaeus)

(Curculionidae) Weevils feeding on the foliage of trees, at Isabela, May 1942. (LFM.)

LEPIDOPTERA

Gonitis praerupta Möschler

(Phalaenidae) Adult reared, from caterpillar collected feeding on leaves of tree, at Toa Baja, Aug. 30, 1940, (det.: Gates Clark). (LFM.)

Montezuma

Oiketicus kirbyi Guilding

(Psychidae) Three or four bag-worms collected, while feeding on the foliage, at Aibonito, Oct. 13, 1940.

HYMENOPTERA

Euplectrus sp.

(Elachertidae) Reared from a caterpillar feeding on leaves of tree, at Isabela, Sept. 15, 1940. The caterpillar, was determined by Dr. Wolcott, as *Anomis* sp. (GNW. & LFM.)

Moringa

Moringa oleifera Lam.

(Moringaceae)

DISTRIBUTION: A tree, introduced and growing spontaneously after planted in Puerto Rico. Much planted along roadsides. A native of the Orient. (In Britton & Wilson, vol. 5, p. 337 as: *Moringa Moringa* (L.) Millsp.)

USES: The seeds of the tree yield the lubricating oil of ben, used for lubrication as well as perfume manufacturing. The wood is very soft and weak, and of no use in Puerto Rico. However, it has many uses, in its native home.

COMMON NAMES: "Ben," "Angela," "Jazmín francés," "Hoja de sen" and Horseradish tree.

INSECT RECORDS

Insects Affecting the Pods

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Trees so heavily infested by the termite, that the tunnels were all over the trunks, branches, and even in the dry pods, the termites boring and living inside. Guayama, May 1942. (LFM.)

Moringa

HOMOPTERA

Saissetia nigra (Nietner)

(Coccidae) Few, on pods of tree, at Salinas, altitude 100 ft., Oct. 20, 1940. (LFM.)

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Trees so heavily infested by termites, at Guayama and Salinas road, that all parts of the trees, were affected. May, 1942. (LFM.)

Myrcia

Myrcia citrifolia (Aubl.) Urban

(Myrtaceae)

DISTRIBUTION: A tree, growing in thickets, forests and on hillsides, at lower and middle elevations in wet or moist districts of Puerto Rico. Also recorded from St. Croix, St. Thomas, St. Jan, Tortola, Virgin Gorda, Cuba, St. Martin and from Saba to Barbados.

COMMON NAME: "Hoja menuda."

INSECT RECORDS

Insects Affecting the Leaves and Twigs

HOMOPTERA

(Coccidae)

Ceroplastes cirripediformis Comstock

At Algarrobo, listed (IB :129), 1914. Host tree listed as *M. paniculata* = *citrifolia* (Aubl.) Urban.

Howardia biclavis (Comstock)

At Dorado, (SIB :60).

Aspidiotus sp.

At Palo Seco, listed (SIB :61).

Myrica

HYMENOPTERA

Aphycus eruptor Howard

(Encyrtidae) Reared from *Ceroplastes cirripediformis* Comstock at Algarrobo, (IB:529), 1914. (det. as sp. nov. near *eruptor* Howard.)

Myrcia deflexa (Poir) DC.

(Myrtaceae)

DISTRIBUTION: A tree, growing in woodlands, forests and thickets, in wet or moist districts of Puerto Rico, ascending to higher elevations. Also recorded from Cuba, Hispaniola, Guadeloupe to Trinidad and northern South America.

USES: The reddish, hard, heavy and strong wood, has very little use, except for fuel and charcoal.

COMMON NAMES: "Cieneguillo" and "Guayavacón."

INSECT RECORDS

Insects Affecting the Twigs

HOMOPTERA

Saissetia hemisphaerica (Targioni)

(Coccidae) Listed (IB:132), 1915.

Myrica

Myrica cerifera L.

(Myricaceae)

DISTRIBUTION: A shrub or tree, growing in thickets and on hillsides, in moist districts at lower and middle elevations, in Puerto Rico. Also recorded from southeastern United States, Bermuda, Bahamas, Cuba and Hispaniola.

Myrica

USES: The tree yields a wax, which has been used in the manufacturing of candles.

COMMON NAMES: "Cerero," "Arrayán," Wax-berry and Bayberry.

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

Aleurodicus griseus Dozier

(Aleyrodidae) Whiteflies abundant, on trees at Guánica Ins. Forest, May 31, 1942. (LFM.)

COLEOPTERA

Aphthona maculipennis Jacoby

(Chrysomelidae) At Guánica (IB:284). The host tree listed as *Myrcia cerifera*, undoubtedly an error; it should be *Myrica cerifera* L.

Nectandra

Nectandra coriacea (Sw.) Griseb.

(Lauraceae)

DISTRIBUTION: A tree, growing in woods, on hillsides and along creeks at lower elevations in dry or moist districts of Puerto Rico. Also recorded from Vieques, St. Thomas, St. Croix, St. Jan, Tortola, Florida, Jamaica, Cuba, Hispaniola and Yucatán.

COMMON NAMES: "Avispillo" and "Laurel."

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

Pseudococcus nipae (Maskell)

(Coccidae) Infestation on the undersides of leaves, on tree, at La Catalina, El Yunque road, altitude 600 ft., Sept. 29, 1940. (LFM.)

Nectandra

Nectandra membranacea (Sw.) Griseb.

(Lauraceae)

DISTRIBUTION: A tree, growing in forests and on hillsides, in wet or moist districts, ascending to higher elevations in Puerto Rico. Also recorded from St. Thomas, St. Croix, Jamaica, Hispaniola and from Guadeloupe to Trinidad.

COMMON NAMES: "Laurelillo," "Laurel" and "Laurel geogeo."

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

Pseudococcus nipae (Maskell)

(Coccidae) Abundant on the foliage of many trees, especially on the undersides of leaves, at Aibonito, Km. 85.4, of the Aibonito-Coamo road, Oct. 13, 1940. (LFM.)

LEPIDOPTERA

Jocara majuscula (Herrich-Schaffer)

(Epipaschidae) Leaf-webber, very abundant, the caterpillars parasitized by a wasp, *Apanteles* sp., at Aibonito, Oct. 13, 1940.

Nectandra sintenisii Mez

(Lauraceae)

DISTRIBUTION: A tree, growing in the forests, at lower and middle elevations, in wet or moist districts of Puerto Rico. Also recorded from St. Thomas and Hispaniola.

COMMON NAMES: "Laurel blanco," "Laurel amarillo," "Laurel macho," "Laurel geo" and "Laurel."

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

Ormenis marginata (Brunnich)

(Fulgoridae) Adults abundant on twigs and leaves of a large tree, at Km. 26.6 of the Río Piedras-Caguas Road, Río Piedras, Oct. 20, 1940. (LFM.)

Nectandra**Pseudococcus nipae** (Maskell)

(Coccidae) In all cases, very abundant on the foliage, especially on the undersides of the leaves, at Camp Patillas, May 14, 1940; Cayey, Oct. 13, 1940; Río Piedras, Oct. 20, 1940; El Yunque Mts., Sept. 29, 1940; ranging in altitudes from 300 to 1,400 ft. (LFM.)

Aleuroplatus vinsonioides (Cockerell)

(Aleyrodidae) Several on the undersides of leaves, on tree near Caguas, on the Gurabo road, May 1942. (LFM.)

LEPIDOPTERA**Jocara majuscula** (Herrich-Schäffer)

(Epipaschidae) Caterpillars leaf-webbers on trees, at Cayey, on the Salinas road, altitude 1,800 ft., Dec. 24, 1940. One moth reared, pupation period 10 days. (LFM.)

Megalopyge krugii (Dewitz)

(Megalopigidae) Many cocoons attached to the trunk of a tree, at Km. 4.7 of the Caguas-Gurabo road, near Caguas. The caterpillars presumably fed on the foliage of this tree. Oct. 20, 1940. (LFM.)

Insects Affecting the Trunk**ISOPTERA****Nasutitermes (N.) costalis** (Holmgren)

(Termitidae) Tunnels on trunks of trees, at Río Abajo Plantations, Utuado, April 20, 1941, altitude 1,200 ft. (LFM.)

Neowashingtonia

Neowashingtonia robusta (Wendl.) Britton

(Arecaceae)

DISTRIBUTION: A palm, native to the southern California deserts, occasionally planted in Puerto Rico, after its introduction.

USES: Grown for ornamental purposes.

COMMON NAMES: "Palma del desierto" and Desert palm.

Neowashingtonia

INSECT RECORDS

Insects Affecting the Seeds

COLEOPTERA

Coccotrypes rollinae Hopkins

(Scolytidae) In seeds of palm, listed (SIB:106), 1933.

Insects Affecting the Leaves

HOMOPTERA

Aspidiotus cyanophyllii Signoret

(Coccidae) Listed (IB:137), host palm as: *Washingtonia robusta*.

Ischnaspis longirostris (Signoret)

(Coccidae) Listed (IB:143), host as: *Washingtonia robusta*.

Aleurodicus cocois (Curtis)

(Aleyrodidae) Abundant in all stages on palm, at the Río Piedras Agr. Exp. Station, during Nov. and Dec. 1924, (IB:144).

Ochroma

Ochroma lagopus Sw.

(Bombacaceae)

DISTRIBUTION: A tree, growing in forests, woodlands and on hillsides, at lower elevations in Puerto Rico. Also recorded from Martinique, St. Vincent, Tobago, Trinidad, Jamaica, Cuba, Hispaniola, Guadeloupe and northern South America. (In Britton & Wilson, Vol. 5, p. 569 as: *Ochroma pyramidale* (Cav.) Urban.)

USES: The very light wood is nearly white, soft, and with a specific gravity of only 0.2. It is used for stoppers, floats, rafts and otherwise as a substitute for cork. The bark yields tannin and a fiber, used in rope making. The woolly interior of the fruit is used for stuffing pillows and mattresses.

COMMON NAMES: "Guano," Balsa or Corkwood.

Ochroma

INSECT RECORDS

Insects Affecting the Leaves

COLEOPTERA

Cryptocephalus nigrocinctus Suffrian

(Chrysomelidae) Many adults feeding on the foliage, at Cayey, Aug. 11, 1940.

LEPIDOPTERA

Pantographa limata (Grote & Robinson)

(Pyraustidae) A leaf-roller in balsa, rolling leaves and feeding, at El Yunque Mts., on the Naguabo Range, altitude 1,800 ft., Sept. 28, 1940. Many of the caterpillars were parasitized by a braconid, *Chelonus insularis* Cresson. Same caterpillars attacking trees, at Patillas, on the San Lorenzo road, about 600 ft. in altitude, Dec. 19, 1941. (det.: Heinrich.) (LFM.)

Oiketicus kirbyi Guilding

(Psychidae) Trees almost completely defoliated, at La Catalina, on El Yunque Rd., altitude 700 ft., many bags hanging on the twigs and smaller branches of trees, Sept. 29, 1940. (LFM.)

Insects Affecting the Twigs

HOMOPTERA

Asterolecanium pustulans (Cockerell)

(Coccidae) Listed (IB:122), 1924.

HYMENOPTERA

Mercetiella reticulata Dozier

(Encyrtidae) Reared from *Asterolecanium pustulans* (Cockerell), a scale insect on tree, (IB:530), 1914.

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Tunnels on trunk of large tree, at Río Abajo Plantations, 1,200 ft. altitude, April 20, 1940. (LFM.)

Ocotea

Ocotea floribunda (Sw.) Mez

(Lauraceae)

DISTRIBUTION: A tree, growing in the forests, at lower and middle elevations in wet or moist districts of Puerto Rico. Also recorded from St. Jan, Tortola, Cuba, Jamaica, Hispaniola, Guadeloupe, Martinique, Trinidad, Central and South America.

COMMON NAME: "Laurel."

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

Pseudococcus nipae (Maskell)

(Coccidae) Abundant on the undersides of leaves, at El Yunque Mts., some trees infested, Sept. 29, 1940. Altitude 1,000 ft. (LFM.)

Ocotea leucoxydon (Sw.) Mez

(Lauraceae)

DISTRIBUTION: A tree, growing in thickets, forests and on hillsides, in wet or moist districts of Puerto Rico, ascending to higher elevations. Also recorded from St. Thomas, Tortola, Cuba, Jamaica, Hispaniola and from Guadeloupe to Grenada.

COMMON NAMES: "Cacaillo," "Laurel geo," "Laurel bobo," and "Laurel geogo."

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

Ceropsylla martorelli Caldwell

(Chermidae) A leaf infesting psyllid, causing pustules on the foliage, all stages especially abundant on the tender leaves of trees. At Aguas Buenas, 1,200 ft. altitude, June 1940; at Cerro de Punta, Jayuya, 3,100 ft., Jan. 26, 1941; at Cayey, altitude 1,200 (Las Cruces) and at Maricao Insular Forest, at 2,300 ft., altitude, May 1942. (LFM)

Ocotea

Aleuroplatus vinsonioides (Cockerell)

(Aleyrodidae) On foliage of trees, at Río Abajo Plantations, 1,200 ft. in altitude, April 20, 1940. (LFM.)

LEPIDOPTERA

Jocara majuscula (Herrich-Schaffer)

(Epipaschidae) Not a very serious infestation; caterpillars webbing leaves of trees, at Cayey, on the Salinas road, altitude 1,800 ft.; at Arecibo, June 10, 1941. (LFM.) (determined as sp. prob. *majuscula* (H.-S.).)

Ocotea portoricensis Mez

(Lauraceae)

DISTRIBUTION: A tree, endemic to the mountain forests of Puerto Rico.
COMMON NAMES: "Laurel," "Laurel geo," "Laurel avispillo."

INSECT RECORDS

Insects Affecting the Leaves and Twigs

HOMOPTERA

Ormenis marginata (Brunnich)

(Fulgoridae) Abundant on twigs of trees, at Camp Patillas, Patillas, May 15, 1940. (LFM.)

Ceropsylla martorelli Caldwell

(Chermidae) The pustule producing psyllid, infesting leaves of trees, at Cayey, Carite Unit, altitude 2,000 ft., Aug. 11, 1940. (LFM.)

Toxoptera aurantii (Fonscolombe)

(Aphiidae) On the young shoots of tree, controlled by the fungus, *Acrostalagmus albus*, according to Mr. Van Zwaluwenburg, (IB:117).

Pseudococcus nipae (Maskell)

(Coccidae) On the undersides of leaves and twigs, at Maricao and Ciales, (SIB:58), 1940. At Cayey, Carite Unit, 2,000 ft. altitude, Aug. 11, 1940. (LFM.)

Ocotea

Saissetia oleae (Bernard)

(Coccidae) On twigs, at Camp Patillas, Patillas, May 15, 1940.
(LFM.)

COLEOPTERA

Diaprepes abbreviatus (Linnaeus)

(Curculionidae) Adults feeding on the foliage of tree, at Guavate Camp, Carite Unit, Cayey, Aug. 11, 1940. (LFM.)

Ormosia

Ormosia krugii Urban

(Fabaceae)

DISTRIBUTION: A tree, growing in the primeval forests of Puerto Rico at middle and higher elevations. Also found in Dominica.

USES: The wood is light, soft and weak and finds little use, except as firewood.

COMMON NAMES: "Palo de matos," "Peronía," and "Palo de peronía."

INSECT RECORDS

Insects Affecting the Leaves

LEPIDOPTERA

Megalopyge krugii (Dewitz)

(Megalopygidae) Cocoons abundant on the trunk of a large tree, at La Catalina, on the Yunque Mts. road, altitude 900 ft., Sept. 29, 1940. Presumably the caterpillars of this insect fed on the foliage of the tree.
(LFM.)

Oxandra

Oxandra lanceolata (Sw.) Baill.

(Annonaceae)

DISTRIBUTION: A tree, growing in woods and thickets, near Quebradillas and Cabo Rojo, Puerto Rico.

Oxandra

USES: The yellow wood is light, durable and elastic; valued for rods, spars and shafts.

COMMON NAMES: "Haya prieta," Black lancewood or Tree lancewood. (Br. W. I.)

INSECT RECORDS

Insects Affecting the Leaves

LEPIDOPTERA

Gonodonta maria Guenée

(Phalaenidae) According to Möschler, p. 183, the caterpillar of this species, among other trees, lives on *Bocagea virgata* = *O. lanceolata* (Sw.) Baill.

Pariti*Pariti tiliaceum* (L.) Hil.

(Malvaceae)

DISTRIBUTION: A tree, growing in thickets, along forest borders, and on banks, ascending to higher elevations in Puerto Rico. Also recorded from St. Thomas, St. Jan, St. Croix, Florida, Bermuda, Cuba, Jamaica, Hispaniola, continental tropical America and Old World tropics.

USES: The hard, stong, durable wood is greenish; used for furniture, railroad ties and in general construction. The fibrous bark is used in rope and cordage making.

COMMON NAMES: "Majagua," "Emajagua," "Esmajagua," Blue or Mountain mahoe (Br. W. I.), "Majot," "Mahot franc" (Haiti) and "Hau" (Hawaii).

INSECT RECORDS

Insects Affecting the Leaves and Twigs

HOMOPTERA

(Cicadellidae)

Empoasca sexmaculata DeLong.

Causing yellowing of leaves, adults, large and small nymphs present, at Punta de Cangrejos, Jan. 13 and May 29, 1920, (IB :91).

Pariti

Hybla maculata McAtee

At Cayey and Mona Island, causing yellowing of leaves, adults and nymphs in all stages, very abundant on the undersides of the leaves, on many trees, at both localities, (SIB:53), 1940. (LFM.)

(Coccidae)

Pseudococcus adonidum (Linnaeus)

On the undersides of leaves, at Cayey, (SIB:58), 1940. (LFM.)

Pseudaulacaspis pentagona (Targioni)

At Fajardo; also at Mameyes and Adjuntas, listed in (IB:135), as: *Aulacaspis pentagona* Targioni.

Pinnaspis minor (Maskell)

At Cayey, on twigs, branches and even on the trunk, (SIB:60), 1940. Large tree, at the U. S. Forest Service grounds, at Río Piedras, with slight infestation on leaves and twigs, controlled by the lady-bird beetle, *Chilocorus cacti* (Linnaeus), Feb. 13, 1941. (LFM.)

HEMIPTERA

Paracarnus cubanus Bruner

(Miridae) Abundant on the undersides of the leaves, at Cayey, (SIB:66), 1940.

Insects Affecting the Trunk

HOMOPTERA

Pinnaspis minor (Maskell)

(Coccidae) Abundant on the trunk of a very large tree, at the U. S. Forest Service grounds, controlled by the lady-bird beetle, *Chilocorus cacti* (L.) Feb. 13, 1942.

COLEOPTERA

Chilocorus cacti (Linnaeus)

(Coccinellidae) Adults and larvae, abundant, feeding voraciously on the scale insect, *Pinnaspis minor* (Maskell), infesting large tree, at the U. S. Forest Service grounds, at Río Piedras, Feb. 13, 1942, (LFM.)

Parkinsonia*Parkinsonia aculeata* L.

(Caesalpiniaceae)

DISTRIBUTION: A tree, growing in the valleys and on the plains, in moist or dry situation, in the eastern and southern districts, near the coasts, in Puerto Rico. Also recorded from Vieques, St. Croix, St. Thomas, St. Jan, Tortola, Virgin Gorda, southern United States, Cuba, Jamaica, Hispaniola, continental tropical America and the Old World tropics.

USES: Often planted for ornament, highly decorative when in bloom. In other parts of the world, the wood is used for fuel, and also has been employed in paper manufacturing. The infusion of the leaves is employed in Mexico as a febrifuge and sudorific, a remedy for epilepsy and an abortifacient.

COMMON NAMES: "Palo de rayo," "Flor de rayo," "Flor de Mayo," Jerusalem thorn and Horsebean.

INSECT RECORDS

Insects Affecting the Leaves

LEPIDOPTERA

Melipotis acontioides (Guenée)

(Phalaenidae) Caterpillars feeding on the foliage, adults reared from them, (SIB:127), 1937. The lepidopteron, *Stictoptera penicillum* Herrich-Schaffer, listed on (IB:430) should be included here, because it refers to *M. acontioides* (Guenée). The name *S. penicillum* is a misidentification.

Insects Resting on the Tree

HEMIPTERA

Alcaeorrhynchus phymatophorus (Beauvois)

(Pentatomidae) At Faro de Cabo Rojo, (SIB:79), 1937. Possibly feeding on the foliage.

Peirania*Peirania polyphylla* (Jacq.) Britton & Rose

(Caesalpiniaceae)

DISTRIBUTION: A shrub or a small tree, growing in thickets and on hill-sides, at low and middle elevations, mostly in dry sections of the south-

Peiranisia

western and southern districts of Puerto Rico. Also recorded from St. Thomas, St. Croix, Anegada and Hispaniola.

USES: Due to its beautiful blossoms, the tree is grown as an ornamental.

COMMON NAMES: "Hediondilla," "Retama" and "Retama prieta."

INSECT RECORDS

Insects Affecting the Leaves

COLEOPTERA

Ectmesopus vitticollis Blake

(Chrysomelidae) At Ponce, (SIB:100). Presumably feeding on the foliage.

Deloyala guttata (Olivier)

(Chrysomelidae) At Ponce, listed (IB:285) as: *Chirida guttata* Olivier. Perhaps feeding on the foliage.

Apodrosus argentatus Wolcott

(Curculionidae) At Juana Díaz (IB:303). Perhaps feeding on the foliage.

Persea*Persea gratissima* Gaertn.

(Lauraceae)

DISTRIBUTION: A tree, growing spontaneous after its introduction, in Puerto Rico. Also recorded from St. Croix and St. Thomas. A native of Mexico. (In Britton & Wilson, vol. 5, p. 318 as: *Persea Persea* (L.) Cockerell.)

USES: Widely planted in tropical and subtropical regions for its edible fruit, which yields a valuable oil, used for burning and soap making. A large number of therapeutic qualities are attributed to the leaves and bark. The reddish brown wood, which is rather soft and weak, has very little use locally.

COMMON NAMES: "Aguacate," Avocado, Alligator pear and Butter pear. (Br. W. I.)

Persea

INSECT RECORDS

Insects Affecting the Leaves and Twigs

HOMOPTERA

(Cicadellidae)

Empoasca (Idona) minuenda Ball

Abundant on the undersides of leaves, at Río Piedras, (Dozier). At Loíza, (IB:91), 1924.

(Fulgoridae)

Oliarus franciscanus (Stål)

At Villalba, listed (IB:96).

Ormenis infuscata Stål

Listed (IB:102), 1912.

Ormenis quadripunctata (Fabricius)

Listed (IB:103), 1912.

(Coccidae)

Pseudococcus nipae (Maskell)

Abundant on the undersides of leaves and on the twigs of trees, at different localities in Puerto Rico, (IB:126).

Ceroplastes floridensis Comstock

Listed (IB:130), 1918.

Saissetia hemisphaerica (Targioni)

Recorded by Dr. Dozier, on avocado, also controlled by the parasitic wasp, *Aneristus ceroplastae* Howard, (IB:132).

Aonidiella orientalis (Newstead)

Listed (SIB:60).

Aspidiotus destructor Signoret

At Mameyes, 1916 and at Guayama 1913, (IB:138).

Pseudischnaspis bowreyi (Cockerell)

Listed (IB:140).

Furcaspis biformis (Cockerell)

At Río Piedras, in (IB:140), listed as *Targionia biformis* Cockerell.

Persea

COLEOPTERA

Diaprepes abbreviatus (Linnaeus)

(Curculionidae) Listed (IB:298), 1917. Heavy defoliation by adults at Yabucoa, Aguadilla, Guajataca and Isabela, May-June 1941. (L.F.M.)

LEPIDOPTERA

Oiketicus kirbyi Guilding

(Psychidae) According to Möschler, p. 122, this species feeds on the foliage of trees (IB:502).

HYMENOPTERA

Aneristus ceroplastae Howard

(Aphelinidae) Reared from *Saissetia hemisphaerica* (Targioni) on avocado, (IB:529). (Dozier.)

Lecanobius cockerelli Ashmead

(Eupelmidae) Reared from *Saissetia oleae* (Bernard) on avocado, (IB:532). (Dozier.)

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Nests and tunnels on trunk of many trees at Santurce, Rio Piedras, Cayey, Guayama, Ponce, Guajataca, Aguadilla, and Isabela, 1941. (L.F.M.)

COLEOPTERA

Apate monachus Fabricius

(Bostrychidae) An outbreak at Lares, attacking many trees, and among them, avocado, (IB:244). Listed as *Apate francisca* Fabricius.

Petitia

Petitia domingensis Jacq.

(Verbenaceae)

DISTRIBUTION: A tree, growing in woods and on hillsides, at lower and middle elevations, in moist districts of Puerto Rico. Also recorded from St. Croix, Bahamas, Cuba, Cayman Islands and Hispaniola.

Petitia

USES: The brown wood, is used for rollers, furniture and general construction. It is hard, heavy, durable and of a beautiful tone when polished and varnished.

COMMON NAMES: "Capá blanco," "Capá amarillo," "Capá rosa," "Capá," "Capá de sabana," "Palo de capá" and Bastard stopper.

INSECT RECORDS**Insects Affecting the Leaves****ORTHOPTERA****Microcentrum triangulatum Brunner**

(Tettigoniidae) Eight or twelve adults feeding voraciously on leaves of a tree, some nymphs present also, at San Lorenzo, Aug. 25, 1940, altitude 300 ft. (LFM.)

HEMIPTERA**Paracarnus cubanus Bruner**

(Miridae) Not very abundant, on the undersides of leaves, on trees at San Lorenzo, altitude 300 ft., Aug. 25, 1940. (LFM.)

LEPIDOPTERA**Pilocrocis secernalis (Möschler)**

(Pyraustidae) The "capá" leaf-webber, abundant and doing damages of considerable importance. At Aguas Buenas, on the Aguas Buenas-Río Piedras road, altitude 400 ft., Dec. 15, 1940; at San Sebastián, altitude 1,000 ft.; very abundant at Guánica, altitude 100 ft., Dec. 1940. (LFM.)

Hyblaea puera (Cramer)

(Hyblaeidae) An extensive outbreak in nurseries at Cayey, controlled by means of lead arsenate, (SIB:134), 1939. (LFM.)

Oiketicus kirbyi Guilding

(Psychidae) At San Sebastián, feeding on the foliage, 1,000 ft., altitude, (SIB:137), 1940. (LFM.)

HYMENOPTERA**Microgaster sp.**

(Braconidae) Only one adult reared from a caterpillar of the "capá" leaf-webber, *Pilocrocis secernalis* (Möschler), collected at Maunabo, Jan. 24, 1941. (det.: Muesebeck, "as sp. nov.") (LFM.)

Petitia

Insects Affecting the Twigs

HOMOPTERA

Ormenis marginata (Brunnich)

(Fulgoridae) Few nymphs and adults, on twigs, San Lorenzo, altitude 300 ft., Aug. 25, 1940. (LFM.)

Saissetia oleae (Bernard)

(Coccidae) On twigs and branches, not very abundant, at Aguas Buenas, Dec. 15, 1940, altitude 400 ft. (LFM.)

LEPIDOPTERA

Terastia meticulosalis Guenée

(Pyraustidae) Caterpillar boring in twigs of tree, at Maunabo, (SIB:131), 1938. (LFM.)

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Tunnels on trunk of several young trees, along the roadsides, at Aguas Buenas, on the Río Piedras-Aguas Buenas road, altitude 400 ft., Dec. 15, 1940.

Phoebe

Phoebe elongata (Vahl) Nees

(Lauraceae)

DISTRIBUTION: A tree, growing in the woods and forests, in wet or moist districts of Puerto Rico. Also recorded from St. Croix, Cuba, Hispaniola, and from Montserrat to Trinidad.

COMMON NAMES: "Laurel," "Laurel bobo" and "Avispillo."

Phoebe

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

Pseudococcus nipae (Maskell)

(Coccidae) Infesting the leaves, especially on the undersides, not very abundant, at Cayey, on Km. 5.4 of the Cayey-Salinas road, 1,400 ft. altitude, Oct. 20, 1940. (LFM.)

LEPIDOPTERA

Jocara majuscula (Herrich-Schaffer)

(Epipaschidae) Caterpillar a leaf-webber on tree, altitude 1,500 ft., at Cayey, on the Salinas road, Dec. 24, 1940. The caterpillar is parasitized by a species of *Apanteles*. (LFM.)

HYMENOPTERA

Apanteles sp.

(Braconidae) Reared from caterpillar of *Jocara majuscula* (Herrich-Schaffer), the leaf-webber on this tree, collected at Cayey, Dec. 24, 1940. (det.: Muesebeck.) (LFM.)

Phoenix

Phoenix dactylifera L.

(Arecaceae)

DISTRIBUTION: An introduced palm, which has been occasionally planted in Puerto Rico and the Virgin Islands. It grows best in the dry southwestern districts of the Island.

USES: Mainly planted for its fruit; but date cultivation has not been successful here. Sometimes grown in gardens as an ornamental.

COMMON NAMES: "Dátil" and Date palm.

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

Aspidiotus destructor Signoret

(Coccidae) Listed in (IB:137).

Picramnia

Picramnia pentandra Sw.

(Simarubaceae)

DISTRIBUTION: A shrub or a small tree, growing in woodlands, river valleys and along creeks, at lower and middle elevations in Puerto Rico. Also recorded from St. Thomas, Tortola, Florida, Cuba, Jamaica and Hispaniola.

USES: The wood is used in house building.

COMMON NAMES: "Guarema," "Hueso," "Hueso prieto," "Palo de hueso" and Bitter bush.

INSECT RECORDS

Insects Affecting the Dead Wood

COLEOPTERA

Apate monachus Fabricius

(Bostrychidae) Mr. Van Zwaluwenburg, reports the insect as boring in dry posts of this tree species, (IB:243). Listed as *Apate francisca* Fabricius.

Piper

Piper aduncum L.

(Piperaceae)

DISTRIBUTION: A shrub or tree, growing in thickets and on hillsides, at lower and middle elevations in Puerto Rico and Vieques. Also recorded from Cuba, Jamaica, Hispaniola, St. Vincent to Trinidad and continental tropical America.

USES: The tree is of little economic importance, only the larger stems being occasionally used in the framework of country houses.

COMMON NAMES: "Higuillo" and "Hoja menuda."

INSECT RECORDS

Insects Affecting the Leaves

Piper

COLEOPTERA

Peridinetus concentricus (Olivier)

(Curculionidae) Adults feeding on the leaves, at Patillas Camp, Patillas, May 1941. (LFM.)

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) On trees, tunnels on the trunk and branches at Río Abajo Plantations, Utuado, April 20, 1941. Altitude 1,200 ft. (LFM.)

Piper amalago L.

(Piperaceae)

DISTRIBUTION: A shrub or a small tree, growing in woods, thickets, on hillsides and river banks, at lower and middle altitudes in Puerto Rico. Also recorded from Vieques, St. Thomas, St. Croix, St. Jan, Tortola, Cuba, Trinidad and continental tropical America.

COMMON NAMES: "Higuillo de limón" and Soot-soot.

INSECT RECORDS

Insects Affecting the Leaves

COLEOPTERA

Altica occidentalis Suffrian

(Chrysomelidae) Adult flea-beetles, very abundant on the foliage of shrubs, at Guajataca Gorge, but apparently not feeding upon this tree species. Nearby plants of *Croton humilis* L., their host plant, were fully covered by the beetles too. Presumably the insects were spreading from the *Croton* to every shrub; weed or tree in the vicinity. Nov. 17, 1940. (LFM.)

Peridinetus concentricus (Olivier)

(Curculionidae) Abundant on host shrubs, cutting small, round holes on the leaves; larvae boring the stems, at Vega Alta, Espinosa, Corozal,

Piper

Loiza and Cayey, (IB:307), 1917-22. Also at Cayey, Guajataca Gorge and Aguas Buenas, in altitudes ranging from sea-level to 1,200 ft., Nov. 1940. (LFM.)

LEPIDOPTERA

Gonodonta nitidimacula Guenée

(Phalaenidae) At Cayey, (IB:441), 1922. Caterpillars abundant on very small shrubs of this species at Guajataca Gorge, Oct. 24, 1940. Reared to adults. (LFM.)

Insects Affecting the Twigs

HOMOPTERA

Ormenis pygmaea (Fabricius)

(Fulgoridae) At Vega Baja, (IB:103). Abundant on branches, at Guajataca Gorge, Nov. 17 and Oct. 24, 1940. (LFM.)

Pseudoparlatoria ostreata Cockerell

(Coccidae) At Manatí (IB:141), 1931.

Piscidia

Piscidia piscipula (L.) Sarg.

(Fabaceae)

DISTRIBUTION: A tree, growing in coastal thickets and on hillsides near Fajardo and along the southern coast of Puerto Rico, extending north to Punta Guaniquilla. Also found at Culebra, Vieques, St. Croix, St. Thomas, St. Jan, Tortola, Florida, Cuba, Jamaica and Hispaniola. (In Britton & Wilson, Vol. 5, p. 409 as: *Ichthyomethia piscipula* (L.) Hitchc.)

USES: The yellowish hard and durable wood has a specific gravity of about 0.9, and is very durable in contact with the soil. The branches of the tree, when thrown into water, stupify fish.

COMMON NAMES: "Ventura" and Dogwood.

INSECT RECORDS

Insects Affecting the Leaves

Piscidia

HOMOPTERA

Euphalerus nidifex Schwarz

(Chermidae) Adults on watershoots, at Punta Cangrejos and Yauco, 1923. Nymphal skins common on host at Boquerón and Punta Cangrejos, (IB:111).

HEMIPTERA

Corythucha gossypii (Fabricius)

(Tingitidae) On tree, at Vieques, (SIB:71), 1940. (GNW.)

LEPIDOPTERA

Acolastus amyntas (Fabricius)

(Hesperiidae) Caterpillars feed on the foliage of this tree; many collected at Boquerón and Punta Cangrejos, (IB:407), 1923.

Insects Affecting the Seeds

COLEOPTERA

Caryedes sp.

(Bruchidae) From seeds collected at St. Thomas, Virgin Islands, by D. DeLeón, June 1940. Heavy infestation, many weevils as well as parasitic wasps reared from collected material. Species identified by Mr. Bridwell of the U. S. National Museum. Mr. Bridwell says, "I think this species is probably, *Bruchus podagricus* Fabricius . . ." (Note: This is not a Puerto Rico record.) (Reared by LFM.)

HYMENOPTERA

Urosigalphus bruchi Crawford

(Braconidae) From the seeds of host tree, infested by the bruchid, *Caryedes* sp. The wasp is presumably a parasite of the larva of the weevil. Material collected by D. DeLeón and reared by L. F. Martorell. St. Thomas, Virgin Islands, June 1940. (Note: This is not a Puerto Rico record.)

Pisonia

Pisonia albida (Heimmerl) Britton

(Nyctaginaceae)

DISTRIBUTION: A tree, growing on limestone hills and coastal thickets at lower elevations in dry districts of Puerto Rico, Mona and Muertos. Endemic.

Pisonia

USES: The wood is light and soft and is only used as fuel.

COMMON NAMES: "Corcho" and "Palo bobo."

INSECT RECORDS

Insects Affecting the Leaves and Twigs

COLEOPTERA

Lachnopus curvipes (Fabricius)

(Curculionidae) Adult weevils feeding on the foliage of a tree, at Guánica Insular Forest, Aug. 21, 1941. (LFM.)

LEPIDOPTERA

Oiketicus kirbyi Guilding

(Psychidae) Collected on twigs of tree at Mona Is., April 6, 1944. (LFM.)

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Very susceptible to the attack of this termite, many trees infested at the Guánica Insular Forest; also at Guajataca Gorge, near Quebradillas, Oct. and Nov. 1940. (LFM.)

Pisonia subcordata Sw.

(Nyctaginaceae)

DISTRIBUTION: A tree, growing in thickets, forests and on hillsides, ascending to higher elevations in Puerto Rico. Also recorded from Icacos, Culebrita, Vieques, St. Thomas, St. Croix, Tortola, Anegada, St. Martin to Martinique.

USES: The wood is very soft, light and weak and has little use except for fuel.

COMMON NAMES: "Corcho," "Palo bobo," Lobloly and Water Mampoo.

INSECT RECORDS

Insects Affecting the Trunk

Pisonia

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) On trees, at Guajataca, tunnels on the trunk, Nov. 17, 1940. (LFM.)

Pithecellobium

Pithecellobium arboreum (L.) Urban

(Mimosaceae)

DISTRIBUTION: A tree, growing in woodlands and on river banks, at lower and middle elevations, mostly in moist districts of Puerto Rico. Also recorded from Hispaniola, Cuba, Jamaica, Mexico and Central America.

USES: Locally, the wood is of little use. The wood is said to be of excellent quality, and is much used in some parts of the West Indies and Central America, for flooring, ceiling, posts, etc.

COMMON NAMES: "Acacia silvestre," "Cojoba" and "Cojobana."

INSECT RECORDS

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Tunnels on the trunk of large trees, at Guajataca Gorge, near Quebradillas, Nov. 17, 1940. (LFM.)

Pithecellobium dulce (Roxb.) Benth.

(Mimosaceae)

DISTRIBUTION: A tree, native to tropical America, from Mexico to Venezuela. Introduced into Puerto Rico, and now occasionally planted along the streets, in gardens and "plazas."

Pithecellobium

USES: The hard and heavy, dark brown heart wood is strong and durable. It is used for general construction work, as fuel and for fence posts. The bark yields a high percentage of tannin and also a yellow dye. It is a satisfactory tree for hedges and also is excellent for planting on avenues.

COMMON NAMES: "Guamá americano," Madras thorn and Manila tamarind.

INSECT RECORDS

Insects Affecting the Leaves and Twigs

LEPIDOPTERA

Phoebis agarithe (Boisduval)

(Pieridae) Caterpillar feeding on the foliage, reared by Mr. Cesáreo Pérez, at Río Piedras, (SIB:123).

HOMOPTERA

Icerya purchasii Maskell

(Coccidae) On tree at the Agricultural Experiment Station, Río Piedras, (Wolcott, p. 134, 1941.)

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) On tree, at San Sebastián Plaza (SIB:43), 1940. (GNW. & LFM.)

Pithecellobium unguis-cati (L.) Mart.

(Mimosaceae)

DISTRIBUTION: A shrub, rarely a small tree, growing in coastal thickets and on hillsides near the southern coast, extending north to the valley of the Coamo River, in Puerto Rico. Also recorded from Culebra, Vieques, Desecheo, Mona, Icacos, St. Croix, St. Thomas, St. Jan, Virgin Gorda, Aneгада, Cuba, Jamaica, Hispaniola, Florida and northern South America.

COMMON NAMES: "Escambrón colorado," "Uña de gato," "Rolón," Crab prickle, Black-head and Cat's claw.

Pithecellobium

INSECT RECORDS

Insects Affecting the Leaves.

LEPIDOPTERA

Acrocercops sp.

(Gracilariidae) Caterpillar a leaf-miner, very abundant at Salinas, altitude 100 ft., Feb. 1940. (LFM.)

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) costalis (Holmgren)

(Termitidae) Two small trees infested, with tunnels on their trunks, at Salinas, 100 ft. altitude, Sept. 13, 1940. (LFM.)

Kalotermes (K.) snyderi Light

(Kalotermitidae) At Mona Island. (Martorell, Jan. 1941, p. 81.)

Plumeria

**Plumeria alba* L.

(Apocynaceae)

DISTRIBUTION: A tree, growing in coastal thickets and on hillsides, at lower elevations in moist and dry districts of Puerto Rico. Also recorded from Muertos, Icacos, Culebra, Vieques, St. Thomas, St. Croix; St. Jan, Tortola, Virgin Gorda, Anegada, Anguilla to Grenada and Cayman Islands.

USES: The yellow wood is used in carpentry. It is hard, tough, heavy and strong. The juice is said to be poisonous and caustic, and is employed sometimes in the West Indies as a remedy for cutaneous and venereal diseases.

COMMON NAMES: "Tabeiba," "Tabaiba," "Alelf cimarrón," White paucipan, Nosegay tree, "Frangipanic blanc" and "Bois de lait" (Fr. West Indies).

*Note: The correct generic name for this species is *Plumeria* L. in Sp. Pl. p. 209, 1753. It is often written incorrectly as *Plumiera* and *Plumieria*. (Writer's note.)

Plumeria

INSECT RECORDS

Insects Affecting the Leaves

LEPIDOPTERA

Pseudosphinx tetrio (Linnaeus)

(Sphingidae) According to Dr. Möschler, the caterpillar of this species lives on *Plumeria*. (Möschler, p. 111.) Very abundant on trees, at Ballena, on the Guánica coast.

Isognathus rimosa (Grote) var. *wolcottii* Clark

(Sphingidae) According to Möschler, p. 110, the caterpillar of this species lives on *Plumeria*. The species of the host plant is not mentioned.

Plumeria obtusa L.

(Apocynaceae)

DISTRIBUTION: A glabrous, small tree, growing on the rocky soils of Mona Island, St. Croix (according to West), Bahamas, Cuba and Hispaniola.

COMMON NAMES: "Alefi cimarrón" and "Alefi de la Mona."

INSECT RECORDS

Insects Affecting the Leaves

LEPIDOPTERA

Pseudosphinx tetrio (Linnaeus)

(Sphingidae) Very abundant, caterpillars feeding on the foliage of trees at Mona Island. (SIB:129), 1940 (LFM.). Also observed by Dr. Wolcott, very abundant and causing complete defoliation of trees at Mona, Sept. 13-15, 1944.

Plumeria rubra L.

(Apocynaceae)

DISTRIBUTION: A tree, commonly planted for ornamental purposes in Puerto Rico and the Virgin Islands, locally spontaneous after cultivation. A native of continental tropical America.

Plumeria

USES: No uses are attributed to this species in the Island, except for ornamental purposes.

COMMON NAMES: "Alelí," Red paucipan or "Frangipanic."

INSECT RECORDS

Insects Affecting the Twigs

HOMOPTERA

Howardia biclavis (Comstock)
(Coccidae) Listed, (IB:134).

Insects Affecting the Leaves

LEPIDOPTERA

Pseudosphinx tetrio (Linnaeus)
(Sphingidae) According to Möschler, p. 111, the caterpillar of this species, lives on *Plumeria*. Mr. A. Busck, 1899, recorded this species on *P. rubra* L.

IsoGNathus rimosa (Grote) var. *wolcottii* Clark
(Sphingidae) According to Dr. Möschler, p. 110, the caterpillar of this species lives on *Plumeria*; not specifying on which of the species of the Genus.

Prosopis

Prosopis glandulosa Torrey

(Mimosaceae)

DISTRIBUTION: A tree, native to the southwestern sections of the United States and Mexico, introduced and planted at Guánica and San Germán. (In Britton and Wilson, Vol. 6, p. 539 as: *Neltuma glandulosa* (Torrey) Britton & Rose.)

USES: Planted for ornamental and shade purposes.

COMMON NAME: "Mesquite."

INSECT RECORDS

Insects Affecting the Leaves

Prosopis

LEPIDOPTERA

Melipotis ochrodes (Guenée)

(Phalaenidae) Caterpillars in crevices under the bark of trees or under trash at the base, at Guánica. (IB 436) 1914. The caterpillar presumably feeding on the foliage at night.

Prosopis juliflora (Sw.) DC.

(Mimosaceae)

DISTRIBUTION: A tree, growing in thickets and on hillsides on the southern districts of Puerto Rico. Also recorded from St. Thomas, Tortola, Cuba, Hispaniola, Montserrat, Bonaire, Curacao, Aruba and continental tropical America. Introduced into the Bahamas and naturalized in the Philippines. (In Britton & Wilson, Vol. 6, p. 539 as: *Neltuma juliflora* (Sw.) DC.)

USES: Commonly planted in Puerto Rico and occasionally in the Virgin Islands, for ornament and for the use of its pods as food for cattle. The wood is valued for many purposes, such as railroad ties, carts, fence posts, fuel, charcoal, etc. The wood and bark are used for tanning. The gum exuded from the trunk is used in Mexico as a substitute for gum arabic and also when diluted in water is employed medicinally, as gargles for throat affections and in dysentery.

COMMON NAMES: "Mesquite," "Algarrobo del Hawaii" and "Bayahonda" (Puerto Rico), "Mezquite" and "Güisache" (in some sections of Mexico), and "Aroma" in the Philippines.

INSECT RECORDS

Insects Affecting the Pods and Seeds

COLEOPTERA

Simicrips sp.

(Monotomidae) Very small beetles, reared from infested seed pods, collected at Guánica Insular Forest, July 15, 1941. (LFM.)

Catorama neltumae Fisher

(Anobiidae) Seed pods, with a very intensive infestation, found in all stages inside mature, nearly dry pods, breeding abundantly, collected at Guánica Insular Forest, Dec. 5, 1940. (LFM.) (det: Fisher).

Prósopis

Acanthoscelides dominicanus (Jekel)

(Bruchidae) Seeds pods infested by the larvae and adults of this species, as abundant in the pods, as the species of anobiid mentioned above, Guánica Insular Forest, Dec. 5, 1940. (det: Bridwell as: "prob. *dominicanus*.") (LFM.)

Amblycerus martorelli Bridwell

A fairly large bruchid beetle, destroying seed pods, as abundant as the two named species above, collected at the Guánica Insular Forest, Dec. 5, 1940. (det: Bridwell.) (LFM.)

LEPIDOPTERA

Corcyra cephalonica (Stainton)

(Galleridae) Reared from pods of trees, collected at the Guánica Insular Forest, Dec. 5, 1940. Many moths reared from caterpillars feeding in the seeds of host trees. (LFM.)

HYMENOPTERA

Horismenus sp.

(Entedontidae) Reared from pods, presumably a parasite of one of the larvae feeding on the pods of seeds, (IB:523), 1914.

Insects Affecting the Leaves

LEPIDOPTERA

Melipotis ochrodes (Guenée)

(Phalaenidae) Caterpillars in crevices under bark of trees and also under trash at base, at Guánica, (IB:436) 1914. Presumably they feed on the foliage at night.

Paratorna rotundipennis (Walsingham)

(Tortricidae) Numerous caterpillars, tying the leaves together and almost defoliating a small tree, at Boquerón (IB:481), 1923.

Insects Affecting the Twigs

HOMOPTERA

Icerya purchasii Maskell

(Coccidae) Slight infestation on the lower branches of a tree, in front of the Ranger's Cabin, at Camp Borinquen, Guánica Insular Forest, Sept. 17, 1941, altitude 300 ft., Guánica. (LFM.)

Prosopis

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Tunnels on the trunk of trees, at Guánica, June, 1941 and 1942.

COLEOPTERA

Heterarthron gonogrum (Fabricius)

(Bostrychidae) At Guánica, listed (IB:244), 1913. Presumably boring in trunk or branches.

Euryscelis suturalis (Olivier)

(Cerambycidae) From logs, at Guayama, listed in (IB:262), 1925.

*Psidium**Psidium guajava* L.

(Myrtaceae)

DISTRIBUTION: A shrub or a small tree, growing in thickets and on hillsides, at lower and middle elevations in Puerto Rico. Also recorded from Vieques, St. Croix, St. Thomas, St. Jan, Tortola, Florida, Bermuda, Cuba, Jamaica, Hispaniola and continental tropical America.

USES: The tree is widely planted for its fruit in tropical and subtropical countries. The hard brownish, strong and tough wood has a specific gravity of about 0.7, and is used for making agricultural implements, for posts, fuel and charcoal.

COMMON NAMES: "Guayaba," "Guayava," "Guayaba pera" and Guava.

INSECT RECORDS

Insects Affecting the Fruits

HEMIPTERA

Leptoglossus gonagra (Fabricius)

(Coreidae) Adults and nymphs feeding on fruits, at Mayagüez, Arecibo and Peñuelas, (IB:169).

Psidium

COLEOPTERA

Lechriops psidii Marshall

(Curculionidae) Apparently a serious pest of the fruits, reared from them at Mayagüez, Bayamón, Aibonito and Arecibo, (IB:308).

Stephanoderes brazilensis Hopkins

(Scolytidae) From dry fruit at Corozal (IB:317).

Stephanoderes buscki Hopkins

In fruits, at Peñuelas, (IB:317).

Stephanoderes georgiae Hopkins

In fruits, at Peñuelas, (IB:317).

Xyleborus sacchari Hopkins

(Scolytidae) From fruits, at Cabo Rojo, (IB:319).

DIPTERA

Lydella incompleta Curran

(Larvaevoridae) Reared from fruits at Bayamón, (IB:353).

Chaetopsis fulyifrons Macquart

(Otitidae) Reared from fruit, at Naguabo, (SIB:118).

Anastrepha mombinpraeoptans Sein

(Tephritidae) One of the most important pests of the fruits; infesting guavas in all sections of Puerto Rico. (IB:377-88) and (SIB:119). Numerous records and localities cited.

Anastrepha unipuncta Sein

(Tephritidae) The second important fruit fly species which infests the fruits, causing considerable damages, in almost all localities of the island where the guava trees grow. Many localities recorded in (IB:378) and (SIB:119-20).

Psidium

HYMENOPTERA

Leptomastix dactylopii Howard

(Encyrtidae) Pupa in fruit, (IB:529). Presumably a fruit fly parasite.

Insects Affecting the Leaves

NEUROPTERA

Chrysopa collaris Schneider

(Chrysopidae) The larvae of this predaceous insect, is recorded, as feeding on scale insects, *Ceroplastes* sp., on guava, (IB:62).

THYSANOPTERA

Selenothrips rubrocinctus (Giard)

(Thripidae) At Mayagüez, (IB:65), 1932. Presumably infesting the foliage.

HOMOPTERA

Aphis gossypii Glover

(Aphidae) Listed (IB:113), 1923.

COCCIDAE

Icerya montserratensis Riley & Howard

At Lares, listed (IB:120).

Pseudococcus nipae (Maskell)

At Bayamón, Pueblo Viejo, Vega Baja, Lares and San Sebastián, (IB:126). A very common pest of guavas, affecting the foliage and sometimes the fruits.

Pulvinaria psidii Maskell

At Luquillo, Lares and Villalba, (IB:129).

Ceroplastes floridensis Comstock

Listed (IB:130).

Vinsonia stellifera (Westwood)

At Mayagüez, (IB:130).

Coccus viridis (Green)

At Pueblo Viejo, Guánica, Vega Baja and Arecibo, (IB:131).

Saissetia hemisphaerica (Targioni)

At Luquillo, listed (IB:132).

*Psidium**Saissetia oleae* (Bernard)

At San Germán (SIB:59).

Aspidiotus destructor Signoret

At Bayamón (IB:138) and (SIB:61).

Chrysomphalus dictyospermi (Morgan)

Listed (IB:140).

Lepidosaphes gloverii (Packard)

Listed (IB:142).

(Aleyrodidae)

Aleurodicus minimus Quaintance

The most common white fly of guava, originally described from guava as a host tree, at Arecibo, Manatí and Mayagüez, (IB:145).

Aleurothrix floccosus (Maskell)

Another common species of white fly on guava foliage (IB:146).

HEMIPTERA

Leptoglossus stigma (Herbst)

(Coreidae) On guava at Trujillo Alto, (IB:170). At Sabana Grande, (SIB:75). Mr. Barber says, "apparently the chief-food plant is guava."

COLEOPTERA

Scymnillus varipennis Sicard

(Coccinellidae) On leaves infested with white flies *Aleurodicus minimus* Quaintance and mealybugs, *Pseudococcus nipae* (Maskell), (IB:230).

Phyllophaga citri (Smyth)

(Scarabaeidae) Feeding on the foliage, recorded by Mr. E. G. Smyth, (IB:250).

Phyllophaga guanicana (Smyth)

Adults from February to July, with a maximum abundance in late April, feeding among other trees, on guava, (IB:251). (E. G. Smyth).

Cryptocephalus nigrocinctus Suffrian

(Chrysomelidae) At Juncos, listed (IB:267), 1916. Possibly feeding on the leaves.

Psidium

Longitarsus varicornis Suffrian

(Chrysomelidae) Adults abundant on the foliage of trees at Aguada,

(SIB:101), 1937. Undoubtedly the adults were feeding on the foliage (Martorell).

Attelabus sexmaculatus Chevrolat

(Curculionidae) The guava leaf-roller beetle, one of the most common pests of the tree, recorded from many localities of Puerto Rico, at low and middle elevations, (IB:290) and (SIB:102). (LFM.)

Diaprepes abbreviatus (Linnaeus)

(Curculionidae) Feeding on the foliage at Barceloneta, Villalba and San Sebastián (IB:298).

LEPIDOPTERA

Eupseudosoma involuta (Sepp)

(Arctiidae) According to Dr. Möschler, p. 114, the caterpillar of this species lives in *Psidium*. Later it has been confirmed and the caterpillar has been found feeding on guava, at Mayagüez, Lares, Caguas, (IB:415).

Ecpantheria icasia (Cramer)

(Arctiidae) Egg cluster on tree, from which 2,450 caterpillars hatched, (IB:417), 1917.

Olethreutes sp. (Olethreutidae)

Reared from guava at Corozal, (IB:481).

Strepsicrates smithianus (Walker)

(Olethreutidae) Reared from host tree, collected at El Yunque, by Dr. W. M. T. Forbes, (IB:482).

Megalopyge krugii (Dewitz)

(Megalopygidae) On foliage, parasitized by *Brachymeria robustella* (Wolcott), (IB:505). At Yabucoa, infesting trees, once in a while. (LFM.)

HYMENOPTERA

Solenopsis geminata (Fabricius)

(Formicidae) Attending *Pseudococcus nipae* (Maskell) on trees at Lares, (IB:545), 1912.

Psidium

Insects Affecting the Twigs

HOMOPTERA

(Membracidae)

Nessorhinus gibberulus Stål

Listed (IB:73), 1916.

(Cerocopidae)

Philaenus fusco-varius Stål

At Bayamón, Cidra and Ponce, (IB:75).

(Fulgoridae)

Neurotmeta sponsa Guerin

At Aibonito (IB:97).

Neocolpoptera monticolens Dozier

At Bayamón, (IB:101).

Ormenis infuscata Stål

At Arecibo, (IB:102).

Punana puertoricensis Muir

At Aibonito, (IB:106).

Psychotria

Psychotria berteriana DC.

(Rubiaceae)

DISTRIBUTION: A tree, growing in forests, ravines and thickets at middle and higher elevations in wet or moist districts of Puerto Rico. Also recorded from Cuba, Jamaica, Hispaniola, St. Kitts, from Montserrat to Trinidad and Colombia.

COMMON NAME: "Palo moro."

Psychotria

INSECT RECORDS

Insects Affecting the Twigs

HOMOPTERA

Saissetia hemisphaerica (Targioni)

(Coccidae) Twigs of tree, infested by scale insects, at Cerro de Punta, Jayuya, altitude 3,300 ft., Jan. 26, 1941. (LFM.)

Pterocarpus

Pterocarpus indicus Willd.

(Fabaceae)

DISTRIBUTION: A tree, native to tropical Asia, introduced and planted at the U. S. Forest Service grounds at Río Piedras.

INSECT RECORDS

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Tunnels on trunk of a large tree, at Río Piedras, Dec. 4, 1940. (LFM.)

Pterocarpus officinalis Jacq.

(Fabaceae)

DISTRIBUTION: A large tree, growing in the forests, at lower and middle elevations, in Puerto Rico. Also recorded from Guadeloupe, Dominica, St. Lucia, St. Vincent, Trinidad and continental tropical America.

USES: The light brown wood is weak and not durable; has a specific gravity of about 0.6, and is used for fuel.

Pterocarpus

COMMON NAMES: "Palo de pollo," "Palo pollo," "Sangre de drago" and Swamp blood wood.

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

Ischnaspis longirostris (Signoret)

(Coccidae) At Mayagüez, listed (IB:143). Host tree, listed as *Pterocarpus draco* = *P. officinalis* Jacq.

Quararibaea

Quararibaea turbinata (Sw.) Poir

(Bombacaceae)

DISTRIBUTION: A tree, growing in forests and wooded hills at lower and middle elevations, in wet or moist districts of Puerto Rico. Also recorded from St. Jan, St. Croix, Hispaniola, from St. Eustatius to Grenada and continental tropical America.

COMMON NAMES: "Garrocho," "Garrocha," "Palo de garrocha" and Swizzle-stick tree.

INSECT RECORDS

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Large tree, infested with termites, at Guajataca, Nov. 17, 1940. (LFM.)

Randia

Randia aculeata L.

(Rubiaceae)

DISTRIBUTION: A shrub or small tree, growing in thickets and on hill-sides, at lower and middle elevations, mostly in dry districts of Puerto Rico. Also recorded from Icacos, Mona, Vieques, St. Croix, St. Thomas, St. Jan, Tortola, Anegada, Florida, Bermuda, Cuba, Jamaica, Hispaniola, Trinidad and Curacao. (In Britton & Wilson, Vol. 6, p. 231 as: *Randia mitis* L.)

USES: The brown, hard, strong, heavy and durable wood is not locally used. The green fruit is astringent and in the West Indies it has been employed as a remedy for dysentery.

COMMON NAMES: "Escambrón," "Tintillo," "Palo de cotorra," Box brier, Dogwood, Christmas tree and Ink berry.

INSECT RECORDS

Insects Affecting the Fruits

HYMENOPTERA

Prodecatoma sp.

(Chalcididae) Many minute wasps, reared from the fruits of trees, the larvae of which destroyed a very large percentage of the seeds. Collected at Aibonito, Aug. 20, 1941. (J. I. Otero) (LFM.)

Insects Affecting the Leaves

COLEOPTERA

Pachybrachys mendicus Weise

(Chrysomelidae) At Ponce, listed (IB:266), possibly feeding on the foliage.

Oiketicus kirbyi Guilding

(Psychidae) Several bags containing live caterpillars on twigs, at Cabo Mala Pascua, Maunabo, Nov. 16, 1943. (GNW.)

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Large tree, infested by termites, at Guajataca, Nov. 24, 1940. Many tunnels on the trunk. (LFM.)

Rapanea*Rapanea ferruginea* (R. & P.) Mez

(Myrsinaceae)

DISTRIBUTION: A tree, growing in forests, thickets, along forest borders and in wooded hills, in wet or moist districts of Puerto Rico ascending to higher elevations. Also recorded from Jamaica, Cuba, Hispaniola, from Saba to Grenada and continental tropical America.

COMMON NAMES: "Arrayán," "Cucubano," "Mameyuelo" and "Mantequero."

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

Toxoptera aurantii (Fonscolombe)

(Aphidae) On leaves and young shoots of tree, at Maricao Insular Forest, 1,300 ft. altitude (SIB:55), 1940. Also at Aguas Buenas, very abundant on the foliage and twigs, altitude 1,100 ft., June 2, 1940. (LFM.)

COLEOPTERA

(Curculionidae)

Lachnopus seinei Wolcott

(Curculionidae) On tender leaves, in mountains north of Yauco, (IB:302), Aug. 1923 (F. Seín). Also at Aibonito, (SIB:302), 1940.

Lachnopus yaucona Wolcott

On tender leaves of trees, in mountains north of Yauco, collected by Mr. F. Seín, Aug. 23, 1933, (IB:302).

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Tunnels on trunk of various trees, at Aguas Buenas, altitude 1,200 ft., June 2, 1940. (LFM.)

Rapanea

Rapanea guianensis Aubl.

(Myrsinaceae)

DISTRIBUTION: A shrub or a small tree, growing in thickets and woodlands, at lower elevations, in the northern and western districts of Puerto Rico. Recorded also from Tortola, Florida, Bahamas, Jamaica, Cuba, Hispaniola, Martinique, St. Vincent, Grenada, Trinidad and continental tropical America.

COMMON NAMES: "Bádula."

INSECT RECORDS

Insects Affecting the Twigs

HOMOPTERA

(Coccidae)

Asterolecanium pustulans (Cockerell)

At Dorado, (SIB:57).

Ceroplastes floridensis Comstock

At Pueblo Viejo, (IB:130), 1915.

Rauwolfia

Rauwolfia nitida Jacq.

(Apocynaceae)

DISTRIBUTION: A tree, growing in thickets, woodlands and on hillsides, at lower and middle elevations in Puerto Rico. Recorded also from St. Croix, St. Thomas, St. Jan, Tortola, St. Barts, Bahamas, Jamaica, Cuba and Hispaniola. (In Britton & Wilson, Vol. 6, p. 90 as: *Rauwolfia tetraphylla* L.)

COMMON NAMES: "Cachimbo," "Palo amargo," "Muñeco," "Palo de muñeco" and Milk bush.

INSECT RECORDS

Insects Affecting the leaves and Twigs

ISOPTERA

Kaloterme (K.) snyderi Light

(Kalotermitidae) Infesting the dead branches of live trees. Mona Island, April 5, 1944. (GNW. & LFM.)

HOMOPTERA

(Coccidae)

Asterolecanium pustulans (Cockerell)

Infestation on twigs and branches, killing many, few trees infested, at Guayama, Nov. 20, 1940, altitude 50 ft. (LFM.)

Pulvinaria psidii Maskell

At Ponce and Guánica, (IB:128-9).

Ceroplastes cirripediformis Comstock

Heavy infestation of a small tree, killing some branches, other trees in the vicinity also affected, at Guayama, altitude 50 ft., Nov. 24, 1940. (LFM.)

Coccus viridis (Green)

Abundant on trees, at Aguadilla, on the undersides of leaves and on twigs, 1938. (LFM.) Abundant on young shoots of trees at Sardinera Beach, Mona Island, April 4, 1944. Attacked by fire ants, *Solenopsis geminata* Fabr. (LFM.)

Saissetia hemisphaerica (Targioni)

At Ponce, listed (IB:132), 1913.

COLEOPTERA

Cryptolaemus montrouzeri Mulsant

(Coccinellidae) Feeding on *Pulvinaria psidii* Maskell, on host tree, at Guánica, (IB:229), 1921. On trees infested with scale insect, *Coccus viridis* (Green) at Aguadilla, (SIB:92), 1938.

Cycloneda sanguinea Linnaeus

(Coccinellidae) Adults abundant on twigs and foliage, at Guayama, altitude, 40 ft., Nov. 14, 1940. Possibly feeding on the scale insects infesting the tree.

Rauwolfia

Metachroma antennalis Weise

(Chrysomelidae) On leaves of tree, near Faro de Aguajereda, Aguadilla, (IB:270), 1931. Possibly feeding on the foliage.

LEPIDOPTERA

Diaphania costata (Fabricius)

(Pyraustidae) Caterpillar a leaf-folder, at Camuy, (IB:462), 1922. Listed as *Margaronia aurocostalis* Guenée. Found at Guajataca, caterpillars folding leaves Nov. 17, 1940 (LFM. & L. E. Gregory) and later at Guayama, very abundant and attacking many trees in the vicinity, Nov. 24, 1940. (LFM.) Many trees infested at Sardinera Beach, Mona Island, April 4, 1944. (LFM.)

HYMENOPTERA

Brachygaster pygmaeus Fabricius

(Evaniiidae) These minute, queer looking evaniids, were very abundant on the leaves of trees, at Guayama, apparently looking for some host to parasitize, Nov. 14, 1940. (det: Cushman) (LFM.).

Tiphia sp.

(Tiphidae) Three males collected by Mr. E. H. Barrows, feeding on secretions of the scale insect, *Pulvinaria psidii* Maskell, at Guánica, (IB:563), 1921.

Myzine haemorrhoidalis (Fabricius)

(Scoliidae) Feeding on the excrement of the green scale, *Coccus viridis* (Green) on trees, at Aguadilla, (SIB:153), 1938. (LFM.)

Rhizophora

Rhizophora mangle L.

(Rhizophoraceae)

DISTRIBUTION: A shrub or tree, growing in the coastal swamps of Puerto Rico. Also recorded from Vieques, St. Croix, St. Thomas, St. Jan, Tortola, Anegada, Florida, Bermuda, Cuba, Jamaica, Hispaniola, continental tropical America and tropical Africa.

Rhizophora

USES: The hard and strong brown wood, valued for piling posts and in boat building, has a specific gravity of 1.16. The bark of the tree is used in tanning, for its high content of tannic acid.

COMMON NAMES: "Mangle," "Mangle colorado," "Mangle sapatero," Mangrove or Red mangrove.

INSECT RECORDS

Insects Affecting the Fruits

COLEOPTERA

Anthonomus sp.

(Curculionidae) In seeds, at Ponce, (IB:305).

Stephanoderes sp. near brunneus Hopkins

(Scolytidae) In seed balls, at Ponce (IB:317).

Insects Affecting the Leaves

COLEOPTERA

(Chrysomelidae)

Pachybrachys sp.

At Ponce, listed (IB:266).

Cryptocephalus nigrocinctus Suffrian

At Mayagüez, (IB:267), 1923.

Homophoeta cyanipennis Fabricius

On foliage, at Laguna de San José, Río Piedras, listed (IB:276), 1923.

Aitica jamaicensis (Fabricius)

A greenish specimen, at Laguna de San José, Río Piedras, (IB:278), 1923.

Chaetocnema apricaria Suffrian

Making brownish curved slits in the undersides of the leaves, at Mayagüez, and at Martín Peña, (IB:281) (GNW.). At El Pastillo, near Santa Isabel, many trees attacked by this species, thousands of the adults on the foliage. The characteristic curved slits on the leaves, tremendously abundant, counting as many as 35 of them on a leaf, May 1942. (LFM.)

Rhizophora

LEPIDOPTERA

Megalopyge krugii (Dewitz)

(Megalopygidae) At Martín Peña, (IB:505), 1923. Also cocoons very abundant on the trunk of many trees, at El Pastillo, near Santa Isabel, the caterpillars of which presumably fed upon the foliage before pupation. May 1942. (LFM.)

Insects Affecting the Twigs

HOMOPTERA

Clastoptera brevis (Walker)

(Cercopidae) At Ponce, listed (IB:75).

Colpoptera carinata Dozier

(Fulgoridae) At Maní Beach, (IB:99), Aug. 11, 1935. (Dozier.)

COLEOPTERA

Lepturges guadeloupensis Fleutiaux & Sallé

(Cerambycidae) A single adult collected near Loíza, on a dead twig, May 1940. (D. DeLeón.)

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) costalis (Holmgren)

(Termitidae) Infesting trees at Camp Pifones, Santurce, Sept. 15, 1940. Also at El Pastillo, near Santa Isabel, observed, May-June 1942. (LFM.)

COLEOPTERA

Chrysobothris tranquebarica (Gmelin)

(Buprestidae) A common insect on our mangrove swamps, larvae boring in trunk of trees; one of the most injurious pests of this tree species. (LFM.)

LEPIDOPTERA

Psychonoctua personalis Grote

(Cossidae) Caterpillar boring in trunk, at Punta de Cangrejos (IB:484). Very injurious and quite pestiferous at times, boring in the trunk and larger branches of trees, weakening them so, that they are easily broken by the wind. (LFM.)

Roystonea

Roystonea borinquena Cook

(Arecaceae)

DISTRIBUTION: A palm, growing in forests and on hillsides, in wet or moist districts, as well as in the valleys of the southern sections of Puerto Rico. Also recorded from Vieques and St. Croix. Endemic.

USES: The leaves are used for thatching houses and barns and their broad bases for the sides of huts and other structures. It is much planted for ornament. The fruits are eaten by the pigs.

COMMON NAMES: "Palma real," "Palma de yaguas," "Yaguas," "Palma de costa" Royal palm and Cabbage palm.

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

Ischnaspis longirostris (Signoret)

(Coccidae) Listed (IB:143). Possibly on the foliage.

COLEOPTERA

Phyllophaga vandinei (Smyth)

(Scarabaeidae) Adults feeding on the foliage, causing considerable damage, at Isabela, May 22, 1941. (LFM.)

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Tunnels on the trunk of many palms, on the hills west of Yabucoa, May 1942. (LFM.)

Sabinea

Sabinea florida (Vahl) DC.

(Fabaceae)

DISTRIBUTION: A small tree, growing in thickets, on banks and hillsides,

Sabinea

at lower and middle elevations in moist districts of Puerto Rico, Culebras, Vieques, St. Jan, St. Thomas, Tortola, Virgin Gorda. Endemic.

USES: Planted for ornamental purposes.

COMMON NAMES: "Retama" and Wattapama.

INSECT RECORDS

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Tunnels on tree, at Guajataca, Nov. 24, 1940. (LFM.)

Salix

Salix chilensis Molina

(Salicaceae)

DISTRIBUTION: A tree, growing in different sections of Puerto Rico, valleys and mountains, at low and high altitudes, widely propagated after its introduction. Also recorded from St. Croix, Jamaica, Cuba, Martinique, St. Vincent, Texas, Mexico and Central America. Native of S. America.

USES: Often planted for ornament, and also used as live fences.

COMMON NAMES: "Sauce" and Humboldt's willow.

INSECT RECORDS

Insects Affecting the Leaves and Twigs

HOMOPTERA

Asterolecanium pustulans (Cockerell)

(Coccidae) According to Dr. Dozier, this species is one of the worst pests of willows, (IB:122).

Pseudaulacaspis pentagona (Targioni)

(Coccidae) At Mayagüez, (IB:135), listed as *Aulacaspis pentagona* Targioni.

Salix

COLEOPTERA

Cryptocephalus nigrocinctus Suffrian

(Chrysomelidae) At Florida, between Barceloneta and Arecibo, (IB:267), 1921.

LEPIDOPTERA

Characoma nilotica Rogenhofer

(Phalaenidae) Caterpillar semi-transparent greenish white, feeding on buds and webbing together small leaves of tree, at Aguadilla, (IB:430), 1922.

Insects Affecting the Trunk

COLEOPTERA

Apate monachus Fabricius

(Bostrychidae) According to Mr. Van Zwaluwenburg, this species bores in the trunk of trees, (IB:243).

Samanea

Samanea saman (Jacq.) Merrill

(Mimosaceae)

DISTRIBUTION: A tree, growing along roadsides and on hillsides in Puerto Rico, naturalized after its introduction from continental tropical America. Also recorded from St. Thomas, St. Croix; widely naturalized in the West Indies. (In Britton & Wilson, Vol. 5, p. 349 as: *Samanea Saman* (Willd.) Merrill.)

USES: The tree is planted for shade; its pods furnish food for cattle. The reddish wood, is hard and heavy, but not durable.

COMMON NAMES: "Samán," "Guango," Rain tree, Giant thibet and Cow bean tree.

Samanea

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

Heteropsylla puertoricoensis Caldwell

(Chermidae) Recorded as undetermined psyllids in (IB:111). The insect lives on the foliage of the tree, nothing is known about its biology, so far.

Icerya montserratensis Riley & Howard

(Coccidae) Listed (IB:119).

LEPIDOPTERA

Erebus odora (Linnaeus)

(Phalaenidae) According to Dr. Möscher, p. 210, the caterpillar of this species lives on the foliage of this tree, listed (IB:434).

Insects Affecting the Twigs

HOMOPTERA

Proarna hilaris (Germar)

(Cicadidae) Abundant on tree, at Salinas, many of them on twigs and smaller branches, singing morning and afternoon, (SIB:50), 1939. (LFM.)

Pinnaspis minor (Maskell)

(Coccidae) At Mayagüez, listed (IB:136).

Sapium

Sapium laurocerasum Desf.

(Euphorbiaceae)

DISTRIBUTION: A tree, growing in forests, and wooded hills in wet or moist districts of Puerto Rico, mostly at middle and higher elevations. Also recorded from St. Jan. Endemic.

Sapium

COMMON NAMES: "Lechesillo," "Lehecillo," "Hincha huevos," "Manzanillo," "Tabeiba" and Milk-tree.

INSECT RECORDS

Insects Affecting the Leaves

HEMIPTERA

Pachycoris fabricii (Linnaeus)

(Scutelleridae) Adults and nymphs on leaves of trees, apparently breeding, at Río Abajo Plantations, Utuado, altitude 1200 ft., April 20, 1941. (LFM.)

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Tunnels on trunk of tree, at Luquillo, 1941 and at Río Abajo Plantations, Utuado, April 20, 1941. (LFM.)

Sciacassia

Sciacassia siamea (Lam.) Britton

(Caesalpiniaceae)

DISTRIBUTION: A tree, native to southern Asia, introduced and planted along roadsides, gardens and farms, in Puerto Rico.

USES: The dark brown and streaked heartwood is used for making small ornamental articles. The wood can be used for fuel as well as charcoal. It has been also planted for shade and ornament.

COMMON NAMES: "Cassia amarilla," "Cassia siamea" and Bombay blackwood.

INSECT RECORDS

Insects Affecting the Leaves

LEPIDOPTERA

Megalopyge krugii (Dewitz)

(Megalopygidae) Many cocoons attached to the trunk of trees, the

Sciacassia

caterpillars presumably fed on the foliage; at San Lorenzo, 500 to 800 ft. in altitude, Aug. 25, 1940 and April 6, 1941. (LFM.)

Insects Affecting the Twigs and Branches

HOMOPTERA

Asterolecanium pustulans (Cockerell)

(Coccidae) The worst pest of this tree species, killing many of them in certain sections of the Island. The scale insect affects the twigs, branches and even the trunk. (IB:122), 1934, and (SIB:57), 1937. Killing trees at San Lorenzo, on the Patillas road, altitude 500 to 900 ft. Aug. 25, 1940 to April 4, 1941. (LFM.)

Saissetia oleae (Bernard)

(Coccidae) Slight infestation, on trees heavily infested by *Asterolecanium pustulans* (Cockerell), at San Lorenzo, 800 ft. high, April 6, 1941.

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Trees at Cayey Nurseries, about 5 or 6 years old with tunnels on their trunks, May 1942. (LFM.)

HOMOPTERA

Asterolecanium pustulans (Cockerell)

(Coccidae) Trees with trunks fully covered by the scales at Toa Baja, Cayey, and San Lorenzo, April 1941. (LFM.)

Sideroxylon

Sideroxylon foetidissimum Jacq.

(Sapotaceae)

DISTRIBUTION: A tree, growing in woodlands, river valleys and on hillsides at lower elevations in dry and moist districts of Puerto Rico. Also

Sideroxylon

recorded from St. Croix, St. Thomas, St. Jan, Florida, Bahamas, Jamaica, Cuba, Hispaniola and, from Saba to Barbados.

USES: Its reddish or yellow wood is hard, very strong and durable, with a specific gravity a little over 1.00. No uses are attributed so far, to this species in our Island. In British Honduras the trees of the same genus, are said to be suitable for flooring and heavy construction.

COMMON NAMES: "Tortugo amarillo," "Tortugo," "Tortugo prieto," "Caguani" (Cuba) and Mastie (Florida).

INSECT RECORDS**Insects Affecting the Leaves****HOMOPTERA*****Ceropsylla sideroxyli* Riley**

(Chermidae) A pit forming psyllid on leaves of host trees at Ciales, 1936 and Mona Island, 1940, (SIB:54). Very heavy infestation of leaves, causing defoliation, at Camuy, Feb. 5, 1941; also very abundant at Manatí, Sept. 10, 1940. (GNW. & LFM.)

***Saissetia hemisphaerica* (Targioni)**

(Coccidae) Slight infestation. Camp Kofresi, Mona Island, Sept. 1944, (GNW.). Det: H. Morrison.

***Coccus viridis* (Green)**

(Coccidae) Slight infestation. Camp Kofresi, Mona Island, Sept. 1944, (GNW.). Det: H. Morrison.

***Eucalymnatus tessellatus* (Signoret)**

(Coccidae) Slight infestation. Camp Kofresi, Mona Island, Sept. 1944, (GNW.). Det: H. Morrison.

Insects Affecting the Twigs**HOMOPTERA*****Saissetia oleae* (Bernard)**

(Coccidae) Fairly abundant on the twigs, some of them also on the undersides of leaves, at Guánica, (SIB:60), 1940.

HYMENOPTERA***Camponotus ustus* Forel**

(Formicidae) Large ants, winged and wingless forms, boring in twigs of trees and breeding abundantly; pupae by the hundreds inside the

Sideroxylon

bores in twigs and smaller branches, at Guajataca Gorge, near Quebradillas, Nov. 17, 1940, altitude 30 ft. (LFM.)

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) costalis (Holmgren)

(Termitidae) Dead nest on trunk of large tree, about 40 ft. high and 20 inches in diameter, at Salinas, altitude 150 ft., Oct. 1940. Nest and tunnels on trees, at Maunabo, Feb. 1941, Guajataca and on the Vía-Isote road, near Arecibo, 1942, all at low elevations. (LFM.)

HYMENOPTERA

Camponotus ustus Forel

(Formicidae) Ants breeding under the bark of tree, at Ciales, (SIB:150), 1940. (GNW. & LFM.)

Sloanea

Sloanea berteriana Choisy

(Elaeocarpaceae)

DISTRIBUTION: A tree, growing in the forests, at middle or higher elevations, in moist or wet districts of Puerto Rico. Also recorded from Hispaniola and Guadeloupe.

USES: The nearly white wood, is heavy, strong and durable and is employed in general construction work. It is also used for fuel and charcoal.

COMMON NAMES: "Cacao motillo," "Cacao roseta," "Cacao," "Motillo," "Cacaillo," "Cacaotillo" and "Roseta."

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

Pseudococcus nipae (Maskell)

(Coccidae) Scales or coccids abundant on the undersides of leaves, at Camp Guavate, Cayey, May 17, 1940. (LFM.)

Spathodea

Spathodea campanulata Beauv.

(Bignoniaceae)

DISTRIBUTION: A tree, native to tropical Asia, occasionally planted for ornament and shade in Puerto Rico and the Virgin Islands.

COMMON NAMES: "Tulipán africano," African tulip tree and Spathodea.

INSECT RECORDS

Insects Affecting the Leaves and Twigs

HOMOPTERA

(Coccidae)

Saissetia hemisphaerica (Targioni)

Slight infestation on the lower branches, affecting the twigs and leaves, on a tree at Manatí, Aug. 30, 1940. (LFM.)

Saissetia oleae (Bernard)

Listed (IB:133). Slight infestation on branches and twigs of a young tree, at Aibonito, Oct. 13, 1940, altitude 2,300 ft. (LFM.)

LEPIDOPTERA

Eulepte concordalis Hübner

(Pyraustidae) Caterpillars feeding on the foliage of trees, and webbing leaves together, at Aibonito, Oct. 13, 1940, altitude 2,300 ft. (LFM.)

Laetilia portoricensis Dyar

(Phycitidae) Caterpillars feeding on scale insects, *Saissetia oleae* (Bernard) on tree, listed (IB:479).

Hyblaea puera (Cramer)

(Hyblaeidae) Caterpillars feeding on the foliage, at Lares, 1924 and La Florida, between Barceloneta and Arecibo, 1932, (IB:479).

Insects Affecting the Twigs

HYMENOPTERA

Myrmelachista ramulorum Wheeler

(Formicidae) On trees, at El Consumo and Maricao, (IB:555), 1935. Listed as *M. ambigua* Forel *ramulorum* Wheeler.

Spondias

Spondias cirouella Tussac

(Anacardiaceae)

DISTRIBUTION: A tree, growing in farms, on hillsides and along roadsides in Puerto Rico and the Virgin Islands.

USES: Planted for its fruit and for shade. It is also used as live fence in farms, especially in the southern coast of Puerto Rico.

COMMON NAME: "Ciruela."

INSECT RECORDS

Insects Affecting the Fruits

DIPTERA

Anastrepha mombinpraeoptans Seán

(Tephritidae) Reared from fruits at Río Piedras, (IB:376), also at Arecibo, (SIB:119).

Insects Affecting the Twigs

HOMOPTERA

Saissetia hemisphaerica (Targioni)

(Coccidae) Very heavy infestation on twigs and branches, on a small tree, many twigs killed on account of the attack, at Guayanilla, Dec. 4, 1940. (LFM.)

Insects Affecting the Trunk

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Listed by Martorell (Jan. 1941, p. 81).

Spondias dulcis Forst

(Anacardiaceae)

DISTRIBUTION: A tree, native to the Pacific Islands, introduced into Puerto Rico, planted in gardens and farms.

USES: The tree is planted for its edible fruit; the wood used for fuel.

COMMON NAMES: "Cítara," and "Jobo de la India."

Spondias

INSECT RECORDS

Insects Affecting the Fruits

DIPTERA

Anastrepha mombinpraeoptans Señ
(Tephritidae) Reared from fruits at Río Piedras, (IB:376).

Anastrepha unipuncta Señ
Reared from fruits, (SIB:119).

Insects Affecting the Leaves and Twigs

HOMOPTERA

Saissetia oleae (Bernard)
(Coccidae) At Ponce, (IB:133).

Aleurothrixus floccosus (Maskell)
(Aleyrodidae) At Ponce, (IB:146).

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)
(Termitidae) Nest and tunnels on large trees, at Lares, on the San Sebastián road, altitude 1,270 ft., Dec. 10, 1941. (LFM.)

Spondias mombin L.

(Anacardiaceae)

DISTRIBUTION: A tree, growing in woodlands, river valleys, on hillsides and along roadsides, at lower and middle elevations, in Puerto Rico. Also recorded from St. Croix, St. Thomas, St. Jan, Tortola, Cuba, Jamaica, Hispaniola, continental tropical America and the Old World tropics.

USES: The tree is planted for shade along roadsides and for its edible fruit in farms and gardens. The wood is strong, light brown, durable, with a specific gravity of about 0.5. It has very little use locally, except

Spondias

for fuel. In some parts of the world, it is employed in the interior decoration of houses, in Brazil it has been used for paper pulp.

COMMON NAMES: "Jobo," "Jobo de perro," "Jobo vano" and Hog-plum.

INSECT RECORDS

Insects Affecting the Fruits

DIPTERA

Anastrepha mombinpraeoptans Seín

(Tephritidae) Reared from fruits, at Río Piedras, (IB:376). Also at Arecibo, (SIB:119).

HYMENOPTERA

Opius anastrephae Viereck

(Braconidae) Attacking the larvae of *Anastrepha fraterculus* Wied. = *A. mombinpraeoptans* Seín in fruits of *Spondias lutea* = *S. mombin* L., listed (IB:509).

Ganaspis hookeri Crawford

(Figitidae) Attacking the larvae of *Anastrepha fraterculus* Wied. = *A. mombinpraeoptans* Seín, in fruits of *S. lutea* = *S. mombin* L., (IB:518).

Insects Affecting the Leaves

THYSANOPTERA

Selenothrips rubrocinctus (Giard)

(Thripidae) On leaves of tree, (IB:65), 1912. Large tree with foliage heavily infested by thrips, at Guajataca, Oct. 24, 1940. Abundant on trees, at Yabucoa, causing chlorosis of leaves, Feb. 1941. (GNW. & LFM.)

HEMIPTERA

Empicoris rubromaculata (Blackburn)

(Reduviidae) Feeding on thrips on the foliage of tree, (IB:160), 1916. The host is presumably, *Selenothrips rubrocinctus* (Giard).

COLEOPTERA

Diabrotica graminea Baly

(Chrysomelidae) On leaves of tree, (IB:272). Possibly feeding on the foliage.

Spondias

Diaprepes abbreviatus (Linnaeus)

(Curculionidae) Feeding on the foliage, at Luquillo, Fajardo, Yabucoa, Santa Isabel, Arecibo, Manatí and Ponce, (IB:298). Eggs between the leaves of tree, at Ponce, (IB:299). Adults feeding on the foliage of tree, at Caguas, Dec. 24, 1940, altitude 850 ft., on the Caguas-Cayey road. (LFM.)

LEPIDOPTERA

Archips jamaicana (Walker)

(Tortricidae) Caterpillar on tree, (IB:480). Presumably on the foliage.

Insects Affecting the Twigs

HOMOPTERA

Nessorhinus gibberulus Stål

(Membracidae) Listed (IB:73), 1916.

Monobelus fasciatus (Fabricius)

(Membracidae) Listed (IB:74), 1916.

Pulvinaria psidii Maskell

(Coccidae) At Arroyo, (IB:128), 1912.

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) At Mayagüez, listed (IB:49), 1921. Trees at Yabucoa, Cayey and Ponce, infested with nests and tunnels on the trunk and branches. A very common pest of this tree, May 1942. (LFM.)

Spondias purpurea L.

(Anacardiaceae)

DISTRIBUTION: A tree, growing on hillsides and along roadsides in Puerto Rico. Also recorded from St. Croix, St. Thomas, St. Jan, Jamaica,

Spondias

Cuba, Hispaniola, Cayman Islands, St. Martin to Trinidad and continental tropical America.

USES: The tree is planted for its fruit and shade and as live fences. The wood is used for fuel.

COMMON NAMES: "Jobillo," "Jobo francés," "Ciruela del país," Spanish plum and Jamaica plum.

INSECT RECORDS

Insects Affecting the Fruits

DIPTERA

Anastrepha mombinpraeoptans Seín

(Tephritidae) Reared from fruits at Río Piedras, (IB:376).

Insects Affecting the Leaves and Twigs

HOMOPTERA

Pseudischnaspis bowreyi (Cockerell)

(Coccidae) Listed (SIB:62).

LEPIDOPTERA

Megalopyge krugii (Dewitz)

(Megalopygidae) Cocoons abundant on trunk of trees, at Ponce, the caterpillar presumably feeding on the foliage, 1940. (LFM.)

HYMENOPTERA

Myrmelachista ramulorum Wheeler

(Formicidae) Trees infested by this ant, boring into the twigs and breeding there; all stages found in bores, Lares, Dec. 10, 1941, altitude 1,270 ft. (LFM.)

Stahlia

Stahlia monosperma (Tul.) Urban

(Caesalpinaceae)

DISTRIBUTION: A tree, growing in the coastal woodlands, at the eastern and southern districts of Puerto Rico; also recorded from Vieques. Endemic.

Stahlia

USES: The nearly black wood is hard, heavy and strong and is much valued for furniture. The tree has become very scarce.

COMMON NAMES: "Cóbana," "Cóbano," "Cóbana negra" and "Poli-sandro."

INSECT RECORDS

Insects Affecting the Leaves and Twigs

HOMOPTERA

Aspidiotus lataniae Signoret

(Coccidae) Heavy infestation on branches, twigs and leaves of an old tree, at Guánica, attended by fire ants, *Solenopsis geminata* (Fabricius), Jan. 5, 1941. (det: Morrison) (LFM.).

HYMENOPTERA

Solenopsis geminata (Fabricius)

(Formicidae) Abundant, attending coccids, *Aspidiotus lataniae* Signoret, on tree, at Guánica, Jan. 5, 1941. (LFM.)

Insects Affecting the Trunk

COLEOPTERA

Chlorida festiva (Linnaeus)

(Cerambycidae) Larvae tunneling logs of trees, at Naguabo, (IB:259), 1926.

Sterculia

Sterculia apetala (Jacq.) Karst.

(Sterculiaceae)

DISTRIBUTION: A tree, native to northern South America, introduced into Puerto Rico and planted in several sections of the island, most abundant on the dry southern coast.

USES: Locally planted for shade and ornament. The wood is used for fuel, in the southern coast of the island, where the tree is very common along roadsides, especially near Ponce, on the Ponce-Santa Isabel road.

Sterculia

In Mexico, parts of the tree are employed for catarrhal and pectoral affections.

COMMON NAMES: "Anacagüitas" and Panama tree.

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

(Coccidae)

Pseudococcus nipae (Maskell)

At Salinas (IB:127), 1935. Also at Guánica, (SIB:58), 1940. Trees with the undersides of the foliage heavily infested by this coccid, near Ponce, on the Juana Díaz road. The coccids were kept under control by means of ladybird beetles. June 1941. (LFM.)

Saissetia oleae (Bernard)

Abundant on leaves and also twigs of trees, near Ponce, Sept. 19, 1940. (LFM.)

COLEOPTERA

Hyperaspis connectens Thunber

(Coccinellidae) Abundant on the undersides of leaves, infested by *Pseudococcus nipae* (Maskell), at Ponce, June 1941. (LFM.)

Scymnillus nunenmacheri Sicard

(Coccinellidae) Abundant, feeding on the undersides of leaves infested by *Pseudococcus nipae* (Maskell), at Ponce, June 1941. (LFM.)

Phyllophaga vandinei (Smyth)

(Scarabaeidae) Adults feeding on the foliage of trees, at Isabela, May 22, 1941. (LFM.)

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Tunnels on the trunks of large trees, at Salinas, April 6, 1941. Many trees infested near Ponce, on the Santa Isabel road, May 1942. (LFM.)

Swietenia

Swietenia macrophylla King

(Meliaceae)

DISTRIBUTION: A tree, native to the forest regions from Mexico to Colombia, introduced into Puerto Rico, for reforestation purposes.

USES: In British Honduras, the wood is used for boat building, dugout canoes and interior trim. It has been suggested to be used for airplane propellers, speed boat hulls, cabinet work and furniture.

COMMON NAMES: "Caoba," "Caoba de Honduras," Mahogany and Honduras mahogany.

INSECT RECORDS

Insects Affecting the Seeds

COLEOPTERA

Carpophilus dimidiatus var. *mutilatus* Erichson

(Nitidulidae) All stages found in bags of imported seeds, at the Cayey Nurseries, (SIB:89), 1937. Many of the seed was destroyed by the larvae of this insect. (LFM.)

Insects Affecting the Leaves

HOMOPTERA

Ischnaspis longirostris (Signoret)

(Coccidae) On trees, at Río Grande, very heavy infestation, especially on the undersides of the leaves, causing many of the leaves to turn yellowish, (SIB:63), 1940. (LFM.)

COLEOPTERA

Phyllophaga vandinei (Smyth)

(Scarabaeidae) Adults feeding on the foliage doing considerable damage, at Isabela, May 22, 1941. (LFM.)

Diaprepes abbreviatus (Linnaeus)

(Curculionidae) Adult weevils, feeding on the foliage and causing damages of economic importance on trees at El Verde Plantation, Río Grande, altitude 800 ft.; at Río Abajo Plantations, altitude 1,200 ft.; at Utuado, April 20, 1941; adults very abundant, destroying the young tender shoots of trees, near the Recreational Area, at El Yunque Mts., 1,400 ft., June 16, 1940. (LFM.)

Swietenia

Insects Affecting the Roots

Diaprepes abbreviatus (Linnaeus)

(Curculionidae) Larvae of the curculionid, attacking the roots of young seedlings at the Mountain Top Nurseries at Patillas, killing many seedlings, (SIB:103), 1939. (GNW. & LFM.)

Swietenia mahagoni Jacq.

(Meliaceae)

DISTRIBUTION: A tree, originally abundant in the valleys and on the hillsides of Puerto Rico, today all but extinguished due to its enormous use. Nowadays it is widely used in reforestation projects. Recorded also from St. Croix, St. Thomas, Florida, Bermuda, Bahamas, Jamaica, Cuba and Hispaniola.

USES: The wood is brown or reddish, strong, hard and tough, with a specific gravity of about 0.7. It is one of the most valuable forest products of tropical America, esteemed for furniture, interior trimming, flooring, and many other purposes.

COMMON NAMES: "Caoba," "Caoba dominicana," "West Indian mahogany" and Mahogany.

INSECT RECORDS

Insects Affecting the Leaves and Twigs

HOMOPTERA

(Coccidae)

Saissetia oleae (Bernard)

Listed (IB:133).

Chrysomphalus dictyospermi (Morgan)

Listed in (IB:139).

COLEOPTERA

Diaprepes abbreviatus (Linnaeus)

(Curculionidae) Adults feeding on the foliage of trees, abundant, at Colonia Algarrobo, Guayama, June 12, 1940. (LFM.)

Swietenia

LEPIDOPTERA

Hypsipyla grandella (Zeller)

(Phycitidae) Caterpillar boring in shoots of trees, at Camp Patillas, Patillas, May 1940. Adults reared from material collected at the field. (LFM.)

Monoleuca albicollis Forbes

(Limacodidae) Larvae feeding on leaves, many cocoons observed. Río Piedras, altitude 350 ft., Sept. 23, 1943 (Dr. A. Bonnet, Coll.).

Insects Affecting the Branches

COLEOPTERA

Trichodesma sp.

(Anobiidae) Reared from branches of tree, infested by the larvae of this species, boring inside, Guánica Insular Forest, May 20, 1940. (D. DeLeón & LFM.)

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Nest in heartwood of live mahogany stump at Aguadilla, 1940; nest on tree at Aguadilla, 1939, (SIB:43). Nest on old tree, about 40 years old, tunnels around the trunk, at Colonia Algarrobo, Guayama, June 12, 1940. (LFM.)

COLEOPTERA

Polycesta porcata Fabricius

(Buprestidae) Larvae in introduced mahogany from Santo Domingo (Island of Hispaniola) to Puerto Rico. Adult reared from furniture recently constructed, from imported timber, at Río Piedras, (SIB:88), 1940. (LFM.)

Apate monachus Fabricius

(Bostrychidae) Larvae, pupae and adults in logs, at Mayagüez, after trees infested were chopped down, at the Mayagüez Nurseries; hundreds of 3 or 4 years old trees, with their trunks bored by adult beetles at Mr. Mario Mercado's Plantation, at Guayanilla, (SIB:94); at Río Abajo Plantation, Utuado, altitude 1,200 ft.; also at Susua Unit attacking several trees, 1940. (LFM.) Listed from Mayagüez, in (IB:243).

Swietenia

Lyctus caribeanus Lesne

(Lyctidae) In sapwood made into furniture, presumably the timber was infested at the field, (SIB:95), 1939. (LFM.)

HYMENOPTERA

Crematogaster steinheili Forel

(Formicidae) Breeding under the bark of many trees, at Colonia Algarrobo, Guayama, June 12, 1940. (LFM.)

Xylocopa brasilianorum (Linnaeus)

(Xylocopidae) Breeding on dead part, on a large branch of a very old tree. Larvae burrowing into the live wood, making tunnels; pupae and very recently emerged adults found in the bores, at Colonia Algarrobo, Guayama, June 12, 1940. (LFM.)

Symlocos

Symlocos martinicensis Jacq.

(Symlococaceae)

DISTRIBUTION: A tree, growing in thickets and on wooded hills, in the northern districts of Puerto Rico. Also recorded from St. Thomas, Tortola and from Saba to Trinidad.

USES: The light colored, fairly heavy, hard and strong wood, has no special use in the Island.

COMMON NAMES: "Aceituna," "Aceituna blanca" and "Aceituna cimarrona."

INSECT RECORDS

HOMOPTERA

Chrysomphalus personatus (Comstock)

(Coccidae) At Bayamón, listed (IB:140), 1916. The host tree is listed as *S. latifolia* = *S. martinicensis* Jacq.

Tabebuia

Tabebuia argentea (Bur. & Schum.) Britton

(Bignoniaceae)

DISTRIBUTION: A tree, native to Paraguay, introduced and planted at St. Croix and at the Mayagüez Agricultural Experiment Station. Many trees also planted in the University of Puerto Rico grounds.

USES: Planted as an ornamental.

COMMON NAME: "Roble" and "Roble de plata."

INSECT RECORDS

Insects Affecting the Leaves

LEPIDOPTERA

Eulepte concordalis Hübner

(Pyraustidae) Slight infestation, caterpillars webbing leaves on trees, at the University grounds, Sept. 22 1940. (LFM.)

Pachymorphus subductellus Möschler

(Chrysaugidae) Many twigs attacked by the borer, on trees at the University grounds, at Río Piedras, Sept. 22, 1940. (LFM.)

Tabebuia haemantha (Bert.) DC.

(Bignoniaceae)

DISTRIBUTION: A shrub or a small tree, growing in woodlands and on hillsides, at lower and middle elevations, in the western, central and southern districts of Puerto Rico. Most abundant in dry regions extending east of Guayama. Endemic.

USES: Very little used, except for fuel.

COMMON NAME: "Roble colorado."

INSECT RECORDS

Insects Affecting the Twigs

LEPIDOPTERA

Pachymorphus subductellus Möschler

(Chrysaugidae) Caterpillar a twig borer on this tree, many of them

Tabebuia

attacked, near Salinas, on the Cayey road, 200 ft. altitude, May 5, 1940. (LFM.)

HYMENOPTERA

Apanteles sp.

Reared from the gallery of a twig borer larva or caterpillar, presumably *Pachymorphus subductellus* Möschler, at Salinas, May 5, 1940 (det: Muesebeck) (D. DeLeón) (LFM.).

Tabebuia heterophylla (DC.) Britton

(Bignoniaceae)

DISTRIBUTION: A tree, growing in woodlands and thickets, mostly at lower elevations in dry districts of Puerto Rico. Also recorded from Mona, Culebra, Vieques, St. Thomas, St. Jan, Tortola, Virgin Gorda, Anegada, Jamaica, Cayman Islands and St. Barts.

USES: Wood whitish, fairly heavy, not much used in Puerto Rico. In other parts of tropical America, the wood is used for furniture, posts, piles, house building and musical instruments.

COMMON NAMES: "Pristo" and "Roble prieto."

INSECT RECORDS

Insects Affecting the Leaves

LEPIDOPTERA

Eulepte concordalis Hübner

(Pyraustidae) Caterpillars webbing leaves, on trees at Mona Island, not especially abundant, (SIB:130), 1940. Listed as *Mesocondyla concordalis* Hübner. (LFM.)

Insects Affecting the Twigs

LEPIDOPTERA

Pachymorphus subductellus Möschler

(Chrysaugidae) Larvae boring in twigs of trees, at Guánica Insular Forest and at Mona Island, (SIB:127), 1940. (Listed as *Pseudo-*

Tabebuia

hemiceras krugii Möscher which I believe is a misidentification: Martorell.) Heavy infestation of trees, at El Vigía, Ponce, many pupal cases observed inside the bores, adults already emerged, Ponce, May 22, 1940. (LFM.)

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Tunnels and nests, on trees at the Guánica Insular Forest, April 1942. (LFM.)

Tabebuia lucida Britton

(Bignoniaceae)

DISTRIBUTION: A tree, having a very limited distribution, found only on the limestone cliffs of Mona Island. Endemic.

USES: Very little use, except for fuel.

COMMON NAME: "Roble de Mona."

INSECT RECORDS

Insects Affecting the Leaves

LEPIDOPTERA

Eulepte concordalis Hübner

(Pyraustidae) Webbing leaves of trees, at Mona Island, (SIB:130), 1940. Listed as *Mesocondyla concordalis* Hübner. (LFM.)

Insects Affecting the Twigs

LEPIDOPTERA

Pachymorphus subductellus Möscher

(Chrysaugidae) Boring in twigs of trees, at Mona Island, (SIB:127), 1940. Listed as *Pseudohemiceras krugii* Möscher, undoubtedly a misidentification: Martorell.

Tabebuia

Tabebuia pallida Miers

(Bignoniaceae)

DISTRIBUTION: A tree, growing in woodlands, thickets and on hillsides, at lower and middle elevations, in wet or moist districts of Puerto Rico. Also recorded from St. Jan, St. Croix, St. Thomas, Bermuda, Hispaniola, from Saba to Trinidad, Central America and Venezuela.

USES: The white, strong and hard wood, has a specific gravity of about 0.8 and is valued for construction, furniture and musical instruments. Locally the tree is extensively planted along roadsides, streets, and gardens, as an ornamental. In Europe the wood has been employed as a substitute for boxwood in engraving. In Cuba, a decoction made with parts of the tree, taken internally is used as a remedy for snake bites. The powdered bark and leaves were formerly used in the Antilles as a febrifuge.

COMMON NAMES: "Roble," "Roble blanco," West Indian boxwood and White cedar.

INSECT RECORDS

Insects Affecting the Pods

LEPIDOPTERA

Ethnistis munitalis Lederer

(Chrysaugidae) Caterpillar in seed pods, (IB:470). Destroying pods of trees, at San Sebastián, on the Quebradillas road, altitude 1,000 ft., May 1941. (LFM.)

Insects Affecting the Leaves

HOMOPTERA

Jassus obligatus Osborn

(Cicadellidae) At Ponce, listed (IB:86).

Protalebra tabebuiae Dozier

(Cicadellidae) Listed (IB:90). Causing intense chlorosis on foliage of trees, at San Sebastián, on the Quebradillas road, altitude 900 ft., Sept. 3, 1940. Same type of injury on trees, on the San Lorenzo-Patillas road, altitude 600 ft., May 1942. (LFM.)

Aphis gossypii Glover

(Aphidae) On leaves, at Cayey, (SIB:54), 1940. Abundant on young shoots and tender leaves of trees; at Humacao, on the Yabucoa road, parasitized by minute wasps, May 24, 1940. (LFM.)

Tabebuia

COLEOPTERA

Diomus roseicollis Mulsant

(Coccinellidae) At Cayey, (SIB:92), 1940. Predaceous on *Aphis gossypii* Glover. Listed as *Scymnus roseicollis* Mulsant. (LFM.)

Megistops lituratus (Olivier)

(Chrysomelidae) At Ponce, listed (IB:284). Possibly feeding on the foliage.

LEPIDOPTERA

Eulepte concordalis Hübner

(Pyraustidae) On leaves of trees, at Dorado, (IB:459), 1922. At Maunabo, (SIB:130), 1940. The most destructive pest on the foliage of this tree, the caterpillars webbing leaves and causing tremendous defoliation. At Rio Piedras, Yabucoa, San Lorenzo, El Yunque Mts., at altitudes from sea-level up to 2,000 ft. 1936-42. (LFM.)

Hyblaea puera (Cramer)

(Hyblaeidae) Caterpillars feeding on leaves, abundant, at Guaynabo and Comerío (IB:479), 1922.

Oiketicus kirbyi Guilding

(Psychidae) Bagworms on tree, at Aibonito, (SIB:137), 1938.

HYMENOPTERA

Aphidius testaceipes (Cresson)

(Braconidae) Reared from aphids, *Aphis gossypii* Glover, attacking shoots and tender foliage of trees, at Humacao, many aphids parasitized, May 24, 1940. (GNW. & LFM.)

Elachertus sp.

(Eulophidae) Parasitic on the caterpillar of the "roble" leaf-webber, *Eulepte concordalis* Hübner, collected at San Sebastian, altitude 1,000 ft., Nov. 26, 1940. (det: Muesebeck, as: "sp. nov.") (LFM.)

Insects Affecting the Twigs

HOMOPTERA

(Coccidae)

Howardia biclavis (Comstock)

At Naguabo, (IB:135), 1914. Also at Vega Alta (SIB:60).

Tabebuia

Aspidiotus herculeanus Hadden

On *Tabebuia*, at Vega Alta, (SIB:61).

LEPIDOPTERA

Pseudohemiceras krugii Möscher

(Phalaenidae) Caterpillar boring in twigs, listed (IB:436), 1916.

Pachymorphus subductellus Möscher

(Chrysaugidae) Caterpillar boring in twigs, listed (IB: 470), 1912. Presumably this species is the common borer in the twigs of "roble," attacking the tree in all parts of the island in high and low altitudes, recorded from Yabucoa, Ponce, Salinas, Mayagüez, Arecibo, Luquillo, Naguabo, etc. 1937-1942. (LFM.)

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Nest on tree at Lares, (SIB:43), 1940. Nests and tunnels on trunk of trees, at Islote-Vigía road, near Arecibo, Dec. 1, 1940. Near Arroyo, very abundant on trees, along the roadsides, June 12, 1940. (LFM.)

COLEOPTERA

Stizocera vanzwaluwenburgi Fisher

(Cerambycidae) Infesting "roble" logs at Trujillo Alto. Oct. 1935 (Det: Fisher) (LFM.).

Tabebuia

Tabebuia rigida Urban

(Bignoniaceae)

DISTRIBUTION: A tree, growing in the forests, in the eastern mountains of Puerto Rico, at higher elevations. Endemic.

USES: The brown, hard and durable wood, has no use locally.

COMMON NAME: "Roble de sierra."

INSECT RECORDS

Insects Affecting the Leaves

LEPIDOPTERA

Eulepte concordalis Hübner

(Pyraustidae) Out of a large patch of trees, nearly fifty per cent of the leaves were attacked by the caterpillars, on Mt. Britton, El Yunque Mts., altitude 2,600 ft., July 14, 1940.

Oiketicus kirbyi Guilding

(Psychidae) Bag-worms on leaves of tree, at Camp Patillas, on the mountains northeast of the Camp site, May 15, 1940. (LFM.)

Insects Affecting the Twigs

LEPIDOPTERA

Pachymorphus subductellus Möschler

(Chrysaugidae) Boring in twigs, trees at the Carite Unit, altitude 1,800 ft., and also at the Patillas Range, altitude 2,500 ft., May 17, 1940. (LFM.)

Tabebuia schumanniana Urban

(Bignoniaceae)

DISTRIBUTION: A tree, growing in the forests of the western mountains of Puerto Rico, at middle and higher elevations. Endemic.

COMMON NAME: "Roble colorado."

Tabebuia

INSECT RECORDS

Insects Affecting the Leaves

LEPIDOPTERA

Eulepte concordalis Hübner

(Pyraustidae) Caterpillars abundant feeding and webbing leaves, of trees, at the Carite Unit, altitude 2,300 ft., May 17, 1940. Many caterpillars on foliage of trees, near Cerro de Punta, Jayuya, 3,000 ft. altitude, April 1941. (LFM.)

Tamarindus

Tamarindus indicus L.

(Caesalpiniaceae)

DISTRIBUTION: A tree, native to Abyssinia and Central Africa, introduced into Puerto Rico, now growing along roadsides and on hillsides at lower elevations. Also recorded from Vieques, St. Croix, St. Thomas, St. Jan and Tortola. (In Britton & Wilson, Vol. 5, p. 365 as: *Tamarindus indica* L.)

USES: The wood is highly esteemed for handles of tools, such as axes, hoes, "machetes," and for furniture and general construction.

COMMON NAMES: "Tamarindo" and Tamarind.

INSECT RECORDS

Insects Affecting the Pods .

COLEOPTERA

Palembus ocularis Casey

(Tenebrionidae) All stages in pods, feeding on the seeds, at Loíza, (IB:235), 1921.

Tribolium castaneum (Herbst)

(Tenebrionidae) In dry pods, at Guánica, (IB:236), 1914. Listed as *T. ferrugineum* (Fabricius).

Tamarindus

Sitophilus linearis (Herbst)

(Curculionidae) According to Dr. Gundlach, this species feeds on the seeds of the tamarind tree: Found in pods at Guánica, Loíza, Cabo Rojo, Ponce and Río Piedras, (IB:317), 1913-21.

Stephanoderes buscki Hopkins

(Scolytidae) Reared to adults from larvae collected in pods at Trujillo Alto, (IB:475). Also at Arecibo, (SIB:133).

Insects Affecting the Leaves and Twigs

HOMOPTERA

(Fulgoridae)

Ormenis pruinosa (Say)

At Mayagüez, listed (IB:103).

(Coccidae)

Pseudococcus brevipes (Cockerell)

At Mayagüez, listed (IB:123).

Pseudococcus maritimus (Ehrhorn)

At Mayagüez, (IB:125).

Saissetia hemisphaerica (Targioni)

Listed (IB:132).

Saissetia oleae (Bernard)

Listed, (IB:133), at Ponce.

Aonidiella orientalis (Newstead)

At Arecibo, (SIB:60). Listed as: *Aspidiotus cocotiphagus* (Marlatt)

Selenaspis articulatus (Morgan)

At Ponce, listed (IB:138), and recorded as *Pseudaonidia articulatus* Morgan.

Tamarindus

COLEOPTERA

Diaprepes abbreviatus (Linnaeus)

(Curculionidae) Listed (IB:298), presumably feeding on the foliage.

Apodrosus argentatus Wolcott

(Curculionidae) At Ponce, listed (IB:303).

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Tunnels and nests on trunk of trees, at Arroyo, Salinas, Patillas and Ponce, May 1941. (LFM.)

COLEOPTERA

Apate monachus Fabricius

(Bostrychidae) At Tallaboa, in dead tamarind, listed (IB:244).

Xylomeira torquata (Fabricius)

(Bostrychidae) In dead branch, at Tallaboa, (IB:244)

Tamonea

Tamonea guianensis Aubl.

(Melastomaceae)

DISTRIBUTION: A shrub or a small tree, growing in woodlands and forest, ascending to higher elevations, in wet or moist districts of Puerto Rico. Also recorded from Tortola, Jamaica, Cuba, Hispaniola, from St. Kitts to Trinidad and continental tropical America.

USES: The wood is used for posts, fuel and charcoal.

COMMON NAMES: "Camasey blanco" and "Camasey de costilla."

Tamonea

INSECT RECORDS

Insects Affecting the Trunk

ISOPTERA

Kalotermes (Glyptotermes) pubescens Snyder

(Kalotermitidae) In stump of tree, at El Yunque Mts. (SIB:42),
1939. (GNW.)

Tecoma

Tecoma stans (L.) H.B.K.

(Bignoniaceae)

DISTRIBUTION: A shrub or a small tree, growing on hillsides, in the southern districts of Puerto Rico. Also recorded from Vieques, St. Croix, St. Thomas, St. Jan, Tortola, Florida, Cuba, Jamaica, Hispaniola and continental tropical America.

USES: The tree is planted along roadsides and gardens, as an ornamental, in Puerto Rico. In Mexico, the Indians use the flexible wood to make bows. Powerful diuretic, tonic, antisyphilitic and vermifugal properties are attributed to the plant as well as roots.

COMMON NAMES: "Roble amarillo," "Ruiibarba," Trumpet flower, Yellow elder, Yellow cedar and Ginger Thomas.

INSECT RECORDS

Insects Affecting the Leaves

LEPIDOPTERA

Protoparce rustica (Fabricius)

(Sphingidae) According to Dr. Möschler, p. 110, the caterpillar of this species, breeds on this tree. Listed (IB:445).

Tectona

Tectona grandis L.

(Verbenaceae)

DISTRIBUTION: A tree, native to the East Indies, introduced into Puerto Rico for reforestation purposes. Also recorded from St. Croix.

USES: The wood is very valuable, and is used in the construction of furniture, cabinet work and general construction.

COMMON NAMES: "Tetona," "Teca" and Teak.

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

(Coccidae)

Coccus viridis (Green)

Few scale insects on the undersides of the leaves, on trees at Camp Patillas, May 14, 1940, (SIB:59). (LFM.)

Saissetia hemisphaerica (Targioni)

Slight infestation, attended by fire ants, at Camp Patillas, May 14, 1940. (LFM.)

Saissetia oleae (Bernard)

Few on the undersides of the leaves of trees, at Camp Patillas, May 14, 1940, (SIB:60). (LFM.)

Pinnaspis minor (Maskell)

On trees, at Patillas, very few on the undersides of leaves, most of them on the trunk, at Camp Patillas, 1940. (LFM.)

HYMENOPTERA

Solenopsis geminata (Fabricius)

(Formicidae) Attending scale insects, on trees, at Camp Patillas, very abundant, May 14, 1940, (SIB:149). (LFM.)

Insects Affecting the Trunk

HOMOPTERA

Pinnaspis minor (Maskell)

(Coccidae) Not a serious infestation; on the trunk of some trees, at Camp Patillas, 1940. (LFM.)

Terminalia*Terminalia catappa* L.

(Terminaliaceae)

DISTRIBUTION: A tree, growing on hillsides and sand dunes, mostly near or along the coasts, in Puerto Rico. Also recorded from Vieques, St. Croix, St. Thomas, St. Jan, Tortola, Virgin Gorda, Cuba, Jamaica, Hispaniola and continental tropical America.

USES: The brownish hard and strong wood, is used for furniture and in construction. The tree is planted for shade, along the roadsides in Puerto Rico. The high tannin content of the roots, bark and fruits makes the tree useful in the tanning industry. The ripe seeds are eaten like almonds.

COMMON NAMES: "Almendra," "Almendo," "Almendrón," Malabar almond and Indian almond.

INSECT RECORDS

Insects Affecting the Fruits

COLEOPTERA

Stelidota geminata (Say)

(Nitidulidae) From the ectocarp of fruits at Añasco, (IB :220).

Stephanoderes brazilensis Hopkins

(Scolytidae) At Arecibo, from fruits, (IB :317).

DIPTERA

Frontina bigeminata Curran

(Larvaevoridae) From fruits, at Vega Alta, (SIB :116).

Anastrepha unipuncta Señ

(Tephritidae) Reared at Río Piedras and Mayagüez, from fruits (IB :378). Also from fruits, at Bayamón, Corozal, Dorado, Manatí and Arecibo, (SIB :120).

LEPIDOPTERA

Ephestia cautella (Walker)

(Phycitidae) From fruits, at Dorado, (SIB :133).

Laspeyresia sp.

(Olethreutidae) At Arecibo, (SIB :135).

Terminalia

Insects Affecting the Leaves and Twigs

THYSANOPTERA

Selenothrips rubrocinctus (Giard)

(Thripidae) At Bayamón, (IB:65). At Maunabo and Dorado (SIB:49), 1940. Attacking the undersides of leaves and causing a yellowing or discoloration, sometimes the leaves looking silvery or whitish at a distance. Heavy infestations at Maunabo, Isabela, Quebradillas, Lares, from Sept. to Dec. 1940. (LFM.)

HOMOPTERA :

(Membracidae)

Monobelus fasciatus (Fabricius)

At Bayamón, (IB:75). Presumably on the twigs.

(Cicadellidae)

Cicadella sirena Stål

At Arecibo, (IB:79).

Protalebra tabebuiae Dozier

At Bayamón, listed (IB:90).

(Fulgoridae)

Ormenis marginata (Brunnich)

Listed (IB:102).

(Aphidae)

Aphis gossypii Glover

At Bayamón, presumably on the foliage, (IB:114).

(Coccidae)

Pseudococcus virgatus (Cockerell)

At Manatí, (IB:128), 1922.

Coccus viridis (Green)

On the undersides of leaves, very abundant, at Mona Island, (SIB:59), 1939. (LFM.)

Saissetia nigra (Nietner)

Mr. A. Busek, collected the scale insect on this tree species, at San Juan, 1899.

Terminalia**Saissetia oleae** (Bernard)

At Mayagüez and Guánica (IB:133). Abundant on twigs, few on the undersides of leaves, at Mona Island, (SIB:60), 1939. (LFM.)

Aspidiotus destructor Signoret

At Arecibo and Mayagüez, (IB:138). At Bayamón and Mayagüez, more recently, (SIB:61).

Chrysomphalus aonidum (Linnaeus)

Recorded by Mr. A. Busck, at San Juan, 1899, (IB:139). Also recorded by Mr. Van Zwaluwenburg.

COLEOPTERA**Phyllophaga vandinei** (Smyth)

(Scarabaeidae) On foliage, at Mayagüez, (IB:249), 1923.

Cryptocephalus tristiculus Weise

(Chrysomelidae) At Arecibo, (IB:267).

Attelabus sexmaculatus Chevrolat

(Curculionidae) At Bayamón, (IB:290), 1921 and 1933. Presumably this insect was resting on the foliage, not rolling the leaves, as it does in *Psidium*. (Note: LFM.)

Diaprepes abbreviatus (Linnaeus)

(Curculionidae) At Manatí (IB:298) and Arecibo. Causing defoliation of trees, at Arecibo and Punta Borinquen near Aguadilla, on Aug. 30, and May 30, 1940 respectively. (LFM.)

Exophthalmodes roseipes (Chevrolat)

(Curculionidae) Causing injury to the foliage, on trees at Punta Borinquen, Aguadilla, May 30, 1940. Counted as much as 25 adults on a single leaf. (LFM.)

LEPIDOPTERA**Oiketicus kirbyi** Guilding

(Psychidae) According to Dr. Möschler, p. 122, the caterpillar of this species feeds on *Terminalia*, (undoubtedly referring to this tree species). Many trees defoliated at La Muda, on the Caguas-Río Piedras road, (SIB:137), 1938. (LFM.)

Megalopyge krugii (Dewitz)

(Megalopygidae) Listed (IB:505). Caterpillars on foliage at Arecibo, (SIB:138), 1938. (LFM.)

Terminalia

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Many trees, with nests and tunnels on trunk, infested by termites, at Naguabo, Aug. 26, 1940. Also at Yabucoa, Maunabo, San Germán, Mayaguez, Lares, Arecibo, Bayamón, Fajardo, Luquillo Arroyo, etc. June 1941. (LFM.)

Ternstroemia

Ternstroemia stahlia Krug & Urban

(Theaceae)

DISTRIBUTION: A small tree, growing in sandy soils near Bayamón and at El Cerro de las Mesas at Mayagüez, Puerto Rico. Endemic. (In Britton & Wilson, Vol. 5, p. 581 as: *Taonabo Stahlia* (Krug & Urban) Britton.)

COMMON NAME: "Mamey del cura."

INSECT RECORDS

Insects Affecting the Leaves and Twigs

HOMOPTERA

(Coccidae)

Asterolecanium pustulans (Cockerell)

At Dorado, listed (SIB:57).

Chrysomphalus aonidum (Linnaeus)

At Dorado, listed (SIB:61).

Tetragastris

Tetragastris balsamifera (Sw.) Kuntze
(Burseraceae)

DISTRIBUTION: A tree, growing in forest, woodlands and along creeks, at lower and middle elevations, mostly in wet or moist districts of Puerto Rico. Also recorded from St. Croix, Cuba, Hispaniola and Guadeloupe.

USES: The wood is fragrant, strong, light and durable and is used in carpentry work.

COMMON NAMES: "Masa," "Palo de aceite," "Masa colorado," "Palo de masa" and "Copal."

INSECT RECORDS

Insects Affecting the Twigs

COLEOPTERA

Hypothenemus sp.

(Scolytidae) Adults and larvae breeding in dry twigs, tree in the mountains between Ciales and Jayuya, altitude 1,500 ft., May 1940. (D. DeLeón.) (LFM.)

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Tree infested, at Salinas, on the Cayey road, altitude 900 ft., Oct. 29, 1941. (LFM.)

Tetrazygia

Tetrazygia elaeagnoides (Sw.) DC.

(Melastomaceae)

DISTRIBUTION: A tree, growing in thickets, woodlands and on hillsides, at lower and middle elevations, in dry and moist districts of Puerto Rico. Also recorded from Vieques, St. Croix, St. Thomas, St. Jan, Tortola, Montserrat and Hispaniola.

COMMON NAMES: "Cenizo," "Verde seco" and "Kre-kre."

Tetrazygia

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

Pseudococcus nipae (Maskell)
(Coccidae) Listed (IB:127), 1914.

Insects Affecting the Twigs

HYMENOPTERA

Camponotus ustus Forel
(Formicidae) At San José, listed (IB:556), 1923. Presumably boring
in the twigs or branches.

Thespesia

Thespesia populnea (L.) Soland

(Malvaceae)

DISTRIBUTION: A tree, growing in thickets, coastal woods and borders of mangrove swamps, at lower elevations in Puerto Rico. Also recorded from Vieques, St. Croix, St. Jan, St. Thomas, Florida, Bermuda, Cuba, Jamaica, Hispaniola, continental tropical America and the Old World tropics.

USES: The wood has very little use locally. Elsewhere, in the tropics, it is used for cabinet work, building and other purposes. The tree is often planted for shade and ornament in Puerto Rico and the Virgin Islands. In the south coast of Puerto Rico, it is extensively used as a roadside tree.

COMMON NAMES: "Emajaguilla," "Palo de jaqueca," "Santa María," Cork-tree, Spanish cork, Bendy tree and Otaheite.

Thespesia

INSECT RECORDS

Insects Affecting the Pods

HEMIPTERA

(Pyrrhocoridae)

Dysdercus andreae (Linnaeus)

Listed (SIB:71). Recorded by Mr. Fife, as affecting pods of tree.

Dysdercus sanguinarius Stål

Listed (SIB:71). Recorded by Mr. Fife, as affecting pods of tree.

COLEOPTERA

Stephanoderes ferrugineus Hopkins

(Scolytidae) In pods of tree, at Guayanilla, (SIB:105), 1939. Listed as: "sp. near *ferrugineus*."

LEPIDOPTERA

Pectinophora gossypiella (Saunders)

(Gelechiidae) The caterpillar infesting pods of this tree, very often. (LFM.)

Ereunetis minuscula Walsingham

(Tineidae) In partitions of pods at Guayanilla, (IB:501), 1921.

Insects Affecting the Twigs

HOMOPTERA

Pinnaspis minor (Maskell)

(Coccidae) Listed (SIB:60), presumably on the twigs or perhaps on the trunk.

Thevetia

Thevetia nereifolia Juss.

(Apocynaceae)

DISTRIBUTION: A shrub or a small tree, growing in coastal thickets, in Puerto Rico. Also recorded from St. Thomas, St. Croix, St. Jan, Florida,

Thevetia

Cuba, Jamaica, Hispaniola and continental tropical America. (In Britton & Wilson, Vol. 6, p. 91 as: *Cerbera Thevetia* L.)

USES: Locally it is commonly planted for ornament in gardens and "patios."

COMMON NAMES: "Caballón," "Cabalonga," Milk tree and Lucky-nut.

INSECT RECORDS

Insects Affecting the Leaves

LEPIDOPTERA

Paradosis flegia (Cramer)

(Pyraustidae) At Plantaje (IB:462), 1916. At Fortaleza gardens in San Juan, (SIB:131), 1037. (Listed as *Margaronia phlegia* Cramer.)

Thrinax*Thrinax microcarpa* Sarg.

(Arecaceae)

DISTRIBUTION: A palm, growing on limestone cliffs and hillsides, mostly in the dry southwestern districts of Puerto Rico. Also recorded from Mona, Florida, Bahamas and Cuba.

USES: Occasionally planted for ornament; its leaves are used for making native brooms.

COMMON NAMES: "Palma de escoba" and "Pandereta."

INSECT RECORDS

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) On trunk of palms, at Río Abajo Plantations, 1,200 ft. high, Utuado, April 20, 1941. (LFM.)

Thuja

Thuja orientalis L.

(Pinaceae)

DISTRIBUTION: A slow growing tree, found in gardens and parks, occasionally planted after its introduction into Puerto Rico.

USES: Planted as an ornamental.

COMMON NAMES: "Tuya," "Ciprés," Thuja and Asiatic arbor vitae.

INSECT RECORDS

LEPIDOPTERA

Oiketicus kirbyi Guilding

(Psychidae) Very abundant, feeding on the foliage of trees, around the lily-pool, at the U. S. Forest Service grounds, Río Piedras. Also At Ponce, (IB:502). (GNW.) (LFM.)

Thouinia

Thouinia portoricensis Radlk.

(Sapindaceae)

DISTRIBUTION: A shrub or a small tree, growing in woodlands and thickets at lower elevations in the dry southwestern districts of Puerto Rico. Endemic. (In Britton & Wilson, Vol. 5, p. 526 as: *Thyana portoricensis* (Radlk.) Britton.)

COMMON NAMES: "Quebracho," "Quebra hacha," "Serrasuela" and "Serrezuela."

INSECT RECORDS

Insects Affecting the Leaves

LEPIDOPTERA

Syllepis marialis Poey

(Pyraustidae) A leaf-roller, especially abundant on the trees when they are under shady situations; caterpillar small, green; not very abundant, at Guayanilla, Jan. 10, 1941. (det: Heinrich) (LFM.).

Torrubia

Torrubia fragans (Dum.-Cours.) Standley

(Nyctaginaceae)

DISTRIBUTION: A tree, growing in forest, thickets and on hillsides, at lower and middle elevations, in dry and moist districts of Puerto Rico, ascending to 900 meters. Also recorded from Icacos, Culebra, St. Croix, St. Thomas, Tortola, Virgin Gorda, Cuba, Hispaniola, Jamaica, Central and South America.

COMMON NAMES: "Corcho," "Corcho prieto," "Majagua," "Majagua quemona," "Majagua quemadora," "Palo de corcho" and Black Mampoo.

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

Pseudococcus nipae (Maskell)

(Coccidae) Leaves infested, on their undersides, at Guajataca Gorge, near Quebradillas, Nov. 17, 1940; also at Yabucoa, on the Maunabo road, altitude 500 ft., Oct. 20, 1940. (LFM.)

COLEOPTERA

Exophthalmodes quindecimpunctatus (Olivier)

(Curculionidae) A 21-spotted iridescent weevil, feeding on the foliage of tree, at Yabucoa, (SIB:103), 1940. Listed as *Prepodes 15-punctatus* Olivier. Collected several times; at Yabucoa, during 1940 and 1941; also at Maunabo, at Cabo de Mala Pascua, altitude 150 ft. from August to December, 1940. (LFM.)

Diaprepes abbreviatus (Linnaeus)

(Curculionidae) Weevils feeding on the foliage, at the same time as the above species, at Yabucoa, on the Maunabo road, altitude 500 ft., Aug. 27, 1940; also at Salinas, on the Cayey road, altitude 1,000 ft., on May 1942. (LFM.)

HYMENOPTERA

Isostasius sp.

(Platygasteridae) Reared from galls on the leaves of a tree, at Yabucoa, altitude 500 ft. Presumably parasitic on the larvae of the insect causing the galls. The galls extremely abundant on the foliage, Oct. 20, 1940. (LFM.)

Torrubia

Insects Affecting the Twigs

HOMOPTERA

(Fulgoridae)

Ormenis pygmaea (Fabricius)

Adults abundant on twigs and smaller branches of tree, on the Vigía-Isloote road, near Arecibo, Oct. 23, 1940. (LFM.)

Ormenis marginata (Brunnich)

Adults abundant, but not so much as *O. pygmaea* (Fabricius); on twigs, sometimes going under the leaves, at Arecibo, Oct. 23, 1940. (LFM.)

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Tunnels on trunk of two large trees, on the Yabucoa-Maunabo road, at 500 and 800 ft. altitude, Oct. 20, 1940; also at Manatí, Sept. 27, 1940. (LFM.)

Trema

Trema lamarckiana (R. & S.) Blume

(Ulmaceae)

DISTRIBUTION: A tree, growing in thickets and on hillsides, in Puerto Rico. Also recorded from Florida, Bermuda, Bahamas, Cuba, Jamaica, Hispaniola and from Saba to St. Vincent.

COMMON NAMES: "Palo de cabrilla" and "Cabrilla."

INSECT RECORDS

Insects Affecting the Leaves and Twigs

HOMOPTERA

(Coccidae)

Pseudococcus nipae (Maskell)

Abundant on the undersides of leaves, at El Yunque Mts., altitude 1,800 ft., Sept. 29, 1940. (LFM.)

Pulvinaria psidii Maskell

Not very abundant, but present on twigs and undersides of leaves, on large trees, near Stone House, at Buena Vista Camp, Maricao Insular Forest, altitude 2,200 ft., May 31, 1942. (LFM.)

Saissetia oleae (Bernard)

Few scale insects, on the twigs of a tree, at the Maricao Insular Forest, altitude 2,200 ft., May 31, 1942. (LFM.)

Insects Affecting the Branches and Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Fairly large tree, on the Cayey-Salinas road, Km. 13.1, attacked by termites, many tunnels on the trunk, Dec. 24, 1940. (LFM.)

HOMOPTERA

Pseudaulacaspis pentagona (Targioni)

(Coccidae) Heavy infestation on trunk and branches of a young tree, at El Yunque Mts., altitude 1,800 ft., Sept. 29, 1940. (det: Morrison.) (LFM.)

Pinnaspis minor (Maskell)

(Coccidae) Trunk and branches of a tree, at the Maricao Insular Forest, heavily infested, altitude 2,200 ft. May 31, 1942. The scale insect kept under control by means of the larvae and adults of the ladybird beetle, *Chilocorus cacti* (L.).

COLEOPTERA

Chilocorus cacti (Linnaeus)

(Coccinellidae) Larvae and adult very abundant, feeding on scale

Trema

insects, *Pinnaspis minor* (Maskell), on trunk and branches of a tree, at the Maricao Insular Forest, altitude 2,200 ft., May 31, 1942. (LFM.)

Trema micrantha (L.) Blume

(Ulmaceae)

DISTRIBUTION: A tree, growing in woodlands and on hillsides, in Puerto Rico. Also recorded from St. Jan, St. Croix, St. Thomas, Tortola, Cuba to Trinidad and continental tropical America.

USES: The light brown, weak and soft wood, is locally used for fuel and charcoal.

COMMON NAMES: "Guacimilla" and "Palo de cabra."

INSECT RECORDS

Insects Affecting the Leaves

COLEOPTERA

Lactica scutellaris Olivier

(Chrysomelidae) In mountains north of Yauco, listed (IB:279), 1921. (Perhaps feeding on the foliage.)

LEPIDOPTERA

Hypanartia paullus (Fabricius)

(Nymphalidae) caterpillar on tree at Ciales and in the mountains north of Yauco, (IB:398), 1921 and 1923. Caterpillar defoliating tree, at El Yunque Mts. altitude 1,800 ft., March 1941. (GNW.)

Insects Affecting the Trunk and Branches

HOMOPTERA

(Coccidae)

Saissetia oleae (Bernard)

Heavy infestation on trunk and branches and even on young twigs of tree, at Aguas Buenas, altitude 800 ft., 1941. (LFM.)

Trema

Pseudaulacaspis pentagona (Targioni)

Listed (IB:136), 1914, as *Aulacaspis pentagona* Targioni.

Pinnaspis minor (Maskell)

Trunk and branches fully infested by the scale insect, at Aguas Buenas, altitude 800 ft., 1941. (LFM.)

Trichilia

Trichilia hirta L.

(Meliaceae)

DISTRIBUTION: A tree, growing in thickets, on hillsides, river banks and along creeks at lower elevations in Puerto Rico. Also recorded from Vieques, St. Thomas, St. Croix, St. Jan, Cuba, Jamaica, Hispaniola and continental tropical America.

USES: The stems of young trees are used for broom handles.

COMMON NAMES: "Cabo de hacha," "Guaita," "Retamo," "Jobillo," "Molinillo," "Palo de Anastasio," "Guayavacón," and Broomstick.

INSECT RECORDS

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Tunnels on trees, at Salinas, Guánica and Arecibo, Sept. to Dec. 1940; all at low altitudes. (LFM.)

Trichilia pallida Sw.

(Meliaceae)

DISTRIBUTION: A tree, growing in woodlands, forests and valleys, ascending to higher elevations in Puerto Rico. Also recorded from Cuba and Hispaniola.

Trichilia

COMMON NAMES: "Gaeta," "Cabo de hacha," "Caracolillo," and "Ramoncillo."

INSECT RECORDS

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Nest and tunnels on trees, at Salinas, on the Guayama road, Sept. 1940. (LFM.)

Triplaris

Triplaris caracasana Cham.

(Polygonaceae)

DISTRIBUTION: A Venezuelan tree, introduced into Puerto Rico and planted at the Agricultural Experiment Station of Mayagüez and Río Piedras.

USES: Planted as an ornamental and shade tree.

COMMON NAME: "Triplaria."

INSECT RECORDS

Insects Affecting the Leaves

COLEOPTERA

Diaprepes abbreviatus (Linnaeus)

(Curculionidae) Weevils feeding on the leaves of a large tree, at the Agricultural Experiment Station grounds at Río Piedras, May 13, 1942. (LFM.)

LEPIDOPTERA

Megalopyge krugii (Dewitz)

(Megalopygidae) Caterpillars feeding on the foliage, pupal cases or cocoons abundant on the branches, on trees at Río Piedras, May 13, 1942. (LFM.)

Triplaris

Insects Affecting the Trunk

Myrmelachista ramulorum (Wheeler)

(Formicidae) Ants abundant under the loose bark of trees at Experiment Station grounds, Río Piedras, Nov. 5, 1943. (GNW.)

Vachellia

Vachellia farnesiana (L.) Wight & Arn.

(Mimosaceae)

DISTRIBUTION: A tree, growing in thickets at lower elevations, mostly in the dry districts of Puerto Rico. Also recorded from Vieques, St. Croix, St. Thomas, St. Jan. Tortola, Virgin Gorda, Florida, Cuba, Jamaica, Hispaniola, continental tropical America and the Old World tropics.

USES: The handsomely grained, heavy, reddish brown wood, is used in construction and wherever strength and durability are required. Probably a very suitable wood for furniture. In southern Europe the flowers are used in the manufacture of perfumes. In Mexico the roots and pods are used medicinally.

COMMON NAMES: "Aroma," "Aromo" and Casha.

INSECT RECORDS

Insects Affecting the Leaves

HOMOPTERA

Heteropsylla mimosae Crawford

(Chermidae) Very abundant on the foliage, at Guánica and Guayanilla, listed (IB:111), 1913.

Insects Affecting the Fruits

Cathartus gemellatus (Jacq.)

(Cucujidae) At Boquerón, listed (IB:221), 1923, as *Silvanus gemellatus* Jacq.

Loberus testaceus Reitter

(Cryptophagidae) At Boquerón, (IB:223), 1923.

Vachellia

Lepturges guadeloupensis Fleutiaux & Sallé

(Cerambycidae) Reared from pods, at Boquerón, (IB :264), 1923.

Acanthoscelides sallei (Sharp)

(Bruchidae) At Boquerón, listed (IB :286), 1923.

Acanthoscelides dominicanus (Jekel)

At Guánica and Boquerón, listed (IB :287), 1914 and 1923. Listed as *Bruchus dominicanus* Jekel.

Brachytarsoides sp.

(Anthribidae) From pods, at Boquerón, (IB :288), 1923. Listed as *Brachytarsus* sp.

HYMENOPTERA

Horismenus sp.

(Entedontidae) From seed pods of tree, infested with *Bruchus* sp., at Guánica, (IB :523), 1914.

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) On trunk of trees at the Guánica Insular Forest, very abundant and many trees attacked, July 1941. (LFM.)

Varronia

Varronia angustifolia West.

(Ehretiaceae)

DISTRIBUTION: A shrub, growing in thickets and on hillsides, in the southern and southwestern dry districts of Puerto Rico, at lower and middle elevations. Also recorded from St. Croix, St. Thomas, Cuba and Hispaniola.

COMMON NAME: "Basora."

Varronia

INSECT RECORDS

Insects Affecting the Leaves and Twigs

HOMOPTERA

Ormenis pygmaea (Fabricius)

(Fulgoridae) At Guánica, (IB:103), 1913. Host tree listed as *Cordia cylindrostacha* = *V. angustifolia* West.

COLEOPTERA

Phyllophaga guanicana (Smyth)

(Scarabaeidae) Feeding on leaves of trees, at Guánica, (IB:251). Host tree listed as *Cordia cylindrostacha* = *V. angustifolia* West.

Lachnopus curvipes (Fabricius)

At Yauco, (IB:302), 1913. Host tree listed as *Cordia cylindrostacha* = *V. angustifolia* West.

Varronia corymbosa (L.) Desv.

(Ehretiaceae)

DISTRIBUTION: A shrub, growing in thickets and on hillsides, at lower and middle elevations, in Puerto Rico. Also recorded from Vieques, St. Croix, St. Thomas, St. Jan, Tortola, Jamaica, Cuba, Hispaniola, from Guadeloupe to Trinidad and continental tropical America.

COMMON NAMES: "Basora prieta," "Palo de perico," "Perico," "Sara-güazo," "Saragüero" and Black sage.

INSECT RECORDS

Insects Affecting the Twigs

HOMOPTERA

Ormenis pygmaea (Fabricius)

(Fulgoridae) Listed (IB:103), 1912.

Ormenis quadripunctata (Fabricius)

Listed (IB:103), 1912.

Vitex

Vitex divaricata Sw.

(Verbenaceae)

DISTRIBUTION: A tree, growing in woods, in wet or moist districts of Puerto Rico, ascending to higher elevations. Also recorded from St. Croix, St. Thomas, St. Jan, Cuba, St. Kitts and from Guadaloupe to Trinidad.

USES: The nearly white wood, is hard and durable and is used in cabinet work and construction.

COMMON NAMES: "Higüerillo," "Péndula," "Palo de péndula," "Péndulo blanco," Lizard wood and Fiddle wood. (Br. W. I.)

INSECT RECORDS

Insect Affecting the Leaves

HOMOPTERA

Aspidiotus cyanophylli Signoret
(Coccidae) Listed (IB:137).

COLEOPTERA

Lachnopus coffeae Marshall
(Curculionidae) Listed (IB:300). Perhaps feeding on the foliage of tree.

Rodolia cardinalis (Mulsant)
(Coccinellidae) One specimen collected on the foliage of a tree, apparently looking to prey upon one of its hosts, near Peñón del Collao, altitude 1,800 ft., Cayey, Feb. 2, 1941. (det: Chapin) (LFM.).

LEPIDOPTERA

Pilocrocis inguinalis (Guenée)
(Pyraustidae) Caterpillar a leaf-webber, causing considerable damage on trees, at El Peñón del Collao, altitude 1,800-2,000 ft., Cayey, Jan. 7, 1941. (det: Heinrich, as sp. presumably *inguinalis* (Guenée)). (LFM.)

Pyrausta cerata (Fabricius)
(Pyraustidae) Caterpillars abundant on trees, at Aibonito and Trujillo Alto, (IB:467), 1923. Abundant on trees at Patillas, May 1940. (D. DeLeón.)

Vitex

DIPTERA

Argyrophylax albincisa (Wiedemann)

(Larvaevoridae) One fly reared from a caterpillar of the leaf-webber, *Pilocrocis inguinalis* (Guenée), collected near Peñón del Collao, Cayey, altitude 2,000 ft., Jan. 15, 1941. (LFM.)

HYMENOPTERA

Microgaster sp.

(Braconidae) Reared from a caterpillar of *Pilocrocis inguinalis*, (Guenée), abundant and many reared from other caterpillars, collected near Peñón del Collao, altitude 2,000 ft., Jan. 7, 1941. (det: Muesebeck, as "sp. nov.") (LFM.)

Eiphosoma insularis Viereck

(Ichneumonidae) Reared from the leaf-roller caterpillar, *Pyrausta cerata* (Fabricius), collected at Patillas May 1940. (D. DeLeón.) (LFM.)

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Nest and tunnels on trunk of a large tree, about 15 inches in diameter, at Lares, altitude 1,200 ft., Nov. 25, 1940. (LFM.)

*Zanthoxylum**Zanthoxylum caribaeum* Lam.

(Rutaceae)

DISTRIBUTION: A tree, growing in woods and on hillsides at lower elevations in the southern and western districts of Puerto Rico. Also recorded from Guadeloupe, Martinique, Barbados, Mexico and northern South America.

USES: Not used locally.

COMMON NAMES: "Espino rubial," "Rubial" and Bastard prickly yellow (Br. Honduras).

Zanthoxylum

INSECT RECORDS

Insects Affecting the Leaves

HEMIPTERA

Corythucha gossypii (Fabricius)

(Tingitidae) On leaves, adults and nymphs in all stages abundant, (SIB:70). (LFM.)

COLEOPTERA

Diaprepes abbreviatus (Linnaeus)

(Curculionidae) Adults feeding on the foliage, at Isabela, (SIB:103), 1939. (LFM.)

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Tunnels on trunk of tree, at El Vigía-Isote road, near Arecibo, Dec. 1, 1940; also on large tree at Guajataca, Nov. 17, 1940. (LFM.)

HYMENOPTERA

Camponotus ustus Forel

(Formicidae) Ants breeding in rotten branches and in the trunk of a tree, at Guajataca Gorge, near Quebradillas, altitude 20 ft., adults and pupae abundant inside bores, Nov. 24, 1940. (LFM.)

Zanthoxylum flavum Vahl.

(Rutaceae)

DISTRIBUTION: A tree, growing on hillsides at low elevations, in the western districts of Puerto Rico and near Quebradillas. Also recorded from St. Jan, Florida, Bermuda, Bahamas, Jamaica, Cuba, Hispaniola and from Montserrat to St. Lucia.

USES: The hard, strong and heavy, yellow wood, is valued for cabinet work, furniture and veneer work.

COMMON NAMES: "Aceitillo," Satinwood and Yellow sander.

Zanthoxylum

INSECT RECORDS

Insects Affecting the Seeds

COLEOPTERA

Apion martinezi Marshall

(Curculionidae) Reared from seeds collected at Guánica Insular Forest. About forty per cent of the seeds infested, on trees at Buena Vista Camp, elevation 2,700 ft., Maricao, reared by E. Martínez, (IB:292), 1932. Further observations during 1939 to 1942, have shown that this insect is very abundant, at Maricao and Guánica Forests, and destroys so many seeds, that very few are left available for reforestation purposes. (LFM.)

HYMENOPTERA

Emersonopsis sp.

(Entedontidae) Many parasitic wasps reared from the seeds, infested by larvae of the weevil, *Apion martinezi* Marshall, collected at the Maricao Insular Forest, July 20, 1941. (LFM.)

Insects Affecting the Leaves and Twigs

HOMOPTERA

(Coccidae)

Asterolecanium pustulans (Cockerell)

Twigs infested, young tree about 12 ft. high, at Santurce, (SIB:57), 1940. (LFM.)

Saissetia oleae (Bernard)

On twigs and the undersides of leaves, abundant, on a small tree, about 12 ft. high, at Santurce, (SIB:57), 1940. (LFM.)

Pinnaspis minor (Maskell)

On twigs and leaves, on a small tree, 12 ft. high, at Santurce, (SIB:60), 1940.

Aonidiella orientalis (Newstead)

On twigs, leaves and even on the trunk, of a small tree, at the Guánica Insular Forest (SIB:60), 1938. Listed as: *Aspidiotus coccoliphagus* (Marlatt). (LFM.)

Zanthoxylum

HEMIPTERA

Corythucha gossypii (Fabricius)

(Tingitidae) Abundant on the undersides of leaves, on trees at the Guánica Insular Forest, causing chlorosis of leaves, also at Santurce, 1940. (LFM.)

HYMENOPTERA

Solenopsis geminata (Fabricius)

(Formicidae) Attending scale insects, infesting a small tree, about 12 ft. high, at Santurce, 1940. Very abundant and with the nest at the base of the trunk; controlled by means of carbolic acid emulsion. (LFM.)

Insects Affecting the Trunk

COLEOPTERA

Chrysobothris megacephala Castelnau & Gory

(Buprestidae) Larvae attacking trunk of tree, at the Guánica Insular Forest, many adults reared, (SIB:88), 1938. (LFM.)

Phloeonemus martorelli Fisher

(Colydiidae) Abundant at the base, on trunk of trees, on gummy exudations, perhaps caused by cuts, with "machetes" (daggers) while clearing the forest. May 1940. (D. DeLeón & LFM.)

Tenebroides sp.

(Ostomidae) Reared from trunk of trees, at the Guánica Insular Forest, April 1940. Larvae and adults collected. (D. DeLeón.)

Elaphidion mutatum Gahan

(Cerambycidae) Larvae in live tree, at the Guánica Insular Forest, collected twice and reared to adults, (SIB:99), 1938. (LFM.)

Leptostylus argentatus J. Duval

(Cerambycidae) Reared from the trunk of a tree, at the Guánica Insular Forest. Abundant and boring in many trees, (SIB:99), 1938. (LFM.)

*Zanthoxylum**Zanthoxylum martinicense* (Lam.) DC.

(Rutaceae)

DISTRIBUTION: A tree, growing in forest, river valleys, on wooded hills and along creeks, at lower and middle elevations in moist and dry districts of Puerto Rico. Also recorded from Vieques, St. Croix, St. Thomas, St. Jan, Tortola, Jamaica, Cuba, Hispaniola, from Montserrat to Trinidad and northern South America.

USES: The light yellow, hard and strong wood, with a specific gravity of about 0.93, is used for furniture and in carpentry, as well as general construction.

COMMON NAMES: "Cenizo," "Espino," "Espino rubial," "Ayúa," White prickle and Prickly ash.

INSECT RECORDS

Insects Affecting the Leaves

LEPIDOPTERA

Papilio pelasus (Fabricius)

(Papilionidae) Twenty fully-grown caterpillars clustered on tree trunk, on web they had spun, unmoved by ant biting one, or by a lizard running over the group, at Cayey, 1922. Also collected at Barranquitas, (IB:406), 1924.

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Large tree, with many tunnels on the trunk, termites very active, at Caguas, Oct. 20, 1940. (LFM.)

Zanthoxylum monophyllum Lam.

(Rutaceae)

DISTRIBUTION: A shrub or a small tree, growing in woodlands, thickets, on hillsides and along creeks, at lower elevations, most abundant in the

Zanthoxylum

dry southern districts of Puerto Rico. Also recorded from Vieques, St. Croix St. Thomas, St. Jan, Hispaniola, from Montserrat to Trinidad, Costa Rica and northern South America.

COMMON NAMES: "Carubio," "Mapurito," "Rubia," "Espino rubial" and Yellow prickle.

INSECT RECORDS

Insects Affecting the Leaves

THYSANOPTERA

Selenothrips rubrocinctus (Giard)

(Thripidae) Attacking the foliage of a small tree, at Guayama, causing chlorosis of leaves, Nov. 14, 1940. (LFM.)

HEMIPTERA

Corythucha gossypii (Fabricius)

(Tingitidae) Listed (SIB:70), 1940. Heavy infestation on a small tree, about 10 ft. high. Chlorosis of leaves very noticeable, Guayama, Nov. 14, 1940. (LFM.)

LEPIDOPTERA

Achylodes thraso (Hübner)

(Hesperiidae) Caterpillar feeding on the foliage of tree, at Boquerón, (IB:408), 1923.

Insects Affecting the Twigs

HOMOPTERA

Ormenis pygmaea (Fabricius)

(Fulgoridae) Breeding abundantly on the lower branches and twigs of a small tree, about 10 ft. high, at Guayama, altitude 40 ft., Nov. 14, 1940. (LFM.)

Insects Affecting the Trunk

ISOPTERA

Nasutitermes (N.) *costalis* (Holmgren)

(Termitidae) Tunnels on the trunk of a large tree, at Maunabo, altitude 150 ft., Oct. 20, 1940. (LFM.)