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Floristic Checklist of the Mache-Chindul
Mountains of Northwestern Ecuador

by
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ABSTRACT

Clark, John L., David A. Neill, and Mercedes Asanza. Floristic Checklist of the Mache-Chindul Mountains of Northwestern Ecuador. *Contributions from the United States National Herbarium*, volume 54, 180 pages (including 23 figures). An inventory of the vascular plants of the Mache-Chindul Mountains is presented from collecting expeditions beginning in 1991 to present. The Mache-Chindul Mountains reach an elevation of 800 meters and are located in northwestern Ecuador in the southernmost part of the province of Esmeraldas (00°21'N 79°44'W) and the northernmost part of the province of Manabí (00°25'S 79°57'W). The Pacific Ocean lies 20-30 km due west and the equator transects the middle of this mountain range. The Mache-Chindul range occupies about 400 km² and harbors the last large tract of coastal wet forest in Ecuador, an area less than 4% of its original size. Important protected areas include the Reserva Ecológica Mache-Chindul, Bilsa Biological Station, Bosque Protector Cerro Pata de Pájaro, and the Reserva Lalo Loor. An inventory of the 6,000 collections made from the region has resulted in the enumeration of 1,346 vascular plant taxa that are native to the study area; non-native and introduced species were not heavily sampled and nearly 2,400 collections (40%) are only determined to genus. A biogeographic analysis is presented based on 1,318 native species. A total of 162 species (12%) are endemic to the western lowlands of coastal Ecuador. The Mache-Chindul flora shares 865 species (66%) with the lowlands of Amazonia, across the barrier of the Andes, and 957 species (73%) are shared with the Chocó region of coastal Colombia. A total of 814 species (61%) extend farther to the north into Mesoamerica. The botanical explorations in the Mache-Chindul Mountains have resulted in the publication of two new monotypic genera and 33 species recently described as new to science. An annotated list of species by family is given that includes the publication citation, a representative specimen, elevation range, habitat preference, and phytogeographic region for each species.

KEY WORDS: biogeography, biodiversity, Ecuador, floristics, Mache-Chindul Mountains, vascular plants

RESUMEN

Clark, John L., David A. Neill, and Mercedes Asanza. Floristic Checklist of the Mache-Chindul Mountains of Northwestern Ecuador. *Contributions from the United States National Herbarium*, volume 54, 180 páginas (incluyendo 23 figuras). Se presenta un inventario de las plantas vasculares de la Cordillera Mache-Chindul, basado en las expediciones botánicas desde el año 1991 hasta la actualidad. Las montañas de Mache-Chindul alcanzan una altitud máxima de 800 m.s.n.m. y están ubicadas en el noroccidente del Ecuador, en el extremo sur de la provincia de Esmeraldas (00°21'N 79°44'W) y el extremo norte de la provincia de Manabí (00°25'S 79°57'W). La costa del Océano Pacífico está entre 20-30 km al oeste, y la línea equinocial divide en la mitad a esta Cordillera. Mache-Chindul comprende alrededor de 400 km² y abarca el último remanente grande de bosque muy húmedo tropical en la Costa del Ecuador, un área de menos de 4% de su extensión original. Las principales áreas protegidas en la región incluyen la Reserva Ecológica Mache-Chindul, la Estación Biológica Bilsa, el Bosque Protector Cerro Pata de Pájaro, y la Reserva de Lalo Loor. Un inventario de las 6,000 colecciones de plantas de la región da como resultado el listado de 1,346 especies de plantas vasculares nativas al área de estudio. No se realizó un inventario completo de las especies introducidas y cultivadas, y casi 2,400 colecciones (40% del total) están identificadas solamente a nivel de género. Se presenta un análisis biogeográfico, en base de 1,318 especies nativas. Un total de 162 especies (12%) son endémicas a la Costa del occidente del Ecuador. La flora de Mache-Chindul comparte 865 especies (66% del total) con las tierras bajas de la Amazonía, a través de la barrera de los Andes, y 957 especies (73%) se comparten con la región del Chocó en la costa occidental de Colombia. Un total de 814 especies (61%) se extienden más al norte hacia el istmo de Mesoamérica. Las exploraciones botánicas en la Cordillera Mache-Chindul han tenido como resultado la publicación de dos nuevos géneros monotípicos, y 33 especies descritas recientemente como nuevas para la ciencia. Se presenta un listado de las especies, con comentarios, organizado por familia taxonómica e incluyendo la cita de la publicación, un espécimen representativo, rango de altitud, hábito, y distribución fitogeográfica de cada especie.

PALABRAS CLAVES: biogeografía, biodiversidad, Ecuador, flora, Cordillera Mache-Chindul, plantas vasculares

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Cover Design by Alice R. Tangerini: front, detail of *Gasteranthus bilasensis* L.E. Skog & L.P.Kvist (*P. Mendoza-T. et al. 561*, *J.L. Clark et al. 213*, and *N. Pitman et al. 884*) illustrated by Cathy Pasquale-Johnson; back, detail of *Ecuadendron acosta-solisianum* D.A. Neill (*D.A. Neill, H. Vargas, T. Núñez & J.L. Clark 10437*) illustrated by John Myers.

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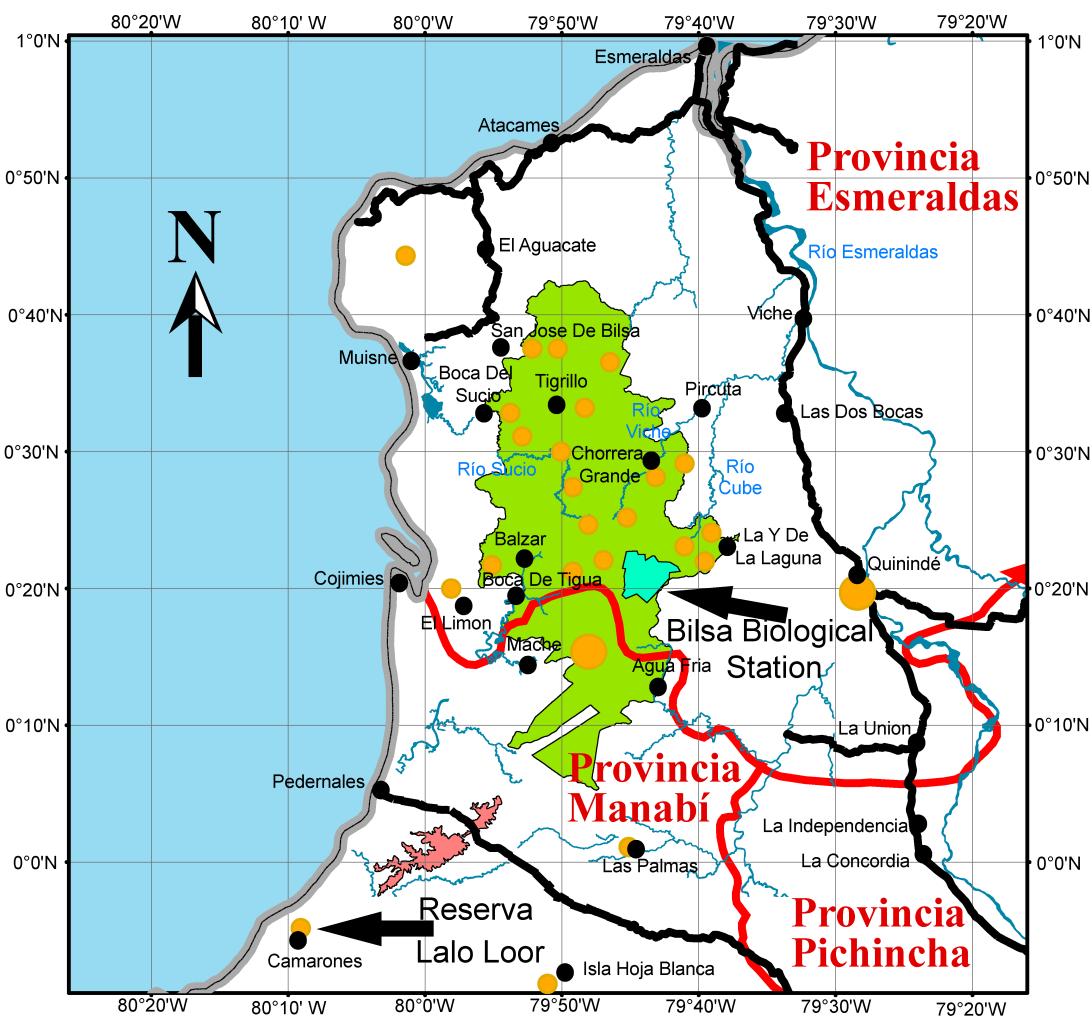
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Legend

- | | |
|---|---|
| <ul style="list-style-type: none"> Reserva Ecológica Mache-Chindul Bilsa Biological Station (> 3500 collections) Bosque Protector Cerro Pata de Pájaro (> 200 collections) Rivers | <ul style="list-style-type: none"> = 1 - 100 collections = > 100 collections |
| — Province Boundary — Highways | |
| | |

Figure 1. Map of study area. Intensity of collecting is indicated by orange circles (Bilsa Biological Station and Cerro Pata de Pájaro represent the two most intensely collected localities with c.a. 3500 and 400 collections respectively).

Floristic Checklist of the Mache-Chindul Mountains of Northwestern Ecuador

John L. Clark¹, David A. Neill², and Mercedes Asanza³

INTRODUCTION

The Mache-Chindul Mountains comprise the northern portion of the Pacific coastal range of western Ecuador where significant tracts of remnant forests are intact. These mountains reach 800 m in elevation and extend from southwestern Esmeraldas province to northern Manabí province. Results presented here are from intensive floristic inventory expeditions of the Mache-Chindul Mountains carried out from September 1994 to August 2003, as well as earlier collections made by A.H. Gentry in January 1991 (Gentry, 1992; Parker & Carr, 1992). Nearly 6,000 herbarium collections were obtained and more than 3,600 have been determined by specialists. Expeditions were conducted throughout many regions of the study site with the most intensive collecting in and around the forests of the Bilsa Biological Station, a privately-owned reserve of 4,000 hectares in the eastern portion of the Mache-Chindul Mountains. The Mache-Chindul Mountains harbor the last large tract of coastal wet forest in Ecuador, an area of about 400 km². This represents less than 4% of the original coastal wet forest and this remnant is being rapidly fragmented and cleared. The Tercer Mundo Foundation administers the Cerro Pata de Pájaro Protection Forest which is located near the southern extent of the range and this area has a drier climate than the central portion of the Mache-Chindul Mountains. In August of 1996, 70,000

hectares were set aside by Ecuador's Ministry of Environment, in the established protected area, "Reserva Ecológica Mache-Chindul."

The study area covered by this checklist includes the western Ecuador coastal range from the region southeast of the provincial capital city of Esmeraldas (northern limit of study area at about 00°45' N) to the region just east of the coastal town of Jama in northern Manabí province (southern limit of study area at about 00°15'S; see Figure 1, map of study area). The coastal range extends farther south than the latitude of Jama, throughout the length of Manabí province, but the original vegetation has been removed or highly disturbed south of our study area, and the climate is progressively drier as one travels further south. Our study area does not include the beach or mangrove vegetation of the coastal zone, but it does include botanical collections made close to sea level at the western margin of the coastal range.

METHODS

A majority of the field work for this publication was conducted through general collecting of plants found in fruit or flower during daily forays into the forest. Most collecting was based from rural communities (i.e., 1-2 days of

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traveling from the nearest road). Therefore, the range of collecting activities in a specific region was contingent on how far a team of botanists could walk in a specific locality in any given day. Numerous extensive treks across the mountains from east to west were conducted by John Clark in 1995, 1996, and 1997. Plant collections were stored in plastic bags during the day and then pressed in newspaper at night and preserved in 70% alcohol until they could be dried in the National Herbarium of Ecuador in Quito.

We also conducted quantitative ecological studies of forest structure and composition at the Bilsa Biological Station, establishing three one-hectare permanent sample plots in primary forest. In each plot, a 100 X 100 m grid was first laid out. Then each tree in the plot with a diameter at breast height (DBH) of 10 cm or greater was measured and marked with a numbered aluminum tag. Voucher specimens were collected from trees using extendable aluminum clipper poles. Obtaining botanical specimens from taller trees often required climbing the trunk with semi-circular, spiked tree climbers strapped to one's feet. Voucher specimens were not collected from trees that could be positively identified in the field. Two to three weeks of field work were required to establish each permanent forest plot.

The first one-hectare plot at the Bilsa Biological Station was established in February 1996 and is located on a slope about 500 m from the main house at about 550 m elevation. The second permanent plot was established in April of 1997 at the highest peak within the Bilsa station property, at 700 m, several kilometers north of the station house. The third permanent plot was established in August of 1997 on a ridge above the headwaters of the Cube River, about 1 km west of the station house. The three permanent plots represent a broad range of vegetation types present at the Bilsa Biological Station.

More recently, in 2005, two one-hectare forest inventory plots were established at the Lalo Loor Reserve, at the southern extremity of our study area in northwest Manabí province, by an Ecuadorian undergraduate student, Jimmy Cevallos, under the supervision of the second author. These plots are

the only quantitative inventory in coastal Ecuador at the ecological transition between semi-evergreen moist forest and deciduous dry forest, a vegetation type that is nearly extinct in the region due to deforestation during the past several decades. The results of the plot-based inventories at Bilsa and Lalo Loor will be presented in future publications.

Botanical specimens were dried and processed at the National Herbarium of Ecuador in Quito. The collection data were entered into the TROPICOS botanical database developed by Missouri Botanical Garden. Duplicate specimens were shipped to Missouri Botanical Garden where they were then shipped to taxonomic specialists at various botanical institutions around the world. Determinations from specialists were entered in the Tropicos database and this information is updated and maintained on the web at <http://mobot.mobot.org/W3T/Search/Ecuador/projsbil.html>.

CLIMATE AND TOPOGRAPHY

The Mache-Chindul Mountains are located in northwestern Ecuador in the southernmost part of the province of Esmeraldas ($00^{\circ}21'N$ $79^{\circ}44'W$) and northern most part of Manabí ($00^{\circ}25'S$ $79^{\circ}57'W$). The Pacific Ocean ranges from 20-30 km due west and the equator transects the middle of the mountain range. It is an important watershed for the Dogala and Cube Rivers that drain into the Quinindé and Esmeraldas rivers, respectively. The area is mountainous, with steep slopes, and reaches an elevation of 800 meters.

There is a pronounced wet season between December and June that restricts interior access to foot, horse or mule. After the end of the rainy season, it may take three months for the logging road to dry and be cleared for motorized vehicle access. Upper regions of the mountains are constantly covered in mist and fog created by orographic uplift from ocean currents, from which it derives its local name, "El Páramo." The annual precipitation is probably between 2,500 to 4,000 mm, but because mist and fog are not measured, no accurate data exist. The average temperature is between 23 and 25.5°C.

PHYTOGEOGRAPHY AND VEGETATION

The latest vegetation map of Ecuador (Sierra *et al.*, 1999) places the Mache-Chindul Mountains in the categories of evergreen premontane and evergreen lower montane forest (*Bosque Siempreverde Piemontano* and *Bosque Siempreverde Montano Bajo*). Cañadas (1983) placed the Mache-Chindul Mountains in the categories of tropical and premontane wet forest. This area can also be considered the southern extent of the Chocó floristic regions of western Colombia, because of similarities in species and the general abundance of epiphytes, lichens, and mosses in the upper regions of the mountains.

At 15 minutes latitude north, about 40 km north of Pedernales, the natural vegetation of the coastal strip is lowland wet forest with typical canopy trees such as *Virola dixonii* and *Brosmum utile*, and with abundant epiphytes and hemi-epiphytes. The forest is being rapidly cut as colonists move into the area along the new coastal road which is under construction, and which now extends north of the Chindul River, 40 km north of Pedernales.

Traveling south along the coastal trip and approaching the equator, wet forest gives way to moist forest, which has a dry season of 4-6 months. The ground retains sufficient moisture such that most canopy trees are evergreen and retain their leaves throughout the year. The town of Pedernales, a few km north of the equator, is in the moist forest zone, but the lands near the town have been deforested. Continuing south of the equator, as the average annual precipitation decreases gradually and the length and severity of the dry season increases, moist forest gives way to dry forest, in which most of the canopy trees shed their leaves during the dry season of 5 months or more. We carried out extensive fieldwork in an undisturbed, mature-phase tract of forest at Camarones, at 4 minutes south latitude, 25 km south of Pedernales. This area is precisely at the transition between moist and dry forest in the coastal hills along the intermittent streams and on the crest of the mountains where coastal fog is prevalent during

the dry season, the forest canopy remains evergreen, but on the drier low hillsides and the coastal plain, all trees are deciduous.

At the Camarones site, a 250-hectare biological reserve has been established by the owner, Mr. Lalo Loor, on part of his property; he runs dairy cattle on the narrow, flat coastal plain but has allowed the forest to stand on the hills up to the crest of the coastal range. The site is probably the largest fragment of tropical moist forest remaining in coastal Ecuador. Typical tree species in the moist forest phase include the large canopy palm *Attalea colenda* and the understory palm *Phytelephas aequatorialis*, both of which are endemic to the region and economically important; the latter species is the source of “vegetable ivory,” which is marketed as a substitute for elephant tusk ivory. Several endemic species of legume trees were also found in the moist forest: *Swartzia littlei* and *Inga jaunechensis*; both were previously known from very few collection localities in western Ecuador. A remarkable discovery in the moist forest at Camarones was the canopy tree *Exothea paniculata* (Sapindaceae), which is known from the Pacific coast of Mexico and Central America, and from the Greater Antilles in the Caribbean (Jamaica, Puerto Rico, Hispaniola). This tree was found once in the Magdalena River valley of Colombia, so our record from Camarones is the second report of the genus *Exothea* for South America and a new generic record for Ecuador. The botanical inventory of the region is still a work in progress, and continued field work will certainly reveal more taxonomic novelties in the flora.

Continuing south along the coastal strip, moist forest is replaced by dry forest. Near the town of Jama at 14 minutes south latitude, are a few intact remnants of dry forest that are very similar to the vegetation near Guayaquil, 300 km to the south. The most conspicuous tree is the endemic *Ceiba trichistandra*, with its characteristic grotesquely swollen trunk and limbs that are green and photosynthetic during the long dry season. Other tree species endemic to Ecuadorian coastal dry forest, such as *Machaerium millei* and *Pradosia montana*, are also present in the forest fragments near Jama.

BOTANICAL NOVELTIES

Results from the botanical explorations in the Mache-Chindul Mountains have produced two new monotypic genera and 33 species recently described as new to science (Table 1). Most of the new species are known from collecting activities that coincided with the establishment of the Bilsa Biological Station in September 1994. Many specimens remain a mystery to specialists. For example, a hemi-epiphytic *Ocotea* (Lauraceae) is a new habit for the Lauraceae family (Figure 4 A-B) and still lacks a specific epithet. Also in the Lauraceae family is a common canopy tree species from the genus *Chlorocardium* (Figure 4 C) that resembles *Chlorocardium venenosum* known from the Putumayo Department of the upper Amazonia border region of Colombia and Ecuador. The *Chlorocardium* species in the Mache-Chindul Mountains is locally common in an area southwest of the Bilsa Biological Station. This genus was recently described Rohwer *et al.* (1991), and remains poorly understood. When *Chlorocardium* was described, there was so little reproductive material available that the authors had to base their description on wood structure because most of the flower buds available for dissection had suffered fungal attack (Rohwer *et al.*, 1991). Although this canopy tree was only recently documented west of the Andes by botanists, it has been sought out and cut by loggers for years because of its fine yellow wood. Also a mystery is an undescribed species possibly assignable to the Boraginaceae that has not been determined to a known genus (R. Liesner, J.S. Miller, and P. Stevens, pers. comm.).

Two recently described monotypic genera from the region are *Ecuadendron* (Leguminosae or Fabaceae, subfamily Caesalpinioideae; Neill, 1998; see Figures 2 A-B & 11); and *Exarata* (Bignoniaceae; Gentry 1992; see Figures 9 A-B & 10). *Ecuadendron acosta-solisianum* (Neill 1998), is a large canopy tree with 2-meter long inflorescences and flowers adapted to pollination by bats. It is known from just three localities in western Ecuador: one in the Mache-Chindul Mountains, and two localities 350 km to the southeast at the western base of the Andes. *Exarata chocoensis* (Figures 9 A-B & 10) is locally

abundant tree, 20-30 m tall, and has also been collected in southwestern coastal Colombia. It has a berry-like fruit with vestigially winged seeds that resemble the hemi-epiphytic genus *Schlegelia*. The deeply canaliculate cross section of the trunk is a remarkable feature of this monotypic genus.

Klarobelia (Figures 5 C-D & 12) and *Monsannona* (Figures 5 A-B & 13) are two genera of Annonaceae that have been recently segregated from *Malmea* (Chatrou, 1998) and include newly described taxa from the Mache-Chindul region: *Mosannona pacifica* (Figures 5 A-B & 13) and *Klarobelia megalocarpa* (Figures 5 C-D & 12). *Klarobelia* comprises 12 species distributed east of the Andes in the upper Amazon basin of Colombia, Ecuador, Peru, Bolivia, and Brazil and west of the Andes from southern coastal Ecuador through the Isthmus of Panama, and up to southeastern Costa Rica. *Klarobelia megalocarpa* was collected for the first time in 1995 during the establishment of the first permanent plot and is only known from the environs of the Bilsa Biological Station (Chatrou, 1998). *Mosannona* comprises 14 described species which are widely distributed throughout the upper Amazon basin (Peru, Ecuador, Bolivia, and Brazil), the Guianas, and along the Pacific coast of Ecuador through Central America to Mexico. The recently described species, *Mosannona pacifica*, is known from only three localities: Rio Palenque Biological Station, Bilsa Biological Station, and Anchayacu. It is also the only species of *Mosannona* whose distribution is confined to the Pacific side of the Andes (Chatrou, 1998).

Many new species have been described from the collections made during the collecting expeditions throughout the Mache-Chindul Mountains. Most of the recently described species are local endemics while others are widespread throughout coastal Ecuador and western Colombia (Table 1). A remarkable discovery is the diversity of the genus *Gasteranthus* (Gesneriaceae) which includes three recently described species from the Bilsa Biological Station, all of them local endemics with very restricted ranges, as far as is known: *Gasteranthus bilsaensis*, *Gasteranthus tenellus* (Figure 6 B & D), and *Gasteranthus villosus* (Figure 6 A & C; see Skog & Kvist, 2000).

CONSERVATION STATUS

A number of publications on the conservation status of the Earth's terrestrial ecosystems during the past two decades indicate that the Andes and Chocó floristic regions of Ecuador are two of the most endangered habitats in the world (Myers, et al. 2000; Dodson & Gentry, 1991; Dinerstein, 1995, Neill, 1997; Simberloff, 1986). The tropical wet and moist forests of coastal Ecuador once spanned a continuous band from Colombia to Peru reaching up to 80 km wide near the northern extent and becoming very narrow and broken in southern Ecuador. In a 1991 visit to the region, Conservation International's Rapid Assessment Program (RAP) team identified Ecuador's coastal wet forest as one of the world's top conservation priorities because of the biological importance of and the immediate threats to remaining forest (Gentry, 1992). Dodson and Gentry (1991) estimated that while this forest type once covered 15% of western Ecuador, currently less than 0.8% of it (90 km^2) remains. One of the most important discoveries made by the RAP team was that there existed one large tract of intact wet forest, in the Mache-Chindul Mountains.

A subsequent study using LANDSAT imagery by Ecuador's national Conservation Data Center (CDC-Ecuador, 1995), estimated the remaining intact forest at 400 km^2 . This discovery gave scientists and conservationists a last chance to study and preserve this ecosystem. Acting on Conservation International's recommendations, Ecuador's non-profit Jatun Sacha Foundation established the Bilsa Biological Station in 1994. This private reserve is located near the southern tip of the remaining forest tract and now comprises 4,000 hectares.

The coastal region of Ecuador has become known, over the past several decades, as a region of high biological diversity and endemism, and also as a prime example of the world's conservation "hotspots" where high biodiversity coincides with high rates of human-caused destruction of native ecosystems and consequent endangerment of endemic species. One of the first botanical studies in the region was Elbert Little's illustrated book on the common trees of Esmeraldas province

(Little & Dixon, 1969). In the 1970s, botanists Calaway Dodson and Alwyn Gentry carried out a floristic survey of the Río Palenque Science Center, a lowland wet forest site in the fertile soils of the Guayas River valley. They encountered many species new to science in the small 100-hectare forest remnant at Río Palenque, which is now surrounded by agricultural crops and is one of very few tiny forest remnants in the valley. Their illustrated Flora of Río Palenque (Dodson & Gentry, 1978) was followed by the Flora de Jauneche, a moist forest site (i.e., intermediate along a moisture gradient between wet and dry forests) (Dodson *et al.*, 1985). Dodson and Gentry also worked on a manuscript for a third floristic study, the dry forest at Capeira near Guayaquil, but this work was incomplete at the time of Al Gentry's death in a plane crash west of Guayaquil in 1993, and remains unpublished.

HISTORY OF BOTANICAL EXPLORATION

The earliest known botanical collections from this region of northern Manabí and southwestern Esmeraldas were made in the 1890s by the Danish botanist, Henrik Baron von Eggers (Jørgensen & León-Yanez, 1999). Eggers' principal collecting locality was his hacienda, El Recreo, on the coast some 30 km south of the present-day town of Jama. This locality is outside of our present study area, but Eggers' collections were distributed to several European herbaria and are rich in types; a number of the species described from Eggers' collections were also collected during our fieldwork, especially in the southern (Manabí) portion of the present study area.

In the 1940s, Misael Acosta-Solís made some collections in the vicinity of Quinindé, to the west of the coastal mountains. Calaway Dodson's and Alwyn Gentry's botanical surveys in western Ecuador during the 1970s and 1980s were mostly concentrated in the Guayas River valley. The coastal range of mountains west of the Guayas basin, especially the northern part of the range in western Esmeraldas and northern Manabí provinces, remained largely unexplored until the 1990s. The northern part of the coastal range, known locally as the Mache and Chindul mountains, is higher, wetter and less easily

accessible than the central and southern parts of the range. The attention of biologists was focused on the Mache-Chindul Mountains during an expedition in 1991 organized by Conservation International through its “Rapid Assessment Program (RAP)”. The 1991 RAP expedition included botanist Al Gentry, ornithologist Ted Parker, mammalogist Louise Emmons, ecologist Robin Foster, and their Ecuadorian counterparts from the National Polytechnic and Catholic Universities in Quito. The botanical surveys made by the RAP expedition confirmed the high degree of endemism in the regional flora; an estimated 20% of the plant species are endemic to western Ecuador and adjacent areas of coastal Colombia and Peru. Also, the alpha diversity of woody plants is much lower than in the upper Amazon basin of Ecuador and Peru. During the expedition in the Mache-Chindul, Al Gentry collected specimens from a tree which he described as a new genus and species in the Bignoniaceae family: *Exarata chocoensis* A.H. Gentry published the following year in 1992.

The report of the 1991 RAP expedition to the coastal range of Ecuador (Parker & Carr, 1992) was widely circulated in Ecuador and helped to stimulate the interest of conservation groups in preserving the region’s biodiversity and endemic biota. In 1994, the Jatun Sacha Foundation of Ecuador began a campaign, led by Jatun Sacha co-founder Michael McColm to raise funds for purchase of forest land. The campaign was successful, and the Jatun Sacha Foundation established the Bilsa Biological Station with 750 hectares initially; the biological station has now increased in size to more than 4,000 hectares. Ecuador’s Conservation Data Center, with support from The Nature Conservancy, carried out in 1994-95 a feasibility study for establishment of a larger, publicly-owned reserve, and in August 1996 the government of Ecuador established the Mache-Chindul Ecological Reserve, an area of about 40,000 hectares in the central part of the range, by executive decree. Meanwhile, a local conservation group based in the coastal town of Pedernales, the Tercer Mundo Foundation, lobbied for establishment of a reserve on the Cerro Pata de Pájaro, one of the highest peaks in the range, located 15 km east of Pedernales, and the Cerro Pata de Pájaro Protection Forest was decreed in

May 1994. The Tercer Mundo Foundation was given responsibility for management and protection of the Pata de Pájaro.

BIOGEOGRAPHICAL ANALYSIS OF THE VASCULAR FLORA

We analyzed the geographical distribution of all the vascular plant species recorded from the Mache-Chindul mountains in the present checklist. The known distributions of plants included in the checklist were compiled from recent floristic literature, taxonomic monographs, and the TROPICOS botanical database maintained by Missouri Botanical Garden (<http://mobot.mobot.org/W3T/Search/vast.html>).

Our analysis of the biogeographical patterns on the Mache-Chindul flora was inspired by a remark by Peter Raven in his Foreword to the *Catalogue of the Vascular Plants of Ecuador*: “The number of species shared across the Andean Cordillera suggests that about 30% of the lowland [Ecuador] flora may have evolved before the rise of the Andes” (Raven, p. viii in Jorgensen & León-Yáñez, 1999). The observation that about 30% of the plants of lowland Ecuador are shared between Amazonia and the Pacific coastal range, with present distributions that cross the migration barrier of the Andes, also served as an impetus to a detailed phylogeographical analysis of one such widespread tree species, *Sympodia globulifera* (Clusiaceae; Dick et al., 2003).

Our biogeographical analysis is aimed at examining the proportion of plant species in the Mache-Chindul flora that also occur in Amazonian Ecuador, east of the Andean barrier, as compared with the proportion that also occur to the north in Pacific coastal Colombia (where no montane barrier exists between coastal Ecuador and coastal Colombia, as well as farther north in Mesoamerica, versus the proportion of locally endemic species that are known only from Pacific coastal Ecuador.

In this checklist we have recorded the known distribution of each species for each of three geographic regions (Amazonia, Chocó, and Mesoamerica) in the Neotropics, apart from the local endemics that are restricted to coastal Ecuador:

Amazonia – Distribution includes lowland Amazonia, east of the Andes.

Chocó – Distribution includes coastal Colombia.

Mesoamerica – Distribution includes any part of the Mesoamerican isthmus, from Panama to the isthmus of Tehuantepec, Mexico, the Flora Mesoamericana region.

Endemic – Known distribution is confined to coastal Ecuador (this category also includes a few species with ranges that extend into the dry forests of northwestern coastal Peru, in Tumbes and Piura departments).

Of course, some widespread species are recorded from two or from all three of the regions, Amazonia, Chocó and Mesoamerica. Some widespread neotropical species also occur in the Caribbean islands of the Antilles, and some species are also native to the Old World tropics, such as the aforementioned tree, *Sympodia globulifera*. We have not recorded the native distributions of plant species beyond the four categories listed above, because our goal was principally to address the question of the Andes as a barrier to distributions of lowland wet forest plants, as compared with the longer distances but much lower elevation barriers between coastal Ecuador and the Mesoamerican isthmus on both the Pacific and Caribbean lowlands.

STATISTICAL RESULTS: SPECIES DISTRIBUTIONS AND BIOGEOGRAPHIC AFFINITIES

The annotated checklist of the flora of the Mache-Chindul Mountains includes a total enumeration of 1,354 vascular plant taxa. Eight of the total are introduced species, including cultivated crop species and adventive weeds recorded from the deforested areas now devoted to agriculture and cattle pastures. The actual number of cultivated and adventive species is surely much larger than that, but the collecting efforts to date have not attempted to include all of the introduced species. Of the remaining total of 1,346 taxa (Table 2), 28 genera in various families have not yet been determined to species – a reflection of our still incomplete knowledge of the Mache-Chindul flora. Some of these genera, such

as *Guatteria* (Annonaceae), obviously include several undetermined species among the existing collection vouchers, but only one voucher per genus is cited in the checklist. The biogeographic analysis in Table 2 is based on the remaining total of 1,318 known native species in the Mache-Chindul vascular flora.

The Mache-Chindul flora comprises about 28% of the 4,463 species enumerated for coastal Ecuador in Jørgensen and León-Yáñez (1999). This percentage will certainly increase with a more thorough survey of the Mache-Chindul region.

A total of 162 species of the Mache-Chindul flora, 12% of the known native species, are local endemics, restricted in distribution to coastal Ecuador (including a few species in the dry forest of the southernmost part of the Mache-Chindul range that extend to the dry forest areas of northwest coastal Peru, in the departments of Tumbes and Piura). This percentage is much lower than the 27% endemism reported for the flora of Ecuador in Jørgensen and León-Yáñez (1999), but it should be noted that the latter figure is the proportion of species endemic to Ecuador as a whole, including species occurring on both sides of the Andes within Ecuador, whereas the 12% local endemism for the Mache-Chindul is for a much smaller area, so the proportion of species recorded as endemics will, logically, be smaller.

It is remarkable that 66% of the Mache-Chindul flora, a total of 865 species, are also reported from the lowlands of Amazonia. The vast majority, but not all of these, have been recorded from Amazonian Ecuador; a few are known only from farther away in Amazonian Peru or Bolivia. This number of shared Ecuador coastal-Amazonian species is much higher than the 31% of species shared between coastal and Amazonian Ecuador as reported in Jørgensen and León-Yáñez (1999). This discrepancy may be explained, at least in part, by the fact the coastal Ecuador flora recorded by Jørgensen and León-Yáñez includes the dry forest elements from the southern coastal area, as well as the wet forest elements of the northern coast. Amazonian Ecuador does not include any area of dry forest, so those floristic elements from southwestern Ecuador are not represented east of the Andes. The wet forest region in northern

Ecuador where the Mache-Chindul range is located, is much more similar climatically to Amazonian Ecuador, and the proportion of species shared between the wet forests of the coastal region and the Amazon basin is much higher than for the dry forest of the southern coast (although a few dry forest taxa are present in our Mache-Chindul checklist because they are present in the southernmost part of our study area, in the moist/dry transition zone south of Pedernales).

In terms of historical biogeography, these results suggest that two-thirds of the species in the Mache-Chindul flora that have present-day distributions with trans-Andean (western Ecuador) as well as cis-Andean (Amazonia) populations, were either already present with an unfragmented northwestern South America distribution before the uplift of the Andes separated these populations, i.e., at least since the Miocene, ca. 15 million years before present, or alternatively, these species have dispersed across the high-altitude barrier of the Andes in more recent times and may be connected at the present time by dispersal and gene flow. More complex scenarios are possible and could be revealed in the future by molecular phylogeographic studies, such as the work on *Sympodia globulifera* (Clusiaceae) by Dick et al. (2003), which revealed three trans-Atlantic dispersal events for this species from Africa, with a present-day distribution that includes western Africa as well as Amazonia, the Chocó and western Ecuador, Mesoamerica and the Antilles.

A total of 957 species (73%) of the Mache-Chindul flora are recorded from the Chocó region of coastal Colombia, and 814 species (61% of the total) extend farther to the north in Mesoamerica. Moreover, 42% of the Mache-Chindul flora (557 species) range very widely in the Neotropics, having been recorded in all four regions: coastal Ecuador as well as lowland Amazonia, the Chocó region, and Mesoamerica.

These results, which are indicative of a rather high percentage of widely distributed species and a relatively low level of local endemism in the flora of the Mache-Chindul mountains, came as a surprise to us, considering the previously published figures and the conventional wisdom of a much higher degree of endemism for the flora of Ecuador

in general.

In part, the results reported herein of relatively low levels of endemism and a high proportion of widely distributed species reflects the fact that, as the Neotropical flora becomes better known, with more complete regional inventories and comprehensive monographs completed for the western hemisphere as a whole, the tabulated proportion of local endemics will continue to decline for many groups as locally circumscribed taxa are reduced to synonymy and range extensions become known for many species previously known from only a few sites.

LIFE-FORM CATEGORIES, AND COMPARISONS WITH OTHER FLORAS

The life-form categories of the Mache-Chindul flora are enumerated in Table 3. These results are compared with the life-form categories for two other published floristic checklists from wet forests of western Ecuador: the Río Palenque Biological Station (Dodson & Gentry, 1978) and the Maquipucuna cloud forest reserve (Webster & Rhode, 2001). For the latter site, some of the life-form categories were not listed in the tables or text of the publication, so are not included in Table 3. For the Mache-Chindul checklist, some species were recorded for more than one life form (e.g., tree and shrub) so the sum of all categories is more than the total number of species at that site.

Trees, with 442 species (33% of the total), are the most species-rich life-form in the Mache-Chindul floristic checklist. In contrast, trees account for 26% of the flora at Río Palenque and just 19% at Maquipucuna. Epiphytes are the second most diverse life-form at Mache-Chindul, with 268 species (20% of the total) but rank first in diversity at the other two sites, 24% of the total recorded flora at Río Palenque and 23% at Maquipucuna. A caveat is certainly in order here: these differences may reflect different degrees of emphasis in collecting and identifying the flora, among the major investigators at each site, more than real differences in the life-form categories at each site.

It is interesting that hemi-epiphytes have very similar percentages (4-5%) in the flora at each of the three sites, and lianas, which were not tabulated in the Maquipucuna summary text are also similar

in proportional diversity at Mache-Chindul and Río Palenque, also with 4-5% of the total flora. The percentages of shrubs and herbaceous plants vary between Río Palenque and Mache-Chindul, but those figures may represent a more thorough inventory of the weedy herbs at Río Palenque.

MAJOR PLANT FAMILIES, AND COMPARISON WITH OTHER FLORAS

The number of species in the major taxonomic groups of vascular plants, and in the major families of angiosperms, are listed for the Mache-Chindul flora in Table 4. Comparative values for each category are included for the lowland flora of Río Palenque (Dodson & Gentry, 1978) and for the western Andean cloud forest flora of Maquipucuna (Webster & Rhode, 2001).

Ferns and fern-allies (Pteridophytes), with 178 species recorded in the Mache-Chindul flora, account for 13% of the vascular plants. Pteridophytes are more diverse in the Maquipucuna flora, with 227 species, but the percentage of the total recorded flora is similar (14% at Maquipucuna). In contrast, the 77 species of ferns and fern-allies at Río Palenque account for just 7% of the total flora.

Monocots as a group are proportionally more diverse at Río Palenque (30%, with 332 species) than at Maquipucuna (27%, with 438 species) and Mache-Chindul (22%, with 295 species). These differences may reflect more on the history of collecting efforts and taxonomic interests of the major investigators, rather than true differences in the proportions of monocots in the respective floras. For example, the Flora of Rio Palenque (Dodson & Gentry, 1978) is first-authored by an orchid specialist. The abundance of species in Orchidaceae from Dodson & Gentry (1978) is more likely the result of a collecting emphasis and research interests of Dodson rather than trends in biodiversity between the floras presented here.

The eleven most diverse families of angiosperms at Mache-Chindul are listed in Table 4, in descending order of species richness. The number of species for each of these families are also enumerated for the Río Palenque and

Maquipucuna floras, with the percentages that each family represents for the total flora recorded at each site. The three most species-rich families at each site are in boldface type in Table 3.

Orchidaceae are the most diverse family of angiosperms at each of the three sites, but orchids are proportionally less diverse in the Mache-Chindul checklists (100 species, 8% of the total) than in the Río Palenque (127 species, 11%) and Maquipucuna (204 species, 13%) checklists. The Araceae and Rubiaceae are second and third in species richness, respectively, among the families at both Mache-Chindul and Río Palenque. At Maquipucuna, in contrast, the second and third most species-rich families are Asteraceae and Piperaceae, in that order. These figures may reflect real floristic differences between the montane Maquipucuna site, which also includes extensive areas of secondary vegetation, and the two lowland sites of Mache-Chindul and Río Palenque, where the primary forest flora is more thoroughly sampled than the secondary vegetation habitats.

The area included in the Mache-Chindul checklist is much larger than that of the Maquipucuna checklist, and several orders of magnitude larger than the Río Palenque checklist; the latter covers only one square kilometer of remnant lowland forest. However, the Mache-Chindul checklist, with 1,346 native vascular plant species recorded, is only intermediate in species richness between Maquipucuna (1,596 native species) and Río Palenque (1,112 native species). This is assuredly not a reflection of the true number of species in each area. The collections from the Mache-Chindul region give evidence of many taxa that have not been determined to species and therefore are not included in the checklist. A substantial proportion of these are probably undescribed species, and when they are described will likely prove to be local endemics. More thorough collecting efforts, in both primary forest and disturbed habitats, are necessary to complete the floristic inventory of the Mache-Chindul region. At this time we cannot speculate accurately on the total number of vascular plant species in the region, but the total almost certainly exceeds 2,000 species, at least 12% of the total of the close to 17,000 vascular plant species that have now been enumerated for Ecuador (Ulloa & Neill, 2005).

Table 1. New genera and new species described since the initiation of collecting activities in the Mache-Chindul Mountains of northwestern Ecuador.

New genera (monotypic) - 2	<i>Exarata</i> A.H. Gentry, Syst. Bot. 17(3): 503. 1992. See Figures 9 A-B & 11. <i>Ecuadendron</i> D.A. Neill, Novon 8(1): 45. 1998. See Figures 2 A-B & 12.
Other recently described genera - 2	<i>Klarobelia</i> Chatrou, Changing Gen. 121. 1998. See Figures 5 C-D & 12. <i>Mosannonia</i> Chatrou, Changing Gen. 155. 1998. See Figures 5 A-B & 13.
New species - 33	
Annonaceae	<i>Cremastosperma longipes</i> Pirie, Blumea 50(1): 51-52, f. 5. 2005. <i>Klarobelia megalocarpa</i> Chatrou, Changing Gen. 136-138. 1998. See Figures 5 C-D & 13. <i>Mosannonia pacifica</i> Chatrou, Changing Gen. 170-171. 1998. See Figures 5 A-B & 14.
Araceae	<i>Anthurium cupulispatum</i> Croat & J. Rodr., Aroideana 18: 63-68. 1995. <i>Anthurium jaramilloi</i> Croat & J. Rodr., Aroideana 18: 80-83. 1995 [1996]. <i>Anthurium nigropunctatum</i> Croat & J. Rodr., Aroideana 18: 101-104. 1995 [1996]. <i>Philodendron clarkei</i> Croat, Aroideana 27: 38-60, f. 1-20. 2004. <i>Philodendron sparreorum</i> Croat, Aroideana 27: 38-60, f. 1-22. 2004.
Bignoniaceae	<i>Exarata choocoensis</i> A.H. Gentry, Syst. Bot. 17(3): 503-506. 1992. See Figures 2 A-B & 10.
Bombaceae	<i>Quararibea casasecae</i> Fern. Alonso & Castrov., Anales Jard. Bot. Madrid 59(1): 155, f. 3. 2001. <i>Spirotheca awadendron</i> Fern. Alonso, Revista Acad. Colomb. Ci. Exact. 25(95): 201-203, f. 9. 2001. See Figure 8 C-D.
Bromeliaceae	<i>Pitcairnia clarkii</i> H. Luther, Selbyana 18(1): 98. 1997. See Figure 7 A-B. <i>Pitcairnia ferrell-ingramiae</i> H. Luther & Dalström, J. Bromeliad Soc. 47(5): 231. 1997. See Figure 7 D-E.
Capparaceae	<i>Capparis bonifaziana</i> X. Cornejo & H.H. Iltis, Novon 15(3): 397. 2005. See Figures 8 B & 15.

Campanulaceae	<i>Burmeistera smaragdi</i> Lammers, Novon 12(2): 213-214, f. 6. 2002. See Figure 7 C.
Ebenaceae	<i>Diospyros esmereg</i> B. Walln., Ann. Naturhist. Mus. Wien, Ser. B, Bot. Zool. 101(B): 568-570, f. 1. 1999. See Figure 2 C.
Ericaceae	<i>Thibaudia litensis</i> Lutelyn, Fl. Ecuador 54: 292. 1996. See Figure 9 C-D.
Fabaceae	<i>Ecuadendron acosta-solisianum</i> D.A. Neill, Novon 8(1): 45-49, f. 1-2. 1998. See Figures 2 A-B & 11.
Gesneriaceae	<i>Gasteranthus bilsaensis</i> L.E. Skog & L.P. Kvist, Syst. Bot. Monogr. 59: 41-42, f. 7D, 17, 22. 2000. <i>Gasteranthus tenellus</i> L.E. Skog & L.P. Kvist, Syst. Bot. Monogr. 59: 96-98, f. 3C, 24, 37. 2000. See Figures 6 BD, p.133; 16 A-H, p.143. <i>Gasteranthus villosus</i> L.E. Skog & L.P. Kvist, Syst. Bot. Monogr. 59: 101-102, f. 9D, 13G-H, 15, 38. 2000. See Figure 17.
Lecythidaceae	<i>Grias longirachis</i> S.A. Mori & J.L. Clark, Brittonia 52(2): 145-148, f. 1. 2000. See Figures 2 D-E; 18 A-H.
Olacaceae	<i>Heisteria pacifica</i> P. Jørg. & C. Ulloa, Fl. Ecuador 69: 72, f. 16. 2002.
Orchidaceae	<i>Epidendrum borchsenii</i> Hågsater & Dodson, Icon. Orchid. (Mexico) 4: pl. 418. 2001. <i>Lepanthes clarkii</i> Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 61: 58. 1996. See Figure 19. <i>Lepanthes maccolmiana</i> Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 61: 112. 1996. See Figure 21. <i>Pleurothallis claviculata</i> Luer & Hirtz, Lindleyana 11(3): 153-154, f. 16. 1996.
Proteaceae	<i>Panopsis megistosperma</i> Bonifaz & Cornejo, Fl. Ecuador 69: 12, f. 2. 2002
Rubiaceae	<i>Amphidasya amethystina</i> J.L. Clark & C.M. Taylor, Novon 11(4): 491-492. 2001. See Figures 3 D-E & 22. <i>Hippotis comosa</i> L. Andersson & Rova, Fl. Ecuador 74: 14-16, fig. 3A-B. 2004. See Figure 3 C. <i>Pentagonia bonifaziana</i> X. Cornejo & C.M. Taylor, Harvard Pap. Bot. 11(1): 19-24. 2006 <i>Pentagonia breviloba</i> L. Andersson & Rova, Fl. Ecuador 74: 32-33, fig. 5C-E. 2004. <i>Psychotria esmeraldana</i> C.M. Taylor, Novon 16(1): 151-152, f. 2D-F. 2006. See Figure 23. <i>Rustia bilsana</i> Delprete, Novon 8(3): 234, f. 1, 2. 1998. See Figures 3 A-B & 24.

Sapindaceae	<i>Talisia equatoriensis</i> Acev.-Rodr., Flora Neotropica 87: 109, 111-112, f. 74, 76. 2003.
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Table 2. Biogeographic analysis of the Mache-Chindul flora.

Total taxa in Mache-Chindul checklist Introduced species Native taxa Genera not determined to species Native species for biogeographic analysis	1,354 taxa 8 species 1,346 taxa 28 genera 1,318 species
Endemic to coastal Ecuador*	162
Species range includes Amazonia	865
Range includes Chocó (coastal Colombia)	958
Range includes Mesoamerica	814
Widespread neotropical species: Coastal Ecuador + Amazonia + Chocó + Amazonia	557

*Includes several species ranges to northwest coastal Peru (Tumbes, Piura)

Table 3. Life-form categories of the Mache-Chindul vascular plants, with a comparison, where the information is available, from the published floras of Río Palenque Science Center, in lowland wet forest of Los Ríos province in western Ecuador (Dodson & Gentry, 1978) and the Maquipucuna Reserve, a cloud forest region on the western slopes of the Andes in Pichincha province, Ecuador (Webster & Rhode, 2001). Some of the categories were not listed in the tables or text of Webster and Rhode (2000).

	Mache-Chindul		Río Palenque		Maquipucuna	
Species total for checklist	1346		1112		1596	
Trees	442	33%	288	26%	310	19%
Shrubs	182	14%	109	10%		
Lianas	70	5%	39	4%		
Terrestrial herbs	256	19%	275	24%		
Herbaceous vines	119	9%	138	12%		
Epiphytes	268	20%	269	24%	361	23%
Hemiepiphytes	64	5%	42	4%	80	5%
Parasites and hemiparasites	9	< 1%				
Saprophytes	3	< 1%				

Table 4. Tabulation of the major taxonomic groups of vascular plants, and the 11 most species-rich families of Angiosperms, in the Mache-Chindul flora. These data are also included for the flora of the Río Palenque reserve (Dodson & Gentry, 1978), a lowland wet forest site in Los Río province, and the Maquipucuna cloud forest reserve (Webster & Rhode, 2001) on the western slopes of the Andes in Pichincha province, Ecuador. The species richness values for the three most diverse families at each site are indicated in bold type. The percentages are for the total native vascular flora at each site as enumerated in each checklist.

Major groups of vascular plants	Mache-Chindul		Río Palenque		Maquipucuna	
Total native vascular flora in checklist	1,346		1,112		1,596	
Pteridophytes	178	13%	77	7%	227	14%
Gymnosperms	1	< 1%	2	< 1%	0	
Angiosperms	1,167	87%	1033	93%	1369	86%
Monocots	295	22%	332	30%	438	27%
Dicots	872	65%	701	63%	931	58%
Major families of Angiosperms						
Orchidaceae	100	8%	127	11%	204	13%
Araceae	93	7%	69	6%	69	4%
Rubiaceae	84	6%	66	6%	66	4%
Fabaceae	60	4%	29	3%	42	3%
Gesneriaceae	46	3%	32	3%	35	2%
Melastomataceae	44	3%	20	2%	44	3%
Piperaceae	36	3%	43	4%	79	5%
Moraceae	34	3%	19	2%	39	2%
Bromeliaceae	30	2%	18	2%	35	2%
Asteraceae	29	2%	46	4%	84	5%
Solanaceae	29	2%	37	3%	59	4%

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ANNOTATED CHECKLIST OF THE FLORA OF THE MACHE-CHINDUL MOUNTAINS

PTERIDOPHYTA

Acrostichum aureum L., Sp. Pl. 2: 1069. 1753.
 Representative Specimen: Ecuador: Manabí: 45 km al norte de Pedernales, 5 m, 28 Aug 1998, D. Neill & QCNE botany interns 11434 (MO, QCNE).

Terrestrial herb. Chocó, Mesoamerica.

Adiantum capillatum A.R. Sm. & Prado, Brittonia 56(1): 82, f. 1. 2004. Type: Ecuador: junction of provinces Guayas, Cañar, Chimborazo, and Bolívar. Bucay, 1000-1250 ft [300-380 m], W. Camp E-3678 (HT: US; IT: NY).
 Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 6 Apr 1995, John L. Clare & Y. Troya 626 (MO, QCNE).
 Terrestrial herb. Amazonia.

Adiantum concinnum Humb. & Bonpl. ex Willd., Sp. Pl. 5: 451. 1810.
 Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor 50 m, 25 Aug 1998, D. Neill & QCNE botany interns 11289.
 Epiphyte. Mesoamerica.

Adiantum fructuosum Poepp. ex Spreng., Syst. Veg. 4: 113. 1827.
 Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 200 m, 10 Oct 1996, J.L. Clark 3032 (MO, QCNE).
 Epiphyte. Amazonia, Chocó, Mesoamerica.

Adiantum macrophyllum Sw., Prodr. 135. 1788.
 Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300–700 m, 19 Jun 1996, J.L. Clark, E. Arroyo & P. Hibbs 2630 (MO, QCNE).
 Epiphyte. Amazonia, Chocó, Mesoamerica.

Adiantum petiolatum Desv., Ges. Naturf. Freunde Berlin Mag. Neuesten Entdeck. Gesammten Naturk. 5: 326. 1811.
 Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 200 m, 10 Oct 1996, J.L. Clark 3048 (MO, QCNE).
 Epiphyte. Amazonia, Chocó, Mesoamerica.

Adiantum phyllitidis J. Sm., London J. Bot. 1: 197. 1842.
 Representative Specimen: Ecuador: Manabí: Mache.Chindul, comunidad Ambache, 250 m, 5 Apr 1997, J.L. Clark, R. Dunn, T. Nuñez & C. Robles 4179.
 Terrestrial herb. Amazonia

Adiantum pulverulentum L., Sp. Pl. 2: 1096. 1753.
 Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 17 Nov 1994, N. Pitman 962 (MO, QCNE).
 Terrestrial herb. Amazonia, Chocó, Mesoamerica.

Adiantum tetraphyllum Hook.
 Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor 50 m, 25 Aug 1998, D. Neill & QCNE botany interns 11301 (MO).
 Epiphyte. Amazonia, Chocó, Mesoamerica.

Adiantum urophyllum Hook., Sp. Fil. 2: 24, t. 84B. 1851.
 Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 650 m, 27 Sep 1996, J.L. Clark 2914 (MO, QCNE).
 Terrestrial herb. Amazonia, Chocó, Mesoamerica.

Adiantum wilsonii Hook., Sp. Fil. 2: 6, t. 72a. 1851.

Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 200 m, 14 Jan 1997, J.L. Clark, L. Chatrou, P. Maas & C. Repetur 3798 (MO).

Terrestrial herb. Amazonia, Chocó, Mesoamerica.

Type: Esmeraldas: sine loco, Hall s.n. (HT: K; IT: B fragm.; photo: US(B)).

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300–700 m, 21 Jul 1996, J.L. Clark, E. Arroyo & P. Hibbs 2708 (MO, QCNE).

Epiphyte. Chocó.

Alsophila cuspidata (Kunze) D.S. Conant, J. Arnold Arbor. 64: 371. 1983.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 6 Dec 1994, N. Pitman & M.S. Bass 1023 (MO, QCNE).

Tree. Amazonia, Chocó, Mesoamerica.

Anetium citrifolium (L.) Splitg., Tijdschr. Natuurl. Gesch. Physiol. 7: 395. 1840.

Representative Specimen: Ecuador: Esmeraldas: Comunidad San Salvador 100–300 m, 1 Dec 1995, J.L. Clark & Cyrus Brame 1713 (MO, QCNE).

Terrestrial herb. Amazonia, Chocó, Mesoamerica.

Asplenium holophlebium Baker, J. Bot. 15: 163. 1877. Type: Andes of Quito, Sodiro, L. s.n. (HT: K).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 9 Nov 1994, N. Pitman & Margo Bass 904 (MO, QCNE).

Epiphyte. Chocó, Mesoamerica.

Asplenium auriculatum Sw., Kongl. Svenska Vetensk. Acad. Handl. 1817(1): 68. 1817.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 29 Sep 1994, N. Pitman, M.S. Bass & L. Kueppers 765 (MO, QCNE).

Epiphyte. Amazonia, Chocó, Mesoamerica.

Asplenium juglandifolium Lam., Encycl. 2: 307. 1786.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 20 Mar 1998, J.L. Clark & C. Pallis 4877 (MO, QCNE).

Common epiphyte. 400-600 m. Amazonia, Chocó, Mesoamerica.

Asplenium cuspidatum Lam., Encycl. 2: 310. 1786.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 28 Sep 1994, M.S. Bass, L. Kueppers & N. Pitman 90 (MO, QCNE).

Epiphyte. Amazonia, Chocó, Mesoamerica.

Asplenium pteropus Kaulf., Enum. Filic. 170. 1824.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 5 Apr 1995, J.L. Clark & Y. Troya 623 (MO, QCNE).

Epiphyte. 400-600 m. Amazonia, Chocó, Mesoamerica.

Asplenium divaricatum Kunze, Linnaea 9: 71. 1834.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 1 Oct 1994, L. Kueppers 30.

Epiphyte. Mesoamerica.

Asplenium repandum Kunze, Linnaea 9: 65. 1834.

Representative Specimen: Ecuador: Esmeraldas: Camino vecinal Herrera-Los Monos 550 m, 24–26 Feb 1995, W. Palacios 13673 (MO, QCNE)

Epiphyte. Amazonia, Chocó, Mesoamerica.

Asplenium hallii Hook., Sp. Fil. 3: 202. 1860.

Asplenium rosenstockianum Brade, Bradea 1(1): 14, t. 2, f. 4, t. 4. 1969.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 1 Apr 1995, J.L. Clark & Y. Troya 556 (MO, QCNE).

Terrestrial herb. Amazonia, Chocó, Mesoamerica.

- Asplenium serratum** L., Sp. Pl. 2: 1079. 1753.
 Representative Specimen: Ecuador:
 Esmeraldas: Bilsa Biological Station, 400–
 600 m, 6 Apr 1995, *J.L. Clark & Ynonne
 Troya 634* (MO, QCNE).
 Epiphyte. Amazonia, Chocó, Mesoamerica.
- Asplenium volubile** N. Murak. & R.C. Moran,
Ann. Missouri Bot. Gard. 80(1): 32. 1993.
 Type: Ecuador: Cotopaxi: Quevedo-
 Latacunga road, km 46 from Quevedo, 600
 m, 00.55S 79.11W, *Holm-Nielsen,
 Jeppesen, Løjtnant & Øllgaard 2905* (HT:
 MO; IT: AAU, F, UC).
 Representative Specimen: Ecuador:
 Esmeraldas: Bilsa Biological Station, 500
 m, 20 Mar 1998, *J.L. Clark & C. Pallis
 4832*.
 Epiphyte. Amazonia, Chocó, Mesoamerica.
- Azolla caroliniana** Willd., Sp. Pl. 5(1): 541. 1810.
 Representative Specimen: Ecuador:
 Esmeraldas: Herrera (La Y de la Laguna)
 400 m, 15 Feb 1998, *J.L. Clark 5512*.
 Floating aquatic herb. Amazonia, Chocó,
 Mesoamerica.
- Blechnum acutum** (Desv.) Mett., *Ann. Sci. Nat.,
 Bot., ser. 5, 2:* 225. 1864.
 Accepted by: Jørgensen, P. M. & S. León-
 Yáñez (eds.), 1999; Kessler, M., T. Krömer
 & I. Jiménez, 2000
 Representative Specimen: Ecuador:
 Esmeraldas: Bilsa Biological Station, 500
 m, 8 Oct 1996, *J.L. Clark 3004* (MO,
 QCNE)
 Hemiepiphyte. Amazonia, Chocó.
- Blechnum cordatum** (Desv.) Hieron., *Hedwigia
 47:* 239. 1908.
 Representative Specimen: Ecuador:
 Esmeraldas: Bilsa Biological Station, 400–
 600 m, 13 Dec 1994, *M.S. Bass & N. Pitman
 343* (MO, QCNE).
 Shrub or treelet. Amazonia, Chocó.
- Blechnum occidentale** L., Sp. Pl. 2: 1077. 1753..
 Representative Specimen: Ecuador:
 Esmeraldas: Bilsa Biological Station, 400–
 600 m, 10 May 1995, *J.L. Clark & C. Watt
 823* (MO, QCNE).
- Terrestrial herb. Amazonia, Chocó,
 Mesoamerica.
- Blechnum wardiae** Mickel & Beitel, *Mem. New
 York Bot. Gard.* 46: 89, f. 122A,B, 125A.
 1988.
 Representative Specimen: Ecuador:
 Esmeraldas: Bilsa Biological Station, 650
 m, 27 Sep 1996, *J.L. Clark 2917* (MO,
 QCNE).
 Terrestrial herb. Amazonia, Chocó,
 Mesoamerica.
- Bolbitis pandurifolia** (Hook.) C. Chr., *Index Filic.,
 Suppl. 3,* 49. 1934.
 Representative Specimen: Ecuador:
 Esmeraldas: Fila de Bilsa, 280 m, 30 Jan
 1991, *A. Gentry, R. Foster & C. Josse 72960*
 (MO).
 Terrestrial herb. Amazonia.
- Campyloneurum aphanophlebioides** (Kunze) T.
 Moore, *Index Fil.* 223. 1861.
 Representative Specimen: Ecuador:
 Esmeraldas: Bilsa Biological Station, 500
 m, 20 Mar 1998, *J.L. Clark & C. Pallis
 4856*.
 Epiphyte. Amazonia, Chocó, Mesoamerica.
- Campyloneurum brevifolium** (Lodd. ex Link)
Link, Fil. Spec. 124. 1841
 Representative Specimen: Ecuador:
 Esmeraldas: Bilsa Biological Station, 400–
 600 m, 6 Apr 1995, *J.L. Clark & Y. Troya
 631* (MO, QCNE).
 Epiphytic or terrestrial herb. Amazonia, Chocó,
 Mesoamerica.
- Campyloneurum fuscosquamatum** Lellinger,
Amer. Fern J. 78(1): 21, f. 4, 10. 1988.
 Representative Specimen: Ecuador: Manabí:
 Reserva de Lalo Loor, 500–550 m, 27 Nov
 1999, *T. Delinks 491*.
 Epiphyte. Amazonia.
- Campyloneurum phyllitidis** (L.) C. Presl, Tent.
Pterid. 78(1): 21, f. 4, 10. 1836.
 Representative Specimen: Ecuador: Manabí:
 Cordillera de Jama, 600 m, 16 Dec 1998,
D. Neill & QCNE botany interns 11593.

- Terrestrial or epiphytic herb. Amazonia, Chocó, Mesoamerica.
- Campyloneurum repens** (Aubl.) C. Presl, Tent. Pterid. 190. 1836.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 20 Mar 1998, *J.L. Clark & C. Pallis 4814*.
Terrestrial or epiphytic herb. Amazonia, Chocó, Mesoamerica.
- Campyloneurum serpentinum** (H. Christ) Ching, Sunyatsenia 5(4): 263. 1940.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 1 Oct 1994, *L. Kueppers 28* (MO, QCNE).
Terrestrial herb. Chocó, Mesoamerica.
- Cochlidium serrulatum** (Sw.) L.E. Bishop, Amer. Fern J. 68(3): 80. 1978.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 6 May 1995, *J.L. Clark & C. Watt 782* (MO, QCNE).
Terrestrial herb. Amazonia, Chocó, Mesoamerica.
- Cyathea brunnescens** (Barrington) R.C. Moran, Novon 1(2): 101. 1991. *Trichipteris nigripes* var. *brunnescens* Barrington. Type: Colombia: Valle: Río Yurumangui, Venereal, 5-50 m, *Cuatrecasas 16155-C* (HT:US; IT:GH).
Representative Specimen: Ecuador: Esmeraldas: 300 m, 19 Oct 1992 - 24 Oct 1992, *Galo Tipaz, C. Aulestia & A. Llanos 2085* (MO).
Tree. Amazonia, Chocó.
- Cyathea conjugata** (Spruce ex Hook.) Domin, Pteridophyta 262. 1929. *Alsophila conjugata* Spruce ex Hook. Type: Ecuador: Chimborazo, *Spruce 5745 [published as 4745]* (HT: K; IT: US).
Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 29 Jan 1991, *A. Gentry & C. Josse 72854* (MO).
Tree. Amazonia, Chocó.
- Cyathea cystolepis** Sodiro, Recens. Crypt. Vasc. Quit. 15. 1883. Type: Crece en la pendiente occidental del Atacazo y del Corazón 1600,2000 mm., *Sodiro, L. s.n.* (ST: P).
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 6 Dec 1994, *N. Pitman & M.S. Bass 1022* (MO, QCNE).
Tree. Amazonia.
- Cyathea delgadii** Sternb., Versuch einer Geognostisch-Botanischen Darstellung der Flora der Vorwelt 1: 47, t. B. 1820.
Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor 50 m, 25 Aug 1998, *D. Neill & QCNE botany interns 11356*.
Tree. Amazonia, Chocó, Mesoamerica.
- Cyclopeltis semicordata** (Sw.) J. Sm., Bot. Mag. 72: Comp. 36. 1846.
Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor 50 m, 25 Aug 1998, *D. Neill & QCNE botany interns 11280*.
Epiphyte. Amazonia, Chocó, Mesoamerica.
- Danaea elliptica** Sm., Cycl. 11: Danaea no. 2. 1808.
Representative Specimen: Ecuador: Esmeraldas: 400–600 m, 15 Oct 1994, *M.S. Bass, L. Kueppers & N. Pitman 173* (MO, QCNE).
Terrestrial herb. Amazonia, Chocó, Mesoamerica.
- Danaea longicaudata** Tuomisto, Fl. Ecuador 66: 50, f. 15. 2001. Type: Ecuador: Pichincha, Reserva Endesa, km 113 of Quito-Puerto Quito road, 8 km E of Pedro vicente Maldonado, 600-700 m, *Moran el al 6025* (HT: QCA, IT: AAU, NY, QCNE, TUR).
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 22 Sep 1994, *N. Pitman, J.L. Clark, B. Adnepos & L. Kueppers 702* (MO, QCNE).
Terrestrial herb. Endemic.
- Dennstaedtia dissecta** (Sw.) T. Moore, Index Fil. 305. 1861.
Representative Specimen: Ecuador:

- Esmeraldas: Bilsa Biological Station, 600 m, 23 Sep 1994, *J.R. Abbott* 15217.
Terrestrial herb. Amazonia, Chocó, Mesoamerica.
- Dennstaedtia obtusifolia** (Willd.) T. Moore, Index Fil. 306. 1861.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 16 May 1995 *J.L. Clark & C. Watt* 880 (MO, QCNE).
Terrestrial herb. Amazonia, Chocó, Mesoamerica.
- Dennstaedtia vagans** (Baker) Diels, Nat. Pflanzenfam. 1(4): 218. 1899. *Dicksonia vagans* Baker. Type: Ecuador, Andes de Quito, *Sodiro*, L. s.n. (13/3) (HT: K; IT: Q).
Representative Specimen: Ecuador: Esmeraldas: 400–600 m, 1 Oct 1994 *M.S. Bass & L. Kueppers* 116 (MO, QCNE).
Hemiepiphyte. Endemic.
- Dicranoglossum polypodioides** (Hook.) Lellinger, Selbyana 2(2-3): 283. 1978. *Taenitis furcata* var. *polypodioides* Hook. Type: Ecuador: “Base of the Andes on the road to Guayaquil”, *Jameson* s.n. (HT: K, (Lellinger, 1978)).
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 24 Sep 1996, *J.L. Clark* 2889 (MO, QCNE).
Epiphyte. Amazonia, Chocó, Mesoamerica.
- Didymochlaena truncatula** (Sw.) J. Sm., J. Bot. (Hooker) 4: 196. 1842.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 6 Apr 1995, *J.L. Clark & Y. Troya* 630 (MO, QCNE).
Terrestrial or epiphytic herb. Amazonia, Chocó, Mesoamerica.
- Diplazium alienum** (Mett.) Hieron., Hedwigia 59: 336. 1918.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 650 m, 19 Feb 1997, *J.L. Clark* 3950.
Terrestrial herb. Amazonia.
- Diplazium chimborazense** (Spruce ex Baker) H. Christ, Farnkr. Erde 221. 1867. *Asplenium chimborazense* Spruce ex Baker. Type: Ecuador: Chimborazo: “Chimborazo, 3000–4000 m”, *Spruce* 5703 (HT: K; IT: BR in part, P, fragm.: NY).
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 24 Sep 1996, *J.L. Clark* 2907 (MO, QCNE).
Terrestrial herb. Amazonia.
- Diplazium cristatum** (Desr.) Alston, J. Bot. 74: 173. 1936.
Representative Specimen: Ecuador: Esmeraldas: 220 m, 1 Sep 1980, *L.B. Holm-Nielsen et al.* 25491 (AAU).
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 6 Apr 1995, *J.L. Clark & Y. Troya* 635 (MO, QCNE).
Terrestrial herb. Amazonia, Chocó, Mesoamerica.
- Diplazium grandifolium** (Sw.) Sw., J. Bot. (Schrader) 1800(2): 62. 1801.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 10 May 1995, *J.L. Clark & C. Watt* 818 (MO, QCNE).
Terrestrial herb. Amazonia, Mesoamerica.
- Diplazium lonchophyllum** Kunze, Linnaea 13: 141. 1839.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 21 Nov 1995, *J.L. Clark & K. Cunningham, C. Roberts* 1626 (MO, QCNE).
Terrestrial herb. Amazonia, Mesoamerica.
- Diplazium oellgaardii** Stolze, Fl. Ecuador 49: 59. 1994. Type: Ecuador: Esmeraldas: plateau above San Marcos de los Coaiqueres, on trail towards Gualpí Bajo, ca 1000 m, B. Øllgaard, Korning, Thomsen & Illum 57504 (HT: AAU; fragm.: F)
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–

- 600 m, 30 Dec 1994, *N. Pitman & David Marsh 1128* (MO, QCNE). Terrestrial herb. 400-600 m. Endemic.
- Diplazium palmense** Rosenst., Repert. Spec. Nov. Regni Veg. 10(251-253): 276. 1912. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 27 Sep 1996, *J.L. Clark* 2928 (MO, QCNE). Terrestrial herb. Chocó, Mesoamerica.
- Diplazium seemannii** T. Moore, Index Fil. 337. 1862. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 9 Feb 1996, *J.L. Clark & N. Kerber, J. Plihal* 1947 (MO, QCNE). Terrestrial herb. Chocó, Mesoamerica.
- Diplazium striatastrum** Lellinger, Selbyana 2(2-3): 283, t. 1B. 1978. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 16 Feb 1996, *J.L. Clark & N. Kerber, J. Plihal* 2036 (MO, QCNE). Terrestrial herb. Chocó, Mesoamerica.
- Diplazium trianae** (Mett.) C. Chr., Index Filic. 240. 1905. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 22 Jun 1995, *J.L. Clark & Erik Calhoun* 1216 (MO, QCNE). Terrestrial herb. Chocó, Mesoamerica.
- Elaphoglossum ciliatum** (C. Presl) T. Moore, Index Fil. 8. 1857. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 2 Apr 1995, *J.L. Clark & Y. Troya* 578 (MO, QCNE). Epiphytic or terrestrial herb. Amazonia, Chocó, Mesoamerica.
- Elaphoglossum crinitum** (L.) H. Christ, Neue Denkschr. Allg. Schweiz. Ges. Gesammten Naturwiss. 36(1): 102, f. 53. 1899. Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 700 m, 26 Aug 1998, *D. Neill & QCNE botany interns* 11363.
- Terrestrial herb. Chocó, Mesoamerica.
- Terrestrial herb. Chocó, Mesoamerica.
- Elaphoglossum decoratum** (Kunze) T. Moore, Index Fil. 8. 1857. Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300–700 m, 7 Apr 1997, *J.L. Clark, T. Nuñez & C. Robles* 4297. Epiphytic herb. Amazonia, Chocó, Mesoamerica.
- Elaphoglossum erinaceum** (Fée) T. Moore, Index Fil. 9. 1857. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 25 Sep 1994, *J.R. Abbott* 15251. Terrestrial or epiphytic herb. Amazonia, Chocó, Mesoamerica.
- Elaphoglossum herminieri** (Bory ex Fée) T. Moore, Index Fil. xvi. 1857. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 18 May 1995, *J.L. Clark & C. Watt* 922 (MO, QCNE). Epiphyte. Amazonia, Mesoamerica.
- Elaphoglossum latum** (Mickel) Atehortúa ex Mickel, Fieldiana, Bot., n.s. 27: 123. 1991. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, September 28, 1994, *M.S. Bass, L. Kueppers & N. Pitman* 97 (MO, QCNE). Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 20 Mar 1998, *J.L. Clark & C. Pallis* 4867. Epiphyte. Chocó, Mesoamerica.
- Elaphoglossum mitorrhizum** Mickel, Novon 2(4): 379. 1992. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 6 Dec 1994, *N. Pitman & M.S. Bass* 1016 (MO, QCNE). Epiphyte. Mesoamerica.
- Elaphoglossum nigrescens** (Hook.) T. Moore ex Diels, Nat. Pflanzenfam. 1(4): 332. 1899. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 580

- m, 18 Feb – 5 Mar 1995, *W. Palacios, J.L. Clark & N. Jaramillo 13578* (MO, QCNE). Epiphyte. Amazonia, Chocó, Mesoamerica.
- Elaphoglossum petiolatum** (Sw.) Urb., Symb. Antill. 4: 61. 1903.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 28 Sep 1994, *M.S. Bass, L. Kueppers & N. Pitman 102* (MO, QCNE). Epiphyte. Amazonia, Mesoamerica.
- Elaphoglossum siliquoides** (Jenman) C. Chr., Index Filic. 315. 1905.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 8 Apr 1995, *J.L. Clark & Y. Troya 663* (MO, QCNE). Epiphyte. Mesoamerica.
- Gleichenella pectinata** (Willd.) C. Presl, Reliq. Haenk. 1(1): 71. 1825.
Representative Specimen: Esmeraldas: Bilsa Biological Station, 400–600 m, 10 Dec 1994, *N. Pitman & M.S. Bass 1071* (MO, QCNE). Terrestrial herb. Amazonia, Chocó, Mesoamerica.
- Grammitis serrulata** (Sw.) Sw., J. Bot. (Schrader) 1800(2): 18. 1801.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 10 Nov 1994, *N. Pitman & M.S. Bass 916* (MO, QCNE). Epiphyte. Amazonia, Chocó, Mesoamerica.
- Grammitis trifurcata** (L.) Copel., Gen. Fil. (Ann. Cryptog. Phytopathol. 5:) 211. 1947.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 22 Jul 1995, *J.L. Clark & Erik Calhoun 1217* (MO, QCNE). Epiphyte. Amazonia, Chocó, Mesoamerica.
- Hemidictyum marginatum** (L.) C. Presl, Tent Pterid. 111, t. 3, f. 24. 1836.
Representative Specimen: Ecuador: Manabí: 45 km al norte de Pedernales, 5 m, 28 Aug 1998, *D. Neill & QCNE botany interns II436* (MO, QCNE).
- Terrestrial herb. Amazonia, Chocó, Mesoamerica.
- Huperzia linifolia** (L.) Trevis., Atti Soc. Ital. Sci. Nat. 17: 248. 1874. .
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 11 Oct 1994, *J.L. Clark 181* (MO, QCNE). Terrestrial herb. Amazonia, Chocó, Mesoamerica.
- Huperzia wilsonii** (Underw. & F.E. Lloyd) B. Øllg., Opera Bot. 92: 170. 1987.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 20 Mar 1998, *J.L. Clark & C. Pallis 4808*. Terrestrial herb. Amazonia, Chocó, Mesoamerica.
- Hymenophyllum elegans** Spreng., Syst. Veg. 4: 133. 1827.
Representative Specimen: Ecuador: Esmeraldas: 400-600 m, 12 Oct 1994, *M.S. Bass, L. Kueppers & N. Pitman 152* (MO, QCNE). Epiphyte. Chocó, Mesoamerica.
- Hymenophyllum hirsutum** (L.) Sw., J. Bot. (Schrader) 1800(2): 99. 1801 [1802].
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 20 Sep 1994, *M.S. Bass & L. Kueppers 33* (MO, QCNE). Epiphyte. Amazonia, Chocó, Mesoamerica.
- Hymenophyllum microcarpum** Desv., Mem. Soc. Linn. Paris 6: 333. 1827.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 1 Oct 1994, *N. Pitman, M.S. Bass & L. Kueppers 780* (MO, QCNE). Epiphyte. Amazonia, Chocó, Mesoamerica.
- Hymenophyllum valvatum** Hook. & Grev., Icon. Filic. 2: t. 219. 1831. Type: Hab. In truncos arborum apud Esmeraldas, regno Peruviano, 4000 ped., Jameson, W. s.n. (HT: K).

- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 20 Sep 1994, *M.S. Bass & L. Kueppers* 34 (MO, QCNE).
Epiphyte. Amazonia.
- Hypolepis hostilis** (Kunze) C. Presl, Tent. Pterid. 162. 1836. *Cheilanthes hostilis* Kunze.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 7 Dec 1994, *N. Pitman & M.S. Bass* 1037 (MO, QCNE).
Terrestrial herb. Amazonia, Chocó, Mesoamerica.
- Hypolepis parallelogramma** (Kunze) C. Presl, Tent. Pterid. 162. 1836.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 25 Mar 1995, *J.L. Clark & Ivonne Troya* 498 (MO, QCNE).
Terrestrial herb. Amazonia, Chocó.
- Lastreopsis exculta** (Mett.) Tindale, Victoria Naturalist 73: 185. 1957.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 31 Dec 1994, *N. Pitman & David Marsh* 1142 (MO, QCNE).
Terrestrial herb. Mesoamerica.
- Lellingeria subsessilis** (Baker) A.R. Sm. & R.C. Moran, Amer. Fern J. 81(3): 87. 1991.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 18 Nov 1994, *N. Pitman & M.S. Bass* 987 (MO, QCNE).
Epiphyte. Amazonia, Chocó, Mesoamerica.
- Lellingeria suspensa** (L.) A.R. Sm. & R.C. Moran, Amer. Fern J. 81(3): 87. 1991
Representative Specimen: Ecuador: Esmeraldas: 600 m, 19 May 1987, *H. van der Werff, C. Dodson, & W. Palacios* 9512 (MO).
Epiphyte. Amazonia, Chocó, Mesoamerica.
- Lindsaea lancea** (L.) Bedd., Suppl. Ferns S. Ind. 6. 1876.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 650 m, 27 Sep 1996, *J.L. Clark* 2913 (MO, QCNE).
Epiphyte. Amazonia, Chocó, Mesoamerica.
- Lomariopsis nigropaleata** Holttum, Bull. Misc. Inform. Kew 1939: 618. 1940.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 4 Apr 1995, *J.L. Clark & Ivonne Troya* 595 (MO, QCNE).
Hemiepiphyte. Amazonia, Chocó.
- Lonchitis hirsuta** L., Sp. Pl. 2: 1078. 1753.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 14 May 1995, *John L Clark & Clare Warr* 860 (MO, QCNE).
Terrestrial herb. Amazonia, Chocó, Mesoamerica.
- Lophosoria quadripinnata** (J.F. Gmel.) C. Chr., Nat. Hist. Juan Fernandez 2: 16. 1920.
Representative Specimen: Ecuador: Esmeraldas : Bilsa Biological Station, 400–600 m, 4 Dec 1994, *N. Pitman & M.S. Bass* 1020 (MO, QCNE).
Tree fern. Amazonia, Chocó, Mesoamerica.
- Lycopodiella cernua** (L.) Pic. Serm., Webbia 23(1): 166. 1968.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 8 Dec 1994, *N. Pitman & M.S. Bass* 1046 (MO, QCNE).
Terrestrial herb. Amazonia, Chocó, Mesoamerica.
- Lygodium radiatum** Prantl, Unters. Morph. Gefasskrypt. 2: 66. 1881.
Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 200 m, 6 Jul 1996, *J.L. Clark* 2737 (MO, QCNE).
Herbaceous vine. Chocó, Mesoamerica.
- Macrothelypteris torresiana** (Gaudich.) Ching, Acta Phytotax. Sin. 8(4): 310. 1963. .
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 16 May 1995, *J.L. Clark & C. Watt* 879 (MO, QCNE).
Terrestrial herb. Amazonia, Chocó, Mesoamerica.

Maxonia apiifolia (Sw.) C. Chr., Smithsonian Misc. Collect. 66(9): 3. 1916.
 Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 30 Jan 1991, A. Gentry & C. Josse 72927 (MO).
 Hemiepiphyte. Mesoamerica.

Megalastrum vastum (Kunze) A.R. Sm. & R.C. Moran, Amer. Fern J. 77(4): 129. 1987. .
 Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 14 May 1995, J.L. Clark & C. Watt 862 (MO, QCNE).
 Terrestrial herb. Amazonia.

Metaxyta rostrata (Kunth) C. Presl, Tent. Pterid. 60, t. 1, f. 5. 1836
 Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 200 m, 6 Jul 1996, J.L. Clark 2769 (MO, QCNE).
 Terrestrial herb. Amazonia, Chocó, Mesoamerica.

Microgramma acatallela Alston, J. Wash. Acad. Sci. 48: 232. 1958.
 Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 2 Apr 1995, J.L. Clark & Y. Troya 575 (MO, QCNE).
 Epiphyte. Amazonia, Chocó.

Microgramma fuscopunctata (Hook.) Vareschi, Fl. Venezuela 1: 893, t. 182. 1969.
Polypodium fuscopunctatum Hook. Type: Hab. Ecuador, ascent of Chimborazo, 3000 feet, Spruce 5734 (HT: K; photo: GH).
 Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 2 Apr 1995, J.L. Clark & Y. Troya 576 (MO, QCNE).
 Epiphyte. Amazonia.

Microgramma percussa (Cav.) de la Sota, Physis (Buenos Aires) 44(106C): 28. 1986.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 5 Apr 1995, J.L. Clark & Y. Troya 622 (MO, QCNE).
 Epiphyte. Amazonia, Chocó, Mesoamerica.

Microgramma piloselloides (L.) Copel., Gen. Fil. (Ann. Cryptog. Phytopathol. 5:) 185. 1947.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 14 May 1995, J.L. Clark & C. Watt 874 (MO, QCNE).
 Epiphyte. Amazonia, Mesoamerica.

Microgramma reptans (Cav.) A.R. Sm., Proc. Calif. Acad. Sci., ser. 4, 40(8): 230. 1975.
 Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 1 Apr 1995, J.L. Clark & Y. Troya 558 (MO, QCNE).
 Epiphyte. Amazonia, Chocó, Mesoamerica.

Nephrolepis biserrata (Sw.) Schott, Gen. Fil. 40(8): 230. 1834.
 Representative Specimen: Ecuador: Manabí: Cordillera de Jama, 300 m, 16 Dec 1998, D. Neill & QCNE botany interns 11563.
 Epiphyte. Amazonia, Chocó, Mesoamerica.

Nephrolepis pendula (Raddi) J. Sm., J. Bot. (Hooker) 4: 197. 1842. .
 Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 3 Apr 1995, J.L. Clark & Y. Troya 588 (MO, QCNE).
 Epiphyte. Amazonia, Chocó, Mesoamerica.

Nephrolepis rivularis (Vahl) Mett. ex Krug, Bot. Jahrb. Syst. 24: 122. 1897.
 Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 650 m, 27 Sep 1996, J.L. Clark 2911 (AAU, MO, QCNE, US).
 Epiphyte. Amazonia, Chocó, Mesoamerica.

Niphidium crassifolium (L.) Lellinger, Amer. Fern J. 62: 106. 1972[1973].
 Representative Specimen: Ecuador: Manabí: Cordillera de Jama, 600 m, 16 Dec 1998, D. Neill & QCNE botany interns 11546.
 Terrestrial herb. Amazonia, Chocó, Mesoamerica.

Oleandra articulata (Sw.) C. Presl, Tent. Pterid. 78, t. 2, f. 12. 1836. .
 Representative Specimen: Ecuador: Esmeraldas: 600 m, 20 May 1987, H. van der Werff, C. Dodson, & W. Palacios 9557 (MO).

- Epiphyte. Amazonia, Chocó, Mesoamerica. Hemiepiphyte. Amazonia, Chocó, Mesoamerica.
- Pecluma divaricata** (E. Fourn.) Mickel & Beitel, Mem. New York Bot. Gard. 46: 269. 1988.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 14 Sep 1994, J.R. Abbott 15111. Epiphyte. Amazonia, Mesoamerica.
- Pityrogramma calomelanos** (L.) Link, Handbuch 3: 20. 1833
Representative Specimen: Ecuador: Manabí: Recinto Hojas Blancas, Carretera Pedernales-Carmen Mandarino, Entrada el Mono, 150 m, 12 Apr 1997, J.L. Clark, T. Nuñez & C. Robles 4385. Terrestrial herb. Amazonia, Chocó, Mesoamerica.
- Pityrogramma tartarea** (Cav.) Maxon, Contr. U.S. Natl. Herb. 17(2): 173. 1913
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 10 Dec 1994, N. Pitman & M.S. Bass 1076 (MO, QCNE). Terrestrial herb. Amazonia, Mesoamerica.
- Polybotrya altescandens** C. Chr., Index Filic. 7. 1905.
Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300–700 m, 5 Mar 1997, H. Vargas, X. Aguirre, R. Miranda & C. Robles 1216 (MO, QCNE). Hemiepiphyte. Amazonia, Chocó.
- Polybotrya andina** C. Chr., Index Filic. 7. 1905.
Arostichum insigne Baker. Type: Ecuador, Andes of Quito, Sodiro, L. s.n. (HT: K; IT: AAU, GH, Q, UC, US; photo: GH(K), US(K))
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 6 Dec 1994, N. Pitman & M.S. Bass 1007 (MO, QCNE). Hemiepiphyte. Endemic.
- Polybotrya polybotryoides** (Baker) H. Christ, Bull. Herb. Boissier 1: 70. 1901.
Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 28 Jan 1991, A. Gentry & C. Josse 72797 (MO).
- Polybotrya suberecta** (Baker) C. Chr., Index Filic. 506. 1906. .
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 4–5 Oct 1996, J.L. Clark 2997 (MO, QCNE). Hemiepiphyte. Amazonia, Chocó.
- Polypodium caceresii** Sodiro, Crypt. Vasc. Quit. 360. 1893. Type: Crece en los bosques de Oriente en la orilla del río Napo, colectado por, *Caceres*, R.P.R. s.n. (HT: ?; IT: S, US; photo: GH, MO (all of S)).
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 28 Sep 1994, N. Pitman & L. Kueppers 746 (MO, QCNE). Terrestrial or epiphytic herb. Amazonia, Chocó, Mesoamerica.
- Polypodium ciliatum** Willd., Sp. Pl. 5: 144. 1810.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 18 Sep 1994, J.R. Abbott 15177. Terrestrial or epiphytic herb. Amazonia, Mesoamerica.
- Polypodium dulce** Poir., Encycl. 5: 523. 1804. (eds.), 1999; Mickel, J. T. & A. R. Smith, 2004
Representative Specimen: Ecuador: Manabí: Cordillera de Jama, 600 m, 16 Dec 1998, D. Neill & QCNE botany interns 11591. Terrestrial or epiphytic herb. Amazonia, Mesoamerica.
- Polypodium fraxinifolium** Jacq., Collectanea 3: 187. 1789[1791].
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 22 Oct 1996, J.L. Clark 3064 (MO, QCNE). Epiphyte. Amazonia, Chocó, Mesoamerica.
- Polypodium sororium** Humb. & Bonpl. ex Willd., Sp. Pl. 5: 191. 1810
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–

- 600 m, 29 Sep 1994, *M.S. Bass, L. Kueppers & N. Pitman 105* (MO, QCNE).
Epiphyte. Amazonia, Chocó, Mesoamerica.
- Polypodium triseriale** Sw., J. Bot. (Schrader) 1800(2): 26. 1801.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 16 Nov 1994, *N. Pitman & M.S. Bass 946* (MO, QCNE).
Epiphyte. Amazonia, Chocó, Mesoamerica.
- Polytaenium cajenense** (Desv.) Benedict, Bull. Torrey Bot. Club 38: 169. 1911.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 31 Mar 1996, *J.L. Clark & Karl Berg, J. Leffingwell 2366* (MO, QCNE).
Epiphyte. Amazonia, Chocó, Mesoamerica.
- Polytaenium lineatum** (Sw.) J. Sm., J. Bot. (Hooker) 4: 68. 1841.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 1 Apr 1995, *J.L. Clark & Y. Troya 557* (MO, QCNE).
Epiphyte. Amazonia, Mesoamerica.
- Psilotum nudum** (L.) P. Beauv., Prodri. Aetheogam. 112. 1805.
Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 500 m, 26 Aug 1998, *D. Neill & QCNE botany interns 11326*.
Epiphyte. Chocó, Mesoamerica.
- Pteris altissima** Poir., Encycl. 5: 722. 1804.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 17 May 1995, *J.L. Clark & C. Watt 911* (MO, QCNE).
Terrestrial herb. Amazonia, Chocó, Mesoamerica.
- Pteris biaurita** L., Sp. Pl. 2: 1076. 1753.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 7 Dec 1994, *N. Pitman & M.S. Bass 1034* (MO, QCNE).
Terrestrial herb. Mesoamerica.
- Pteris livida** Mett., Ann. Sci. Nat., Bot. 2: 222. 1864.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 11 Apr 1995, *J.L. Clark & Y. Troya 697* (MO, QCNE).
Terrestrial herb. Amazonia, Chocó, Mesoamerica.
- Pteris pungens** Willd., Sp. Pl. 5: 387. 1810.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 15 Nov 1994, *N. Pitman & J.L. Clark 936* (MO, QCNE).
Terrestrial herb. Amazonia, Chocó, Mesoamerica.
- Pteris speciosa** Mett. ex Kuhn, Linnaea 36: 91. 1869.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 27 Sep 1996, *J.L. Clark 2926* (MO, QCNE).
Terrestrial herb. Amazonia, Chocó, Mesoamerica.
- Radiovittaria gardneriana** (Fée) E.H. Crane, Syst. Bot. 22(3): 515. 1997 [1998].
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 17 Jul 1996, *N. Pitman 1317* (MO, QCNE).
Epiphyte. Amazonia.
- Radiovittaria remota** (Fée) E.H. Crane, Syst. Bot. 22(3): 515. 1997 [1998].
Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300–700 m, 20 Jul 1996, *J.L. Clark, E. Arroyo & P. Hibbs 2688* (MO, QCNE).
Epiphyte. Amazonia, Mesoamerica.
- Saccoloma elegans** Kaulf., Berlin. Jahrb. Pharm. Verbundenen Wiss. 21: 51. 1820.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 28 Sep 1994, *N. Pitman & L. Kueppers 742* (MO, QCNE).
Terrestrial herb. Amazonia, Chocó, Mesoamerica.

Saccoloma inaequale (Kunze) Mett., Ann. Sci. Nat., Bot., ser. 4, 15: 80. 1861.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 1 Oct 1994, N. Pitman, M.S. Bass & L. Kueppers 786 (MO, QCNE).

Terrestrial herb. Amazonia, Chocó, Mesoamerica.

600 m, 11 Dec 1994, M.S. Bass & N. Pitman 335 (MO, QCNE).

Terrestrial herb. Amazonia, Chocó, Mesoamerica.

Selaginella flexuosa Spring, Flora 21: 197. 1838.

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro 400 -700 m, 16 Jun 1996, N. Pitman & D. Arroyo 1288 (MO, QCNE).

Terrestrial herb. Amazonia, Chocó, Mesoamerica.

Sticherus hypoleucus (Sodiro) Copel., Gen. Fil. (Ann. Cryptog. Phytopathol. 5:) 28. 1947. *Gleichenia hypoleuca* Sodiro. Type: Crece en lugares pedregosos, secos, templados, en la orilla del río Yamboya.—(1600mm.). *Sodiro, L. s.n.* (HT: ?).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 13 Oct 1994, N. Pitman 824 (MO, QCNE).

Terrestrial herb. Amazonia, Chocó, Mesoamerica.

Selaginella geniculata (C. Presl) Spring, Bull. Acad. Roy. Sci. Bruxelles 10(1): 230. 1843.

Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 200 m, 10 Oct 1996, J.L. Clark 3030 (MO, QCNE). Terrestrial herb. Amazonia, Chocó, Mesoamerica.

Sticherus remotus (Kaulf.) Chrysler, Amer. J. Bot. 31(8): 483. 1944.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 12 Oct 1994, N. Pitman & M.S. Bass 817 (MO, QCNE)

Terrestrial herb. Amazonia, Mesoamerica.

Selaginella kunzeana A. Braun, Ann. Sci. Nat., Bot., ser. 5, 3: 296. 1865.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 5 Dec 1994, J.L. Clark & K. Chamberlain 371 (MO, QCNE).

Terrestrial herb. Amazonia, Chocó, Mesoamerica.

Tectaria acutiloba (Hieron.) Maxon, Proc. Biol. Soc. Wash. 43: 88. 1930. *Aspidium acutilobum* Hieron. Type: Columbia: Crescit ad ripas fluminis Rio Timbiquí, Lehmann 8932 (HT: B destr.?).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 14 May 1995, J.L. Clark & C. Watt 864 (MO, QCNE).

Terrestrial herb. Chocó, Mesoamerica.

Selaginella wolffii Sodiro, Crypt. Vasc. Quit. 620. 1893. Type: Crece en los bosques de la cordillera occidental, entre 1400 y 2200 metros, rara, *Sodiro s.n.* (T: P).

Representative Specimen: Ecuador: Esmeraldas: Reserva Awa 150 - 200 m, 9 Feb 1988, W.S. Hoover, R.A. Lorentzen & P. Gelpi 3837 (MO).

Representative Specimen: Manabí: Cerro Pata de Pájaro 400–700 m, 16 Jun 1996, N. Pitman & D. Arroyo 1287 (MO, QCNE).

Terrestrial herb. Amazonia, Chocó.

Tectaria antioquiana (Baker) C. Chr., Index Filic., Suppl. 3, 177. 1934. *Nephrodium antioquianum* Baker. Type: New Granada: Antioquia: on trees amongst moss and forests at 5000 ft., Kalbreyer 1703.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 650 m, 12 Mar 1997, J.L. Clark, A. Cousins, T. Nuñez & J. Richter 4101

Terrestrial herb. Amazonia, Chocó, Mesoamerica.

Sticherus ferrugineus (Desv.) J. Gonzales. *Mertensia ferruginea* Desv.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–

600 m, 11 Dec 1994, M.S. Bass & N. Pitman 335 (MO, QCNE).

- Sodiro. Type: crece en los bosques al rededor de S. Miguel de los Colorados.— Muy raro., *Sodiro, L. s.n.* (HT: ?; IT: K; photo: GH(K)).
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 16 May 1995, *J.L. Clark & C. Watt* 886 (MO, QCNE).
- Terrestrial herb. Amazonia.
- Tectaria incisa** Cav., Descr. Pl. 249. 1802.
- Representative Specimen: Ecuador: Manabí: Cordillera de Jama, 600 m, 16 Dec 1998, *D. Neill & QCNE botany inters* 11587.
- Terrestrial herb. Amazonia, Chocó, Mesoamerica.
- Tectaria mexicana** (Fée) C.V. Morton, Amer. Fern J. 56(3): 133. 1966.
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 30 Dec 1994, *N. Pitman & David Marsh* 1129 (MO, QCNE).
- Terrestrial herb. Chocó, Mesoamerica.
- Tectaria pilosa** (Fée) R.C. Moran, Novon 2(2): 138. 1992.
- Representative Specimen: Ecuador: Manabí: 34 km al norte de Pedernales 60 m, 28 Aug 1998, *D. Neill & QCNE botany inters* 11450.
- Terrestrial herb. Amazonia, Chocó, Mesoamerica.
- Tectaria plantaginea** (Jacq.) Maxon, Contr. U.S. Natl. Herb. 10: 494. 1908.
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 14 May 1995, *J.L. Clark & C. Watt* 872 (MO, QCNE).
- Terrestrial herb. Amazonia, Chocó, Mesoamerica.
- Tectaria rivalis** (Mett. ex Kuhn) C. Chr., Index Filic., Suppl. 3, 184. 1934.
- Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 200 m, 10 Oct 1996, *J.L. Clark* 3042 (MO, QCNE).
- Terrestrial herb. Mesoamerica.
- Terpsichore alsophilicola** (H. Christ) A.R. Sm., Novon 3(4): 485. 1993.
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 1 Oct 1994, *L. Kueppers* 31 (MO, QCNE).
- Epiphyte. Mesoamerica.
- Terpsichore chrysleri** (Proctor ex Copel.) A.R. Sm., Novon 3(4): 486. 1993.
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 12 May 1995, *J.L. Clark & C. Watt* 842 (MO, QCNE).
- Epiphyte. Amazonia, Chocó, Mesoamerica.
- Terpsichore lehmanniana** (Hieron.) A.R. Sm., Novon 3(4): 487. 1993.
- Representative Specimen: Esmeraldas: Bilsa Biological Station, 580 m, 18 Feb 1995, *W. Palacios, J.L. Clark & N. Jaramillo* 13566 (MO, QCNE).
- Epiphyte. Mesoamerica.
- Thelypteris amphioxypertis** (Sodiro) A.R. Sm., Fl. Ecuador 18: 17. 1983. *Nephrodium amphioxypertis* Sodiro. Type: Crece en las inmediaciones de S. Miguel de los Colorados, en lugares calientes, sombríos y húmedos.— Raro., *Sodiro, L. s.n.* (HT: ?; IT: K(2)?).
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 18 May 1995, *J.L. Clark & C. Watt* 914 (MO, QCNE).
- Terrestrial herb. Amazonia, Chocó, Mesoamerica.
- Thelypteris andreana** (Sodiro) C.V. Morton, Contr. U.S. Natl. Herb. 38: 50. 1967. *Meniscium andeanum* Sodiro. Type: Crece en la región tropical en la orilla del río Toachi cerca de Santo Domingo, *Sodiro, L. s.n.* (HT: ?).
- Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro 400–700 m, 17 Jun 1996, *N. Pitman* 1335 (MO, QCNE).
- Terrestrial herb. Amazonia, Mesoamerica.
- Thelypteris angustifolia** (Willd.) Proctor, Bull. Inst. Jamaica, Sci. Ser. 5: 57. 1953.
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–

600 m, 16 May 1995, *J.L. Clark & C. Watt*
891 (MO, QCNE).

Terrestrial herb. Amazonia, Chocó,
Mesoamerica.

Thelypteris dentata (Forssk.) E.P. St. John, Amer.
Fern J. 26(2): 44. 1936.

Representative Specimen: Ecuador: Esmeraldas:
Bilsa Biological Station, 400–600 m, 14
May 1995, *J.L. Clark & C. Watt* 865 (MO,
QCNE).

Terrestrial herb. Amazonia, Chocó,
Mesoamerica.

Thelypteris falcata (Liebm.) R.M. Tryon,
Rhodora 69(777): 6. 1967. Liebm.

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 400–
600 m, 16 May 1995, *J.L. Clark & C. Watt*
898 (MO, QCNE).

Terrestrial herb. Chocó, Mesoamerica.

Thelypteris fluminalis A.R. Sm., Fl. Ecuador 18:
46. 1983. Type: Ecuador: Morona-Santiago/
Zamora-Chinchipe: Near Mendez, upland
along the río Upano just N of junction with
río Chupiantza, 533–762 m, *Camp, W.H. E-*
1009 (HT: US(2)).

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 400–
600 m, 24 Sep 1994, *J.L. Clark & N. Pitman*
109 (MO, QCNE).

Terrestrial herb. Amazonia, Chocó.

Thelypteris francoana (E. Fourn.) C.F. Reed,
Phytologia 17(4): 278. 1968.

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 500
m, 31 Mar 1996, *J.L. Clark & Karl Berg, J.*
Leffingwell 2357 (MO, QCNE).

Terrestrial herb. Mesoamerica.

Thelypteris fraseri (Mett. ex Kuhn) A.R. Sm.,
Univ. Calif. Publ. Bot. 76: 32. 1980.
Aspidium fraseri Mett. ex Kuhn. Type:
Ecuador, *Fraser s.n.* (HT: B, BM fragm.,
GH fragm.; photo: BM(B), GH(B)).

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 400–
600 m, 4 Apr 1995, *J.L. Clark & Y. Troya*

594 (AAU, MO, QCNE).

Terrestrial herb. Mesoamerica.

Thelypteris gemmulifera (Hieron.) A.R. Sm.,
Opera Bot. 56: 30. 1980.

Representative Specimen: Ecuador:
Esmeraldas: Paraíso de Papagayos, 200 m,
10 Oct 1996, *J.L. Clark* 3038 (MO, QCNE).

Terrestrial herb. Chocó, Mesoamerica.

Thelypteris germaniana (Fée) Proctor, Rhodora
61(732): 306. 1959[1960].

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 650
m, 27 Sep 1996, *J.L. Clark* 2916
(MO, QCNE).

Terrestrial herb. Mesoamerica.

Thelypteris gigantea (Mett.) R.M. Tryon,
Rhodora 69(777): 6. 1967.

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 400–
600 m, 11 May 1995, *John L Clark & C.*
Watt 828 (MO, QCNE).

Terrestrial herb. Amazonia, Chocó,
Mesoamerica.

Thelypteris glandulosa (Desv.) Proctor, Rhodora
61(732): 306. 1959[1960].

Representative Specimen: Ecuador:
Esmeraldas: 50 m, 8 Oct 1983, *Barfod et al.*
48023 (AAU).

Terrestrial herb. Amazonia, Mesoamerica

Thelypteris glandulosa var. **longipilosa** A.R. Sm.,
Univ. Calif. Publ. Bot. 76: 22. 1980.

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 400–
600 m, 28 Sep 1994, *M.S. Bass, L. Kueppers & N. Pitman* 100 (MO, QCNE).

Terrestrial herb. Amazonia, Mesoamerica.

Thelypteris leprieurii (Hook.) R.M. Tryon,
Rhodora 69(777): 6. 1967.

Terrestrial herb. Amazonia, Chocó,
Mesoamerica.

Thelypteris leprieurii var. **leptolepis**.

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 500

- m, 1 Oct 1994, *L. Kueppers* 54 (MO, QCNE).
Terrestrial herb. Amazonia, Chocó, Mesoamerica.
- Thelypteris opulenta** (Kaulf.) Fosberg, Smithsonian Contr. Bot. 8: 3-6. 1972
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 13 Oct 1994, *N. Pitman* 832 (MO, QCNE).
Terrestrial herb. Amazonia, Chocó, Mesoamerica.
- Thelypteris peripae** (Sodiro) C.F. Reed, Phytologia 17(4): 303. 1968. *Nephrodium peripae* Sodiro. Type: Crece cerca de S. Miguel de los Colorados en la orilla del río Peripa, uno de los primeros orígenes del río Daule., *Sodiro*, *L. s.n.* (HT: ?; IT: K?).
Representative Specimen: Ecuador: Esmeraldas: Mache-Chindul, comunidad Caña Braval, 250 m, 16 Mar 1998, *J.L. Clark* 4737.
Terrestrial herb. Amazonia.
- Thelypteris poiteana** (Bory) Proctor, Bull. Inst. Jamaica, Sci. Ser. 5: 63. 1953.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 17 Nov 1994, *N. Pitman* 967 (MO, QCNE).
Terrestrial herb. Amazonia, Mesoamerica.
- Thelypteris polyphlebia** (C. Chr.) C.V. Morton, Amer. Fern J. 51: 38. 1961
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 14 May 1995, *J.L. Clark & C. Watt* 863 (MO, QCNE).
Terrestrial herb. Amazonia, Chocó, Mesoamerica.
- Thelypteris tristis** (Kunze) R.M. Tryon, Rhodora 69(777): 8. 1967.
Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor 450–500 m, 28 Nov 1999, *T. Delinks* 514.
Terrestrial herb. Amazonia, Chocó, Mesoamerica.
- Thelypteris urbanii** (Sodiro) A.R. Sm., Fl. Ecuador 18: 116. 1983. *Polypodium urbanii* Sodiro. Type: Crece en la pendiente occidental del monte Pichincha, en el valle de Mindo entre 1.000 y 1.600 metros, *Sodiro*, *L. s.n.* (ST: P, US).
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 18 May 1995, *J.L. Clark & C. Watt* 921 (MO, QCNE).
Terrestrial herb. Mesoamerica.
- Trichomanes ankersii** C. Parker ex Hook. & Grev., Icon. Filic. 2(11): t. 201. 1831.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 26 Sep 1994, *N. Pitman* 731 (MO, QCNE).
Epiphyte. Amazonia, Chocó, Mesoamerica.
- Trichomanes collariatum** Bosch, Ned. Kruidk. Arch. 4: 368. 1859 [1858].
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 2 Apr 1995, *J.L. Clark & Y. Troya* 571 (MO, QCNE).
Epiphyte. Amazonia, Chocó, Mesoamerica.
- Trichomanes diversifrons** (Bory) Mett. ex Sadeb., Nat. Pflanzenfam. 1(4): 108. 1899.
Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 200 m, 10 Oct 1996, *J.L. Clark* 3031 (MO, QCNE).
Epiphyte. Amazonia, Chocó, Mesoamerica.
- Trichomanes elegans** Rich., Actes Soc. Hist. Nat. Paris 1: 114. 1792.
Representative Specimen: Ecuador: Esmeraldas: Comunidad Chorrera Grande, 300–750 m, 10–13 Jul 1996, *J.L. Clark, N. Binder & Meter Hibbs* 2843 (MO, QCNE).
Epiphyte. Amazonia, Chocó, Mesoamerica.
- Trichomanes gourlianum** Grev. ex J. Sm., Bot. Voy. Herald 240. 1854.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 29 Sep 1994, *N. Pitman, M.S. Bass & L. Kueppers* 763 (MO, QCNE).
Epiphyte. Chocó, Mesoamerica.

Trichomanes membranaceum L., Sp. Pl. 2: 1097.

1753. Type: America, *Anon.*

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 29 Sep 1994, *N. Pitman, M.S. Bass & L. Kueppers* 764 (MO, QCNE).

Epiphyte. Amazonia, Chocó, Mesoamerica.

Trichomanes polypodioides L., Sp. Pl. 2: 1098.

1753.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 1 Oct 1994, *N. Pitman, M.S. Bass & L. Kueppers* 781 (MO, QCNE).

Epiphyte. Amazonia, Chocó, Mesoamerica.

Trichomanes radicans Sw., J. Bot. (Schrader)

1800(2): 97. 1801.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 5 Dec 1994, *N. Pitman & M.S. Bass* 1002 (MO, QCNE).

Epiphyte. Amazonia, Chocó, Mesoamerica.

Trichomanes sublabiatum Bosch, Ned. Kruidk.

Arch. 5(2): 152. 1861. Type: Hab. Quito, *Cuming* 17 (HT: B destr?).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 3 Jan 1995, *N. Pitman* 1174 (MO, QCNE).

Epiphyte. Amazonia, Chocó.

Vittaria remota Féé, Mem. Soc. Sci. Nat.

Strasbourg 5: 26, pl. 20, f. 1. 1857.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 5 May 1995, *J.L. Clark & C. Watt* 745 (MO, QCNE).

Epiphyte. Amazonia, Chocó, Mesoamerica.

GYMNOSPERMAE**CYCADACEAE****Zamia lindenii** Regel ex André, Ill. Hort. 22: 23, t. 195. 1875.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 24 Nov 1999, *F. Nicolalde & Grupo de Post-Grado MO-QCNE* 375 (MO, QCNE).

Terrestrial shrub. 30-600 m. Chocó [We consider this taxon as distinct from the Amazonian *Zamia poeppigiana* Mart. & Eichler; fide C.H. Dodson, pers. comm.]

ANGIOSPERMAE**ACANTHACEAE****Aphelandra albinotata** Wassh., Nordic J. Bot.

16(4): 405. 1996. Type: Ecuador: Esmeraldas: vicinity of Lita, on the Ibarra-San Lorenzo railroad, 550-650 m, *M.T. Madison, T.C. Plowman, H.A. Kennedy & L. Besse* 5094 (HT: US; IT: AAU, F, QCA, SEC).

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro 400-700 m, 16 Jun 1996, *N. Pitman & D. Arroyo* 1283 (MO, QCNE).

Terrestrial herb. 400-700 m. Endemic.

Aphelandra attenuata Wassh., Phytologia 25(7):

487. 1973. Type: Ecuador: Guayas: Manglaralto, 0-50 m, 12 Dec 1961, *C.H. Dodson & Thien* 1647 (HT: US).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 18 Oct 1994, *J.L. Clark & B. Adnepos* 204 (MO, QCNE).

Terrestrial shrub. 400-600 m. Endemic (including coastal Tumbes, Peru)

Blechum pyramidatum (Lam.) Urb., Repert.

Spec. Nov. Regni Veg. 15: 323. 1918.

Representative Specimen: Ecuador: Manabí: Cerro del Matal 100 m, 17 Dec 1998, *D. Neill & QCNE botany interns* 11616 (MO, QCNE).

Terrestrial shrub. 400-600 m. Amazonia, Chocó, Mesoamerica.

Dicliptera peruviana (Lam.) Juss., Ann. Mus.

Natl. Hist. Nat. 9: 268. 1807.

Representative Specimen: Ecuador: Manabí: Camaronés 100 m, 15 Dec 1998, *D. Neill & QCNE botany interns* 11513 (MO, QCNE).

Terrestrial herb. 100 m. Coastal Ecuador; also Galápagos and coastal and Andean Peru.

- Dicliptera unguiculata** Nees, Bot. Voy. Sulphur 149. 1846.
 Representative Specimen: Ecuador: Manabí: Cerro del Matal 100 m, 17 Dec 1998, *D. Neill & QCNE botany interns 11604* (MO, QCNE).
 Terrestrial herb. 100 m. Mesoamerica.
- Encephalosphaera puberula** (Leonard) Wassh., Monogr. Syst. Bot. Missouri Bot. Gard. 75: 953. 1999. *Aphelandra puberula* Leonard. Type: Colombia: El Cauca: in primitive forest at La Costa, 900 m, 27 Jul 1936, *K. von Sneidern 869* (HT: S; IT: US fragm.).
 Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 22 Oct 1996, *J.L. Clark 3086* (MO, QCNE).
 Succulent terrestrial vine in sunny disturbed areas. 100 m. Chocó.
- Fittonia albivenis** (Lindl. ex Veitch) Brummitt, Curtis's Bot. Mag., New Ed. 182(4): 165. 1979.
 Representative Specimen: Ecuador: Esmeraldas: Mache-Chindul, comunidad Caña Braval, 250 m, 16 Mar 1998, *J.L. Clark 4666* (MO, QCNE).
 Terrestrial herb. 250 m. Amazonia, Mesoamerica.
- Hygrophila costata** Nees, Pl. Hort. Bonn. Icon. 2: 7-8, t. 3. 1824.
 Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 27 Mar 1995, *J.L. Clark & Y. Troya 516* (MO, QCNE).
 Terrestrial herb. 400-600 m. Amazonia, Chocó, Mesoamerica.
- Justicia pectoralis** Jacq., Enum. Syst. Pl. 11. 1760.
 Representative Specimen: Ecuador: Esmeraldas: Mache-Chindul, comunidad Caña Braval, 250 m, 16 Mar 1998, *J.L. Clark 4727* (MO, QCNE).
 Terrestrial herb. 250 m. Amazonia, Mesoamerica.
- Mendoncia aspera** Ruiz & Pav., Syst. Veg. Fl. Peruv. Chil. 158. 1798.
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 4 May 1995, *J.L. Clark & C. Watt 738* (MO, QCNE).
 Herbaceous vine. 400-600 m. Amazonia
- Mendoncia orbicularis** Turrill, Bull. Misc. Inform. Kew 1919(10): 423. 1919. Type: Ecuador. Chimborazo: at the foot of Mt. Chimborazo, 923 m, *R. Spruce 6213* (HT: K).
 Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 200 m, 6 Jul 1996, *J.L. Clark 2760* (MO, QCNE).
 Herbaceous vine. 400-600 m. Amazonia, Chocó.
- Mendoncia pilosa** Mart., Nov. Gen. Sp. Pl. 3: 21, t. 209. 1829.
 Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 200 m, 28 Mar 1998, *J.L. Clark & S. Nazzaro 4942* (MO, QCNE).
 Herbaceous vine. 200 m. Amazonia.
- Mendoncia sprucei** Lindau, Bull. Herb. Boissier 5(8): 647. 1897.
 Representative Specimen: Ecuador: Esmeraldas: San Salvador 100–150 m, Mar 1995, *W. Palacios 13769* (MO, QCNE).
 Liana. 100-150 m. Amazonia.
- Odontonema cuspidatum** (Nees) Kuntze, Revis. Gen. Pl. 2: 494. 1891.
 Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300–700 m, 7 Apr 1997, *J.L. Clark, T. Nuñez & C. Robles 4316* (MO, QCNE).
 Shrub. 300-700 m. Mesoamerica.
- Pseuderanthemum dawei** Turrill, Bull. Misc. Inform. Kew 2: 69. 1920.
 Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 22 Oct 1996, *J.L. Clark 3087* (MO, QCNE).
 Herbaceous vine. 500 m. Chocó.
- Pseuderanthemum hookerianum** (Nees) V.M. Baum, Brittonia 34(4): 433. 1982.

- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 23 Nov 1995, *J.L. Clark & K. Cunningham, C. Roberts 1650* (MO, QCNE). Terrestrial herb. 500 m. Amazonia.
- Pseuderanthemum leptorachis** Lindau, Bull. Herb. Boissier 5(8): 664. 1897. Syntype: Ecuador. Manabí. El Recreo, Eggers 15025 (B. destr., F, US)
- Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 700 m, 26 Aug 1998, *D. Neill & QCNE botany interns 11344* (MO, QCNE). Terrestrial subshrub. 250-700 m. Amazonia.
- Razisea ericae** Mildbr. ex Wassh., Novon 7(1): 88-91, f. 1-2. 1997. Type: Ecuador: Napo: vicinity of Tena, Hda. Dos Ríos, 650 m., *E. Heinrichs 309* (HT: G).
- Representative Specimen: Ecuador: Manabí: Mache-Chindul 250 m, 25 Mar 1997, *J.L. Clark R. Dunn, T. Nuñez & C. Robles 4230* (MO, QCNE). Terrestrial herb. 250 m. Amazonia.
- Ruellia brevifolia** (Pohl) C. Ezcurra, Darwiniana 29: 278. 1989.
- Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor, 100 m, 15 Dec 1998, *D. Neill & QCNE botany interns 11509* (MO, QCNE). Shrub. 50-100 m. Amazonia.
- Ruellia potamophila** Leonard, Contr. U.S. Natl. Herb. 31(1): 71. 1951.
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 18 Nov 1996, *J.L. Clark, F. Gurumendi & H. Weinert 3450* (MO, QCNE). Terrestrial herb. 500 m. Choco.
- Ruellia terminale** (Nees) Wassh., Monogr. Syst. Bot. Missouri Bot. Gard. 75: 953. 1999. *Scorodoxylum terminale* Nees. Type. Ecuador: Esmeraldas, Atacames, *Barclay s.n.*
- Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 200 m, 10 Oct 1996, *J.L. Clark 3034* (MO, QCNE).
- Terrestrial herb. 200 m. Chocó
- Sanchezia parviflora** Leonard, J. Wash. Acad. Sci. 16: 491. 1926. Type: Ecuador: El Oro: between Santa Rosa and La Chorita, August 1923, *A.S. Hitchcock 21127* (HT: US).
- Representative Specimen: Ecuador: Esmeraldas: Mache-Chindul, comunidad Caña Braval, 250 m, 16 Mar 1998, *J.L. Clark 4733* (MO, QCNE). Shrub. 250 m. Endemic
- Thunbergia grandiflora** Roxb., Bot. Cab. 4: t. 324. 1820.
- Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 200 m, 27 Oct 1996, *J.L. Clark & C. Brame 3114* (MO, QCNE). Herbaceous vine. 200 m. Introduced; widely cultivated in tropics.
- Trichanthera gigantea** (Bonpl.) Nees, Prodr. 11: 218. 1847. *Ruellia gigantea* Bonpl. Type: Colombia. Habitat frequentissime in sylvis fluvii Magdalena, prope Badillas et juxta Ybagué, *Humboldt & Bonpland s.n.*
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 17 Jan 1997, *J.L. Clark, L. Chatrou, C. Repetur & P. Maas 3817* (MO, QCNE). Tree. 500 m. Amazonia, Chocó, Mesoamerica.
- ## ACTINIDIACEAE
- Saurauia herthae** Sleumer, Feddes Repert. Spec. Nov. Regni Veg. 45: 9. 1938. Type: Ecuador: Napo, *Schultze-Rhonhof 2165* (LT: K).
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 20 Mar 1998, *J.L. Clark & C. Pallis 4785* (MO, QCNE). Common roadside tree. 500 m. Amazonia.
- ## AMARANTHACEAE
- Alternanthera brasiliiana** (L.) Kuntze, Revis. Gen. Pl. 2: 537. 1891.
- Representative Specimen: Ecuador: Manabí: Pedernales 5-30 m, 11 Oct 1999, *T. Delinks 442* (MO, QCNE).

- Terrestrial herb. 0-50 m. Chocó, Mesoamerica.
- Alternanthera lanceolata** (Benth.) Schinz, Nat. Pflanzenfam. (ed. 2) 16c: 75. 1934.
Representative Specimen: Ecuador: Esmeraldas: Mache-Chindul comunidad Caña Braval, 250 m, 16 Mar 1998, J.L. Clark 4706 (MO, QCNE).
Terrestrial herb. 250 m. Chocó, Mesoamerica.
- Cyathula prostrata** (L.) Blume, Bijdr. Fl. Ned. Ind. 10: 549. 1826.
Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 200 m, 10 Oct 1996, J.L. Clark 3033 (MO, QCNE).
Terrestrial herb. 200-600 m. Amazonia, Chocó, Mesoamerica.
- Iresine diffusa** Humb. & Bonpl. ex Willd., Sp. Pl. 4(2): 765. 1806.
Representative Specimen: Ecuador: Esmeraldas: Quinindé, 400–600 m, 13 Nov 1994, M.S. Bass & N. Pitman 243 (MO, QCNE).
Herbaceous vine. 400-600 m. Amazonia, Chocó, Mesoamerica.
- Pleuropetalum sprucei** (Hook. f.) Standl., N. Amer. Fl. 21(2): 96. 1917.
Representative Specimen: Ecuador: Manabí: San Sebastian 700 - 750 m, 21 Jan 1991, A. Gentry, R. Foster & C. Josse 72605 (MO).
Shrub. 100-500 m. Chocó, Mesoamerica.
- ### AMARYLLIDACEAE
- Bomarea obovata** Herb., Amaryllidaceae 111. 1837.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 12 May 1995, J.L. Clark & C. Watt 844 (MO, QCNE).
Herbaceous vine. 0-600 m. Amazonia, Chocó, Mesoamerica.
- ### ANACARDIACEAE
- Anacardium occidentale** L., Sp. Pl. 1: 383. 1753.
Representative Specimen: Ecuador: Esmeraldas: Pariso de Papagayos, 200 m, 28 Mar 1998, J.L. Clark & S. Nazzaro 4949 (MO, QCNE).
Tree. 200 m. Introduced; widely cultivated throughout the tropics.
- Spondias mombin** L., Sp. Pl. 1: 371. 1753.
Representative Specimen: Ecuador: Manabí: Cerro del Matal 100 m, 17 Dec 1998, D. Neill & QCNE botany interns 11619 (MO, QCNE).
Tree. 100-600 m. Amazonia, Chocó, Mesoamerica.
- ### ANNONACEAE
- Annona manabiensis** Saff. ex R.E. Fr., Acta Horti Berg. 10(2): 267, taf. 20. 1931. Type: Ecuador: Manabí: hacienda El Recreo (Blühend und fruchtend), 22 Aug 1893, H. Eggers 15197 (HT: B; IT: F, K, L, M, P, US fragm.; photo: F).
Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor 50 m, 25 Aug 1998, D. Neill & QCNE botany interns 11284 (MO, QCNE).
Tree. 0-50 m. Endemic.
- Annona muricata** L., Sp. Pl. 1: 536-537. 1753.
Representative Specimen: Ecuador: Manabí: Punta los Frailes, La Chorrera 5–60 m, 29 Jun 1999, T. Delinks & C. Robles 346 (MO, QCNE).
Tree. 0-60 m. Amazonia, Chocó. Mesoamerica.
- Annona neglecta** R.E. Fr., Acta Horti Berg. 12(2): 278. 1937.
Representative Specimen: Ecuador: Esmeraldas: Muisne 180 m, 23 May 2000, D. Neill & QCNE botany interns 12771 (MO, QCNE).
Tree. 180-500 m. Amazonia.
- Annona oligocarpa** R.E. Fr., Kongl. Svenska Vetenskapsakad. Handl. 24(10): 17-18, t. 7c-e. 1948. Type: Ecuador: Guayas: wet forest E of Manglar Alto, ca. 100 m, 25 Jun 1941, O. Haught 3101 (HT: S; IT: F, US fragm.).
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400

m, 2 Oct 1996, *J.L. Clark* 2975 (MO, QCNE).

Tree. 400 m. Endemic.

Cremastosperma longipes Pirie, Blumea 50(1): 51-52, f. 5. 2005. Type: Colombia: Choco: San José del Palmar, Mouth of river Torito (Tributary of River Hábita), west slope, 3 Mar 1980, *E. Forero, R. Jaramillo, J. Espina Z. & P. Palacios H.* 6576 (HT: COL; IT: MO).

Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 30 Jan 1991, *A. Gentry, R. Foster & C. Josse* 72995 (MO).

Tree, ca. 15 m tall. 280 m. Chocó.

Guatteria sp.

Representative Specimen: Ecuador: Esmeraldas: Recinto Palma Junta, 100 m, 19 May 2000, *D. Neill & QCNE botany interns* 12741 (MO, QCNE).

Tree. Several distinct but undetermined, and probably undescribed, species of *Guatteria* have been collected in the study area.

Klarobelia lucida (Diels) Chatrou, Changing Gen. 133. 1998. *Malmea lucida* Diels, Notizbl. Bot. Gatt. Mus. Berlin-Dahlem 11(102): 78. 1931; R.E. Fries, Acta Horti Bergiani 10(2): 322. 1931. Type: Ecuador. Manabí: Tablada de Zapallo, Feb 1897, *H.F.A. Eggers* 15661 (HT: B (destroyed); lectotype: L; IL: F, K-2 sheets, M, P, US).

Representative Specimen: Ecuador: Manabí: Chone, Recinto Hojas Blancas, Carretera Pedernales-Carmen Mandarino, Entrada el Mono, 150 m, 12 Apr 1997, *J.L. Clark, T. Nuñez & C. Robles* 4365 (MO, QCNE, U)

Tree. 150 m. Endemic.

Klarobelia megalocarpa Chatrou, Changing Gen. 136-138, fig. 5, pl. 3C. 1998. Type: Ecuador. Esmeraldas: Cantón Quininde, Mache-Chindul Ecological Reserve, Bilsa Biological Station, 35 km W of Quininde, 500 m, 15 Jan 1997, *P. Maas, L. Chatrou, C. Repetur & J.L. Clark* 8521 (HT: U; IT: AAU, BR, COL, F, GB, HUA, K, LZ, MO, NY, OWU, QCA, QCNE, TUR, US, USM). (Fig. 5C-D, p.132; 12A-D, p.139).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 26 Mar 1995, *J.L. Clark & Y. Troya* 509 (MO, QCNE, U).

Common tree in the Bilsa reserve. 400-600 m. Endemic.

Mosannona pacifica Chatrou, Changing Gen. 170-171, fig. 8, pl. 4C. 1998. Type: Ecuador. Esmeraldas: The Mache-Chindul Ecological Reserve, Bilsa Biological Station, 35 km W of Quininde, 500 m, 22 Mar 1997, *J.L. Clark* 4107 (HT: QCNE; IT: AAU, COL, CR, F, GB, H, K, LOJA, LZ, MO, NY, OWU, PMA, QCA, TUR, U). (Fig. 5A-B, p.132; 13 A-C, p.140).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 25 Jan 1995, *J.L. Clark* 418 (MO, QCNE, U).

Common tree in the Bilsa reserve. 400-650 m. Endemic.

Rollinia mucosa (Jacq.) Baill., Adansonia 8: 268. 1868.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 650 m, 12 Mar 1997, *J.L. Clark, A. Cousins, T. Nuñez & J. Richter* 3973 (MO, QCNE).

Tree. 650 m. Amazonia, Chocó, Mesoamerica.

Unonopsis sp.

Representative Specimen: Ecuador: Manabí: 31 km al norte de Pedernales, 60 m, 27 Aug 1998, *D. Neill & QCNE botany interns* 11379 (MO, QCNE).

Common subcanopy tree. 60 m.

APIACEAE

Eryngium foetidum L., Sp. Pl. 1: 232. 1753.

Representative Specimen: Ecuador: Manabí: Cordillera de Jama, 16 Dec 1998, *D. Neill & QCNE botany interns* 11594 (MO, QCNE).

Common terrestrial herb in sunny open areas. 600 m. Amazonia, Chocó, Mesoamerica.

Hydrocotyle leucocephala Cham. & Schldl., Linnaea 1: 364. 1826.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 1994, *J.R. Abbott 15030*.

Terrestrial herb. 600 m. Amazonia, Chocó, Mesoamerica.

APOCYNACEAE

Allomarkgrafia plumeriiflora Woodson, Ann. Missouri Bot. Gard. 20(4): 627-628. 1933.
Type: Colombia: Boyacá: forest's edge at stream side, El Umbo, 3200 ft, 13 Oct. 1932, *Lawrance 534* (HT: MO).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 21 Feb 1996, *J.L. Clark 2120* (MO, QCNE).

Herbaceous vine. 400-600 m. Chocó, Mesoamerica.

Anechites nerium (Aubl.) Urb., Repert. Spec. Nov. Regni Veg. 16: 150. 1919.

Representative Specimen: Ecuador: Manabí: Mache-Chindul, comunidad Ambache, 250 m, 6 Apr 1997, *J.L. Clark, R. Dunn, T. Nuñez & C. Robles 4216* (MO, QCNE).

Common lowland herbaceous vine. 0-500 m. Chocó, Mesoamerica.

Aspidosperma macrocarpon Mart., Nov. Gen. Sp. Pl. 1: 59. 1824.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 18 Nov 1994, *J.L. Clark, H. Lintz, & S. Mora 277* (MO, QCNE).

Tree. 400-600 m. Common name: "Naranjillo." Amazonia

Aspidosperma myristicifolium (Markgr.) Woodson, Ann. Missouri Bot. Gard. 38(2): 169. 1951.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 2 Oct 1996, *J.L. Clark 2969* (MO, QCNE).

Tree. 100-500 m. Common name: "Naranjillo." Chocó, Mesoamerica.

Aspidosperma rigidum Rusby, Mem. New York Bot. Gard. 7: 323. 1927.

Representative Specimen: Ecuador: Manabí: Jama, 24 km S of Pedernales, N of Reserva de Lalo Loor, 7 Oct 1999, *T. Delinks & C. Robles 381* (MO, QCNE, Z).

Subcanopy tree. 300-350 m. Common names: "Naranjillo" or "Canelon." Amazonia, Chocó, Mesoamerica.

Bonafousia columbiensis L. Allorge, Ann. Missouri Bot. Gard. 68(4): 679-681, f. 2. 1981 [1982]. Type: Colombia: Espriella, Tumaco, 20 Jun 1959, *[Romero-] Castaneda 2799* (HT: MO).

Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 29 Jan 1991, *A. Gentry, R. Foster & C. Josse 72858* (MO).

Tree. Chocó

Lacmellea speciosa Woodson, Ann. Missouri Bot. Gard. 36(4): 543-544. 1949. Type: Colombia: Del Valle: Río Calima (region del Chocó), La Trojita, 5-50 m, 19 Feb-10 Mar 1944, *J. Cuatrecasas 16568* (HT: MO).

Representative Specimen: Esmeraldas: Bilsa Biological Station, 500 m, 20 Mar 1998, *J.L. Clark & C. Pallis 4899* (MO, QCNE).

Tree. 450-650 m. Common name: "Chidle." Amazonia, Chocó, Mesoamerica.

Laubertia boissieri A. DC., Prodr. 8: 487. 1844.

Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 30 Jan 1991, *A. Gentry, R. Foster & C. Josse 72942* (MO).

Herbaceous vine. Amazonia.

Macropharynx renteriae A.H. Gentry, Phytologia 47(2): 99. 1980. Type: Colombia: Chocó: ca 37 km W of Las Animas on new PanAmerican Hwy, 180 m, disturbed roadside forest, 10 Jan 1979, *A. Gentry & Renteria 23955* (HT: COL; IT: MO, HUA).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 10 Jan 1997, *J.L. Clark, E. Austen, S. Bennett & D. Kapan 3780* (MO, QCNE). Herbaceous vine. 400-600 m. Chocó, Mesoamerica.

Odontadenia puncticulosa (Rich.) Pulle, Enum. Vasc. Pl. Surinam 383. 1906.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 200 m, 7 Jul 1996, J.L. Clark 2776 (MO, QCNE).

Woody liana growing in canopy. 200 m. Amazonia, Chocó, Mesoamerica.

Prestonia mollis Kunth, Nov. Gen. Sp. 3: 221, t. 242. 1818 [1819].

Representative Specimen: Ecuador: Manabí: Cerro del Matal 100 m, 17 Dec 1998, D. Neill & QCNE botany interns 11612 (MO, QCNE).

Liana. 5-100 m. Mesoamerica.

Prestonia rotundifolia K. Schum. ex Woodson, Ann. Missouri Bot. Gard. 23(2): 318-320. 1936. Type: Ecuador: Manabí: El Recreo, Aug 1893, H. Eggers 15078 (HT: M; IT: B, US fragm.).

Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 29 Jan 1991, A. Gentry & C. Josse 72840 (MO).

Woody hemi-epiphytic climber in subcanopy. 10-600 m. Amazonia, Chocó [formerly considered endemic to western Ecuador]

Rauvolfia leptophylla A.S. Rao, Ann. Missouri Bot. Gard. 43(3): 305-306, f. 11. 1956. Type: Colombia: Magdalena: San Sebastián de Rábago, Romero R. Castañeda 900 (HT: MO).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station Biologcial Station, 400-600 m, 18 Oct 1994, J.L. Clark & B. Adnepos 201 (MO, QCNE).

Tree. 400-700 m. Common name: "Huevos de Perro." Amazonia ,Chocó.

Rauvolfia macrantha K. Schum. ex Markgr., Repert. Spec. Nov. Regni Veg. 20: 117, 120. 1924.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 650 m, 12 March 1997, J.L. Clark, A. Cousins, T. Nuñez & J. Richter 3988 (MO, QCNE).

Tree. 650 m. Common name: "Huevos de Perro." Mesoamerica.

Rauvolfia sprucei Müll. Arg., Fl. Bras. 6(1): 34, pl. 10, f. 1. 1860.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 17 Nov 1994, J.L. Clark & S. Mora 256 (MO, QCNE).

Tree or Hemiepiphyte. 400-500 m. Common name: "Huevos de Perro." Amazonia

Tabernaemontana amygdalifolia Jacq., Enum. Syst. Pl. 14. 1760.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 20 Feb 1996, J.L. Clark 2115 (MO, QCNE).

Tree. 280-600 m. Common name: "Lechoso." Amazonia, Chocó, Mesoamerica.

Tabernaemontana columbiensis (L. Allorge)

Leeuwenb., Agric. Univ. Wageningen Pap. 87(5): 5. 1987 [1988]. Bonaousia columbiensis L. Allorge. Type: Colombia: Espriella, Tumaco, 20 Jun 1959, /Romero-J Castaneda 2799 (HT: MO).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 23 Jan 1995, J.L. Clark 406 (MO, QCNE, WAG).

Tree. 280-600 m. Amazonia, Chocó, Mesoamerica.

Tabernaemontana heterophylla Vahl, Eclog. Amer. 2: 22. 1798.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 450-650 m, 5 Jun 1997, T. Nuñez, C. Aulestia, G. Aguinda & S. Delgado 512 (MO, QCNE, Z).

Tree, ca. 6 m tall. 400-650 m. Amazonia, Chocó, Mesoamerica.

Tabernaemontana sananho Ruiz & Pav., Fl. Peruv. 2: 22, pl. 144. 1799.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 17 Oct 1994, J.L. Clark & B. Adnepos 196 (MO, QCNE, WAG).

Understory shrub, ca. 1.5 m tall. 450-700 m. Amazonia, Chocó.

AQUIFOLIACEAE***Ilex* sp.**

Representative Specimen: Ecuador: Manabí: 43 km Nof Pedernales along coastal highway, 4 km S of Río Cojimíes crossing, 100 m, 19 Dec 1998, Aug 1998, *D. Neill QCNE botany interns 11736* (MO, QCNE).

Tree, ca. 7 m tall. 100 m. Several undetermined species of *Ilex* have been collected in the area.

ARACEAE

Anthurium angamarcanum Sodiro, Anales Univ. Centr. Ecuador 15(108): 12. 1901. Type: Ecuador: Cotopaxi: Cordillera Angamarca, *Sodiro s.n.* (LT: QPLS; ILT: B, MO).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 16 May 1995, *J.L. Clark 882* (MO, QCNE).

Terrestrial. Chocó

Anthurium asplundii Croat, Ann. Missouri Bot. Gard. 78(3): 601, f. 8, 10, 35–37, 43. 1991. Type: Ecuador: Los Ríos: Río Blanco, across river from Villa Hermosa, 3 km S of Sto. Domingo-Esmeraldas hwy. at km 24, 00°5' S, 79°15' W, *T. Croat 50688* (HT: MO; IT: K, QCA, US).

Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor 50 m, 25 Aug 1998, *D. Neill QCNE botany interns 11279* (MO, QCNE).

Usually epiphytic; rarely terrestrial. 0–700 m. Chocó.

Anthurium balaoanum Engl., Bot. Jahrb. Syst. 25: 432. 1898. Type: Ecuador. Guayas: Balao (sic Bulao, Engler, 1898), *H. Eggers 14532* (HT: B; IT: LE).

Representative Specimen: Ecuador: Manabí: Pedernales, 450–500 m, 28 Nov 1999, *T. Delinks 507* (K, MO).

Terrestrial or epiphytic herb, 5–700 m. Amazonia.

Anthurium balslevii Croat & J. Rodr., Aroideana 18: 54–57. 1995(1996). Type: Ecuador. Pichincha: Reserva ENDESA, 8 km N of

km 113 on Quito-Puerto Quito Highway, ca. 700 m, *T. Croat & J. Rodríguez 61505* (HT: MO; IT: AAU, B, K, NY, QCA, US).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 5 Jan 1997, *J.L. Clark, E. Austen, S. Bennett & D. Kapan 3721* (MO, QCNE). Hemiepiphyte. 400–600 m. Endemic.

Anthurium brevipes Sodiro, Anales Univ. Centr. Ecuador 19(136): 270. 1905. Type locality: Ecuador. Esmeraldas, Rio Cachaba.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 19 Sep 1994, *M.S. Bass & N. Pitman 19* (CM, MO, QCNE). Epiphyte. 400–600 m. Chocó.

Anthurium carchiense Croat, Ann. Missouri Bot. Gard. 78(3): 621, f. 77, 78, 81. 1991. Type: Ecuador: Carchí: vic. Maldonado, 1500–1900 m, *Madison 3998* (HT: SEL; IT: MO).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 650 m, 19 Feb 1997, *J.L. Clark 3952* (MO, QCNE). Epiphyte. 650 m. Amazonia, Chocó.

Anthurium caulorrhizum Sodiro, Anales Univ. Centr. Ecuador 19(137): 309. 1905. Type: Ecuador. Imbabura: between Hacienda Paramba and Lita, Aug 1904, *Sodiro s.n.* (HT: B; photo: F).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 8 Jan 1997, *J.L. Clark, E. Austen, S. Bennett & D. Kapan 3770* (MO, QCNE). Epiphyte. 500 m. Chocó.

Anthurium citrifolium Sodiro, Anales Univ. Centr. Ecuador 15(108): 5. 1901. Type: Ecuador. Pichincha: Nanegal, *Sodiro s.n.* (NT: B; photo: F).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 17 Nov 1996, *J.L. Clark, B. Neill & K. Zambrano 3424* (MO, QCNE).

Common herbaceous hemiepiphyte. 400–700 m. Amazonia, Chocó.

Anthurium columbianum Engl., Bot. Jahrb. Syst. 25: 379. 1898.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 650 m, 19 Feb 1997, J.L. Clark 3843 (MO, QCNE).

Epiphyte. 650 m. Amazonia, Chocó.

m, 16 Jan 1997, J.L. Clark, L. Chatrou, C. Repetur & P. Maas 3813 (MO, QCNE).

Common hemiepiphytic herb. 400-600 m. Amazonia, Chocó, Mesoamerica.

Anthurium cupulispathum Croat & J. Rodr., Aroideana 18: 63-68. 1995. Type: Ecuador. Pichincha: ENDESA reserve, 9 km N of km 113 on Quito-Puerto Quito rd., 750 m, T. Croat & Rodriguez 61456 (HT: MO; IT: B, COL, K, QCA, US).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 10 May 1995, J.L. Clark & C. Watt 815 (MO, QCNE).

Epiphyte. 400-600 m. Chocó.

Anthurium jaramilloi Croat & J. Rodr., Aroideana 18: 80-83. 1995 [1996]. Type: Ecuador. Pichincha: ENDESA reserve, 9 km N of km 113 on Quito-Puerto Quito rd., ca. 750 m, Croat & Rodriguez 61465 (HT: MO; IT: AAU, B, F, K, NY, QCA, QCNE, K, US).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 25 Nov 1995, J.L. Clark & K. Cunningham, C. Roberts 1687 (MO, QCNE).

Epiphyte. 500 m. Endemic.

Anthurium dolichostachyum Sodiro, Anales Univ. Centr. Ecuador 15(108): 12. 1901. Type: Ecuador. Cotopaxi: Angamarca, Sodiro s.n. (HT: B; IT: G; photo: F).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 6 Jan 1997, J.L. Clark, E. Austen, S. Bennett & D. Kapan (MO, QCNE).

Hemiepiphyte. 400-600 m. Chocó.

Anthurium lancea Sodiro, Anales Univ. Centr. Ecuador 15(108): 13. 1901. Type: no type information cited, Sodiro s.n.

Representative Specimen: Ecuador: Esmeraldas: 800 m, 12 May 1990, A. Gentry, C. Dodson, B. Boyle & D. Rubio 70157 (MO).

Terrestrial, epiphyte, or hemiepiphyte. 400-600 m. Amazonia, Chocó.

Anthurium incomptum Madison, Selbyana 2: 286, t. 1A. 1978. Type: Ecuador: Los Ríos. Río Palenque Science Center, km 56 on Quevedo-Sto. Domingo road, 150-220 m, Nov 1975, M.T. Madison 2114 (HT: SEL; IT: MO, QCA, RPSC, US).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 26 Feb 1996, J.L. Clark 2162 (MO, QCNE).

Common terrestrial or epiphytic herb. 500-600 m. Amazonia, Chocó.

Anthurium magnifolium Croat & J. Rodr., Aroideana 18: 93-95. 1995 [1996]. Type: Ecuador. Pichincha: ENDESA reserve, 8 km N of km 113 on Quito-Puerto Quito rd., vic. Rio Cabuyales, 750 m, 16 Jul 1986, T. Croat & J. Rodriguez 61506 (HT: MO; IT: AAU, B, BR, CAS, CM, COL, CR, CUVC, DUKE, EAP, F, G, GB, GH, HUA, K, MEXU, MY, NY, P, PMA, Q, QCA, QCNE, QPLS, RB, RSA, SCZ, S, TEX, US, VEN).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 4 Dec 1996, J.L. Clark, M. Lysinger, T. Walla & H. Greeney 3563 (MO, QCNE, US).

Epiphyte. 350-700 m. Endemic.

Anthurium interruptum Sodiro, Anales Univ. Centr. Ecuador 15(108): 5. 1901. Type. Ecuador. Cotopaxi: western slopes of the Cordillera de Angamarca, Nov 1899, Sodiro s.n. (HT: B; photo: F).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500

m, 16 Jan 1997, J.L. Clark, L. Chatrou, C. Repetur & P. Maas 3813 (MO, QCNE).

Common hemiepiphytic herb. 400-600 m.

Amazonia, Chocó, Mesoamerica.

- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 16 May 1995, *J.L. Clark & C. Watt* 892 (MO, QCNE).
Epiphyte. 400-600 m. Amazonia, Chocó.
- Anthurium marmoratum** Sodiro, Anales Univ. Centr. Ecuador 17(123): 261. 1903. Type: Ecuador. Pichincha: along Río toachi & río Pilatón, Oct 1902, *Sodiro s.n.* (HT: B; IT: QPLS).
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 550 m, 2 Sep 1998, *S. Roponen & A. Johannessen* 4023 (LPB, MO).
Epiphyte. 550 m. Chocó.
- Anthurium microspadix** Schott, Oesterr. Bot. Z. 8(6): 180. 1858.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 650 m, 19 Feb 1997, *J.L. Clark* 3954 (LE, MO, QCNE, SAR).
Epiphyte. 650 m. Amazonia, Chocó, Mesoamerica.
- Anthurium mindense** Sodiro, Anales Univ. Centr. Ecuador 15(108): 17. 1901. Type: Ecuador. Pichincha: valley of Mindo, 1500-2000 m, *Sodiro s.n.* (HT: B; photo: F)
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 5 Jan 1997, *J.L. Clark, E. Austen, S. Bennett & D. Kapan* 3724 (MO, QCNE).
Hemiepiphyte. 400-600 m. Amazonia, Chocó.
- Anthurium nigrescens** Engl., Bot. Jahrb. Syst. 25(3): 441. 1898.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 28 Sep 1994, *M.S. Bass, L. Kueppers & N. Pitman* 96 (MO, QCNE).
Epiphyte. 400-600 m. Amazonia, Chocó, Mesoamerica.
- Anthurium nigropunctatum** Croat & J. Rodr., Aroideana 18: 101-104. 1995 [1996]. Type: Ecuador. Pichincha: Reserva Endesa, 9 km N of Km 113 on Quito-Pto. Quito Highway, ca. 750 m, 0°05'N, 79°02'W, *T Croat & J. Rodriguez* 61457 (HT: MO; IT: AAU, B, CAS, COL, F, K, M, NY, QCA, QCNE, US, VEN).
- Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 500 m, 26 Aug 1998, *D. Neill & QCNE botany interns* 11370 (MO, QCNE).
Common hemiepiphyte. 280-700 m. Chocó.
- Anthurium obscurinervium** Croat, Ann. Missouri Bot. Gard. 78(3): 686, f. 203-204. 1991. Type: Ecuador: Cañar: along road between Azogues and El Triunfo, ca. 2 km S of Hwy. at Cedro Pampa, 800-1000 m, 2° 25'S, 79° 10'W, *T. Croat* 50914 (HT: MO; IT: AAU, BM, G, K, LL, M, MICH, MO, NY, QCA, RSA, SEL, US).
- Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300-700 m, 5 Mar 1997, *H. Vargas, X. Aguirre, R. Miranda & C. Robles* 1222 (MO, QCNE).
Terrestrial and epiphytic herb. 300-700 m. Chocó.
- Anthurium obtusum** (Engl.) Grayum, Phytologia 82(1): 35. 1997.
Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 500 m, 26 Aug 1998, *D. Neill & QCNE botany interns* 11324 (MO QCNE).
Common hemiepiphytic herb, 0-800 m. Amazonia, Chocó, Mesoamerica.
- Anthurium oreophilum** Sodiro, Anales Univ. Centr. Ecuador 15(108): 15. 1901. Type: Ecuador: Pichincha: In forest W of Mt. Pichincha, 1400-2000 m, *L. Sodiro s.n.* (IT: B? photo: F, US).
- Representative Specimen: Ecuador: Esmeraldas: 500 m, 2 Jan 1997, *J.L. Clark, E. Austen, S. Bennett & D. Kapan* 3688 (MO, QCNE).
Epiphyte. 400-600 m. Chocó.
- Anthurium palenquense** Croat, Ann. Missouri Bot. Gard. 78(3): 694, f. 221, 223, 224. 1991. Type: Ecuador: Los Ríos: Río Palenque Science Center, along trails W of laboratory and in vicinity of laboratory clearing, 210-250 m, *T. Croat* 38670 (HT: MO; IT: AAU, B, K, MO, NY, PMA, QCA, RSA, US).

- Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300–700 m, 19 Jun 1996, *J.L. Clark, E. Arroyo & P. Hibbs* 2668 (MO, QCNE). Terrestrial or epiphytic herb, 300-850 m. Endemic.
- Anthurium pallidiflorum** Engl., Bot. Jahrb. Syst. 25(3): 395-396. 1898. Type: Ecuador: in silvis tropicis pr. San Miquel de los Colorados, Jul 1875, *A. Sodiro*, *S. J. n. 15*. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 18 May 1995, *J.L. Clark & C. Watt* 917 (MO, QCNE). Epiphyte. 400-600 m. Endemic
- Anthurium x pallidinervium** x Engl., Pflanzenr. 197: 245. 1898. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 24 Sep 1994, *N. Pitman* 718 (MO, QCNE). Epiphyte. 400-600 m. Natural hybrid.
- Anthurium propinquum** Sodiro, Anturios Ecuator. 197: 245. 1903. Type: Ecuador: en el valle del rio Cañar, hacienda de San Nicolás, 1500 m, *Rimbach* 88 (HT: B; IT: G; photo: F). Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 650 m, 19 Feb 1997, *J.L. Clark* 3951 (MO, NY, QCNE). Terrestrial herb. 450-650 m. Amazonia, Chocó, Mesoamerica. Infrasp.: *Anthurium propinquum* var. *albispadix* Croat & J. Rodr.
- Anthurium pulverulentum** Sodiro, Anales Univ. Centr. Ecuador 15(108): 110. 1901. Type: Ecuador. Pichincha: Volcan Atacatzo along the Rio Pilaton, 1400-2000 m, *Sodiro s.n.* (T: QPLS). Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 16 Jan 1997, *J.L. Clark, L. Chatrou, C. Repetur & P. Mass* 3815 (MO, QCNE). Terrestrial and epiphytic herb. 850 m. Amazonia, Chocó.
- Anthurium rimbachii** Sodiro, Anturios Ecuator. 2: 202. 1903. Type: Ecuador: Guayas: near Quillallpa, 200 m, *Rimbach* 80. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 19 May 1995, *J.L. Clark & C. Watt* 920 (MO, QCNE). Common hemiepiphyte or terrestrial herb. 280-850 m. Endemic. Amazonia.
- Anthurium rodrigueziae** Croat, Aroideana 18: 126-130. 1995(1996). Type: Ecuador. Pichincha: Reserva Endesa, ca. 8 km N of Km 113 on Quito-Pto. Quito Hwy., vic. Rio Cabayales, 700 m, *T. Croat & J. Rodriguez* 61517 (HT: MO; IT: AAU, B, K, NY, QCA, US).
- Representative Specimen: Ecuador: Esmeraldas: 300-500 m, 12 May 1990, *A. Gentry, C. Dodson, B. Boyle & D. Rubio* 70047 (AAU, CM, MO, NY, QCNE, US). Epiphyte. 280 m. Chocó
- Anthurium saccardoi** Sodiro, Anturios Ecuator. 218. 1903. Type: Ecuador: Guayas: near Quillapa, *Rimbach s.n.* (T: QPLS). Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro 200 – 500 m, 9 Nov 1998, *T. Delinks & C. Robles* 103 (MO, QCNE). Terrestrial herb and hemiepiphyte. 500 m. Endemic.
- Anthurium sarmentosum** Engl., Bot. Jahrb. Syst. 25: 375. 1898. Type: Ecuador: Pichincha: near San Florencio, May 1885, *Sodiro s.n.* (HT: B; photo: F). Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 17 Nov 1996, *J.L. Clark, B. Neill & K. Zambrano* 3426 (MO, QCNE, US). Herbaceous vine. 500 m. Amazonia, Chocó.
- Anthurium scandens** (Aubl.) Engl., Fl. Bras. 3(2): 78. 1878. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 4 Jan 1997, *J.L. Clark, E. Austen, S. Bennett & D. Kapan* 3707 (MO, QCNE, US). Epiphyte. 100-700 m. Amazonia, Chocó, Mesoamerica.

- Infrasp. *Anthurium scandens* subsp. *pusillum* R. Sheffer, *Anthurium scandens* subsp. *scandens* Engl., *Anthurium scandens* var. *ovalifolium* Engl. Terrestrial herb. 280 m. Chocó, Mesoamerica.
- Anthurium spathiphyllum*** N.E. Br., Gard. Chron., n.s., 7: 652-653. 1877. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 20 May 1995, J.L. Clark & C. Watt 949 (MO, QCNE). Epiphyte. 400-600 m. Amazonia, Mesoamerica.
- Anthurium spathulatum*** Sodiro, Anales Univ. Centr. Ecuador 15(108): 6. 1901. Representative Specimen: Ecuador: Esmeraldas: 550 m, 24-26 febrero 1995, W. Palacios 13627 (MO, QCNE). Epiphyte. 400-600 m. Chocó.
- Anthurium testaceum*** Croat & R.A. Baker, Brenesia 16(Supl. 1): 92-94. 1979. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 18 Nov 1996, J.L. Clark, F. Gurumendi & H. Weinert 3441 (K, MO, QCNE). Epiphyte or Terrestrial herb. 500-550 m. Chocó, Mesoamerica.
- Anthurium tremulum*** Sodiro, Revista Chilena Hist. Nat. 4(6): 15. 1900. Type: Ecuador: Pichincha: Nanegal, May 1901, *Sodiro s.n.* (HT: B; IT: G, MO). Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 30 Mar 1996, J.L. Clark, K. Berg & J. Leffingwell 2349 (MO, QCNE). Epiphyte or Terrestrial herb. 400-600 m. Endemic. Amazonia.
- Anthurium tripartitum*** Engl., Pflanzenr. IV. 23B(Heft 21): 277. 1905. Type: Colombia: im Begiet von Barbacoas, 200 m, *Triana 687 bis* (HT: BM). Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 30 Jan 1991, A. Gentry, R. Foster & C. Josse 72981 (MO).
- Anthurium trisectum*** Sodiro, Anales Univ. Centr. Ecuador 20(140): 100-102. 1905. Type: Crece en la prov. de Esmeraldas, en la orilla del río S. Antonio, *Sodiro 8/904*. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 18 Nov 1996, J.L. Clark, F. Gurumendi & H. Weinert 3443 (MO, QCNE). Terrestrial herb. 500 m. Chocó, Mesoamerica.
- Anthurium umbraculum*** Sodiro, Anales Univ. Centr. Ecuador 16: 101. 1902. Type: Ecuador: Pichincha: Volcán Pichincha, Nono, *Sodiro s.n.* (LT: MO; ILT: B destr.?; G; photo: F(B)). Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 29 Jan 1991, A. Gentry, R. Foster & C. Josse 72879 (MO). Epiphyte. 280 m. Amazonia, Chocó.
- Anthurium umbricola*** Engl., Bot. Jahrb. Syst. 25: 407. 1898. Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro 400-700 m, 1 Sep 1998, T. Delinks & C. Robles 60 (MO, QCNE, UB). Terrestrial herb. 400-700 m. Chocó.
- Anthurium versicolor*** Sodiro, Anales Univ. Centr. Ecuador 15(108): 13. 1901. Type: Ecuador: Napo: Río Masfa, between Cuyuja and Baeza, *Sodiro s.n.* (T: QPLS). Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 29 Jan 1991, A. Gentry & C. Josse 72838 (MO). Terrestrial herb. 280-600 m. Amazonia, Chocó.
- Chlorospatha atropurpurea*** (Madison) Madison, Selbyana 5(3-4): 354. 1981. *Caladiopsis atropurpurea* Madison. Type: Ecuador: Los Ríos: Río Palenque Science Center, 150-200 m, Aug 1975, C.H. Dodson 5911 (HT: SEL; IT: MO, RSPC, US). Representative Specimen: Ecuador: Manabí: Mache-Chindul, comunidad Ambache, 250 m, 5 Apr 1997, J.L. Clark, R. Dunn, T. Nuñez & C. Robles 4174 (MO, QCNE). Terrestrial herb. 250 m. Endemic.

Chlorospatha dodsonii (G.S. Bunting) Madison, Selbyana 5(3-4): 352. 1981. Caladiopsis dodsonii G.S. Bunting. Type: Ecuador: Pichincha: along Río Baba 28 km S of Santo Domingo, 350 m, Nov 1961, C.H. Dodson & Thien 1190 (HT: MO).

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300–700 m, 19 Jun 1996, J.L. Clark, E. Arroyo & P. Hibbs 2645 (CAS, MO, QCNE).

Terrestrial herb. 300-700 m. Endemic.

m, 6 Jan 1997, J.L. Clark, E. Austen, S. Bennett & D. Kapan 3738 (MO, QCNE). Terrestrial herb. 300-520 m. Chocó.

Dieffenbachia killipii Croat, Ann. Missouri Bot. Gard. 91(4): 720-726, f. 15, 28b. 2004.

Representative Specimen: Ecuador: Manabí: Jama 400 m, 18 Dec 1998, D. Neill & QCNE botany interns 11683 (MO, QCNE).

Epiphyte or Terrestrial herb. 400-700 m. Amazonia, Chocó, Mesoamerica.

Dieffenbachia oerstedii Schott, Oesterr. Bot. Z. 8: 179. 1858.

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro 300 - 700 m, 21 Jun 1996, J.L. Clark et al. 2710 (MO, QCNE).

Terrestrial herb. 300-700 m. Chocó, Mesoamerica.

Dieffenbachia tonduzii Croat & Grayum, Novon 9(4): 497-500. 1999.

Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 30 Jan 1991, A. Gentry, R. Foster & C. Josse 72955 (MO).

Subshrub. 280-600 m. Amazonia, Chocó, Mesoamerica.

Heteropsis ecuadorensis Sodiro, Anales Univ. Centr. Ecuador 22(162): 278. 1903.

Representative Specimen: Ecuador: Esmeraldas: Estero La Fortuna 25 m, 24 May 2000, D. Neill & QCNE botany interns 12785 (MO, QCNE).

Epiphyte. 25-700 m. Amazonia, Chocó, Mesoamerica

Homalomena peltata Mast., Gard. Chron., n.s., 7: 273, f. 46. 1877.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500

m, 6 Jan 1997, J.L. Clark, E. Austen, S. Bennett & D. Kapan 3738 (MO, QCNE). Terrestrial herb. 300-520 m. Chocó.

Monstera adansonii Schott, Wiener Z. Kunst 4: 1028. 1830.

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro 400–700 m, 1 Sep 1998, T. Delinks & C. Robles 73 (MO, QCNE).

Hemiepiphyte. 400-700 m. Amazonia, Chocó, Mesoamerica.

Infrap.: *Monstera adansonii* var. *laniata* (Schott) Madison.

Monstera dubia (Kunth) Engl. & K. Krause, Pflanzenr. IV.23B(Heft 37): 117. 1908.

Representative Specimen: Ecuador: Manabí: Jama 400 m, 18 Dec 1998, D. Neill & QCNE botany interns 11692 (MO, QCNE).

Hemiepiphyte. 100-500 m. Amazonia, Chocó, Mesoamerica.

Monstera lechleriana Schott, Prodr. Syst. Aroid. 366. 1860.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 25 Oct 1994, N. Pitman, M.S. Bass & L. Kueppers 880 (MO, QCNE).

Epiphyte. 400-600 m. Amazonia, Chocó, Mesoamerica.

Monstera pinnatipartita Schott, Oesterr. Bot. Wochensbl. 7(25): 197-198. 1857.

Representative Specimen: Ecuador: Manabí: 7 Km al este de Pedernales 100 m, 14 Aug 1998, T. Delinks 30 (MO, QCNE).

Terrestrial herb. 100 m. Amazonia, Chocó, Mesoamerica.

Monstera spruceana (Schott) Engl., Fl. Bras. 3(2): 115. 1878.

Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 200 m, 28 Mar 1998, J.L. Clark & S. Nazzaro 4932 (MO, QCNE).

Epiphyte. 100-200 m. Amazonia, Chocó, Mesoamerica.

Philodendron alliodorum Croat & Grayum, Phytologia 73(1): 30. 1992.

- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 8 Jan 1997, *J.L. Clark, E. Austen, S. Bennett & D. Kapan* 3759 (B, F, K, MO, QCNE, US, WU). Hemiepiphyte. 400-600 m. Amazonia, Chocó, Mesoamerica.
- Philodendron brunneicaule** Croat & Grayum, Ann. Missouri Bot. Gard. 84(3): 414-416. 1997.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 11 Dec 1994, *Pitman & Marsh* 1085 (MEXU, MO, NY, QCNE).
Hemiepiphyte. Chocó, Mesoamerica.
- Philodendron clarkei** Croat, Aroideana 27: 38-60, f. 1-20. 2004. Type: Esmeraldas, along road to Tulubí from main San Lorenzo-Lita Hwy, *T. Croat et al.* 83915 (HT: MO; IT: AAU, B, CAS, COL, DUKE, F, GB, HUA, INB, K, MEXU, NY, SA, S, SEL, TEX, UB, US, VEN)
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 20 Mar 1998, *J.L. Clark* 2773 (B, K, MO, QCNE).
Hemi-epiphyte. 100-600 m. Endemic.
- Philodendron dodsonii** Croat & Grayum, Ann. Missouri Bot. Gard. 84(3): 430-432. 1997.
Type: Ecuador. Pichincha: along Río Blanco across from Villa Hermosa on road 1.9 km N of main Sto. Domingo de Los Colorados-Esmeraldas Hwy., *T. Croat* 72982 (HT: MO; IT: AAU, B, COL, CR, K, NY, PMA, QCA, QCNE, US).
- Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 10 km E of Pedernales, 400–700 m, Sep 1998, *T. Delinks & C. Robles* 61 (MO, QCNE).
Hemiepiphyte. 280-700 m. Amazonia. Chocó, Mesoamerica.
- Philodendron grandipes** K. Krause, Pflanzenr. IV. 23Db(Heft 60): 48. 1913.
Representative Specimen: Ecuador: Esmeraldas: Camino vecinal Herrera-Los Monos 550 m, 24-26 Feb 1995, *W. Palacios* 13670 (MO, QCNE).
- Hemiepiphyte. 550 m. Chocó, Mesoamerica.
- Philodendron hederaceum** (Jacq.) Schott, Wiener Z. Kunst 1829(3): 780. 1829.
Representative Specimen: Ecuador: Manabí: 7 Km al este de Pedernales 100 m, 14 Aug 1998, *T. Delinks* 27 (MO, QCNE).
Hemiepiphyte. 100 m. Amazonia, Chocó, Mesoamerica.
- Philodendron hooveri** Croat & Grayum, Syst. Bot. Monogr. 47: 111-114. 1996. Type: Ecuador. Carchi: along Quebrada Mongon, 1200-1400 m, *Hoover, Gelpi, Arguello & Lorentzen* 2963 (HT: QCA; IT: MO).
Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 29 Jan 1991, *A. Gentry, R. Foster & C. Josse* 72874 (MO).
Hemiepiphyte. 280-600 m. Chocó.
- Philodendron inaequilaterum** Liebm., Vidensk. Meddel. Dansk Naturhist. Foren. Kjobenhavn 1849: 16. 1849.
Representative Specimen: Ecuador: Esmeraldas: 270 m, 31 Mar 1983, *T. Croat* 55552 (MO, QCA).
Hemiepiphyte. 280-550 m. Amazonia, Chocó, Mesoamerica.
- Philodendron jodavisionum** G.S. Bunting, Gentes Herb. 9: 337-338. 1965.
Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 30 Jan 1991, *A. Gentry & C. Josse* 72923 (MO, QCNE).
Hemiepiphyte. 280 m. Chocó, Mesoamerica.
- Philodendron mexicanum** Engl., Fl. Bras. 3(2): 143. 1878.
Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro 400–700 m, 1 Sep 1998, *T. Delinks & C. Robles* 69 (MO, QCNE).
Hemiepiphyte. 400-700 m. Chocó, Mesoamerica.
- Philodendron pagonocaule** Madison, Selbyana 2(1): 23. 1977. Type: Ecuador: Los Ríos: Río Palenque Science Center, km 56 road Quevedo-Sto. Domingo, 150-220 m, March

1977, *C. Dodson* 6669 (HT: SEL; IT: MO, RPSC).

Representative Specimen: Ecuador: Esmeraldas: 700 m, 20 Feb 1992, *T.B. Croat* 72278 (AAU, GB, JGP, M, MO, QCA, RSA, SEL, TEX, UB).

Hemiepiphyte. 350-700 m. Chocó.

Philodendron rhodoaxis G.S. Bunting, Acta Bot. Venez. 10(1-4): 308-309. 1975.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 17 Nov 1996, *J.L. Clark, B. Neill & K. Zambrano* 3431 (MO, QCNE).

Hemiepiphyte. 200-500 m. Chocó, Mesoamerica.

Infrasp.: *Philodendron rhodoaxis* subsp. *lewisii* *Croat & Grayum*.

Philodendron rodrigueziae Croat & Grayum,

Syst. Bot. Monogr. 47: 152-155. 1996. Type: Ecuador. Pichincha: Reserva ENDESA, Corporacion Forestal Juan Manual Durini, turnoff at Km 113 Quito to Puerto Quito rd., 450 m, *Hammel & Wilder* 17222 (HT: QCNE; IT: AAU, COL, MO, NY).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 13 May 1998, *J.L. Clark & C. Pallis* 5584 (MO, QCNE).

Epiphyte. 500 m. Chocó.

Philodendron senatocarpium Madison, Selbyana 2(1): 23-24, t. 5d. 1977. Type: Ecuador: Los Ríos: Río Palenque Science Center, km 56 road Quevedo-Sto. Domingo, 150-220 m, April 1977, *Madison* 3841 (HT: SEL; IT: MO).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 6 Apr 1995, *J.L. Clark & Y. Troya* 640 (MO, QCNE, US).

Epiphyte. 280-600 m. Chocó, Mesoamerica.

Philodendron sparreorum Croat, Aroideana 27: 38-60, f. 1-22. 2004. Type: Ecuador, Esmeraldas, 8.8 km NW of Quininde, 85 km SE of Esmeraldas, 270 m, *T. Croat* 55555 (HT: MO; IT: AAU, B, F, K, NY, QCA, QCNE, US).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 20 Mar 1998, *J.L. Clark & C. Pallis* 4825 (MO, QCNE, US).

Hemiepiphyte. 380-600 m. Chocó.

Philodendron squamipetiolatum Croat, Ann.

Missouri Bot. Gard. 84(3): 531-532, f. 375, 385-388. 1997.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 580 m, 18 Feb-5 Mar 1995, *W. Palacios, J.L. Clark & N. Jaramillo* 13502 (MO, QCNE). Hemiepiphyte. 500-600 m. Chocó, Mesoamerica.

Philodendron subhastatum Engl. & K. Krause,

Pflanzenr. Fam. 23 Db: 97. 1913. Type: Ecuador: Pichincha: Nanegal-Gualea, *Sodiro* 12g (HT: B; IT: G).

Representative Specimen: Ecuador: Manabí: Cordillera de Jama 16 Dec 1998, *D. Neill & QCNE botany interns* 11567 (F, MEXU, MO, QCNE).

Common hemiepiphyte. 200-700 m. Chocó.

Philodendron sulcatum K. Krause, Pflanzenr. IV.

23Db(Heft 60): 19. 1913. Type: Ecuador: Am Pilatonfluss, Oct 1902, *Sodiro* 2B (HT: B).

Representative Specimen: Ecuador: Esmeraldas: 270 m, 31 Mar 1983, *T. Croat* 55544 (MO, QCA).

Hemiepiphyte. 350-700 m. Amazonia, Chocó, Mesoamerica.

Philodendron tenue K. Koch & Augustin, Index

Sem. (Berlin) IV. 23Db(Heft 60): 19. 1854.

Representative Specimen: Ecuador: Manabí: 45 Km al norte de Pedernales, 5 m, 28 Aug 1998, *D. Neill & QCNE botany interns* 11424 (COL, F, MO, QCNE, US, WIS).

Common hemiepiphyte. 0-600 m. Chocó, Mesoamerica.

Philodendron tenuipes Engl., Bot. Jahrb. Syst. 37:

131. 1905.

Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 100-300 m, 7 Jul 1996, *J.L. Clark, N. Binder & W. Naranjo* 2773 (MO, QCNE).

- Common hemiepiphyte. 100-850 m. Chocó.
- Philodendron tuerckheimii** Grayum, Syst. Bot. Monogr. 47: 174-181. 1996.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 30 Dec 1996, *J.L. Clark, E. Austen, S. Bennett & D. Kapan* 3663 (MO, QCNE, US).
Herbaceous vine. 500 m. Chocó, Mesoamerica.
- Philodendron verrucosum** L. Mathieu ex Schott, Syn. Aroid. 85. 1856.
Representative Specimen: Ecuador: Esmeraldas: 80 m, 1 Apr 1983, *T.B. Croat* 55609 (MO).
Common hemiepiphyte. 380-700 m. Amazonia, Chocó, Mesoamerica.
- Pistia stratiotes** L., Sp. Pl. 2: 963. 1753.
Representative Specimen: Ecuador: Esmeraldas: Herrera, La Y de la laguna 400 m, 15 Feb 1998, *J.L. Clark* 5511 (MO, QCNE).
Common aquatic herb. 400 m. Amazonia, Chocó, Mesoamerica.
- Rhodospatha latifolia** Poepp., Nov. Gen. Sp. Pl. 3: 91, pl. 300. 1845.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 8 Dec 1994, *M.S. Bass & N. Pitman* 313 (MO, QCNE).
Herbaceous vine. 400-600 m. Amazonia, Chocó.
- Stenospermation angustifolium** Hemsl., Biol. Cent.-Amer., Bot. 3(18): 425. 1885.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 21 Nov 1994, *J.L. Clark & C. Bergman* 312 (MO, QCNE, RSA).
Hemiepiphyte. 400-600 m. Amazonia, Chocó, Mesoamerica.
- Stenospermation densiovulatum** Engl., Bot. Jahrb. Syst. 37: 112. 1905.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 5 Jan 1997, *J.L. Clark, E. Austen, S. Bennett & D. Kapan* 3723 (MO, QCNE).
- Common terrestrial herb or Epiphyte. 280-700 m. Chocó.
- Stenospermation gracile** Sodiro, Sert. Fl. Ecuad. Ser., Ser. 2: 71. 1908. Type: Ecuador: Esmeraldas. *Sodiro s.n.*
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 16 Sep 1994, *J.L. Clark & B. Adnepos* 57 (MO, QCNE).
Hemiepiphyte. 400-600 m. Endemic.
- Stenospermation latifolium** Engl., Bot. Jahrb. Syst. 37: 112. 1905.
Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 700 m, 26 Aug 1998, *D. Neill & QCNW botany interns* 11359 (MO, QCNE).
Hemiepiphyte. 540 m. Chocó.
- Stenospermation longipetiolatum** Engl., Bot. Jahrb. Syst. 37: 112. 1905. Type: Ecuador: Pichincha: Nanegal-Gualea, vic. Gualea, 800 m Oct. 1900, *Sodiro* 29 (HT: B, photo F).
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 30 Dec 1996, *J.L. Clark, E. Austen, S. Bennett & D. Kapan* 3662 (MO, QCNE).
Herbaceous vine. 400-600 m. Amazonia, Chocó.
- Stenospermation sodiroanum** Engl., Bot. Jahrb. Syst. 37: 112. 1905. Type: Ecuador. In Regenwaldern zwischen Mindo und Nanegal, *Sodiro* 27 (HT: B).
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 13 Sep 1994, *J.L. Clark & B. Adnepos* 20 (MO, QCNE).
Hemiepiphyte. 400-600 m. Chocó
- Syngonium crassifolium** (Engl.) Croat, Ann. Missouri Bot. Gard. 68(4): 591. 1981 [1982].
Representative Specimen: Ecuador: Esmeraldas: Río Cayapa 100 m, 25 Jun 1982, *L. Kvist & Asanza* 40330 (AAU).
Epiphyte. 280-600 m. Chocó.

Syngonium macrophyllum Engl., Pflanzenr. IV. 23E(Heft 71): 128. 1920.

Representative Specimen: Ecuador: Esmeraldas: 350 m, 21 Feb 1992, *T.B. Croat 72328* (MO).

Hemiepiphyte. 350-700 m. Choco, Mesoamerica.

Syngonium podophyllum Schott, Bot. Zeitung (Berlin) 9(5): 85. 1851.

Representative Specimen: Ecuador: Manabí: 43 Km al norte de Pedernales 100 m, 19 Dec 1998, *D. Neill & QCNE botany interns 11729* (CM, MO, QCNE, SEL).

Epiphytic Terrestrial herb. 100-700 m. Amazonia, Chocó, Mesoamerica.

Syngonium triphyllum Birdsey ex Croat, Ann. Missouri Bot. Gard. 68(4): 642-645, f. 68, 73-75. 1981 [1982].

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 6 Dec 1994, *M.S. Bass & N. Pitman 290* (MO, QCNE).

Hemiepiphyte. 400-600 m. Chocó, Mesoamerica.

Xanthosoma daguense Engl., Bot. Jahrb. Syst. 37: 137. 1905.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 13 May 1998, *J.L. Clark & C. Pallis 5579* (MO, QCNE).

Terrestrial herb. 400-600 m. Amazonia, Chocó.

Xanthosoma eggersii Engl., Pflanzenr. Fam. 23 E: 56. 1920. Type: Ecuador: Guayas: El Recreo, *H. Eggers 15543* (HT: B; photo: F).

Representative Specimen: Ecuador: Esmeraldas: 50 m, 17 Mar 1992, *T.B. Croat 73117* (MO, QCNE).

Terrestrial herb. 300-700 m. Endemic.

Xanthosoma undipes (K. Koch & C.D. Bouché) K. Koch, Bonplandia (Hanover) 4(1-2): 4. 1856.

Representative Specimen: Ecuador: Manabí: Cordillera de Jama, 300 m, 16 Dec 1998, *D. Neill & QCNE botany interns 11552* (MO, QCNE).

Terrestrial herb. 300-700 m. Amazonia, Chocó, Mesoamerica.

ARALIACEAE

Dendropanax sp.

Representative Specimen: Ecuador: Esmeraldas: Carretera Herrera-El Páramo (Santa Isabel), Estación Biológica Bilsa, 18 Feb-5 Mar 1995, *W. Palacios, J.L. Clark & N. Jaramillo 13546* (MO, QCNE).

Tree, ca. 20 m tall. 400-600 m..

Oreopanax confusus Marchal, Bull. Acad. Roy.

Sci. Belgique, ser. 2, 47(1): 85-87. 1879. Type: Ecuador in sylvis Andium frequens, Pallatanga, *R. Spruce 5525* (ST: C, E, G, K, LE).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 7 Oct 1994, *J.L. Clark & H. Lintz 149* (MO, QCNE).

Shrub, Tree, or woody Hemiepiphyte. 400-600 m. Amazonia, Chocó

Schefflera lasiogyne Harms, Res. Note, Forest. Commiss. New South Wales 15: 245. 1918.

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300-700 m, 7 Apr 1997, *J.L. Clark, T. Nuñez & C. Robles 4304* (MO, QCNE). Liana. 300-700 m. Chocó.

Schefflera sphaerocoma (Benth.) Harms, Die Naturlichen Pflazenfamilien 3(8): 37. 1894 [1898].

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 1 Dec 1994, *J.L. Clark 349* (MO, QCNE).

Hemiepiphyte. 400-600 m. Common name: "Pata de Gallina." Amazonia, Chocó, Mesoamerica.

Schefflera ternata Cuatrec., Revista Acad. Colomb. Ci. Exact. 6: 546. 1946.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 31 Mar 1996, *J.L. Clark, Karl Berg & J. Leffingwell 2352* (MO, QCNE).

Hemiepiphyte. 380-500 m. Chocó.

ARECACEAE

Aiphanes eggersii Burret, Notizbl. Bot. Gart. Berlin-Dahlem 11(107): 563. 1932. Type: Ecuador: El Recreo, Corozo, 14 Feb 1897, *H. Eggers* 15480.

Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor, 30 km S of Pedernales on coastal highway, 50 m, 25 Aug 1998, *D. Neill & QCNE botany interns* 11266 (AAU, COL, MO, QCNE).

Shrub. 50 m. Endemic (including coastal Tumbes, Peru).

Aiphanes tricuspidata Borchs., R. Bernal & M. Ruiz, Brittonia 41(2): 156, f. 1. 1989. Type: Ecuador. El Oro: rd. from Machala to Naranjal, km 33, 8 km E along dirt rd. leaving from Río Bonito, 380 m, 19 Nov 1987, *F. Skov, F. Borchsenius, U. Blicher Mathiesen, & B. Bang Klitgaard* 64836 (HT: AAU; IT: COL, K, NY, QCA, QCNE).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 14 Feb 1996, *J.L. Clark & N. Kerber, J. Plihal* 1991 (MO, QCNE).

Shrub. 500 m. Common name: "Corozo." Amazonia, Chocó.

Attalea colenda (O.F. Cook) Balslev & An. Hend., Brittonia 39(1): 1. 1987. *Ynesa colenda* O.F. Cook. Type: Ecuador: Los Ríos: Cantón Vinces, Hcda. Sta. Lucia, 50 m, *Y. Mexía* 6574 (T: US-4 sheets).

Representative Specimen: Ecuador: Manabí: 31 km al norte de Pedernales, 60 m, 27 Aug 1998, *D. Neill & QCNE botany interns* 11377 (MO, QCNE).

Tree. 0-100 m. A large palm common in wet to moist forest and often the only tree species left in deforested pastures. Formerly used for edible oil extracted from fruit mesocarp. Common name: "Palma Real." Chocó.

Bactris setulosa H. Karst., Linnaea 28: 408. 1856. Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 30 Jan 1991, *A. Gentry, R. Foster & C. Josse* 72972 (MO).

Tree. 280-600 m. Common name: "Chontillo." Amazonia, Chocó.

Chamaedorea linearis (Ruiz & Pav.) Mart., Hist. Nat. Palm. 2: 5. 1823.

Representative Specimen: Ecuador: Manabí: Jama 400 m, 18 Dec 1998, *D. Neill & QCNE boyany interns* 11675 (MO, QCNE). Tree. 400-800 m. Amazonia, Chocó.

Chamaedorea pinnatifrons (Jacq.) Oerst., Vidensk. Meddel. Dansk Naturhist. Foren. Kjøbenhavn 1858(1-4): 14. 1859.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 24 Nov 1994, *J.L. Clark & S. Mora* 332 (MO, QCNE).

Common Shrub. 400-600 m. Amazonia, Chocó, Mesoamerica.

Desmoncus cirriferus A.H. Gentry & Zardini, Ann. Missouri Bot. Gard. 75(4): 1436-1438, f. 3. 1988 [1989].

Representative Specimen: Ecuador: Manabí: Mache-Chindul, comunidad Ambache, 250 m, 25 Mar 1997, *J.L. Clark, R. Dunn, T. Nuñez & C. Robles* 4223 (MO, QCNE).

Liana. 250 m. Common names: "Bora Negra" or "Matmpa." Chocó.

Geonoma cuneata H. Wendl. ex Spruce, J. Linn. Soc., Bot. 11: 104. 1869.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 13 Feb 1996, *J.L. Clark & N. Kerber, J. Plihal* 1947 (MO, QCNE).

Common understory Shrub. 280-650 m. Amazonia, Chocó, Mesoamerica.

Infrasp.: *Geonoma cuneata* var. *cuneata*, *Geonoma cuneata* var. *gracilis* (H. Wendl. ex Spruce) Skov, *Geonoma cuneata* var. *procumbens* (H. Wendl. ex Spruce) Skov.

Geonoma interrupta (Ruiz & Pav.) Mart., Hist. Nat. Palm. 2(1): 8-9, t. 7. 1823.

Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 200 m, 6 Jul 1996, *J.L. Clark* 2759 (MO, QCNE). Understory Shrub. 200 m. Amazonia, Chocó, Mesoamerica.

- Infrasp.: *Geonoma interrupta* var. *euspatha* (Burret) An. Hend.
- Geonoma macrostachys** Mart., Hist. Nat. Palm. 2: 19, pl. 20. 1823.
Representative Specimen: Ecuador: Esmeraldas: Camino vecinal Herrera-Los Monos 550 m, 24–26 Feb 1995, W. Palacios 13639 (MO, QCNE). Understory Shrub. 500 m. Amazonia.
- Iriartea deltoidea** Ruiz & Pav., Syst. Veg. Fl. Peruv. Chil. 298. 1798.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 550 m, 24 Feb 1999, D. Neill & QCNE botany interns 12216 (MO, QCNE). Very common canopy Tree. 200-650 m. Common name: "Pambil." Amazonia, Choco, Mesoamerica.
- Pholidostachys synanthera** (Mart.) H.E. Moore, Taxon 18(2): 231. 1969.
Representative Specimen: Ecuador: Esmeraldas: Mache-Chindul, comunidad Caña Braval, 250 m, 11 Mar 1998, J.L. Clark 4611 (MO, QCNE). Understory Shrub. 250-600 m. Amazonia, Chocó, Mesoamerica.
- Phytelephas aequatorialis** Spruce, J. Linn. Soc., Bot. 11: 179-180. 1871. Type: Ecuador: "Chimborazo, Andes Quitensis," R. Spruce 64 (HT: K)
Tree. Common name: "Tagua." Endemic. Amazonia.
- Prestoea decurrens** (H. Wendl. ex Burret) H.E. Moore, Gentes Herb. 9(3): 286. 1963.
Representative Specimen: Ecuador: Esmeraldas: Mache-Chindul, comunidad Caña Braval, 250 m, 16 Mar 1998, J.L. Clark 4663a (MO, QCNE). Understory Shrub. 250-600 m. Common name: "Palmiche." Amazonia, Chocó, Mesoamerica.
- Socratea exorrhiza** (Mart.) H. Wendl., Bonplandia (Hanover) 8(6): 103. 1860.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 550 m, 24 Nov 1999, D. Neill & QCNE botany interns 12217 (QCNE). Very common canopy Tree. 200-650 m. Common names: "Patoma," "Pinnachi." Amazonia, Chocó, Mesoamerica.
- Synechanthus warscewiczianus** H. Wendl., Bot. Zeitung (Berlin) 16(21): 145. 1858.
Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 200 m, 6 Jul 1996. J.L. Clark 2750 (MO, QCNE). Tree. 200-600 m. Chocó, Mesoamerica.
- Welfia regia** Mast., Gard. Chron. 1869: 1236. 1869.
Representative Specimen: Ecuador: Esmeraldas: Mache-Chindul, comunidad Caña Braval, 250 m, 11 Mar 1998, J.L. Clark 4605 (MO, QCNE). Tree, ucommon in west forest. 250 m. Chocó, Mesoamerica.
- Wettinia equalis** (O.F. Cook & Doyle) R. Bernal, Caldasia 17(82-85): 368. 1995. *Acrostigma equale* O.F. Cook & Doyle. Type: Colombia: Cauca: collected in deep, marshy forests near Córdoba, Dec 1905, C.B. Doyle s.n. (HT: US).
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 550 m, 24 Nov 1999, D. Neill & QCNE botany interns 12215 (MO, QCNE). Tree. 250-550 m. Common names: "Gualte," and "Rosario." Chocó, Mesoamerica.
- ## ARISTOLOCHIACEAE
- Aristolochia pilosa** Kunth, Nov. Gen. Sp. (quarto ed.) 2: 146-147, t. 113. 1817.
Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 29 Jan 1991, A. Gentry, R. Foster & C. Josse 72880 (MO).
Herbaceous vine. 100-280 m. Amazonia, Chocó, Mesoamerica.
- Aristolochia sprucei** Mast., Fl. Bras. 4(2): 88. 1875.
Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 200 m, 10 Oct 1996, J.L. Clark 3043 (MO, QCNE).

Herbaceous vine. 200 m. Amazonia, Chocó, Mesoamerica.

ASCLEPIADACEAE

Asclepias curassavica L., Sp. Pl. 1: 215. 1753.

Representative Specimen: Ecuador: Esmeraldas: 50 km N of Pedernales along new coastal highway, 3 km N of Río Cojimíes, 50 m, 19 December 1998, D. Neill & QCNE botany interns 11705 (MO, QCNE).

Herb or subshrub. 0-100 m. Amazonia, Chocó, Mesoamerica.

Blepharodon mucronatum (Schltr.) Decne., Prodr. 8: 603-604. 1844. *Ast Stephanus mucronatus* Schltr. Linnaea 8(5): 518-519. 1833 [1834].

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 16 May 1995, J.L. Clark & C. Watt 878 (MO, QCNE, UPS).

Herbaceous vine. 200-600 m. Chocó, Mesoamerica.

Fischeria columbiana Schlr., Bot. Jahrb. Syst. 37: 623-624. 1906.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 13 September 1994, J.R. Abbott 15080 (BEREA, MO, QCNE).

Common Herbaceous vine. 250-600 m. Chocó, Mesoamerica.

Gonolobus fimbriatiflorus (Morillo) W.D. Stevens, Novon 10(3): 243-244. 2000.

Matelea fimbriatiflora Morillo. Type: Ecuador: Prov. de Pichincha: 20 km W of St. Domingo de los Colorados seasonal rainforest, 1000 ft, 18 Oct 1961, Cazalet & Pennington 5061 (HT: US; IT: BM, F, K, NY).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 11 Dec 1994, M.S. Bass & N. Pitman 332 (MO, QCNE).

Herbaceous vine. 400-600 m. Mesoamerica.

Gonolobus ophioglossa Woodson, Ann. Missouri Bot. Gard. 29(4): 366. 1942.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 20 May 1995, J.L. Clark & C. Watt 965 (MO, QCNE).

Herbaceous vine. 400-600 m. Mesoamerica.

Matelea reflexa (Hemsl.) Morillo, Ernstia 24: 39. 1984.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 20 Mar 1998, J.L. Clark & C. Pallis 4782 (MO, QCNE).

Herbaceous vine. 400-600 m. Amazonia, Chocó, Mesoamerica.

ASTERACEAE

Acmella sp.

Esmeraldas: Bilsa Biological Station, 600 m, 13 Sep 1994, J.R. Abbott 15039 (BEREA, QCNE).

Common terrestrial herb in disturbed areas. 600 m.

Adenostemma platyphyllum Cass., Dict. Sci. Nat. (ed. 2) 25: 363-364. 1822.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 15 Oct 1994, N. Pitman, M.S. Bass & L. Kueppers 857 (MO, QCNE).

Terrestrial herb. 600 m. Amazonia, Chocó, Mesoamerica.

Ageratina sp.

Esmeraldas: Bilsa Biological Station, 600 m, 13 Sep 1994, J.R. Abbott 15054 (BEREA, QCNE).

Common terrestrial herb in disturbed areas. 600 m.

Bidens sp.

Esmeraldas: Bilsa Biological Station, 600 m, 13 Sep 1994, J.R. Abbott 15068 (BEREA, QCNE).

Common terrestrial herb in disturbed areas. 600 m.

Centratherum punctatum Cass., Dict. Sci. Nat. (ed. 2) 7: 384. 1817.

Representative Specimen: Ecuador: Manabí: Jama 200 m, 18 Dec 1998, D. Neill &

- QCNE botany interns 11648* (MO, QCNE). Terrestrial herb. 200-600 m. Amazonia, Chocó, Mesoamerica.
- Chromolaena roseorum** (B.L. Rob.) R.M. King & H. Rob., *Phytologia* 20: 205. 1970. *Eupatorium roseorum* B.L. Rob. Type: Ecuador: Guayas: vicinity of Guayaquil, 30 Aug-2 Sep 1918, J.N. Rose & G. Rose 22464 (HT: GH; IT: NY, US). Representative Specimen: Ecuador: Manabí: Jama 200 m, 18 Dec 1998, *D. Neill & QCNE botany interns 11646* (MO, QCNE). Terrestrial herb. 200-600 m. Amazonia.
- Clibadium eggersii** Hieron., *Bot. Jahrb. Syst.* 28: 598. 1901. Type: Ecuador: Manabí: Río Rapallo near El Recreo, 6 Sep 1893, *H. Eggers 15309* (HT: B (dest.); LT: K; ILT: P, US). Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 20 Sep 1994, *J.L. Clark & B. Adnepos 81* (MO, QCNE). Shrub in disturbed areas. 400-600 m. Amazonia, Chocó, Mesoamerica.
- Clibadium laxum** S.F. Blake, *J. Wash. Acad. Sci.* 16: 418. 1926. Type: Ecuador: Guayas: Teresita, 270 m, *A.S. Hitchcock 20430* (HT: US). Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 27 Sep 1996, *J.L. Clark 2923* (MO, QCNE). Common tree in disturbed areas. 400-600 m. Amazonia, Chocó.
- Cyrtocymura scorpioides** (Lam.) H. Rob., *Proc. Biol. Soc. Wash.* 100(4): 852. 1987. Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor, 100 m, 15 Dec 1998, *D. Neill & QCNE botany interns 11507* (MO, QCNE). Terrestrial herb. 100 m. Amazonia, Mesoamerica.
- Elephantopus mollis** Kunth, *Nov. Gen. Sp. (folio ed.) 4: 20.* 1820 [1818]. Representative Specimen: Ecuador: Manabí: Cordillera de Jama, 600 m, 16 Dec 1998,
- D. Neill & QCNE botany interns 11568* (MO, QCNE). Terrestrial herb. 100-600 m. Amazonia, Chocó, Mesoamerica.
- Erechtites prenanthoides** (A. Rich.) DC., *Prodri.* 6: 296. 1837. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 9 Dec 1994, *N. Pitman & M.S. Bass 1064* (MO, QCNE). Terrestrial herb. 400-600 m. Amazonia, Mesoamerica.
- Fleischmannia pratensis** (Klatt) R.M. King & H. Rob., *Phytologia* 19: 205. 1970. Representative Specimen: Ecuador: Manabí: 50 km N of Pedernales along new coastal highway, 3 km N of Río Cojimíes, 50, 19 Dec 1998, *D. Neill & QCNE botany interns 11711* (MO, QCNE, US). Terrestrial herb growing in open pasture. 50 m. Amazonia, Chocó, Mesoamerica.
- Fulcaldea laurifolia** (Bonpl.) Poir., *Encycl., Suppl. 5(2): 575.* 1817. Representative Specimen: Ecuador: Manabí: Cerro del Matal 100 m, 17 Dec 1998, *D. Neill & QCNE botany interns 11621* (MO, QCNE, US). Tree, with spines on trunk. 30-100 m. Common in dry forest on slopes at Reserva de Lalo Loor.
- Hidalgoa ternata** La Llave, *Nov. Veg. Descr.* 1: 15. 1824. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 5 Dec 1994, *N. Pitman & M.S. Bass 994* (MO, QCNE). Herbaceous vine. 400-600 m. Mesoamerica.
- Lycoseris eggersii** Hieron., *Bot. Jahrb. Syst.* 29: 75. 1900. Representative Specimen: Ecuador: Manabí: 25 km al sur de Pedernales 5 – 30 m, 11 Oct 1999, *T. Delinks 451* (MO, QCNE). Shrub. 0-30 m.
- Mikania decora** Poepp., *Nov. Gen. Sp. Pl.* 3: 53. 1845.

- Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 700 m, 8 Mar 1997, *H. Vargas, X. Aguirre, R. Miranda & C. Bobles 1265* (MO, QCNE).
Herbaceous vine. 580-700 m. Amazonia.
- (ed. 3) 350. 1839.
Representative Specimen: Ecuador: Manabí: 25 km al sur de Pedernales 5-80 m, 11 Oct 1999, *Tom Delinkns 417* (MO, QCNE).
Shrub. 0-100 m. Mesoamerica.
- Mikania guaco** Bonpl., Pl. Aequinoct. 2(13): 84, t. 105. 1809 [1811].
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 8 Dec 1994, *N. Pitman & M.S. Bass 1054* (MO, QCNE).
Herbaceous vine. 400-600 m. Amazonia, Chocó, Mesoamerica.
- Mikania houstoniana** (L.) B.L. Rob., Proc. Amer Acad. Arts 42: 47. 1906.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 850 m, 18 Feb-5 Mar 1995, *W. Palacios, J.L. Clark & N. Jaramillo 13592* (MO, QCNE).
Liana. 850 m. Amazonia, Chocó, Mesoamerica.
- Mikania micrantha** Kunth, Nov. Gen. Sp. (folio ed.) 4: 105. 1820 [1818].
Representative Specimen: Ecuador: Esmeraldas: Cotacachi-Cayapas 250 m, 28-31 Oct 1993, *Milton Tirado & P. Asimbaya, M. Coroso, J. Arroyo 697* (MO, QCNE).
Herbaceous vine. 500 m. Amazonia, Chocó, Mesoamerica.
- Neurolaena lobata** (L.) R. Br. ex Cass., Dict. Sci. Nat. (ed. 2) 34: 501, 502. 1825.
Representative Specimen: Ecuador: Esmeraldas: Carretera Herrera-El Páramo (Sta. Isabel) 580 m, 19 Feb - 5 Mar 1995, *W. Palacios, J.L. Clark & N. Jaramillo 13554* (MO, QCNE).
Shrub. 580-600 m. Amazonia, Chocó, Mesoamerica.
- Piptocarpha poeppigiana** (DC.) Baker, Fl. Bras. 6(2): 131. 1873.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 10 Jan 1997, *J.L. Clark, E. Austen, S. Bennett & D. Kapan 3787* (MO, QCNE).
Liana. 500 m. Amazonia, Chocó, Mesoamerica.
- Pluchea carolinensis** (Jacq.) G. Don, Hort. Brit. (ed. 3) 350. 1839.
Representative Specimen: Ecuador: Manabí: 25 km al sur de Pedernales 5-80 m, 11 Oct 1999, *Tom Delinkns 417* (MO, QCNE).
Shrub. 0-100 m. Mesoamerica.
- Pseudelephantopus spicatus** (Juss. ex Aubl.) C.F. Baker, Trans. Acad. Sci. St. Louis 12(5): 55. 1902.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 7 Dec 1994, *N. Pitman & M.S. Bass 1027* (MO, QCNE).
Terrestrial herb. 400-600 m. Amazonia, Chocó, Mesoamerica.
- Pseudelephantopus spiralis** (Less.) Cronquist, Madrono 20: 255. 1970.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 14 Sep 1994, *J.R. Abbott 15093* (QCNE).
Terrestrial herb. 600 m. Amazonia, Chocó, Mesoamerica.
- Pseudogynoxys bogotensis** (Spreng.) Cuatrec., Brittonia 8: 156. 1955.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 19 Oct 1994, *N. Pitman, M.S. Bass & L. Kueppers 866* (MO, QCNE).
Terrestrial herb. 400-600 m. Chocó.
- Schistocarpha eupatorioides** (Fenzl) Kuntze, Revis. Gen. Pl. 3(2): 170. 1898.
Representative Specimen: Ecuador: Esmeraldas: Carretera Herrera-El Páramo (Sta. Isabel) 580 m, 18 Feb-5 Mar 1995, *W. Palacios, J.L. Clark & N. Jaramillo 13553* (QCNE).
Shrub. 580 m. Amazonia, Chocó, Mesoamerica.
- Verbesina minuticeps** S.F. Blake, Bull. Torrey Bot. Club 51: 431. 1924. Type: Ecuador: Guayas: Guayaquil, 0-50 m, *Hitchcock, A.S. 20159* (HT: US).
Representative Specimen: Ecuador: Manabí: Jama 200 m, 18 Dec 1998, *D. Neill & QCNE botany interns 11643* (MO, QCNE).
Shrub. 200 m. Endemic.
- Vernonanthura patens** (Kunth) H. Rob.,

Phytologia 73(2): 72. 1992.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 9 Dec 1994, *M.S. Bass & N. Pitman* 319 (MO, QCNE).

Tree. 400-600 m. Amazonia, Chocó, Mesoamerica.

Vernonia patens Kunth, Nov. Gen. Sp. (folio ed.) 4: 32. 1820 [1818].

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 9 Dec 1994, *N. Pitman & M.S. Bass* 1066 (MO, QCNE).

Tree. 400-600 m. Amazonia, Chocó, Mesoamerica.

Wulffia baccata (L.) Kuntze, Revis. Gen. Pl. 1: 373. 1891.

Representative Specimen: Ecuador: Esmeraldas: 300 m, 19 Oct 1992 - 24 Oct 1992, *Galo Tipaz, C. Aulestia & A. Llanos* 2124 (MO).

Herbaceous vine. 300-700 m. Amazonia, Chocó, Mesoamerica.

BALANOPHORACEAE

Helosis cayennensis (Sw.) Spreng., Syst. Veg. 3: 765. 1826.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 24 Sep 1996, *J.L. Clark* 2901 (MO, QCNE).

Common root parasite. 100-500 m. Amazonia, Chocó, Mesoamerica.

BALSAMINACEAE

Impatiens balsamina L., Sp. Pl. 2: 938. 1753.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 5 Apr 1995, *J.L. Clark & Y. Troya* 609 (MO, QCNE).

Common cultivated terrestrial herb. 0-600 m. Introduced; widely naturalized in the tropics.

BEGONIACEAE

Begonia glabra Aubl., Hist. Pl. Guiane 2: 916-

917, t. 349. 1775.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 14 Nov 1994, *J.L. Clark, H. Lintz & S. Mora* 233 (MO, QCNE).

Herbaceous vine. 400-600 m. Amazonia, Chocó, Mesoamerica.

Begonia harlingii L.B. Sm. & Wassh., *Phytologia*

44: 246, pl. 9. 1979. Type: Ecuador. Los Ríos, 750 m, *Harling* 487 (HT: S; photo: US).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 27 Sep 1997, *J.L. Clark* 2915 (MO, QCNE).

Common terrestrial herb with succulent stems. 400-650 m. Endemic.

Begonia sodiroi C. DC., Bull. Herb. Boissier, ser. 2, 8: 323. 1908.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 22 Oct 1996, *J.L. Clark* 3075 (MO, QCNE).

Common herbaceous vine. 400-600 m. Amazonia.

BIGNONIACEAE

Amphilophium paniculatum (L.) Kunth, Nov. Gen. Sp. 3: 149. 1818[1819].

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 17 Jan 1997, *J.L. Clark, L. Chatrou, C. Repetur & P. Maas* 3816 (MO, QCNE).

Herbaceous vine. 400-600 m. Amazonia, Chocó, Mesoamerica.

Amphitecna latifolia (Mill.) A.H. Gentry, Taxon 25(1): 108. 1976.

Representative Specimen: Ecuador: Manabí: 45 km al norte de Pedernales, 5 m, 28 Aug 1998, *D. Neill & QCNE botany interns* 11409 (QCNE).

Tree. 0-50 m. Chocó, Mesoamerica.

Anemopaegma chrysanthum Dugand, Caldasia 4(19): 307-309. 1947. Type: Colombia: Cauca: Costa del Pacífico, río Micay, brazo Noanamito, orilla derecha, El Chachajo, 2-

- 5 m, 27 Feb 1943, *J. Cuatrecasas* 14269 (HT: COL). Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 29 Jan 1991, *A. Gentry, R. Foster & C. Josse* 72876 (MO). Liana. 280-600 m. Chocó, Mesoamerica.
- Arrabidaea verrucosa** (Standl.) A.H. Gentry, Selbyana 2(1): 43. 1977. Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 30 Jan 1991, *A. Gentry, R. Foster & C. Josse* 72941 (MO). Liana. 280 m. Amazonia, Chocó, Mesoamerica.
- Crescentia cujete** L., Sp. Pl. 2: 626. 1753. Representative Specimen: Ecuador: Manabí: 25 km al sur de Pedernales 5–80 m, 11 Oct 1999, *T. Delinks* 414 (QCNE). Common cultivated Tree. 0-100 m. Introduced. Amazonia, Chocó, Mesoamerica.
- Exarata chocoensis** A.H. Gentry, Syst. Bot. 17(3): 503-506, f. 1-3. 1992. Type: Ecuador: Pichincha: near Puerto Quito, 350 m, *T. Pennington & J. de la Cruz* 10550 (HT: MO; IT: K, QCNE). (Fig. 9A-B, p.136; 10A-E, p.137). Representative Specimen: Esmeraldas: Bilsa Biological Station, Loma de los Guerrilleros, 650 m, 19 Feb 1997, *J.L. Clark* 3944 (COL, MO, QCNE, US). Subcanopy tree, common in wet forest. 100-650 m. Common name: "Piedrita." Chocó.
- Paragonia pyramidata** (Rich.) Bureau, Kongel. Danske Vidensk. Selsk. Skr., Naturvidensk. Math. Afd., ser. 6 6(3): 422. 1892. Representative Specimen: Ecuador: Esmeraldas: Mache-Chindul, comunidad Caña Braval, Cabaceras del Río Viche, estero Sabaleta, 250 m, 16 Mar 1998, *J.L. Clark* 4724 (MO, QCNE). Vine. 250 m. Amazonia, Chocó, Mesoamerica.
- Schlegelia darienensis** Sandwith, Kew Bull. 1930: 212. 1930. Representative Specimen: Esmeraldas: Bilsa Biological Station, 500 m, 6 Jan 1997, *J.L. Clark, E. Austen, S. Bennett & D. Kapan* 3733 (COL, MO, QCNE, US). Common woody vine. 100-650 m. Chocó.
- Schlegelia dressleri** A.H. Gentry, Ann. Missouri Bot. Gard. 60(3): 924, f. 32K-O. 1973 [1974]. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 6 Feb 1996, *J.L. Clark, N. Kerber & J. Plihal* 1939 (COL, MO, QCNE). Common woody vine. 280-600 m. Chocó, Mesoamerica.
- Schlegelia sulphurea** Diels, Notizbl. Bot. Gart. Berlin-Dahlem 14: 39. 1938. Type: Ecuador: San Carlos de los Colorados, primaren Regenwald, 150 m, *Schultze-Rhonhof* 2016 (T: B). Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 12 Sep 1994, *J.L. Clark* 7 (MO, QCNE). Common woody vine. 280-600 m. Chocó, Mesoamerica.
- Tabebuia chrysanthia** (Jacq.) G. Nicholson, Ill. Dict. Gard. 4: 1. 1887. Representative Specimen: Ecuador: Manabí: Cerro del Matal 100 m, 17 Dec 1998, *D. Neill & QCNE botany interns* 11613 (QCNE). Canopy tree. 100-300 m. Common name: "Guayacan boqueño." Amazonia, Chocó, Mesoamerica. Infrasp.: *Tabebuia chrysanthia* subsp. *pluvicola* A.H. Gentry.
- Tecoma castanifolia** (D. Don) Melch., Ber. Deutsch. Bot. Ges. 59: 26. 1941. Representative Specimen: Ecuador: Manabí: Cerro del Matal 100 m, 17 Dec 1998, *D. Neill & QCNE botany interns* 11632 (QCNE). Tree or shrub, in dry forest. 0-300 m. Endemic (coastal Ecuador and coastal NW Peru).
- BIXACEAE**
- Bixa orellana** L., Sp. Pl. 1: 512. 1753. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-

600 m, 27 Sep 1994, *M.S. Bass & J. Wolf*
74 (MO, QCNE).

Common cultivated shrub. 100-600 m.
Common name: "Achote." Introduced;
widely cultivated in the tropics.

BOMBACACEAE

Eriotheca globosa (Aubl.) A. Robyns, Bull. Jard. Bot. Etat 33(1): 142. 1963.

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 400-
600 m, 9 Oct 1994, *J.L. Clark* 173 (MO,
QCNE, WIS).

Common tree in wet forest. 400-600 Amazonia,
Chocó [Possibly a mis-identification; the
taxon in coastal Ecuador and Colombia is
probably distinct from the Amazonian
species; *J.L. Fernández-Alonso*, pers.
comm.]

Eriotheca ruizii (K. Schum.) A. Robyns, Bull. Jard. Bot. Etat 33(2): 162. 1963.

Representative Specimen: Ecuador: Manabí:
Punta Los Frailes 5-60 m, 29 Jun 1999, *T. Delinks & C. Robles* 337 (QCNE).

Common tree in dry forest. 0-50 m. Amazonia.

Matisia castano H. Karst. & Triana, Ann. Sci. Nat., Bot., ser. 4, 27: 326. 1862.

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 500
m, 12 Feb 1996, *J.L. Clark & N. Kerber*, *J. Plihal* 1952 (MO, QCNE).

Tree. 400-600 m. Chocó.

Matisia giacomettoi Romero, Mutisia 33: 16, f. 10, 11. 1970.

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 400-
600 m, 10 May 1995, *J.L. Clark & C. Watt*
822 (MO, QCNE).

Tree. 400-600 m.

Matisia grandifolia Little, J. Wash. Acad. Sci. 38:
102, f. 18. 1948. Type: Ecuador: Pichincha:
Sto. Domingo de los Colorados, *E.L. Little*
6146 (HT: US; IT: F).

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 500
m, 13 May 1998, *J.L. Clark & C. Pallis*

5524 (MO, QCNE).

Tree. 400-600 m. Amazonia, Chocó.

Matisia idroboi Cuatrec., Phytologia 4: 476. 1954.

Synonym: *Quararibea idroboi* (Cuatrec.) A. Robyns & S. Nilsson

Representative Specimen: Ecuador:
Esmeraldas: Mache-Chindul, comunidad
Caña Braval, 250 m, 16 Mar 1998, *J.L. Clark* 4657 (MO, QCNE).

Tree. 250 m. Amazonia, Chocó.

Matisia longipes Little, Phytologia 18: 200, f. 3.

1969. Type: Ecuador: Esmeraldas: Alto
Tambo, 650 m, lower montane forest, 23
Sep 1965, *E.L. Little & R.G. Dixon* 21125
(HT: US; IT: NY).

Representative Specimen: Ecuador:
Esmeraldas: Reserva Awa 500 m, 21 Jan
1993, *C. Aulestia & M. Aulestia* 1003 (MO,
QCNE, WIS).

Tree. 280 m. Chocó.

Matisia palenquiana (A. Robyns) W.S. Alverson,

Taxon 38(3): 386. 1989. *Quararibea*
palenquiana A. Robyns. Type: Ecuador:
Los Rios, 200 m, 22 Feb 1974, *A. Gentry*
10134 (HT: BR).

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 550
m, 24 Nov 1999, *D. Neill & QCNE botany*
interns 12222 (MO, QCNE).

Tree. 500-600 m. Endemic.

Ochroma pyramidalis (Cav. ex Lam.) Urb.,

Repert. Spec. Nov. Regni Veg. Beih. 5: 123.
1920.

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 400-
600 m, 12 Dec 1994, *M.S. Bass & N. Pitman*
338 (MO, QCNE).

Common tree in light gaps. 400-600 m.
Common names: "Balsa" or "Boya."
Amazonia, Chocó, Mesoamerica.

Pachira patinoi (Dugand & Robyns) Fern. Alonso,

Revista Acad. Colomb. Ci. Exact. 22(82):
7-12. 1998.

Synonym: *Bombacopsis patinoi* Dugand &
Robyns.

Representative Specimen: Ecuador:

- Esmeraldas: Bilsa Biological Station, 650 m, 12 Mar 1997, *J.L. Clark, T. Nuñez & J. Richter* 3998 (MO, QCNE). Common subcanopy Tree. 400-600 m. Chocó.
- Patinoa almirajo** Cuatrec., Rev. Int. Bot. Appl. Agric. Trop. 33(369-370): 309-310, 312, f. 1-2, 6-13. 1953. Type: Colombia: Choco: La Playa, margen derecha del Río Atrato, frente a Quibdo, 50 m, 12 Mar 1953, *V.M. Patiño* 122 (HT: F). (Fig. 8A). Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 1 Oct 1996, *J.L. Clark* 2961 (MO, QCNE). Common subcanopy tree along rivers. Fruits large (>30 cm) and heavy. 400-600 m. Chocó, Mesoamerica.
- Pseudobombax millei** (Standl.) A. Robyns, Bull. Jard. Bot. Etat 33: 69. 1963. *Bombax millei* Standl. Type: Ecuador, *L. Mille* 868 (HT: F; photo: F). Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor 50 m, 25 Aug 1998, *D. Neill & QCNE botany interns* 1129 (MO, QCNE). Tree, in dry to moist forest. 0-100 m. Endemic.
- Quararibea casasecae** Fern. Alonso & Castrov., Anales Jard. Bot. Madrid 59(1): 155, f. 3. 2001. Type: Ecuador. Estación Biológica Bilsa, Montañas Mache-Chindul, 35 km al W de Quininde, 650 m, 2 Oct 1996, *J.L. Clark* 3000 (HT: QCNE; IT: COL, MO). Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 650 m, 12 Mar 1997, *J.L. Clark, A. Cousins, T. Nuñez & J. Richter* 4015 (MO, QCNE). Tree. 500-650 m. Endemic.
- Spirotheca awadendron** Fern. Alonso, Revista Acad. Colomb. Ci. Exact. 25(95): 201-203, f. 9. 2001. Type: Ecuador. Esmeraldas: Quinindé. Reserva Ecológica Mache-Chindul. Bilsa Biological Station, 500 m, 1-10 Jan 1997, *J.L. Clark, E. Austen & D. Kapan* 3708 (HT: QCNE; IT: COL, MO, GH, US, AAU). (Fig. 8C-D, p.135). Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 650 m, 12 Mar 1997, *J.L. Clark, A. Cousins, T. Nuñez & J. Richter* 4091 (US, QCNE, COL, MO). Emergent canopy tree. 400-650 m. Endemic.
- ## BORAGINACEAE
- Cordia alliodora** (Ruiz & Pav.) Oken, Allg. Naturgesch. 3(2): 1098. 1841. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 20 May 1995, *J.L. Clark & C. Watt* 963 (MO, QCNE). Common roadside tree. 400-650 m. Common name, "Laurel Negro." Amazonia, Chocó, Mesoamerica.
- Cordia cylindrostachya** (Ruiz & Pav.) Roem. & Schult., Syst. Veg. 4: 459. 1819. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 17 May 1995, *J.L. Clark & C. Watt* 906 (MO, QCNE). Tree. 400-600 m. Common name: "Tutumbe." Amazonia, Chocó, Mesoamerica.
- Cordia dwyeri** Nowicke, Phytologia 18(7): 419-420. 1969. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 25 Feb 1996, *J.L. Clark* 2132 (MO, QCNE). Tree. 280-600 m. Choco, Mesoamerica.
- Cordia fallax** I.M. Johnst., J. Arnold Arbor 16: 10. 1935. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 8 May 1996, *J.L. Clark* 2561 (MO, QCNE). Tree. 400-600 m. Amazonia.
- Cordia hebeclada** I.M. Johnst., J. Arnold Arbor. 31: 176. 1950. Representative Specimen: Ecuador: Manabí: 45 km al norte de Pedernales, 5 m, 28 Aug 1998, *D. Neill & QCNE botany interns* 11439 (QCNE). Tree. 0-600 m. Amazonia, Chocó.
- Cordia lucidula** I.M. Johnst., J. Arnold Arbor.

21(3): 352-353. 1940.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 9 May 1995, *J.L. Clark & C. Watt 809* (MO, QCNE).

Subcanopy tree; inflorescence to 1 m wide. 400-600 m. Chocó, Mesoamerica.

Cordia lutea Lam., Tabl. Encycl. 1: 421. 1791.

Representative Specimen: Ecuador: Manabí: Cerro del Matal 100 m, 17 Dec 1998, *D. Neill & QCNE botany interns 11627* (QCNE).

Shrub. 100 m. Amazonia, Chocó.

Cordia mexicana I.M. Johnst., J. Arnold Arbor. 18: 12. 1937.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 19 Feb 1996, *J.L. Clark 2083* (MO, QCNE).

Tree. 400-600 m. Amazonia.

Cordia spinescens L., Mant. Pl. 2: 206. 1771.

Synonym: *Varronia spinescens* (L.) Borhidi.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 11 Nov 1994, *M.S. Bass & N. Pitman 230* (MO, QCNE).

Common shrub along disturbed roadsides. 250–600. Amazonia, Chocó, Mesoamerica.

Heliotropium curassavicum L., Sp. Pl. 1: 130. 1753.

Representative Specimen: Ecuador: Manabí: Cerro del Matal 100 m, 17 Dec 1998, *D. Neill & QCNE botany interns 11611* (MO, QCNE).

Terrestrial herb. 100 m. Mesoamerica.

Heliotropium indicum L., Sp. Pl. 1: 130. 1753.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 2 Jan 1997, *J.L. Clark, E. Austen, S. Bennett & D. Kapan 3696* (MO, QCNE).

Terrestrial herb. 500 m. Chocó, Mesoamerica.

Tournefortia angustiflora Ruiz & Pav., Fl. Peruv.

2: 25-26, t. 151, f. a. 1799.

Representative Specimen: Ecuador: Manabí: Cerro Para de Pájaro, 300–700 m, 5 Mar 1997, *H. Vargas, X. Aguirre, R. Miranda &*

C. Robles 1205 (MO, QCNE).

Terrestrial herb. 300-700 m. Amazonia, Chocó, Mesoamerica.

Tournefortia bicolor Sw., Prodr. 40. 1788.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 4 Apr 1995, *J.L. Clark & Y. Troya 602* (MO, QCNE).

Scandent subshrub. 400-600 m. Amazonia, Chocó, Mesoamerica.

Tournefortia delicatula J.S. Mill. Novon 7(3):

265-267, f. 1. 1997.

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300–700 m, 19 Jun 1996, *J.L. Clark, E. Arroyo & P. Hibbs 2625* (MO, QCNE).

Terrestrial herb. 300-700 m. Amazonia.

Tournefortia gigantifolia Killip ex J.S. Mill.,

Novon 10(1): 49-51, fig. 1. 2000. Type: Ecuador: Napo: Reserva Biologica Jatun Sacha, ca. 8 km ESE of Puerto Misahualli, *J.S. Miller, W. Wilbert & S.F.S. Med. Bot. Class. 2321* (HT: MO, IT: QCA, US).

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300–700 m, 20 Jun 1996, *J.L. Clark, E. Arroyo & P. Hibbs 2686* (MO, QCNE).

Shrub. 300-700 m. Amazonia, Chocó.

Tournefortia hirsutissima L., Sp. Pl. 1: 140. 1753.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 14 Feb 1996, *J.L. Clark 1984* (MO, QCNE).

Herbaceous vine. 400-600 m. Amazonia, Chocó, Mesoamerica.

Tournefortia maculata Jacq., Enum. Syst. Pl. 14.

1760.

Representative Specimen: Ecuador: Manabí: Mache-Chindul, comunidad Ambache, 250 m, 6 Apr 1997, *J.L. Clark, R. Dunn, T. Nuñez & C. Robles 4234* (MO, QCNE).

Herbaceous vine. 250 m. Amazonia, Chocó, Mesoamerica.

BROMELIACEAE

Aechmea aciculosa Mez & Sodiro, Bull. Herb.

- Boissier, ser. 2, 4: 620. 1904. Type: Ecuador, *Sodiro 171/2* (B destr., photo: US). Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 10 Apr 1995, *J.L. Clark & Ivonne Troya 690* (MO, QCNE, SEL). Common epiphyte. 400-600 m. Amazonia. Eipiphyte. 700 m. Endemic.
- Aechmea angustifolia** Poepp. & Endl., Nov. Gen. Sp. Pl. 2: 43, t. 159. 1838.
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 20 Nov 1994, *J.L. Clark, C. Bergman, H. Lintz & S. Mora 296* (MO, QCNE, SEL). Common epiphyte. 400-600 m. Amazonia, Chocó, Mesoamerica.
- Aechmea mexicana** Baker, J. Bot. 17: 165. 1879.
- Representative Specimen: Ecuador: Manabí: 45 km al norte de Pedernales 5 m, 28 Aug 1998, *D. Neill & QCNE botany interns 11432* (QCNE). Epiphyte. 0-50 m. Chocó, Mesoamerica.
- Aechmea pyramidalis** Benth., Bot. Voy. Sulphur 173. 1846. Type: Ecuador. Guayaquil, *Sinclair s.n.* (HT: K; photo: GH).
- Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor, 100 m, 15 Dec 1998, *D. Neill & QCNE botany interns 11523* (MO). Epiphyte, 100-600 m.
- Catopsis sessiliflora** (Ruiz & Pav.) Mez, Monogr. Phan. 9: 625. 1896.
- Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 200 m, 6 Jul 1997, *J.L. Clark 2800* (MO, QCNE). Epiphyte, 200-700 m. Amazonia, Chocó, Mesoamerica.
- Guzmania alborosea** H. Luther, Selbyana 9: 187, f. 1986. Type: Ecuador: Pichincha: Centinela, montañas de la Ila, km 12 on road from Patricia Pilar to Flor de Mayo, 600 m, *C.H. Dodson, M. Fallen & P. Morgan 8422* (HT: SEL; IT: US).
- Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 700 m, 26 Aug 1998, *D. Neill & QCNE botany interns 11353* (MO).
- Guzmania amplexens** L.B. Sm., Contr. U.S. Natl. Herb. 29: 292, f. 16. 1949.
- Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 700 m, 26 Aug 1998, *D. Neill & QCNE botany interns 11340* (QCNE). Epiphyte. 700 m. Chocó.
- Guzmania angustifolia** (Baker) Wittm., Bot. Jahrb. Syst. 11: 62. 1889.
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 11 May 1995, *J.L. Clark & C. Watt 830* (MO, QCNE, SEL). Common epiphyte. 300-700 m. Amazonia, Chocó, Mesoamerica.
- Guzmania eduardii** André ex Mez.
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 16 Sep 1994, *J.L. Clark & B. Adnepos 69* (MO, QCNE). Epiphyte. 400-600 m. Amazonia, Chocó.
- Guzmania lingulata** (L.) Mez, Monogr. Phan. 9: 899. 1896.
- Representative Specimen: Ecuador: Manabí: 43 km al norte de Pedernales, 100 m, 19 Dec 1998, *D. Neill & QCNE botany interns 11726* (QCNE). Epiphyte. 50-600 m. Amazonia, Chocó, Mesoamerica.
- Infrasp.: *Guzmania lingulata* var. *cardinalis* (André) André ex Mez.
- Guzmania monostachia** (L.) Rusby ex Mez, Monogr. Phan. 9: 905. 1896.
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 10-13 Jul 1996, *J.L. Clark & P. Hibbs 2853* (MO, QCNE). Epiphyte. 400-600 m. Amazonia, Chocó, Mesoamerica.
- Guzmania remyi** L.B. Sm., Phytologia 19: 285, t. 1, f. 16-18. 1970. Type: Ecuador: Bolívar-Guayas: forests between Guaranda and Bodegas (Babahoyo), Nov 1856, *E.J. Remy s.n.* (HT: P; IT: US).

- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 31 Mar 1996, *J.L. Clark & K. Berg & J. Leffingwell* 2364 (MO, QCNE). Common epiphyte. 300-700 m. Endemic.
- Guzmania rhonhofiana** Harms, Notizbl. Bot. Gart. Berlin-Dahlem 14: 329. 1939. Type: Ecuador: Los Ríos: San Carlos de los Colordos, 19 Oct 1935, *H. Schultze-Rhonhof* 1981 (HT: B).
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 8 Oct 1996, *J.L. Clark* 3020 (MO, QCNE). Epiphyte. 500 m. Chocó
- Guzmania scherzeriana** Mez, Monogr. Phan. 9: 949. 1896.
- Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300–700 m, 19 Jun 1996, *J.L. Clark, E. Arroyo & P. Hibbs* 2701 (MO, QCNE). Epiphyte. 300-700 m. Amazonia, Chocó, Mesoamerica.
- Pitcairnia bakeri** (André) André ex Mez, Monogr. Phan. 9: 460. 1896.
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 28 Mar–11 Apr 1995, *J.L. Clark & Y. Troya* 586 (MO, QCNE). Terrestrial or epiphytic herb, 400-600 m. Amazonia, Chocó.
- Pitcairnia bronniartiana** André, Enum. Bromel. 5. 1888.
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 20 Oct 1994, *N. Pitman, M.S. Bass & L. Kueppers* 869 (MO, QCNE). Terrestrial herb. 400-600 m. Amazonia, Chocó.
- Pitcairnia clarkii** H. Luther, Selbyana 18(1): 98. 1997. Type: Ecuador. Esmeraldas: Quinindé, Bilsa Biological Station, Mache Mountains, 35 km W of Quinindé, 5 km W Santa Isabel, 00°21'N 79°44'W, 400-600 m Premontane wet forest, 28 Mar-11 Apr 1995, *J. L. Clark & Y. Troya* 528 (HT: SEL; IT: MO, QCA, QCNE). (Fig. 7A-B, p.134).
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 16 Sep 1994, *J.L. Clark & B. Adnepos* 67 (MO, QCNE, SEL). Terrestrial or epiphytic subsrub. 400-600 m. Endemic.
- Pitcairnia ferrell-ingramiae** H. Luther & Dalström, J. Bromeliad Soc. 47(5): 231. 1997. Type: Ecuador. Imbabura: Los Cedros Reserve, 1550-1600 m. 25 Mar 1996, *S. Dallström, S. Ingram & K. Ferrell-Ingram* 2236 (HT: SEL). (Fig. 7D-E, p.134).
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 4–5 Oct 1996, *J.L. Clark* 2984 (MO, QCNE). Epiphyte, stems subwoody. 400-600 m. Endemic.
- Pitcairnia sceptrigera** Mez, Repert. Spec. Nov. Regni Veg. 3: 7. 1906. Type: Ecuador: Manabí: Hacienda El Recreo, ca 50 m, *H. Eggers* 15061 (HT: B; IT: F; photo: F(B)).
- Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300–700 m, 7 Apr 1997, *J.L. Clark, T. Nuñez & C. Robles* 4328 (MO, QCNE, SEL). Terrestrial, stems subwoody. 300-700 m. Amazonia.
- Racinaea multiflora** (Benth.) M.A. Spencer & L.B. Sm., Phytologia 74(2): 155. 1993. *Tillandsia multiflora* Benth. Type: Ecuador. Guayas, *Cuming* 1269 (HT: K; photo: GH).
- Representative Specimen: Ecuador: Manabí: Cojimíes 100 m, 6 Apr 1997, *J.L. Clark, R. Dunn, T. Nuñez & C. Robles* 4257 (MO, QCNE). Epiphyte. 100 m.
- Tillandsia balbisiana** Schult. f., Syst. Veg. 7(2): 1212. 1830.
- Representative Specimen: Ecuador: Manabí: colectada en pastizal, cerca Pedernales, carretera a San Vicente, 5 m, 13 Apr 2001, *José M. Manzanares* 7418 (QCNE). Epiphyte. 5 m. Amazonia.
- Tillandsia complanata** Benth., Bot. Voy. Sulphur 173. 1846. Type: Ecuador. Esmeraldas:

Atacames, *Sinclair s.n.* (HT: K; photo: GH). Representative Specimen: Ecuador: Manabí: Mtns. Mache-Chindul, comunidad Ambache, 250 m, 6 Apr 1997, *J.L. Clark, R. Dunn, T. Nuñez & C. Robles 4218* (MO, QCNE, SEL).

Epiphyte. 50-700 m. Amazonia.

Tillandsia cornuta Mez & Sodiro, Bull. Herb. Boissier, ser. 2, 5: 106. 1905. Type: Ecuador: Bolívar: Balsapamba, Oct 1890, *Sodiro 171/42* (HT: B; photo: B).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 26 Jan 1995, *J.L. Clark 429* (MO, QCNE, SEL).

Common Epiphyte. 280-700 m. Chocó, Mesoamerica.

Tillandsia cyanea Linden ex K. Koch, Wochenschr. Gartnerei Pflanzenk. 10: 140. 1867.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 6 Feb 1996, *J.L. Clark & N. Kerber, J. Plihal 1942* (MO, QCNE).

Epiphyte. 280-700 m. Endemic.

Tillandsia distichia Vell., Fl. Flumin. 136. 1825.

Representative Specimen: Esmeraldas: Paraíso de Papagayos, 200 m, 6 Jul 1997, *J.L. Clark 2781* (MO, QCNE, SEL).

Epiphyte. 0-200 m. Chocó.

Tillandsia narthecioides C. Presl, Reliq. Haenk. 1(2): 125. 1827.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 28 Mar-11 Apr 1995, *J.L. Clark & Y. Troya 638* (MO, QCNE, SEL).

Epiphyte. 0-600 m. Chocó.

Tillandsia venusta Mez & Wercklé, Bull. Herb. Boissier, ser. 2, 5: 108. 1905.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 25 Nov 1995, *J.L. Clark, K. Cunningham & C. Roberts 1692* (MO, QCNE, SEL).

Common Epiphyte. 250-600 m. Mesoamerica.

Vriesea barclayana (Baker) L.B. Sm., Contr. U.S.

Natl. Herb. 29(10): 517, f. 75. 1951.
Tillandsia barclayana Baker. Type: Ecuador: Guayas: Valdivia, Nov 1836, *Barclay 622* (HT: K).

Representative Specimen: Ecuador: Manabí: Jama 200 m, 18 Dec 1998, *D. Neill & QCNE botany interns 11642* (MO, QCNE). Epiphyte. 0-200 m.

Werauhia paupera (Mez & Sodiro) J.R. Grant, Trop. Subtrop. Pflanzenwelt 91: 47. 1995.
Thecophyllum pauperum Mez & Sodiro.
Vriesea paupera (Mez & Sodiro) L.B. Sm. & Pittendr., J. Wash. Acad. Sci. 43: 403. 1953. Type: Ecuador: Pichincha: slopes of Pichincha, ca. 75 m, Jul 1886, *Sodiro 171/18* (HT: B; photo: B).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 7 Oct 1994, *J.L. Clark & Heather Lintz 158* (MO, QCNE).

Epiphyte. 400-600 m. Endemic.

Werauhia vittata (Mez & Wercklé ex Mez) J.R. Grant, Trop. Subtrop. Pflanzenwelt 91: 38. 1995, *Vriesea vittata* (Mez & Wercklé) L.B. Sm. & Pittendr., J. Wash. Acad. Sci. 43: 403. 1953[1954]. *Thecophyllum vittatum* Mez & Wercklé.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 7 Oct 1994, *J.L. Clark, M.S. Bass & N. Pitman 157* (MO, QCNE).

Epiphyte. 400-600 m. Mesoamerica.

BURMANNIACEAE

Gymnosiphon sp.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 2 Jan 1997, *J.L. Clark, E. Austen, S. Bennett & D. Kapan 3683* (QCNE).

Saprophyte, in wet forest.

BURSERACEAE

Protium ecuadorensis Benoist, Bull. Soc. Bot. France 81: 324. 1934. Type: Ecuador.

Representative Specimen: Ecuador: Esmeraldas: Recinto Palma Junta 80 m, 20 May 2000, *D. Neill & QCNE botany interns*

12745 (MO, QCNE).
Canopy tree. 50-200 m. Common name: "Copal Blanco," "Anime." Chocó.

Tetragastris varians Little, J. Wash. Acad. Sci. 38: 96, f. 6. 1948. Type: Ecuador: Esmeraldas: San Lorenzo, 10 m, 10 Apr 1943, E.L. Little 6292 (HT: MAD; IT: F, US).

Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 28 Jan 1991, A. Gentry & C. Josse 72775 (MO). Tree, in wet forest, 280 m. Common name: "Anime." Endemic.

BUTOMACEAE

Limnocharis flava (L.) Buchenau, Index Crit. Butom. Alism. Juncag. 13. 1868.

Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 200 m, 28 Mar 1998, J.L. Clark & S. Nazzaro 4933 (MO, QCNE).

Aquatic succulent herb, 200 m. Amazonia, Chocó, Mesoamerica.

CACTACEAE

Epiphyllum columbiense (F.A.C. Weber) Dodson & A.H. Gentry, Selbyana 2(1): 31. 1977.

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300–700 m, 21 Jun 1996, J.L. Clark, E. Arroyo & P. Hibbs 2699 (MO, QCNE).

Epiphyte. 300-700 m. Chocó, Mesoamerica.

Epiphyllum rubrocornatum (Kimnach) Dodson & A.H. Gentry, Selbyana 2(1): 31. 1977.
Epiphyllum phyllanthus var. *rubrocornatum* Kimnach. Type: Ecuador: Chimborazo: along Río Chimbo at La Isla), 1958, Horich, C.K. s.n. (*cult. UC-58.790*) (HT: HNT; IT: K, UC, US)

Representative Specimen: Ecuador: Manabí: Cordillera de Jama, 20 m, 16 Dec 1998, D. Neill & QCNE botany interns 11599 (MO, QCNE).

Epiphyte. 0-50 m. Chocó, Mesoamerica.

Rhipsalis micrantha (Kunth) DC., Prodr. 3: 476. 1828.

Representative Specimen: Ecuador:

Esmeraldas: Paraíso de Papagayos, 200 m, 10 Oct 1996, J.L. Clark 3050 (MO, QCNE). Epiphyte. 200-500 m. Amazonia, Chocó, Mesoamerica.

CAMPANULACEAE

Burmeistera brachyandra E. Wimm., Pflanzenr. 276b: 129. 1943. Type: Ecuador: Esmeraldas: Parroquia de Concepción, Playa Rica, Y. Mexía 8432 (HT: W; IT: BM, F, G, MO, NY, OXF, U, UC, US).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 27 Sep 1996, J.L. Clark 2935 (MO, QCNE).

Shrub. 600 m. Endemic.

Burmeistera crassifolia (E. Wimm.) E. Wimm., Repert. Spec. Nov. Regni Veg. 30: 33, t. 125. 1932.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 11 Oct 1994, J.L. Clark 178 (MO, QCNE).

Scandent Shrub. 400-600 m. Endemic.

Burmeistera crispiloba Zahlbr., Repert. Spec. Nov. Regni Veg. 13: 528. 1915. Type: Sodiro 91/24.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 25 Mar 1995, J.L. Clark & Y. Troya 499 (MO, QCNE).

Scandent subshrub. 400-600 m. Endemic. Amazonia.

Burmeistera cyclostigmata Donn. Sm., Bot. Gaz. 20(7): 291. 1895.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 550 m, 24-25 Feb 1995, W. Palacios 13636 (MO, OSH, QCNE).

Shrub. 550 m. Amazonia, Chocó, Mesoamerica.

Burmeistera multiflora Zahlbr., Repert. Spec. Nov. Regni Veg. 13: 530. 1915. Type: Ecuador, Karsten s.n. (LT: W; photo: F).

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 500 m, 26 Aug 1998, D. Neill & QCNE botany interns 11374

- (MO, OSH).
Shrub. 500 m. Chocó.
- Burmeistera smaragdi** Lammers, Novon 12(2): 213-214, f. 6. 2002. Type: Ecuador: Esmeraldas: Quinindé, Bilsa Biological Station, Montañas de Mache, 35 km W of Quinindé, 5 km W of Santa Isabel, road between the station and the SE Ridge Trail, 00°21'N, 79°44'W, premontane wet forest, 400-600 m, 19 Sep. 1994, M.S. Bass & N. Pittman 22 (HT: OSH; IT: MO, QCNE). (Fig. 7C, p.134).
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 13 Sep 1994, J.L. Clark & B. Adnepos 27 (MO, QCNE, F).
Herbaceous vine. 400-600 m. Endemic.
- Centropogon cornutus** (L.) Druce, Bot. Exch. Club Soc. Brit. Isles 3(5): 416. 1914.
Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 200 m, 6 Jul 1996, J.L. Clark 2747 (MO, QCNE).
Scandent subshrub in disturbed forest. 50-200 m. Amazonia, Chocó, Mesoamerica.
- Centropogon granulosus** C. Presl, Prodr. Monogr. Lobel. 3(5): 416. 1836.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 20 Nov 1994, J.L. Clark, C. Bergman, H. Lintz, & S. Mora 287 (MO, QCNE).
Scandent subshrub in disturbed forest, 400-600 m. Amazonia, Chocó, Mesoamerica.
Infrasp.: *Centropogon granulosus* subsp. *granulosus*.
- Hippobroma longiflora** (L.) G. Don, Gen. Hist. 3: 717. 1834.
Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300-700 m, 21 Jun 1996, J.L. Clark, E. Arroyo & P. Hibbs 2697 (MO, QCNE).
Common terrestrial herb in disturbed areas. 300-700 m. Amazonia, Chocó, Mesoamerica.
- CANNACEAE**
- Canna indica** L., Sp. Pl. 1: 1. 1753.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 650 m, 12 Mar 1997, J.L. Clark, A. Cousins, T. Nuñez & J. Richter 4104 (MO, QCNE).
Terrestrial herb in disturbed areas. 500-650 m. Common name: "Lágrimas de San Pe." Amazonia, Chocó, Mesoamerica.
- Canna tuerckheimii** Kraenzl., Pflanzenr. IV. 47(Heft 56): 70. 1912.
Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300-700 m, 21 Jun 1996, J.L. Clark, E. Arroyo & P. Hibbs 2704 (MO, QCNE).
Terrestrial herb in disturbed areas. 300-700 m. Common name: "Lágrimas de San Pe." Amazonia, Chocó, Mesoamerica.
- CAPPARACEAE**
- Capparis bonifaziana** X. Cornejo & H.H. Iltis, Novon 15(3): 397. 2005. Type: Ecuador: Los Ríos: Hdca. Clementina, Puerta Negra, 9 Oct 2003, X. Cornejo & C. Bonifaz 7812 (IT: MO, WIS). (Fig. 8B, p.135; 14A-F, p.141).
Representative Specimen: Esmeraldas: Bilsa Biological Station, 500 m, 15 Jan 1997, J.L. Clark, L. Chatrou, C. Repetur & P. Maas 3805 (MO, QCNE).
Common understory Shrub. 50-600 m. Endemic.
- Capparis crotonoides** Kunth, Nov. Gen. Sp. 5: 95, t. 437. 1821.
Representative Specimen: Ecuador: Manabí: 70 m, 21 Nov 1993, Lindsay Woodruff and Tamara Núñez 579 (MO, QCNE).
Tree. 0-100 m. Amazonia.
- Capparis ecuadorica** H.H. Iltis, Selbyana 2(2-3): 303-306, pl. 1. 1978. Type: Ecuador: Los Ríos: Río Palenque Field Station, 56 km north of Quevedo on Santo Domingo de los Colorados Highway, wet forest, 200 m, 16 Feb 1974, A. Gentry 9973 (HT: WIS; IT: MO).
Representative Specimen: Ecuador: Manabí: Cuchilla Seca 450 m, 22 Jan 1991, A. Gentry & C. Josse 72626 (MO).
Tree. 0-100 m. Endemic.

Capparis frondosa Jacq., Enum. Syst. Pl. 24. 1760.

Representative Specimen: Ecuador: Manabí: Punta Los Frailes 5–60 m, 29 Jun 1999, *T. Delinks & C. Robles 341* (QCNE).
Shrub. 0-100 m. Amazonia, Chocó, Mesoamerica.

Capparis petiolaris Kunth, Nov. Gen. Sp. 5: 91. 1821.

Representative Specimen: Ecuador: Manabí: Estero Manta Blanca 100-200 m, 24 Jan 1991, *A. Gentry & C. Josse 72719* (MO).
Shrub. 0-100 m.

Morisonia americana L., Sp. Pl. 1: 503. 1753.

Representative Specimen: Ecuador: Manabí: Parque Nacional Machalilla, 80-100 m, 18 Jan 1991, *A. Gentry & C. Josse 72389* (MO, WIS).
Tree. 0-100 m. Chocó, Mesoamericana.

Podandrogyne brevipedunculata Cochrane, Selbyana 2(1): 32 (-36), t. 9, 10. 1977. Type: Ecuador: Esmeraldas: Parroquia de Concepción, El Sajado on Río Santiago, clearing, 60 m, 15 Dec 1936, *Y. Mexía 8443* (HT: UC; IT: BM, F, G, GB, GH, K, MO, NY, U, UC, US).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 11 Apr 1995, *J.L. Clark & Y. Troya 695* (MO, QCNE)

Suffrutescent Shrub. 200-600 m. Endemic.

Podandrogyne jamesonii (Briq.) Cochrane, Novon 7(4): 353. 1997 [1998].

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 5 Dec 1994, *J.L. Clark & K. Chamberlain 364* (MO, QCNE).

Terrestrial herb. 400-600 m. Endemic.

Steriphoma urbani Eggers, Bot. Centralbl. 73: 67. 1898. Type: Ecuador: Manabí, El Recreo, *H. Eggers 15404* (HT: B; IT: US).

Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor, 250 m, 28 Nov 1999, *T. Delinks 519* (MO, QCNE).
Shrub. 250 m. Endemic.

CARICACEAE

Carica microcarpa Jacq., Pl. Hort. Schoenbr. 3: 32-33, t. 309-310. 1798.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 10 Apr 1995, *J.L. Clark & Y. Troya 687* (MO, NY, QCNE).
Tree. 400-600 m. Common name: "Col de Monte." Amazonia, Chocó, Mesoamerica.
Infrasp.: *Carica microcarpa* subsp. *baccata* (Heilborn) V.M. Badillo.

Carica parviflora (A. DC.) Solms, Fl. Bras. 13(3): 177. 1889.

Representative Specimen: Ecuador: Manabí: Cerro del Matal, 100 m, 17 Dec 1998, *D. Neill & QCNE botany interns 11629* (QCNE).

Unbranched pachycaul Tree. 0-600 m. Amazonia.

Jacaratia spinosa (Aubl.) A. DC., Prodr. 15(1): 419. 1864.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 31 March 1996, *J.L. Clark & Karl Berg, J. Leffingwell 2351* (MO, QCNE).

Canopy tree. 500 m. Common name: "Papayuela" & "Tambora." Amazonia, Chocó, Mesoamerica.

CARYOPHYLLACEAE

Stellaria ovata Willd. ex Schldl., Ges. Naturf. Freunde Berlin Mag. Neuesten Entdeck. Gesammten Naturk. 7: 196-197. 1816.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 25 Oct 1994, *N. Pitman, M.S. Bass & L. Kueppers 886* (MO, PRC, QCNE).

Sprawling herb in disturbed areas. 600 m. Amazonia, Chocó, Mesoamerica.

CECROPIACEAE

Cecropia hispidissima Cuatrec., Revista Acad. Colomb. Ci. Exact. 9: 325. 1956. Type: Colombia: Valle: Río San Juan, below

- Queremal, J. Cuatrecasas 23986 (HT: US; IT: F). Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 20 Mar 1998, J.L. Clark & C. Pallis 4885 (MO, QCNE). Common subcanopy Tree. 400-700 m. Common name: "Guarumo." Chocó, Mesoamerica
- Cecropia obtusifolia** Bertol., Novi Comment. Acad. Sci. Inst. Bononiensis 4: 439. 1840. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 20 Mar 1998, J.L. Clark & C. Pallis 4889 (MO, QCNE). Canopy tree. 400-600 m. Chocó, Mesoamerica.
- Cecropia reticulata** Cuatrec., Revista Acad. Colomb. Ci. Exact. 6: 279. 1945. Type: Colombia: Valle: Río Digua, Piedra de Moler, J. Cuatrecasas 15117 (HT: COL; IT: F, US). Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 20 Mar 1998, J.L. Clark & C. Pallis 4806 (MO, QCNE). Understory Tree. 20-600 m. Common name: "Guarumo." Amazonia, Chocó, Mesoamerica.
- Coussapoa contorta** Cuatrec., Caldasia 7: 289. 1956. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 13 May 1998, J.L. Clark & C. Pallis 5559 (MO, QCNE). Common canopy strangler. 400-600 m. Chocó, Mesoamerica.
- Coussapoa herthae** Mildbr., Notizbl. Bot. Gart. Berlin-Dahlem 14: 29. 1938. Type: Ecuador: Pichincha: San Carlos de los Colorados, 5 Oct 1935, Schultze-Rhonhof 1953 (HT: B). Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 13 May 1998, J.L. Clark & C. Pallis 5567 (MO, QCNE). Common canopy strangler. Common name: "Mata palo." 400-600 m. Chocó.
- Coussapoa villosa** Poepp. & Endl., Nov. Gen. Sp. Pl. 2: 33, pl. 147. 1838. Representative Specimen: Ecuador: Esmeraldas: Mache-Chindul, comunidad Caña Braval, 250 m, 11 Mar 1998, J.L. Clark 4629 (MO, QCNE). Canopy strangler. 40-600 m. Common name: "Mata palo." Amazonia, Chocó, Mesoamerica.
- Pourouma bicolor** Mart., Syst. Mat. Med. Veg. Bras. 2: 33, pl. 147. 1843. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 20 Mar 1998, J.L. Clark & C. Pallis 4811 (MO, QCNE). Understory Tree. 300-600 m. Common name: "Uva de Monte." Amazonia, Chocó, Mesoamerica. Infrasp.: *Pourouma bicolor* subsp. *scobina* (Benoist) C.C. Berg & Exudens.
- Pourouma guianensis** Aubl., Hist. Pl. Guiane 2: 892, t. 341. 1775. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 24 Sep 1996, J.L. Clark 2900 (MO, QCNE). Subcanopy tree. 500 m. Common name: "Uva silvestre." Amazonia. Infrasp.: *Pourouma guianensis* subsp. *guianensis*.
- CELASTRACEAE**
- Maytenus macrocarpa** (Ruiz & Pav.) Briq., Annuaire Conserv. Jard. Bot. Geneve 20: 361. 1919. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 25 Nov 1999, D. Neill & QCNE botany interns 12195 (MO, QCNE). Common subcanopy tree. 500 m. Common name: "Chuchuhuasu." Amazonia, Chocó.
- Perrottetia distichophylla** Cuatrec., Lloydia 11: 24. 1949. Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 30 January 1991, A. Gentry, R. Foster & C. Josse 72974 (MO).

Tree. 500 m. Amazonia, Chocó.

Common understory shrub. 400-600 m. Amazonia.

Perrottetia sessiliflora Lundell, Phytologia 1(14): 451-452. 1940.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 1 Oct 1996, *J.L. Clark 2965* (MO, QCNE).

Common subcanopy tree. 400-600 m. Amazonia, Chocó, Mesoamerica.

CHRYSOBALANACEAE

Couepia platycalyx Cuatrec., Fieldiana, Bot. 27: 66. 1950.

Representative Specimen: Ecuador: Esmeraldas: Mache-Chindul, comunidad Caña Braval, 250 m, 11 Mar 1998, *J.L. Clark 4639* (K, MO, QCNE).

Canopy tree. 250 m. Common name: "Chachaho." Chocó, Mesoamerica.

Hirtella mutisii Killip & Cuatrec., Fieldiana, Bot. 27(2): 112. 1951.

Representative Specimen: Ecuador: Esmeraldas: Pariso de Papagayos, 200 m, 6 Jul 1996, *J.L. Clark 2771* (K, MO, QCNE, US).

Common understory tree. 180-500 m. Amazonia, Chocó, Mesoamerica.

Licania celiae Prance, Mem. New York Bot. Gard. 64: 198-201, f. 1. 1990. Type: Ecuador:

Napo: Parque Nacional Yasuni, 0 °155'S, 76 °111'W, 200 m, 28 May-8 Jun 1988, *C.E. Cerón & F. Hurtado 3843* (HT: K; IT: MO).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 25 Mar 1995, *J.L. Clark & P. Nutt* (K, MO, QCNE).

Common subcanopy tree. 500 m. Amazonia.

CLUSIACEAE

Chrysochlamys macrophylla Pax, Repert. Spec. Nov. Regni Veg. 7: 111. 1909.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 7 Oct 1994, *J.L. Clark, M.S. Bass & N. Pitman 154* (MO, QCNE).

Clusia bracteosa Cuatrec., Revista Acad. Colomb.

Ci. Exact. 8: 46. 1950. Type: Colombia: Valle: Río Naya, brazo Aji, along Calle Larga, 4 m, *Cuatrecasas 14293* (HT: F).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 21 Sep 1994, *J.L. Clark & B. Adnepos 95* (MO, QCNE).

Common woody hemiepiphyte. 400-600 m. Chocó.

Clusia caudata (Planch. & Triana) Pipoly, Sida

17(4): 766. 1997. Type: Colombia: Choco: Pacific coast, 1100-1700 m, 1851-1857, *J. Triana s.n.* (HT: P; IT: P).

Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 7 km E of San Jose de Bilsa, 12 km SE of El Salto on Atacames-Muisne Road, *A. Gentry, R. Foster & C. Josse 72973* (AAU, BRIT, MO).

Woody hemiepiphyte. 200-300 m. Chocó.

Clusia hamameliana Pipoly, Fl. Venez. Guayana 4: 273. 1998.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 22 Nov 1995, *J.L. Clark & K. Cunningham & C. Roberts 1637* (BRIT, MO, QCNE).

Woody vine in mature forest. 400-600 m. Amazonia, Chocó, Mesoamerica.

Clusia laurifolia Planch. & Triana, Ann. Sci. Nat.,

Bot. 13: 344. 1860. Type: Colombia: Cordillere du Choco., *Triana s.n.*

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 27 Mar 1995, *J.L. Clark & Y. Troya 518* (MO, QCNE).

Woody hemiepiphyte. 400-600 m. Chocó.

Clusia loranthacea Planch. & Triana, Ann. Sci.

Nat., Bot., ser. 4, 13: 346-347. 1860. Type: Colombia: forest of Chocó, 100 m, *Triana s.n.*

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 500 m, 26 Aug 1998,

- D. Neill & QCNE botany interns 11376*
(MO, QCNE).
Understory tree. 500 m. Amazonia, Chocó,
Mesoamerica.
- Clusia pallida** Engl., Fl. Bras. 12(1): 414. 1888.
Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 500
m, 6 Jan 1997, *J.L. Clark, E. Austen, S.
Bennett & D. Kapan* 3747 (BRIT, MO,
QCNE, US).
Woody vine in mature forest. 400-600 m.
Amazonia, Chocó.
- Clusia thurifera** Planch. & Triana, Ann. Sci. Nat.,
Bot., ser. 4, 13: 364-365. 1860.
Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 500
m, 23 Nov 1995, *J.L. Clark & K.
Cunningham & C. Roberts* 1644 (BRIT,
MO, QCNE).
Woody vine in mature forest. 400-600 m.
Amazonia, Chocó.
- Garcinia macrophylla** Mart., Flora 24(Band 2):
35. 1841.
Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 500
m, 31 Mar 1996, *J.L. Clark, K. Berg & J.
Leffingwell* 2367 (MO, QCNE).
Subcanopy tree. 400-600 m. Common name:
“Madroño silvestre.” Amazonia, Choco,
Mesoamerica.
- Marila laxiflora** Rusby, Mem. Torrey Bot. Club
6(1): 9. 1896.
Representative Specimen: Ecuador:
Esmeraldas: Mtns. Mache-Chindul,
Comunidad Caña Braval, Cabaceras del Río
Viche, estero Sabaleta, 250 m, 16 Mar 1998,
J.L. Clark 4669 (MO, QCNE).
Tree. 250 m. Amazonia, Chocó, Mesoamerica.
- Symphonia globulifera** L. f., Suppl. Pl. 302. 1781
[1782].
Representative Specimen: Ecuador:
Esmeraldas: Reserva Ecológica Mache-
Chindul, Comunidad Caña Braval,
Cabaceras del Río Viche, estero Sabaleta,
250 m, 16 Mar 1998, *J.L. Clark* 4686 (MO,
QCNE).
- Canopy tree. 200-300 m. Common name :
“Asufre,” “Machare.” Amazonia, Chocó,
Mesoamerica.
- Tovomita weddelliana** Planch. & Triana, Ann. Sci.
Nat., Bot., ser. 4, 14: 277-278. 1860.
Representative Specimen: Ecuador:
Esmeraldas: Reserva Ecologica Mache-
Chindul, Comunidad Ambache (vía
marginal de la costa-Chindul), 25 Mar 1997,
J.L. Clark, T. Nuñez & C. Robles 4170 (MO,
QCNE).
Common understory tree. 200-600 m. Common
name: “Mangle de Montaña.” Amazonia,
Chocó, Mesoamerica.
- Vismia sprucei** Sprague, Trans. Bot. Soc.
Edinburgh 22: 428. 1905.
Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 400-
600 m, 22 Jun 1995, *J.L. Clark & Erik
Calhoun* 1218 (MO, QCNE).
Common tree along disturbed roadsides. 400-
600 m. Amazonia, Chocó.
- ## COCHLOSPERMACEAE
- Cochlospermum vitifolium** (Willd.) Spreng.,
Syst. Veg. 2: 596. 1825.
Representative Specimen: Ecuador: Manabí:
Pedernales, 300 m, 14 Mar 1997, *H. Vargas,
X. Aguirre, R. Miranda & C. Robles* 1362
(MO, QCNE).
Subcanopy tree. 0-600 m. Chocó,
Mesoamerica.
- ## COMBRETACEAE
- Combretum laxum** Jacq., Enum. Syst. Pl. 19.
1760.
Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 400-
600 m, 15 Jul 1996, *J.L. Clark, C. Aulestia,
J. Kellermann, and F. Vetel* 2882 (MO,
QCNE).
Liana. 400-600 m. Amazonia, Chocó,
Mesoamerica.
- Conocarpus erectus** L., Sp. Pl. 1: 176. 1753.
Representative Specimen: Ecuador: Manabí: 4 km
al sur de Pedernales, 0 m, 15 Dec 1998, *D.*

Neill & QCNE botany interns 11503 (MO, QCNE).

Common tree in lowland mangrove vegetation.
0 m. Chocó, Mesoamerica.

Laguncularia racemosa (L.) C.F. Gaertn., Suppl. Carp. 1: 176. 1807.

Representative Specimen: Ecuador: Manabí: 4 km al su de Pedernales, 0 m, 15 Dec 1998, *D. Neill & QCNE botany interns 11502* (MO, QCNE).

Common tree in lowland mangrove vegetation.
0 m. Chocó, Mesoamerica.

Quisqualis indica L., Sp. Pl. (ed. 2) 1: 556. 1762.

Representative Specimen: Ecuador:
Esmeraldas: Muisne, 2 Dec 1995, *J.L. Clark & K. Cunningham 1720* (MO, QCNE).

Cultivated shrub. 0-100 m. Introduced. Chocó,
Mesoamerica.

COMMELINACEAE

Aneilema beniniense (P. Beauv.) Kunth.

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 650 m, 19 Feb 1997, *J.L. Clark 3963* (MO, QCNE, US).

Terrestrial herb. 400-650 m. Introduced from
Africa.

Callisia cordifolia (Sw.) E.S. Anderson &
Woodson, Contr. Arnold Arbor. 9: 117.
1935.

Representative Specimen: Ecuador: Manabí:
Reserva de Lalo Loor, 30 km S of
Pedernales on coastal highway, 100 m, 15
Dec 1998, *D. Neill & QCNE botany interns 11527* (MO, QCNE, US).

Creeping terrestrial herb. 0-100 m.
Mesoamerica.

Commelina diffusa Burm. f., Fl. Indica 9: 117.
1768.

Representative Specimen: Esmeraldas: Bilsa
Biological Station, 600 m, 14 Sep 1994, *J.R. Abbott 15101* (BEREA, QCNE).

Terrestrial herb. 400-600 m. Amazonia, Chocó,
Mesoamerica.

Dichorisandra hexandra (Aubl.) Standl., Lista Pl.
Salvador 48. 1925.

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 400–
600 m, 5 Apr 1995, *J.L. Clark & Y. Troya 610* (MO, QCNE, US).

Common shrub in light gaps. 280-800 m.
Amazonia, Chocó, Mesoamerica.

Dichorisandra ulei J.F. Macbr., Field Mus. Nat.
Hist., Bot. Ser. 11(1): 8. 1931.

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 400–
600 m, 5 Dec 1994, *N. Pitman & M.S. Bass 1004* (MO, QCNE).

Shrub. 400-600 m. Amazonia, Chocó,
Mesoamerica.

Geogenanthus rhizanthus (Ule) G. Brückn.,
Notizbl. Bot. Gart. Berlin-Dahlem 10(91):
56. 1927.

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 400–
600 m, 5 May 1995, *J.L. Clark & C. Watt 752* (MO, QCNE).

Terrestrial herb. 400-600 m. Amazonia, Chocó.

Tradescantia zanonia (L.) Sw., Fl. Ind. Occid. 1:
604. 1797.

Representative Specimen: Ecuador:
Esmeraldas: Mache-Chindul, comunidad
Caña Braval, 250 m, 16 Mar 1998, *J.L. Clark 4736* (MO, QCNE, US).

Terrestrial herb. 400-600 m. Amazonia, Chocó,
Mesoamerica.

CONNARACEAE

Connarus ecuadorensis G. Schellenb., Pflanzenr.
IV. 127(Heft 103): 238. 1938. Type:
Ecuador: Guayas: Balao, Feb 1892, *H. Eggers 14398* (HT: M).

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 400–
600 m, 23 Jan 1995, *J.L. Clark 408* (COL,
MO, NY, QCNE).

Rare tree, 3 m tall. 400-600 m. Endemic.

Connarus nervatus Cuatrec., Fieldiana, Bot.
27(2): 100-101. 1951. Type: Colombia:
Valle: Costa del Pacifico, Río Cajambre,

quebrada de Guapecinto, 5 m, 16 May 1944,
Cuatrecasas 17713 (HT: F).

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station,
Dogala trail, 400-600 m, 23 Jan 1995, *J.L. Clark & Y. Troya 572* (COL, MO, NY,
QCNE).

Rare woody liana. 200-600 m. Amazonia,
Chocó, Mesoamerica.

29(12): 694. 1902.

Representative Specimen: Esmeraldas: Bilsa
Biological Station, 400-600 m, 7 Dec 1994,
J.L. Clark 377 (MO, QCNE).

Terrestrial herb to 2 m tall. 250-600 m.
Amazonia, Chocó, Mesoamerica.

Infrasp.: *Costus guanaiensis* var.
macrostrobilus (K. Schum.) Maas, *Costus*
guanaiensis var. *tarmicus* (Loes.) Maas.

CONVOLVULACEAE

Dicranostyles sp.

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 400-
600 m, 24 Mar 1997, *J.L. Clark & P. Nutt 4130* (MO, QCNE).

Common canopy woody liana. 400-600 m, wet
forest.

Ipomoea batatas (L.) Lam., Tabl. Encycl. 1: 465. 1793.

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 400-
600 m, 2 Apr 1995, *J.L. Clark & Y. Troya 583* (MO, QCNE).

Common terrestrial vine along sunny disturbed
roadsides. 400-600 m. Amazonia, Chocó,
Mesoamerica.

Ipomoea phyllomega (Vell.) House, Ann. New York Acad. Sci. 18: 246. 1908.

Representative Specimen: Ecuador: Ecuador:
Esmeraldas: Bilsa Biological Station, 400-
600 m, 27 May 1995, *J.L. Clark & C. Watt 905* (MO, QCNE).

Common terrestrial vine along sunny disturbed
roadsides. 400-600 m.

Maripa sp.

Representative Specimen: Ecuador: Ecuador:
Esmeraldas: Fila de Bilsa, 7 km E of San
Jose de Bilsa, 12 km SE of El Salto on
Atacames-Muisne Road, 30 Jan 1991, *A. Gentry & C. Josse 72924* (MO).

Liana. 200-600 m, wet forest.

Costus laevis Ruiz & Pav., Fl. Peruv. 1: 3. 1798.

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 650
m, 19 Feb 1997, *J.L. Clark 3938* (MO,
QCNE).

Terrestrial herb, ca. 1.5 m tall. 650 m.
Amazonia, Chocó, Mesoamerica.

Costus lima K. Schum., Pflanzenr. IV. 46(Heft 20): 388-389. 1904.

Representative Specimen: Ecuador:
Esmeraldas: Paraíso de Papagayos, 200 m,
10 Oct 1996, *J.L. Clark 3045* (MO, QCNE).

Terrestrial herb to 3.5 m tall. 200-600 m.
Amazonia, Chocó, Mesoamerica.

Infrasp.: *Costus lima* var. *scabremarginatus*
Maas

Costus longebracteolatus Maas, Fl. Neotrop. 8: 72, f. 33. 1972.

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 650
m, 19 Feb 1997, *J.L. Clark 3967* (MO,
QCNE).

Terrestrial herb, ca. 2 m tall. 650 m. Amazonia,
Chocó.

Costus pulverulentus C. Presl, Reliq. Haen. 1(2): 111. 1827.

Representative Specimen: Ecuador: Manabí:
Cordillera de Jama, 600 m, 16 Dec 1998,
D. Neill & QCNE botany interns 11581.

Terrestrial herb to 2 m tall. 10-700 m.
Amazonia, Chocó, Mesoamerica.

CUCURBITACEAE

Cayaponia macrocalyx Harms, Notizbl. Bot. Gart. Berlin-Dahlem 9(89): 994. 1926.

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 400-

COSTACEAE

Costus guanaiensis Rusby, Bull. Torrey Bot. Club

600 m, 7 May 1995, *J.L. Clark & C. Watt 791* (MO, NY, QCNE).

Vine. 400-600 m. Amazonia, Chocó, Mesoamerica.

Cayaponia oppositifolia Harms, Notizbl. Bot. Gart. Berlin-Dahlem 9: 994. 1926.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 5 Apr 1995, *J.L. Clark & Ivonne Troya 621* (MO, QCNE).

Herbaceous vine. 400-600 m. Amazonia.

Gurania eriantha (Poepp. & Endl.) Cogn., Diagn. Cucurb. Nouv. 1: 16. 1876.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 5 Jan 1997, *J.L. Clark, E. Austen, S. Bennett & D. Kapan 3720* (MO, NY, QCNE).

Herbaceous vine. 400-600 m. Amazonia, Chocó, Mesoamerica.

Gurania lobata (L.) Pruski, Brittonia 51(3): 329. 1999.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 2 Oct 1994, *N. Pitman & M.S. Bass 788* (MO, QCNE).

Herbaceous vine. 280-600 m. Chocó.

Gurania pedata Sprague, Trans. & Proc. Bot. Soc. Edinburgh 22: 433. 1905.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 9 Jan 1997, *J.L. Clark, E. Austen, S. Bennett & D. Kapan 3774* (MO, QCNE).

Vine. 400-600 m. Amazonia.

Gurania tubulosa Cogn., Diagn. Cucurb. Nouv. 1: 17, 30-31. 1876. Type: Ecuador: at base of Mt. Chimborazo, 2600 ft, Aug 1860, *R. Spruce 6150* (HT: K-HOOK).

Synonym: *Gurania megistantha* J.D. Sm.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 16 Sep 1994, *J.L. Clark & B. Adnepos 68* (MO, QCNE).

Hemiepiphyte. 400-600 m. Mesoamerica.

Melothria sp.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 8 Dec 1994, *N. Pitman & M.S. Bass 1044* (MO, QCNE).

Herbaceous vine. 400-600 m, wet forest.

Momordica charantia L., Sp. Pl. 2: 1009. 1753.

Representative Specimen: Ecuador: Manabí: 45 km N of Pedernales along coastal highway, just above tidal estuary of Río Cojimíes, 28 Aug 1998, *D. Neill & QCNE botany interns 11420* (MO, QCNE, US).

Herbaceous vine in sunny disturbed sites. 0-20 m. Amazonia, Chocó, Mesoamerica.

Psiguria sp.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 15 Nov 1994, *N. Pitman & J.L. Clark 937* (MO, QCNE).

Vine. 400-600 m, wet forest.

Selsysia prunifera (Poepp. & Endl.) Cogn., Monogr. Phan. 3: 736. 1881.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 15 Nov 1994, *R. Abbott 15234* (MO, NY, QCNE).

Herbaceous vine. 400-600 m. Amazonia, Chocó, Mesoamerica.

Sicydium sp.

Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 29 Jan 1991, *A. Gentry, R. Foster & C. Josse 72896* (MO).

Vine. 200-300 m, wet forest.

CYCLANTHACEAE

Asplundia vagans Harling, Acta Horti Berg. 18(1):

170-172, f. 45H-M, t. 16. 1958. Type: Colombia: Chocó: Río San Juan, on the right side, Quebrada del Taparal, 5-20 m, 30 May 1946, *J Cuatrecasas 21440* (HT: VALLE).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 18 Nov 1994, *J.L. Clark, H. Lintz & S. Mora 279* (MO, QCNE).

- Epiphyte. 400-600 m. Amazonia, Chocó, Mesoamerica.
- Carludovica palmata** Ruiz & Pav., Syst. Veg. Fl. Peruv. Chil. 18(1): 170-172, f. 45H-M, t. 16. 1798.
Representative Specimen: Ecuador: Manabí: 45 km al norte de Pedernales, 5 m, 28 Aug 1998, D. Neill & QCNE botany interns 11428 (MO, QCNE).
Terrestrial herb. 5-600 m. Common name: "Paja Toquilla." Amazonia, Chocó, Mesoamerica.
- Carludovica rotundifolia** H. Wendl. ex Hook. f., Bot. Mag. 115: t. 7083. 1889.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 26 Sep 1994, N. Pitman 724 (MO, QCNE).
Terrestrial herb. 400-600 m. Chocó, Mesoamerica.
- Cyclanthus bipartitus** Poit. ex A. Rich., Dict. Class. Hist. Nat. 5: 222. 1824.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 7 Apr 1995, J.L. Clark & Y. Troya (MO, QCNE).
Common terrestrial herb. 400-600 m. Amazonia, Chocó, Mesoamerica.
- Dianthoveus cremnophilus** Hammel & G. Wilder, Ann. Missouri Bot. Gard. 76(1): 113, f. 1-5, 7-9. 1989. Type: Ecuador: Pichicha: Quito to Sto Domingo de los Colroados, Río Pilatón valley, 44 km E of Sto Domingo, on steep wet slope along highway, 1200 m, B. Hammel & G. Wilder 16058 (HT: MO; IT: COL, DUKE, F, GB, K, NY, QCA, PARIS, S, SEL, US).
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 24 Sep 1994, J.L. Clark & N. Pitman 110 (MO, QCNE).
Common herb growing along streams. 400-600 m. Amazonia, Chocó.
- Dicranopygium cuatrecasanum** Harling, Acta Horti Berg. 18(1): 312, f. 4h, 80j, t. 73. 1958. Type: Colombia: Valle: Río Calima, region of Chocó, hills opposite Quebrada de la Brea, 30-50 m, 18 May 1946, J Cuatrecasas 21096 (HT: VALLE).
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 27 Sep 1994, J.L. Clark, B. Adnepos & J. Wolf 123 (MO, QCNE).
Common herb growing along streams. 400-600 m. Amazonia, Chocó, Mesoamerica.
- Evodianthus funifer** (Poit.) Lindm., Bih. Kongl. Svenska Vetensk.-Akad. Handl. 26(3/8): 8. 1900.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 12 Sep 1994, R. Abbot 15025 (BEREA, QCNE).
Hemiepiphyte. 400-600 m. Amazonia, Chocó, Mesoamerica.
- ## CYPERACEAE
- Cyperus luzulae** (L.) Rottb. ex Retz., Observ. Bot. 4: 11. 1786.
Representative Specimen: Ecuador: Esmeraldas: 50 km al norte de Pedernales 50 m, 19 Dec 1998, D. Neill & QCNE botany interns 11712 (MO, QCNE).
Terrestrial herb. 50-600 m. Amazonia, Chocó, Mesoamerica.
- Eleocharis elegans** (Kunth) Roem. & Schult., Syst. Veg. 2: 150. 1817.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 17 Nov 1996, J.L. Clark, B. Neill & K. Zambrano 3425 (MO, QCNE, US).
Terrestrial herb. 500 m. Amazonia, Chocó, Mesoamerica.
- Rhynchospora watsonii** (Britton) Davidse, Ann. Missouri Bot. Gard. 61(2): 529. 1974.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, along Río Cubé, 400-600 m, 26 Sep 1994, R. Abbot 15320 (BEREA, QCNE).
Terrestrial herb. 400-600 m. Amazonia, Chocó, Mesoamerica.
- ## DICAPETALACEAE
- Stephanopodium cuspidatum** Prance, Kew Bull. 50(2): 302, 304-305, f. 3. 1995. Type:

Ecuador: Esmeraldas: Río Lita, sector El Cristal, 20 Aug 1989, 1450 m, *W. Palacios* 4376 (HT: K; IT: MO).

Representative Specimen: Ecuador: Esmeraldas: Mache-Chindul, comunidad Caña Braval, 250 m, 16 Mar 1998, *J.L. Clark* 4673 (K, MO, QCNE). Understory tree. 250 m. Chocó.

DILLENIACEAE

Doliocarpus major J.F. Gmel., Syst. Nat. 1: 805. 1791.

Representative Specimen: Ecuador: Manabí: Mache-Chindul, comunidad Ambache, 250 m, 25 Mar 1997, *J.L. Clark, E. Duna, T. Nuñez & C. Robles* 4210 (MO, QCNE).

Liana. 250 m. Amazonia, Chocó, Mesoamerica. Infrasp.: *Doliocarpus major* subsp. *major*.

Doliocarpus multiflorus Standl., J. Wash. Acad. Sci. 15(13): 285. 1925.

Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 28 Jan 1991, *A. Gentry & C. Josse* 72752 (MO). Liana. 250 m. Amazonia, Chocó, Mesoamerica.

Tetracera hydrophila Triana & Planch., Ann. Sci. Nat., Bot., ser. 4, 17: 20-21. 1862.

Representative Specimen: Ecuador: Esmeraldas: Pariso de Papagayos, 200 m, 28 Mar 1998, *J.L. Clark & S. Nazzaro* 4948 (MO, QCNE).

Liana. 200 m. Amazonia, Chocó, Mesoamerica.

DIOSCOREACEAE

Dioscorea sp.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 17 Nov 1996, *J.L. Clark, B. Neill & K. Zambrano* 3430 (MO, QCNE).

Herbaceous vine in disturbed sunny areas. 400-600 m..

EBENACEAE

Diospyros esmereg B. Walln., Ann. Naturhist.

Mus. Wien, Ser. B, Bot. Zool. 101(B): 568-570, f. 1. 1999. Type: Ecuador: Esmeraldas, Quinindé Cantón: Mache-Chindul

Ecological Reserve, Bilsa Biological Station, Mache Mtns, 35 km W of Quinindé, 500 m, 00°21'N, 79°44'W, *J.L. Clark* 3003 (HT: MO; IT: K, MO, QCNE, US). (Fig. 2C, p.129).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 12 May 1995, *J.L. Clark & C. Watt* 846 (MO, QCNE).

Rare canopy tree with yellow inner bark. 400-600 m. Common name: "Amagro." Endemic.

ELAEOCARPACEAE

Sloanea fragrans Rusby, Mem. New York Bot. Gard. 7: 294. 1927.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 3 Apr 1996, *J.L. Clark & Karl Berg*, *J. Leffingwell* 2382 (MO, QCNE).

Common canopy tree. 400-600 m. Common name: "Catarata." Amazonia, Chocó.

Sloanea stipitata Spruce ex Benth., J. Proc. Linn. Soc., Bot. 5(Suppl. 2): 68-69. 1861.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 14 Nov 1994, *J.L. Clark, H. Lintz & S. Mora* 232 (MO, QCNE).

Subcanopy tree. 400-600 m. Common name: "Achiotillo." Amazonia, Chocó, Mesoamerica.

ERICACEAE

Anthopterus wardii Ball, Hooker's Icon. Pl. 15(3): 51-52, t. 1465. 1884.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 2 Jan 1997, *John L. Clark, E. Austen, S. Bennett & D. Kapan* 3694 (MO, NY, QCNE).

Common subwoody vine. 400-600 m. Chocó, Mesoamerica.

Disterigma utleyorum Wilbur & Luteyn, Brittonia 29(3): 259-260. 1977.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500

- m, 21 Feb 1996, *John L. Clark* 2125 (MO, NY, QCNE).
Epiphyte. 400-600 m. Mesoamerica.
- Macleania subsessilis** Luteyn, Fl. Ecuador 54: 142. 1996. Type: Ecuador. Esmeraldas: Cantón San Lorenzo, 13.5 km S of Lita, property of Dr. Lalama, 1220-1350 m, 2 Nov 1992, *J. L. Luteyn, D. S. Sylva & C. Quelal* 14729 (HT: NY; IT: AAU, CAS, E, GB, K, MEXU, MO, MSC, P, QCA, TEX, US).
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 21 Sep 1994, *J.L. Clark, E. Austen, S. Bennett & D. Kapan* 3664 (MO, NY, QCNE).
Common woody vine. 400-600 m. Endemic.
- Psammisia aberrans** A.C. Sm., J. Arnold Arbor. 27: 95. 1946.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 23 Oct 1996, *J.L. Clark* 3097 (MO, QCNE).
Common woody vine. 400-800 m. Amazonia, Chocó.
- Psammisia debilis** Sleumer, Repert. Spec. Nov. Regni Veg. 42: 258. 1937. Type: Colombia: Cauca, *von Sneidern* 914 (HT: S; photo: NY).
Representative Specimen: Ecuador: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 11 Sep 1994, *J.L. Clark* 6 (MO, QCNE).
Common woody vine. 280-600 m. Amazonia, Chocó, Mesoamerica.
Infrasp.: *Psammisia debilis* var. *debilis*.
- Psammisia ferruginea** A.C. Sm., Contr. U.S. Natl. Herb. 28(2): 391-392, t. 10. 1932.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 22 Oct 1996, *J.L. Clark* 3078 (MO, NY, QCNE).
Woody vine. 400-600 m. Amazonia, Chocó, Mesoamerica.
- Psammisia sodiroi** Hoerold, Bot. Jahrb. Syst. 42: 306. 1909.
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 22 Oct 1996, *J.L. Clark* 3082 (MO, NY, QCNE).
Woody vine. 300-700 m. Amazonia, Chocó.
- Sphyrospermum buxifolium** Poepp. & Endl., Nov. Gen. Sp. Pl. 1: 4-5, t. 8. 1835.
Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300-700 m, 19 Jun 1996, *J.L. Clark, E. Arroyo & P. Hibbs* 2633 (MO, NY, QCNE).
Epiphyte. 300-700 m. Amazonia, Chocó, Mesoamerica.
- Sphyrospermum cordifolium** Benth., Pl. Hartw. 222. 1846.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 29 Mar 1995, *J.L. Clark & Ivonne Troya* 531 (MO, NY, QCNE).
Epiphyte. 400-700 m. Amazonia, Chocó, Mesoamerica.
- Thibaudia albiflora** A.C. Sm., Phytologia 1(6): 209-210. 1937. Type: Ecuador: [Cotopaxí] León: Cantón Pajili, Hda. Solento, near Santa Rosa, 1000 m, 17-20 Nov 1934 (fl), *Y. Mexia* 6682 (HT: NY; IT: US).
Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300-700 m, 7 Apr 1997, *J.L. Clark, T. Nuñez & C. Robles* 4293 (MO, NY, QCNE).
Woody vine. 300-700 m. Amazonia, Chocó.
- Thibaudia litensis** Luteyn, Fl. Ecuador 54: 292. 1996. Type: Ecuador. Esmeraldas: Cantón San Lorenzo, El Cristal, near border with Imbabura, 1300 m, *W. A. Palacios* 6913 (HT: QCNE; IT: NY). (Fig. 9C-D, p.136).
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 27 Sep 1996, *J.L. Clark* 2933 (MO, NY, QCNE).
Woody vine. 500-600 m. Endemic.
- ERYTHROXYLACEAE**
- Erythroxylon patens** Ruiz ex O.E. Schulz.
Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 500 m, 26 Aug 1998,

D. Neill & QCNE botany interns 11372
(MO, QCNE).

Shrub. 500 m. Amazonia.

EUPHORBIACEAE

Acalypha cuneata Poepp., Nov. Gen. Sp. Pl. 3: 22. 1845.

Representative Specimen: Ecuador: Manabí: Cordillera de Jama, 600 m, 16 Dec 1998, *D. Neill & QCNE botany interns 11543* (MO, QCNE).

Shrub. 150-600 m. Amazonia, Chocó, Mesoamerica.

Acalypha diversifolia Jacq., Pl. Hort. Schoenbr. 2: 63, pl. 244. 1797.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, along Río Cubé, 600 m, 26 September 1994, *J.R. Abbott 15317* (BEREA, QCNE).

Shrub. 400-600 m. Amazonia, Mesoamerica

Acalypha macrostachya Jacq., Pl. Hort. Schoenbr. 2: 63, pl. 245. 1797.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 8 Jan 1997, *J.L. Clark, E. Austen, S. Bennett & D. Kapan 3766* (DAV, MO, QCNE).

Shrub. 500-600 m. Amazonia, Chocó, Mesoamerica.

Acalypha villosa Jacq., Enum. Syst. Pl. 32. 1760.

Representative Specimen: Ecuador: Esmeraldas: Mache-Chindul, comunidad Caña Braval, 250 m, 16 Mar 1998, *J.L. Clark 4720* (DAV, MO, QCNE).

Shrub. 500-600 m. Chocó, Mesoamerica

Alchornea latifolia Sw., Prodr. 98. 1788.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 650 m, 12 Mar 1997, *J.L. Clark, A. Cousins, T. Nuñez & J. Richter 4021* (DAV, MO, QCNE).

Canopy tree. 500-650 m. Amazonia, Chocó, Mesoamerica.

Cleidion castaneifolium Müll. Arg., Linnaea 34: 184. 1865.

Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 200 m, 28 Mar 1998, *J.L. Clark & S. Nazzaro 4934* (DAV, MO, QCNE).

Understory tree. 500-600 m. Mesoamerica

Croton aequatoris Croizat, J. Arnold Arbor. 21: 88. 1940. Type: Ecuador, Manabí, El Recreo, *H. Eggers 15498* (HT: B).

Representative Specimen: Ecuador: Manabí: Jama, 24 km S of Pedernales, N of Reserva de Lalo Loor, 7 Oct 1999, *T. Delinks & C. Robles 382* (MO, QCNE, WIS).

Shrub. 100-200 m. Endemic.

Croton aff. pachypodus G.L. Webster, Notizbl. Bot. Gart. Berlin-Dahlem 9: 264. 1925.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 650 m, 12 Mar 1997, *J.L. Clark, A. Cousins, T. Nuñez & J. Richter 4085* (DAV, MO, QCNE).

Subcanopy tree. 600-700 m. Amazonia, Chocó.

Drypetes brownii Standl., Trop. Woods 20: 20-21. 1929.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 4 May 1995, *J.L. Clark & C. Watt 728* (DAV, MO, QCNE).

Common understory tree, 5-12 m tall. 400-650 m. Amazonia, Mesoamerica.

Hieronyma alchorneoides Allemão, Hieronima alchorneoides 20: 20-21. 1848.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 20 Mar 1998, *J.L. Clark & C. Pallis 4882* (DAV, MO, QCNE).

Tree. 400-600 m. Common name: "Mascarey." Amazonia, Chocó, Mesoamerica.

Mabea sp.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 20 Mar 1998, *J.L. Clark & C. Pallis 4863* (DAV, MO, QCNE).

Tree, ca. 10 m tall. 400-600 m.

Manihot brachyloba Müll. Arg., Fl. Bras. 11(2): 451. 1874.

- Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor, 10 m, 9 Apr 1997, *J.L. Clark, T. Nuñez & C. Robles 4379* (DAV, MO, QCNE). Herbaceous vine. 400-600 m. Amazonia, Chocó, Mesoamerica.
- Margaritaria nobilis** L. f., Suppl. Pl. 428. 1781 [1782]. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 20 Mar 1998, *J.L. Clark & C. Pallis 4896* (DAV, MO, QCNE). Common subcanopy tree. 400-600 m. Amazonia, Chocó, Mesoamerica.
- Omphalea diandra** L., Syst. Nat. (ed. 10) 428. 1759. Representative Specimen: Ecuador: Manabí: Recinto Hojas Blancas, Carretera Pedernales-Carmen Mandarino, Entrada el Mono, 150 m, 12 Apr 1997, *J.L. Clark, T. Nuñez & C. Robles 4388* (MO, QCNE). Woody vine. 150 m. Amazonia, Chocó, Mesoamerica.
- Pausandra trianae** (Müll. Arg.) Baill., Adansonia 11: 92. 1873. Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 200 m, 10 Oct 1996, *J.L. Clark 3026* (MO, QCNE). Shrub. 200 m. Amazonia, Chocó, Mesoamerica.
- Phyllanthus anisolobus** Müll. Arg., Prodr. 15(2): 382. 1866. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, along Río Dogala, 400–600 m, 7 Dec 1994, *J.L. Clark 374* (MO, QCNE). Understory tree. 400-600 m. Common name: “Barbasco.” Amazonia, Chocó, Mesoamerica.
- Phyllanthus stipulatus** (Raf.) G.L. Webster, Contr. Gray Herb. 176: 53. 1955. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 2 Apr 1995, *J.L. Clark & Y. Troya 584* (DAV, MO, QCNE). Terrestrial herb. 400-600 m. Amazonia, Chocó, Mesoamerica.
- Plukenetia volubilis** L., Sp. Pl. 2: 1192. 1753. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 650 m, 19 Feb 1997, *J.L. Clark 3953* (DAV, MO, QCNE). Vine. 650 m. Amazonia, Chocó, Mesoamerica.
- Ricinus communis** L., Sp. Pl. 2: 1007. 1753. Common terrestrial subshrub along roads. 0–800 m. Common name: Higuerilla.” Introduced and cultivated.
- Sapium glandulosum** (L.) Morong, Ann. New York Acad. Sci. 7: 227. 1893. Representative Specimen: Ecuador: Manabí: Jipijapa, 650 m, 10 Dec 1999, *D. Neill & botany interns 12252* (MO, QCNE). Subcanopy tree. 650. Amazonia, Chocó, Mesoamerica.
- Sapium laurifolium** (A. Rich.) Griseb., Fl. Brit. W. I. 49. 1859. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 20 Mar 1998, *J.L. Clark & C. Pallis 4890* (DAV, MO, QCNE). Subcanopy tree. 10-500 m. Amazonia, Chocó, Mesoamerica.
- Sapium marmieri** Huber, Bull. Soc. Bot. France 49: 49. 1902. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 9 May 1995, *J.L. Clark & C. Watt 807* (DAV, MO, QCNE). Canopy tree. 650 m. Amazonia.
- Tetrorchidium andinum** Müll. Arg., Flora 47(34): 538. 1864. Representative Specimen: Ecuador: Manabí: Mache-Chidul, comunidad Ambache, 250 m, 25 Mar 1997, *J.L. Clark R. Dunn, T. Nuñez & C. Robles 4151* (DAV, MO, QCNE). Understory tree. 650 m. Amazonia, Chocó.
- Tetrorchidium euryphyllum** Standl., Publ. Field Mus. Nat. Hist., Bot. Ser. 4(8): 219. 1929. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological

Station, 500 m, 18 Nov 1996, *J.L. Clark, F. Gurumendi & H. Weinert* 3449 (DAV, MO, QCNE).

Understory tree. 500 m. Amazonia, Chocó, Mesoamerica.

Tetrorchidium macrophyllum Müll. Arg., Prodr. 15(2): 1133. 1866.

Representative Specimen: Ecuador: Esmeraldas: Reserva Ecológica Mache-Chindul, Comunidad Caña Braval, Cabaceras del Río Viche, estero Sabaleta, 250 m, 16 Mar 1998, *J.L. Clark* 4664 (DAV, MO, QCNE).

Understory tree. 250-600 m. Amazonia, Chocó, Mesoamerica.

Tragia volubilis L., Sp. Pl. 2: 980. 1753.

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 700 m, 8 Mar 1997, *H. Vargas, X. Aguirre, R. Miranda & C. Robles* 1248 (DAV, MO, QCNE).

Liana. 700 m. Chocó, Mesoamerica.

FABACEAE

Abarema barbouriana (Standl.) Barneby & J.W. Grimes, Mem. New York Bot. Gard. 74(1): 70. 1996.

Representative Specimen: Ecuador: Esmeraldas: 80 m, 20 - 29 Jul 1992, *C. Aulestia, G. Tipaz, L. Delgado & G. Lao* 93 (MO, QCNE).

Tree. Common name: "Dormilon silvestre." Amazonia, Chocó, Mesoamerica.

Acacia farnesiana (L.) Willd., Sp. Pl. 4(2): 1083-1084. 1806.

Representative Specimen: Ecuador: Manabí: Cabins Punta Prieta, 32 km S of Pedernales, cliffside above beach, 25 m from seashore, 30 m, 9 Oct 1999, *T. Delinks* 410 (MO, QCNE).

Tree, to 4 m tall. Chocó, Mesoamerica.

Andira inermis (Sw.) Kunth, Nov. Gen. Sp. (quarto ed.) 6: 385. 1824.

Representative Specimen: Ecuador: Esmeraldas: Mache-Chindul, comunidad Caña Braval, 250 m, 11 Mar 1998, *J.L. Clark* 4645 (MO, QCNE).

Tree. Common name: "Chontillo." Amazonia,

Mesoamerica.

Bauhinia aculeata L., Sp. Pl. 1: 374. 1753.

Representative Specimen: Ecuador: Manabí: 25 km al sur de Pedernales, 5-30 m, 11 Oct 1999, *T. Delinks* 440 (MO, QCNE).

Shrub or small tree. Chocó, Mesoamerica.

Bauhinia guianensis Aubl., Hist. Pl. Guiane 1: 377-378, pl. 145. 1775.

Representative Specimen: Ecuador: Esmeraldas: 80 m, 20 - 29 Jul 1992, *C. Aulestia, G. Tipaz, L. Delgado & G. Lao* 270 (MO).

Liana Amazonia, Chocó, Mesoamerica.

Bauhinia haughtii Wunderlin, Brittonia 35(4):

337-338, f. 2. 1983. Type: Ecuador: Manabí: Bella Vista, SE of Santa Ana, 100 m, 5 September 1942, *O. Haught* 3481 (HT: US; IT: NY).

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300-700 m, 21 Jun 1996, *J.L. Clark, E. Arroyo & P. Hibbs* 2711 8MO, QCNE).

Rare understory shrub in wet forest; the only known extant population is on the slopes of Cerro Pata de Pájaro, and it is probably critically endangered. Endemic.

Bauhinia seminarioi Harms ex Eggers, Bot. Centralbl. 73: 69. 1898. Type: Ecuador: Manabí, *H. Eggers* 14925 (HT: B).

Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor, 75-125 m, 6 Oct 1999, *T. Delinks & C. Robles* 353 (MO, QCNE).

Understory shrub in moist to dry forest. Endemic.

Brownea coccinea Jacq., Select. Stirp. Amer. Hist. 73: 69. 1763.

Representative Specimen: Ecuador: Manabí: Cordillera de Jama, 300 m, 16 Dec 1998, *D. Neill & QCNE botany interns* 11551 (MO, QCNE).

Abundant understory tree 10 m tall, at the Reserva de Lalo Loor. Common name: "Clavellín." Amazonia, Mesoamerica.

Infrasp.: *Brownea coccinea* subsp. *angustiflora* (Little) Klitgaard.

- Browneopsis disepala** (Little) Klitgaard, Nordic J. Bot. 11(4): 444. 1991. *Brownea disepala* Little. Type: Ecuador: El Oro: Piedras, Hcda. Ingenio, 800 m, E.L. Little 6677 (T: US). Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 20 May 1995, J.L. Clark & C. Watt 939 (K, MO, QCNE, US). Tree, in wet forest. Common name: "Clavellín." Endemic. Biol. Cent.-Amer., Bot. 1: 268. 1879. Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor, 100 m, 15 Dec 1998, D. Neill & QCNE botany interns 11528 (MO, QCNE). Hebeaceous vine. Amazonia, Mesoamerica.
- Caesalpinia glabrata** Kunth, Nov. Gen. Sp. 6: 326-327. 1823. Representative Specimen: Ecuador: Manabí: Cerro del Matal 100 m, 17 Dec 1998, D. Neill & QCNE botany interns 11615 (MO, QCNE). Shrub or small tree in dry forest. Amazonia.
- Cajanus cajan** (L.) Millsp., Publ. Field Columbian Mus., Bot. Ser. 2(1): 53. 1900. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 12 Oct 1994, N. Pitman & M.S. Bass 814 (MO, QCNE). Introduced, cultivated shrub with edible beans. Common name: "Fréjol de Palo." Widely cultivated in tropics.
- Calliandra angustifolia** Spruce ex Benth., Trans. Linn. Soc. London 30(3): 539. 1875. 6. Representative Specimen: Ecuador: Esmeraldas: Muisne 25 m, 22 May 2000, D. Neill & QCNE botany interns 12749 (MO, QCNE). Shrub, common along watercourses. Amazonia, Chocó, Mesoamerica.
- Centrolobium ochroxylum** Rose ex Rudd, J. Wash. Acad. Sci. 44(9): 287, f. 2. 1954. Type: Ecuador, J.N. Rose & G. Rose 23370 (T: US). Representative Specimen: Ecuador: Manabí: Jama, 200 m, 18 Dec 1998, D. Neill & QCNE botany interns 11644 (MO, QCNE). Common canopy tree to 25 m, in dry to moist forest. Endemic, including coastal Tumbes and Piura, Peru.
- Chaetocalyx latisiliqua** (Poir.) Benth. ex Hemsl.,
- Cojoba rufescens** (Benth.) Britton & Rose, N. Amer. Fl. 23(1): 32. 1928. Representative Specimen: Ecuador: Manabí: Jama 400 m, 18 Dec 1998, D. Neill & QCNE botany interns 11681 (MO, QCNE). Understory shrub, in moist to dry forest. Chocó, Mesoamerica.
- Crotalaria retusa** L., Sp. Pl. 2: 715. 1753. Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor, 50 m, 25 Aug 1998, D. Neill & QCNE botany interns 11302 (MO, QCNE). Terrestrial herb. Amazonia, Chocó, Mesoamerica.
- Desmodium ascendens** (Sw.) DC., Prodr. 2: 332. 1825. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 14 September 1994, J.R. Abbott 15089 (BEREA, QCNE). Terrestrial herb. Common name: "Pega pega." Amazonia, Chocó, Mesoamerica.
- Desmodium axillare** (Sw.) DC., Prodr. 2: 333. 1825. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 14 Sep 1994, J.R. Abbott 15091. Terrestrial herb. Common name: "Pega pega." Amazonia, Chocó, Mesoamerica.
- Desmodium intortum** (Mill.) Urb., Symb. Antill. 8(1): 292. 1920. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 14 Sep 1994, J.R. Abbott 15110 (BEREA, QCNE). Terrestreail herb. Common name: "Pega pega." Amazonia, Chocó, Mesoamerica.
- Dussia lehmannii** Harms, Repert. Spec. Nov. Regni Veg. 19: 292. 1924.

- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 6 May 1995, *J.L. Clark & C. Watt* 759 (MO, QCNE). Tree, common in wet forest. Common name: “Frejolito.” Chocó, Mesoamerica.
- Ecuadendron acosta-solisianum** D.A. Neill, Novon 8(1): 45-49, f. 1-2. 1998. Type: Ecuador: Azuay, Cantón Cuenca. Manta Real, at western base of Andes, 20 km SE of La Troncal, on lower slopes just above the village, primary forest remnants trees in cocoa plantation, 350 m, 2°34'S 79°21'W, 7 Nov 1995, *D.A. Neill, H. Vargas, T. Núñez & J.L. Clark* 10437 (HT: QCNE; IT: AAU, COL, GB, GUAY, K, MEXU, MO, NY, QCA, US). (Fig. 2A-B, p.129; 11A-F, p.138).
- Representative Specimen: Ecuador: Esmeraldas: comunidad Chorrera Grande 300–750 m, 10–13 Jul 1996, *J.L. Clark, N. Binder & P. Hibbs* 2838 (MO, QCNE). Canopy tree in wet forest; only three populations known from western Ecuador. Endemic.
- Entada gigas** (L.) Fawc. & Rendle, Fl. Jamaica 4: 124. 1920.
- Representative Specimen: Ecuador: Esmeraldas: Cotacachi-Cayapas 200 m, 1 Nov 1993 - 2 Nov 1993, *Milton Tirado & P. Asimbaya, M. Coroso, J. Arroyo* 255 (MO, QCNE). Liana. Chocó, Mesoamerica.
- Erythrina megistophylla** Diels, Biblioth. Bot. 116: 96. 1937. Type: Ecuador: Guayas. Guayaquil, Tafalla? - (FHD 267. L.538) (HT: B).
- Representative Specimen: Ecuador: Manabí: Cordillera de Jama, 600 m, 16 Dec 1998, *D. Neill & QCNE botany interns* 11569 (MO). Tree, to 5 m tall, understory in wet forest. Endemic.
- Erythrina poeppigiana** (Walp.) O.F. Cook, U.S.D.A. Div. Bot. Bull. 25: 57. 1901.
- Representative Specimen: Ecuador: Esmeraldas: Quingüe, 250 m, 18 May 2000, *D. Neill & QCNE botany interns* 1272 (MO, QCNE).
- Canopy tree, 25 m. Common name: “Mambla,” “Bombón.” Amazonia, Chocó, Mesoamerica.
- Erythrina smithiana** Krukoff, Brittonia 3(2): 323-325. 1939. Type: Ecuador: Chimborazo: vicinity of Huigra, 6 Sep 1918, *J. N. Rose & G. Rose* 22563 (HT: NY; IT: GH, US).
- Representative Specimen: Ecuador: Manabí: Jama ,200 m, 18 Dec 1998, *D. Neill & QCNE botany interns* 1163 (MO, QCNE).
- Tree. Common name: “Caraca.” Endemic, including coastal Piura and Tumbes in Peru.
- Geoffroea spinosa** Jacq., Enum. Syst. Pl. 28. 1760.
- Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor, 50 m, 25 Aug 1998, *D. Neill & QCNE botany interns* 11296 (MO, QCNE). Tree, in dry to moist forest. Amazonia.
- Gliricidia brenningii** (Harms) Lavin, Syst. Bot. Monogr. 45: 83. 1996.
- Representative Specimen: Ecuador: Manabí: Carretera entre Pedernales y El Carmen, 300 m, 14 Mar 1997, *H. Vargas, X. Aguirre, R. Miranda & C. Robles* 1363 (MO, QCNE).
- Tree, in wet to moist forest; often planted as living fencepost. Common name: “Yuca ratón.” Endemic, including coastal Tumbes and Piura, Peru.
- Indigofera suffruticosa** Mill., Gard. Dict. (ed. 8) Indigofera n. 2. 1768.
- Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor 50 m, 25 Aug 1998, *D. Neill & QCNE botany interns* 11303 (MO, QCNE). Shrub. Amazonia, Chocó, Mesoamerica.
- Inga acreana** Harms, Notizbl. Konigl. Bot. Gart. Berlin 6: 298. 1915.
- Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 500 m, 26 Aug 1998, *D. Neill & QCNE botany interns* 11323 (MO, QCNE).
- Tree. Amazonia, Chocó.
- Inga acuminata** Benth., London J. Bot. 4: 600. 1845.
- Representative Specimen: Ecuador: Manabí:

- Jama 400 m, 18 Dec 1998, *D. Neill & QCNE botany interns 11679* (MO, QCNE). Tree. Amazonia, Chocó, Mesoamerica.
- Inga carinata** T. D. Penn., The genus *Inga*: Botany 731-734, f. 232, map 90. 1997. Type: Ecuador: Pichincha, , Canton Pedro Vicente Maldonado, Rio Silanche Reserve (ENDESA), *T. D. Pennington et al. 13725* (HT: K; IT: QCNE). Representative Specimen: Ecuador: Esmeraldas: Bilsa, 500 m, 00.21N 79.44W, 1 Oct 1996, *John L. Clark 2967* (MO, QCNE). Tree, in wet forest. Common name: "Guaba silvestre." Endemic.
- Inga coruscans** Humb. & Bonpl. ex Willd., Sp. Pl. 4(2): 1017. 1806. Representative Specimen: Ecuador: Esmeraldas: Comunidad San Salvador, 200 m, 10–13 Jul 1996, *J.L. Clark, N. Binder & P. Hibbs 2857* (MO, QCNE). Tree. Amazonia, Chocó, Mesoamerica.
- Inga edulis** Mart. Representative Specimen: Ecuador: Esmeraldas: Comunidad San Salvador, 200 m, 10–13 Jul 1996, *J.L. Clark, N. Binder & P. Hibbs 2857* (MO, QCNE). Tree, commonly cultivated along roads. Common name: "Guaba de bejuco."
- Inga hayesii** Benth., Trans. Linn. Soc. London 30(3): 617. 1875. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 20 May 1995, *J.L. Clark & C. Watt 944* (MO, QCNE). Tree. Chocó, Mesoamerica.
- Inga jaunechensis** A.H. Gentry, Phytologia 54(7): 476-477. 1984. Type: Ecuador: Los Ríos: Jauneche Forest, Jauneche, km 70, Quevedo-Palenque via Mocache, Canton Vinces, 100 m, 24 Mar 1980, *C.H. Dodson & A.H. Gentry 9857* (HT: MO; IT: GUAY, RPSC, SEL). Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor, 50 m, 25 Aug 1998, *D. Neill & QCNE botany interns 1129* (MO, QCNE).
- Tree, in moist forest. Endemic.
- Inga laurina** (Sw.) Willd., Sp. Pl. 4(2): 1018. 1806. Representative Specimen: Ecuador: Manabí: Jama, 400 m, 18 Dec 1998, *D. Neill & QCNE botany interns 1169* (MO, QCNE). Tree. Amazonia, Chocó, Mesoamerica.
- Inga marginata** Willd., Sp. Pl. 4(2): 1015. 1806. Representative Specimen: Ecuador: Esmeraldas: Quingüe, 250 m, 18 May 2000, *D. Neill & QCNE botany interns 12724* (MO, QCNE). Tree. Common name: "Guaba." Amazonia, Chocó, Mesoamerica.
- Inga multicaulis** Spruce ex Benth., Trans. Linn. Soc. London 30(3): 624. 1875. Type: Ecuador, Chimborazo, base of Mt. Chimborazo, fl. Aug. 1860, *Spruce s.n.* (HT: K) Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 500 m, 26 Aug 1998, *D. Neill & QCNE botany interns 11311* (MO, QCNE). Tree, in wet forest Endemic; also on western slopes of Andes in Ecuador. Common name: "Guabilla."
- Inga nobilis** Willd., Enum. Pl. 2: 1047. 1809. Representative Specimen: Ecuador: Esmeraldas: Recinto Palma Junta, 100 m, 19 May 2000, *D. Neill & QCNE botany interns 12730* (MO, QCNE). Tree. Common name: "Guabilla." Amazonia, Chocó, Mesoamerica. Infrasp.: *Inga nobilis* subsp. *quaternata* (Poepp.) T.D. Penn
- Inga pruriens** Poepp., Nov. Gen. Sp. Pl. 3: 78. 1845. Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 28 Jan 1991, *A. Gentry & C. Josse 72833* (MO). Tree. Amazonia.
- Inga punctata** Willd., Sp. Pl. 4(2): 1016. 1806. Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro 800 m, 10 Mar 1997, *H. Vargas 1301* (MO, QCNE). Tree. Amazonia, Chocó, Mesoamerica.

Inga rusbyi Pittier, Contr. U.S. Natl. Herb. 18(5): 179. 1916.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 17 May 1995, *J.L. Clark & C. Watt 913* (MO, QCNE).

Tree. Amazonia.

m, 20 Mar 1998, *J.L. Clark & C. Pallis 4754*. Common subcanopy tree, in wet forest. Amazonia, Chocó.

Inga silanchensis T.D. Penn., The genus Inga: Botany 364–367, f. 84, map 38. 1997. Type: Ecuador: Pichincha, Río Silanche, ENDESA Reserve, *T. D. Pennington et al. 13717* (HT: QCNE; IT: K).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 30 Mar 1996, *J.L. Clark, Karl Berg & J. Leffingwell 2348* (MO, QCNE).

Tree, in wet forest. Common name: "Silanchensis." Endemic.

Mimosa acantholoba (Humb. & Bonpl. ex Willd.) Poir., Encycl., Suppl. 1(1): 83. 1810.

Representative Specimen: Ecuador: Manabí: Cerro del Matal 100 m, 17 Dec 1998, *D. Neill & QCNE botany interns 11620* (MO, QCNE).

Shrub, in dry forest. Mesoamerica.

Inga spectabilis (Vahl) Willd., Sp. Pl. 4(2): 1017–1018. 1806.

Representative Specimen: Ecuador: Manabí: Pedernales, 300 m, 14 Mar 1997, *H. Vargas, X Aguirre, R. Miranda & C. Robles 1360* (MO, QCNE).

Tree. Common name: "Guaba machete." Amazonia, Chocó, Mesoamerica.

Mucuna rostrata Benth., Fl. Bras. 15(1): 171, pl. 157. 1859.

Representative Specimen: Ecuador: Esmeraldas: Quingüe, 250 m, 18 May 2000, *D. Neill & QCNE botany interns 12708* (MO, QCNE).

Liana. Common name: "Pasquinque." Amazonia, Chocó, Mesoamerica.

Leucaena trichodes (Jacq.) Benth., J. Bot. (Hooker) 4(32): 417. 1842.

Representative Specimen: Ecuador: Manabí: Cerro del Matal 100 m, 17 Dec 1998, *D. Neill & QCNE botany interns 11631* (MO, QCNE).

Tree. Mesoamerica.

Pithecellobium excelsum (Kunth) Mart., Flora 20(2): Beibl. 115. 1837.

Representative Specimen: Ecuador: Manabí: Cerro del Matal 100 m, 17 Dec 1998, *D. Neill & QCNE botany interns 11610* (MO, QCNE).

Shrub.

Machaerium millei Standl., Trop. Woods 42: 30. 1935. Type: Ecuador: El Oro: Portovelo, *J. N. Rose & G. Rose 23444* (T: US).

Representative Specimen: Ecuador: Manabí: Cerro del Matal 100 m, 17 Dec 1998, *D. Neill & QCNE botany interns 11630*.

Tree, in dry to moist forest. Endemic, including dry forest of coastal Tumbes and Piura, Peru.

Prosopis juliflora (Sw.) DC., Prodr. 2: 447. 1825.

Representative Specimen: Ecuador: Manabí: Cerro del Matal 100 m, 17 Dec 1998, *D. Neill & QCNE botany interns 11607* (MO, QCNE).

Tree, in dry forest. Chocó, Mesoamerica.

Macrolobium colombianum (Britton ex Killip) Killip ex Uribe., Caldasia 4(18): 213. 1946.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 450

Pueraria phaseoloides (Roxb.) Benth., J. Linn. Soc., Bot. 9: 125. 1867.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 30 Oct 1994, *J.L. Clark & D. Neill 228* (MO, QCNE).

Introduced herbaceous vine. Amazonia, Chocó, Mesoamerica; widely naturalized in tropics.

Rhynchosia calycosa Hemsl., Diagn. Pl. Nov. Mexic. 3: 48. 1880.

Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor 50 m, 25 Aug 1998, *D. Neill & QCNE botany interns 11307* (MO, QCNE).

- Terrestrial herb. Chocó, Mesoamerica.
- Rhynchosia minima** (L.) DC., Prodr. 2: 385. 1825.
Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor 50 m, 25 Aug 1998, D. Neill & QCNE botany interns 11350 (MO, QCNE).
- Terrestrial herb. Chocó, Mesoamerica.
- Samanea saman** (Jacq.) Merr., J. Wash. Acad. Sci. 6(2): 47. 1916.
Representative Specimen: Ecuador: Manabí: 4 km al sur de Pedernales, 0 m, 15 Dec 1998, D. Neill & QCNE botany interns 11505 (MO, QCNE).
- Tree, in moist to dry forest and open areas. Common name: "Saman." Chocó, Mesoamerica.
- Senna dariensis** (Britton & Rose) H.S. Irwin & Barneby, Mem. New York Bot. Gard. 35: 128. 1982.
Representative Specimen: Ecuador: Esmeraldas: Recinto Palma Junta, 100 m, 19 May 2000, D. Neill & QCNE botany interns 12735 (MO, QCNE).
- Tree. Amazonia, Chocó, Mesoamerica.
Infrasp.: *Senna dariensis* var. *smaragdina* H.S. Irwin & Barneby.
- Senna mollissima** (Humb. & Bonpl. ex Willd.) H.S. Irwin & Barneby, Mem. New York Bot. Gard. 35: 592. 1982. *Cassia mollissima* Humb. & Bonpl. ex Willd.
Representative Specimen: Ecuador: Manabí: Cerro del Matal 100 m, 17 Dec 1998, D. Neill & QCNE botany interns 11623 (MO, QCNE).
Tree or shrub. Mesoamerica.
- Senna oxyphylla** (Kunth) H.S. Irwin & Barneby, Mem. New York Bot. Gard. 35: 117. 1982.
Representative Specimen: Ecuador: Manabí: Jama 200 m, 18 Dec 1998, D. Neill & QCNE botany interns 11649 (MO, QCNE).
Shrub. Chocó, Mesoamerica.
Infrasp.: *Senna oxyphilla* var. *hartwegii* (Benth.) H.S. Irwin & Barneby
- Senna reticulata** (Willd.) H.S. Irwin & Barneby, Mem. New York Bot. Gard. 35: 458. 1982.
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 12 Oct 1994, N. Pitman & M.S. Bass 813 (MO, QCNE).
- Shrub, in open areas. Amazonia, Chocó, Mesoamerica.
- Swartzia haughtii** R.S. Cowan, Fl. Neotrop. 1: 49, f. 6. 1968. Type: Ecuador: Manabí: hills south of Olmedo, Sep 1942, Haught, O. 3491 (HT: US(4)).
Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 500 m, 26 Aug 1998, D. Neill & QCNE botany interns 11309 (MO, QCNE).
- Tree, common in moist to wet forest and secondary vegetation. Common name: "Frejolito." Endemic.
- Swartzia littlei** R.S. Cowan, Fl. Neotrop. 1: 165, f. 30, 40f-g. 1968. Type: Ecuador: Esmeraldas: 4 km W of Borbón, April 1943, E.L. Little 6371 (HT: US(2); IT: F, NY).
Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor 50 m, 25 Aug 1998, D. Neill & QCNE botany interns 11269 (MO).
Tree, locally common at Reserva de Lalo Loor. Endemic.
- Zygia longifolia** (Humb. & Bonpl. ex Willd.) Britton & Rose, N. Amer. Fl. 23(1): 40. 1928.
Representative Specimen: Ecuador: Esmeraldas: Muisne 25 m, 22 May 2000, D. Neill & QCNE botany interns 12730 (MO, QCNE).
Tree, common along watercourses. Amazonia, Chocó, Mesoamerica.

FLACOURTIACEAE

- Banara guianensis** Aubl., Hist. Pl. Guiane 1: 548–549, t. 217. 1775.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 30 Mar 1996, J.L. Clark, Karl Berg & J. Leffingwell 2326 (AAU, GB, MEXU, MO, NY, QCNE, US).
Tree. 540–650 m. Amazonia, Chocó, Mesoamerica.

Carpotroche platyptera Pittier, Contr. U.S. Natl. Herb. 12(5): 178-180, t. 19, f. 15-16. 1909.

Representative Specimen: Ecuador: Esmeraldas: Reserva Ecológica Mache-Chindul, Comunidad Caña Braval, Cabeceras de Río Viche, estero Sabaleta, 11 Mar 1998, *J.L. Clark* 4614 (MO, QCNE). Shrub. 250-600 m. Amazonia, Mesoamerica.

m, 1 Oct 1996, *J.L. Clark* 2957 (MO, QCNE).

Tree. 400-600 m. Amazonia.

Casearia aculeata Jacq., Enum. Syst. Pl. 21. 1760.

Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor, 100 m, 15 Dec 1998, *Davis Neill & QCNE botany interns* 11525 (MO, QCNE). Shrub. 10-700 m. Amazonia, Chocó, Mesoamerica.

Casearia arborea (Rich.) Urb., Symb. Antill. 4(3): 421-422. 1910.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 3 Apr 1996, *J.L. Clark & Karl Berg, J. Leffingwell* 2384 (AAU, F, GB, MEXU, MO, NY, US). Tree. 400-600 m. Amazonia, Chocó, Mesoamerica.

Casearia combaymensis Tul., Ann. Sci. Nat., Bot., ser. 3. 7: 362. 1847. Type: Colombia: Tolima: near Ibague along the River Combayma (Combeima), *Goudot* 106 (HT: P; IT: FI-Webb).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 17 Feb 1996, *J.L. Clark & N. Kerber, J. Plihal* 2049 (MO, QCNE). Tree. 500 m. Amazonia, Chocó, Mesoamerica.

Casearia mariquitensis Kunth, Nov. Gen. Sp. (quarto ed.) 5: 363-364. 1821 [1823].

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 8 Apr 1995, *J.L. Clark & Y. Troya* 658 (MO, QCNE). Tree. 400-600 m. Amazonia, Chocó, Mesoamerica.

Casearia prunifolia Kunth, Nov. Gen. Sp. 5: 364. 1821 [1823].

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500

Casearia sylvestris Sw., Fl. Ind. Occid. 2: 752-753. 1798.

Representative Specimen: Ecuador: Manabí: Jama 400 m, 18 Dec 1998, *D. Neill & QCNE botany interns* 11685 (MO, QCNE). Tree. 400-600 m. Amazonia, Chocó, Mesoamerica.

Casearia ulmifolia Vahl ex Vent., Choix Pl. 46. 1808.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 12 Feb 1996, *J.L. Clark & N. Kerber, J. Plihal* 1950 (AAU, MO, QCNE). Tree. 500 m. Amazonia, Chocó.

Lunania parviflora Spruce ex Benth., J. Proc. Linn. Soc., Bot. 5(Suppl. 2): 90. 1861.

Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 200 m, 6 Jul 1996, *J.L. Clark* 2739 (AAU, MEXU, MO, NY, QCNE, US). Subcanopy tree. 200 m. Amazonia, Chocó, Mesoamerica.

Pleuranthodendron lindenii (Turcz.) Sleumer, Blumea 24: 118. 1978.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 1 Oct 1996, *J.L. Clark* 2960 (AAU, MO, QCNE, US).

Understory tree. 400-600 m. Amazonia, Chocó, Mesoamerica.

Tetrathyllum macrophyllum Poepp., Nov. Gen. Sp. Pl. 3: 34, t. 240. 1843.

Representative Specimen: Ecuador: Manabí: 45 km al norte de Pedernales, 5 m, 28 Aug 1998, *D. Neill & QCNE botany interns* 11413 (MO, QCNE).

Understory tree. 0-200 m. Amazonia, Chocó, Mesoamerica.

Xylosma digyna Eichler, Fl. Bras. 13(1): 447. 1871.

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 580-750 m, 23 Jul

- 1998, *T. Delinks* 15 (MO, QCNE).
Tree. 580-750 m. Amazonia.
- Xylosma oligandra** Donn. Sm., Bot. Gaz. 23(4): 235. 1897.
Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 700 m, 8 Mar 1997, H. Vargas, X. Aguirre, R. Miranda & C. Robles 1246 (MO, QCNE).
Shrub. 700 m. Amazonia, Chocó, Mesoamerica.
- Xylosma tessmannii** Sleumer, Notizbl. Bot. Gart. Berlin-Dahlem 12: 477. 1935.
Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300-700 m, 21 Jul 1996, J.L. Clark, E. Arroyo & P. Hibbs 2696 (MO, QCNE).
Tree. 300-700 m. Amazonia, Chocó.
- GENTIANACEAE**
- Chelonanthus alatus** (Aubl.) Pulle, Enum. Vasc. Pl. Surinam 376. 1906.
Synonym: *Irlbachia alata* (Aubl.) Maas and *Irlbachia alata* subsp. *alata*.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 17 Oct 1994, J.L. Clark & B. Adnepos 198 (MO, QCNE).
Common terrestrial herb along sunny roads. 400-600 m. Amazonia, Chocó, Mesoamerica.
- Voyria** sp.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 19 Sep 1994, N. Pitman & M.S. Bass 656 (MO, QCNE).
Saprophytic herb. 400-600 m.
- GESNERIACEAE**
- Besleria tambensis** C.V. Morton, Contr. U.S. Natl. Herb. 26(9): 428. 1939. Type: Colombia: El Cauca: collected at La Costa, District of La Tambo, 1200 m, 26 Jul 1936, K. von Sneidern 850 (HT: S).
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 19 Aug 2003, J.L. Clark, C. Aulestia, J. Bermingham & I. Salinas 8803 (MO,
- QCNE, US).
Common unbranched subshrub, 1-2 m tall. Chocó, Mesoamerica.
- Chrysotheremis friedrichsthaliana** (Hanst.) H.E. Moore, Baileya 2(3): 87. 1954.
Representative Specimen: Ecuador: Esmeraldas: Mache-Chidul, comunidad Caña Braval, 250 m, 16 Mar 1998, J.L. Clark 4651 (AAU, COL, E, MO, QCA, QCNE, US).
Lowland terrestrial herb, 40-70 cm tall. 200-300. Amazonia, Chocó, Mesoamerica.
- Codonanthe crassifolia** (H. Focke) C.V. Morton, Publ. Field Mus. Nat. Hist., Bot. Ser. 18(4): 1159. 1938.
Representative Specimen: Ecuador: Esmeraldas: Comunidad Piedrita, 10 km SW of Cube (via pircuta), 400-750 m, 10-13 Jul 1996, J.L. Clark, N. Binder & P. Hibbs 2819 (MO, QCNE, US).
Epiphyte. 400-750. Amazonia, Chocó, Mesoamerica.
- Codonanthe uleana** Fritsch, Bot. Jahrb. Syst. 37(5): 492. 1906.
Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 200 m, 28 Mar 1998, J.L. Clark & S. Nazzaro 4950B (MO, QCNE, US).
Epiphyte. 200 m. Amazonia, Chocó, Mesoamerica.
- Columnea angustata** (Wiehler) L.E. Skog, Ann. Missouri Bot. Gard. 65(3): 844. 1978 [1979]. *Pentadenia angustata* Wiehler. Type: Colombia: El Valle: old road from Cali to Buenaventura, 8 km past La Elsa, Epiphyte. calyx maroon-pink, corolla orange, 30 Apr 1972, H. Wiehler, Dressler & Williams 7276 (HT: SEL; IT: COL, K, MO, NY, US).
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 20 Mar 1998, J.L. Clark & C. Pallis 4747 (MO, QCA, QCNE, US).
Common scandent herbaceous epiphyte. 250-750 m. Amazonia, Chocó, Mesoamerica.
- Columnea asteroloma** (Wiehler) L.E. Skog,

Taxon 30(2): 506. 1981. *Dalbergaria asteroloma* Wiehler. Type: Ecuador: Pichincha: Montañas de Ila, at km 12 on road from Patricia Pilar to village of 24 de Mayo, La Centinella, cloud forest on western slope, 540 m, H. Wiehler 77109 (HT: SEL; IT: K, NY, QCA, RPSC, US).

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 700 m, 26 Aug 1998, D. Neill & QCNE botany interns 11365 (MO, QCNE, US).

Rare epiphyte. 700 m. Endemic.

Columnea eburnea (Wiehler) L.P. Kvist & L.E. Skog, Allertonia 6(5): 354. 1993. *Dalbergaria eburnea* Wiehler. Type: Ecuador: Pichincha: old road Quito-Santo Domingo, below Chiriboga, leaves with red apices below, 27 April 1779, Wiehler & Masterson 79108 (HT: SEL; IT: to be distributed).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 13 May 1998, J.L. Clark & C. Pallis 5552 (AAU, COL, QCA, QCNE, US).

Common terrestrial or epiphytic subshrub with dorsiventral shoots. 400-700 m. Amazonia, Chocó, Mesoamerica.

Columnea kalbreyeriana Mast., Gard. Chron., n.s., 17(420): 44. 1882.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 650 m, 19 Feb 1997, J.L. Clark 3965 (MO, QCNE, US).

Rare herbaceous epiphyte. 650 m. Chocó, Mesoamerica.

Columnea kienastiana Regel, Trudy Imp. S.-Peterburgsk. Bot. Sada 8: 274. 1883.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 8 Jan 1997, J.L. Clark, E. Austen, S. Bennett & D. Kapan 3765 (MO, QCNE).

Rare pendent herbaceous epiphyte. 250-500 m. Chocó.

Columnea medicinalis (Wiehler) L.E. Skog & L.P. Kvist, Novon 7(4): 414. 1997 [1998]. *Dalbergaria medicinalis* Wiehler. Type: Ecuador: Pichincha: above Chiriboga, on

old road from Quito to Santo Domingo, H. Wiehler & GRF Expedition 88215 (HT: GES; IT: K, MO, NY, QCA, SEL, US).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 15 Jul 1996, J.L. Clark, C. Aulestia, J. Kellermann, and F. Vetal 2873 (AAU, COL, MO, QCNE, US).

Common terrestrial or epiphytic subshrub with dorsiventral shoots. 300-700 m. Amazonia, Chocó.

Columnea minor (Hook.) Hanst., Linnaea 34(4): 387-388. 1865.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 27 Sep 1996, J.L. Clark 2934 (AAU, COL, E, MO, QCNE, US).

Pendent epiphyte. 400-600 m. Chocó.

Columnea minutiflora L.P. Kvist & L.E. Skog, Allertonia 6(5): 379. 1993. Type: Ecuador: Carchi: 12 km W of Maldonado, Chical, wet montane forest along Río San Juan, 1200 m, 29 May 1978, M.T. Madison, T.C. Plowman, H.A. Kennedy, & L. Besse 4755 (HT: AAU; IT: F, SEL).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 21 Feb 1996, J.L. Clark 2119 (GB, MO, QCNE, US).

Common epiphyte. 400-650 m. Chocó.

Columnea picta H. Karst., Fl. Columb. 2: 105, t. 154. 1865.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 20 Sep 1994, J.L. Clark & B. Adnepos 80 (MO, QCNE, SEL, US).

Common terrestrial or epiphytic subshrub. 250–600 m. Amazonia, Chocó.

Columnea rubriacuta (Wiehler) L.P. Kvist & L.E. Skog, Allertonia 6(5): 367. 1993. *Dalbergaria rubriacuta* Wiehler. Type: Ecuador: Los Ríos, 200 m, 19 Jul 1971, H. Wiehler & C.H. Dodson 7102 (HT: SEL; IT: K, NY, QCA, S, US).

Synonym: *Dalbergaria rubriacuta* Wiehler.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–

- 600 m, 20 Sep 1994, *J.L. Clark & B. Adnepos 5586* (AAU, COL, MO, QCA, QCNE, US). Common terrestrial or epiphytic subshrub with dorsiventral shoots. 250-600 m. Amazonia, Chocó.
- Columnea spathulata** Mansf., Notizbl. Bot. Gart. Berlin-Dahlem 14(121): 37. 1938. Type: Ecuador: Pichincha: Santo Domingo de los Colorados, Centinella, Mts. de Ila, 12 km from Patricia Pilar, virgin rain forest, 575 m, 10 Jul 1979, *B. Løjtnant & U. Molau 15811* (NT: AAU). Representative Specimen: Ecuador: Esmeraldas: Mache-Chindul, comunidad Caña Braval, 250 m, 11 Mar 1998, *J.L. Clark & C. Pallis, J. West 4644* (AAU, COL, MO, QCA, QCNE, US).
- Common and widespread epiphyte with dorsiventral shoots. 100-750. Amazonia, Chocó.
- Cremosperma** aff. **castroanum** C.V. Morton, J. Wash. Acad. Sci. 25(6): 289. 1935. Type: Colombia: Chocó: 20 km N of Quibdó, Tutunendo, 80 m, *Archer 2151* (HT: US). Representative Specimen: Ecuador: Manabí: Pedernales Cantón, Mache-Chindul, comunidad Ambache, 250 m, 5 Apr 1997, *J.L. Clark, R. Dunn, T. Nuñez & C. Robles 4197* (AAU, MO, QCNE, US).
- Common terrestrial herb, 15-25 cm tall. 250-600 m. Amazonia, Chocó.
- Diastema affine** Fritsch, Bot. Jahrb. Syst. 50(4): 409. 1913. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 27 Sep 1996, *J.L. Clark 2930* (AAU, COL, E, MO, NY, QCNE, SRP, US). Common succulent terrestrial herb. 250-600 m. Amazonia, Chocó, Mesoamerica.
- Diastema racemiferum** Benth., Bot. Voy. Sulphur 132. 1845. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 24 Sep 1996, *J.L. Clark 2897* (AAU, COL, E, F, GB, MO, NY, QCA, QCNE, US).
- Common succulent terrestrial herb. 10-700 m. Amazonia, Mesoamerica.
- Diastema scabrum** (Poepp.) Benth. ex Walp., Repert. Bot. Syst. 6: 401, 403. 1847. Representative Specimen: Ecuador: Esmeraldas: comunidad Chorrera Grande 300-750 m, 10-13 Jul 1996, *J.L. Clark, N. Binder & P. Hibbs 2817* (AAU, COL, E, MO, QCNE, US). Terrestrial herb. 100-750 m. Amazonia, Mesoamerica.
- Drymonia alloplectoides** Hanst., Linnaea 34(3): 358-359. 1865. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 15 Oct 1994, *M.S. Bass, L. Kueppers & N. Pitman 143* (MO, QCNE). Rare vine. 400-600 m. Amazonia, Chocó, Mesoamerica.
- Drymonia brochidodroma** Wiehler, Gesneriana 1(1): 53. 1995. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 22 Nov 1995, *J.L. Clark, K. Cunningham & C. Roberts 1636* (MO, QCNE, US). Common terrestrial herb, 1-2 m tall. 400-600 m. Amazonia, Chocó.
- Drymonia dodsonii** (Wiehler) J.L. Clark, Selbyana 2(1): 67-70, t. 19A. 1977. *Drymonia dodsonii* Wiehler. Type: Ecuador: Los Ríos: Río Palenque Science Center, km 56 between Quevedo and Santo Domingo, tropical wet forest, ca 200 m, 19 July 1971, *H. Wiehler & C.H. Dodson 7105* (HT: SEL; IT: BR, K, MO, NY, QCA, S, US). Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, Invader trail to N and NE boundary of reserve, 400-600 m, 28 Sep 1994, *P. Mendoza T., J.L. Clark, L.P. Kvist & L.E. Skog 579* (MO, QCA, QCNE). Terrestrial or epiphytic herb. 60-400 m. Endemic.
- Drymonia ecuadorensis** Wiehler, Selbyana 2(1): 74-, t. 22A. 1977. Type: Ecuador: Los Ríos:

Río Palenque Science Center, km 56 between Quevedo and Santo Domingo, tropical wet forest, ca 200 m, epiphyte on fallen tree trunk, 19 Jul 1971, *Wiehler 7106* (HT: SEL; IT: K, NY, QCA, S, US).

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300–700 m, 7 Apr 1997, *J.L. Clark, T. Nuñez & C. Robles 4275* (AAU, MO, QCNE, US).

Herbaceous vine. 300-700 m. Endemic. Amazonia.

Drymonia killipii Wiehler, Selbyana 2(1): 106-109, t. 31B. 1977. Type: Colombia: El Valle: old road Cali-Buenaventura, near Río Sabaletas, on path above creek, 2 May 1972, *Wiehler, Dressler, & Williams 72142* (HT: SEL; IT: COL, K, MO, NY, US).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 25 Nov 1999, *D. Neill & QCNE botany interns 12208* (MO, QCNE, US).

Terrestrial or epiphytic subshrub. 200-500 m. Chocó.

Drymonia laciniosa Wiehler, Selbyana 2(1): 77, t. 22B. 1977. Type: Ecuador: Los Ríos: Río Palenque Science Center, km 56 between Quevedo and Santo Domingo, tropical wet forest, ca 200 m, shrub along creek, 24 Jul 1971, *H. Wiehler & C.H. Dodson 71309* (HT: SEL; IT: K, NY, QCA, S, US).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 13 May 1998, *J.L. Clark & C. Pallis 5589* (AAU, COL, E, MO, QCA, QCNE, US).

Scendent epiphyte. 250-600 m. Endemic.

Drymonia macrophylla (Oerst.) H.E. Moore, Baileya 3(3): 112, f. 43. 1955.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 20 Mar 1998, *J.L. Clark & C. Pallis 4914* (AAU, COL, E, GB, MO, NY, QCA, QCNE, SRP, US).

Terrestrial or epiphytic herb. 280-600 m. Amazonia, Chocó, Mesoamerica.

Drymonia rhodoloma Wiehler, Selbyana 2(1): 77, t. 22D. 1977. Type: Ecuador: Los Ríos: Río

Palenque Science Center, km 56 between Quevedo and Santo Domingo, tropical wet forest, ca 200 m alt, 24 Jul 1971, *H. Wiehler & C.H. Dodson 71311* (HT: SEL; IT: K, MO, NY, QCA, S, US).

Representative Specimen: Ecuador: Esmeraldas: Mache-Chindul, comunidad Caña Braval, 250 m, 16 Mar 1998, *J.L. Clark 4701* (AAU, CAS, COL, E, MO, QCA, QCNE, SRP, US, USM).

Herbaceous epiphyte. 250-500 m. Endemic.

Drymonia serrulata (Jacq.) Mart., Nov. Gen. Sp. Pl. 3: 192. 1832.

Representative Specimen: Ecuador: Manabí: Mache-Chindul, comunidad Ambache, 250 m, 4 Apr 1997, *J.L. Clark, R. Dunn, T. Nuñez & C. Robles 4165* (MO, QCNE, US).

Scendent terrestrial or epiphytic subshrub. 10-600 m. Amazonia, Chocó, Mesoamerica.

Drymonia teuscheri (Raymond) J.L. Clark, Selbyana 25(2): 182-209. 2005. *Hypocyrta teuscheri* Raymod. Type: Ecuador; described from cultivated material.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 24 Sep 1996, *J.L. Clark 2894* (AAU, COL, MO, QCNE, US).

Common terrestrial or epiphytic herb. Chocó.

Drymonia turrialvae Hanst., Linnaea 34(3): 359-360. 1865.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 650 m, 19 Feb 1997, *J.L. Clark 3949* (MO, QCNE, US).

Rare terrestrial herb. 650 m. Amazonia, Chocó, Mesoamerica.

Drymonia warszewicziana Hanst., Linnaea 34(3): 352. 1865.

Representative Specimen: Ecuador: Esmeraldas: Mache-Chindul, comunidad Caña Braval, 250 m, 16 Mar 1998, *J.L. Clark 4693* (MO, QCNE, US).

Common herbaceous vine. 200-600 m. Amazonia, Chocó, Mesoamerica.

Gasteranthus bilsaensis L.E. Skog & L.P. Kvist, Syst. Bot. Monogr. 59: 41-42, f. 7D, 17, 22.

2000. Type: Ecuador: Esmeraldas: Montañas de Mache, 35 km W of Quinindé, Bilsa Biological Station, Rana Roja trail, 550-560 m, 25 Oct 1995, *P. Mendoza T., J.L. Clark, L.E. Skog & L.P. Kvist*. 561 (HT: QCNE; IT: AAU, COL, K, MO, NY, QCA, SEL, UC, US). (Fig. 15A-F, p.142).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 26 Oct 1994, *J.L. Clark, C. Bienkowski & C. Clark* 213 (COL, E, MO, QCNE, US).

Terrestrial herb in mature forest. 300-700 m. Endemic.

Gasteranthus calcaratus (Kunth) Wiehler, Selbyana 1(2): 154. 1975. *Besleria calcarata* Kunth.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 1 Oct 1996, *J.L. Clark* 2964 (AAU, COL, E, MO, NY, QCNE, SRP, US, USM).

Infrasp.: *Gasteranthus calcaratus* subsp. *oncogastrus* (Hanst.) L.E. Skog & L.P. Kvist, *Gasteranthus calcaratus* subsp. *calcaratus*.

Common terrestrial herb. 60-600 m. Amazonia, Chocó.

Gasteranthus crispus (Mansf.) Wiehler, Selbyana 1(2): 154. 1975. *Halphyllum crispum* Mansf. Type: Ecuador: Los Ríos: S. Carlos de los Colorados, 150 m, *A. Schultz-Rhonhof* 2031 (HT: B).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 16 Sep 1994, *J.L. Clark & B. Adnepos* 58 (MO, QCNE, US).

Understory terrestrial herb. 280-600 m. Endemic.

Gasteranthus tenellus L.E. Skog & L.P. Kvist, Syst. Bot. Monogr. 59: 96-98, f. 3C, 24, 37. 2000. Type: Ecuador: Esmeraldas: Quinindé, Community Piedrita, 10 km SW of Cube (via Pircuta), 400-750 m, 00°20'N 79°41'W, 11 Jul 1996, *J.L. Clark & P. Hibbs* 2815 (HT: QCNE; IT: AAU, COL, E, MO, NY, QCA, SRP, US, VEN). (Fig. 6B,D, p.133; 16A-H, p.143).

Representative Specimen: Ecuador:

Esmeraldas: Bilsa Biological Station, 500 m, 13 May 1998, *J.L. Clark & C. Pallis* 5573 (AAU, COL, MO, QCA, QCNE, SRP, US).

Understory terrestrial herb. 250-750 m. Endemic.

Gasteranthus villosus L.E. Skog & L.P. Kvist, Syst. Bot. Monogr. 59: 101-102, f. 9D, 13G-H, 15, 38. 2000. Type: Ecuador: Esmeraldas: 35 km W of Quinindé, Mache Mountains, Bilsa Biological Station, 400-600 m, 26 Oct 1995, *Mendoza-T. et al.* 594 (HT: QCNE; IT: AAU, COL, E, GH, MO, NY, P, QCA, US). (Fig. 6A, C,E, p.133; 17A-H, p.144).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 11 Mar 1998, *J.L. Clark, C. Pallis & J. West* 4610 (AAU, COL, E, MO, NY, QCA, QCNE, SRP, US).

Understory terrestrial herb. 250-750 m. Endemic.

Glossoloma sp.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 15 Jul 1996, *J.L. Clark, C. Aulestia, J. Kellermann, & F. Vetel* 2867 (MO, QCNE, SEL, US).

Unbranched understory subshrub, 1-2 m tall. 400-600 m.

Gloxinia dodsonii Wiehler, Selbyana 2(1): 80, t. 24D. 1977. Type: Ecuador: Pichincha: along Río Baba (=Río Quevedo), 28 km S of Santo Domingo de los Colorados, 350 m, 3 Nov 1961, *C.H. Dodson & L.B. Thien* 1173 (HT: SEL; IT: BH, K, UC, US, WIS).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 5 Dec 1994, *J.L. Clark & K. Chamberlain* 367 (MO, QCNE, SEL, US).

Common terrestrial herb in understory of mature forest, 10-20 cm tall. 200-600 m. Endemic.

Kohleria inaequalis (Benth.) Wiehler, Selbyana 5(1): 62. 1976.

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 700 m, 26 Aug 1998,

D. Neill & QCNE botany interns 11358
(MO, QCNE).

Terrestrial herb. 300-700 m. Chocó.

Infrasp.: *Kohleria inaequalis* var. *inaequalis*.

Kohleria spicata (Kunth) Oerst., Centralamer. Gesner. 5(1): 62. 1858.

Representative Specimen: Ecuador Esmeraldas: Bilsa Biological Station, 400-600 m, 21 Aug 2003, J.L. Clark, R. Fleiss & F. Gurumendi 8840 (MO, QCNE, US).

Terrestrial herb in sunny disturbed sites. 400-600 m. Amazonia, Chocó, Mesoamerica.

Kohleria villosa (Fritsch) Wiegler, Selbyana 5(1): 63. 1978.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 6 Apr 1995, J.L. Clark & Y. Troya 628 (MO, QCNE).

Terrestrial herb in understory of mature forest. 400-600 m. Amazonia, Chocó.

Infrasp.: *Kohleria villosa* var. *villosa*.

Monopyle macrocarpa Benth., Icon. Pl. 12: 85-86, t. 1198, f. 1-5. 1876.

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 700 m, D. Neill & QCNE botany interns 11362 (MO, QCNE).

Terrestrial herb in understory of mature forest. 300-700 m. Amazonia, Chocó, Mesoamerica.

Napeanthus robustus Fritsch, Akad. Wiss. Wien Sitzungsber., Math.-Naturwiss. Kl., Abt. 1, 134(3-4): 122-124, f. 1. 1925. Type: Ecuador: In silvis tropicis prope S. Domingo, 360 m, Aug 1875, Sodiro 119/58 (HT: B).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600, 27 Sep 1996, J.L. Clark 2942 (AAU, COL, MO, QCNE, US).

Terrestrial herb in understory of mature forest, 10-15 cm tall with inflorescence to 70 cm long; occasionally growing on rocks. 400-600 m. Amazonia, Chocó, Mesoamerica.

Paradrymonia binata Wiegler, Phytologia 73(3): 231. 1992. Type: Ecuador. Esmeraldas: ca 5 km W of Lita, dense, wet forest near Río

Chuchubí, down the slope towards Río Mira, 800 m altitude, H. Wiehler 9205 (HT: GES; IT: NY, QCA, US).

Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 30 Jan 1991, A. Gentry, R. Foster & C. Josse 72948 (MO, US).

Terrestrial or epiphytic herb. 280 m. Endemic.

Paradrymonia hypocyrta Wiegler, Selbyana 2(1): 82, t. 25C. 1977. Type: Ecuador: Los Ríos: Montaña de Ila, km io2, road from Patricia Pilar to 24 de Mayo, 540 m, cloud forest on western slopes, 30 May 1976, C.H. Dodson 6092 (HT: SEL; IT: K, NY, QCA, S, US).

Representative Specimen: Ecuador: Esmeraldas: Comunidad Piedrita, 400-750 m, 10-13 Jul 1996, J.L. Clark, N. Binder & P. Hibbs 2821 (MO, QCNE).

Common terrestrial or epiphytic herb. 400-750 m. Endemic.

Reldia sp.

Representative Specimen: Ecuador Esmeraldas: Bilsa Biological Station, 400-600 m, 21 Aug 2003, J.L. Clark, R. Fleiss & F. Gurumendi 8835 (MO, QCNE, US).

Rare terrestrial understory herb, 20-50 cm tall. 400-600 m.

HAEMODORACEAE

Xiphidium caeruleum Aubl., Hist. Pl. Guiane 1: 33, t. 11. 1775.

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300-700 m, 21 Jun 1996, J.L. Clark, E. Arroyo & P. Hibbs 2726 (MO, QCNE).

Common terrestrial herb. 75-700 m. Amazonia, Chocó, Mesoamerica.

HELICONIACEAE

Heliconia harlingii L. Andersson, Fl. Ecuador 22: 66. 1985. Type: Ecuador: Los Ríos: Río Palenque Science Center, about halfway between Quevedo and Santo Domingo, c. 200 m, 7 Jun 1981, L. Andersson 1326 (HT: S; IT: GB, QCA).

Representative Specimen: Ecuador: Manabí: 45 km al norte de Pedernales, 5 m, 28 Aug

- 1998, *D. Neill & QCNE botany interns 11426* (MO, QCNE). Terrestrial herb. 5-600 m. Common name: "Platanillo." Endemic.
- Heliconia longa** (Griggs) H.J.P. Winkl., Nat. Pflanzenfam. (ed. 2) 15a: 536. 1930. *Bihai longa* Griggs. Representative Specimen: Ecuador: Manabí: 45 km al norte de Pedernales, 5 m, 28 Aug 1998, *D. Neill & QCNE botany interns 11430* (MO, QCNE). Terrestrial herb. 0-50 m. Common name: "Platanillo." Amazonia, Chocó, Mesoamerica.
- Heliconia longiflora** R.R. Sm., Phytologia 36(3): 255-256, f. 1. 1977. Representative Specimen: Ecuador: Manabí: Jama 400 m, 18 Dec 1998, *D. Neill & QCNE botany interns 11661* (MO, QCNE). Terrestrial herb. 400 m. Common name: "Platanillo." Chocó, Mesoamerica. Infrasp.: *Heliconia longiflora* subsp. *ecuadoriensis* L. Andersson.
- Heliconia metallica** Planch. & Linden ex Hook., Bot. Mag. 88: t. 5315. 1862. Representative Specimen: Ecuador: Manabí: Reserva Ecologica Mache-Chindul, Comunidad Ambache (vía marginal de la costa-Chindul), 250 m, 6 Apr 1997, J.L. Clark, R. Dunn, T. Nuñez & C. Robles 4221 (MO, QCNE). Terrestrial herb. 250-500 m. Common name: "Platanillo." Amazonia, Chocó, Mesoamerica.
- Heliconia nigripraefixa** Dodson & A.H. Gentry, Selbyana 2(2-3): 296-297, t. 2D. 1978. Type: Ecuador: Los Ríos: Río Palenque Science Center, km 56 Quevedo to Santo Domingo, 220 m., 15 Oct. 1972, *C.H. Dodson 5188* (HT: SEL; IT: MO (fragm.), RPSC). Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 30 Jan 1991, *A. Gentry, R. Foster & C. Josse 72937* (MO). Terrestrial herb. 280 m. Common name: "Platanillo." Chocó, Mesoamerica.
- Heliconia reticulata** (Griggs) Winkl., Nat. Pflanzenfam. (ed. 2) 15a: 536. 1930. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 2 Jan 1997, *J.L. Clark, E. Austen, S. Bennett & D. Kapan 3960* (GB, MO, QCNE). Terrestrial herb. 280-600 m. Common name: "Platanillo." Chocó, Mesoamerica.
- Heliconia spathocircinata** Aristeg., Bol. Soc. Venez. Ci. Nat. 22(98-99): 18, 20, t. 1961. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 25 Mar 1995, *J.L. Clark & Y. Troya 497* (GB, MO, QCNE). Terrestrial herb. 400-600 m. Common name: "Platanillo." Amazonia, Chocó, Mesoamerica.
- Heliconia stricta** Huber, Bol. Mus. Paraense Hist. Nat. 4: 543. 1906. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 14 Nov 1994, *J.L. Clark, H. Lintz & S. Mora 240* (MO, QCNE). Terrestrial herb. 400-600 m. Common name: "Platanillo." Amazonia, Chocó.
- ## HERNANDIACEAE
- Hernandia didymantha** Donn. Sm., Bot. Gaz. 31(2): 120. 1901. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 17 Feb 1996, *J.L. Clark, N. Kerber & J. Plihal 2056* (MO, QCNE). Common subcanopy tree. 400-600 m. Chocó, Mesoamerica.
- ## HIPPOCASTANACEAE
- Billia rosea** (Planch. & Linden) C. Ulloa & P. Jørg., Novon 11(2): 287. 2001. Syonym: *Billia columbiana* Planch. & Linden. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 19 Feb 1996, *J.L. Clark 2095* (MO, QCNE). Common subcanopy tree. 400-650 m. Amazonia, Chocó, Mesoamerica.

HIPPOCRATEACEAE**Cheiloclinium sp.**

Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 28 Jan 1991, *A. Gentry & C. Josse* 72773 (MO). Tree. 280 m. Common name: "Comida de Loro."

Peritassa sp.

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 380-450 m, 12 Nov 1998, *T. Delinks & C. Robles* 150 (MO, QCNE). Liana. 380-450 m.

Salacia macrantha A.C. Sm., Bull. Torrey Bot. Club 66(4): 245-246. 1939.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 17 Feb 1996, *J.L. Clark, N. Kerber & J. Plihal* 2043 (MO, QCNE).

Common tree. 100-600 m. Common name: "Chupa chupa." Amazonia, Chocó, Mesoamerica.

Salacia spectabilis A.C. Sm., Brittonia 3(3): 436-438. 1940.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 16 Nov 1994, *J.L. Clark* 403 (MO, QCNE).

Common tree. 100-600 m. Amazonia, Chocó.

Tontelea mauritioides (A.C. Sm.) A.C. Sm., Brittonia 3(3): 481, f. 10t-v. 1940.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 8 Feb 1996, *J.L. Clark & N. Kerber, J. Plihal* 1944 (MO, QCNE).

Woody liana. 500-650 m. Amazonia.

HYDRANGEACEAE**Hydrangea peruviana** Moric., Prodr. 4: 14. 1830.

Type: In Peruvia prope Huyaquaquil, *Pavón s.n.* (HT: herb. Moricand).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 9 Dec 1994, *M.S. Bass & N. Pitman* 320 (MO, QCNE).

Infrasp.: *Hydrangea peruviana* var. *oerstedii* (Briq.) Freire-Fierro.

Woody liana from subcanopy. 400-600 m. Amazonia, Chocó, Mesoamerica.

ICACINACEAE**Calatola columbiana** Sleumer, Notizbl. Bot. Gart. Berlin-Dahlem 15: 247. 1940.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 4-5 Oct 1996, *J.L. Clark* 2987 (MO, QCNE).

Tree. 300-700 m. Amazonia, Chocó.

Calatola costaricensis Standl., J. Wash. Acad. Sci. 16(15): 416-418. 1926.

Representative Specimen: Ecuador: Pedernales Cantón, Reserva Ecologica Mache-Chindul, Cerro Pata de Pájaro, Cabaceras de Río Vite, estero Nuquepe, 300-700 m, 7 Apr 1997, *J.L. Clark, T. Nuñez & C. Robles* 4313 (MO, QCNE).

Tree. 300-700 m. Amazonia, Chocó, Mesoamerica..

Citronella incarum (J.F. Macbr.) R.A. Howard, J. Arnold Arbor. 21: 472. 1940.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 8 May 1996, *J.L. Clark* 2565 (MO, QCNE).

Tree. 400-600 m. Amazonia, Chocó.

Citronella melliodora (Sleumer) R.A. Howard, Contr. Gray Herb. 142: 77. 1942.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 3 Apr 1996, *J.L. Clark, K. Berg & J. Leffingwell* 2385 (MO, QCNE).

Common subcanopy tree. 400-600 m. Amazonia.

Dendrobangia boliviiana Rusby, Mem. Torrey Bot. Club 6(1): 19-20. 1896.

Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 28 Jan 1991, *A. Gentry & C. Josse* 72762 (MO).

Tree. 280 m. Amazonia, Chocó, Mesoamerica.

LAMIACEAE**Hyptis atrorubens** Poit., Ann. Mus. Natl. Hist.

Nat. 7: 466-467, t. 27, f. 3. 1806.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 14 Sep 1994, J.R. Abbott 15099 (BEREA, QCNE).

Prostrate herb. 400-600 m. Amazonia, Chocó, Mesoamerica.

Salvia sp.

Representative Specimen: Ecuador: Manabí: Cordillera de Jama (coastal range), Cerro Nueve, 15 km E of Jama, N of Río Jama, 600 m, 17 Dec 1998, D. Neill & QCNE *botany interns* (MO, QCNE).

Terrestrial herb. 400-600 m.

LAURACEAE

Aniba sp.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 19 Feb 1996, J.L. Clark 2102 (MO, QCNE).

Subcanopy tree. 400-600 m.. Common name: "Jigua."

Beilschmiedia alloiophylla (Rusby) Kosterm., Recueil Trav. Bot. Neerl. 35: 849. 1938.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 27 Sep 1996, J.L. Clark 2943 (MO, QCNE).

Common subcanopy tree. 100-850 m. Amazonia, Chocó, Mesoamerica.

Caryodaphnopsis theobromifolia (A.H. Gentry)

van der Werff & H.G. Richt., Syst. Bot. 10(2): 167. 1985. *Persea theobromifolia*

A.H. Gentry. Type: Ecuador: Los Ríos: Quevedo-Sto. Domingo, Río Palenque Science Center, tropical wet forest, 150-220 m, Mar 1973, C. H. Dodson 5243 (HT: SEL; IT: MO, US, RPSC).

Representative Specimen: Ecuador: Manabí: Mache-Chindul, comunidad Ambache, 250 m, 4 Apr 1997, J.L. Clark, R. Dunn, T. Nuñez & C. Robles 4148 (MO, QCNE).

Common canopy tree at low elevations, rare tree at higher elevations. 100-850 m. Common name: "Caoba." Endemic.

Chlorocardium aff. venenosum (Kosterm. & Pinkley) Rohwer, H.G. Richt. & van der Werff, Ann. Missouri Bot. Gard. 78(2): 390-392. 1991. (Fig. 4C).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 5 May 1996, J.L. Clark, S. Bollendorff & P. Smith 2540 (MO, QCNE).

Common canopy tree. 400-600 m. Amazonia, Chocó [The tree in coastal Ecuador and the Chocó may not be conspecific with Amazonian *C. venenosum*, but more comparative fertile material is needed].

Cinnamomum triplinerve (Ruiz & Pav.) Kosterm., Reinwardtia 6: 24. 1961.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 20 May 1995, J.L. Clark & C. Watt 936 (MO, QCNE).

Common understory shrub. 400-600 m. Amazonia, Chocó, Mesoamerica.

Endlicheria browniana Mez, Jahrb. Konigl. Bot. Gart. Berlin 5: 115. 1889.

Representative Specimen: Ecuador: Esmeraldas: Muisne, Sitio San Salvador, orillas del Río Sucio, 100-150 m, Mar 1995, W. Palacios 13750 (MO, QCNE).

Understory tree. 100-150 m. Chocó, Mesoamerica.

Endlicheria ruforamula Chanderbali, Fl. Neotrop. 91: 102-105, f. 36,37. 2004.

Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 100-300 m, 7 Jul 1996, J.L. Clark, N. Binder & W. Naranjo 2784 (MO, QCNE).

Subcanopy tree. 100-150 m. Amazonia, Chocó.

Nectandra bartlettiana Lasser, Bol. Tecn. Minist. Agric. 3: 14. 1942.

Representative Specimen: Ecuador: Manabí: 15 km al norte de Pedernales 20 m, 28 Aug 1998, D. Neill & QCNE *botany interns* 11405 (QCNE).

Understory tree. 0-50 m.

Nectandra hihua (Ruiz & Pav.) Rohwer, Fl.

Neotrop. 60: 196. 1993. *Laurus hihua* Ruiz & Pav. Type: Ecuador. Guayas: "in

Huayaquilensisbus nemoribus”, Ruiz & Pavón s.n. (HT: MA; IT: B, G, fragm. F).

Representative Specimen: Ecuador: Manabí: Recinto Hojas Blancas, Carretera Pedernales-Carmen Mandarino, Entrada el Mono, 150 m, 12 Apr 1997, J.L. Clark, T. Nuñez & C. Robles 4381 (MO, QCNE). Understory tree. 100-300 m. Amazonia, Chocó, Mesoamerica.

Nectandra lineata (Kunth) Rohwer, Fl. Neotrop. 60: 209. 1993.

Representative Specimen: Ecuador: Manabí: Jipijapa, 650 m, 10 Dec 1999, D. Neill & QCNE botany interns 12251 (MO, QCNE). Understory tree. 650 m. Amazonia, Chocó, Mesoamerica.

Nectandra membranacea (Sw.) Griseb., Fl. Brit. W. I. 282. 1860.

Representative Specimen: Ecuador: Esmeraldas: Quigüe 250 M, 18 May 2000, D. Neill & QCNE botany interns 12707 (MO, QCNE). Subcanopy tree. 250 m. Amazonia, Chocó, Mesoamerica.

Nectandra purpurea (Ruiz & Pav.) Mez, Jahrb. Konigr. Bot. Gart. Berlin 5: 443. 1889

Representative Specimen: Ecuador: Esmeraldas: Quingüe, 250 m, 18 May 2000, D. Neill & QCNE botany interns 12711 (MO, QCNE). Tree. 200-400 m. Amazonia, Chocó, Mesoamerica.

Ocotea cernua (Nees) Mez, Mitt. Bot. Vereins Kreis Freiburg 47/48: 422. 1888.

Representative Specimen: Ecuador: Manabí: Jama 400 m, 18 Dec 1998, D. Neill & QCNE botany interns 11669 (MO, QCNE). Tree. 400 m. Amazonia, Chocó, Mesoamerica.

Ocotea insularis (Meisn.) Mez, Jahrb. Konigr. Bot. Gart. Berlin 5: 271. 1889.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 1 Apr 1995, J.L. Clark & Y. Troya 555 (MO, QCNE). Tree. 400-600 m. Amazonia, Chocó, Mesoamerica.

Ocotea oblonga (Meisn.) Mez, Jahrb. Konigr. Bot. Gart. Berlin 5: 367. 1889.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 650 m, 12 Mar 1997, J.L. Clark, A. Cousins, T. Nuñez & J. Richter 4005 (MO, QCNE). Tree. 400-650 m. Amazonia, Chocó, Mesoamerica.

Ocotea sodiroana Mez, Bull. Herb. Boissier 5(3):

240. 1905. Type: Ecuador. Cotopaxi: “in silvis ad Angamarca, Riofrio”, Sodiro 147/7b (B).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 18 Feb 1996, J.L. Clark 2138 (MO, QCNE).

Common canopy tree. 400-750 m. Common name: “Catangal,” “Catangare.” Chocó.

Ocotea stenoneura Mez & Pittier, Bull. Herb. Boissier, ser. 2, 3: 233. 1903.

Representative Specimen: Ecuador: Esmeraldas: road to the Bilsa Biological Station, between La “Y” de La Laguna and Viche, 500 m, 11 Mar 1998, J.L. Clark, C. Pallis & J. West 4604 (MO, QCNE).

Canopy tree. 500 m. Common name: “Jigua Pequeqa.” Chocó, Mesoamerica.

Persea americana Mill., Gard. Dict. (ed. 8) 3: 233. 1768.

Representative Specimen: Ecuador: Manabí: 50 km al norte de Pedernales 50 m, 19 Dec 1998, D. Neill & QCNE botany interns 11708 (MO, QCNE).

Common cultivated tree. 0-200 m.. Common name: “Aguacate.”

Persea povedae W.C. Burger, Fieldiana, Bot., n.s. 23: 105, f. 12. 1990.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 18 Nov 1996, J.L. Clark, F. Gurumendi & H. Weinert 3455 (COL, MO, QCNE).

Common canopy tree. 300-700 m. Mesoamerica.

Pleurothyrium cinereum van der Werff, Ann.

Missouri Bot. Gard. 80(1): 61, f. 13, 15. 1993. Type: Ecuador: Esmeraldas:

- Panadero, 5 km from the river, *C. Játiva & C. Epling* 2039 (HT: MO; IT: NY, US). Representative Specimen: Ecuador: Bilsa Biological Station, Mache Mountains, 35 km W of Quinindé, 5 km W of Santa Isabel, 400-600 m, 24 Nov 1995, *J.L. Clark, K. Cunningham & C. Roberts* 1659 (COL, MO, QCNE). Canopy tree. 25-600 m. Amazonia. Mesoamerica.
- Pleurothyrium giganthum** van der Werff, Ann. Missouri Bot. Gard. 80(1): 72, f. 18, 21. 1993. Type: Ecuador: Los Ríos: Río Palenque Science Center, km 56 Quevedo-Sto. Domingo, *Dodson* 18217 (HT: QCNE). Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 20 Mar 1998, *J.L. Clark & C. Pallis* 4886 (MO, QCNE). Common canopy tree. 400-600 m. Common name: "Jigua." Endemic.
- Rhodostemonodaphne kunthiana** (Nees) Rohwer, Mitt. Inst. Allg. Bot. Hamburg 20: 84. 1986. *Acrodielidium kunthianum* Nees. Representative Specimen: Ecuador: Manabí: Cordillera de Jama, 600 m, 16 Dec 1998, *D. Neill & QCNE botany interns* 11565 (MO, QCNE). Canopy tree. 600 m. Amazonia, Chocó, Mesoamerica.
- LECYTHIDACEAE**
- Eschweilera caudiculata** R. Knuth, Pflanzenr. IV. 219a(Heft 105): 95. 1939. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 23 Oct 1996, *J.L. Clark* 3095 (MO, NY, QCNE). Common canopy tree. 300-850 m. Amazonia, Chocó, Mesoamerica.
- Eschweilera integrifolia** (Ruiz & Pav. ex Miers) R. Knuth, Pflanzenr. IV. 219a(Heft 105): 97. 1939. Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 200 m, 27 Oct 1996, *J.L. Clark & C. Brame* 3111 (MO, NY, QCNE, US). Subcanopy tree. 100-500 m. Chocó, Mesoamerica.
- Eschweilera rimbachii** Standl., Trop. Woods 42: 31. 1935. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 8 Feb 1996, *J.L. Clark, N. Kerber & J. Plihal* 1945 (MO, NY, QCNE). Common shrub, 2-5 m tall. 250-700 m. Common name: "Maté." Amazonia, Chocó.
- Grias longirachis** S.A. Mori & J.L. Clark, Brittonia 52(2): 145-148, f. 1. 2000. Type: Ecuador: Esmeraldas: Reserva Ecológica Mache-Chindul, Bilsa Biological Station, 35 km W of Quinindé, 5 km W of Santa Isabel, 00°12'1"N, 79°14'4"W, 400-600 m, 10 Apr 1995, *J.L. Clark & Y. Troya* 684 (HT: QCNE; IT: GB, MO, NY, US). (Fig. 2D-E, p.129; 18A-H, p.145).
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 23 Nov 1995, *J.L. Clark & K. Cunningham & C. Roberts* 1641 (MO, NY, QCNE). Common tree, 10-20 m tall. 400-600 m. Common name: "Pitón." Endemic.
- Grias peruviana** Miers, Trans. Linn. Soc. London 30(2): 301. 1874. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 5 Apr 1995, *J.L. Clark & Y. Troya* 567 (AAU, MEXU, MO, NY, QCNE). Common tree, 3-15 m tall. 400-600 m. Common name: "Jagua de Choque." Amazonia.
- Gustavia angustifolia** Benth., Bot. Voy. Sulphur 99. 1845. Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor, 100 m, 15 Dec 1998, *D. Neill & QCNE botany interns* 11510 (MO, QCNE). Tree, 4-8 m tall. 5-100 m. Chocó.
- Gustavia dodsonii** S.A. Mori, Selbyana 2(1): 37-38, pl. 11. 1977. Type: Ecuador: Los Ríos: Río Palenque Science Center, km 56 between Quevedo and Santo Domingo de los Colorados, tropical wet forest, alt, ca

200 m., A.H.A. Gentry & C. Dodson 12048
(HT: MO; IT: NY, QCA).

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 400-
600 m, 26 Mar 1995, J.L. Clark & Y. Troya
513 (AAU, GB, MEXU, MO, NY, QCNE).
Common canopy tree. 60-650 m. Common
name: "Membrillo." Endemic.

Gustavia serrata S.A. Mori, Fl. Neotrop. 21(1):
180, f. 53. 1979. Type: Ecuador: Manabí:
road from Chone to Pichincha, km 82, 450
m, 29 Dec 1961, flowers, Dodson & Thien
1766 (HT: WIS).

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 500
m, 22 Oct 1996, J.L. Clark 3066 (AAU, GB,
MEXU, MO, NY, QCNE).
Tree, 5-20 m tall. 100-700 m. Endemic.

Gustavia speciosa (Kunth) DC., Prodr. 3: 289.
1828. Pirigara speciosa Kunth.

Representative Specimen: Ecuador:
Esmeraldas: Recinto Palma Junta, 10 km E
of Muisne near road to Tonchigüe, ridge
above Estero La Pedorrera, 100 m, 19 May
2000, D. Neill & QCNE botany interns
12739 (MO, QCNE).
Tree, 4-10 m tall. 100-550 m. Chocó.

Infrasp.: *Gustavia speciosa* subsp. *speciosa*.

Lecythis tuyrana Pittier, Contr. U.S. Natl. Herb.
26(1): 9, t. 7. 1927.

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 400-
600 m, 4 Apr 1996, J.L. Clark, K. Berg & J.
Leffingwell 2405 (MO, QCNE).
Canopy tree. 400-600 m. Common name:
"Sabroso." Chocó, Mesoamerica.

LEMNACEAE

Spirodela polyrhiza (L.) Schleid., Linnaea 13:
392. 1839.

Representative Specimen: Ecuador:
Esmeraldas: Herrera . Lake near "La Y de
la Laguna." 400 m, 15 Feb 1998 J.L. Clark
5513 (MO, QCNE).
Emergent aquatic herb. 400 m. Mesoamerica.

LENTIBULARIACEAE

Utricularia jamesoniana Oliv., J. Proc. Linn. Soc.,
Bot. 4: 169-170, t. 1, f. 1. 1860. Type:
Ecuador: ad fluvium Cosanga, prov.
Ecuador, Jameson s.n.

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 500
m, 22 Oct 1996, J.L. Clark 3070 (MO,
QCNE).

Saprophyte. 500-650 m. Amazonia, Chocó,
Mesoamerica.

LOASACEAE

Klaprothia fasciculata (C. Presl) Poston, Syst.
Bot. 15: 677. 1990.

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 600
m, 26 Sep 1994, J.R. Abbott 15294
(BEREA, QCNE).

Small herb to subshrub in disturbed areas. 600
m. Amazonia, Chocó, Mesoamerica.

LOGANIACEAE

Spigelia multispica Steud., Flora 26(45): 764.
1843.

Representative Specimen: Ecuador: Manabí:
Cerro Pata de Pájaro, 700 m, 26 Aug 1998,
D. Neill & QCNE botany interns 11337
(MO, QCNE).

Terrestrial herb. 60-700 m. Common name:
"Hierba de Lombrise." Amazonia, Chocó,
Mesoamerica.

Strychnos mattogrossensis S. Moore, Trans. Linn.
Soc. London, Bot. 4: 392. 1895.

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 400-
600 m, 13 May 1995, J.L. Clark & C. Watt
852 (MO, QCNE).

Woody canopy liana. 400-600 m. Amazonia,
Chocó.

Strychnos pachycarpa Ducke, Bol. Tecn. Inst.
Agron. N. 3: 15. 1945.

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 500
m, 4 Jan 1997, J.L. Clark, E. Austen, S.
Bennett & D. Kapan 3710 (MO, QCNE).

- Woody canopy liana. 500 m. Amazonia.
- Strychnos ramentifera** Ducke, Bull. Mus. Natl. Hist. Nat., ser. 2, 4: 745. 1932.
Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 30 Jan 1991, A. Gentry, R. Foster & C. Josse 72971 (MO).
Woody canopy liana. 280 m. Amazonia, Chocó, Mesoamerica.
- Strychnos schultesiana** Krukoff, Mem. New York Bot. Gard. 12(1): 78. 1965.
Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro 300-700 m, 7 April 1997, J.L. Clark, T. Nuñez & C. Robles 4273 (MO, QCNE).
Woody canopy liana. 300-700 m. Chocó.
- Strychnos tarapotensis** Sprague & Sandwith, Bull. Misc. Inform. Kew 1927(3): 131. 1927.
Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 30 Jan 1991, A. Gentry & C. Josse 72922 (MO).
Woody canopy liana. 280 m. Common name: "Cacho de venado." Amazonia, Chocó.
- Strychnos toxifera** R.H. Schomb. ex Benth., J. Bot. (Hooker) 3: 240-241. 1841.
Representative Specimen: Ecuador: Esmeraldas: Reserva Ecológica Mache-Chindul, Comunidad Caña Braval, Cabeceras de Río Viche, estero Sabaleta., 250 m, 11 Mar 1998, J.L. Clark 4635 (MO, QCNE).
Woody canopy liana. 250 m. Amazonia, Chocó, Mesoamerica.
- ### LORANTHACEAE
- Cladocolea archeri** (A.C. Sm.) Kuijt, J. Arnold Arbor. 56(3): 277. 1975.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600, 27 Sep 1996, J.L. Clark 2931 (MO, QCNE).
Parasitic scandent subshrub. 600 m. Amazonia, Chocó.
- Oryctanthus alveolatus** (Kunth) Kuijt, Bot. Jahrb. Syst. 95(4): 504-511. 1976. *Loranthus* *alveolatus* Kunth Nov. Gen. Sp. (quarto ed.) 3: 444. 1818 [1820]. Type. Colombia: Crescent prope Carthago Popayanensium, *Humboldt & Bonpland s.n.* (HT: P).
Representative Specimen: Ecuador: Esmeraldas: Quininde, Fundacion Paraiso de Papagayos, Km 2 via Esmeraldas, 7 Jul 1996, J.L. Clark 2813 (MO, QCNE).
Parasitic subshrub. 200 m. Amazonia, Chocó, Mesoamerica.
- Oryctanthus florulentus** (Rich.) Tiegh., Bull. Mus. Hist. Nat. (Paris) 2: 339. 1896.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 5 Dec 1994, J.L. Clark & K. Chamberlain 357 (MO, QCNE).
Parasitic subshrub. 400-600 m. Amazonia, Chocó, Mesoamerica.
- Oryctanthus occidentalis** (L.) Eichler, Fl. Bras. 5(2): 89. 1868.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 7 Oct 1994, J.L. Clark, M.S. Bass & N. Pitman 156 (MO, QCNE).
Parasitic subshrub. 400-600 m. Amazonia, Chocó, Mesoamerica.
- Oryctanthus spicatus** (Jacq.) Eichler, Fl. Bras. 5(2): 89. 1868.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 5 Dec 1994, J.L. Clark & K. Chamberlain 356 (MO, QCNE).
Parasitic subshrub. 400-600 m. Amazonia, Chocó, Mesoamerica.
- Psittacanthus cucullaris** (Lam.) Blume, Syst. Veg. 7(2): 1730. 1830.
Representative Specimen: Ecuador: Manabí: Pedernales, 300 m, 14 Mar 1997, H. Vargas, X. Aguirre, R. Miranda & C. Robles 1366 (MO, QCNE).
Parasitic subshrub. Amazonia, Chocó, Mesoamerica.
- ### LYTHRACEAE
- Cuphea bombonasae** Sprague, Ann. Bot. (Rome) 17: 161, t. 11: 17-21. 1903.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 24 Sep 1994, *J.L. Clark & N. Pitman 108* (MO, QCNE).
Shrub. 400-600 m. Amazonia, Chocó.

Cuphea racemosa (L. f.) Spreng., Syst. Veg. 2: 455. 1825.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 13 Sep 1994, *J.R. Abbott 15073* (BEREA, QCNE).
Herb or subshrub. 600 m. Amazonia, Chocó, Mesoamerica.

Cuphea strigulosa Kunth, Nov. Gen. Sp. 6: 204. 1823 [1824].

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 13 Sep 1994, *J.R. Abbott 15067* (BEREA, QCNE).
Herb or subshrub. 600 m. Common name: "Yerba de toro." Amazonia.

Cuphea tetrapetala Koehne, Fl. Bras. 13(2): 223. 1877.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 18 Sep 1994, *N. Pitman, M.S. Bass & J.L. Clark 653* (MO, QCNE).
Low subshrub common along rivers. 400-600 m. Amazonia, Chocó, Mesoamerica.

Lagerstroemia indica L., Syst. Nat. (ed. 10) 2: 1076. 1759.

Representative Specimen: Ecuador: Manabí: Chone, Recinto, Hojas Blanca, Carretera Pedernales-Carmen Mandarino, Entrada el Mono, Río Mongolla, 12 Apr 1997, *J.L. Clark, T. Nuñez & C. Robles 4406* (MO, QCNE).
Introduced, cultivated ornamental tree. 150 m..

MALPIGHIACEAE

Banisteriopsis martiniana (A. Juss.) Cuatrec., Webbia 13: 498. 1958. *Banisteria martiniana* A. Juss, Ann. Sci. Nat., Bot., ser. 2, 13: 284. 1840.

Representative Specimen: Ecuador: Esmeraldas: Muisne, San Salvador, orillas del Río Sucio, Mar 1995, *W. Palacios 13749*

(MICH, MO, QCNE).
Woody liana from subcanopy. 100-150 m. Chocó.
Infrasp.: *Banisteriopsis martiniana* var. *subenervia* Cuatrec.

Bunchosia argentea (Jacq.) DC., Prodr. 1: 582. 1824. *Malpighia argentea* Jacq. Fragm. Bot. 57, t. 83. 1809.

Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor, 100 m, 15 Dec 1998, *D. Neill & QCNE botany interns 11516* (MO, QCNE).
Subcanopy tree. 100-400 m. Amazonia, Chocó, Mesoamerica.

Bunchosia hookeriana A. Juss., Ann. Sci. Nat., Bot. 13: 324. 1840.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 6 Apr 1995, *J.L. Clark & Y. Troya 637* (MO, QCNE).

Tree, ca. 2 m tall. 400-600 m. Amazonia.

Heteropterys aequatorialis W.R. Anderson, Contr. Univ. Michigan Herb. 23: 72, f. 4. 2001. Type: Ecuador: Guayas: Capeira, 22 km N of Guayaquil, 2 ° S, 79 ° 58'W, disturbed dry forest, 20-150 m, 15 Jul 1986, *A. Gentry & C. Dodson 54847* (HT: MICH; IT: MO).

Representative Specimen: Ecuador: Manabí: Jama, Cerro del Matal 100 m, 17 Dec 1998, *D. Neill & QCNE botany interns 11634* (MO, QCNE).

Woody vine. 100 m.

Heteropterys berteroana A. Juss. Ann. Sci. Nat., Bot., ser. 2, 13: 278. 1840.

Synonym: *Heteropterys occidentalis* Cuatrec. Specimen: Ecuador: Manabí: Jama, Reserva de Lalo Loor, 9 Apr 1997, *J.L. Clark, T. Nuñez & C. Robles 4354* (MICH, MO, QCNE)..

Woody liana. 0-350 m.

Hiraea cephalotes Triana & Planch., Ann. Sci. Nat., Bot., ser. 4, 18: 331. 1862. Type: Nouvelle-Grenade: Prov. de Pasto, 1000 m, 1851-1857, *Triana s.n.* (HT: P).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–

- 600 m, 14 Oct 1994, *J.L. Clark 190* (MICH, MO, QCNE).
Woody liana. 400-600 m. Amazonia, Chocó.
- Mascagnia hippocrateoides** (Triana & Planch.) Nied., Arbeiten Bot. Inst. Konigl. Lyceums Hosianum Braunsberg 3: 24. 1908. *Hiraea hippocrateoides* Triana & Planch., Ann. Sci. Nat., Bot., ser. 4, 18: 328. 1862. Type: Colombia: Anapoima, entre Anapoima et les bords du Magdalena, 700 m, Triana & Planchon s.n. (COL, US)
- Representative Specimen: Ecuador: Esmeraldas, Quinindé, Fundacion Paraiso de Papagayos, 2 via Esmeraldas, 200 m, 10 Oct 1996, *J.L. Clark 3021* (MICH, MO, QCNE, US).
Woody liana. 0-500 m. Chocó, Mesoamerica.
- Tetrapterys glabrifolia** (Griseb.) Small, N. Amer. Fl. 25(2): 126. 1910. *Tetrapterys calophylla* var. *glabrifolia* Griseb. Fl. Bras. 12(1): 77-78. 1858.
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, *J.L. Clark, E. Austen, S. Bennett & D. Kapan 3789* (MICH, MO, QCNE).
Terrestrial subshrub or woody liana. 400-600 m. Amazonia, Chocó, Mesoamerica.
- MALVACEAE**
- Hibiscus acetosella** Welw. ex Hiern, Cat. Afr. Pl. 1: 73. 1896.
Representative Specimen: Esmeraldas: Muisne, island of Muisne, 2 Dec 1995, *J.L. Clark & K. Cunningham 1718* (MO, QCNE, TEX). Common cultivated herb. 0-50 m. Inbroduced.
- Hibiscus schizopetalus** (Dyer) Hook. f., Bot. Mag. 106: pl. 6524. 1880.
Representative Specimen: Ecuador: Manabí: Recinto Hojas Blancas, Carretera Pedernales-Carmen Mandarino, Entrada el Mono, 150 m, 12 Apr 1997, *J.L. Clark, T. Nuñez & C. Robles 4405* (MO, QCNE, TEX).
Scandent subshrub. 150 m. Mesoamerica.
- Malvastrum tomentosum** (L.) S.R. Hill, Brittonia 32: 466. 1980. *Malva tomentosa* L., Sp. Pl. 2: 687. 1753.
- Representative Specimen: Ecuador: Manabí: Cerro del Matal, 3 km NW of Jama, 100 m, 17 Dec 1998, *D. Neill & QCNE botany interns 11609* (MO, QCNE, TEX).
Shrub. 100 m. Amazonia.
- Malvaviscus concinnus** Kunth, Nov. Gen. Sp. 5: 286. 1821 [1822]. Type: Ecuador: Loja, 1802, *Humboldt & Bonpland s.n.* (HT: B (photo F, GH); IT: P).
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 5 Apr 1995, *J.L. Clark & Y. Troya 614* (MO, QCNE, TEX).
Woody liana or subshrub. 400-600 m. Amazonia, Chocó, Mesoamerica.
- Pavonia castaneifolia** A. St.-Hil. & Naudin, Ann. Sci. Nat., Bot., ser. 2, 18: 44. 1842.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 4-5 Oct 1996, *J.L. Clark 2995* (MO, QCNE, TEX).
Terrestrial herb or subshrub. 250-650 m. Amazonia, Chocó, Mesoamerica.
- Pavonia pseudotyphalaea** Planch. & Linden ex Triana & Planch., Ann. Sci. Nat., Bot., ser. 4, 17: 160. 1862. Type: Colombia: Mariqueta, forests of las Juntas, 1836, *Linden 936* (LT: F; ILT: BR, CTES (fragm), G, OXF, P).
Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 700 m, 8 Mar 1997, *H. Vargas, X. Aguirre, R. Miranda & C. Robles 1256* (MO, QCNE, TEX).
Terrestrial herb. 700 m. Amazonia, Chocó.
- Sida setosa** Mart. ex Colla, Herb. Pedem. 1: 416. 1833.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 9 Dec 1994, *N. Pitman & M.S. Bass 1061* (MO, QCNE, TEX).
Common terrestrial herb in disturbed areas. 400-600 m. Common name: "Escoba verde." Amazonia, Chocó, Mesoamerica.
- Urena lobata** L., Sp. Pl. 2: 692. 1753.
Common terrestrial herb in disturbed areas. 0-2000 m. Common name: "Amonan." Amazonia, Chocó, Mesoamerica.

Wissadula excelsior (Cav.) C. Presl, Reliq. Haenk. 2(2): 118, t. 69. 1835. *Sida excelsior* Cav., Diss. 1: 27, pl. 5, f. 3. 1785. Type: Peru, *J. de Jussieu s.n.* (HT: MA; IT: P-JU).

Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 200 m, 6 Jul 1996, *J.L. Clark* 2744 (MO, QCNE).

Common shrub in disturbed areas. 400-600 m. Amazonia, Chocó, Mesoamerica.

MARANTACEAE

Calathea crotalifera S. Watson, Proc. Amer. Acad. Arts 24: 86. 1889.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 20 May 1995, *J.L. Clark & C. Watt* 948 (MO, QCNE).

Common terrestrial herb. 200-600 m. Amazonia, Chocó, Mesoamerica.

Calathea guzmanioides L.B. Sm. & Idrobo, Caldasia 5(21): 47-48, f. 1948. Type: Colombia: Valle: Sabaletas, Km 29 carretera Buenaventura-Cali, 25 m, 4 May 1944, *E.P. Killip & J. Cuatrecasas* 38748 (HT: US; IT: COL).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 16 Jan 1997, *J.L. Clark, L. Chatrou, C. Repetir & P. Maas* 3806 (MO, QCNE).

Common terrestrial herb. 280-600 m. Chocó, Mesoamerica.

Calathea lutea Schult., Mant. 1: 8. 1822.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 7 Dec 1994, *J.L. Clark* 378 (MO, QCNE, UBC).

Common terrestrial herb. 60-600 m. Common name: "Bijao," "Hoja blanca." Amazonia, Chocó, Mesoamerica.

Calathea marantifolia Standl., J. Wash. Acad. Sci. 17(10): 250. 1927.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 24 Nov 1994, *J.L. Clark & S. Mora* 342 (MO, QCNE).

Terrestrial herb. 400-600 m. Amazonia, Chocó, Mesoamerica.

Calathea metallica Planch. & Linden, Cat. General 10: 2. 1855.

Representative Specimen: Ecuador: Manabí: Jama 400 m, 18 Dec 1998, *D. Neill & QCNE botany interns* 11656 (MO, QCNE). Terrestrial herb. 60-400 m. Chocó.

Calathea micans (L. Mathieu) Körn., Gartenflora 7: 87. 1858.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 9 Jan 1997, *J.L. Clark, E. Austen, S. Bennett & D. Kapan* 3777 (MO, QCNE). Terrestrial herb. 500 m. Amazonia, Chocó, Mesoamerica.

Calathea pachystachya (Poepp. & Endl.) Körn., Bull. Soc. Imp. Naturalistes Moscou 35(1): 142. 1862. Nov. Gen. Sp. Pl. 2: 19 t. 127. 1838. Type: Ecuador, *Poepig s.n.* (NT: LE).

Representative Specimen: Ecuador: Esmeraldas: Sta. Isabel 500 m, 17 Jan 1997, *J.L. Clark* 3818 (MO, QCNE). Terrestrial herb. 500 m. Amazonia.

Calathea roseobracteata H. Kenn., Nordic J. Bot. 6: 459. 1986. Type: Ecuador: Pichinchas: 600 m, *C.H. Dodson & P.M. Dodson* 6803 (HT: MO; IT: F, SEL).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 24 Sep 1996, *J.L. Clark* 2891 (MO, QCNE).

Terrestrial herb. 400-700 m. Endemic.

Calathea selbyana H. Kenn., Fl. Ecuador 32: 63. 1988. Type: Ecuador: Carchi: Environs of Chical, 12 km below Maldonado on Río San Juan, 1200 m, *Madison, Plowman, Kennedy & Besse* 4545 (HT: SEL; IT: F).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 12 May 1995, *J.L. Clark & C. Watt* 849 (MO, QCNE).

Terrestrial herb. 400-600 m. Chocó.

Calathea variegata Linden ex Körn., Mitt. Russ. Grbr. St. Petersburg 2: 93. 1860.

Representative Specimen: Ecuador: Manabí:

- Cordillera de Jama, 300 m, 16 Dec 1998, *D. Neill & QCNE botany interns 11559* (MO, QCNE).
Terrestrial herb. 300-400 m. Amazonia.
- Ischnosiphon leucophaeus** (Poepp. & Endl.) Körn., Bull. Soc. Imp. Naturalistes Moscou 35(1): 91-93. 1862. *Calathea leucophaea* Poepp. & Endl. Nov. Gen. Sp. Pl. 2: 21-22, t. 129. 1838.
Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor, 100 m, 15 Dec 1998, *D. Neill & QCNE botany interns 11518* (GB, MO, QCNE).
Terrestrial herb. 100 m. Amazonia, Chocó, Mesoamerica.
Infrasp.: *Ischnosiphon leucophaeus* subsp. *leucophaeus*.
- Pleiostachya pruinosa** (Regel) K. Schum., Pflanzenr. IV. 48(Heft 11): 165. 1902. *Maranta pruinosa* Regel, Gartenflora 27: 104. 1878
Representative Specimen: Ecuador: Esmeraldas: Quinindé, Fundacion Paraiso de Papagayos, Km 2 via Esmeraldas, 250 m, 20 Oct 1996, *J.L. Clark 3062* (MO, QCNE).
Terrestrial herb. 250 m. Chocó, Mesoamerica.
- MARCGRAVIACEAE**
- Marcgravia atropunctata** de Roon, Acta Bot. Neerl. 18(1): 197-200, pl. 2. 1969.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 8 Apr 1995, *J.L. Clark & Y. Troya 664* (MO, QCNE, U).
Common woody liana. 400-850 m. Amazonia, Chocó, Mesoamerica.
- Marcgravia brownei** (Triana & Planch.) Krug & Urb., Symb. Antill. 1: 367. 1899.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 5 May 1995, *J.L. Clark & C. Watt 747* (MO, QCNE, U).
Woody liana. 280-600 m. Amazonia, Chocó, Mesoamerica.
- Marcgravia caudata** Triana & Planch., Ann. Sci. Nat., Bot., ser. 4, 17: 362-363. 1862. Type: Nouvelle-Grenade: Province de Barbacoas, 800 m, *Triana s.n.*
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 16 Sep 1994, *J.L. Clark & B. Adnepos 59* (MO, QCNE, U).
Woody liana growing in canopy. 400-600 m. Amazonia, Chocó, Mesoamerica.
- Marcgravia nervosa** Triana & Planch., Ann. Sci. Nat., Bot., ser. 4, 17: 363-364. 1862. Type: Nouvelle-Grenade: Province de Barbacoas, 1000 m, *Triana & Planchon s.n.*
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 11 Oct 1994, *J.L. Clark 182* (MO, QCNE, U).
Woody liana. 400-600 m. Amazonia, Chocó, Mesoamerica.
- Marcgravia roonii** S. Dressler, Novon 6(3): 258-261, f. 2. 1996. Type: Colombia: El Valle: Río Digua Valley, Río Blanco, 600 m, 2-5 Apr 1939, *E.P. Killip 34790* (HT: BM; IT: US).
Representative Specimen: Ecuador: Esmeraldas: Mache-Chindul, comunidad Caña Braval, 250 m, 11 Mar 1998, *J.L. Clark 4615* (MO, QCNE, U).
Common woody liana growing in subcanopy. 250-700 m. Amazonia, Chocó, Mesoamerica.
- Marcgraviastrum sodiroi** (Gilg) Bedell ex S. Dressler, Monogr. Syst. Bot. Missouri Bot. Gard. 75: 955. 1999. *Norantea sodiroi* Gilg, Bot. Jahrb. Syst. 34(Beibl. 78): 14. 1904. Type: Ecuador: Pichincha: along the river Pilatón and near Consacoto, *Sodiro 149* (LT: P; ILT: G).
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 22 Oct 1996, *J.L. Clark 3065* (MO, QCNE, U).
Common woody liana growing in subcanopy. 400-600 m. Chocó.
- Sarcopera anomala** (Kunth) Bedell, Bot. Jahrb. Syst. 119(3): 329. 1997

- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 15 Sep 1994, *J.L. Clark & B. Adnepos 33* (MO, QCNE, U). Common woody vine. 400-600 m. Amazonia, Chocó, Mesoamerica.
- Common woody liana growing in subcanopy. 400-600 m. Amazonia, Chocó.
- Sarcopera cordachida** (Ruiz & Pav. ex G. Don) Bedell ex S. Dressler, Monogr. Syst. Bot. Missouri Bot. Gard. 75: 955. 1999. *Norantea cordachida* Ruiz & Pav. ex G. Don. Type: Ecuador: Guayas, *Tafalla s.n.* (HT: W!; IT: BM, F, G, MA; photo: F, MICH, all of MA).
- Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 700 m, 26 Aug 1998, *D. Neill & QCNE botany interns 11364* (MO, QCNE). Epiphytic shrub. 700 m. Chocó.
- Schwartzia lozaniana** Giraldo-Cañas, Caldasia 23(2): 384-387, f. 1. 2001. Type: Colombia: Nariño: Junín-Tumaco road, 6-11 km W of Junín, roadside thickets 850-1030 m, 27 Feb 1979, *J.L. Luteyn & M. Lebron-Luteyn 6880* (HT: COL, IT: MO, NY).
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 650 m, 12 Mar 1997, *J.L. Clark, A. Cousins, T. Nuñez & J. Richter 3974* (COL, MO, QCNE). Rare woody liana growing in subcanopy. 650 m. Chocó.
- ### MELASTOMATACEAE
- Aciotis cauialata** (Ruiz & Pav.) Triana, Trans. Linn. Soc. London 28(1): 52. 1871 [1872]. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 1 Oct 1994, *L. Kueppers 71* (MO, QCNE). Common terrestrial roadside herb. 400-600 m. Amazonia, Chocó, Mesoamerica.
- Adelobotrys adscendens** (Sw.) Triana, J. Bot. 5: 210. 1867. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 27 Sep 1996, *J.L. Clark 2940* (MO, QCNE, US). Common terrestrial subshrub to 2 m tall. 400-600 m. Endemic.
- Arthrostemma ciliatum** Pav. ex D. Don, Mem. Wern. Nat. Hist. Soc. 4: 299. 1823. Representative Specimen: Ecuador: Esmeraldas: Muisne 60 m, Mar 1995, *W. Palacios 13725* (MO, QCNE). Scandent subshrub. 60 m. Amazonia, Chocó, Mesoamerica.
- Blakea jativae** Wurdack, Phytologia 43(4): 343-344. 1979. Type: Ecuador: Esmeraldas: Near Tobar Donoso, *C. Játiva & C.C. Epling 1128* (HT: US; IT: NY). Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 10 Apr 1995, *J.L. Clark & Y. Troya 675* (MO, QCNE, US). Woody hemiepiphyte. 400-600 m. Endemic.
- Blakea punctulata** (Triana) Wurdack, Phytologia 43(4): 354. 1979. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 13 Sep 1994, *J.L. Clark & B. Adnepos 16* (MO, QCNE, US). Common shrub or woody hemiepiphyte. 400-600 m. Amazonia, Chocó.
- Blakea subconnata** O. Berg ex Triana, Trans. Linn. Soc. London 28(1): 148. 1871. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 10 Apr 1995, *J.L. Clark & Y. Troya 674* (MO, QCNE, US). Common shrub or woody hemiepiphyte. 400-850 m. Amazonia, Chocó.
- Clidemia acostae** Wurdack, Phytologia 38(4): 299-300. 1978. Type: *M. Acosta-Solis 12722*. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 12 Feb 1996, *J.L. Clark & N. Kerber, J. Plihal 1954* (MO, QCNE, US). Common terrestrial subshrub to 2 m tall. 400-600 m. Endemic.
- Clidemia densiflora** (Standl.) Gleason, Phytologia 3(7): 346. 1950. Representative Specimen: Ecuador: Manabí:

- Cerro Pata de Pájaro 850 m, 11 Mar 1997, *H. Vargas, X. Aguirre, R. Miranda & C. Robles 1334* (AAU, MO, QCNE).
Shrub to 2 m tall. 850 m. Amazonia, Chocó, Mesoamerica.
- Clidemia dentata** Pav. ex D. Don, Mem. Wern. Nat. Hist. Soc. 4(2): 308-309. 1823. Type: Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 8 Dec 1994, *N. Pitman & M.S. Bass 1052* (MO, QCNE).
Shrub to 3 m tall. 400-600 m. Amazonia, Chocó, Mesoamerica.
- Clidemia discolor** (Triana) Cogn., Monogr. Phan. 7: 1025. 1891. *Sagraea discolor* Triana. Type: In Novo Granata, *Triana s.n.*
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 30 Mar 1995, *J.L. Clark & Y. Troya 540* (MO, QCNE, US).
Subshrub to 1 m tall. 400-600 m. Chocó, Mesoamerica.
- Clidemia epiphytica** (Triana) Cogn., Monogr. Phan. 7: 1025. 1891. *Sagraea epiphytica* Triana. Type: In Nova Granata prope Cieneguita, prov. Choco, *Triana s.n.*
Representative Specimen: Ecuador: Manabí: Mache-Chindul, comunidad Ambache, 250 m, 5 Apr 1997, *J.L. Clark, R. Dunn, T. Nuñez & C. Robles 4175* (MO, QCNE, US).
Common woody vine. 250-600 m. Amazonia, Chocó, Mesoamerica.
Infrasp.: *Clidemia epiphytica* var. *epiphytica*.
- Clidemia purpurea** Pav. ex D. Don, Mem. Wern. Nat. Hist. Soc. 4: 308. 1823. Type: Habitat in Peruvia, *Pavón s.n.* (HT: BM).
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 6 Jan 1997, *J.L. Clark, E. Austen, S. Bennett & D. Kapan 3749* (MO, QCNE, US).
Understory subshrub. 500 m. Chocó, Mesoamerica.
- Clidemia radicans** Cogn., Bot. Gaz. 20(7): 288–289. 1895.
Representative Specimen: Ecuador:
- Esmeraldas: Bilsa Biological Station, 400–600 m, 10 May 1995, *J.L. Clark & C. Watt 821* (MO, QCNE, US).
Common shrub along shady streams. 400-600 m. Mesoamerica.
- Clidemia septuplinervia** Cogn., Fl. Bras. 14(4): 506-507. 1888.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 24 Jan 1995, *J.L. Clark 410* (MO, QCNE, US).
Understory shrub to 2 m tall. 250-600 m. Amazonia, Chocó, Mesoamerica.
- Conostegia centronioides** Markgr., Notizbl. Bot. Gart. Berlin-Dahlem 14: 33. 1938. Type: Ecuador: Pichincha, *Schultze-Rhonhof 1898*.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 6 May 1995, *J.L. Clark & C. Watt 755* (MO, QCNE, US).
Common understory tree to 13 m tall. 250-700 m. Amazonia.
- Conostegia cuatrecasii** Gleason, Bull. Torrey Bot. Club 72(5): 473-474. 1945. Type: Colombia: Collected on the Río Cajambre, coast of El Valle, 5-80 m, *J. Cuatrecasas 17612*.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 10 Apr 1995, *J.L. Clark & Y. Troya 680* (MO, QCNE, US).
Understory tree to 8 m tall. 25-600 m. Chocó, Mesoamerica.
- Conostegia montana** (Sw.) D. Don ex DC., Prodr. 3: 175. 1828.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 22 Oct 1996, *J.L. Clark 3088* (AAU, MO, QCNE, US).
Common understory tree to 10 m tall. 250-850 m. Chocó, Mesoamerica.
- Conostegia superba** D. Don ex Naudin, Ann. Sci. Nat., Bot., ser. 3. 16: 108. 1850.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500

m, 8 Jan 1997, *J.L. Clark, E. Austen, S. Bennett & D. Kapan* 3773 (MO, QCNE, US).

Tree to 2 m tall. Common in light gaps. 500 m. Amazonia, Mesoamerica.

Leandra dichotoma (Pav. ex D. Don) Cogn., Fl. Bras. 14(4): 200-201. 1886.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 8 Oct 1996, *J.L. Clark* 3008 (MO, QCNE, US).

Shrub, 2 m tall. 400-600 m. Amazonia, Chocó, Mesoamerica.

Leandra granatensis Gleason, Brittonia 2(4): 319.

1937. Type: Colombia: Dept Sur de Santander: from the vicinity of Branea Bermeja, Magdalena Valley, *Haught* 1311 (HT: NY).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 26 Feb 1996, *J.L. Clark* 2167 (MO, QCNE, US).

Understory tree to 2 m tall. Chocó, Mesoamerica.

Leandra longicoma Cogn., Fl. Bras. 14(4): 202-203, t. 43. 1886.

Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 200 m, 18 Mar 1998, *J.L. Clark & S. Nazzaro* 4929 (MO, QCNE, US).

Understory shrub. 200 m. Amazonia, Chocó, Mesoamerica.

Miconia andersonii Fawcett & Rendle, J. Bot. 64: 104. 1926.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 50 m, 8 Oct 1996, *J.L. Clark* 3005 (MO, QCNE, US).

Shrub or tree. 500 m. Amazonia.

Miconia brevitheca Gleason, Brittonia 2(4): 322.

1937. Type: Ecuador: León: collected on the border of forest, near Santa Rosa, Cantón Pujilí, 1000 m, *Mexia* 6730 (HT: NY).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 31 Mar 1996, *J.L. Clark, K. Berg &*

J. Leffingwell 2368 (MO, QCNE, US).

Tree, 5-12 m tall. 300-700 m. Endemic.

Miconia explicita Wurdack, Phytologia 26(1): 3-4. 1973. Type: Ecuador. Pichincha, 300 m, *G. Harling* 4475 (HT: S).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 6 May 1996, *J.L. Clark, S. Bollendorff & P. Smith* 2553 (MO, QCNE, US).

Common understory tree, 3-8 m tall. 400-600 m. Endemic.

Miconia goniostigma Triana, Trans. Linn. Soc.

London 28(1): 124. 1871 [1872]. Type: Prope Ingara provinciae Chocoensis Reipublicae Novo-Granatensis, *Triana* 3968.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 15 Sep 1994, *J.L. Clark & B. Adnepos* 47 (MO, QCNE, US).

Woody vine or scandent subshrub. 400-700 m. Amazonia, Chocó, Mesoamerica.

Miconia lamprophylla Triana, Trans. Linn. Soc.

London 28(1): 108. 1871 [1872]. Type: Colombia: Pastoensis, prope Chutucal, *Triana* 1033.

Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos 250 m, 20 Oct 1996, *J.L. Clark, B. Shlenker & H. Shlenker* 3061 (MO, QCNE, US).

Shrub to 2 m tall. 250 m. Amazonia, Mesoamerica.

Miconia loreyoides Triana, Trans. Linn. Soc.

London 28(1): 121. 1871 [1872].

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 580-750 m, 23 Jul 1998, *T. Delinks* 18 (MO, QCNE).

Liana. 580-750 m. Amazonia, Chocó, Mesoamerica.

Miconia minuta Gleason, Bull. Torrey Bot. Club 52: 450. 1925.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 17 Nov 1994, *J.L. Clark & S. Mora* 261 (MO, QCNE, US).

Woody hemiepiphyte. 400-600 m. Amazonia.

Miconia nervosa (Sm.) Triana, Trans. Linn. Soc. London 28(1): 111. 1871 [1872].

Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 200 m, 28 Mar 1998, J.L. Clark & S. Nazzaro 4930 (MO, QCNE, US). Woody hemiepiphyte. 400-600 m. Amazonia, Chocó, Mesoamerica.

Miconia porphyrotricha (Markgr.) Wurdack, Phytologia 22(5): 404. 1972. *Heterotrichum porphyrotrichum* Markgr. Type: Ecuador. Pastaza: 1150-1200 m, Schimpff 1077 (HT: B destr.).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 17 Nov 1996, J.L. Clark, B. Neill & K. Zambrano 3423 (MO, QCNE, US).

Scandent subshrub. 400-500 m. Amazonia, Chocó

Miconia theaezans (Bonpl.) Cogn., Fl. Bras. 14(4): 419. 1888. *Melastoma theaezans* Bonpl. Type: Habitat, una cum Rhexia speciosa, juxta urbem Popayan, *Humboldt & Bonpland s.n.*

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 8 Dec 1994, N. Pitman & M.S. Bass 1053 (MO, QCNE, US).

Tree, 4 m tall. 400-500 m. Amazonia, Chocó.

Monolena primuliflora Hook. f., Bot. Mag. 96: 5818. 1870.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 27 Sep 1996, J.L. Clark 2924 (MO, QCNE, US).

Common succulent epiphyte. 400-600 m. Amazonia, Chocó, Mesoamerica.

Ossaea boekei Wurdack, Phytologia 41(1): 9-10. 1978. Type: Ecuador: Azuay: road Jesus Maria-Molleluro, 10 km from Guayas border, J.D. Boeke & H. Loyola 2171 (HT: US; IT: NY).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 22 Oct 1996, J.L. Clark 3076 (MO, QCNE, US).

Understory shrub or tree, 1.5 to 5 m tall. 400-

600 m. Endemic.

Ossaea brenesii Standl., Publ. Field Mus. Nat. Hist., Bot. Ser. 18(3): 835. 1938.

Representative Specimen: Ecuador: Esmeraldas: Carretera Herrera-El Páramo (Sta. Isabel) 580 m, 18 Feb 1995, W. Palacios, J.L. Clark & N. Jaramillo 13507 (MO, QCNE).

Shrub, ca. 1 m tall. 400-580 m. Chocó, Mesoamerica.

Ossaea incerta Wurdack, Phytologia 38(4): 302-303. 1978. Type: Ecuador, *M. Acosta-Solis* 12274 (HT: F).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 30 Dec 1994, N. Pitman & D. Marsh 1130 (MO, QCNE).

Shrub, ca. 1 m tall. 400-600 m. Endemic.

Ossaea micrantha (Sw.) Macfad. ex Cogn., Monogr. Phan. 7: 1066. 1891

Representative Specimen: Ecuador: Manabí: Cordillera de Jama, 600 m, 16 Dec 1998, D. Neill & QCNE botany interns 11585 (MO, QCNE).

Shrub, ca. 2 m tall. 600 m. Amazonia, Chocó, Mesoamerica.

Ossaea palenquensis Wurdack, Phytologia 38(4): 302. 1978. Type: Ecuador: Los Ríos: Río Palenque Biological Station, C.H. Dodson & A.H. Gentry 6553 (HT: US; IT: MO).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 2 Jan 1995, N. Pitman 1158 (MO, QCNE).

Understory shrub, ca. 1.5 m tall. 400-600 m. Endemic.

Ossaea quinquenervia (Mill.) Cogn., Monogr. Phan. 7: 1064. 1891.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 8 Oct 1996, J.L. Clark 3006 (MO, QCNE, US).

Common understory tree to 2 m tall. 400-600 m. Amazonia, Chocó, Mesoamerica.

Tibouchina longifolia (Vahl) Baill., Adansonia 12: 74. 1877.

- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 14 Sep 1994, *J.R. Abbott 15083* (BEREA, QCNE).
Shrub. 600 m. Amazonia, Chocó, Mesoamerica.
- Topobea dodsonorum** Wurdack, Phytologia 38(4): 304-305. 1978. Type: Ecuador: Los Ríos/Pichincha: collected in cloud forest along ridge line near La Centinella at 12 km on road from Patricia Pilar to Flor de Mayo, Montañas de Ila, 600 m, 16 Jul-11 Aug 1977, *C.H. Dodson & H.C. Dodson 6752* (HT: US-2781998; IT: SEL).
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 21 Nov 1994, *J.L. Clark & C. Bergman 317* (MO, QCNE, US).
Common woody hemiepiphyte. 250-600 m. Endemic.
- Triolena barbeyana** Cogn., Monogr. Phan. 7: 542. 1891.
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 27 Sep 1994, *J.L. Clark, B. Adnepos & J. Wolf 119* (MO, QCNE, US).
Common terrestrial herb in light gaps. 60-800 m. Chocó, Mesoamerica.
- Triolena hirsuta** (Benth.) Triana, J. Bot. 5: 211. 1867. *Bertolonia hirsuta* Benth. Type: Guayaquil,
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 8 Oct 1996, *J.L. Clark 3018* (AAU, MO, QCNE).
Common terrestrial herb in mature forest. 60–800 m. Amazonia, Chocó, Mesoamerica.
- Triolena pedemontana** Wurdack, Phytologia 35(3): 243-244. 1977. Type: Ecuador: Pichincha: 20 km West of Santo Domingo de Los Colorados, 300 m, *P.C.D. Cazalet & T.D. Pennington 5195* (HT: K; IT: NY, US).
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 8 Oct 1996, *J.L. Clark 3019* (AAU, MO, QCNE).
Terrestrial herb in mature forest. 500-580 m.
- Endemic. Amazonia.
- Triolena pustulata** Triana, Trans. Linn. Soc. London 28(1): 81. 1871. Type: In Andibus Ecuadorensibus ad flum. de Guayaquil, prope Ventanas, *R. Spruce 6235*.
- Representative Specimen: Ecuador: Esmeraldas: Mache-Chindul, Comunidad Caña Braval, 250 m, 11 Mar 1998, *J.L. Clark 4632* (AAU, MO, QCNE).
Terrestrial herb. 250-600 m. Endemic.
- MELIACEAE**
- Carapa guianensis** Aubl., Hist. Pl. Guiane 2(Suppl.): 32, t. 387. 1775.
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 20 Nov 1995, *J.L. Clark, K. Cunningham & C. Roberts 1601* (K, MO, QCNE).
Common canopy tree. 0-650 m. Common names: “Tangare,” “Figeroa.” Chocó, Mesoamerica.
- Carapa megistocarpa** A.H. Gentry & Dodson, Ann. Missouri Bot. Gard. 75(4): 1434-1436, f. 2. 1988 [1989]. Type: Ecuador. Pichincha: Centinela, km 12 carretera Patricia Pilar-24 de Mayo, cima de las Montañas de Ila, 650 m, *C.H. Dodson, A. H. Gentry, W. Palacios & J. Zaruma 14492* (HT: MO; IT: MO, QCNE).
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 24 Jan 1995, *J.L. Clark 411* (K, MO, QCNE).
Common understory tree. 50-500 m. Chocó.
- Cedrela odorata** L., Syst. Nat. (ed. 10) 2: 940. 1759. Type: Brown. jam. 158, t. 10, f. 1.,
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 10 May 1995, *J.L. Clark & C. Watt 826* (MO, QCNE).
Canopy tree. 400-600 m. Common name: “Cedro castillo.” Amazonia, Chocó, Mesoamerica.
- Guarea glabra** Vahl, Eclog. Amer. 3: 8-9. 1807.
Type: Habitat in Montserrat, *Ryan s.n.*
Representative Specimen: Ecuador: Manabí:

- Jama 400 m, 18 Dec 1998, *D. Neill & QCNE botany interns 11672* (MO, QCNE). Understory tree, 10 m tall. 400 m. Amazonia, Chocó, Mesoamerica.
- Guarea kunthiana** A. Juss., Bull. Sci. Nat. Geol. 23: 240. 1830.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 31 Mar 1996, *J.L. Clark, K. Berg & J. Leffingwell 2378* (MO, QCNE). Common canopy tree. 250-600 m. Common name: "Colombiano," "Manzana Colorado." Amazonia, Chocó, Mesoamerica.
- Ruagea glabra** Triana & Planch., Ann. Sci. Nat., Bot., ser. 5, 15: 368. 1872. Type: Colombia: Entre la Mesa et Junca, sur le versant occidental des Andes de Bogota, 1200 m, *Triana s.n.*
Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300–700 m, 21 Jan 1996, *J.L. Clark, E. Arroyo & P. Hibbs 2724* (K, MO, QCNE, US). Common canopy tree. 300-700 m. Amazonia, Chocó, Mesoamerica.
- Ruagea insignis** (C. DC.) T.D. Penn., Fl. Neotrop. 28: 249-251, f. 52, map 49. 1981. Cabralea insignis C. DC.
Representative Specimen: Ecuador: Esmeraldas: Camino Vecinal Herrera-Los Monos, 550 m, 24–26 Feb 1995, *W. Palacios 13681* (MO, QCNE). Tree. 100-600 m. Amazonia, Chocó, Mesoamerica.
- Trichilia elegans** A. Juss., Fl. Bras. Merid. 2: 79, pl. 98. 1829.
Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor, 50 m, 25 Aug 1998, *D. Neill & QCNE botany interns 11271* (MO, QCNE). Subcanopy tree. 50 m. Amazonia, Chocó.
- Trichilia elsaæ** Harms, Nat. Pflanzenfam. (ed. 2) 19b1: 115, 117. 1940.
Representative Specimen: Ecuador: Manabí: Jama, Reserva de Lalo Loor, 24 km S of Pedernales, SE off coastal highway; 100 m,
- 15 Dec 1998, *D. Neill & QCNE botany interns 11515* (MO, QCNE). Subcanopy tree. 50-150 m. Amazonia.
- Trichilia martiana** C. DC., Fl. Bras. 11(1): 205. 1878.
Representative Specimen: Ecuador: Manabí: Mache-Chindul, comunidad Ambache, 250 m, 6 Apr 1997, *J.L. Clark, R. Dunn, T. Nuñez & C. Robles 4249* (K, MO, QCNE). Subcanopy tree. 250-580 m. Chocó, Mesoamerica.
- Trichilia maynasiana** C. DC., Monogr. Phan. 1: 700. 1878.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 20 Mar 1998, *J.L. Clark & C. Pallis 4764* (MO, QCNE). Understory tree, ca. 8 m tall. 500 m. Amazonia.
- Trichilia obovata** W. Palacios, Novon 4(2): 157-158, f. 2. 1994. Type: Ecuador: Pastaza: Pozo Petrolero Danta 2, 50 km al suroeste del Curaray, 1.47°S, 76.48°W, 365 m, 1-19 Oct 1990, *D. Rubio & T. Coba 855* (HT: QCNE; IT: K, MO).
Representative Specimen: Ecuador: Manabí: 28 km S of Pedernales, 3.5 km SW of the town Reserva de Lalo Loor, 500–550 m, 27 Nov 1999, *T. Delinks 485* (MO, QCNE). Tree, ca. 4 m tall. 500-550 m. Amazonia.
- Trichilia pallida** Sw., Prodr. 67. 1788. Type: Hispaniola, *Swartz s.n.*
Representative Specimen: Ecuador: Manabí: Chone, Recint. Hojas Blanca, Carretera Pedernales-Carmen Mandarino, Entrada el Mono, Río Mongolla, 12 Apr 1997, *J.L. Clark, T. Nuñez & C. Robles 4387* (K, MO, QCNE). Common understory tree. 50-700 m. Amazonia, Chocó, Mesoamerica.
- Trichilia quadrijuga** Kunth, Nov. Gen. Sp. (quarto ed.) 5: 215. 1821 [1822].
Representative Specimen: Ecuador: Manabí: Jama Cantón, Reserva de Lalo Loor, 30 km S of Pedernales, 9 Apr 1997, *J.L. Clark, T. Nuñez & C. Robles 4330* (MO, QCNE). Common tree, ca. 3 m tall. 10-100 m.

Amazonia, Chocó, Mesoamerica.

Trichilia septentrionalis C. DC., Fl. Bras. 11(1): 220. 1878.

Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 30 Jan 1991, A. Gentry, R. Foster & C. Josse 72938 (MO).

Subcanopy tree. 280 m. Amazonia, Chocó, Mesoamerica.

Trichilia surinamensis (Miq.) C. DC., Monogr. Phan. 1: 679-680. 1878

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 2 Oct 1996, J.L. Clark 2976 (MO, QCNE).

Common tree, 5-15 m tall. 60-600 m. Amazonia.

MENISPERMACEAE

Abuta fluminum Krukoff & Barneby, Phytologia 25(1): 38. 1972.

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300–700 m, 7 Apr 1997, J.L. Clark, T. Nuñez & C. Robles 4267 (MO, QCNE).

Woody vine. 300-700 m. Amazonia.

Anomospermum chloranthum Diels, Notizbl. Konigl. Bot. Gart. Berlin 6(54): 132-133. 1914.

Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 28 Jan 1991, A. Gentry & C. Josse 72751 (MO).

Subcanopy tree. 280 m. Amazonia, Chocó, Mesoamerica.

Cissampelos fasciculata Benth., London J. Bot. 2: 361-362. 1843.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 4 Apr 1995, J.L. Clark & Y. Troya 598 (MO, QCNE).

Woody liana growing in canopy. 400-600 m. Amazonia, Chocó, Mesoamerica.

Cissampelos pareira L., Sp. Pl. 2: 1031-1032. 1753.

Representative Specimen: Ecuador:

Esmeraldas: Bilsa Biological Station, 400 m, 27 Feb 1996, J.L. Clark 2173 (MO, QCNE).

Common herbaceous vine along roads. 400-600 m. Amazonia, Chocó, Mesoamerica.

Disciphania tricaudata Barneby, Brittonia 42(3):

180-181, f. 1G-J. 1990. Type: Ecuador: Napo: en bosque muy húmedo premontana, Via Hollin-Loreto, entre río Guamani and río Pucuno, km 40, 1200 m, 12 Dec 1987, W. Palacios 2269 (HT: MO; IT: F, K, NY, US).

Representative Specimen: Ecuador: Manabí: Cantón Pedernales, Cerro Pata de Pájaro, 10 km E of Pedernales, 800 m, 10 Mar 1997, H. Vargas 1313 (MO, QCNE).

Vine. 800 m. Amazonia.

Odontocarya perforata Barneby, Selbyana 2(1):

47, t. 13B. 1977. Type: Ecuador: Los Ríos: along trail 2, Río Palenque Science Station, km 56 road Quevedo-Sto Domingo, 1 Mar 1976, 150-220 m, C.H. Dodson 5992 (HT: MO; CST (drupa): NY; IT: QCA, RPSC, SEL).

Representative Specimen: Ecuador: Manabí: 34 km al norte de Pedernales 60 m, 28 Aug 1998, D. Neill & QCNE botany interns 11453 (MO, QCNE).

Liana. 60-800 m. Endemic.

MONIMIACEAE

Siparuna aspera (Ruiz & Pav.) A. DC., Prodr. 16(2.2): 645-646. 1868.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 21 Nov 1994, J.L. Clark & C. Bergman 300 (MO, QCNE).

Common shrub in disturbed areas. 400-600 m. Amazonia, Chocó.

Siparuna conica S.S. Renner & Hausner, Novon 6(1): 108-111, f. 5. 1996. Type: Ecuador:

Carchi: Reserva Etnica Awá, Comunidad de Gualpi Medio, 900 m, female, 21 May 1992 (fl), Quelal, C. 685 (HT: QCNE; IT: MJG, MO).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-

- 600 m, 11 Dec 1994, *M.S. Bass & N. Pitman* 334 (MO, QCNE).
Tree. 400-600 m. Chocó, Mesoamerica.
- Siparuna eggersii** Hieron., Bot. Jahrb. Syst. 20: Beibl. 49: 17. 1895. Type: Ecuador: Guayas: Near Balao, *H. Eggers* 14081 (HT: B destr., (Macbride photo neg. 13497); IT: L, M, NY- 3 sheets, US-2 sheets, WU).
Representative Specimen: Ecuador: Manabí: Cordillera de Jama, 600 m, 16 Dec 1998, *D. Neill & QCNE botany interns* 11583 (AAU, GB, MEXU, MO, NY, QCNE).
Small tree or scandent subshrub. 400-600 m. Endemic.
- Siparuna gentryana** S.S. Renner, Novon 10(2): 134-138, f. 1-3. 2000. Type: Ecuador: Carchi: Tulcán, Reserva Etnica Awá, Centro Gualpí Medio, Río Canumbí, 1150 m, 19-28 Feb 1993, *A. Grijalva, C. Aulestia & J. Taicuz* 606 (HT: QCNE; IT: AAU, MO, NY, QCA, QCNE).
Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 28 Jan 1991, *A. Gentry & C. Josse* 72777 (MO).
Tree, ca. 7 m tall. 280 m. Common name: "Comida de Mono." Chocó, Mesoamerica.
- Siparuna laurifolia** (Kunth) A. DC., Prodr. 16(2.2): 651. 1868.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400 m, 28 Oct 1994, *M.S. Bass & N. Pitman* 198 (MO, QCNE).
Shrub. 400 m. Amazonia, Chocó, Mesoamerica.
- Siparuna multiflora** S.S. Renner & Hausner, Novon 6(1): 108, f. 4, 9C, D. 1996. Type: Ecuador. Carchi: Canton Tulcán, Parroquia Tobar Donoso, Reserva Indígena Awá, 500 m, male, 19 Jun 1992, *G. Tipaz* 1337 (HT: QCNE; IT: MJG, MO).
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 27 Sep 1996, *J.L. Clark* 2941 (MO, QCNE).
Tree, 2-8 m tall. 400-600 m. Endemic.
- Siparuna palenquensis** S.S. Renner & Hausner, Novon 5(1): 63, f. 1K-N, 3. 1995. Type: Ecuador: Pichincha: Hdca. Covadonga on Río Pioatón, 1000 m 2 July 1955, *Asplund* 16764 (HT: S; IT: MJG, QCA).
Representative Specimen: Ecuador: Esmeraldas: Muisne 25 m, 22 May 2000, *D. Neill & QCNE botany interns* 12769 (MO, QCNE).
Tree, ca. 7 m tall. 25-200 m. Endemic.
- ## MORACEAE
- Brosimum guianense** (Aubl.) Huber, Bol. Mus. Paraense Hist. Nat. 5: 337. 1909.
Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300-700 m, 7 Apr 1997, *J.L. Clark, T. Nuñez & C. Robles* 4276 (MO, QCNE).
Tree, ca. 7 m tall. 300-700 m. Common name: "Sande." Amazonia, Chocó, Mesoamerica.
- Brosimum utile** (Kunth) Oken ex J. Presl, Wseobecny Rostl. 2: 1379. 1846
Representative Specimen: Ecuador: Esmeraldas: Muisne, Sitio San Salvador, orillas del Río Sucio, 100-150 m, Mar 1995, *W. Palacios* 13767 (MO, QCNE).
Subcanopy tree. 100-280 m. Amazonia, Chocó. Infrasp.: *Brosimum utile* subsp. *occidentale* C.C. Berg.
- Castilla elastica** Sessé ex Cerv., Gaz. Lit. Mexico 3: 7. 1794.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 17 Nov 1994, *J.L. Clark & S. Mora* 274 (MO, QCNE).
Tree, ca. 10 m tall. 300-700 m. Common name: "Caucho." Chocó, Mesoamerica.
Infrasp.: *Castilla elastica* subsp. *gummifera* (Miq.) C.C. Berg.
- Castilla tunu** Hemsl., Hooker's Icon. Pl. 27: t. 2651. 1900.
Representative Specimen: Ecuador: Manabí: Canton: Pedernales, Cerro Pata de Pájaro, 10 km E of Pedernales, 21 Jun 1996, *J.L. Clark, E. Arroyo & P. Hibbs* 2717 (MO, QCNE).
Canopy tree. 300-700 m. Chocó, Mesoamerica.

Clarisia biflora Ruiz & Pav., Syst. Veg. Fl. Peruv. Chil. 255. 1798.

Representative Specimen: Ecuador: Esmeraldas: Camino vecinal Herrera-Los Monos, 550 m, 24–26 Feb 1995, W. Palacios 13678 (MO, QCNE).

Subcanopy tree. 550 m. Amazonia, Chocó, Mesoamerica.

Clarisia racemosa Ruiz & Pav., Syst. Veg. Fl. Peruv. Chil. 255. 1798.

Representative Specimen: Ecuador: Manabí: Pedernales 100 m, 6 Apr 1997, J.L. Clark, R. Dunn, T. Nuñez & C. Robles 4256 (MO, QCNE).

Canopy tree. 100 m. Common name: “Moral bobo.” Amazonia, Chocó, Mesoamerica.

Ficus brevibracteata W.C. Burger, Phytologia 26(6): 423-424. 1973.

Representative Specimen: Ecuador: Manabí: Pedernales, Reserva Ecologica Mache-Chindul, Comunidad Ambache (vía marginal de la costa-Chindul), 250 m, 25 Mar 1997, J.L. Clark, T. Nuñez & C. Robles 4248 (BG, MO, QCNE).

Subcanopy or canopy tree. 250-700 m. Chocó, Mesoamerica.

Ficus caldasiana Dugand, Caldasia 4: 33. 1942.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 19 Feb 1996, J.L. Clark 2085 (BG, MO, QCNE).

Canopy tree. 400-600 m. Amazonia, Chocó, Mesoamerica.

Ficus citrifolia Mill., Gard. Dict. (ed. 8) 4: 33. 1768.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 8 Apr 1995, J.L. Clark & Y. Troya 665 (BG, MO, QCNE).

Tree, 6-10 m tall. 100-600 m. Amazonia, Chocó, Mesoamerica.

Ficus crassiuscula Warb. ex Standl., Contr. U.S. Natl. Herb. 20(1): 12. 1917.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 13 May 1995, J.L. Clark & C. Watt

855 (BG, MO, QCNE).

Common emergent canopy tree. 400-600 m. Chocó, Mesoamerica.

Ficus cuatrecasasiana Dugand, Caldasia 1(4): 36, f. 1. 1942.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 19 Feb 1996, J.L. Clark 2100 (BG, MO, QCNE).

Free standing strangler reaching canopy. 250-600 m. Amazonia, Chocó, Mesoamerica.

Ficus insipida Willd., Sp. Pl. 4: 1143. 1806.

Representative Specimen: Ecuador: Manabí: Recinto Hojas Blancas, Carretera Pedernales-Carmen Mandarino, Entrada el Mono, 150 m, 12 Apr 1997, J.L. Clark, T. Nuñez & C. Robles 4412 (BG, MO, QCNE). Tree, 20-25 m tall. 150 m. Amazonia, Chocó, Mesoamerica.

Ficus macbridei Standl., Field Mus. Nat. Hist., Bot. Ser. 13(2/2): 305. 1937.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 18 Nov 1996, J.L. Clark, F. Gurumendi & H. Weinert 3445 (BG, MO, QCNE).

Tree, ca. 12 m tall. 280-500 m. Amazonia, Chocó, Mesoamerica.

Ficus maxima Mill., Gard. Dict. (ed. 8) Ficus no. 6. 1768.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 1 Jan 1997, J.L. Clark, S. Bennett & D. Kapan 3679 (BG, MO, QCNE).

Subcanopy tree. 60-500 m. Common name: “Higuerón.” Amazonia, Chocó, Mesoamerica.

Ficus obtusifolia Kunth, Nov. Gen. Sp. (quarto ed.) 2: 49. 1817.

Representative Specimen: Ecuador: Esmeraldas: Herrera (La Y de la Laguna) 450 m, 26 Mar 1998, J.L. Clark 4915 (BG, MO, QCNE).

Tree, ca. 2 m tall. 450 m. Amazonia, Chocó, Mesoamerica.

Ficus paraensis (Miq.) Miq., Ann. Mus. Bot.

- Lugduno-Batavum 3: 298. 1867.
 Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 25 Nov 1995, *J.L. Clark & K. Cunningham, C. Roberts* 1671 (BG, MO, QCNE).
 Hemiepiphyte. 500 m. Amazonia, Chocó, Mesoamerica.
- Ficus pertusa** L. f., Suppl. Pl. 442. 1781 [1782].
 Representative Specimen: Ecuador: Esmeraldas: Mache-Chindul, comunidad Caña Braval, 250 m, 11 Mar 1998, *J.L. Clark* 4647 (BG, MO, QCNE).
 Hemiepiphyte strangler. 250 m. Amazonia, Chocó, Mesoamerica.
- Ficus petenensis** Lundell, Wrightia 3(8): 167. 1966.
 Representative Specimen: Ecuador: Esmeraldas: Muisne 180 m, 23 May 2000, *D. Neill & QCNE botany interns* 12763 (MO, QCNE).
 Tree, ca. 20 m tall. 180 m. Amazonia, Mesoamerica.
- Ficus rieberiana** C.C. Berg, Novon 6(3): 234, f. 4. 1996. Type: Ecuador: Carchi: Reserva Awa, 1500 m, 16–30 Nov. 1990, *Rubio et al.* 1068 (HT: QCNE; IT: BG, MO).
 Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 650 m, 12 Mar 1997, *J.L. Clark, A. Cousins, T. Nuñez & J. Richter* 4102 (BG, MO, QCNE).
 Tree, ca. 5 m tall. 650 m. Endemic.
- Ficus schippii** Standl., Publ. Field Columbian Mus., Bot. Ser. 8(1): 7. 1930.
 Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 1 Oct 1996, *J.L. Clark* 2966 (BG, MO, QCNE).
 Common woody vine. 200-600 m. Amazonia, Chocó, Mesoamerica.
- Ficus sibundoya** Dugand, Caldasia 4: 65, f. 12. 1942.
 Representative Specimen: Ecuador: Esmeraldas: Carretera Herrera-El Páramo (Sta. Isabel) 580 m, 18 Feb 1995, *W. Palacios, J.L. Clark & N. Jaramillo* 13533 (MO, QCNE).
 Canopy tree. 580 m. Amazonia.
- Ficus toduzii** Standl., Contr. U.S. Natl. Herb. 20(1): 8. 1917.
 Representative Specimen: Ecuador: Esmeraldas: Reserva Ecológica Mache-Chindul, Comunidad Caña Braval, Cabaceras del Río Viche, estero Sabaleta, 250 m, 16 Mar 1998, *J.L. Clark* 4743 (BG, MO, QCNE).
 Tree, 3-15 m tall. 25-500 m. Amazonia, Chocó, Mesoamerica.
- Ficus trianae** Dugand, Caldasia 1(4): 70. 1942. Type: Colombia: Barbacoas, 700 m [Narino: Costa del Pacífico], *May* 1853, *J.J. Triana s.n.* (HT: COL).
 Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 29 Jan 1991, *A. Gentry, R. Foster & C. Josse* 72875 (MO).
 Hemiepiphytic strangler. 280 m. Chocó.
- Ficus yaponensis** Desv.
 Representative Specimen: Ecuador: Esmeraldas: Pedernales Cantón, Reserva Ecologica Mache-Chindul, Hacienda la Siberia, ca. 20 km SE of Cojimíes, 100 m, 6 April 1997, *J.L. Clark, R. Dunn, T. Nuñez & C. Robles* 4263 (BG, MO, QCNE).
 Tree, ca. 13 m tall. 100 m. Amazonia.
- Maclura tinctoria** (L.) D. Don ex Steud., Nomencl. Bot. (ed. 2) 2: 87. 1841. *Morus tinctoria* L.
 Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 20 Mar 1998, *J.L. Clark & C. Pallis* 4779 (BG, MO, QCNE).
 Tree, 10-20 m tall. 250-500 m. Amazonia, Chocó.
 Infrasp.: *Maclura tinctoria* subsp. *tinctoria*.
- Maquira guianensis** Aubl., Hist. Pl. Guiane 2(Suppl.): 36, t. 389. 1775.
 Representative Specimen: Ecuador: Manabí Canton, Cerro Pata de Pájaro, 10 km E of Pedernales, 21 Jun 1996, *J.L. Clark, E. Arroyo & P. Hibbs* 2718 (BG, MO, QCNE).
 Canopy tree. 100-700 m. Amazonia, Chocó,

Mesoamerica.

Infrasp.: *Maquira guianensis* subsp. *costaricana* (Standl.) C.C. Berg.

Perebea angustifolia (Poepp. & Endl.) C.C. Berg,
Acta Bot. Neerl. 18(3): 463. 1969.

Representative Specimen: Ecuador:
Esmeraldas: Mache-Chindul, comunidad
Caña Braval, 250 m, *J.L. Clark* 4675 (BG,
MO, QCNE).

Tree, 3-7 m tall. 100-580 m. Amazonia, Chocó,
Mesoamerica.

Perebea xanthochyma H. Karst., Fl. Columb. 2:
23, t. 112. 1862.

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 500
m, 15 Feb 1996, *J.L. Clark, N. Kerber & J.
Plihal* 2011 (BG, MO, QCNE).

Common tree, 2-12 m tall. 180-600 m.
Amazonia, Chocó, Mesoamerica.

Poulsenia armata (Miq.) Standl., Trop. Woods 33:
4. 1933. .

Representative Specimen: Ecuador:
Esmeraldas: Quinindé, Paraíso de
Papagayos, 200 m, 6 Jul 1996, *J.L. Clark*
2756 (BG, MO, QCNE).

Tree, 3-8 m tall. 200-500 m. Common names:
“Majagua,” “Damagua.” Amazonia, Chocó,
Mesoamerica.

Pseudolmedia macrophylla Trécul, Ann. Sci.
Nat., Bot., ser. 3. 3(8): 132. 1847.

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 500
m, 16 Feb 1998, *J.L. Clark* 4536 (BG, MO,
QCNE).

Tree, ca. 15 m tall. 500 m. Amazonia.

Pseudolmedia rigida (Klotzsch & H. Karst.)

Cuatrec., Fieldiana, Bot., n.s. 28: 215. 1951.

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 500
m, 4 Apr 1996, *J.L. Clark & Karl Berg, J.
Leffingwell* 2404 (BG, MO, QCNE).

Common canopy tree. 100-700 m. Common
name: “Guión.” Amazonia, Chocó,
Mesoamerica.

Infrasp.: *Pseudolmedia rigida* subsp. *eggersii*
(Standl.) C.C. Berg.

Sorocea jaramilloi C.C. Berg, Novon 6(3): 241,
f. 9. 1996. Type: Ecuador: Pichincha: road
Quito-Puerto Quito, km 113, 10 km N of
road, Reserva Forestal ENDESA, 22 Aug
1984, *J. Jaramillo* 7055 (HT: QCA; IT:
AAU, GB, MO, QCNA).

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 400–
600 m, 28 Mar 1995, *J.L. Clark & Y. Troya*
524 (BG, MO, QCNE).

Common canopy tree. 400-600 m. Chocó.

Sorocea sarcocarpa Lanj. & Wess. Boer, Acta Bot.
Neerl. 11: 452. 1962. Type: Ecuador.
Esmeraldas, 4 km W of Borbón, *Little* 6375
(HT: F; IT: K).

Representative Specimen: Ecuador: Manabí,
Reserva Ecologica Mache-Chindul,
Comunidad Ambache (vía marginal de la
costa-Chindul), 250 m, 25 Mar 1997, *J.L.
Clark, T. Nuñez & C. Robles* 4150 (BG, MO,
QCNE).

Tree, 8-14 m tall. 100-250 m. Endemic.

Trophic caucana (Pittier) C.C. Berg, Proc. Kon.
Ned. Akad. Wetensch., C 91(4): 354. 1988.
Olmedia caucana Pittier. Type: Colombia:
Cauca Valley, La Manuelita near Palmira,
Pittier 803, 5 Dec 1904-6 Jan 1905 (US;
IT: NY).

Representative Specimen: Ecuador: Manabí:
Cerro Pata de Pájaro, 300–700 m, 7 Apr
1997, *J.L. Clark, T. Nuñez & C. Robles* 4285
(BG, MO, QCNE).

Canopy tree. 300-700 m. Amazonia, Chocó,
Mesoamerica.

MUSACEAE

Musa acuminata Colla, Mem. Reale Accad. Sci.
Torino 25: 394-395. 1820.

Common introduced and cultivated herb. 0-700
m. Cultivated throughout the tropics.

MYRISTICACEAE

Compsoneura mutisii A.C. Sm., Brittonia 2(5):
415-416. 1937 [1938]. Type: Colombia:
without locality, collected between 1760–
1808, *J.C. Mutis* 3486 (HT: US).

Representative Specimen: Ecuador: Manabí: 31

km al norte de Pedernales 60 m, 27 Aug 1998, D. Neill & QCNE botany interns 11389 (MO, QCNE).

Subcanopy tree. 60-300 m. Common name, "Coco." Chocó.

Otoba gordoniifolia (A. DC.) A.H. Gentry, Taxon 28(4): 417. 1979. *Myristica gordoniifolia* A. DC. Type: In peruvia prope Guayaquil, *Pavón s.n.* (HT: G-BOIS).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 14 Feb 1996, J.L. Clark, N. Kerber & J. Plihal 1986 (MO, QCNE).

Very common canopy tree. 400-600 m. Common name: "Sangre de gallina." Chocó.

Otoba novogranatensis Moldenke, Bull. Torrey Bot. Club 59(3): 156. 1932.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 550 m, 24 Nov 1999, D. Neill & QCNE botany interns 12236 (MO, QCNE).

Canopy tree. 400-600 m. Amazonia, Chocó, Mesoamerica.

Virola aequatorialis Muriel & Balslev, Nordic J. Bot. 20(4): 443-445, f. 1. 2000 [2001]. Type: Ecuador, Esmeraldas, Anchayacu, Eloy Alfaro, Mayronga, 100-250 m, Pennington et al. 14498 (HT: K; IT: K, NY).

Representative Specimen: Ecuador: Manabí: Pedernales Cantón, Hacienda la Siberia (vía la carretera marginal de la costa), ca. 20 km SE of Cojimíes., 100 m, 6 Apr 1997, J.L. Clark, T. Nuñez & C. Robles 4258 (AAU, MO, QCNE).

Canopy tree. 100-250 m. Endemic.

Virola dixonii Little, Phytologia 19: 255. 1970. Type: Ecuador: Esmeraldas: San Antonio, South of Borbón at río Cayapas, 60 m, E.L. Little & R.G. Dixon 21092 (HT: US; IT: US).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 18 Nov 1994, J.L. Clark, H. Lintz & S. Mora 276 (MO, QCNE, UPCB).

Common canopy tree. 5-600 m. Common name: "Coco." Amazonia, Chocó.

Virola theiodora (Spruce ex Benth.) Warb., Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 68: 187. 1897.

Representative Specimen: Ecuador: Esmeraldas: Quinindé, Paraíso de Papagayos, 200 m, 27 Feb 1996, J.L. Clark & C. Brame 3109 (MO, QCNE). Canopy tree. 200 m. Amazonia.

MYRSINACEAE

Ardisia sp.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 25 Nov 1995, J.L. Clark et al. 1677 (MO, QCNE).

Shrub. 400-600 m. Several undetermined species of *Ardisia* have been collected from the region.

Cybianthus kayapii (Lundell) Pipoly, Sida 18(1): 84. 1998.

Representative Specimen: Ecuador: Esmeraldas: Carretera vecinal Herrera-Los Monos, Cabecera del Río Aguacatal, 550 m, 24-26 Feb 1995, W. Palacios 13677 (MO, QCNE).

Shrub, ca. 1 m tall. 550 m. Amazonia, Chocó.

Cybianthus simplex (Hook. f.) G. Agostini, Acta Biol. Venez. 10(2): 163. 1980. *Comomysine simplex* Hook. f. Type: Ecuador: Chimborazo, R. Spruce 6143 (HT: K).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 29 Mar 1995, J.L. Clark & Y. Troya 527 (MO, QCNE).

Common unbranched pachycaul subshrub, ca. 1 m tall. 400-600 m. Amazonia, Chocó, Mesoamerica.

Cybianthus sprucei (Hook. f.) G. Agostini, Acta Biol. Venez. 10(2): 164. 1980.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 25 Feb 1996, J.L. Clark 2148 (MO, QCNE).

Unbranched subshrub, ca. 50 cm tall. 500 m. Amazonia, Chocó.

Geissanthus longistamineus (A.C. Sm.) Pipoly, Novon 3(4): 472. 1993.

Representative Specimen: Ecuador: Esmeraldas: Carretera Herrera-El Páramo (Sta. Isabel) 580 m, 18 Feb-5 Mar 1995, W. Palacios, J.L. Clark & N. Jaramillo 13509 (MO, QCNE). Common subcanopy tree, 10 m tall. 500-580 m. Amazonia, Chocó.

Geissanthus mezianus G. Agostini, Phytologia 20(7): 403. 1970.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 650 m, 12 March 1997, J.L. Clark, A. Cousins, T. Nuñez & J. Richter 4007 (MO, QCNE). Tree, 8-10 m tall. 400-600 m. Chocó.

Stylogyne turbacensis (Kunth) Mez, Pflanzrenr. IV. 236(Heft 9): 270. 1902. *Ardisia turbacensis* Kunth. Type: Crescit prope pagum Turbaco Novo-Granatensium, in humidis, *Humboldt* & *Bonpland* s.n.

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300-700 m, 7 Apr 1997, J.L. Clark, T. Nuñez & C. Robles 4282 (MO, QCNE).

Tree, 7 m tall. 300-700 m. Chocó, Mesoamerica.

Infrasp.: *Stylogyne turbacensis* subsp. *turbacensis*.

MYRTACEAE

Campomanesia lineatifolia Ruiz & Pav., Syst. Veg. Fl. Peruv. Chil. 128. 1798.

Representative Specimen: Ecuador: Manabí: Chone, Recinto, Hojas Blanca, Carretera Pedernales-Carmen Mandarino, Entrada el Mono, Río Mongolla, 150 m, 12 Apr 1997, J.L. Clark, T. Nuñez & C. Robles 4408 (MO, QCNE).

Common cultivated tree. 0-150 m. Common name: "Guayabilla." Amazonia, Chocó.

Eugenia multirimosa McVaugh, Fieldiana, Bot. 29(3): 213. 1956. Type: Peru: Loreto: Yurimaguas, along lower Rio Huallaga, 135 m, dense forest, 23 Aug-7 Sep 1929, Killip & Smith 29019 (HT: US: IT: NY).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-

600 m, 24 Sep 1994, J.L. Clark & N. Pitman 106 (F, MO, QCNE).

Common understory tree, 6-10 m tall. 400-600 m. Amazonia, Chocó.

Eugenia oerstediana O. Berg, Linnaea 27(2-3): 285-286. 1854 [1856].

Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos 250 m, 20 Oct 1996, J.L. Clark, B. Shlenker & H. Shlenker 3059 (MO, QCNE).

Tree, 4-14 m tall. 60-250 m. Amazonia, Chocó, Mesoamerica.

Myrcia splendens (Sw.) DC., Prodr. 3: 244. 1828.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 30 Mar 1995, J.L. Clark & Y. Troya 541 (MO, QCNE, SEL).

Common tree along disturbed roadsides above 400 m. Amazonia, Chocó, Mesoamerica.

Psidium acutangulum DC., Prodr. 3: 233. 1828.

Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor, 100 m, 15 Dec 1998, D. Neill & QCNE botany interns 11535 (MO, QCNE).

Subcanopy tree. 100 m. Amazonia, Chocó.

Syzygium jambos (L.) Alston, Handb. Fl. Ceylon 6: 115. 1931.

Representative Specimen: Ecuador: Manabí: Chone, Recinto, Hojas Blanca, Carretera Pedernales-Carmen Mandarino, Entrada el Mono, Río Mongolla, 150 m, 12 Apr 1997, J.L. Clark, T. Nuñez & C. Robles 4409 (MO, QCNE).

Introduced and cultivated tree. Common name: "Poma Rosa."

NYCTAGINACEAE

Mirabilis jalapa L., Sp. Pl. 1: 177. 1753.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 20 May 1995, J.L. Clark & C. Watt 959 (AAU, MO, QCNE).

Common terrestrial herb in disturbed areas. 400-600 m. Amazonia, Chocó, Mesoamerica.

***Neea* sp.**

Representative Specimen: Ecuador: Esmeraldas: 2km E of Quingüe, 250 m, 18 May 2000, D. Neill & QCNE botany interns 12722 (MO, QCNE). Treelet, ca. 3 m tall. 250 m. Several undetermined species of *Neea* have been collected in the region.

OCHNACEAE***Ouratea werdermannii* Sleumer**, Notizbl. Bot. Gart. Berlin-Dahlem 13: 356. 1936.

Representative Specimen: Ecuador: Manabí: 250 m, 25 March 1997, J.L. Clark, R. Dunn, T. Nuñez & C. Robles 4166 (MO, QCNE). Tree, ca. 3 m tall. 250 m. Amazonia. [The material from coastal Ecuador may be a distinct, undescribed species]

OLACACEAE***Heisteria acuminata* (Humb. & Bonpl.) Engl.**, Fl. Bras. 12(2): 14. 1872.

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300–700 m, 7 Apr 1997, J.L. Clark, T. Nuñez & C. Robles 4288 (MO, QCNE).

Uncommon tree, 4-6 m tall. 100-700 m. Amazonia, Chocó.

Infrasp.: *Heisteria acuminata* subsp. *acuminata*, *Heisteria acuminata* subsp. *angustifolia* P. Jørg.

***Heisteria cyathiformis* Little**, J. Wash. Acad. Sci. 38(3): 87, f. 7. 1948. Type: Ecuador: Esmeraldas: Quinindé, E.L. Little 6263A (HT: US).

Representative Specimen: Ecuador: Esmeraldas: Quininde, Fundacion Paraiso de Papagayos, Km 2 via Esmeraldas, 200 m, 28 Mar 1998, J.L. Clark & S. Nazzaro 4928 (MO, QCNE).

Common tree, 2-7 m tall. 60-300 m. Endemic.

***Heisteria erythrocarpa* P. Jørg. & C. Ulloa**, Fl. Ecuador 69: 82, f. 18. 2002. Type: Ecuador: Cotopaxi: Tenefuerte, Río Pilaló, Quevedo-Latancunga road, km 52-53, 750-900 m, Dodson & Dodson 12919 (HT: QCNE; IT: MO, SEL).

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300–700 m, 7 Apr 1997, J.L. Clark, T. Nuñez & C. Robles 4321 (MO, QCNE).

Uncommon shrub, 2-4 m tall. 60-300 m. Endemic.

***Heisteria pacifica* P. Jørg. & C. Ulloa**, Fl. Ecuador 69: 72, f. 16. 2002. Type: Ecuador: Esmeraldas: Cantón Quinindé, the Mache-Chindul Ecological Reserve, Bilsa Biological Station, 35 km W of Quinindé, 500 m, J.L. Clark & C. Pallis 4796 (HT: QCNE; IT: MO).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 16 Feb 1996, J.L. Clark & N. Kerber; J. Plihal 2023 (MO, QCNE).

Very common understory tree, 3-12 m tall. 280-600 m. Chocó.

ONAGRACEAE***Ludwigia octovalvis* (Jacq.) P.H. Raven**, Kew Bull. 15: 476, f. 6d-e, 8h. 1962. *Oenothera octovalvis* Jacq.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station 600 m, 14 September 1994, J.R. Abbott 15107 (BEREA, QCNE).

Common herb or subshrub in disturbed areas. 400-600 m. Amazonia, Chocó, Mesoamerica.

ORCHIDACEAE***Cyclopogon epiphytica* (Dodson)** Dodson, Icon. Pl. Trop., ser. 2 5: pl. 430. 1989. *Beadlea epiphytica* Dodson. Type: Ecuador: Los Ríos: Río Palenque Science Center, km 47 Sto. Domingo-Quevedo, 220 m, 12 Sep 1972, Dodson 5139 (HT: SEL; IT: QCA, RPSC).

Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 30 Jan 1991, A. Gentry, R. Foster & C. Josse 72989 (MO, RPSC).

Epiphyte. Mesoamerica

***Dichaea angustisegmenta* Dodson**, Icon. Pl. Trop. 1: pl. 40. 1980. Type: Ecuador: Los Ríos:

- Río Palenque Science Center, km 56 Quevedo-Santo Domingo, 220 m, 17 Apr 1973, *Dodson & Luer 5252* (HT: SEL). Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 27 Sep 1996, *J.L. Clark 2950* (MO, QCNE). Epiphyte. Endemic.
- Dichaea chasei** Dodson, *Orquideologia* 19(1): 101. 1993. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 26 Feb 1996, *J.L. Clark 2171* (MO, QCNE). Epiphyte. Amazonia.
- Dichaea hystricina** Rchb. f., *Flora* 48: 279. 1865. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 15 Jul 1996, *J.L. Clark, C. Aulestia, J. Kellermann & F. Vetel 2863* (MO, QCNE). Epiphyte. Amazonia, Mesoamerica.
- Dichaea panamensis** Lindl., *Gen. Sp. Orchid. Pl.* 209. 1833. Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 100–300 m, *J.L. Clark, N. Binder & W. Naranjo 2799* (MO, QCNE). Epiphyte. Chocó, Mesoamerica.
- Dichaea richii** Dodson, *Selbyana* 2(1): 49, t. 13C. 1977. Type: Ecuador: Los Ríos: Río Palenque Science Center, km 56 Quevedo-Santo Domingo, 150-220 m, 5 Mar 1976, *C.H. Dodson & E.R. Rich 6000* (HT: SEL; IT: RPSC). Representative Specimen: Ecuador: Esmeraldas: Lita-San Lorenzo 230 m, 11 Jul 1990, *Dodson et al. 18520A* (MO). Epiphyte. Amazonia, Chocó.
- Dimerandra rimbachii** (Schltr.) Schltr., *Repert. Spec. Nov. Regni Veg. Beih.* 17: 44. 1922. *Epidendrum rimbachii* Schltr. Type: Ecuador. Guayas: Häufig auf Kakaobäumen im Küstentiefland bei Ventanas, Apr 1920, *A. Rimbach 2* (HT: B destr.). Representative Specimen: Ecuador: Manabí: Pto. Viejo-Quevedo 400 m, 8 May 1985,
- Harling & Andersson 25000* (GB, QCA). Epiphyte. Endemic.
- Dressleria fragrans** Dodson, *Orquideologia* 21(1): 3. 1998. Type: Ecuador. Bolívar: Babahoyo to Guaranda, above Balzapamba, 1400 m 6 June 1960, *C. H. Dodson d100* (HT: SEL; IT: QCA). Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 8 May 1995, *J.L. Clark & C. Watt 805* (MO, QCNE). Epiphyte. Endemic.
- Elleanthus aristatus** Garay, *Fl. Ecuador* 9: 63. 1978. Type: Ecuador: Los Ríos: ca 3 km E of Quevedo-Latacunga, 70 m, 10 June 1960, *Dodson 88* (HT: SEL). Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 26 Jan 1995, *J.L. Clark 428* (MO, QCNE). Epiphyte. Endemic.
- Elleanthus capitatus** (Poepp. & Endl.) Rchb. f., *Ann. Bot. Syst.* 6: 475. 1862. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 24 Nov 1995, *J.L. Clark, K. Cunningham & C. Roberts 1668* (MO, QCNE). Epiphyte. 500 m. Amazonia, Chocó, Mesoamerica.
- Elleanthus ecuadorensis** Garay, *Fl. Ecuador* 9: 77. 1978. Type: Ecuador: Pichincha: between Chiriboga and Guajalito, 2000 m, *Asplund 20515* (HT: S). Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 11 May 1995, *J.L. Clark & C. Watt 841* (MO, QCNE). Epiphyte. Amazonia, Chocó, Mesoamerica.
- Elleanthus fractiflexus** Schltr., *Repert. Spec. Nov. Regni Veg. Beih.* 8: 35. 1921. Type: Ecuador. Pichincha: In valle Nanegal, epiphyticus et terrestris, *A. Sodiro 35* (HT: B destr.; LT: BR; IT: QPLS). Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 18 Nov 1994, *J.L. Clark, H. Lintz &*

- S. Mora* 284 (MO, QCNE).
Epiphyte. Amazonia, Chocó, Mesoamerica.
- Elleanthus graminifolius** (Barb. Rodr.) Løjtnant, Bot. Not. 129: 447. 1977
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 24 Sep 1996, *J.L. Clark* 2906 (MO, QCNE).
Epiphyte. Amazonia, Chocó, Mesoamerica.
- Elleanthus robustus** (Rchb. f.) Rchb. f., Ann. Bot. Syst. 6: 474. 1862
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 21 Nov 1994, *J.L. Clark & C. Bergman* 305 (MO, QCNE).
Epiphyte. Amazonia, Mesoamerica.
- Encyclia fragrans** (Sw.) Lemée, Fl. Guayane Franc. 1: 418. 1955.
Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 100–300 m, 8 Jul 1996, *J.L. Clark, N. Binder & W. Naranjo* 2794 (MO, QCNE).
Epiphyte.
- Encyclia vespa** (Vell.) Dressler, Phytologia 21(7): 441. 1971.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 27 Oct 1995, *J.L. Clark, L. Kvist, P. Mendosa & L. Skog* 1516 (MO, QCNE).
Epiphyte. Amazonia, Chocó, Mesoamerica.
- Epidendrum borchsenii** Hágster & Dodson, Icon. Orchid. (Mexico) 4: pl. 418. 2001.
Type: Ecuador: Pichincha: Road valve Hermoso-Los Banos, km 7 (turn oof at km 24 on rd. to Sto. Domingo-Quinidé), 450 m, 25 May 1994, *Borchsenius et al.* 265 (HT: QCA; IT: AMO).
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 15 Jul 1996, *J.L. Clark* 2872 (MO, QCNE).
Epiphyte. Endemic.
- Epidendrum difforme** Jacq., Enum. Syst. Pl. 29: 1760.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–
- 600 m, 25 Nov 1995, *J.L. Clark, K. Cunningham, & Catherine Roberts* 1681 (MO, QCNE).
Epiphyte. Amazonia, Chocó, Mesoamerica.
- Epidendrum echinatum** Løjtnant, Bot. Not. 130: 324, f. 2. 1977. Type: Ecuador. Cotopaxi: Quevedo-Latacunga road, rocky slopes with rain forest, c. 800–950 m, (79 °11W, 00 °15'S), 5 April 1973, *Holm-Nielsen, Jeppesen, Løjtnant & Øllgaard* 3001 (HT: AAU; IT: AMES, K, MO, SEL).
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 11 May 1995, *J.L. Clark & C. Watt* 839 (MO, QCNE)
Epiphyte. Endemic
- Epidendrum gentryi** Dodson, Icon. Pl. Trop. 5: pl. 427. 1982. Type: Ecuador: Pastaza: Tarqui, 13 km west of Puyo, 1000 m, 12 Aug 1978, *Dodson et al.* 7262 (HT: SEL).
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 21 Nov 1994, *J.L. Clark & C. Bergman* 309 (MO, QCNE).
Epiphyte. Amazonia, Chocó.
- Epidendrum jejunum** Rchb. f., Otia Bot. Hamburg. 12. 1982.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 27 Oct 1995, *J.L. Clark, L.P. Kvist, P. Mendosa & L.E. Skog* 1521 (MO, QCNE).
Epiphyte. Amazonia.
- Epidendrum littorale** Hágster & Dodson, Icon. Orchid. (Mexico) 2: pl. 153. 1993. Type: Ecuador: Pichincha: Centinela, km 12 Patricia Pilar to 24 (de) Mayo, at crest of ridge of Montañas Ila, 600 m, 7 Jul 1985, *C. H. Dodson & T. A. Dodson* 15869A (HT: RPSC).
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 8 May 1995, *J.L. Clark & C. Watt* 802 (MO, QCNE).
Epiphyte. Chocó.
- Epidendrum mininocturnum** Dodson, Selbyana

2(1): 53, f. 14D. 1977. Type: Ecuador. Los Ríos: Río Palenque Science Center, km 56 Quevedo-Santo Domingo, 150-220 m, 10 Mar 1977, in fruit, *C.H. Dodson 6654* (HT: SEL).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 25 Nov 1995, *J.L. Clark 1682* (MO, QCNE).

Epiphyte. Amazonia, Chocó.

Terrestrial herb. Endemic.

Gongora aceras Dressler, Orquideologia 6: 70, f. 1971. Type: Ecuador: Pichincha: Río Chihuilpe, SW of Santo Domingo de los Colorados, *Dressler, R.L. s.n.* (HT: US).

Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, *A. Gentry, R. Foster & C. Josse 72870* (MO, QCNE). Epiphyte. Chocó.

Epidendrum myodes Rchb. f., Beitr. Orchid.-K. C. Amer. 86. 1866.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 27 Sept 1996, *J.L. Clark 2947* (MO, QCNE).

Epiphyte. Mesoamerica.

Epidendrum repens Cogn., Repert. Spec. Nov. Regni Veg. 7: 122. 1909.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, *J.L. Clark & C. Watt 942* (MO, QCNE).

Epiphyte. Amazonia, Mesoamerica.

Gongora ilense Whitten & Jenny, Orchidee (Hamburg) 43(6): 270. 1992. Type: Ecuador: Los Ríos: Centinela, forested hills near Río Bimbe on E side of Río Baba, E of Río Palenque S. C., ca 3 km from Patricia Pilar, 0.30S 79.28W, 400 m, Nov. 1988, *M. Whitten & C. H. Dodson 88062* (HT: QCNE; IT: AMES, FLAS, MO, SEL).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 17 Feb 1996, *J.L. Clark & N. Kerber, J. Plihal 2051* (MO, QCNE).

Epiphyte. Endemic.

Epidendrum rigidum Jacq., Enum. Syst. Pl. 29. 1760.

Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 100–300 m, 7 Jul 1996, *J.L. Clark, N. Binder & W. Naranjo 2779* (MO, QCNE).

Epiphyte. Amazonia, Chocó, Mesoamerica.

Epidendrum secundum Jacq., Enum. Syst. Pl. 29. 1760.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 15 Mar 1998, *Christopher Pallis 4* (MO, QCNE).

Epiphyte. Amazonia, Chocó, Mesoamerica.

Helleriella punctulata (Rchb. f.) Garay & H.R. Sweet, Fl. Lesser Antilles 167. 1974.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 27 Sept 1996, *J.L. Clark 2948* (MO, QCNE).

Epiphyte. Mesoamerica.

Huntleya fasciata Fowlie, Orchid Digest 30: 281. 1966.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 23 Oct 1996, *J.L. Clark 3100* (MO, QCNE).

Epiphyte. Mesoamerica.

Lepanthes calodictyon Hook., Bot. Mag. t. 5259. 1861.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 650 m, 12 Mar 1997, *J.L. Clark, A. Cousins, T. Nuñez & J. Richter 4037*

Epiphyte. Chocó.

Erythrodes ecuadorensis Garay, Fl. Ecuador 9: 279. 1978. Type: Ecuador. Los Ríos: Río Palenque Biological Station., *Dodson & McMahon 5074* (HT: SEL; IT: RPSC).

Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 30 Jan 1991, *A. Gentry, R. Foster & C. Josse 72991* (MO, QCNE).

Lepanthes clarkii Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 61(3): 58, f. 50. 1996.

- Type: Ecuador: Bilsa Biological Station, Mache Mountains, west of Santa Isabel, 400-600 m, 14 November 1994., *J.L. Clark & N. Pitman 254* (HT: MO; IT: QCNE). (Fig. 19, p.146).
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 15 Nov 1994, *J.L. Clark & N. Pitman 254* (MO, QCNE).
- Epiphyte. Endemic.
- Lepanthes maccolmiana** Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 61(3): 112, f. 144. 1996. Type: Ecuador. Esmeraldas, *J. L. Clark & C. Watt 838* (HT: MO; IT: QCNE). (Fig.20, p.147).
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 11 May 1995, *J.L. Clark & C. Watt 838* (MO, QCNE).
- Epiphyte. Endemic.
- Lepanthes pecunialis** Luer, Orchidee (Hamburg) 37(5): 219. 1986. Type: Ecuador. Pichincha: epiphytic in citrus trees above Tandapi, 1500 m, 31 Mar 1985, *C. Luer, J. Luer, A. Hirtz & X. Hirtz 11016* (HT: MO).
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 27 Nov 1995, *J.L. Clark 1700* (MO, QCNE).
- Epiphyte. Endemic.
- Lepanthes saltatrix** Luer & Hirtz, Monogr. Syst. Bot. Missouri Bot. Gard. 61(3): 150, f. 207. 1996. Type: Ecuador. Esmeraldas: epiphytic in cloud forest west of Lita, 750 m, 18 January 1987., *C. Luer, J. Luer, C. H. Dodson, A. Hirtz, D. Benzing & D. Bermudes 12424* (HT: MO).
- Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300-700 m, 19 Jan 1996, *J.L. Clark, E. Arroyo & P. Hibbs 2728* (MO, QCNE).
- Epiphyte. Endemic.
- Lockhartia chocoensis** Kraenzl., Pflanzenr. 19. 1923. Type: Colombia,.
- Representative Specimen: Ecuador: Esmeraldas: Lita-Alto Tambo 850 m, 20 May 1987, *Dodson et al. 17138* (MO,
- QCNE).
- Epiphyte. Chocó.
- Lockhartia hercodonta** Rchb. f. ex Kraenzl., Pflanzenr. IV. 50(Heft 83): 8, t. 2A. 1923.
- Representative Specimen: Ecuador: Manabí: Pata de Pájaro 300 - 700 m, 20 June 1996, *J.L. Clark, E. Arroyo & P. Hibbs 2670* (MO, QCNE).
- Epiphyte. Chocó.
- Lockhartia serra** Rchb. f., Otia Bot. Hamburg. 6. 1876[1878]. Type: Ecuador. Guayas: Guayaquil, Litoral-Ebene, *F.C. Lehmann s.n.* (HT: W; photo: RPSC).
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 8 May 1995, *J.L. Clark & C. Watt 804* (MO, QCNE).
- Epiphyte. Endemic.
- Masdevallia geminiflora** P. Ortiz, Orquideología 13: 75. 1978.
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 650 m, 12 Mar 1997, *J.L. Clark, A. Cousins, T. Nuñez & J. Richter 4038*.
- Epiphyte. Chocó.
- Maxillaria acutifolia** Lindl., Edwards's Bot. Reg. 25: misc. 92. 1839.
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 27 Sep 1996, *J.L. Clark 2954* (MO, QCNE).
- Epiphyte. Amazonia, Mesoamerica.
- Maxillaria adendrobium** (Rchb. f.) Dressler, Taxon 13(7): 248-249. 1964.
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 9 Oct 1994, *J.L. Clark 169* (MO, QCNE).
- Epiphyte. Amazonia, Mesoamerica.
- Maxillaria alba** (Hook.) Lindl., Gen. Sp. Orchid. Pl. 143. 1832.
- Representative Specimen: Esmeraldas: Paraíso de Papagayos, 100-300 m, 7 Jul 1996, *J.L. Clark, N. Binder & W. Naranjo 2789* (MO, QCNE).

Epiphyte. Amazonia, Chocó, Mesoamerica.

QCNE).

Maxillaria aurea (Poepp. & Endl.) L.O. Williams,
Caldasia 1(3): 14. 1941.

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 400–
600 m, 21 Nov 1994, J.L. Clark & C.
Bergman 304 (MO, QCNE).

Epiphyte. Amazonia, Chocó, Mesoamerica.

Epiphyte. Amazonia, Chocó.

Maxillaria chionantha J.T. Atwood, Selbyana
16(2): 242, f. 1. 1995

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 500
m, 23 Oct 1996, J.L. Clark 3098
(MO, QCNE).

Epiphyte. Amazonia, Mesoamerica.

Maxillaria imbricata Barb. Rodr., Gen. Sp.
Orchid. 1: 120. 1877.

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 500
m, 24 Sep 1996, J.L. Clark 2905 (MO,
QCNE).

Epiphyte. Amazonia.

Maxillaria cryptobulbon Carnevali & J.T.
Atwood, Novon 1(4): 159–162, f. 1–2. 1991.

Type: Ecuador: Morona-Santiago: Serranía
de Cutucú, 25 km SE of Logrono, flowering
at the Marie Selby Botanical Gardens, 6–
10 Jan 1991, J. D. Ackerman 1041 (HT:
SEL; IT: MO, VEN).

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 400–
600 m, 23 Nov 1994, J.L. Clark & C.
Bergman 327 (MO, QCNE).

Epiphyte. Amazonia, Mesoamerica.

Maxillaria longicaulis Schltr., Repert. Spec. Nov.
Regni Veg. 27: 72. 1929.

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 500
m, 8 Oct 1996, J.L. Clark 3013 (MO,
QCNE).

Epiphyte. Amazonia.

Maxillaria marmoliana Dodson, Icon. Pl. Trop.
2: t. 156. 1980. Type: Ecuador: Los Ríos:

Río Palenque Science Center, km 56
Quevedo-Santo Domingo, 220 m 18 June
1979, C.H. Dodson 7757 (HT: SEL).

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 500
m, 21 Nov 1995, J.L. Clark & K.
Cunningham, C. Roberts 1627 (MO,
QCNE).

Epiphyte. Endemic.

Maxillaria dichotoma (Schltr.) L.O. Williams,
Bot. Mus. Leafl. 9(1): 15. 1940.
Camaridium dichotomum Schltr. Type:
Ecuador: Pinchincha: In regione subtropical
vallis Nanegal, Aug 1874, Sodiro 94.

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 400–
600 m, September 21, 1994, M.S. Bass &
L. Kueppers 38 (MO, QCNE).

Epiphyte. Amazonia, Chocó, Mesoamerica.

Maxillaria nasuta Rchb. f., Beitr. Orchid.-K. C.
Amer. 104. 1866. Type: Novo Granada:
Lasita, Schlim s.n.

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 400–
600 m, 15 Jul 1996, J.L. Clark 2880 (MO,
QCNE).

Epiphyte. Amazonia, Mesoamerica

Maxillaria ecuadorensis Schltr., Repert. Spec.
Nov. Regni Veg. Beih. 8: 93. 1921. Type:
Ecuador. Pichincha: In silvis temperatis
prope Canzacoto – Majo 1885, Sodiro 86
(HT: B destr.; LT: QPLS).

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 500
m, 21 Nov 1995, J.L. Clark & K.
Cunningham, C. Roberts 1627 (MO,

Maxillaria porrecta Lindl., Edwards's Bot. Reg.
24: misc. 92. 1838.

Representative Specimen: Ecuador:
Esmeraldas: Bilsa Biological Station, 500
m, 23 Oct 1996, J.L. Clark 3093 (MO,
QCNE).

Epiphyte. Amazonia, Mesoamerica.

Maxillaria pseudoreichenheimiana Dodson,
Icon. Pl. Trop. 2: t. 160. 1980. Type:
Ecuador: Pichincha: Km 87-84 old road
Quito-Santo Domingo, 1200-1300 m, 21

- Mar 1980, C.H. Dodson & A.H. Gentry 9718 (HT: SEL; IT: GUA, MO, SEL). Representative Specimen: Ecuador: Esmeraldas: Lita-San Lorenzo 230 m, 11 Jul 1990, *Dodson et al. 18517* (MO). Epiphyte. Endemic.
- Maxillaria ramosa** Ruiz & Pav., Syst. Veg. Fl. Peruv. Chil. 1: 226. 1798. Representative Specimen: Ecuador: Esmeraldas: Sto. Domingo-Esmeraldas 300 m, 14 Sep 1980, *Dodson et al. 10436* (SEL). Epiphyte. Amazonia, Mesoamerica.
- Maxillaria richii** Dodson, Orquideologia 19(3): 81. 1994. Type: Ecuador. Esmeraldas: Lita to San Lorenzo, Km 8, 720 m, 13 May 1990, *Dodson et al. 16586 [not 18283]* (HT: RPSC; IT: QCNE). Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 15 Jul 1996, *J.L. Clark, C. Aulestia, J. Kellermann & F. Veltel 2862* (MO, QCNE). Epiphyte. Endemic.
- Maxillaria variabilis** Bateman ex Lindl., Edwards's Bot. Reg. 23: sub t. 1886. 1837. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 23 Oct 1996, *J.L. Clark 3105* (MO, QCNE). Epiphyte. Amazonia, Mesoamerica.
- Mesospinidium incantans** Rchb. f., Gard. Chron. 1: 586. 1880. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 7 May 1995, *J.L. Clark & C. Watt 794* (MO, QCNE). Epiphyte. 400-600 m. Amazonia.
- Monophyllochis maculata** Garay, Fl. Ecuador 9: 43. 1978. Type: Ecuador: Pastaza: Mera, H. Lugo 1942 (HT: S; IT: AMES, GB). Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 21 Sep 1994, *N. Pitman, J.L. Clark & B. Adnepos 686* (MO, QCNE). Terrestrial herb. Amazonia, Mesoamerica.
- Myoxanthus exasperatus** (Lindl.) Luer, Selbyana 7(1): 36. 1982. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 9 May 1995, *J.L. Clark & C. Watt 813* (MO, QCNE). Epiphyte. Amazonia, Chocó, Mesoamerica.
- Octomeria sp.** Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 24 Nov 1995, *J.L. Clark, K. Cunningham & C. Roberts 1666* (MO, QCNE). Epiphyte. 400-600 m.
- Oncidium crista-galli** Rchb. f., Bot. Zeitung (Berlin) 10: 697. 1852. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 650 m, 12 Mar 1997, *J.L. Clark, A. Cousins, T. Nuñez & J. Richter 4069*. Epiphyte. Chocó, Mesoamerica.
- Oncidium obryzatum** Rchb. f., Bonplandia (Hanover) 2: 108. 1854. Representative Specimen: Ecuador: Manabí: Monticristi 500 m, 27 Feb 1977, *Luer et al. 1474* (SEL). Epiphyte. Amazonia, Chocó, Mesoamerica.
- Oncidium toachicum** Dodson, Icon. Pl. Trop. 2: t. 191. 1980. Type: Ecuador: Pichincha: Santo Domingo, 530 m, in fruit, 22 Jul 1979, *Dodson 9277* (HT: SEL). Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 22 Oct 1996, *J.L. Clark 3091* (MO, QCNE). Epiphyte. Endemic.
- Ophidion pleurothallopsis** (Kraenzl.) Luer, Selbyana 7(1): 80. 1982. *Cryptophoranthus pleurothallopsis* Kraenzl. Type: Colombia: Antioquia: on trees in thick, damp forests around San Gregorio and Nariño, 2000–2400 m, fl. Dec, *Lehmann 7272* (HT: K). Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 650 m, 12 Mar 1997, *J.L. Clark, A. Cousins, T. Nuñez & J. Richter 3990*. Epiphyte. Amazonia, Chocó, Mesoamerica..

Ornithocephalus bryostachys Schltr., Repert.

Spec. Nov. Regni Veg. 17: 17. 1921. Type: Ecuador. Chimborazo: "In silvis tropicis secus flumen Chimbo, 400 m, Sep 1891, L. Sodiro s.n. (HT: B destr.?).

Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 100–300 m, 8 Jul 1996, J.L. Clark, N. Binder & W. Naranjo 2798 (MO, QCNE).

Epiphyte. Amazonia.

Osmoglossum panduratum Garay, Bot. Mus.

Leafl. 26(1): 29. 1978. Type: Ecuador: without precise locality. Imported and grown by J. Stacy, J. Stacy s.n. (HT: AMES).

Representative Specimen: Ecuador: Manabí: Mache-Chindul, comunidad Ambache, 250 m, 5 Apr 1997, J.L. Clark, R. Dunn, T. Nuñez & C. Robles 4195 (MO, SEL, QCNE).

Epiphyte. 250 m. Endemic

Platystele acutilingua Kapuler & Hascall, Amer.

Orchid Soc. Bull. 35: 544. 1966. Type: Colombia: Dept. del Chocó: between Tutunendo and El Carmen, on tree trunks in the foothills of the Cordillera Occidental, A. M. Kapuler & V. C. Hascall 268 (HT: COL).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 650 m, 12 Mar 1997, J.L. Clark, A. Cousins, T. Nuñez & J. Richter 4034

Epiphyte. Chocó..

Platystele enervis Luer, Phytologia 55(3): 200.

1984. Type: Ecuador: Pichincha: epiphytic in cloud forest near Los Faisanes, ca. 2000 m, 15 Jul 1983, A. Hirtz 1009 (HT: SEL).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 25 Mar 1997, J.L. Clark & P. Nutt 4125.

Epiphyte. Endemic.

Pleurothallis barbulata Lindl., Fol. Orchid.

Pleurothallis 40. 1859.

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300–700 m, 20 Jun 1996, J.L. Clark, E. Arroyo & P. Hibbs 2693 (MO, QCNE).

Epiphyte. Amazonia, Mesoamerica.

Pleurothallis clavigulata Luer & Hirtz,

Lindleyana 11(3): 153-154, f. 16. 1996.

Type: Ecuador. Pastaza: epiphytic in cloud forest along Río Zuñag, 2400 m, 23–28 Feb 1990, A. Hirtz et al. 4635 (HT: MO).

Representative Specimen: Ecuador:

Esmeraldas: Bilsa Biological Station, 400–600 m, 5 May 1995, J.L. Clark & C. Watt 741 (MO, QCNE).

Epiphyte. Endemic. Amazonia.

Pleurothallis deregularis (Barb. Rodr.) Luer,

Selbyana 2(4): 385-386. 1978.

Representative Specimen: Ecuador:

Esmeraldas: Sto. Domingo-Esmeraldas 100 m, 13 Sep 1980, Dodson et al. 10420 (SEL).

Epiphyte. Amazonia, Mesoamerica.

Pleurothallis dibolia Luer, Selbyana 1(3): 238, f.

54. 1975. Type: Ecuador: Pichincha: epiphytic in old coffee trees 15 km east of Santo Domingo, 800 m, 28 Feb. 1975, C. Luer & R. Kent 269 (HT: SEL).

Representative Specimen: Ecuador:

Esmeraldas: Bilsa Biological Station, 600 m, 27 Sep 1996, J.L. Clark 2952 (MO, QCNE).

Epiphyte. Chocó.

Pleurothallis helleri A.D. Hawkes, Phytologia

14(1): 12-14, t. 8. 1966.

Representative Specimen: Ecuador:

Esmeraldas: Bilsa Biological Station, 400–600 m, 15 Jul 1996, J.L. Clark 2877 (MO, QCNE).

Epiphyte. Mesoamerica.

Pleurothallis pidax Luer, Selbyana 5(2): 174-175.

1979. Type: Ecuador: Los Ríos: epiphytic in rain forest at Río Palenque Science Center, Km 47 S of Santo Domingo, 2000 m, March 1976, cult. at SEL, greenhouse acc. no. 91-76-51, flowered in cult. Jan 1978, C. Luer 2277 (HT: SEL).

Representative Specimen: Ecuador:

Esmeraldas: Bilsa Biological Station, 400–600 m, 18 May 1995, J.L. Clark & C. Watt 935 (MO, QCNE).

Epiphyte. Endemic.

Pleurothallis rowleei Ames, Sched. Orch. 1: 11-

12. 1922
 Representative Specimen: Ecuador:
 Esmeraldas: Bilsa Biological Station, 400–
 600 m, 15 Jul 1996, *J.L. Clark 2871* (MO,
 QCNE).
 Epiphyte. Amazonia, Chocó, Mesoamerica.
- Pleurothallis ruscifolia** (Jacq.) R. Br., Hort. Kew.
 (ed. 2) 5: 211. 1813.
 Representative Specimen: Ecuador:
 Esmeraldas: Bilsa Biological Station, 500
 m, 20 Mar 1998, *J.L. Clark & C. Pallis 4745*
 (MO, QCNE).
 Epiphyte. Amazonia, Chocó, Mesoamerica.
- Polycyenis ornata** Garay, Canad. J. Bot. 34(2):
 256. 1956. Type: Ecuador: Napo-Pastaza:
 Ozoyacu (north of Archidona), 1000 m, 26
 Oct 1939, *E. Asplund 9516* (HT: S).
 Representative Specimen: Ecuador:
 Esmeraldas: Bilsa Biological Station, 650
 m, 12 Mar 1997, *J.L. Clark, A. Cousins, T.
 Nuñez & J. Richter 4036*.
 Epiphyte. Amazonia, Mesoamerica.
- Polystachya concreta** (Jacq.) Garay & H.R.
 Sweet, Fl. Lesser Antilles 1: 178. 1974.
 Representative Specimen: Ecuador:
 Esmeraldas: Bilsa Biological Station, 400–
 600 m, 16 May 1995, *J.L. Clark & C. Watt
 904* (MO, QCNE).
 Epiphyte. Amazonia, Chocó, Mesoamerica.
- Polystachya foliosa** (Hook.) Rchb. f., Ann. Bot.
 Syst. 6(4): 640. 1863.
 Representative Specimen: Ecuador: Manabí:
 Cerro Pata de Pájaro, 300–700 m, 20 Jun
 1996, *J.L. Clark, E. Arroyo & P. Hibbs 2692*
 (MO, QCNE).
 Epiphyte. Amazonia, Chocó, Mesoamerica.
- Sarcoglottis grandiflora** (Lindl.) Klotzsch, Allg.
 Gartenzeitung 10: 107. 1842. *Spiranthes
 grandiflora* Lindl.
 Representative Specimen: Ecuador:
 Esmeraldas: Fila de Bilsa, 280 m, 29 Jan
 1991, *A. Gentry, R. Foster & C. Josse 72872*
 (MO).
 Terrestrial herb. Amazonia.
- Scaphosepalum microdactylum** Rolfe, Bull.
 Misc. Inform. Kew 1893(82-83): 335. 1893
 [1894].
 Representative Specimen: Ecuador:
 Esmeraldas: Cerros de Mache 600 m, 15
 Dec 1990, *Dodson et al. 18569* (MO).
 Epiphyte. Chocó, Mesoamerica.
- Scaphyglottis boliviensis** (Rolfe) B.R. Adams,
 Phytologia 64(4): 257. 1988.
 Representative Specimen: Ecuador:
 Esmeraldas: Paraíso de Papagayos, 100–
 300 m, 8 Jul 1996, *J.L. Clark, N. Binder &
 W. Naranjo 2803* (MO, QCNE).
 Epiphyte. Amazonia, Chocó, Mesoamerica.
- Scaphyglottis prolifera** Cogn., Fl. Bras. 3(5): 15.
 1898.
 Representative Specimen: Ecuador:
 Esmeraldas: Bilsa Biological Station, 400–
 600 m, 20 May 1995, *J.L. Clark & C. Watt
 940* (MO, QCNE).
 Epiphyte. Amazonia, Chocó, Mesoamerica.
- Sigmatostalix adamsii** Dodson, Selbyana 2(1): 54,
 f. 15C. 1977. Type: Ecuador: Pichincha:
 very common in orange trees in the city of
 Santo Domingo, 650 m, 15 Jun 1967, *C.H.
 Dodson, N. Willias & R. Adams 3705* (HT:
 SEL).
 Representative Specimen: Ecuador:
 Esmeraldas: Bilsa Biological Station, 530
 m, 9 May 2001, *D. Neill, C. Aulestia &
 QCNE botany interns 13230* (MO, QCNE).
 Epiphyte. Endemic.
- Sobralia lancea** Garay, Bot. Mus. Leafl. 18: 187.
 1958. Type: *Koie 4787*.
 Representative Specimen: Ecuador:
 Esmeraldas: Bilsa Biological Station, 400–
 600 m, 21 Nov 1994, *J.L. Clark & C.
 Bergman 310* (MO, QCNE).
 Terrestrial herb. Chocó, Mesoamerica.
- Sobralia powellii** Schltr., Repert. Spec. Nov. Regini
 Veg. Beih. 17: 11. 1922. Type: *Powell 2*.
 Representative Specimen: Ecuador:
 Esmeraldas: Bilsa Biological Station, 500
 m, 24 Sep 1996, *J.L. Clark 2886* (MO,
 QCNE).
 Terrestrial herb. Chocó, Mesoamerica.

Stanhopea annulata Mansf., Orchis 16: 19. 1938.
Type: Ecuador: Pichincha: Río Baba, 28 km south of Santo Domingo, 350 m, 15 May 1962, *Dodson & Thien* 2166 (NT: SEL).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 25 Nov 1995, *J.L. Clark, K. Cunningham & C. Roberts* 1694 (MO, QCNE).

Epiphyte. Chocó

Terrestrial herb. Chocó, Mesoamerica.

Stelis argentata Lindl., Edwards's Bot. Reg. 28: Misc. 64. 1842.

Representative Specimen: Ecuador: Manabí: Cordillera de Jama, 300 m, 16 Dec 1998, *D. Neill & QCNE botany interns* 11561.

Epiphyte. Amazonia, Chocó, Mesoamerica.

Stelis manabina Dodson & Garay, Icon. Pl. Trop. 4: t. 327. 1980. Type: Ecuador: Manabí: near summit of Monticristi, 8 km of Manta, 500 m, 8 Jan 1978, *Luer et al.* 2273 (HT: SEL).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 27 Sep 1996, *J.L. Clark* 2951 (MO, QCNE).

Epiphyte. Endemic.

Stelis pardipes Rehb. f., Beitr. Orchid.-K. C. Amer. 96. 1866. *Wendland s.n.*

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300–700 m, 20 Jun 1996, *J.L. Clark, E. Arroyo & Meter Hibbs* 2669 (MO, QCNE).

Epiphyte. Amazonia, Mesoamerica.

Stelis purpurea (Ruiz & Pav.) Willd., Sp. Pl. 4: 140. 1805.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 27 Sep 1996, *J.L. Clark* 2949 (MO, QCNE).

Epiphyte. Amazonia, Chocó, Mesoamerica.

Stenorrhynchos lanceolatum (Aubl.) Rich. ex Spreng., Syst. Veg. 3: 710. 1826.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 2 Jan 1997, *J.L. Clark, E. Austen, S. Bennett & D. Kapan* 3680

Trichopilia rostrata Rchb. f., Refug. Bot. t. 100. 1872.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 27 Sep 1996, *J.L. Clark* 2944 (MO, QCNE).

Epiphyte. Endemic.

Trichosalpinx blaisdellii (S. Watson) Luer, Phytologia 54(5): 394. 1983.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 530 m, 9 May 2001, *D. Neill, C. Aulestia & QCNE botany interns* 13231 (MO, QCNE).

Epiphyte. Amazonia, Mesoamerica.

Trichosalpinx orbicularis (Lindl.) Luer, Phytologia 54(5): 396. 1983.

Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 28 Jan 1991, *A. Gentry & C. Josse* 72767 (MO, QCNE).

Epiphyte. Amazonia, Chocó, Mesoamerica.

Vanilla planifolia Andrews, Bot. Repos. 8: pl. 538. 1808.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 2 Jan 1995, *N. Pitman* 1162 (MO, QCNE).

Terrestrial, scandent herb. Common name: "Vainilla." Amazonia, Chocó, Mesoamerica.

OXALIDACEAE

Averrhoa carambola L., Sp. Pl. 1: 428. 1753.

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300–700 m, 21 Jun 1996, *J.L. Clark, E. Arroyo & P. Hibbs* 2698 (MO, QCNE).

Common introduced and cultivated tree. 300–700 m. Common name: "Fruta china." Chocó, Mesoamerica.

Biophytum dendroides (Kunth) DC., Prodr. 1: 690. 1824. *Oxalis dendroides* Kunth. Type: Crescit in Regno Novo-Granatensi, inter urbem Guaduas et Quebrada de la

Carbonera, Humboldt & Bonpland s.n.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 18 Nov 1996, *J.L. Clark, F. Gurumendí & H. Weinert 3447* (MO, QCNE).

Common herb growing on rocks along shady rivers. 500 m. Amazonia, Chocó, Mesoamerica.

Oxalis sp.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 4 Dec 1996, *J.L. Clark, T. Walla & H. Greeney 3567* (MO, QCNE).

Common terrestrial herb along disturbed roadsides. 400-600 m. Amazonia, Chocó, Mesoamerica.

PAPAVERACEAE

Bocconia integrifolia Humb. & Bonpl., Pl. Aequinoct. 1: 119, t. 35. 1807.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 7 Oct 1994, *J.L. Clark & H. Lintz 150* (MO, QCNE).

Common shrub along road, 1-3 m tall. 400-600 m. Amazonia.

PASSIFLORACEAE

Passiflora ambigua Hemsl., Bot. Mag. 128: t. 7822. 1902.

Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 200 m, 10 Oct 1996, *J.L. Clark 3035* (MO, QCNE).

Herbaceous vine. 200 m. Amazonia, Chocó, Mesoamerica.

Passiflora auriculata Kunth, Nov. Gen. Sp. 2: 131. 1817.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 22 Oct 1996, *J.L. Clark 3063* (MO, QCNE).

Common herbaceous vine in disturbed areas. 60–800 m. Amazonia, Chocó, Mesoamerica.

Passiflora biflora Lam., Encycl. 3: 36. 1789.

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro 800 m, 10 Mar 1997,

H. Vargas 1307 (MO, QCNE).

Vine or liana. 800 m. Chocó, Mesoamerica.

Passiflora capsularis L., Sp. Pl. 2: 957. 1753.

Representative Specimen: Ecuador: Manabí: Jama 400 m, 18 Dec 1998, *D. Neill & QCNE Botany interns 11680* (QCNE).

Herbaceous vine. 400 m. Chocó, Mesoamerica.

Passiflora chelidonea Mast., Gard. Chron. 12: 40.

1879. Type: Cultivated: cult. by Anderson-Henry from a Sodiro seed collection from Cerro Corazón, Ecuador, s.n. (HT: K).

Representative Specimen: Ecuador: Esmeraldas: Herrera (La Y de la Laguna) 450 m, 26 Mar 1998, *J.L. Clark 4920* (QCNE, MO).

Herbaceous vine. 450 m. Amazonia, Chocó.

Passiflora discophora P. Jørg. & Lawesson, Nordic J. Bot. 7(2): 127, f. 1. 1987. Type:

Ecuador. Prov. Los Ríos: Patricia Pilar-24 de Mayo, km 12, *C.H. Dodson et al. 11077* (HT: MO!).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 4 Jan 1997, *J.L. Clark, E. Austen, S. Bennett & D. Kapan 3706* (MO, QCNE, US).

Liana growing in subcanopy. 500 m. Endemic. Amazonia

Passiflora edulis Sims, Bot. Mag. 45: pl. 1989. 1818.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 13 Sep 1994, *J.L. Clark & B. Adnepos 12* (MO, QCNE).

Common introduced and cultivated herbaceous vine. 400-600 m. Common name: “Maracuya.” Amazonia, Chocó, Mesoamerica.

Passiflora filipes Benth., Pl. Hartw. 118. 1843.

Type: Ecuador: Guayaquil, *Hartweg 661*.

Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor 50 m, 25 Aug 1998, *D. Neill & QCNE botany interns 11287* (MO, QCNE).

Herbaceous vine. 50 m. Mesoamerica.

Passiflora foetida L., Sp. Pl. 2: 959. 1753.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 13 May 1995, *J.L. Clark & C. Watt 856* (MO, QCNE).

Common clambering herbaceous vine in disturbed areas. 400 m. Common name: “Bombillo.” Amazonia, Chocó, Mesoamerica.

Passiflora macrophylla Spruce ex Mast., J. Linn. Soc., Bot. 20: 31. 1883. Type: Ecuador: Río San Antonio near Volcan Chimborazo, *Spruce 6203* (LT: BM; ILT: W).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 14 May 1995, *J.L. Clark & C. Watt 871* (MO, QCNE).

Understory unbranched shrub, 1-2 m tall. 300–700 m. Amazonia, Chocó.

Passiflora maliformis L., Sp. Pl. 2: 956. 1753.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 2 Jan 1997, *J.L. Clark, E. Austen, S. Bennett & D. Kapan 3681* (MO, QCNE).

Herbaceous vine in sunny disturbed areas. 500 m. Chocó.

Passiflora palenquensis Holm-Niels. & Lawesson, Ann. Missouri Bot. Gard. 74: 497, f. 1. 1987. Type: Ecuador. Prov. Los Ríos: Río Palenque Science Center, Km 56. 150-220 m., *C.H. Dodson & A. Gentry 8854* (HT: MO).

Representative Specimen: Ecuador: Esmeraldas : Bilsa Biological Station, 500 m, 4 -5 Oct 1996, *J.L. Clark 2983* (MO, QCNE).

Common herbaceous vine. 280-600 m. Chocó.

Passiflora pittieri Mast., Bot. Gaz. 23(4): 246-247. 1897.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 8 Jan 1997, *J.L. Clark, E. Austen, S. Bennett & D. Kapan 3772* (MO, QCNE).

Common woody vine in mature forest. Used for *Heliconius-Passiflora* study. 400-600 m. Chocó, Mesoamerica.

Passiflora punctata L., Sp. Pl. 2: 957. 1753.

Representative Specimen: Ecuador: Manabí: 34 km al norte de Pedernales 60 m, 28 Aug 1998, *D. Neill & QCNE botany interns 11458* (MO, QCNE).

Herbaceous vine growing in secondary forest. 60 m. Chocó, Mesoamerica.

Passiflora quadrangularis L., Syst. Nat. (ed. 10) 2: 1248. 1759.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 8 Dec 1994, *M.S. Bass & N. Pitman 312* (MO, QCNE).

Vine growing in secondary forest. 400-600 m. Common name: “Badea.” Amazonia, Chocó, Mesoamerica.

Passiflora resticulata Mast. & André, J. Linn. Soc., Bot. 20: 42-43. 1884. Type: Ecuador:

Pichincha: San Florencio on the W slopes of Cerro Corazón, 1580 m, *André 2568* (LT: K).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 4–5 Oct 1996, *J.L. Clark 2994* (MO, QCNE).

Common herbaceous vine in secondary forest. 400-800 m. Amazonia.

Passiflora rubra L., Sp. Pl. 2: 956-957. 1753.

Representative Specimen: Ecuador: Esmeraldas: 3 km al norte del Río Cojimíes 50 m, 19 Dec 1998, *D. Neill & QCNE botany interns 11699* (MO, QCNE).

Herbaceous vine. 50-700 m. Amazonia, Chocó, Mesoamerica.

Passiflora sprucei Mast., Fl. Bras. 13(1): 568. 1872. Type: Ecuador: Guayas: Río Ventanas, *R. Spruce 6459* (IT: BM, K).

Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 200 m, 14 Jan 1997, *J.L. Clark, L. Chatrou, P. Maas & C. Repetur 3792* (MO, QCNE).

Herbaceous vine growing in sunny disturbed site. 200 m. Endemic.

Passiflora tiliifolia L., Sp. Pl. 956. 1753.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–

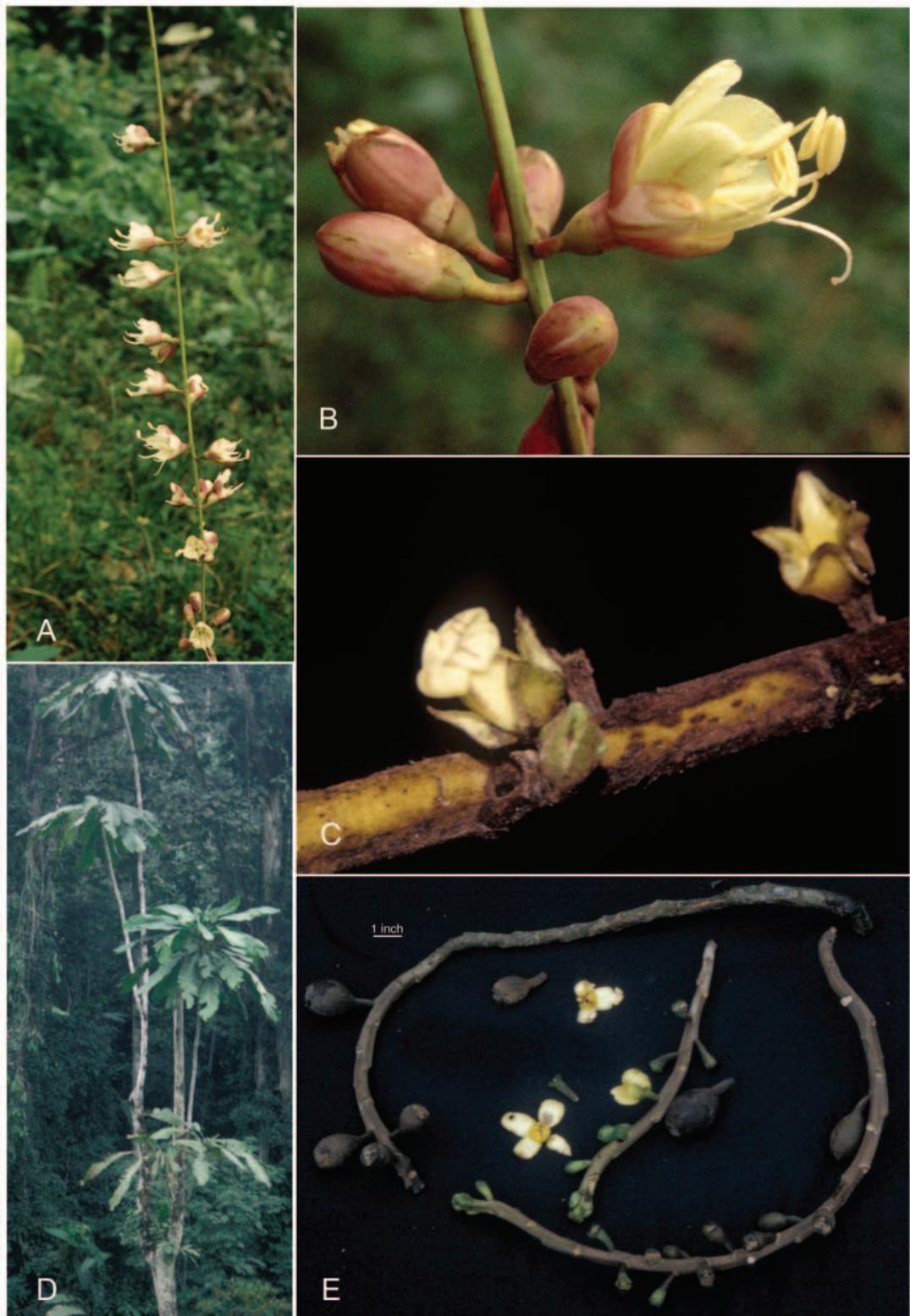


Figure 2. A-B. Inflorescence and flower of *Ecuadendron acosta-solisianum* D.A. Neill. C. Flower of *Diospyros esmeregae* B. Walln. D-E. Habit and inflorescence of *Grias longirachis* S. Mori & J.L. Clark.

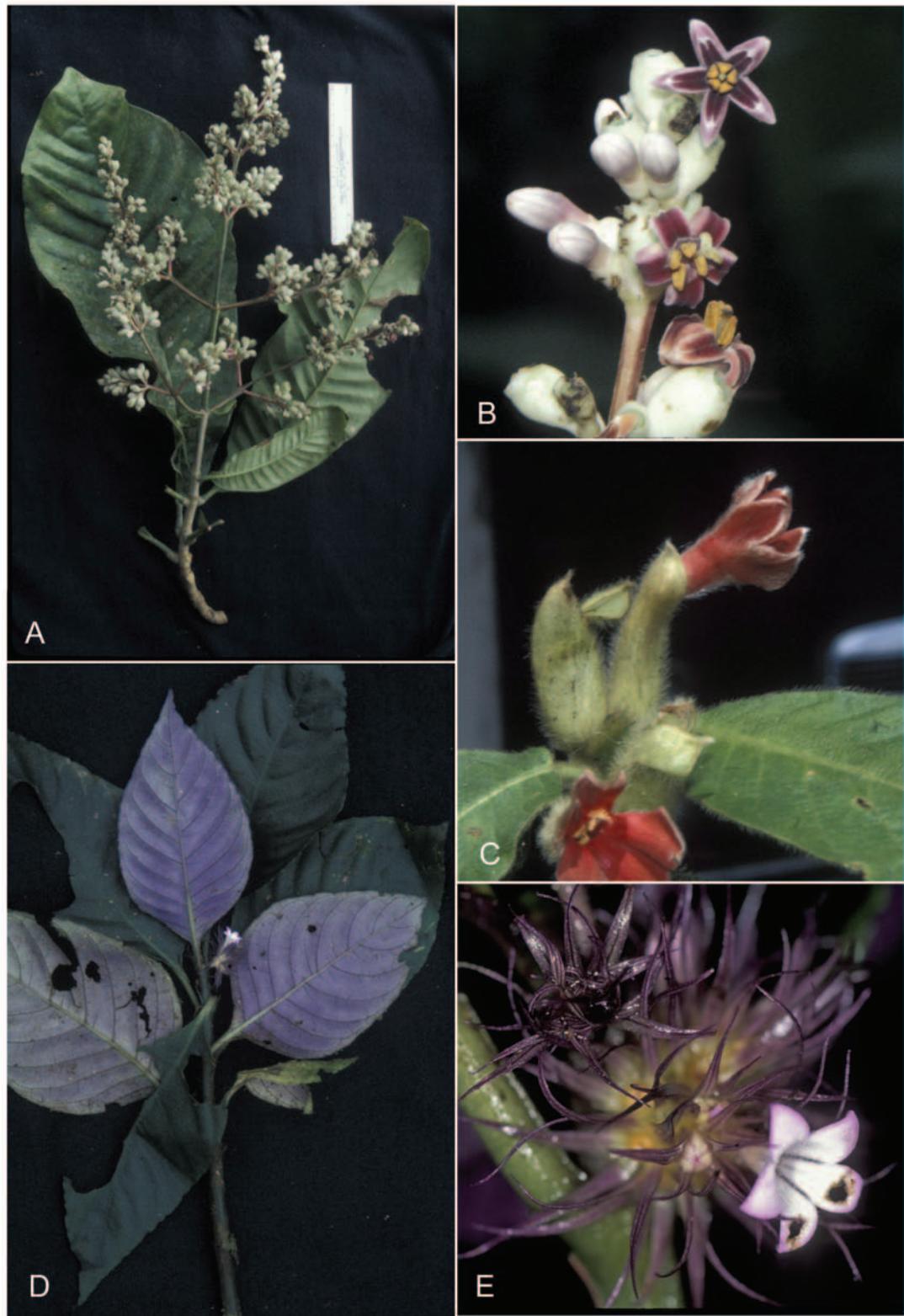


Figure 3. A-B. Inflorescence and flower of *Rustia bilsana* Delprêtre. C. Flower of *Hippotis comosa* L. Andersson & Rova. D-E. Habit and inflorescence of *Amphidasya amethystina* J.L. Clark & C.M. Taylor.



Figure 4. A-B. Hemiepiphytic *Ocotea* sp. showing strangling habit on the host tree *Citharexylum gentryi* Moldenke; only known from three individuals in permanent plot on Loma de los Guerreros. C. Common canopy tree, *Chlorocardium* aff. *venenosum* (Kosterm. & Pinkley) Rohwer, H.G. Richt. & van der Werff.

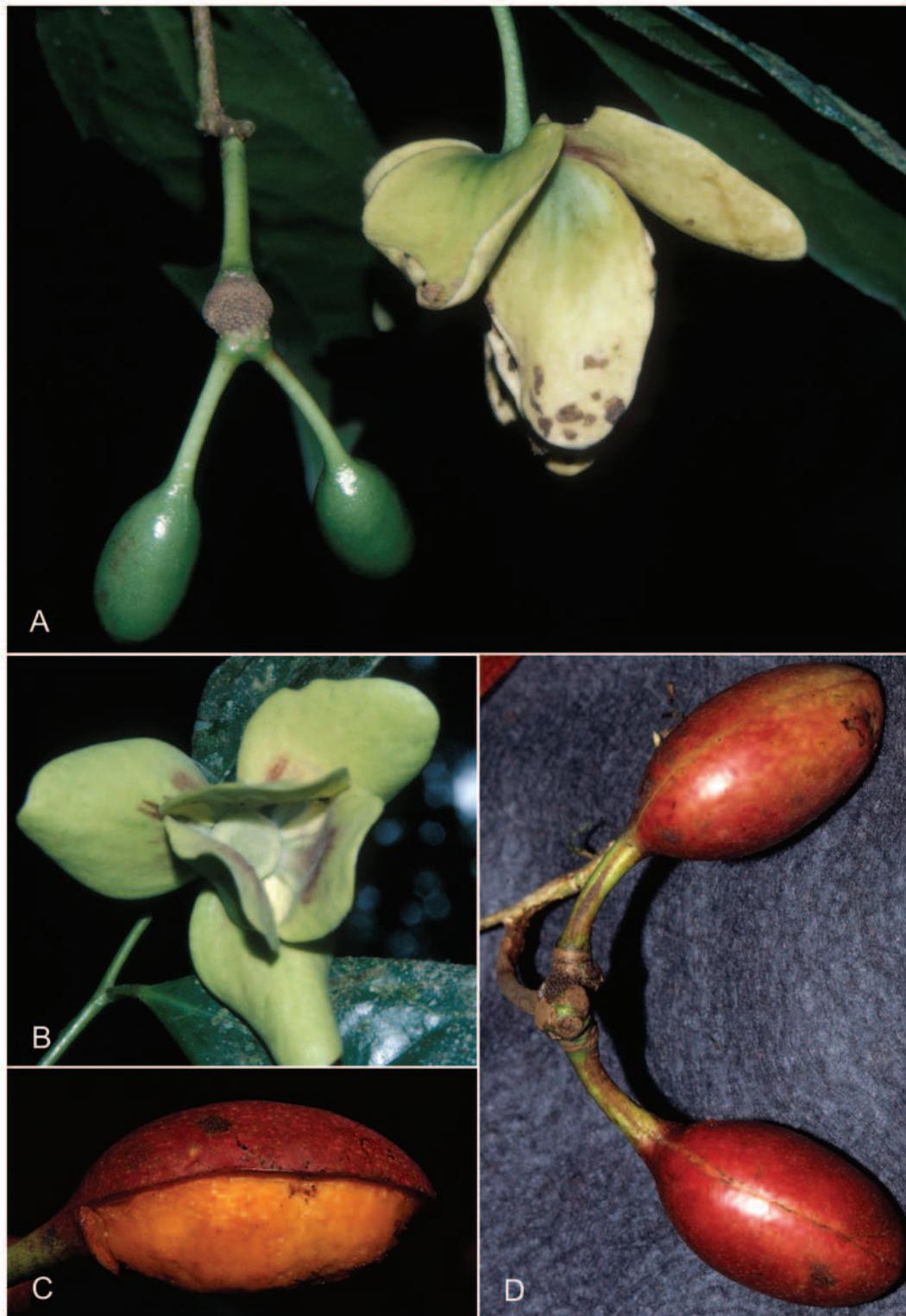


Figure 5. A-B. Fruit and flower of *Mosannonia pacifica* Chatrou. C-D. Fruits of *Klarobelia megalocarpa* Chatrou (photo by P. Maas of type collection, Maas et al. 8521)

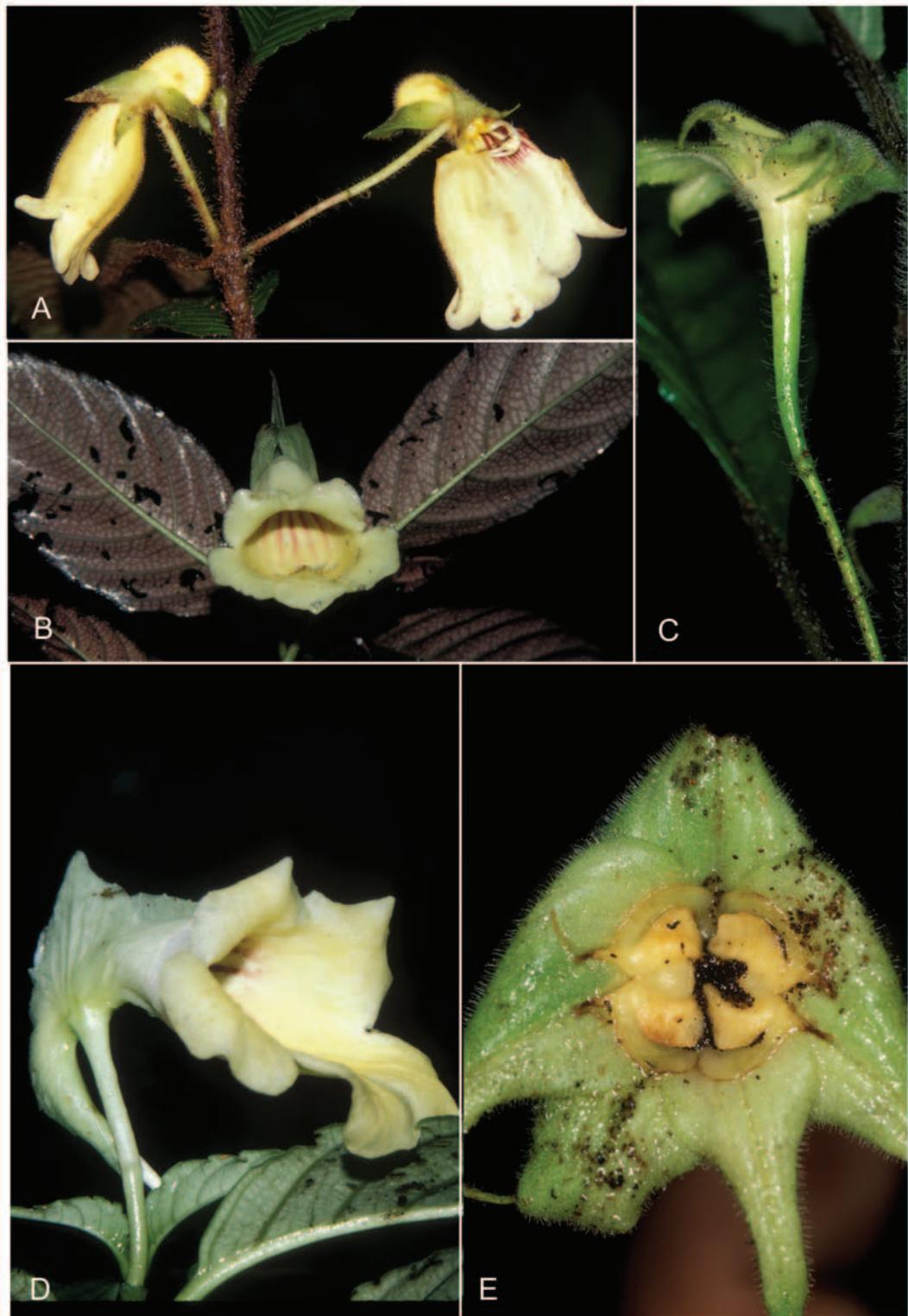


Figure 6. A. Lateral views of closed and cut open flowers of *Gasteranthus villosus* L.E. Skog & L.P. Kvist. B. Front view of *Gasteranthus tenellus* L.E. Skog & L.P. Kvist with red foliage. C & E. Capsular fruit of *Gasteranthus villosus*. D. Lateral view of *Gasteranthus tenellus* L.E. Skog & L.P. Kvist with green foliage.



Figure 7. A-B. Flower and habit of *Pitcairnia clarkii* H. Luther. C. Flower of *Burmeistera smaragdi* Lammers. D-E. Flower and habit of *Pitcairnia ferrell-ingramiae* H. Luther & Dalström.



Figure 8. A. Large fruits with numerous wooly lanate seeds of *Patinoia aff. almirajo* Cuatrec. B. Flower of *Capparis bonifaziana* X. Cornejo & H.H. Iltis. C-D. Flower and leaves of emergent canopy tree, *Spirotheca awadendron* Fern.Alonso

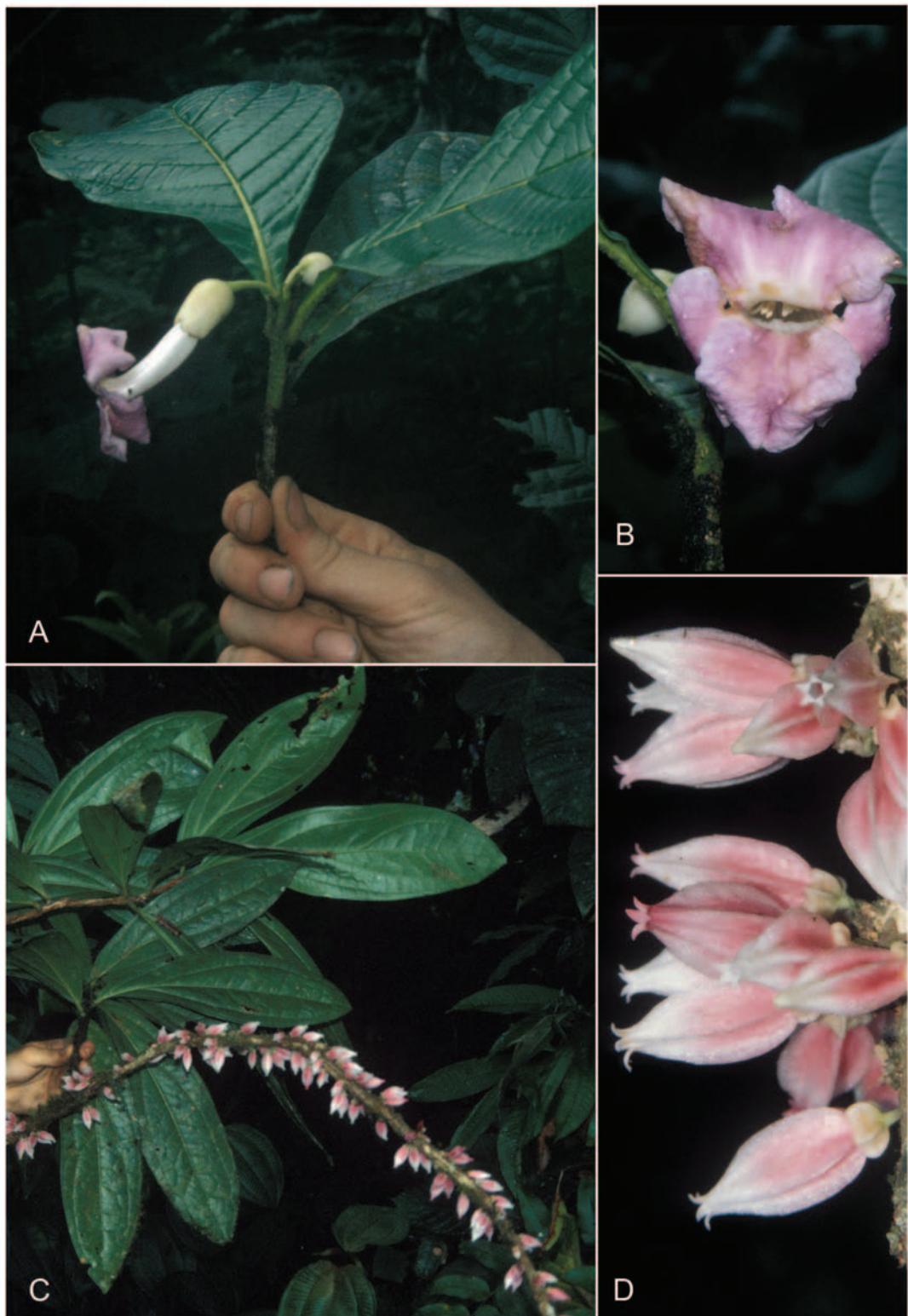


Figure 9. A-B. Lateral and front views of flower from *Exarata chocoensis* A.H. Gentry. C-D. Hemiepiphytic habit and flowers of *Thibaudia litensis* Luteyn.



Figure 10. *Exarata chocoensis* A.H. Gentry. A. Branch with flowers. B. Branch with fruits. C. Calyx cut away to show pistil. D. Anthers. E. Base of lower leaves. (Based on: A, Pennington & de la Cruz 10550; B, Gentry & Renteria 23980.) Reprinted with permission from Gentry (1992: Figure 1).

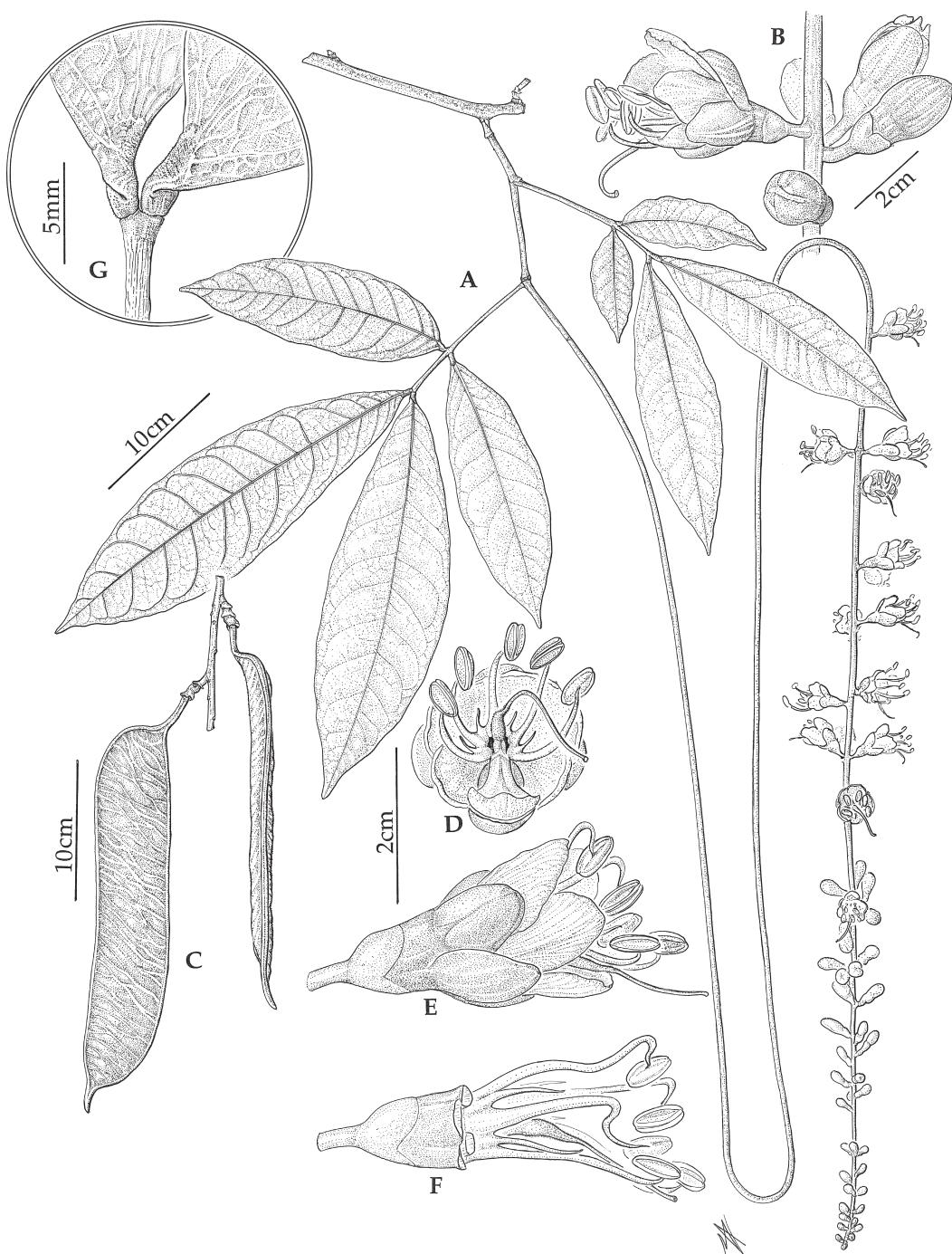


Figure 11. *Ecuadendron acosta-solisianum* D.A. Neill. A. Flowering branch with pendent inflorescence. B. Position of flowers on pendent inflorescence. C. Pendent, mature fruits. D. Open flower showing position of petals, androecium, and gynoecium. E. Side view of open flower. At anthesis filaments are fully extended. F. Flower with sepals and petals removed, showing position of androecium with fertile stamens and vestigial staminodes and gynoecium. (Based on: D.A. Neill, H. Vargas, T. Núñez & J.L. Clark 10437, holotype.) Reprinted with permission from Neill (1998: Figure 1).

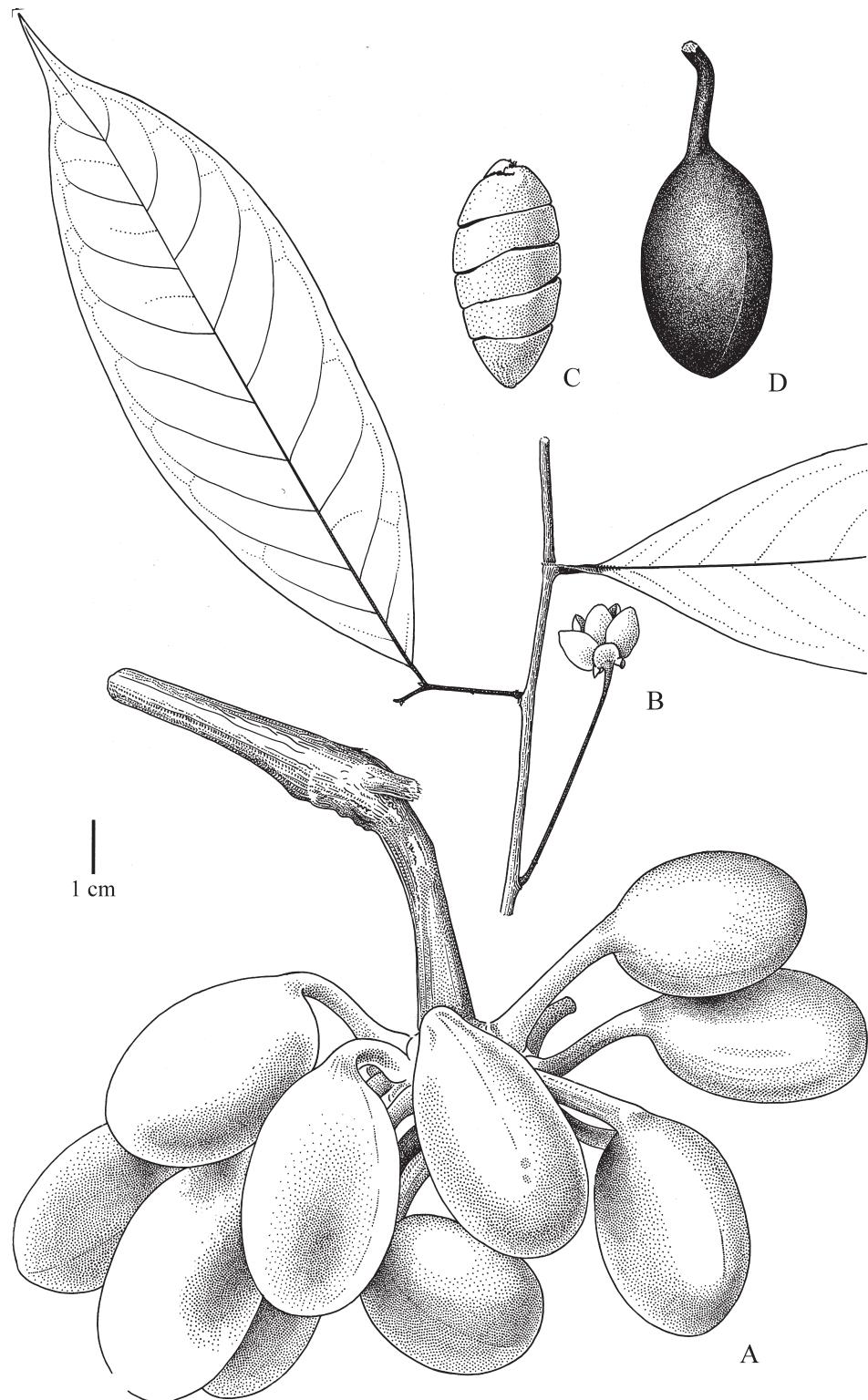


Figure 12. *Klarobelia megalocarpa* Chatrou. A. Fruit. B. Habit with immature flower. C. Seed with spiral raphe. D. Monocarp. (Based on: A, C, D, Maas et al. 8521, holotype; B, J.L. Clark 509.) Reprinted with permission from Chatrou (1998: Figure 5).



Figure 13. *Mosannon pacifica* Chatrou. A. Habit with immature fruit. B. Flower at anthesis. The front petal curved inward to close the pollination chamber. C. Habit with flower. (Based on: A, P. Maas et al. 8531, type collection; B, J.L. Clark 4107; C, J.L. Clark 419.) Reprinted with permission from Chatrou (1998: Figure 8).

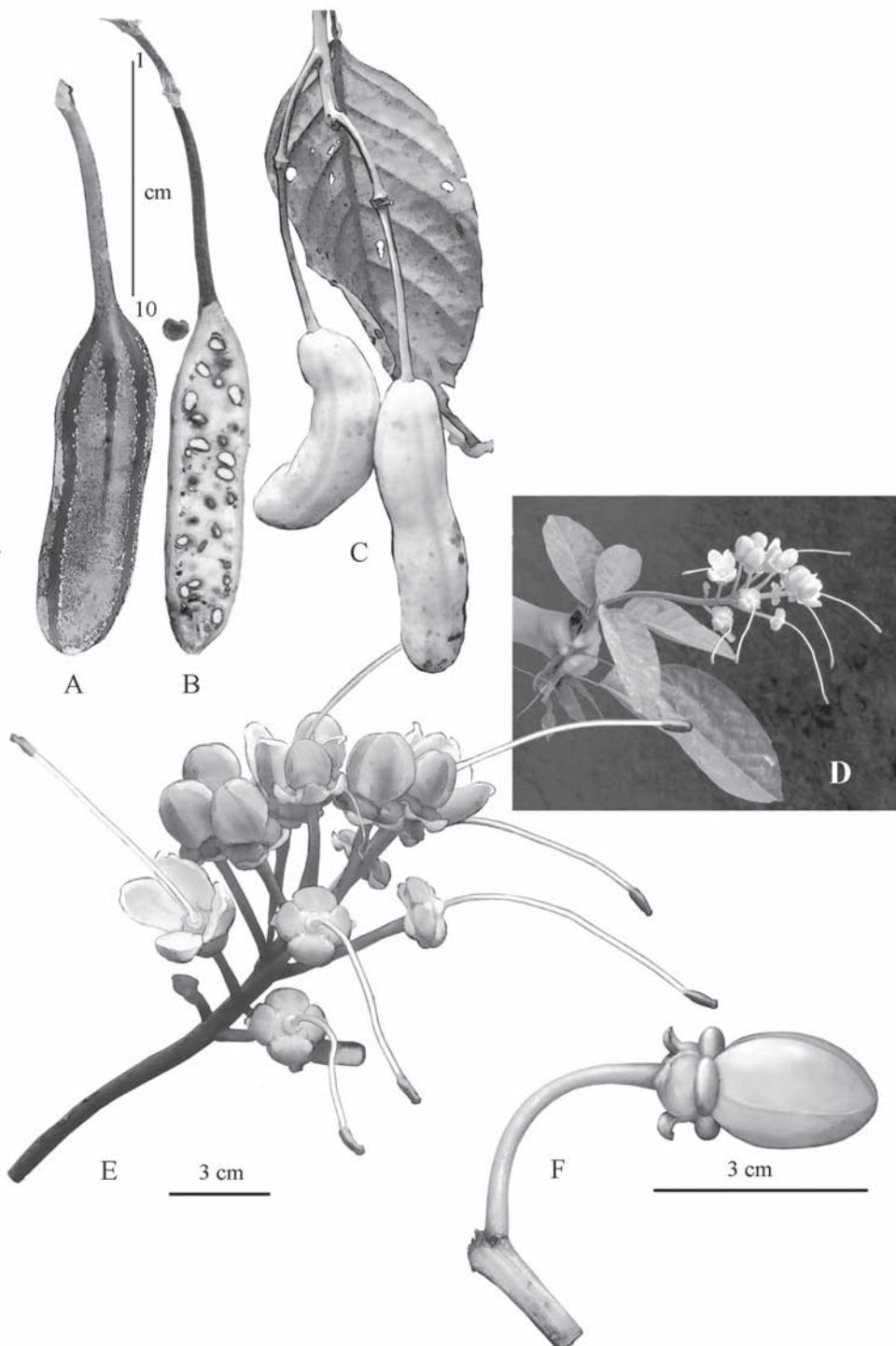


Figure 14. *Capparis bonifaziana* X. Cornejo & Iltis. A. Nearly mature fruit with characteristic longitudinal stripes. B. Fruit in longitudinal section, showing the many seeds imbedded in a white pulp. C. Branch with two fruits and subtending leaf. D. Flowering branch, with buds and post-anthesis flower with filaments abscised. E. The same branch as in D, enlarged. F. Flower bud just preceding anthesis. Reprinted with permission from Cornejo & Iltis (2005: modified from Figures 4 & 5).



Figure 15. *Gasteranthus bilsaensis* L.E. Skog & L.P. Kvist. A. Habit. B. Inset: section of abaxial leaf surface. C. Corolla. D. Corolla opened to show stamens. E. Calyx. F. Calyx, pistil, and disk. (Based on: A, Mendoza-T. et al. 561; B, J.L. Clark et al. 213; C-F, N. Pitman et al. 884.) Reprinted with permission from Skog & Kvist (2000: Figure 17).



Figure 16. *Gasteranthus tenellus* L.E. Skog & L.P. Kvist. A. Habit. B. Inset: section of abaxial leaf surface. C. Corolla. D. Corolla opened to show stamens. E. Calyx. F. Calyx, pistil, and disk. G. Fruit. H. Seeds. (Based on: A, Abbott 15271; B-F, J.L. Clark et al. 2815; G-H, Mendoza-T. et al. 586.) Reprinted with permission from Skog & Kvist (2000: Figure 37).

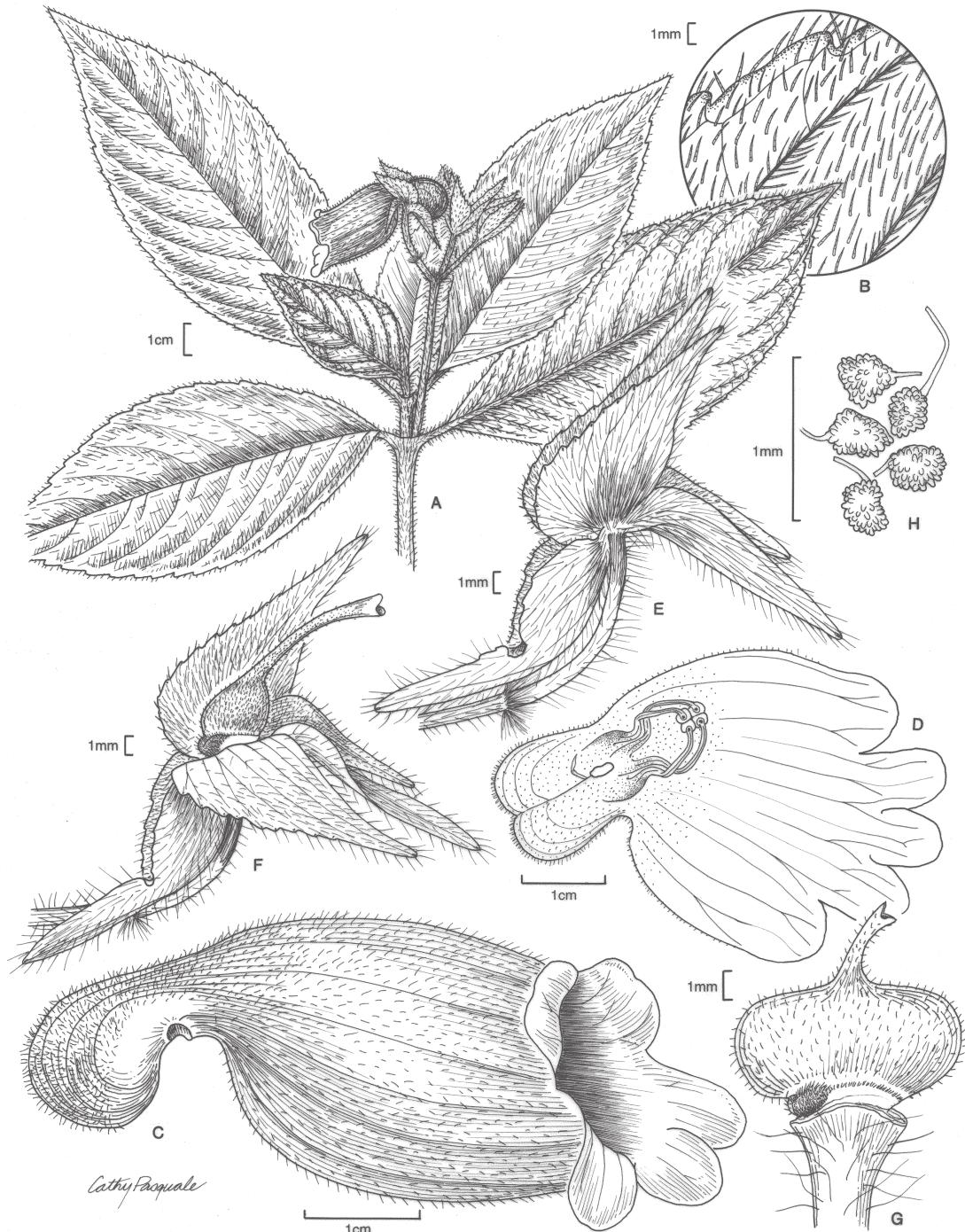


Figure 17. *Gasteranthus villosus* L.E. Skog & L.P. Kvist. A. Habit. B. Inset: section of abaxial leaf surface. C. Corolla. D. Corolla opened to show stamens. E. Calyx. F. Calyx, pistil, and disk. G. Fruit. H. Seeds. (Based on: *Játiva & Epling 744*.) Reprinted with permission from Skog & Kvist (2000: Figure 38).

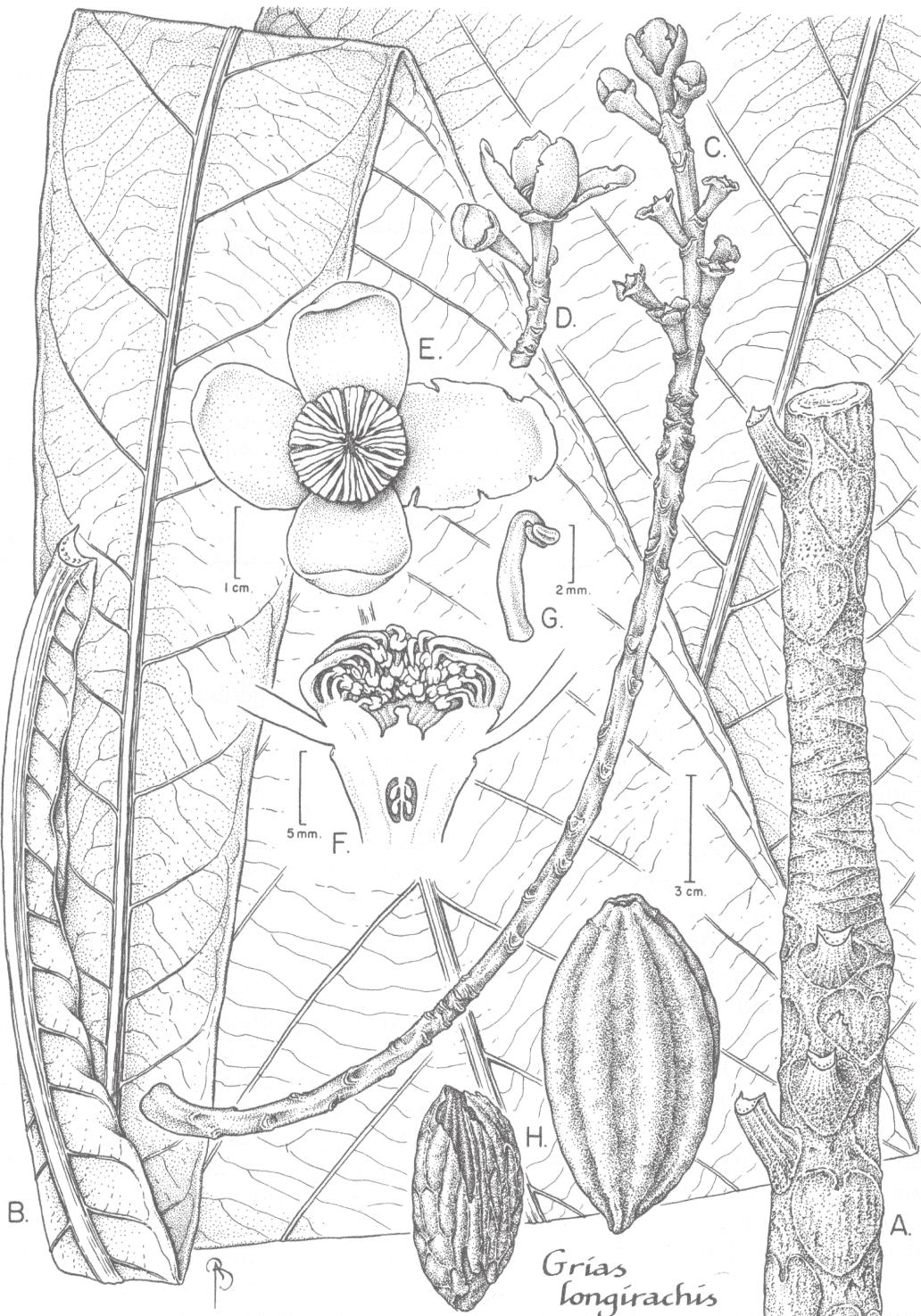


Figure 18. *Grias longirachis* S.A. Mori & J.L. Clark. A. Stem showing scars of two leaf flushes with scars of intervening bracts. B. Part of leaf. C. Inflorescence showing young flowers toward apex and newly forming fruits below them, note bracts at apex and bract scars under flowers and developing fruits. D. Apical part of inflorescence showing lateral views of bud and flower. E. Apical view of flower. F. Medial section of androecium and pistil. Note pendulous ovules. G. Stamen. H. Fruit (upper right) and seed with seed coat partially fragmented (lower left). (Based on: A, J.L. Clark & D. Kapan 3745; B, H from J.L. Clark & Y. Troya 684; C, J.L. Clark et al. 1641; D-G, J.L. Clark 2963.) Reprinted with permission from Clark & Mori (2000: Figure 1).

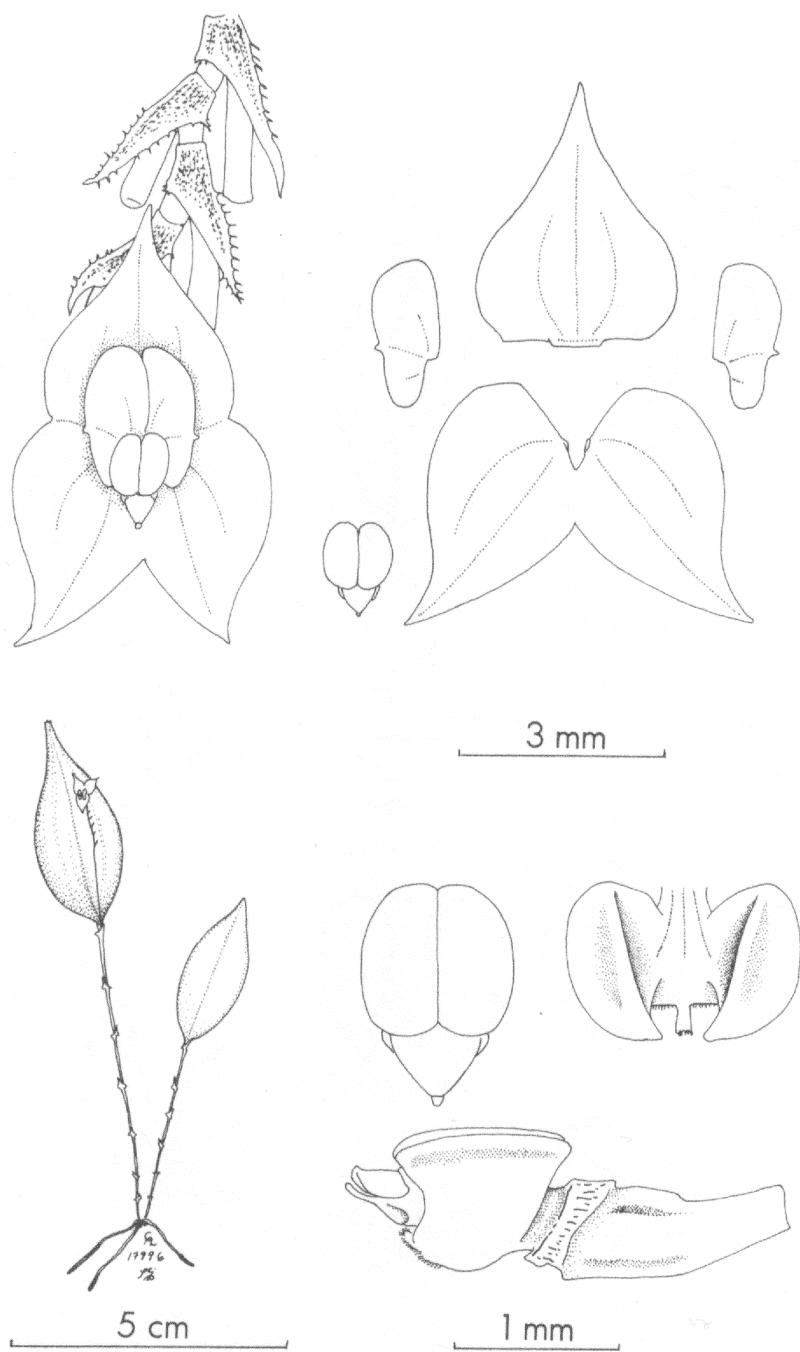


Figure 19. *Lepanthes clarkii* Luer. (Based on: J.L. Clark & N. Pitman 254, type.) Reprinted with permission from Luer (1996: Figure 50).

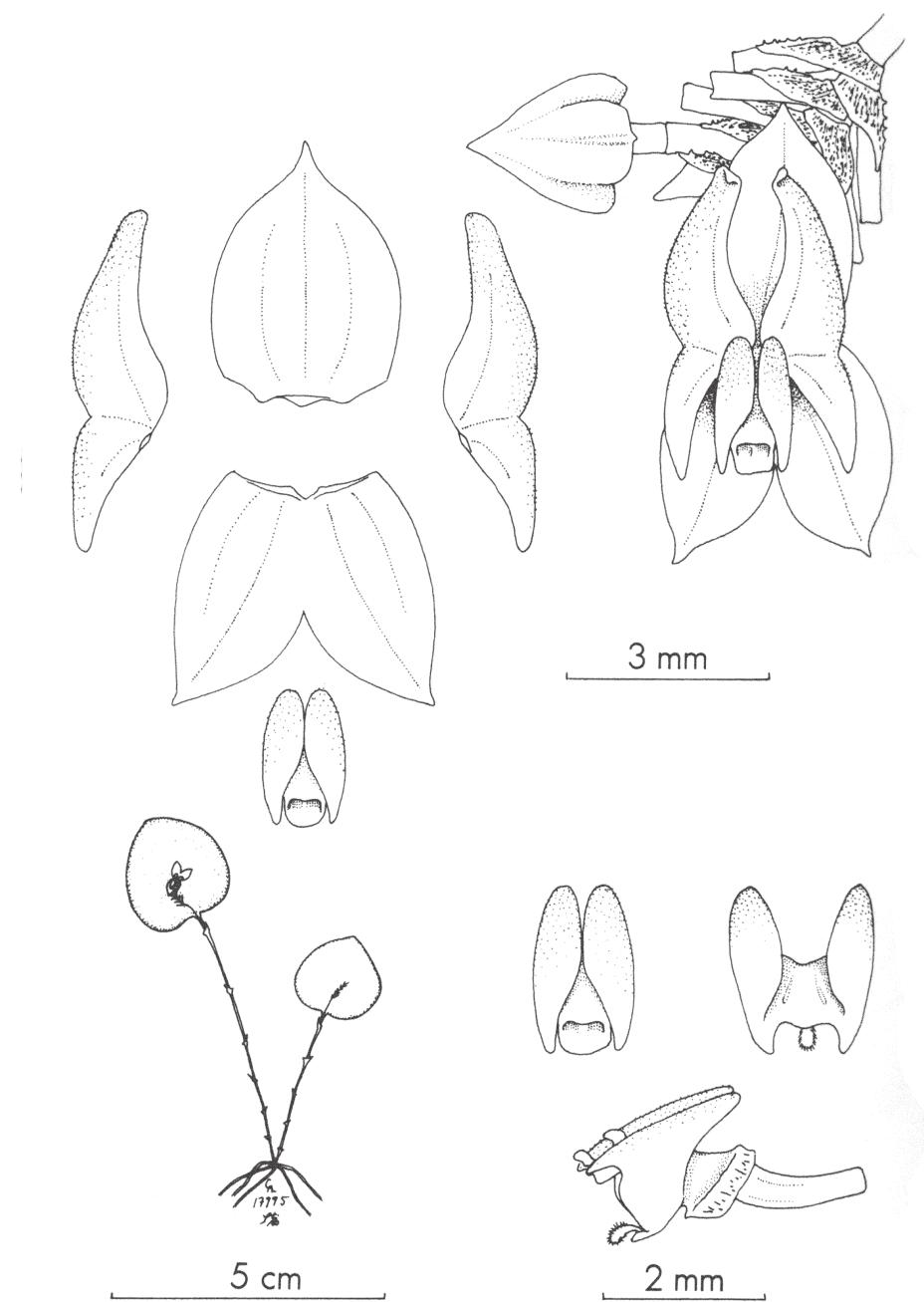


Figure 20. *Lepanthes maccolmiana* Luer. (Based on: J.L. Clark & C. Watt 838, type.) Reprinted with permission from Luer (1996: Figure 144).

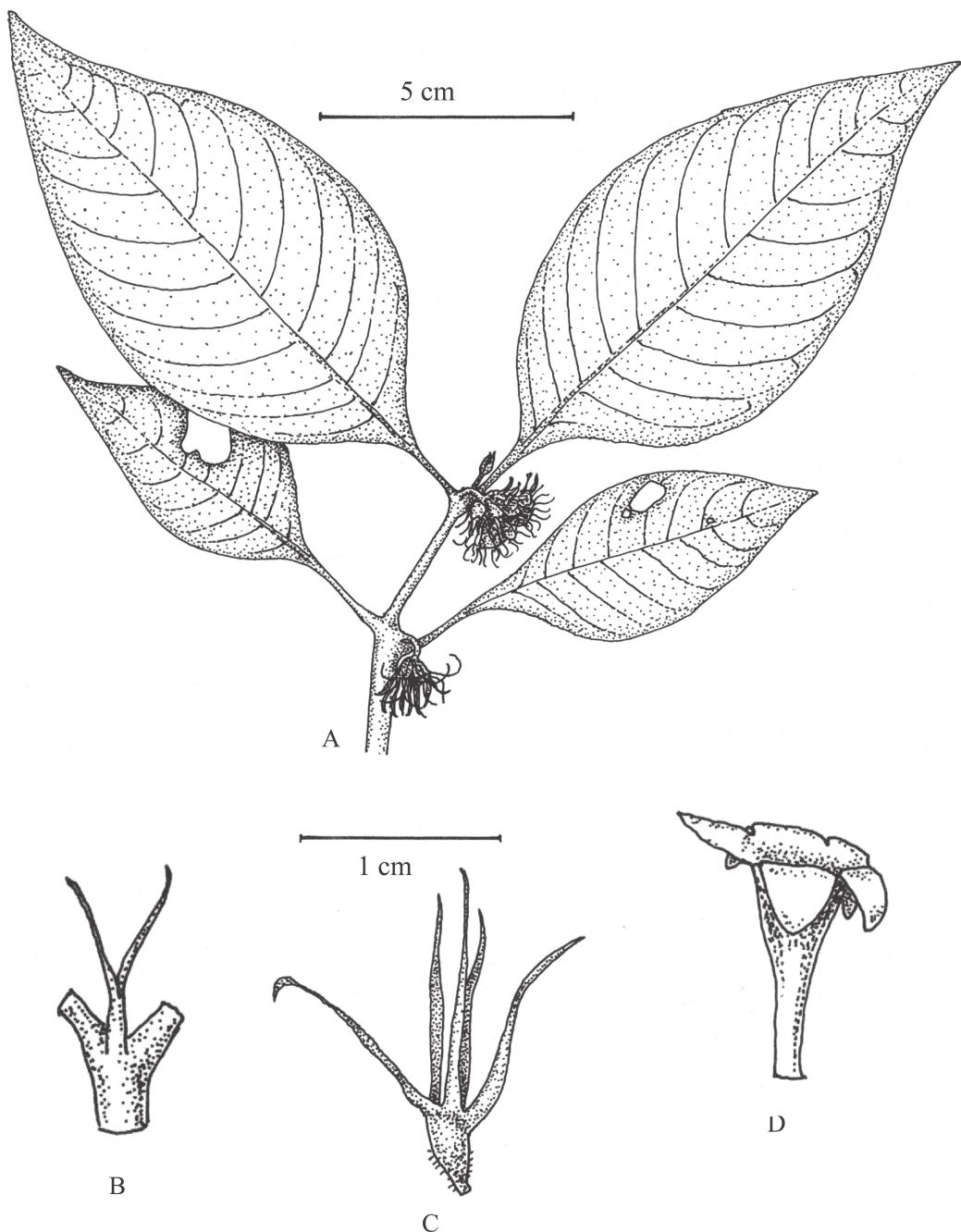


Figure 21. *Amphidasya amethystina* J.L. Clark & C.M. Taylor. A. Stem with young infructescences. B. Node with stipule. C. Calyx (including hypanthium) at anthesis. D. Corolla at anthesis. A to 5-cm scale; B,C,D to 1-cm scale. (Based on: J.L. Clark et al. 2864; B-D based on J.L. Clark et al. 1514, type.) Reprinted with permission from Taylor & Clark (2001: Figure 1).

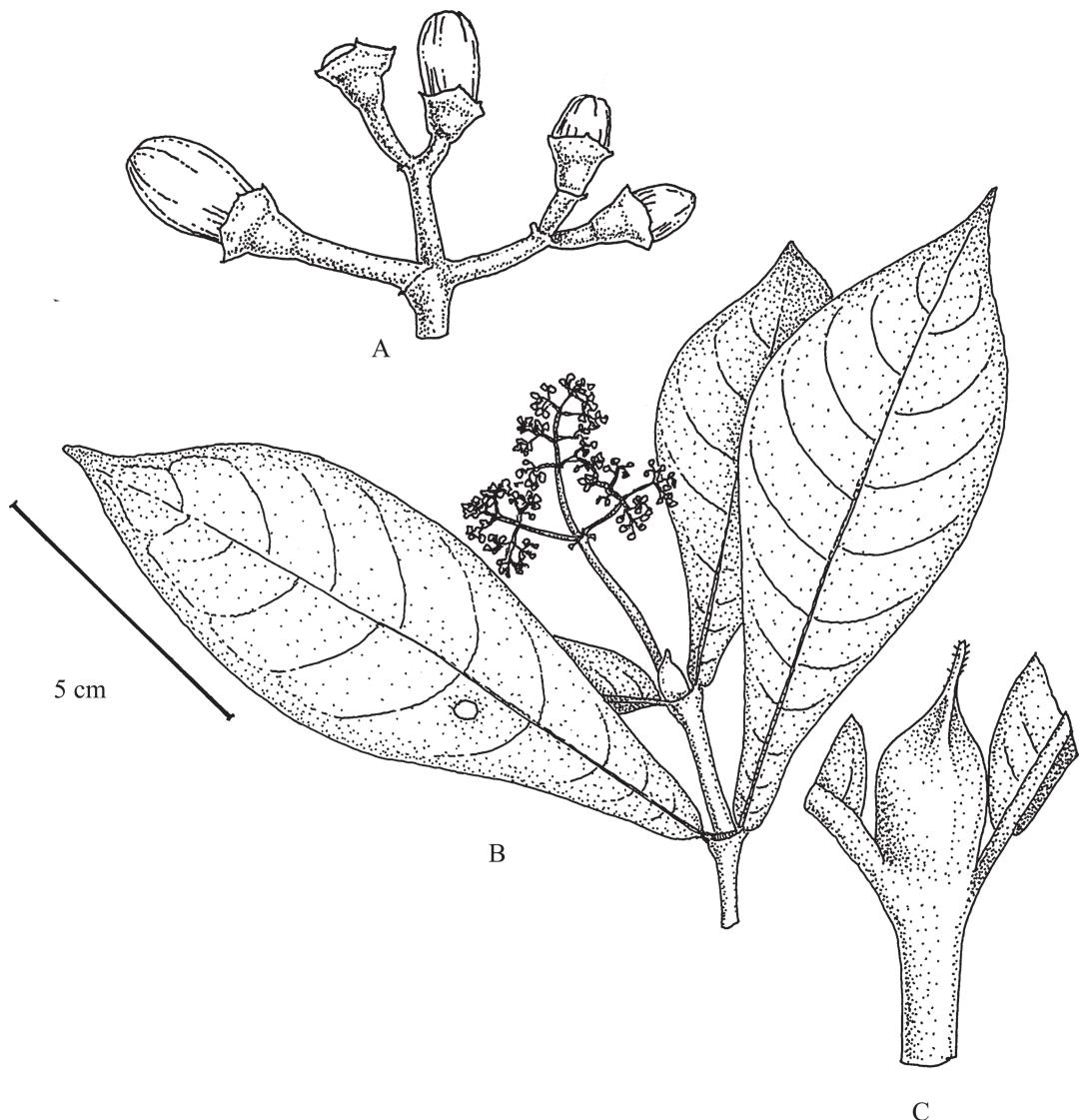


Figure 22. *Psychotria esmeraldana* C.M. Taylor. A. Portion of inflorescence with one flower from which the corolla has fallen and four flower buds. B. Flowering stem. C. Portion of stem with stipule and portions of subtending leaves. (Based on: A, Carvajal 7; B, C Bass & Pitman 244.) Reprinted with permission from Taylor (2006: Figure 2 D-F).

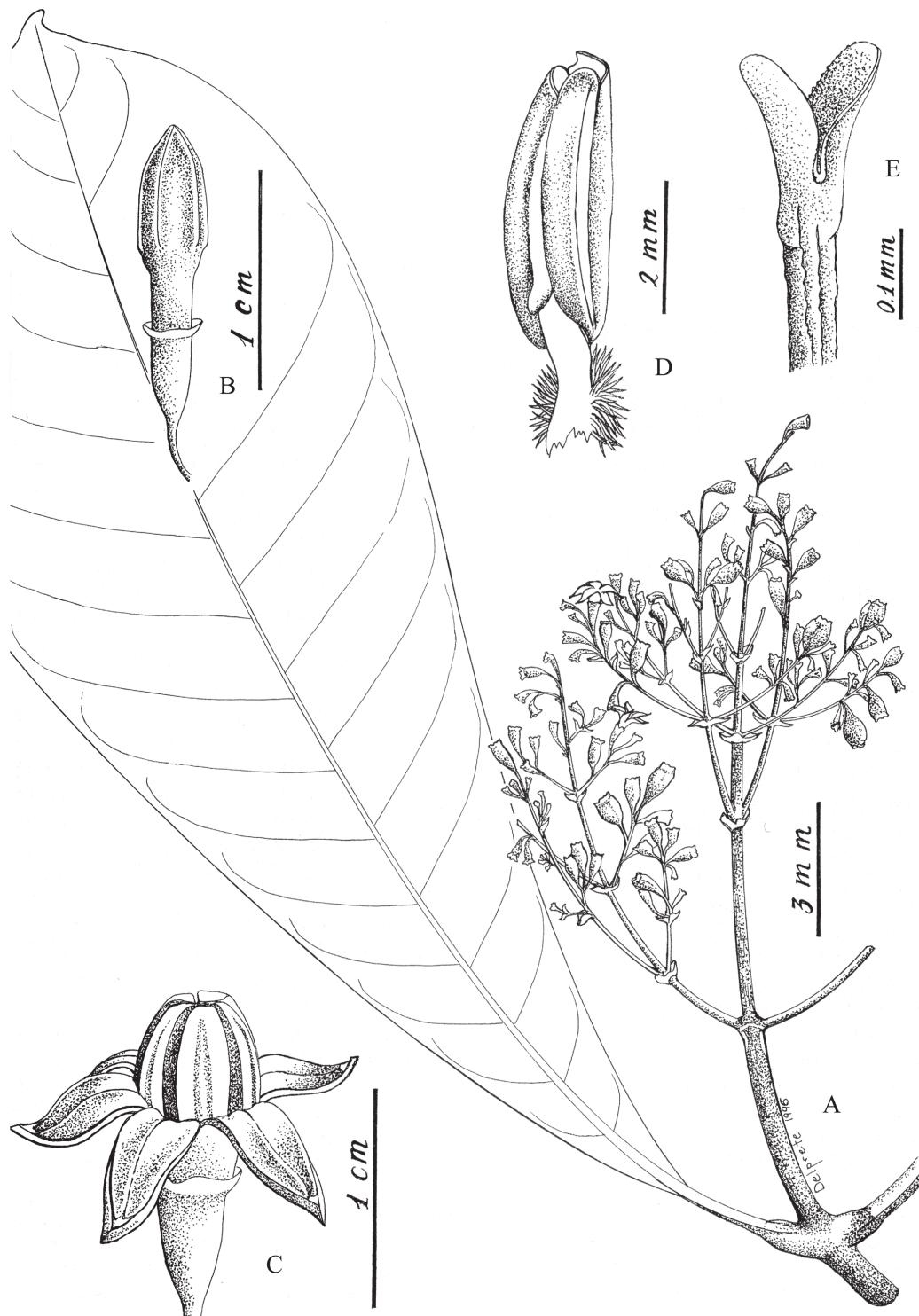


Figure 23. *Rustia bilsana* Delprete. A. Habit of inflorescence with mature leaf. B. Flower bud. C. Flower in early stage of anthesis. D. Anther. E. Style. (Based on: J.L. Clark 2979, type.) Reprinted with permission from Delprete (1998: Figure 1).

600 m, 7 Dec 1994, *M.S. Bass & N. Pitman* 299 (MO, QCNE).

Vine. 200 m. Common name: "Grenadilla del monte." Amazonia, Chocó, Mesoamerica.

PHYTOLACCACEAE

Gallesia integrifolia (Spreng.) Harms, Nat. Pflanzenfam. (ed. 2) 16c: 144. 1934.

Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor 50 m, 25 Aug 1998, *D. Neill & QCNE botany interns* 11277 (MO, QCNE).

Canopy tree. 10-50 m. Common name: "Ajo."

Hilleria secunda (Ruiz & Pav.) H. Walter, Pflanzenr. IV. 83(Heft 39): 82-83. 1909.

Representative Specimen: Ecuador: Manabí: Jama 400 m, 18 Dec 1998, *D. Neill & QCNE botany interns* 11658 (MO, QCNE).

Understory herb. 400 m.

Petiveria aliacea L., Sp. Pl. 1: 342. 1753.

Representative Specimen: Ecuador: Manabí: Mache-Chindul, comunidad Ambache, 250 m, 6 Apr 1997, J.L. Clark, R. Dunn, T. Nuñez & C. Robles 4208 (MO, QCNE).

Terrestrial herb. 250 m. Amazonia, Chocó, Mesoamerica.

Phytolacca rivinoides Kunth & C.D. Bouché, Index Sem. (Berlin) 1848: 15-16. 1849.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 3 Oct 1994, *J.L. Clark, M. Bass & N. Pitman* 138 (MO, QCNE).

Common succulent herb in sunny disturbed sites. 300-700 m. Common name: "Atuczara." Amazonia, Chocó, Mesoamerica.

Phytolacca weberbaueri H. Walter, Pflanzenr. IV. 83(Heft 39): 49-50. 1909.

Representative Specimen: Ecuador: Manabí: Jama, 10 km NE of Jama, slopes north of Río Don Juan, 400 m, 18 Dec 1998, *D. Neill & QCNE botany interns* 11674 (MO, QCNE).

Canopy tree. 400 m. Amazonia, Chocó.

Rivina humilis L.

Representative Specimen: Ecuador: Esmeraldas: Quinindé, Paraíso de Papagayos, 200 m, 14 Jan 1997, *J.L. Clark, L. Chatrou & C. Repetur* 3795 (MO, QCNE).

Herbaceous vine in disturbed areas. 200 m. Widespread: Amazonia, Chocó, Mesoamerica.

PIPERACEAE

Peperomia alwynii Callejas & Betancur, Novon 7(1): 17, f. 1. 1997. Type: Colombia: Nariño: municipio de Barbacoas, corregimiento Altaquer, vereda El Barro, Reserva Natural Río Ñambí, margen derecha del Río Ñambí, 1325 m. 1 °11'N 78 °108'W, 7 Dec 1993, *P. Franco, D. Giraldo, W. Beltrán, A. Prieto & O. Rivera* 4999 (HT: COL; IT: HUA).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 650 m, 19 Feb 1997, *J.L. Clark* 3962 (MO, QCNE).

Succulent terrestrial herb, 30 cm tall. 650 m. Chocó.

Peperomia glabella (Sw.) A. Dietr., Sp. Pl. 1: 156. 1831.

Representative Specimen: Ecuador: Manabí: 31 km al norte de Pedernales 60 m, 27 Aug 1998, *D. Neill & QCNE botany interns* 11400 (HUA, MO, QCNE).

Epiphyte. 60 m. Amazonia, Chocó, Mesoamerica.

Peperomia lancifolia Hook., Icon. Pl. 4: t. 332. 1841.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 23 Sep 1994, *J.R. Abbott* 15202 (BEREA, QCNE).

Epiphytic herb. 600 m. Amazonia, Chocó, Mesoamerica.

Peperomia montium C. DC., Repert. Spec. Nov. Regni Veg. 15(415/417): 5. 1917.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 7 Dec 1994, *M.S. Bass & N. Pitman* 307 (HUA, MO, QCNE).

- Herbaceous epiphyte. 280-600 m. Amazonia, Chocó, Mesoamerica.
- Peperomia obtusifolia** (L.) A. Dietr., Sp. Pl. 1: 154. 1831.
 Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 25 Jan 1995, *J.L. Clark 421* (MO, QCNE, US).
 Epiphyte in disturbed forest. 400-600 m. Amazonia, Chocó, Mesoamerica.
- Peperomia pernambucensis** Miq., London J. Bot. 4: 420-421. 1845.
 Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 31 Dec 1994, *N. Pitman & David Marsh 1136* (HUA, MO, QCNE).
 Succulent epiphyte. 400-600 m. Amazonia, Chocó, Mesoamerica.
- Peperomia puberulicaulis** Trel. & Yunck., Piperac. N. South Amer. 2: 637. 1950. Type: Colombia: El Valle: Cordillera Occidental, La Cubre, 1900-2200 m, 21-25 May 1922, *E.P. Killip 5925* (T: GH, NY, PH, US).
 Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 13 Sep 1994, *J.L. Clark & Adnepos 30* (HUA, MO, QCNE).
 Epiphyte. 400-600 m. Chocó.
- Peperomia pyramidata** Sodiro, Piperac. Ecuad. 1: 151-152. 1900. Type: Crece en las pendientes occidentales de Angamarca, colectada con flores y fruto en Nov. 1900, *Sodiro s.n.*
 Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 2 Apr 1995, *J.L. Clark & Y. Troya 566* (HUA, MO, QCNE, US).
 Common succulent understory herb. 400-800 m. Amazonia, Chocó, Mesoamerica.
- Peperomia rotundifolia** (L.) Kunth, Nov. Gen. Sp. (quarto ed.) 1: 65-66. 1815 [1816].
 Representative Specimen: Ecuador: Manabí: Mache-Chindul, comunidad Ambache, 250 m, 4 Apr 1997, *J.L. Clark, R. Dunn, T. Nuñez & C. Robles 4145* (HUA, MO, QCNE).
- Succulent herbaceous vine. 250 m. Amazonia, Chocó, Mesoamerica.
- Peperomia serpens** (Sw.) Loudon, Hort. Brit. 13. 1830. *Piper serpens* Sw. Type: Jamaica, *Swartz s.n.*
 Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 24 Sep 1994, *N. Pitman 717* (HUA, MO, QCNE).
 Succulent herbaceous vine. 400-600 m. Amazonia, Chocó, Mesoamerica.
- Peperomia urocarpa** Fisch. & C.A. Mey., Index Sem. (St. Petersburg) 13. 1838. Type: Hab. in Brasilia, *not cited*.
 Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 12 Sep 1994, *J.L. Clark 9* (HUA, MO, QCNE).
 Herbaceous epiphyte. 400-600 m. Amazonia, Chocó, Mesoamerica.
- Peperomia verticillatispica** Trel. & Yunck., Piperac. N. South Amer. 13. 1950. Type: Ecuador: Pichincha: on tree in forest along road from Quito to Santo Domingo, inflorescence showy white, 1200 m., 4 Apr 1942, *Haught 3217* (HT: US; IT: GH, ILL).
 Representative Specimen: Ecuador: Esmeraldas: Carretera Herrera-El Páramo (Sta. Isabel) 580 m, 18 Feb – 5 Mar 1995, *W. Palacios, J.L. Clark & N. Jaramillo 13579* (HUA, MO, QCNE).
 Succulent herbaceous epiphyte. 400-600 m. Amazonia, Chocó.
- Piper aduncum** L., Sp. Pl. 1: 29. 1753.
 Representative Specimen: Ecuador: Manabí: Cordillera de Jama, 600 m, 16 Dec 1998, *D. Neill & QCNE botany interns 11548* (HUA, MO, QCNE).
 Shrub, ca. 1.5 m tall. 600 m. Amazonia, Chocó, Mesoamerica.
- Piper appendiculatum** (Benth.) C. DC., Prodr. 16(1): 369. 1869. *Artanthe appendiculata* Benth. Type: Ecuador: Pichincha: along Quito-Santo Domingo road, 1200 m, 4 Apr 1942, *Fraser s.n.* (T: G).
 Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600

- m, 27 Sep 1996, *J.L. Clark* 2925 (HUA, MO, QCNE).
Subwoody shrub or herb. 400-600 m. Amazonia, Chocó.
- Piper augustum** Rudge, Pl. Guian. 1: 10, pl. 7. 1805.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 7 Dec 1994, *N. Pitman & M.S. Bass 1030* (MO, QCNE).
Shrub to 2 m tall. 400-600 m. Amazonia, Chocó, Mesoamerica.
- Piper auritum** Kunth, Nov. Gen. Sp. (quarto ed.) 1: 54. 1815 [1816].
Representative Specimen: Ecuador: Esmeraldas: Reserva Ecológica Mache-Chindul, Comunidad Caña Braval, Cabaceras del Río Viche, estero Sabaleta, 250 m, 16 Mar 1998, *J.L. Clark 4654* (HUA, MO, QCNE).
Terrestrial herb, to 1.5 m tall. 25-250 m. Common name: “Santa María de Anís.” Amazonia, Chocó.
- Piper brachypodon** (Benth.) C. DC., Prodr. 16(1): 327. 1869
Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 30 Jan 1991, *A. Gentry & C. Josse 72930* (MO). Liana. 280 m. Amazonia, Chocó.
- Piper brachystylum** Trel., Ciencias (Mexico) 2(5): 207. 1941.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 21 Nov 1994, *J.L. Clark & C. Bergman 323* (MO, QCNE).
Shrub or hemiepiphyte. 400-600 m. Amazonia.
- Piper bulosum** C. DC., J. Bot. 4: 165. 1866. Type: In Novae-Granatae: prov. Barbacoas, 1000 m, *Triana 22* (HT: G-DC).
Representative Specimen: Ecuador: Esmeraldas: 400–600 m, 4 Oct 1994, *M.S. Bass & N. Pitman 136* (HUA, MO, QCNE). Vine. 400-600 m. Amazonia, Chocó.
- Piper cinereum** C. DC., J. Bot. 4: 214. 1866. Type: Colombia: Chocó, *Triana s.n.* (HT: G-DC).
- Representative Specimen: Ecuador: Esmeraldas: Mache-Chindul, comunidad Caña Braval, 250 m, 16 Mar 1998, *J.L. Clark 4661* (HUA, MO, QCNE).
Herb or subshrub in sunny disturbed areas. 250–600 m. Amazonia, Chocó, Mesoamerica.
- Piper dryadum** C. DC., Bull. Soc. Roy. Bot. Belgique 30(1): 221. 1891 [1892].
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 16 Sep 1994, *J.L. Clark & B. Adnepos 63* (HUA, MO, QCNE).
Scandent shrub or hemiepiphyte. 400-600 m. Chocó, Mesoamerica.
- Piper filistilum** C. DC., Bull. Herb. Boissier 6(6): 491. 1898. Type: Ecuador: in regione tropicali, *Sodiro 1/7*.
Synonym: *Trianaeopiper garciae* Trel. & Yunck., fide: Jørgensen & León-Yáñez (1999).
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 27 Sep 1994, *J.L. Clark, B. Adnepos & J. Wolf 125* (HUA, MO, QCNE).
Common herb or subshrub. 400-600 m. Chocó, Mesoamerica.
- Piper laevigatum** Kunth, Nov. Gen. Sp. 1: 56. 1815 [1816].
Representative Specimen: Ecuador: Manabí: Mache-Chindul, comunidad Ambache, 250 m, 4 Apr 1997, *J.L. Clark, R. Dunn, T. Nuñez & C. Robles 4160* (HUA, MO, QCNE).
Shrub. 250 m. Amazonia, Chocó.
- Piper maranyonense** Trel., Publ. Field Mus. Nat. Hist., Bot. Ser. 13(2): 189. 1936.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 30 Oct 1994, *J.L. Clark & D. Neill 230* (HUA, MO, QCNE).
Shrub. 400-600 m. Amazonia, Chocó.
- Piper marginatum** Jacq., Collectanea 4: 128. 1790.
Representative Specimen: Ecuador: Manabí: Jama, Reserva de Lalo Loor, 10 m, 9 Apr 1997, *J.L. Clark, T. Nuñez & C. Robles 4372*

(HUA, MO, QCNE).

Shrub. 10-400 m. Amazonia, Chocó, Mesoamerica.

Piper ottoniifolium C. DC., J. Bot. 4: 213. 1866.

Representative Specimen: Ecuador: Manabí: 45 km al norte de Pedernales, 5 m, 28 Aug 1998, D. Neill & QCNE botany interns II1418 (HUA, MO, QCNE).

Shrub. 5 m. Amazonia, Chocó, Mesoamerica.

Piper oxystachyum C. DC., Annaire Conserv.

Jard. Bot. Geneve 2: 255. 1898.

Representative Specimen: Ecuador: Esmeraldas: 400–600 m, 27 Sep 1994, J.L. Clark, B. Adnepos & J. Wolf 126 (HUA, MO, QCNE).

Hemiepiphyte. 400-600 m. Chocó.

Piper peltatum L., Sp. Pl. 1: 30. 1753.

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro 800 m, 10 Mar 1997, H. Vargas 1306 (MO, QCNE).

Common subshrub or herb in sunny disturbed areas, to 1 m tall. 400-800 m. Amazonia, Chocó, Mesoamerica.

Piper piluliferum Kunth, Nov. Gen. Sp. 1: 53.

1815 [1816]. Type: Crescit in declivitate Andinum, inter Cuenca et Tambo de Burgay, super Schisto micaceo, 1400 hexapodarom. Floret Julio, Humboldt & Bonpland s.n.

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300–700 m, 7 Apr 1997, J.L. Clark, T. Nuñez & C. Robles 4314 (HUA, MO, QCNE).

Shrub. 300-700 m. Amazonia, Chocó.

Piper reticulatum L., Sp. Pl. 1: 29. 1753. Type:

Habitat in Martinica, Brasilia.,

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 3 Jan 1995, N. Pitman 1178 (HUA, MO, QCNE).

Shrub, ca. 3 m tall. 400-600 m. Amazonia, Chocó, Mesoamerica.

Piper tenuilimbum C. DC., Bot. Jahrb. Syst. 40: 253. 1908.

Representative Specimen: Ecuador:

Esmeraldas: Bilsa Biological Station, 500 m, 20 Mar 1998, J.L. Clark & C. Pallis 4834 (HUA, MO, QCNE).

Vine or hemiepiphyte. 400-600 , Chocó.

Piper trianae C. DC., J. Bot. 4: 162-163. 1866.

Type: Colombia: Pasto, Triana 2 (HT: G-DC).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 25 Jan 1995 J.L. Clark 420 (HUA, MO, QCNE).

Common subshrub, ca. 1 m tall. 400-600 m. Chocó.

Piper veneraleNSE Trel. & Yunck., Piperac. N.

South Amer. 4: 162-163. 1950. Type: Colombia: El Valle: Pacific Coast, Río Yurumanguí, Venerale, 5-50 m, Jan 28-Feb 10, 1944, Cuatrecasas 15740 (HT: US-1852625).

Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 30 Jan 1991, A. Gentry, R. Foster & C. Josse 72907 (MO).

Liana. 280 m. Chocó.

Piper verruculosum C. DC., J. Bot. 4: 215. 1866.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 3 Oct 1994, J.L. Clark, M.S. Bass & N. Pitman 132 (HUA, MO, QCNE).

Shrub, ca. 1.5 m tall. 400-600 m. Chocó, Mesoamerica.

Piper xanthostachyum C. DC., Annales Inst. Fis.-

Geogr. Nac. Costa Rica 9: 169. 1897.

Representative Specimen: Ecuador: Esmraldas: Bilsa Biological Station, 400–600 m, 7 Dec 1994, M.S. Bass & N. Pitman 303 (HUA, MO, QCNE).

Vine. 400-600 m. Amazonia.

Sarcorhachis sydowii Trel., Repert. Spec. Nov.

Regni Veg. 48: 16. 1940. Type: Ecuador: Pichincha: Mindo, H. Sydow 317 (HT: US-2 sheets).

Representative Specimen: Ecuador: Esmeraldas: 400–600 m, 11 Nov 1994, M.S. Bass & N. Pitman 229 (HUA, MO, QCNE).

Woody liana. 400-600 m. Amazonia, Chocó.

POACEAE

Chloris barbata Sw., Fl. Ind. Occid. 1: 200. 1797.

Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor, 100 m, 15 Dec 1998, *D. Neill & QCNE botany interns 11542* (MO, QCNE).

Common in pastures and fields. 100 m. Chocó, Mesoamerica.

Homolepis aturensis (Kunth) Chase, Proc. Biol. Soc. Wash. 24: 146, f. 12. 1911.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 13 Sep 1994, *J.R. Abbott 15051* (BEREA, QCNE).

Common terrestrial herb along road. 400-600 m. Amazonia, Chocó, Mesoamerica.

Ichnanthus nemorosus (Sw.) Döll, Fl. Bras. 2(2): 289. 1877.

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro 850 m, 11 Mar 1997, *H. Vargas, X. Aguirre, R. Miranda & C. Robles 1337* (MO, QCNE).

Terrestrial herb. 850 m. Amazonia, Chocó, Mesoamerica.

Ichnanthus pallens (Sw.) Munro ex Benth., Fl. Hongk. 414. 1861.

Representative Specimen: Ecuador: Manabí: Cordillera de Jama, 600 m, 16 Dec 1998, *D. Neill & QCNE botany interns 11574* (MO, QCNE).

Terrestrial herb in secondary forest. 400-600 m. Amazonia, Chocó, Mesoamerica.

Lasiacis nigra Davidse, Phytologia 29(2): 152. 1974.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 14 Sep 1994, *J.R. Abbott 15140* (MO, QCNE).

Herb. 600 m. Amazonia, Chocó, Mesoamerica.

Lasiacis scabrior Hitchc., Proc. Biol. Soc. Wash. 40: 85. 1927.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 18 Nov 1996, *J.L. Clark, F. Gurumendi*

& H. Weinert 3439 (AAU, MO, QCNE). Common clambering herb in sunny disturbed areas. 300-600 m. Amazonia, Chocó, Mesoamerica.

Olyra latifolia L., Syst. Nat. (ed. 10) 1261. 1759.

Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor, 100 m, 15 Dec 1998, *D. Neill & QCNE botany interns 11530* (MO, QCNE).

Scandent terrestrial herb in secondary forest. 10-250 m. Amazonia, Chocó, Mesoamerica.

Panicum pilosum Sw., Prodr. 22. 1788.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 18 Nov 1996, *J.L. Clark, F. Gurumendi & H. Weinert 3453* (MO, QCNE).

Common terrestrial herb along disturbed roadsides. 500 m. Amazonia, Chocó, Mesoamerica.

Panicum polygonatum Schrad., Mant. 2: 256. 1824.

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 10 km al este de Pedernales, 800 m, 10 Mar 1997, *H. Vargas 1312* (MO, QCNE).

Herb. 800 m. Amazonia, Chocó, Mesoamerica.

Panicum trichidiachne Döll, Fl. Bras. 2(2): 339, pl. 49. 1877.

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300-700 m, 7 Apr 1997, *J.L. Clark, T. Nuñez & C. Robles 4299* (MO, QCNE, SI).

Terrestrial herb. 300-700 m. Amazonia, Mesoamerica.

Paspalum conjugatum P.J. Bergius, Acta Helv. Phys.-Math. 7: 129, t. 8. 1762 [1772].

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 13 Sep 1994, *J.R. Abbott 15074* (BEREA, QCNE).

Herb. 600 m. Amazonia, Chocó, Mesoamerica.

Pharus latifolius L., Syst. Nat. (ed. 10) 2: 1269. 1759.

Representative Specimen: Ecuador: Esmeraldas: Mache-Chindul, comunidad

Caña Braval, 250 m, 16 Mar 1998, J.L. Clark 4734 (MO, QCNE).

Terrestrial herb. 250 m. Amazonia, Chocó, Mesoamerica.

m. Chocó, Mesoamerica.

POLYGALACEAE

Pharus mezii Prod., Bot. Arch. 1: 250. 1922.

Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor 50 m, 25 Aug 1998, D. Neill & QCNE botany interns II281 (MO, QCNE).

Terrestrial herb in secondary forest. 10-50 m. Mesoamerica.

Monnina denticulata Chodat, Bull. Herb. Boissier

3: 135. 1895. Type: Hab. in Guayaquil, Pavon s.n. (HT: G-DEL; IT: P).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 650 m, 19 Feb 1997, J.L. Clark 3966 (GB, MO, QCNE).

Vine. 650 m.

Pseudechinolaena polystachya (Kunth) Stapf, Fl. Trop. Afr. 9: 495. 1919.

Representative Specimen: Ecuador: Manabí: Cordillera de Jama, 600 m, 16 Dec 1998, D. Neill & QCNE botany interns II1595 (MO, QCNE).

Creeping herb. 600 m. Amazonia, Chocó, Mesoamerica.

Streptochaeta sodiroana Hack., Oesterr. Bot. Z. 40: 113. 1890. Type: Ecuador: Pinchacha: prope San Miguel de Colorados, in silvis tropicae, secus flumen Peripa, 400 m, 1883, Sodiro 911 (HT: W.).

Representative Specimen: Ecuador: Manabí: 31 km al norte de Pedernales 60 m, 27 Aug 1998, D. Neill & QCNE botany interns II1394 (MO, QCNE).

Terrestrial herb in secondary forest. 60 m. Mesoamerica.

Streptochaeta spicata Schrad. ex Nees, Fl. Bras. Enum. Pl. 2: 537. 1829.

Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor 75 – 125 m, 6 Oct 1999, T. Delinks & C. Robles 354 (MO, QCNE).

Herb. 75-125 m. Chocó, Mesoamerica.

Infrasp.: *Streptochaeta spicata* subsp. *ecuatoriana* Judz. & Soderstr.

Uniola pittieri Hack., Oesterr. Bot. Z. 52: 309. 1902.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 2 m, 2 Dec 1995, J.L. Clark & K. Cunningham 1723 (MO, QCNE).

Terrestrial herb in lowland sandy areas. 0-10

m. Chocó, Mesoamerica.

POLYGONACEAE

Securidaca calophylla (Poepp.) S.F. Blake, Proc.

Biol. Soc. Wash. 40: 52. 1927.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 580 m, 2-4 marzo 1995, W. Palacios 13704 (GB, MO, QCNE).

Common terrestrial herb in open sunny areas.

400-600 m. Amazonia, Chocó,

Mesoamerica.

Coccoloba mollis Casar., Nov. Stirp. Bras. 8: 72.

1844.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 10 Dec 1994, N. Pitman & M.S. Bass 1078 (MO, QCNE).

Tree, ca. 20 m tall. 400-600 m. Amazonia, Chocó, Mesoamerica.

Coccoloba obovata Kunth, Nov. Gen. Sp. (quarto

ed.) 2: 176. 1817 [1818]

Representative Specimen: Ecuador:

POLYPODIACEAE

Coccoloba mollis Casar., Nov. Stirp. Bras. 8: 72.

1844.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 10 Dec 1994, N. Pitman & M.S. Bass 1078 (MO, QCNE).

Tree, ca. 20 m tall. 400-600 m. Amazonia, Chocó, Mesoamerica.

Coccoloba obovata Kunth, Nov. Gen. Sp. (quarto

ed.) 2: 176. 1817 [1818]

Representative Specimen: Ecuador:

Esmerealdas: Fila de Bilsa, 280 m, 29 Jan 1991, A. Gentry & C. Josse 72760 (MO). Tree, ca. 15 m tall. 280 m. Amazonia, Chocó, Mesoamerica.

Triplaris cumingiana Fisch. & C.A. Mey. ex C.A. Mey., Mem. Acad. Imp. Sci. Saint-Petersbourg, Ser. 6, Sci. Math., Seconde Pt. Sci. Nat. 4: 148. 1845 [1840]. Type: Colombia, Cuming s.n.
Representative Specimen: Ecuador: Manabí: Jama, 200 m, 18 Dec 1998, D. Neill & QCNE botany interns 11640 (MO, QCNE). Common tree in secondary forests. 200-500 m. Common name: "Fernán Sanchez." Chocó, Mesoamerica.

PONTEDERIACEAE

Heteranthera reniformis Ruiz & Pav., Fl. Peruv. 1: 43, pl. 71, f. a. 1798.
Representative Specimen: Ecuador: Esmerealdas: Bilsa Biological Station, 400-600 m, 10 Apr 1995, J.L. Clark & Ivonne Troya 689 (MO, QCNE). Aquatic herb. 400-600 m. Amazonia, Chocó, Mesoamerica.

PORTULACEAE

Portulaca sp.
Representative Specimen: Ecuador: Esmerealdas: Muisne, 2 m, 2 Dec 1995, J.L. Clark & K. Cunningham 1722 (MO, QCNE). Terrestrial herb. 0-10 m.

PROTEACEAE

Panopsis megistosperma Bonifaz & Cornejo, Fl. Ecuador 69: 12, f. 2. 2002. Type: Ecuador: Los Ríos: Hda Clementina, Cerro Samana, trail between destacamente Pita and La Torre, 650-750 m, 21 Sept 1999, C. Gustafsson & X. Cornejo 510 (HT: GUAY; IT: AAU, GB, K). Representative Specimen: Ecuador: Esmerealdas: Bilsa Biological Station, 400-600 m, 25 Jan 1995, J.L. Clark 416 (MO, QCNE). Rare tree, 10-15 m tall. 400-600 m. Endemic.

RANUNCULACEAE

Clematis haenkeana C. Presl, Reliq. Haenk. 2(2): 69. 1835.
Representative Specimen: Ecuador: Esmerealdas: Bilsa Biological Station, 400 m, 27 Feb 1996, J.L. Clark 2177 (MO, QCNE). Herbaceous vine. 400-600 m. Amazonia, Chocó, Mesoamerica.

RHAMNACEAE

Ziziphus thrysiflora Benth. Bot. Voy. Sulphur 78. 1844-1846. Type: Ecuador, Guayaquil Hartweg 646 (K, W; photo: F(W)). Representative Specimen: Ecuador: Manabí: Punta Los Frailes, 5-60 m, 29 Jun 1999, T. Delinks & C. Robles 347 (MO, QCNE). Tree, in dry to moist forest, ca. 9 m tall. 5-60 m. Endemic (including coastal Tumbes, Peru)

RUBIACEAE

Agouticarpa williamsii (Standl.) C. Persson, Brittonia 55(2): 197. 2003.
Synonym: *Genipa williamsii* Standl., fide Persson (2003). Representative Specimen: Ecuador: Esmerealdas: Fila de Bilsa, 280 m, 30 Jan 1991, A. Gentry, R. Foster & C. Josse 72970 (MO). Tree, ca. 15 m tall. 280 m. Amazonia, Chocó, Mesoamerica.

Alseis eggersii Standl., Publ. Field Columbian Mus., Bot. Ser. 4(8): 264. 1929. Type: Ecuador: Manabí: El Recreo, 29 Apr 1897, H. Eggers 15738 (HT: F; IT: B destr (photos: F, C, K, O, S)). Representative Specimen: Ecuador: Manabí: Jama Cantón, Hacienda Reserva de Lalo Loor, 30 km S of Pedernales on vía marginal de la costa, 10 m, 9 Oct 1997, J.L. Clark, T. Nuñez & C. Robles 4380 (MO, QCNE). Tree, 18 m tall. 0-50 m. Amazonia.

Amphidasya ambigua (Standl.) Standl., Field Mus. Nat. Hist., Bot. Ser. 11(5): 181. 1936.

Sabicea ambigua Standl. Type: Colombia: without definite locality, *Triana* 1847 (HT: K).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 4 May 1995, *J.L. Clark & C. Watt* 736 (GB, MO, QCNE).

Terrestrial herb or shrub in understory of mature forest. 280-600 m. Amazonia, Chocó, Mesoamerica.

Amphidasya amethystina J.L. Clark & C.M. Taylor, Novon 11(4): 491-492, f. 1. 2001. Type: Ecuador: Esmeraldas: cantón Quinindé, Bilsa Biological Station, Mache Mountains, 35 km W of Quininde, 5 km W of Santa Isabel, 00 °21'N, 79 °44'W, 400-600 m, 27 Oct 1995, *J.L. Clark, L.P. Kvist, P. Mendosa & L.E. Skog* 1514 (HT: QCNE; IT: MO, US). (Fig. 3D-E, p.130; 21A-D, p.148).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 27 Sep 1994, *J.L. Clark, B. Adnepos & J. Wolf* 124 (MO, NY, QCNE, US).

Terrestrial herb in light gaps or shade of mature forest. 400-600 m. Endemic.

Bertiera procumbens K. Schum. & K. Krause, Bot. Jahrb. Syst. 40: 328. 1908. Type: Ecuador, *H. Eggers* 14282 (T: M, US).

Representative Specimen: Ecuador: Esmeraldas: Quinindé, Paraíso de Papagayos, 200 m, 10 Oct 1006, *J.L. Clark* 3037 (MO, QCNE).

Shrub, ca. 1 m tall. 200 m. Endemic.

Borreria remota (Lam.) Bacigalupo & E.L. Cabral, Darwiniiana 37(3-4): 334. 1999.

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 700 m, 8 Mar 1997, *H. Vargas, X. Aguirre, R. Miranda & C. Robles* 1263 (MO, QCNE).

Herb. 700 m. Amazonia, Chocó, Mesoamerica.

Chione venosa (Sw.) Urb., Symb. Antill. 4: 594. 1911.

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300–700 m, 7 Apr 1997, *J.L. Clark, T. Nuñez & C. Robles* 4318 (MICH, MO, QCNE).

Subcanopy tree. 60-450 m. Mesoamerica.

Infrasp.: *Chione venosa* var. *venosa*.

Chomelia ecuadorensis (K. Schum. & K. Krause)

Steyermark Mem. New York Bot. Gard. 17(1): 340. 1967. *Anisomeris ecuadorensis* K. Schum. & K. Krause. Type: Ecuador: Manabi, El Recreo. H. Eggers 15411 (HT: B destr.?; IT: MO).

Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor, 10 m, 9 Apr 1997, *J.L. Clark, T. Nuñez & C. Robles* 4332 (MO, QCNE).

Tree, 8 m tall. 0-50 m. Chocó.

Chomelia panamensis (Standl.) Dwyer. Ann.

Missouri Bot. Gard. 57(1): 100. 1989. *Antirhea panamensis* Standl.

Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor, 50 m, 4 Jun 2006, *D. Neill, J. Cevallos & Peace Corps volunteers* 15164 (MO, QCNE).

Tree, 25 m tall. 50-100 m. Dominant canopy tree, with distinctive smooth papery bark, in semi-deciduous forest at Lalo Loor Reserve. Chocó, Mesoamerica. [May be conspecific with *Guettarda acreana* K. Krause (C.M. Taylor, pers. comm.) and therefore also in Amazonia.]

Chomelia tenuiflora Benth., J. Bot. (Hooker) 3:

235. 1841.

Representative Specimen: Esmeraldas: Bilsa Biological Station, 500 m, 22 Oct 1996, *J.L. Clark* 3085 (MO, QCNE).

Understory tree, 2-15 m tall. 400-600 m. Amazonia, Chocó, Mesoamerica.

Coussarea latifolia Standl., J. Wash. Acad. Sci. 18: 281. 1928.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 27 Oct 1994, *J.L. Clark, C. Bienkowski & C. Clark* 219 (MO, QCNE, US).

Very common understory tree, 5-15 m tall. 280-650 m. Chocó Mesoamerica.

Coutarea hexandra (Jacq.) K. Schum., Fl. Bras.

6(6): 196. 1889.

Representative Specimen: Ecuador: Esmeraldas: Quinindé, Paraíso de

- Papagayos, 200 m, 10 Oct 1996, *J.L. Clark* 3035 (MO, QCNE).
Tree, 2.5-5 m tall. 10-200 m. Amazonia, Chocó, Mesoamerica.
- Elaeagia sp.**
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 4-5 Oct 1996, *J.L. Clark* 2990 (MO, QCNE).
Subcanopy tree. 400-650 m
- Faramea anisocalyx** Poepp. & Endl., Nov. Gen. Sp. Pl. 3: 28. 1845.
Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 30 Jan 1991, *A. Gentry & C. Josse* 72921 (MO).
Tree. 280 m. Amazonia.
- Faramea coffeoides** C.M. Taylor, Fl. Ecuador 162(pt. 3): 277, fig. 48D, E. 1999. Type: Ecuador: Carchi, SE trail, in Gualpi Chico area near Awa encampment, *W.S. Hoover, P. Guelpi, R.A. Lorentzen & A. Arguello* 2739 (HT: MO).
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 2 Jan 1997, *J.L. Clark, E. Austen, S. Bennett & D. Kapan* 3691 (AAU, GB, MEXU, MO, NY, QCNE).
Rare understory tree, 6 m tall. 500-550 m. Chocó.
- Faramea insignis** Standl., Publ. Field Columbian Mus., Bot. Ser. 7: 72. 1930.
Representative Specimen: Ecuador: Esmeraldas: Comunidad Chorrera Grande, 300-750 m, 10-13 Jul 1996. *J.L. Clark, N. Binder & P. Hibbs* 2840 (MO, QCNE).
Understory tree, 2 m tall. 300-750 m. Chocó.
- Faramea multiflora** A. Rich. ex DC., Prodr. 4: 497. 1830.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 11 Sep 1994, *J.L. Clark* 1 (MO, QCNE).
Very common understory tree in mature forest, 1-4 m tall. 400-600 m. Amazonia, Chocó, Mesoamerica.
- Faramea occidentalis** (L.) A. Rich., Mem. Soc. Hist. Nat. Paris 5: 176. 1834.
Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor, 10 m, 8 Apr 1997, *J.L. Clark, T. Nuñez & C. Robles* 4366 (MO, QCNE).
Understory tree, 2-4 m tall. 10-150 m. Amazonia, Chocó, Mesoamerica.
- Faramea spathacea** Müll. Arg. ex Standl., Field Mus. Nat. Hist., Bot. Ser. 11(5): 211-212. 1936.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 24 Sep 1996, *J.L. Clark* 2888 (MO, QCNE).
Understory tree, 5-8 m tall. 100-600 m. Amazonia, Mesoamerica.
- Genipa americana** L., Syst. Nat. (ed. 10) 2: 931. 1759.
Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 500 m, 26 Aug 1998, *D. Neill & QCNE botany interns* 11314 (MO, QCNE).
Canopy or subcanopy tree. 200-700 m.
Common name: "Jagua." Amazonia, Chocó, Mesoamerica.
- Gonzalagunia bifida** B. Ståhl, Fl. Ecuador 62: 94, fig. 28. 1999. Type: Ecuador: Manabí, Flavio Alfaro on road between Santo Domingo and Chone, 11 May 1968, *G. Harling, Storm & Strom* 9427 (HT: GH; IT: MO, US).
Representative Specimen: Ecuador: Manabí: 45 km al norte de Pedernales, 5 m, 28 Aug 1998, *D. Neill & QCNE botany interns* 11427 (GB, MO, QCNE).
Tree, 8 m tall. 0-50 m. Endemic.
- Gonzalagunia cornifolia** (Kunth) Standl., Field Mus. Nat. Hist., Bot. Ser. 4(8): 279. 1929..
Representative Specimen: Ecuador: Esmeraldas: Comunidad Chorrera Grande, 300-750 m, 10-13 Jul 1996, *J.L. Clark, N. Binder & P. Hibbs* 2844 (GB, MO, QCNE).
Tree in understory of secondary forest, 1-4 m tall. 300-750 m. Amazonia, Chocó, Mesoamerica.

Gonzalagunia dicocca Cham. & Schlechl., Linnaea 4: 194. 1829.

Representative Specimen: Ecuador: Esmeraldas: Mache-Chindul, comunidad Caña Braval, 250 m, 16 Mar 1998, J.L. Clark 4662 (GB, MO, QCNE). Tree in understory of secondary forest, ca. 1 m tall. 250-600 m. Amazonia.

Gonzalagunia dodsonii Dwyer, Selbyana 2(1): 58-59. 1977. Type: Ecuador: Los Ríos: cloud forest on western slope, area of virgin forest, km 12 road from Patricia Pilar to 24 de Mayo, Montañas de Ila, 450 m, C.H. Dodson & A.H. Gentry 6597 (HT: MO; IT: RPSC, SEL).

Representative Specimen: Ecuador: Manabí: Mache-Chindul, comunidad Ambache, 250 m, 4 Apr 1997, J.L. Clark, R. Dunn, T. Nuñez & C. Robles 4165 (GB, MO, QCNE). Tree in understory of secondary forest, ca. 4 m tall. 250 m. Endemic.

Gonzalagunia sessilifolia Standl., Publ. Field Columbian Mus., Bot. Ser. 7: 210. 1931. Type: , Ecuador: Chimborazo 900 m, Spruce s.n., July 1860 (K: frag., photo: F).

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300–700 m, 20 Jun 1996, J.L. Clark, E. Arroyo & P. Hibbs 2682 (MO, QCNE).

Common shrub in understory of secondary forest, ca. 1 m tall. 300-700 m. Endemic.

Guettarda acreana K. Krause, Notizbl. Bot. Gart. Berlin-Dahlem 6: 204. 1914.

Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor, 10 m, 9 Apr 1997, J.L. Clark, T. Nuñez & C. Robles 4356 (MO, QCNE).

Tree, 10 m tall. 0-50 m. Amazonia, Chocó, Mesoamerica.

Guettarda crispiflora Vahl, Eclog. Amer. 1: 36, t. 6. 1796.

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300–700 m, 20 Jun 1996, J.L. Clark, E. Arroyo & P. Hibbs 2665 (MO, QCNE).

Tree, 4-15 m tall. 300-850 m. Amazonia, Chocó, Mesoamerica.

Guettarda sanblasensis Dwyer, Ann. Missouri Bot. Gard. 67(1): 204. 1980.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 27 Sep 1996, J.L. Clark 2932 (MO, QCNE).

Common understory tree, 8-15 m tall. 10-600 m. Chocó, Mesoamerica.

Hamelia axillaris Sw., Prodr. 46. 1788.

Representative Specimen: Ecuador: Manabí: Mache-Chindul, comunidad Ambache, 250 m, 25 Mar 1997, J.L. Clark, R. Dunn, T. Nuñez & C. Robles 4220 (MO, QCNE).

Tree, 3 m tall. 50-250 m. Amazonia, Chocó, Mesoamerica.

Hamelia patens Jacq., Enum. Syst. Pl. 16. 1760.

Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 200 m, 28 Mar 1998, J.L. Clark & S. Nazzaro 4925 (MO, QCNE).

Tree, 5 m tall. 10-200 m. Amazonia, Chocó, Mesoamerica.

Hippotis comosa L. Andersson & Rova, Fl. Ecuador 74: 14-16, fig. 3A-B. 2004. Type:

Ecuador, Esmeraldas, cantón Quinindé, Montañas de Mache, 35 km W of Quinindé, 0°21'N, 79°44'W, 500 m, J.L. Clark, M. Lysinger, T. Walla & H. Greeney 3559 (HT: GH; IT: AAU, F, GB, K, MO, NY, QCNE, US). (Fig. 3C, p.130).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 550 m, 24 Nov 1999, D. Neill & QCNE botany interns 12229 (MO, QCNE).

Very common understory tree in mature forest, 4-15 m tall. 250-600 m. Endemic.

Hoffmannia longipetiolata Pol., Linnaea 41(5-6): 567-568. 1877.

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro 800 m, 10 Mar 1997, H. Vargas 1315 (MO, QCNE).

Tree, 3 m tall. 800 m. Chocó, Mesoamerica.

Hoffmannia subauriculata Standl., J. Wash. Acad. Sci. 18: 179. 1928.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–

- 600 m, 22 Sep 1994, *M.S. Bass & J.R. Abbott* 45 (MO, QCNE).
Subshrub, 1.5 m tall. 400-600 m. Chocó, Mesoamerica.
- Isertia pittieri** (Standl.) Standl., Publ. Field Columbian Mus., Bot. Ser. 8(5): 346. 1931.
Cassupa pittieri Standl. Type: Colombia, El Valle, Pittier 514.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 5 May 1996, *J.L. Clark* 2551 (MO, QCNE).
Common understory tree reaching subcanopy. 25-700 m. Common name: "Cangana." Chocó
- Ladenbergia pavonii** (Lamb.) Standl., Publ. Field Columbian Mus., Bot. Ser. 7: 201. 1931.
Cinchona pavonii Lamb. Type: Ecuador: Prov. unknown: "Cinchona cava sp. nova / inedita vulgo canela / de Loxa Quito Peru / es preciosa esta planta", *Pavón* s.n. (LT: BM; T: B destroyed, photo F-134; possible IT: BM, MA, P).
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 13 May 1998, *J.L. Clark & C. Pallis* 5537 (MO, QCNE).
Subcanopy tree, 20 m tall. 400-850 m. Endemic.
- Manettia reclinata** L., Mant. Pl. 2: 558. 1771.
Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300-700 m, 7 Apr 1997, *J.L. Clark, T. Nuñez & C. Robles* 4301 (MO, QCNE).
Succulent vine. 300-700 m. Chocó, Mesoamerica.
- Notopleura anomothyrsa** (K. Schum. & Donn. Sm.) C.M. Taylor, Ann. Missouri Bot. Gard. 88(3): 490. 2001.
Synonyms: *Psychotria anomothyrsa* K. Schum. & Donn. Sm., *Psychotria macrophylla* subsp. *anomothyrsa* (K. Schum. & Donn. Sm.) Steyermark.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, M.S. Bass & L. Kueppers 400-600 m, 15 Oct 1994, *N. Pitman, M.S. Bass & L. Kueppers* 852 (MO, QCNE).
Succulent understory herb. 400-600 m. Amazonia, Chocó, Mesoamerica.
- Notopleura capacifolia** (Dwyer) C.M. Taylor, Ann. Missouri Bot. Gard. 88(3): 491. 2001.
Synonyms: *Psychotria capacifolia* Dwyer, *Psychotria dosbocensis* Dwyer.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 15 Sep 1994, *J.L. Clark & B. Adnepos* 41 (MO, QCNE).
Common understory shrub or herb. 400-750 m. Amazonas, Chocó, Mesoamerica.
- Notopleura epiphytica** (K. Krause) C.M. Taylor, Ann. Missouri Bot. Gard. 88(3): 512. 2001.
Synonyms: *Psychotria epiphytica* K. Krause, *Psychotria lassula* Standl., *Psychotria orchidearum* Standl., *Psychotria paramorum* Standl., *Psychotria semimetallica* K. Krause.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 20 Nov 1995, *J.L. Clark & K. Cunningham, C. Roberts* 1609 (MO, QCNE).
Woody hemiepiphyte in mature forest. 400-600 m. Amazonas, Chocó, Mesoamerica.
- Notopleura macrophylla** (Ruiz & Pav.) C.M. Taylor, Ann. Missouri Bot. Gard. 88(3): 499. 2001.
Synonyms: *Psychotria albacostata* Rusby, *Psychotria macrophylla* fo. *tomentella* Steyermark., *Psychotria macrophylla* Ruiz & Pav., *Psychotria macrophylla* subsp. *albacostata* (Rusby) Steyermark.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 15 Oct 1994, *N. Pitman, Margor Bass & L. Kueppers* 851 (MO, QCNE).
Succulent understory shrub. 400-600 m. Amazonia, Chocó, Mesoamerica.
- Palicourea acanthacea** Standl. ex C.M. Taylor, Novon 6(2): 211. 1996.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 650 m, 12 Mar 1997, *J.L. Clark, A. Cousins, T. Nuñez & J. Richter* 4052

(MO, QCNE).

Common tree in light gaps in mature forests, 3-12 m tall. 400-650 m. Chocó.

Palicourea chimbacensis Standl., Publ. Field Columbian Mus., Bot. Ser. 7: 231. 1931.

Representative Specimen: Ecuador: Manabí: Reserva Ecologica Mache-Chindul. Comunidad Ambache (vía marginal de la costa-Chindul), comunidad Ambache, 250 m, 5 Apr 1997, J.L. Clark, R. Dunn, T. Nuñez & C. Robles 4191 (MO, QCNE).

Understory tree, 14 m tall. 250 m. Chocó.

Palicourea guianensis Aubl., Hist. Pl. Guiane 1: 173, t. 66. 1775.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 1 Dec 1994, J.L. Clark 347 (MO, QCNE).

Common tree, 2-8 m tall. 25-500 m. Amazonia, Chocó, Mesoamerica.

Infrasp.: *Palicourea guianensis* subsp. *barbinervia* (DC.) Steyermark.

Palicourea lugoana C.M. Taylor, Ann. Missouri Bot. Gard. 84: 253. 1997. Type: Ecuador, Pastaza, Mera, M. Lugo 14 (HT: S).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 11 Oct 1994, J.L. Clark 189 (MO, QCNE).

Tree, 1-3 m tall. 400-600 m. Amazonia, Chocó.

Palicourea stipularis Benth., Pl. Hartw. 133. 1844.

Type: Ecuador: Loja: El Sisma mountains, (HT: K, photos F, MO, NY).

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 400–500 m, 11 Nov 1998, T. Delinks & C. Robles 144 (MO, QCNE).

Tree, ca. 3 m tall. 400-500 m. Amazonia, Chocó.

Pentagonia breviloba L. Andersson & Rova, Fl.

Ecuador 74: 32-33, fig. 5C-E. 2004. Type: Ecuador, Esmeraldas, Cantón Quinindé, Montañas de Mache, Bilsa Biological Station, 35 km W of Quinindé, 5 km W of Santa Isabel, J.L. Clark & C. Watt 908 (HT: GB; IT: GH, QCNE).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 20 Nov 1994, J.L. Clark, C. Bergman, H. Lintz, & S. Mora 292 (MO, QCNE).

Tree, 10-12 m tall. 400-600 m. Endemic.

Pentagonia bonifaziana X. Cornejo & C.M.

Taylor, Harvard Pap. Bot. (11)1: 19-24, Type: Ecuador, Esmeraldas, Reserva Mache-Chindul, adentro del Río Ene, a lo largo del estero aportante, cerca a la propiedad de Luis Cabrera, 150 m, 3 May 2003, X. Cornejo & C. Bonifaz 7782. (HT: GUAY; IT: GB, MO).

Representative Specimen: Known only from the type.

Pachycaul, unbranched treelet, 6 m tall. 150 m. Endemic.

Pentagonia donnell-smithii (Standl.) Standl., J. Wash. Acad. Sci. 17(7): 170. 1927.

Representative Specimen: Ecuador: Esmeraldas: Muisne 100 m, 22 May 2000, D. Neill & QCNE botany interns 12751 (MO, QCNE).

Common understory tree, 10 m tall. 0-15 m. Chocó, Mesoamerica.

Pentagonia grandiflora Standl., Field Mus. Nat.

Hist., Bot. Ser. 17(2): 217. 1937. Type: Ecuador: Río Cojumies (?). above tidewater, 1921, W.W. Rowlee & G. Mixter 1271 (HT: US-2 sheets).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 22 Sep 1994, N. Pitman, J.L. Clark, B. Adnepos & L. Kueppers 707 (MO, QCNE).

Unbranched tree, 3-15 m tall. 280-600 m. Chocó.

Pentagonia macrophylla Benth., Bot. Voy. Sulphur 105, t. 39. 1845.

Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 200 m, 7 Jul 1996, J.L. Clark 2786 (MO, QCNE).

Tree, 5-10 m tall. 60-700 m. Amazonia, Chocó, Mesoamerica.

Pentagonia tinajita Seem., Bot. Voy. Herald 105,

- t. 39. 1854.
- Representative Specimen:** Ecuador: Esmeraldas: Reserva Ecológica Mache-Chindul, comunidad Caña Braval, cabaceras del Río Viche, estero Sabaleta, 250 m, 16 Mar 1998, J.L. Clark 4739 (MO, QCNE).
- Shrub, ca. 2 m tall. 250 m. Mesoamerica.
- Posoqueria coriacea* M. Martens & Galeotti, Bull. Acad. Roy. Sci. Bruxelles 11(1): 240. 1844.**
- Representative Specimen:** Ecuador: Manabí: Cerro Pata de Pájaro, 300–700 m, 21 Jul 1996, J.L. Clark, E. Arroyo & P. Hibbs 2722 (MO, QCNE).
- Tree, 4 m tall. 300–700 m. Amazonia, Chocó, Mesoamerica.
- Posoqueria latifolia* (Rudge) Roem. & Schult., Syst. Veg. 5: 227. 1819..**
- Representative Specimen:** Esmeraldas: Bilsa Biological Station, 400–600 m, 11 Oct 1994, J.L. Clark 176 (MO, QCNE).
- Tree, 5–18 m tall. 400–600 m. Amazonia, Chocó, Mesoamerica.
- Posoqueria longiflora* Aubl., Hist. Pl. Guiane 142: 134, t. 51. 1775.**
- Representative Specimen:** Ecuador: Esmeraldas: Muisne, sitio San Salvador, orillas del Río Sucio, 100–150 m, Mar 1995, W. Palacios 13764 (MO, QCNE).
- Tree, 3–7 m tall. 100–150 m. Amazonia, Chocó.
- Posoqueria panamensis* (Walp. & Duchass.) Walp., Ann. Bot. Syst. 2: 797. 1852.**
- Representative Specimen:** Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 26 Mar 1995, J.L. Clark & Y. Troya 502 (AAU, GB, MEXU, MO, NY, QCNE, US).
- Very common tree, 6–20 m tall. 250–800 m. Amazonia, Chocó, Mesoamerica.
- Psychotria allenii* Standl., Ann. Missouri Bot. Gard. 27(3): 342. 1940.**
- Representative Specimen:** Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 15 Nov 1994, J.L. Clark & N. Pitman 243 (MO, QCNE).
- Common tree, 5–15 m tall. 400–600 m.
- Amazonia, Chocó, Mesoamerica.
- Psychotria amplifrons* Standl., Publ. Field Mus. Nat. Hist., Bot. Ser. 22(3): 199. 1940. Type: Ecuador: In silv. conv. Nanegal, Aug 1874, P. L. Sodiro s.n.3 (HT: BP; IT: F fragm.; photo: F (BP)).**
- Representative Specimen:** Ecuador: Manabí: Cerro Pata de Pájaro, 300–700 m, 20 Jun 1996, J.L. Clark, E. Arroyo & P. Hibbs 2675 (MO, QCNE).
- Tree, 1.5–3 m tall. 300–850 m. Chocó.
- Psychotria brachiata* Sw., Prodr. 45. 1788.**
- Representative Specimen:** Ecuador: Esmeraldas: Quinindé, Reserva Ecológica Mache-Chindul, comunidad Caña Braval, cabaceras del Río Viche, estero Sabaleta, 250 m, 16 Mar 1998, J.L. Clark 466b (MO, QCNE).
- Shrub, ca. 1.5 m tall. 250 m. Amazonas, Chocó, Mesoamerica.
- Psychotria carthagrenensis* Jacq., Enum. Syst. Pl. 16. 1760.**
- Representative Specimen:** Ecuador: Esmeraldas: Quinindé, Reserva Ecológica Mache-Chindul, Bilsa Biological Station, 400–600 m, 13 Nov 1994, M.S. Bass & N. Pitman 244 (MO, QCNE).
- Tree, ca. 2 m tall. 400–600 m. Amazonia, Chocó, Mesoamerica.
- Psychotria chimborecensis* Standl., Publ. Field Columbian Mus., Bot. Ser. 7: 223. 1931.**
- Type: Ecuador: at the base of Mt. Chimborazo 750 m., July 1860, R. Spruce 6192 (HT: K; photo: F).
- Representative Specimen:** Ecuador: Manabí: Pedernales Cantón, Reserva Ecologica Mache-Chindul, Hacienda la Siberia (vía la carretera marginal de la costa), ca. 20 km SE of Cojimíes, 100 m, 6 Apr 1997, J.L. Clark, R. Dunn, T. Nuñez & C. Robles 4259 (MO, QCNE).
- Tree, ca. 5 m tall. 100–800 m. Endemic
- Psychotria cornejoi* C.M. Taylor, Novon 12(1): 124–125, f. 2A-D. 2002. Type: Ecuador: Guayas: 3 km E of Olón (5 km N of Manglaralto, on the beach), 75–190 m, 20**

Dec 1961, C.H. Dodson & L.B. Thien 1669
(HT: MO).

Representative Specimen: Ecuador: Manabí: Pedernales Cantón, Reserva Ecológica Mache-Chindul, Cerro Pata de Pájaro, cabaceras de Río Vite, estero Nuquepe, forest N of La Loma de Pajaro & road to Carmen, 300–700 m, 7 Apr 1997, J.L. Clark, T. Nuñez & C. Robles 4274 (MO, QCNE).

Tree, 2-4 m tall. 300-800 m. Chocó.

Psychotria esmeraldana C.M. Taylor, Novon 16(1): 151-152, f. 2D-F. 2006. Type: Ecuador: Representative Specimen: Ecuador: Esmeraldas: Cantón Quinindé, Reserva Ecológica Mache-Chindul, Bilsa Biological Station, 400–600 m, 13 Nov 1994, M.S. Bass & N. Pitman 244 (HT: QCNE; IT: MO). (Fig. 22A-F, p.149).

Tree, ca. 2 m tall. 400-600 m. Endemic.

Psychotria gentryi (Dwyer) C.M. Taylor, Novon 4: 305. 1994. *Cephaelis gentryi* Dwyer. Type: Ecuador: Los Ríos: Río Palenque Biological Station, km 56 Quevedo-Santo Domingo road, 150-220 m, C.H. Dodson 5169 (HT: MO; IT: RPSC, US, SEL).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 19 Feb 1996, J.L. Clark 2089 (MO, QCNE).

Common tree in mature forest, 5-11 m tall. 280-700 m. Amazonia, Chocó, Mesoamerica.

Psychotria grandis Sw., Prodr. 43. 1788.

Representative Specimen: Ecuador: Manabí: Recinto Hojas Blancas, Carretera Pedernales-Carmen Mandarino, Entrada el Mono, 150 m, 12 Apr 1997 J.L. Clark, T. Nuñez & C. Robles 4404 (MO, QCNE).

Tree, 15 m tall. 100-150 m. Chocó, Mesoamerica.

Psychotria hazenii Standl., Publ. Field Columbian Mus., Bot. Ser. 7: 96. 1930.

Representative Specimen: Ecuador: Manabí: canton Pedernales, Cerro Pata de Pájaro, 10 km E of Pedernales, 300–700 m, 19 Jun 1996, J.L. Clark, E. Arroyo & P. Hibbs 2644 (MO, QCNE).

Understory tree, 1.5-12 m tall. 300-700 m. Amazonia, Chocó, Mesoamerica.

Psychotria hispidula Standl. ex Steyermark, Acta Biol. Venez. 4: 97. 1964.

Representative Specimen: Ecuador: Esmeraldas: Quinindé, Paraíso de Papagayos, 200 m, 6 Jul 1996, J.L. Clark 2762 (MO, QCNE).

Understory shrub, 1 m tall. 200 m. Amazonia, Chocó, Mesoamerica.

Psychotria horizontalis Sw., Prodr. 44. 1788.

Type: Hispaniola, Swartz s.n.

Representative Specimen: Manabí: Reserva de Lalo Loor 50 m, 25 Aug 1998, D. Neill & QCNE botany interns 11304 (MO, QCNE).

Understory shrub, 2 m tall. 50 m. Chocó, Mesoamerica.

Psychotria hylocharis Standl., Publ. Field Columbian Mus., Bot. Ser. 7: 98. 1930.

Representative Specimen: Ecuador: Manabí: 43 km N of Pedernales, 100 m, 19 Dec 1998, D. Neill & QCNE botany interns 11727 (MO, QCNE).

Understory shrub, 1.4-3 m tall. 100 m. Chocó.

Psychotria marginata Sw., Prodr. 43. 1788.

Representative Specimen: Ecuador: Esmeraldas: Quinindé, Paraíso de Papagayos, 200 m, 14 Jan 1997, J.L. Clark, L. Chatrou, P. Maas & C. Repetur 3804 (MO, QCNE).

Tree, 4 m tall. 250. Amazonia, Chocó, Mesoamerica.

Psychotria pilosa Ruiz & Pav., Fl. Peruv. 2: 60, t. 208, f. a. 1799.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 15 Nov 1994, N. Pitman & J.L. Clark 939 (MO, QCNE).

Tree or shrub to 2 m tall. 400-600 m. Amazonia, Chocó, Mesoamerica.

Psychotria poeppigiana Müll. Arg., Fl. Bras. 6(5): 370. 1881.

Representative Specimen: Ecuador: Esmeraldas: Quinindé, Paraíso de Papagayos, 200 m, 8 Jul 1996, John L. Clark

- 2797 (MO, QCNE).
Shrub, ca. 1 m tall. 200 m. Amazonia, Chocó, Mesoamerica.
- Psychotria racemosa** Rich., Actes Soc. Hist. Nat. Paris 1: 107. 1792.
Representative Specimen: Ecuador: Esmeraldas: Quinindé, Paraíso de Papagayos, 200 m, 6 Jul 1996, *J.L. Clark* 2749 (MO, QCNE).
Understory shrub, 1.5 m tall. 200 m. Amazonia, Chocó, Mesoamerica.
- Randia armata** (Sw.) DC., Prodr. 4: 387. 1830.
Gardenia armata Sw.
Representative Specimen: Ecuador: Esmeraldas: Recinto Palma Junta 80 m, 20 May 2000, *D. Neill & QCNE* botany interns 12746 (MO, QCNE, UB).
Tree. 500 m. Amazonia, Chocó, Mesoamerica.
- Randia pubistyla** C. Gust., Novon 10(3): 204-206, fig. 2. 2000. Type: Ecuador, Guayas, 15 km E of Guayaquil, Cerro Mirador de los Monos, *D. Rubio & W. Palacios* 2439 (HT: GB; IT: MO, QCNE).
Representative Specimen: Ecuador: Manabí: Pedernales Cantón, Reserva Ecologica Mache-Chindul, Cerro Pata de Pájaro, cabaceras de Río Vite, estero Nuquepe, forest N of La Loma de Pajaro & road to Carmen, 300–700 m, 7 Apr 1997, *J.L. Clark, T. Nuñez & C. Robles* 4287 (MO, QCNE).
Tree, 2-5 m tall. 5-700 m. Chocó.
- Rudgea cornifolia** (Kunth) Standl., Publ. Field Columbian Mus., Bot. Ser. 7: 432. 1931.
Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor, 10 m, 9 Apr 1997, *J.L. Clark, T. Nuñez & C. Robles* 4346 (MO, QCNE).
Tree, 5 m tall. 0-50 m. Amazonia, Chocó, Mesoamerica.
- Rustia bilsana** Delprete, Novon 8(3): 234, f. 1, 2. 1998. Type: Ecuador. Esmeraldas: Cantón Quinindé, Bilsa Biological Station, Mache Mountains, 35 km W of Quinindé, 5 km W of Santa Isabel, along Cube River, premontane wet forest, 2 Oct 1996, *J. L. Clark* 2979 (HT: QCNE; IT: AAU, CAS, COL, DAV, F, G, GB, GH, MO, NY, P, QCA, TEX, US). (Fig. 3A-B, p. 130; 23A-E, p. 150).
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 3 Oct 1994, *J.L. Clark, M.S. Bass & N. Pitman* 139 (MO, NY, QCA, QCNE, TEX).
Subcanopy tree. 400-600 m. Endemic
- Sabicea villosa** Willd. ex Roem. & Schult., Syst. Veg. 5: 265. 1819.
Representative Specimen: Esmeraldas: Bilsa Biological Station, 400–600 m, 11 May 1995, *J.L. Clark & C. Watt* 836 (MO, QCNE).
Herbaceous vine in disturbed sunny areas. 250–600 m. Amazonia, Chocó, Mesoamerica.
Infrasp.: *Sabicea villosa* var. *villosa*.
- Schradera stellata** Benth., Bot. Voy. Sulphur 106, t. 40. 1845. Type: Colombia, Isle of Gorgona.,
Representative Specimen: Ecuador: Esmeraldas: Cotacachi-Cayapas 250 m, 28 Oct 1993 - 31 Oct 1993, *Milton Tirado & P. Asimbaya, M. Coroso, J. Arroyo* 622 (MO, QCNE).
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 21 Feb 1996, *J.L. Clark* 2118 (MO, QCNE).
Common woody liana in subcanopy, leaves with foetid odor. 400-600 m. Chocó.
- Simira standleyi** (Little) Steyermark., Mem. New York Bot. Gard. 23: 309. 1972. *Sickingia standleyi* Little. Type: Ecuador: Esmeraldas: Quinindé, 60 m, cutover wet tropical forest, 13 Apr 1943, *E.L. Little* 6248 (HT: US; IT: F, Q).
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 25 Mar 1995, *J.L. Clark & Y. Troya* 496 (MO, QCNE).
Common canopy tree, inner bark turns bright red. 400-600 m. Common names: “Mangle,” “Manglillo,” “Murcielag.” Endemic.
- Sommera purdiei** Standl., Publ. Field Columbian

Mus., Bot. Ser. 7: 48. 1930. Type: Colombia: Bogota, *Purdie s. n.* (HT: GH; IT: K).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 11 May 1995, *J.L. Clark & C. Watt* 832 (MO, QCNE).

Common understory tree, 5-10 m tall. 100-600 m. Chocó.

Spermacoce sp.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 14 Sep 1994, *J.R. Abbott* 15102 (BEREA, QCNE).

Common terrestrial herb in disturbed sunny areas. 400-600 m.

Tocoyena pittieri (Standl.) Standl., Contr. Arnold Arbor. 5: 151. 1933.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 7 May 1995, *J.L. Clark & C. Watt* 790 (MO, QCNE).

Common understory tree in mature forest, 4–10 m tall. 250-850 m. Amazonia, Chocó, Mesoamerica.

Warszewiczia coccinea (Vahl) Klotsch, Monatsber. Konigl. Preuss. Akad. Wiss. Berlin 1853: 497. 1853.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 23 Jan 1995, *J.L. Clark* 407 (MO, QCNE).

Understory tree, 2-4 m tall in secondary forest. 400-600 m. Amazonia, Chocó, Mesoamerica.

RUTACEAE

Amyris pinnata Kunth, Nov. Gen. Sp. 7: 37-38. 1824.

Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor, 100 m, Oct 2005, *J. Cevallos & D. Neill* 211 (MO, QCNE).

Tree, 10 m tall, 100 m. Amazonia, Choco, Mesoamerica.

Toxosiphon carinatus (Little) Kallunki, Brittonia 44(2): 121. 1992. *Erythrociton carinatus*

Little. Type: Ecuador: El Oro: At Piedras about 3 km along new trail, virgin forest 500 m 18 June 1943, *Little, E.L.* 6632 (HT: US; IT: F, K, NY).

Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor, 100 m, 15 Dec 1998, *D. Neill & QCNE botany interns* 11531 (MO, QCNE).

Tree or shrub, 1-4 m tall. 50-500 m. Amazonia.

Zanthoxylum fagara (L.) Sarg., Gard. & Forest 3(112): 186. 1890.

Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor, 10 m, 9 Apr 1997, *J.L. Clark, T. Nuñez & C. Robles* 4340 (MO, QCNE).

Tree, 18 m tall. 0-50 m. Common name: “Tachuelo.” Amazonia, Chocó, Mesoamerica.

Infrasp.: *Zanthoxylum fagara* var. *culantrillo* (Kunth) Reynel.

Zanthoxylum tumbezanum (J.F. Macbr.) J.F. Macbr., Field Mus. Nat. Hist., Bot. Ser. 13(3/2): 669. 1949.

Representative Specimen: Ecuador: Manabí: Punta los frailes, La Chorrera, 3 km SW of Pedernales, Dry forest, 5-60 m, 29 June 1999, *T. Delinks & C. Robles* 340 (MO, NY, QCNE).

Tree. 0-60 m, in dry forest. Endemic, including coastal Tumbes, Peru.

SABIACEAE

Meliosma occidentalis Cuatrec., Lloydia 11(3): 217. 1948. Type: Colombia: del Valle: Cordillera Occidental vert. Occidental, Hoya del río Anchicayá bosques junto a la Quebrada de Le Retiro, 230-260 m, 13 Oct 1943, *J. Cuatrecasas* 15279 (HT: F).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 25 Feb 1996, *J.L. Clark* 2145 (MO, QCNE).

Common subcanopy tree in mature forest. 400-600 m. Chocó, Mesoamerica.

SAPINDACEAE

Allophylus dodsonii A.H. Gentry, Ann. Missouri

- Bot. Gard. 75(4): 1438. 1988 [1989]. Type: Ecuador. Los Ríos: Río Palenque Field Station, halfway between Quevedo and Santo Domingo de los Colorados, wet forest, 200 m, 21 Feb 1974, A.H. Gentry 10098 (HT: MO; IT: QCA).
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 13 May 1998, J.L. Clark & C. Pallis 5550 (K, MO, QCNE).
- Common understory tree, 3-18 m tall. 400-600 m. Endemic.
- Allophylus incanus** Radlk., Sitzungsber. Math.-Phys. Cl. Konigl. Bayer. Akad. Wiss. Munchen 38: 216, 236. 1908-1909. Type: Ecuador, H. Eggers 15786 (HT: M; IT: US fragm.; photo: F(M)).
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 20 Sep 1994, J.L. Clark & B. Adnepos 83 (MO, QCNE, US).
- Common subcanopy tree. 400-600 m. Amazonia, Chocó.
- Cupania cinerea** Poepp., Nov. Gen. Sp. Pl. 3: 38. 1844. Type: Crescit in marginibus sylvarum provinciae peruvianaë Maynas. Martio mense a nobis lecta fuit, Poeppig s.n.
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 29 Mar 1995, J.L. Clark & Ivonne Troya 526 (MO, NY, QCNE, US).
- Canopy tree. 250-600 m. Common name: "Pialde." Amazonia, Chocó, Mesoamerica.
- Cupania livida** (Radlk.) Croat, Ann. Missouri Bot. Gard. 63(3): 438-439. 1976 [1977].
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 4 Jan 1997, J.L. Clark, E. Austen, S. Bennett & D. Kapan 3707 (MO, QCNE, US).
- Canopy tree. 400-600 m. Common name: "Quebra Fierro." Amazonia, Chocó, Mesoamerica.
- Exothea paniculata** (Juss.) Radlk., Index Gen. Phan. 81. 1887 [1888].
- Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor 50 m, 25 Aug 1998,
- D. Neill & QCNE botany interns 11278 (MO, QCNE).
- Common canopy tree in moist forest at the Reserva de Lalo Loor, in permanent plots; with distinctive "shaggy" bark. 50-150 m. Common name: "Cativo." Mesoamerica. [Also in the Antilles; only one previous record from South America, in the Río Magdalena valley, Colombia].
- Matayba sp.**
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 650 m, 12 Mar 1997, J.L. Clark, A. Cousins, T. Nuñez & J. Richter 4084 (K, MO, QCNE, US).
- Common understory tree in second permanent plot. 650 m.
- Paullinia bilobulata** Radlk., Bot. Jahrb. Syst. 37: 152. 1905.
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 17 May 1995, J.L. Clark & C. Watt 912 (MO, QCNE, US).
- Woody liana in subcanopy. 100-600 m.
- Paullinia bracteosa** Radlk., Bull. Herb. Boissier, ser. 2, 5(4): 321-322. 1905.
- Representative Specimen: Ecuador: Manabí: Mache-Chindul, comunidad Ambache, 250 m, 6 Apr 1997, J.L. Clark, R. Dunn, T. Nuñez & C. Robles 4219 (MO, QCNE, US).
- Woody vine. 250 m. Amazonia, Chocó, Mesoamerica.
- Paullinia capreolata** (Aubl.) Radlk., Monogr. Serjania 70. 1875.
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 12 May 1995, J.L. Clark & C. Watt 847 (MO, NY, QCNE).
- Woody liana in canopy. 580-750 m. Amazonia, Chocó, Mesoamerica.
- Paullinia dasystachya** Radlk., Monogr. Paullinia 70. 1895-96.
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 14 Feb 1996, John L Clark & N. Kerber, J. Plihal 1995 (MO, NY, QCNE).

- Woody liana in canopy. Collected in first permanent plot. 500 m. Amazonia, Mesoamerica.
- Paullinia elongata** Radlk., Abh. Math.-Phys. Cl. Konigl. Bayer. Akad. Wiss. 19: 238. 1895-1896.
 Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 20 Nov 1995, *J.L. Clark, K. Cunningham & C. Roberts 1600* (MO, QCNE, US).
 Liana. 400-600 m. Amazonia.
- Paullinia quitensis** Radlk., Monogr. Paullinia 269. 1895. Type: In Ecuador: ad pedem montis Chimborazo in sylvis, 3000 ped., m. Jul. 1860, flor et fruct. juven; Andes Quitensis, in sylvis secus torrentem Navegal [Nanegal], m. Aug. 1874, flor et fruct. immat., *R. Spruce 6156; Sodiro s.n. (ST's)*.
 Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor 50 m, 25 Aug 1998, *D. Neill & QCNE botany interns 11294* (MO, QCNE, US).
 Common woody liana in mature forest in environs of Reserva de Lalo Loor. 0-50 m. Amazonia
- Paullinia rubiginosa** Cambess., Fl. Bras. Merid. 1: 371. 1825.
 Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 27 Sep 1994, *J.L. Clark, B. Adnepos & J. Wolf 120* (MO, QCNE, US).
 Woody liana in mature forest. 400-600 m. Chocó.
- Paullinia spicata** Benth., J. Bot. (Hooker) 3: 193. 1851.
 Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300-700 m, 7 Apr 1997, *J.L. Clark, T. Nuñez & C. Robles 4311* (MO, QCNE, US).
 Understory tree in mature forest. 300-700 m. Amazonia, Chocó.
- Sapindus saponaria** L., Sp. Pl. 1: 367. 1753.,
 Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor 50 m, 25 Aug 1998, *D. Neill & QCNE botany interns 11294* (MO, QCNE).
- Tree, 20 m tall. 50 m. Common name: "Jaboncillo." Amazonia, Chocó, Mesoamerica.
- Serjania brevipes** Benth., Bot. Voy. Sulphur 76. 1844. Type: Ecuador, Guayaquil, *Barclay & Hinds s.n.* (HT: K).
 Representative Specimen: Ecuador: Manabí: Cerro del Matal 100 m, 17 Dec 1998, *D. Neill & QCNE botany interns 11608* (MO, QCNE, US).
 Liana. 100-300 m. Endemic.
- Talisia equatoriensis** Acev.-Rodr., Fl. Neotrop. 87: 109, 111-112, f. 74, 76. 2003. Type: Ecuador: Pichincha: between Atenas and Sapullo, Km 17, 1750 m., 2 Nov 1991 (fl), *J. Jaramillo & E. Grijalva 14473* (HT: NY; IT: QCA).
 Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300-700 m, 20 Jun 1996, *J.L. Clark, E. Arroyo & P. Hibbs 2650* (MO, QCNE, US).
 Unbranched understory tree with terminally clustered leaves, ca. 10 m tall. Common in southern range of Mache-Chindul mountains, including Reserva de Lalo Loor. 100-700 m. Chocó, Mesoamerica.
- Talisia macrophylla** (Mart.) Radlk., Sitzungsber. Math.-Phys. Cl. Konigl. Bayer. Akad. Wiss. München 8(3): 347. 1878.
 Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 5 Apr 1995, *J.L. Clark & Y. Troya 611* (MO, NY, QCNE).
 Unbranched understory tree with terminally clustered leaves, ca. 10 m tall. Common in northern range of Mache-Chindul mountains (e.g., Bilsa Biological Station). 400-700 m. Chocó, Mesoamerica.
- ## SAPOTACEAE
- Chrysophyllum argenteum** Jacq., Enum. Syst. Pl. 15. 1760.
 Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 18 Feb 1996, *J.L. Clark & N. Kerber, J. Plihal 2062* (K, MO, QCNE).
 Common canopy tree. 400-600 m. Common

- name: "Caimito." Amazonia, Chocó, Mesoamerica.
- Infrasp.: *Chrysophyllum argenteum* subsp. *panamense* (Pittier) T.D. Penn.
- Pouteria brevipetiolata** T.D. Penn., Fl. Neotrop. 52: 468, f. 104E-F. 1990. Type: Ecuador: El Oro: ca 50 km SE of Arenillas along road to Loja, Nov. 1982 (fl.), *Pennington & Tenorio 10716* (HT: NY; IT: K, QCA)
- Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor, 50 m, Oct. 2005, *J. Cevallos & D. Neill s.n* (QCNE).
- Canopy tree, 20 m, common in permanent plots, moist forest at Reserva de Lalo Loor. Tentative determination from sterile material; otherwise known only from the type. Endemic.
- Pouteria bulliformis** Q. Jiménez & T.D. Penn., Novon 7(2): 169-171, f. 1. 1997.
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 30 Dec 1996, *J.L. Clark, E. Austen, S. Bennett & D. Kapan 3661* (K, MO, QCNE, US).
- Canopy tree. 400-600 m. Chocó, Mesoamerica.
- Pouteria capacifolia** Pilz, Selbyana 2(1): 60, t. 17, f. 1. 1977. Type: Ecuador: Los Ríos: Río Palenque Science Center, km 56 Quevedo-Santo Domingo road, 7 Mar 1974 (fl.), 150-220 m, *Dodson, C.H. 5808* (NT: MO; T: MO, QCA, RPSC, SEL, US).
- Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 30 Jan 1991, *A. Gentry & C. Josse 72934* (K, MO). Subcanopy tree. 280-580 m. Chocó.
- Pouteria glomerata** (Miq.) Radlk., Sitzungsber. Math.-Phys. Cl. Konigl. Bayer. Akad. Wiss. Munchen 12(3): 333. 1882.
- Representative Specimen: Ecuador: Manabí: Mache-Chindul, comunidad Ambache, 250 m, 4 Apr 1997, *J.L. Clark, R. Dunn, T. Nuñez & C. Robles 4153* (K, MO, QCNE). Understory tree, ca. 15 m tall. 400-600 m. Amazonia, Chocó, Mesoamerica.
- Pouteria multiflora** (A. DC.) Eyma, Recueil Trav. Bot. Neerl. 33: 164. 1936.
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 28 Mar 1995, *J.L. Clark & Y. Troya 522* (MO, QCNE). Common canopy tree. 400-600 m. Common name: "Zapote silvestre." Amazonia, Chocó, Mesoamerica.
- Pouteria polysepala** T.D. Penn., Fl. Neotrop. 52: 500. 1990.
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 4 Apr 1995, *J.L. Clark & Y. Troya 605* (K, MO, QCNE). Canopy tree. 400-600 m. Amazonia
- Pouteria sapota** (Jacq.) H.E. Moore & Stearn, Taxon 16(5): 383. 1967..
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 25 Mar 1997, *J.L. Clark & P. Nutt 4116* (K, MO, QCNE). Common canopy tree in first permanent plot at Bilsa. 500 m. Mesoamerica.
- Pouteria torta** (Mart.) Radlk., Sitzungsber. Math.-Phys. Cl. Konigl. Bayer. Akad. Wiss. Munchen 12(3): 333. 1882.
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 18 Feb 1996, *J.L. Clark & N. Kerber, J. Plihal 2071* (K, MO, QCNE). Subcanopy tree. 100-500 m. Common name: "Mamey silvestre." Amazonia, Chocó, Mesoamerica.
- Infrasp.: *Pouteria torta* subsp. *torta*, *Pouteria torta* subsp. *tuberculata* (Sleumer) T.D. Penn.,
- Pradosia montana** T.D. Penn., Fl. Neotrop. 52: 661-663, f. 155E, 156a. 1990. Type: Ecuador: El Oro: ca 60 km SE of Arenillas on road to Loja, Nov. 1982 (fl.), *Pennington & Tenorio 10719* (HT: K; IT: NY, QCA).
- Representative Specimen: Ecuador: Manabí: Cerro del Matal 100 m, 17 Dec 1998, *D. Neill & QCNE botany interns 11601* (MO, QCNE). Canopy tree, in dry forest, southern part of Mache-Chindul range. 100 m. Endemic.

SCROPHULARIACEAE

Lindernia crustacea (L.) F. Muell., Syst. Census Austral. Pl. 1: 97. 1882.

Representative Specimen: Esmraldas: Bilsa Biological Station, 500 m, 22 Nov 1995, *J.L. Clark & K. Cunningham, C. Roberts 1639* (MO, QCNE).

Terrestrial herb growing along sunny disturbed roads. 400-600 m. Amazonia, Chocó, Mesoamerica.

Scoparia dulcis L., Sp. Pl. 1: 116. 1753.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 2 Apr 1995, *J.L. Clark & Y. Troya 581* (MO, QCNE).

Common terrestrial herb growing along sunny disturbed roads. 400-600 m. Amazonia, Chocó, Mesoamerica.

Stemodia angulata Oerst., Vidensk. Meddel. Dansk Naturhist. Foren. Kjobenhavn 1853(1-2): 22-23. 1854.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 19 Sep 1994, *M.S. Bass & N. Pitman 16* (BKL, MO, QCNE).

Terrestrial herb growing along sunny disturbed roads. 400-600 m. Amazonia, Chocó, Mesoamerica.

SIMAROUBACEAE

Picramnia latifolia Tul., Ann. Sci. Nat., Bot., ser. 3. 7: 258-259. 1847.

Representative Specimen: Ecuador : Manabí : Cerro Pata de Pájaro, 500 m, 26 Aug 1998, *D. Neill & QCNE botany interns 11373* (MO, QCNE).

Understory tree, ca. 6 m tall. 500 m. Amazonia, Chocó, Mesoamerica.

Simarouba amara Aubl., Hist. Pl. Guiane 2: 860-861, pl. 331-332. 1775.

Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 200 m, 10 Oct 1996, *J.L. Clark 3049* (MO, NY, QCNE).

Canopy tree. 200 m. Amazonia, Chocó, Mesoamerica.

SMILACACEAE

Smilax cumanensis Humb. & Bonpl. ex Willd., Sp. Pl. 4: 783. 1806.

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300–700 m, 20 Jun 1996, *J.L. Clark, E. Arroyo & P. Hibbs 2657* (MO, QCNE).

Vine. 100-700 m. Amazonia, Chocó.

Smilax mollis Humb. & Bonpl. ex Willd., Sp. Pl. 4: 785. 1806.

Representative Specimen: Ecuador: Manabí: 400 - 500 m, 11 November 1998, *T. Delinks & C. Robles 146* (MO, QCNE).

Liana. 400-500 m. Chocó, Mesoamerica.

Smilax tomentosa Kunth, Nov. Gen. Sp. (quarto ed.) 1: 272. 1815 [1816].

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 01Ene 1997, *J.L. Clark, E. Austen, S. Bennett & D. Kapan 3678* (MO, QCNE).

Vine growing along sunny disturbed roads. 500 m. Amazonia, Chocó, Mesoamerica.

SOLANACEAE

Browallia americana L., Sp. Pl. 2: 631. 1753.

Representative Specimen: Ecuador: Manabí: Cordillera de Jama, 600 m, 16 Dec 1998, *D. Neill & QCNE botany interns 11577*.

Common herb or subshrub along sunny disturbed roads. 50-600 m. Amazonia, Chocó, Mesoamerica.

Cestrum loretense Francey, Candollea 6: 225-226. 1935-36.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 26 Sep 1994, *J.Richard Abbott 15306* (BEREA, QCNE).

Shrub. 600 m. Amazonia

Cestrum microcalyx Francey, Candollea 6: 301-302. 1935.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 4 May 1995, *J.L. Clark & C. Watt 738* (BM, MO, QCNE).

Tree, ca. 2 m tall. 25-600 m. Amazonia, Chocó,

- Mesoamerica. (MO).
Cestrum morae Hunz., J. Arnold Arbor. 61(1): 113. 1980.
 Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 4–5 Oct 1996, *J.L. Clark 2991* (MO, QCNE). Tree in mature forest, 2–4 m tall. 400–600 m. Chocó.
- Cestrum schlechtendalii** G. Don, Gen. Hist. 4: 482–483. 1838. [ask Alex Monroe about this name – this is a southeastern Brazil name]
 Representative Specimen: Ecuador: Manabí: Jama 400 m, 18 Dec 1998, *D. Neill & QCNE botany interns 11684* (MO, QCNE). Shrub, ca. 4 m tall. 400 m. Amazonia, Chocó, Mesoamerica.
- Cestrum silvaticum** Francey, Candollea 6: 316–317. 1935.
 Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 14 Feb 1996, *J.L. Clark & N. kerber, J. Plihal 1990* (MO, MY, QCNE). Tree, 2 m tall. Common along roads and sunny disturbed areas. 500–600 m. Amazonia, Chocó, Mesoamerica.
- Cuatresia harlingiana** Hunz., Opera Bot. 92: 75. 1987. Type: Ecuador. Prov. Pichincha: Palmitopamba, ca 1300 m, ca 10 km northwest of Nanegal. 23 Jan 1974., *Harling & Andersson 11529* (HT: GB; IT: MO). Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 16 May 1995, *J.L. Clark & C. Watt 889* (MO, QCNE). Shrub, ca. 1.5 m tall. 400–600 m. Endemic. Amazonia.
- Cuatresia plowmanii** Hunz., Kurtziana 10: 18–20, f. 4. 1977. Type: Colombia: Valle del Cauca: Cordillera Occidental, vertiente occidental, Hoya del río Anchicayá (circa del puente de Aguaclara), 120 m, 29 Sep 1946, *Cuatrecasas 22066* (HT: US). Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 30 Jan 1991, *A. Gentry, R. Foster & C. Josse 72949* (MO). Vine. 280 m. Chocó.
- Juanulloa pavonii** (Miers) Benth. & Hook., Nat. Pflanzenfam. 4(Abt. 3b): 29. 1891. *Ectozoma pavonii* Miers. Type: Ecuador, Pavón s.n. (HT: BM).
 Synonyms: *Ectozoma pavonii* Miers, *Markea pavonii* (Miers) D'Arcy
 Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 17 Feb 1996, *J.L. Clark & N. Kerber, J. Plihal 2061* (MO, NY, QCNE). Common woody vine in mature forest. 250–700. Amazonia, Chocó.
- Lycianthes medusocalyx** (Bitter) Bitter, Lycianthes 4(Abt. 3b): 29. 1919.
 Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 26 Sep 1994, *J.R. Abbott 15281* (BEREA, QCNE). Shrub, 1.5 m tall. 600 m. Amazonia.
- Lycianthes pauciflora** (Vahl) Bitter, Lycianthes 4(Abt. 3b): 29. 1919.
 Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 13 Oct 1994, *N. Pitman 838* (MO, QCNE). Vine. 400–600 m. Amazonia, Chocó.
- Solandra aff. longiflora** Tussac, Fl. Antill. 2: 49–51, t. 12. 1818.
 Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor, 75–125 m, 6 Oct 1999, *T. Delinks & C. Robles 358* (MO, QCNE). Woody liana. 75–125 m. Mesoamerica.
- Solanum adhaerens** Willd. ex Roem. & Schult., Syst. Veg. 4: 669. 1819.
 Representative Specimen: Ecuador: Esmeraldas: Quinindé, Reserva Ecológica Mache-Chindul, comunidad Caña Braval, cabaceras del Río Viche, estero Sabaleta, 250 m, 16 Mar 1998, *J.L. Clark 4663b* (MO, QCNE). Herbaceous vine. 250 m. Amazonia, Chocó, Mesoamerica.

Solanum circinatum Bohs, Taxon 44(4): 585. 1995.

Synonym: *Cyphomandra hartwegii* (Miers) Walp.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 8 May 1995, J.L. Clark & C. Watt 800 (MO, NY, QCNE).

Tree, ca. 5 m tall. 400-600 m. Amazonia, Chocó, Mesoamerica.

Solanum confertiseriatum Bitter, Repert. Spec. Nov. Regni Veg. 11: 490. 1913.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 13 May 1998, J.L. Clark & C. Pallis 5576 (MO, QCNE).

Tree, 1.5-7 m tall. 500-700 m. Amazonia.

Solanum evolvulifolium Greenm., Bot. Gaz. 37(4): 211. 1904.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 17 Feb 1996, J.L. Clark & N. Kerber, J. Plihal 2054 (MO, QCNE).

Vine in mature forest. 500 m. Amazonia, Chocó, Mesoamerica.

Solanum fallax Bohs, Taxon 44(4): 585. 1995.

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro 800 m, 10 Mar 1997, H. Vargas 1307 (MO, NY, QCNE).

Tree, 8 m tall. 800 m. Chocó.

Solanum lepidotum Dunal, Solan. Syn. 17. 1816.

Type: Nova Granada, Humboldt & Bonpland s.n. (HT: P).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 650 m, 19 Feb 1997, J.L. Clark 3942 (MO, NY, QCNE).

Tree, 1-3 m tall. Common along sunny roads. 400-650 m. Amazonia, Chocó, Mesoamerica.

Solanum leptorhachis Bitter, Repert. Spec. Nov.

Regni Veg. 18: 50. 1922. Type: Ecuador: Manabí: El Recreo, H. Eggers 15743 (HT: M; IT: K, US).

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro 400–500 m, 11 Nov

1998, T. Delinks & C. Robles 148 (MO, QCNE).

Shrub, 1.5 m tall. 400-500 m. Chocó.

Solanum marantifolium Bitter, Repert. Spec. Nov. Regni Veg. 11: 13. 1912.

Representative Specimen: Manabí: Bilsa Biological Station, 250 m, 5 Apr 1997, J.L. Clark, R. Dunn, T. Nuñez & C. Robles 4200 (MO, QCNE).

Succulent terrestrial herb, ca. 1 m tall. 250 m. Chocó

Solanum ovalifolium Dunal, Solan. Syn. 37. 1816.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 21 Nov 1994, J.L. Clark & C. Bergman 307 (MO, QCNE).

Tree, 2 m tall. 400-600 m. Amazonia, Chocó.

Solanum pensile Sendtn., Fl. Bras. 10: 50, t. 4, f. 32-36. 1846.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 24 Jan 1995, J.L. Clark 412 (MO, QCNE).

Common woody linana. 280-600 m. Amazonia, Chocó, Mesoamerica.

Solanum pimpinellifolium L., Cent. Pl. I. 8. 1755.

Synonym: *Lycopersicon pimpinellifolium* (L.) Mill.

Representative Specimen: Ecuador: Esmeraldas: Quinindé, carretera vecinal Herrera-Los Monos, cabecera del Río Aguacatal, 550 m, 24-26 Feb 1995, W. Palacios 13695 (MO, QCNE).

Scandent terrestrial erb. 550 m. Common name: “Tomatillo.”

Solanum pseudolulo Heiser, Ci. & Nat. 11: 5. 1968.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, September 19, 1994, M.S. Bass & N. Pitman 11 (MO, QCNE).

Shrub, 2-3 m tall. 400 m. Amazonia, Chocó.

Solanum quitoense Lam., Tabl. Encycl. 2: 16. 1794.

Representative Specimen: Ecuador: Manabí:

- Cordillera de Jama, 600 m, 16 Dec 1998, *D. Neill & QCNE botany interns 11564* (MO, QCNE). Common shrub to 3 m tall. Native and cultivated. 0-600 m. Common name: "Naranjillo." Amazonia, Chocó, Mesoamerica.
- Solanum rudepannum** Dunal, Prodr. 13(1): 264-265. 1852.. Representative Specimen: Ecuador: Manabí: Cerro del Matal 100 m, 17 Dec 1998, *D. Neill & QCNE botany interns 11603* (MO, QCNE). Shrub, 1.5-3 m tall. Common in secondary forest. 5-500 m. Chocó, Mesoamerica.
- Solanum schlechtendalianum** Walp., Repert. Bot. Syst. 3: 61. 1844. Representative Specimen: Esmeraldas: Bilsa Biological Station, 500 m, 10 Jan 1997, *J.L. Clark, E. Austen, S. Bennett & D. Kapan 3786* (MO, QCNE). Shrub to 2 m tall. 400-700 m. Amazonia, Chocó, Mesoamerica.
- Solanum siphonobasis** Bitter, Repert. Spec. Nov. Regni Veg. 12: 72. 1913. Type: Ecuador. Jameson 808 (HT: G-BARB.-BOISS.; IT: BM, K, NY) photo: F. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 4-5 Oct 1996, *J.L. Clark 2993* (MO, NY, QCNE). Common vine in secondary forest. 400-600 m. Chocó.
- Witheringia solanacea** L'Hér., Sert. Angl. 1: 19, t. 1. 1788. Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 13 Sep 1994, *J.R. Abbott 15048I* (BEREA, QCNE). Shrub, 3.5 m tall. Common in secondary forest. 400-600 m. Amazonia, Chocó, Mesoamerica.

STAPHYLEACEAE

- Turpinia occidentalis** (Sw.) G. Don, Gen. Hist. 2: 3. 1832.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400-600 m, 20 May 1995, *J.L. Clark & C. Watt 962* (MO, QCNE).

Understory tree in mature forest, 10 m tall. 400-600 m. Amazonia, Chocó, Mesoamerica.

STERCULIACEAE

- Guazuma ulmifolia** Lam., Encycl. 3: 52-53. 1789.

Representative Specimen: Manabí: Cordillera de Jama, 300 m, 16 Dec 1998, *D. Neill & QCNE botany interns 11550* (MO, QCNE). Understory tree, 2-10 m tall. Common in secondary forest. 300 m. Amazonia, Chocó, Mesoamerica.

- Herrania balaensis** P. Preuss, Exped. C.-Sudamer. 253. 1901.

Representative Specimen: Esmeraldas: Paraíso de Papagayos, 200 m, 6 Jul 1996, *J.L. Clark 2741* (MO, QCNE).

Unbranched pachycaul tree to 2 m tall in understory of mature forest. 200-500 m. Common name: "Cacao silvestre." Endemic.

- Melochia lupulina** Sw., Prodr. 97. 1788. Type: Jamaica, *Swartz s.n.*

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300-700 m, 7 Apr 1997, *J.L. Clark, T. Nuñez & C. Robles 4296* (MO, QCNE).

Shrub to 3 m tall in secondary forest. 5-800 m. Amazonia, Chocó, Mesoamerica.

- Sterculia colombiana** Sprague, Trans. & Proc. Bot. Soc. Edinburgh 22(4): 429. 1905. Type: Colombia: San José: Río Putumayo, *Sprague 618*.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 13 May 1998, *J.L. Clark & C. Pallis 5569* (MO, QCNE).

Common canopy tree. 500-650 m. Common name: "Higuerilla," "Fruta chucha." Amazonia, Mesoamerica.

STYRACACEAE

- Styrax weberbaueri** Perkins, Repert. Spec. Nov.

Regni Veg. 2: 16. 1906.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 25 Nov 1995, *J.L. Clark & K. Cunningham, C. Roberts* 1674 (CAS, MO, QCNE).
Rare tree, 10-30 m tall. 250-500 m. Amazonia, Chocó.

THEOPHRASTACEAE

Clavija eggersiana Mez, Pflanzenr. IV. 236a(Heft 15): 18. 1903. Type: Ecuador, *H Eggers 14303* (LT: M; ILT: L, LE, US fragm., photo: MO F(M)).

Representative Specimen: Ecuador: Manabí: Cordillera de Jama, 300 m, 16 Dec 1998, *D. Neill & QCNE botany interns 11555*.

Unbranched pachycaul tree to 5 m tall in understory of mature forest. 200-600 m. Endemic.

Clavija membranacea Mez, Pflanzenr. IV. 236a(Heft 15): 38. 1903. Type: Ecuador, *Sodiro 100/13*.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 650 m, 19 Feb 1997, *J.L. Clark 3957* (MO, QCNE).

Unbranched pachycaul tree to 1 m tall in understory of mature forest. 250-650 m. Amazonia, Chocó.

Clavija parvula Mez, Pflanzenr. IV. 15(236A): 23. 1903.

Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor, 100 m, 15 Dec 1998, *D. Neill & QCNE botany interns 11539* (MO, QCNE).

Common unbranched pachycaul tree to 1 m tall in understory of mature forests near southern edge of Mache-Chindul Mountains (Manabí). 50-100 m.

Jacquinia sprucei Mez, Pflanzenr. IV. 15: 43-44. 1903. Type: *Spruce 6478*.

Representative Specimen: Ecuador: Manabí: Cerro del Matal 100 m, 17 Dec 1998, *D. Neill & QCNE botany interns 11628* (MO, QCNE).

Tree, 15 m tall. 100 m.

THYMELAEACEAE

Schoenobiblus panamensis Standl. & L.O. Williams, Ceiba 3(1): 33. 1952.

Representative Specimen: Ecuador: Esmeraldas: Muisne 180 m, 23 May 2000, *D. Neill & QCNE botany interns 12762* (MO, QCNE).

Tree, ca. 10 m tall. 180-250 m. Amazonia, Mesoamerica.

TILIACEAE

Trichospermum galeottii (Turcz.) Kosterm., Reinwardtia 6(3): 278. 1962.

Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos 250 m, 20 Oct 1996, *J.L. Clark B. Shlenker & H. Shlenker 3057* (MO, QCNE).

Understory tree, 10-20 m tall. 200-600 m. Amazonia, Chocó, Mesoamerica.

TROPAEOLACEAE

Tropaeolum harlingii Sparre, Fl. Ecuador 2: 15. 1973. Type: Ecuador: Guayas, Guayaquil, April 13, 1939., *Asplund 5684* (HT: S; IT: CAS, G, K, LD, R, RJ, UPS, US).

Representative Specimen: Ecuador: Esmeraldas: Muisne, 30-40 m, 27 Jun 1979, *B. Løjtnant & U. Molau 15292* (AAU). Herbaceous vine. 0-50 m. Endemic.

TURNERACEAE

Turnera subulata Sm., Cycl. 36: n. 2. 1817.

Representative Specimen: Ecuador: Esmeraldas: Muisne, 2 m, 2 Dec 1995, *J.L. Clark & K. Cunningham 1717* (MO, QCNE).

Common roadside herb at low elevations. 0-50 m. Chocó, Mesoamerica.

ULMACEAE

Celtis iguanaea (Jacq.) Sarg., Silva 7: 64. 1895.

Representative Specimen: Ecuador: Manabí: Chone, Recinto Hojas Blancas, Carretera Pedernales-Carmen Mandarino, Entrada el Mono, 150 m, 12 Apr 1997, *J.L. Clark, T. Nuñez & C. Robles 4398* (MO, QCNE)

- Woody liana in canopy of mature forest. 5-500 m. Amazonia, Chocó, Mesoamerica.
- Trema integerrima** (Beurl.) Standl., Contr. Arnold Arbor. 5: 55. 1933.
Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 200 m, 10 Oct 1996, J.L. Clark 3045 (MO, QCNE). Common tree in secondary forest, 2-19 m tall. 200-500 m. Common names: "Sapán de mono," "Sapán de palomo." Amazonia, Chocó, Mesoamerica.
- Trema micrantha** (L.) Blume, Mus. Bot. 2: 58. 1856.
Representative Specimen: Ecuador: Esmeraldas: Quigüe 250 m, 18 May 2000, D. Neill & QCNE botany interns 12701 (MO, QCNE). Tree, 10 m tall. 250 m. Amazonia, Chocó, Mesoamerica.
- URTICACEAE**
- Boehmeria ramiflora** Jacq., Enum. Syst. Pl. 31. 1760.
Representative Specimen: Ecuador: Esmeraldas: Muisne, 50 m, 27 Jun 1979, B. Løjtnant & U. Molau 15280 (AAU). Shrub. 50 m. Amazonia, Mesoamerica.
- Laportea aestuans** (L.) Chew, Gard. Bull. Singapore 21(2): 200. 1965.
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 17 Nov 1994, N. Pitman 972 (MO, QCNE). Common succulent herb along streams. 400–600 m. Amazonia, Chocó, Mesoamerica.
- Myriocarpa stipitata** Benth., Bot. Voy. Sulphur 168, t. 55. 1846. Type: Tumaco [coastal Nariño province, Colombia].
Representative Specimen: Ecuador: Esmeraldas: Muisne, 25 m, 24 May 2000, D. Neill & QCNE botany interns 12778 (MO, QCNE). Tree, to 6 m tall. 0-50 m. Amazonia, Chocó.
- Phenax rugosus** (Poir.) Wedd., Prodr. 16(1): 235(38). 1869.
- Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 14 Sep 1994, J.R. Abbott 15108 (BEREA, QCNE). Shrub, ca. 2 m tall. 600 m. Amazonia, Chocó, Mesoamerica.
- Pilea fasciata** Wedd., Prodr. 16(1): 149. 1869. Type: In sylvis prov. Choco et Novita Novo-Granatensis, altit. 170 m, Triana s.n. (HT: P). Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 21 Nov 1995, J.L. Clark & K. Cunningham, C. Roberts 1617 (MO, QCNE). Herb growing on rocks along stream. 500 m. Amazonia, Chocó, Mesoamerica.
- Urera eggersii** Hieron., Bot. Jahrb. Syst. 20(Beibl. 49): 3-4. 1895. Type: Ecuador: crescit prope Balao, mense Februario florens, H. Eggers 14466.
Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 30 Jan 1991, A. Gentry, R. Foster & C. Josse 72953 (MO). Shrub, ca. 2 m tall. 280 m. Amazonia, Chocó, Mesoamerica.
- VALERIANACEAE**
- Valeriana scandens** L., Sp. Pl. (ed. 2) 1: 47. 1762.,
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 2 Oct 1996, J.L. Clark 2978 (MO, QCNE). Herbaceous vine. 400-500 m. Amazonia, Mesoamerica.
Infrasp.: *Valeriana scandens* var. *candolleana* (Gardner) C.A. Mull.
- VERBENACEAE**
- Aegiphila alba** Moldenke, Phytologia 1: 185. 1937. Type: Ecuador: Los Ríos: Canton Vices, Quevedo, Mexía, Y. 6656 (T: US).
Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 5 May 1995, J.L. Clark & C. Watt 749 (MO, QCNE).

Tree, 4-12 m tall. Common in secondary forest. 0-600 m. Common name: "Lulu." Amazonia, Chocó.

Aegiphila chrysantha Hayek, Bot. Jahrb. Syst. 42: 171. 1908.

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300–700 m, 7 Apr 1997, J.L. Clark, T. Nuñez & C. Robles 4290 (MO, QCNE). Woody vine. 300-700 m. Amazonia.

Aegiphila haughtii Moldenke, Phytologia 2: 8. 1941. Type: Ecuador: Guayas: Cerro Cimalón, Hdca Vainillo, 50 m, Haught, O. 2904 (T: US).

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 300–700 m, 7 Apr 1997, J.L. Clark, T. Nuñez & C. Robles 4303 (MO, QCNE). Tree, ca. 3 m tall. 100-700 m. Amazonia.

Bouchea fluminensis (Vell.) Moldenke, Repert. Spec. Nov. Regni Veg. 49: 117. 1940.

Representative Specimen: Ecuador: Manabí: Reserva de Lalo Loor, 10 m, 9 Apr 1997, J.L. Clark, T. Nuñez & C. Robles 4342 (MO, QCNE).

Terrestrial herb, ca. 50 cm tall. 0-20 m. Amazonia.

Citharexylum gentryi Moldenke, Phytologia 35(4): 276. 1977. Type: Ecuador: Los Ríos: beside the gatehouse of the Río Palenque Biological Station at Km 56 on the road from Quevedo to Santo Domingo, 150-220 m, C.H. Dodson & A.H. Gentry 6575 (HT: Herb. Mold.).(Fig. 4A-B, p.131).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 18 May 1995, J.L. Clark & C. Watt 924 (MO, QCNE).

Tree, 15 m tall. 400-600 m. Endemic.

Clerodendrum philippinum Schauer, Prodr. 11: 667. 1847.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400 m, 21 Feb 1996, J.L. Clark 2127 (MO, QCNE).

Introduced, cultivated shrub, ca. 1 m tall. 400 m.

Cornutia pyramidata L., Sp. Pl. 2: 628. 1753.

Representative Specimen: Ecuador: Esmeraldas: Quingüe, 250 m, 18 May 2000, D. Neill & QCNE Botany interns 12720 (MO, QCNE).

Tree, ca. 8 m tall in secondary forest. 250 m. Amazonia, Chocó, Mesoamerica.

Petrea volubilis L., Sp. Pl. 2: 626. 1753.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 10 Jan 1997, J.L. Clark, E. Austen, S. Bennett & D. Kapan 3780 (MO, QCNE).

Woody vine. 500 m. Amazonia, Chocó, Mesoamerica.

Priva lappulacea (L.) Pers., Syn. Pl. 2: 139. 1806

Representative Specimen: Ecuador: Manabí: Cerro Pata de Pájaro, 700 m, 8 Mar 1007, H. Vargas, X. Aguirre, R. Miranda & C. Robles 1251 (MO, QCNE).

Terrestrial herb, ca. 50 cm tall. 700 m. Amazonia, Chocó, Mesoamerica.

Stachytarpheta cayennensis (Rich.) Vahl, Enum. Pl. 1: 208. 1804.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 600 m, 13 Sep 1994, J.R. Abbott 15047 (BEREA, QCNE).

Terrestrial herb or subrhub. Common in disturbed and sunny sites. 400-600 m. Amazonia, Chocó, Mesoamerica.

Verbena sp.

Esmeraldas: Bilsa Biological Station, 600 m, 13 Sep 1994, J.R. Abbott 15064 (BEREA, QCNE).

Common terrestrial herb in disturbed areas. 600 m

Vitex flavens Kunth, Nov. Gen. Sp. (quarto ed.) 2: 246. 1818.

Representative Specimen: Ecuador: Manabí: Cordillera de Jama, 600 m, 16 Dec 1998, D. Neill & QCNE botany interns 11598 (MO, QCNE).

Tree to 25 m tall, Common in dry forest in southern portion of range, at Reserva de Lalo Loor. 0-50 m. Amazonia.

VIOLACEAE

Amphirrhox longifolia (A. St.-Hil.) Spreng., Syst. Veg. 4(2): 99. 1827.

Representative Specimen: Ecuador: Esmeraldas: Muisne, sitio San Salvador, orillas del Río Sucio, 100–150 m, Mar 1995, W. Palacios 13746 (MO, QCNE).

Common understory tree in mature moist forest below 150 m, ca. 6 m tall. 100–150 m. Mesoamerica.

Gloeospermum grandifolium Hekking, Phytologia 42: 461, f. 1979. Type. Ecuador: Esmeraldas: 2 km S of Playa de Oro, 30 Apr 1943, E.L. Little 6405 (HT: US; IT: F).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 18 Nov 1996, J.L. Clark, F. Gurumendi & H. Weinert 3444 (MO, QCNE).

Common canopy to subcanopy tree. 400–600 m. Chocó.

Gloeospermum longifolium Hekking, Phytologia 43(5): 467, t. 1, f. 5. 1979.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 9 Oct 1994, J.L. Clark 174 (MO, QCNE).

Subcanopy tree. 400–600 m. Amazonia, Chocó, Mesoamerica.

Rinorea apiculata Hekking, Phytologia 43(5): 469, pl. 2, f. 7. 1979.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 8 Oct 1996, J.L. Clark 3017 (MO, QCNE).

Understory tree in mature forest, 3–13 m tall. 500 m. Amazonia, Chocó.

VISCACEAE

Phoradendron piperoides (Kunth) Trell., Phoradendron 43(5): 469, pl. 2, f. 7. 1916.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 27 Mar 1995, J.L. Clark & Y. Troya 519 (MO, QCNE).

Parasitic shrub. 200–600 m. Amazonia, Chocó, Mesoamerica.

VITACEAE

Cissus neei Croat, Ann. Missouri Bot. Gard. 63(2): 359, f. 1. 1976 [1977].

Representative Specimen: Ecuador: Esmeraldas: Fila de Bilsa, 280 m, 28 Jan 1991, A. Gentry & C. Josse 72796 (MO). Liana. 280 m. Amazonia, Chocó, Mesoamerica.

VOCHysiaceae**Vochysia** sp.

Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 200 m, 10 Oct 1996, J.L. Clark 3045 (MO, QCNE). Canopy tree. 200 m.

ZINGIBERACEAE

Alpinia purpurata (Vieill.) K. Schum., Pflanzenr. IV. 46(Heft 20): 323, f. 40A. 1904.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 650 m, 19 Feb 1997, J.L. Clark 3958 (MO, QCNE).

Commonly cultivated terrestrial herb, ca. 2 m tall. 0–650 m. Chocó, Mesoamerica.

Alpinia zerumbet (Pers.) B.L. Burtt & R.M. Sm., Notes Roy. Bot. Gard. Edinburgh 31(2): 204. 1972.

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 7 Dec 1994, J.L. Clark 377 (MO, QCNE).

Commonly cultivated terrestrial herb, ca. 2 m tall. 0–650 m.

Hedychium coronarium J. König, Observ. Bot. 3: 73–74. 1783.

Representative Specimen: Ecuador: Manabí 34 km al norte de Pedernales 60 m, 28 Aug 1998, D. Neill & QCNE botany interns 11440 (MO, QCNE).

Introduced and cultivated, naturalized herb, ca. 50 cm tall. Common along sunny and disturbed roads. 0–100 m.

Renealmia alpinia (Rottb.) Maas, Acta Bot. Neerl. 24(5–6): 474. 1975 [1976]

Representative Specimen: Ecuador: Esmeraldas: Paraíso de Papagayos, 200 m, 10 Oct 1996, *J.L. Clark 3041* (MO, QCNE).

Native and cultivated terrestrial herb. 200 m. Amazonia, Chocó, Mesoamerica.

Renealmia ligulata Maas, Acta Bot. Neerl. 24(5-6): 477-478. 1975 [1976]. Type: Colombia: El Valle: Cordillera Central, Río Nima, above Tenjo, 1850 m, *Maas, Plowman & Escobar 1826* (HT: U; IT: COL, F, GH, K, MO, NY, VALLE).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 400–600 m, 16 Nov 1994, *N. Pitman & M.S. Bass 952* (MO, QCNE).

Terrestrial herb, ca. 2 m tall. 400-600 m. Amazonia, Chocó, Mesoamerica.

Renealmia oligosperma K. Schum., Pflanzenr. IV. 46: 300. 1904.

Representative Specimen: Ecuador: Manabí:

Cerro Pata de Pájaro, 400–600 m, 16 Nov 1994, *N. Pitman & M.S. Bass 952* (MO, QCNE).

Terrestrial herb. 400-700 m. Amazonia.

Renealmia variegata Maas & H. Maas, Notes Roy. Bot. Gard. Edinburgh 44(2): 241-242, f. 3. 1987. Type: Ecuador: Pichincha: carretera Quito-Puerto Quito, km 113, virgin forest, 800 m, 26 Feb 1984, *C. Ulloa 87* (HT: QCA; IT: U).

Representative Specimen: Ecuador: Esmeraldas: Bilsa Biological Station, 500 m, 14 Feb 1996, *J.L. Clark, N. Kerber & J. Plihal 1993* (MO, QCNE).

Terrestrial herb. 500 m. Amazonia, Chocó, Mesoamerica.

Zingiber officinale Roscoe, Trans. Linn. Soc. London 8: 348. 1807.

Introduced and cultivated terrestrial herb. 0-200 m.

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