

# Lepidoptera on flowering plants of La Mancha, Veracruz, Mexico

# 1

Cristian A. Martínez Adriano<sup>1</sup>, Eduardo G. Adriano Espinoza<sup>2</sup>, Armando Aguirre Jaimes<sup>1</sup>, and Cecilia Díaz Castelazo<sup>1</sup>  
<sup>1</sup>Instituto de Ecología A.C., Red de Interacciones Multitróficas, <sup>2</sup>Preparatoria en Línea – SEP.

Photos: Cristian Adrian Martínez Adriano. Produced by: Cristian Adrian Martínez Adriano and Eduardo Guadalupe Adriano Espinoza, with support from Connie Keller and Andrew Mellon Foundation. © Cristian Adrian Martínez Adriano [cristian.martinez.cama@gmail.com] and other authors. Thanks to: Instituto de Ecología, A. C., Centro de Investigaciones Costeras La Mancha and their staff. Special thanks to E. Zaragoza-Quintana, R. Quintana-Bustamante and J. Sánchez-Huerta for field assistance. Eduardo Guadalupe Adriano Espinoza edited the final version of all butterfly photos.

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La Mancha is a natural reserve area managed by Instituto de Ecología, A. C. The reserve comprises several vegetation types in only 82.29 ha. In this natural reserve, butterflies are very common and they are an important insect group as flower visitors. The butterfly species in this guide were collected from six vegetation types distributed in this tropical coastal ecosystem. The aim of this guide is to provide knowledge about the diversity of butterflies to local people, for educational proposes and ecotourism. The images in this field guide include the dorsal and ventral position of each butterfly species with 1-cm scale.



**Research paper associated with this field guide:** Martínez-Adriano CA, Díaz-Castelazo C, Aguirre-Jaimes A. (2018) Flower-mediated plant-butterfly interactions in an heterogeneous tropical coastal ecosystem. PeerJ 6:e5493 <https://doi.org/10.7717/peerj.5493>

<p>1 <i>Pyrausta tyralis</i> (Guenée, 1854) <b>CRAMBIDAE</b></p>		<p>2 <i>Horama oedippus</i> (Boisduval, 1870) <b>EREBIDAE</b></p>	
<p>3 <i>Horama plumipes</i> (Drury, 1773) <b>EREBIDAE</b></p>		<p>4 <i>Horama</i> sp. <b>EREBIDAE</b></p>	
<p>5 <i>Macrocneme</i> sp. <b>EREBIDAE</b></p>		<p>6 <i>Utetheisa ornatrix</i> (Linnaeus, 1758) <b>EREBIDAE</b></p>	





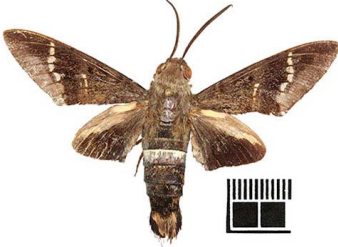




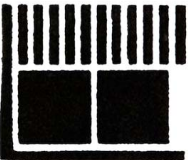

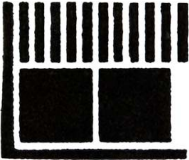




























# Lepidoptera on flowering plants of La Mancha, Veracruz, Mexico

2

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<p>7 <i>Melanchroia chephise</i> (Stoll, 1782) <b>GEOMETRIDAE</b></p>		<p>8 <i>Aellopos titan</i> (Cramer, 1777) <b>SPHINGIDAE</b></p>	
 	 	 	 
<p>9 Polilla12 <b>MICROLEPIDOPTERA</b></p>		<p>10 <i>Antigonus erosus</i> (Hübner, [1812]) <b>HESPERIIDAE</b></p>	
 	 	 	 
<p>11 <i>Antigonus nearchus</i> (Latreille, 1817) <b>HESPERIIDAE</b></p>		<p>12 <i>Astraptes fulgerator azul</i> (Reakirt, [1867]) <b>HESPERIIDAE</b></p>	
 	 	 	 
<p>13 <i>Calpodex ethlius</i> (Stoll, 1782) <b>HESPERIIDAE</b></p>		<p>14 <i>Chioides albofasciatus</i> (Hewitson, 1867) <b>HESPERIIDAE</b></p>	
 	 	 	 
<p>15 <i>Cogia calchas</i> (Herrich-Schäffer, 1869) <b>HESPERIIDAE</b></p>		<p>16 <i>Cogia calchas</i> (Herrich-Schäffer, 1869) <b>HESPERIIDAE</b></p>	



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17 *Cogia calchas* (Herrich-Schäffer, 1869)  
**HESPERIIDAE**



18 *Corticea lysias lysias* (Plötz, 1883)  
**HESPERIIDAE**



19 *Corticea lysias lysias* (Plötz, 1883)  
**HESPERIIDAE**



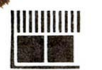
20 *Cycloglypha thrasibulus thrasibulus* (Fabricius, 1793)  
**HESPERIIDAE**



21 *Cycloglypha thrasibulus thrasibulus* (Fabricius, 1793)  
**HESPERIIDAE**



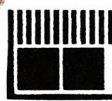
22 *Cyclosemia anastomosis* (Mabille, 1878)  
**HESPERIIDAE**



23 *Epargyreus spina spina* (Evans, 1952)  
**HESPERIIDAE**



24 *Heliopetes arsalte* (Linnaeus, 1758)  
**HESPERIIDAE**



25 *Heliopetes macaira macaira* (Reakirt, [1867])  
**HESPERIIDAE**



26 *Heliopyrgus sublinea* (Schaus, 1902)  
**HESPERIIDAE**



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27 *Hylephila phyleus phyleus* (Drury, 1773)  
**HESPERIIDAE**



28 *Lerema liris* Evans, 1955  
**HESPERIIDAE**



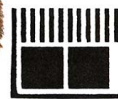
29 *Lerodea eufala eufala* (W. H. Edwards, 1869)  
**HESPERIIDAE**



30 *Mylon pelopidas* (Fabricius, 1793)  
**HESPERIIDAE**



31 *Mylon pelopidas* (Fabricius, 1793)  
**HESPERIIDAE**



32 *Nisoniades godma* (Evans, 1953)  
**HESPERIIDAE**



33 *Nisoniades macarius* (Herrich-Schäffer, 1870)  
**HESPERIIDAE**



34 *Panoquina hecebolus* (Scudder, 1872)  
**HESPERIIDAE**



35 *Panoquina panoquinoides panoquinoides* (Skinner, 1891)  
**HESPERIIDAE**



36 *Panoquina panoquinoides panoquinoides* (Skinner, 1891)  
**HESPERIIDAE**




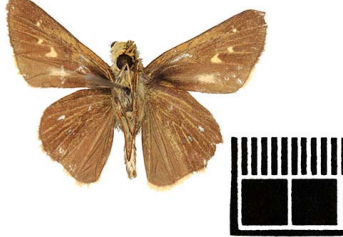
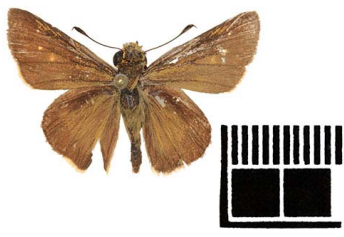

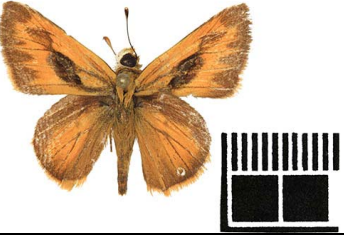
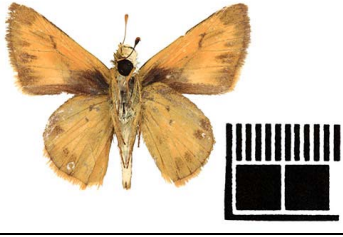










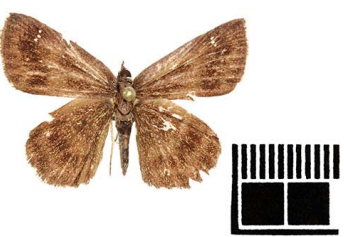
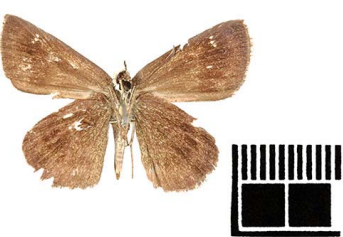

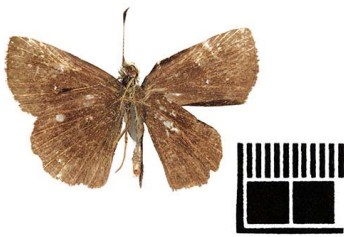
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<b>37</b> <i>Panoquina panoquinoides panoquinoides</i> (Skinner, 1891) <b>HESPERIIDAE</b>		<b>38</b> <i>Panoquina panoquinoides panoquinoides</i> (Skinner, 1891) <b>HESPERIIDAE</b>	
			
<b>39</b> <i>Polites vibex vibex</i> (Geyer, 1832) <b>HESPERIIDAE</b>		<b>40</b> <i>Polythrix asine</i> (Hewitson, 1867) <b>HESPERIIDAE</b>	
			
<b>41</b> <i>Polythrix asine</i> (Hewitson, 1867) <b>HESPERIIDAE</b>		<b>42</b> <i>Proteides mercurius mercurius</i> (Fabricius, 1787) <b>HESPERIIDAE</b>	
			
<b>43</b> <i>Pyrgus communis communis</i> (Grote, 1872) <b>HESPERIIDAE</b>		<b>44</b> <i>Quasimellana eulogius</i> (Plötz, 1882) <b>HESPERIIDAE</b>	
			
<b>45</b> <i>Staphylus azteca</i> (Scudder, 1872) <b>HESPERIIDAE</b>		<b>46</b> <i>Staphylus mazans</i> (Reakirt, [1867]) <b>HESPERIIDAE</b>	

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Dorsal view of a brown butterfly with dark spots on the forewings.	Ventral view of a brown butterfly with dark spots on the hindwings.	Dorsal view of a brown butterfly with dark spots on the forewings.	Ventral view of a brown butterfly with dark spots on the hindwings.
<b>47 <i>Staphylus mazans</i> (Reakirt, [1867]) HESPERIIDAE</b>		<b>48 <i>Staphylus mazans</i> (Reakirt, [1867]) HESPERIIDAE</b>	
Dorsal view of a brown butterfly with yellow spots on the forewings.	Ventral view of a brown butterfly with yellow spots on the hindwings.	Dorsal view of a brown butterfly with yellow spots on the forewings.	Ventral view of a brown butterfly with yellow spots on the hindwings.
<b>49 <i>Urbanus dorantes dorantes</i> (Stoll, 1790) HESPERIIDAE</b>		<b>50 <i>Urbanus proteus proteus</i> (Linnaeus, 1758) HESPERIIDAE</b>	
Dorsal view of a brown butterfly with dark spots on the forewings.	Ventral view of a brown butterfly with dark spots on the hindwings.	Dorsal view of a brown butterfly with dark spots on the forewings.	Ventral view of a brown butterfly with dark spots on the hindwings.
<b>51 <i>Urbanus simplicius</i> (Stoll, 1790) HESPERIIDAE</b>		<b>52 <i>Urbanus simplicius</i> (Stoll, 1790) HESPERIIDAE</b>	
Dorsal view of a brown butterfly with dark spots on the forewings.	Ventral view of a brown butterfly with dark spots on the hindwings.	Dorsal view of a brown butterfly with dark spots on the forewings.	Ventral view of a brown butterfly with dark spots on the hindwings.
<b>53 <i>Virga clenchi</i> (L. Miller, 1970) HESPERIIDAE</b>		<b>54 Sp. 03 (Hesp043) HESPERIIDAE</b>	
Dorsal view of a brown butterfly with dark spots on the forewings.	Ventral view of a brown butterfly with dark spots on the hindwings.	Dorsal view of a brown butterfly with dark spots on the forewings.	Ventral view of a brown butterfly with dark spots on the hindwings.
<b>55 Sp. 03 (Hesp043) HESPERIIDAE</b>		<b>56 Sp. 04 (Hesp044) HESPERIIDAE</b>	

































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7

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57 Sp. 05 (Hesp048) <b>HESPERIIDAE</b>	58 Sp. 07 (Hesp085) <b>HESPERIIDAE</b>
  	  
59 Sp. 08 (Hesp087) <b>HESPERIIDAE</b>	60 Sp. 11 (Hesp159) <b>HESPERIIDAE</b>
  	  
61 Sp. 13 (Hesp162) <b>HESPERIIDAE</b>	62 Sp. 14 (Hesp163) <b>HESPERIIDAE</b>
  	  
63 <i>Arawacus sito</i> (Boisduval, 1836) <b>LYCAENIDAE</b>	64 <i>Calycopis isobea</i> (Butler & H. Druce, 1872) <b>LYCAENIDAE</b>
  	  
65 <i>Hemiargus ceraunus astenidas</i> (Lucas, 1857) <b>LYCAENIDAE</b>	66 <i>Hemiargus ceraunus astenidas</i> (Lucas, 1857) <b>LYCAENIDAE</b>



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# 8

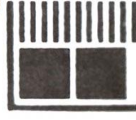
Cristian Adrian Martínez Adriano<sup>1</sup>, Eduardo Guadalupe Adriano Espinoza<sup>2</sup>, Armando Aguirre Jaimes<sup>1</sup>, Cecilia Díaz Castelazo<sup>1</sup>  
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67 *Hemiargus ceraunus watsoni* (W. Comstock & Huntington, 1943)  
LYCAENIDAE



68 *Leptotes cassius cassidula* (Boisduval, 1970)  
LYCAENIDAE



69 *Michaelus hecate* (Godman & Salvin, 1887)  
LYCAENIDAE



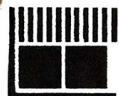
70 *Ministrymon inoa* (Godman & Salvin, 1887)  
LYCAENIDAE



71 *Panthiades bathildis* (C. Felder & R. Felder, 1865)  
LYCAENIDAE



72 *Panthiades bitias* (Cramer, 1777)  
LYCAENIDAE



73 *Rekoa palegon* (Cramer, 1780)  
LYCAENIDAE



74 *Rekoa palegon* (Cramer, 1780)  
LYCAENIDAE



75 *Strymon bazochii bazochii* (Godart, [1824])  
LYCAENIDAE



76 *Strymon istapa istapa* (Reakirt, [1867])  
LYCAENIDAE



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9

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77 *Strymon istapa istapa* (Reakirt, [1867])  
LYCAENIDAE



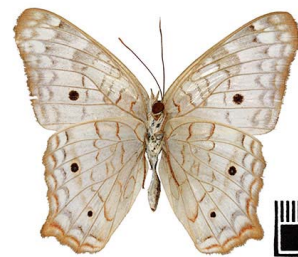
78 *Strymon serapio* (Goldman & Salvin, 1887)  
LYCAENIDAE



79 *Strymon serapio* (Goldman & Salvin, 1887)  
LYCAENIDAE



80 *Anartia fatima fatima* (Fabricius, 1793)  
NYMPHALIDAE



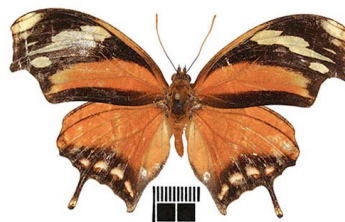
81 *Anartia jatrophae luteipicta* (Frustorfer, 1907)  
NYMPHALIDAE



82 *Anthanassa tulcis* (H.W. Bates, 1864)  
NYMPHALIDAE



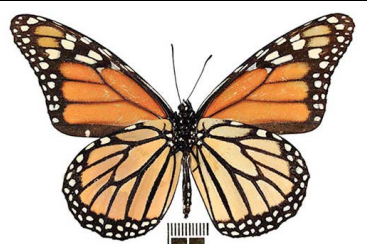
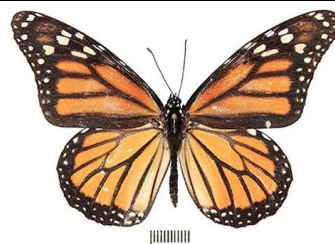
83 *Chlosyne theona theona* (Ménétriés, 1855)  
NYMPHALIDAE



84 *Consul fabius cecrops* (Doubleday, [1849])  
NYMPHALIDAE



85 *Danaus gilippus thersippus* (H.W. Bates, 1863)  
NYMPHALIDAE



86 *Danaus plexippus plexippus* (Linnaeus, 1785)  
NYMPHALIDAE



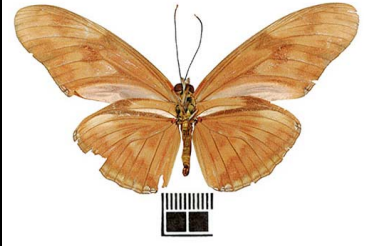
# Lepidoptera on flowering plants of La Mancha, Veracruz, Mexico

# 10

Cristian Adrian Martínez Adriano<sup>1</sup>, Eduardo Guadalupe Adriano Espinoza<sup>2</sup>, Armando Aguirre Jaimes<sup>1</sup>, Cecilia Díaz Castelazo<sup>1</sup>  
<sup>1</sup>Instituto de Ecología A.C., Red de Interacciones Multitróficas, <sup>2</sup>Preparatoria en Línea – SEP.

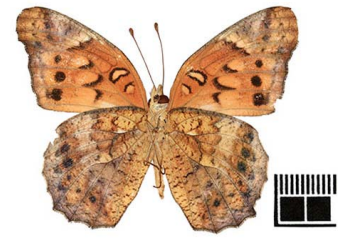
Photos: Cristian Adrian Martínez Adriano. Produced by: Cristian Adrian Martínez Adriano and Eduardo Guadalupe Adriano Espinoza, with support from Connie Keller and Andrew Mellon Foundation. © Cristian Adrian Martínez Adriano [cristian.martinez.cama@gmail.com] and other authors. Thanks to: Instituto de Ecología, A. C., Centro de Investigaciones Costeras La Mancha and their staff. Special thanks to E. Zaragoza-Quintana, R. Quintana-Bustamante and J. Sánchez-Huerta for field assistance. Eduardo Guadalupe Adriano Espinoza edited the final version of all butterfly photos.

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87 *Doxocopa pavon theodora* (Lucas, 1857)  
NYMPHALIDAE

88 *Dryas iulia moderata* (Riley, 1926)  
NYMPHALIDAE



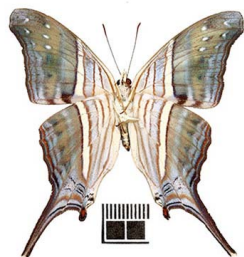
89 *Eunice monima* (Stoll, 1782)  
NYMPHALIDAE

90 *Euptoieta hegesia meridiania* (Stichel, 1938)  
NYMPHALIDAE



91 *Heliconius charitonía vazquezae* (W. Comstock & F. Brown, 1950)  
NYMPHALIDAE

92 *Heliconius erato petiverana* (Doubleday, 1847)  
NYMPHALIDAE



93 *Marpesia chiron marius* (Cramer, 1779)  
NYMPHALIDAE

94 *Marpesia petreus* (Cramer, 1176) (Northern segregate)  
NYMPHALIDAE



95 *Mechanitis polymnia lycidice* (H. Bates, 1864)  
NYMPHALIDAE

96 *Myscelia ethusa ethusa* (Doyère, [1840])  
NYMPHALIDAE



# Lepidoptera on flowering plants of La Mancha, Veracruz, Mexico

# 11

Cristian Adrian Martínez Adriano<sup>1</sup>, Eduardo Guadalupe Adriano Espinoza<sup>2</sup>, Armando Aguirre Jaimes<sup>1</sup>, Cecilia Díaz Castelazo<sup>1</sup>  
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97 *Siproeta stelenes* (Linnaeus, 1758)  
NYMPHALIDAE



98 *Taygetis thamyra* (Cramer, 1779)  
NYMPHALIDAE



99 *Battus philenor philenor* (Linnaeus, 1771)  
PAPILIONIDAE



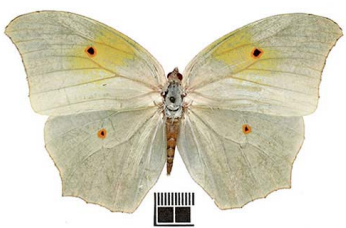
100 *Papilio thoas autocles* (Rostchild y Jordan, 1906)  
PAPILIONIDAE



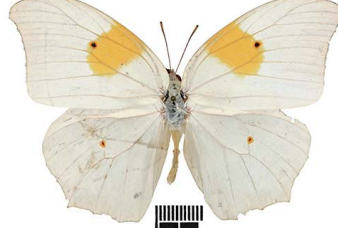
101 *Abaeis nicippe* (Cramer, 1779)  
PIERIDAE



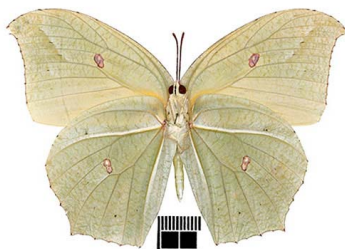
102 *Abaeis nicippe* (Cramer, 1779)  
PIERIDAE



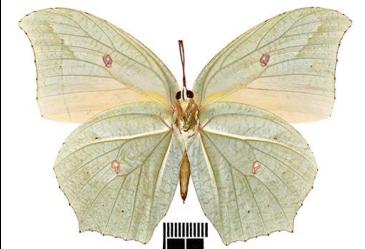
103 *Anteos clorinde* (Godart, [1824])  
PIERIDAE



104 *Anteos clorinde* (Godart, [1824])  
PIERIDAE



105 *Anteos maerula* (Fabricius, 1775)  
PIERIDAE



106 *Anteos maerula* (Fabricius, 1775)  
PIERIDAE



# Lepidoptera on flowering plants of La Mancha, Veracruz, Mexico

# 12

Cristian Adrian Martínez Adriano<sup>1</sup>, Eduardo Guadalupe Adriano Espinoza<sup>2</sup>, Armando Aguirre Jaimes<sup>1</sup>, Cecilia Díaz Castelazo<sup>1</sup>  
<sup>1</sup>Instituto de Ecología A.C., Red de Interacciones Multitróficas, <sup>2</sup>Preparatoria en Línea – SEP.

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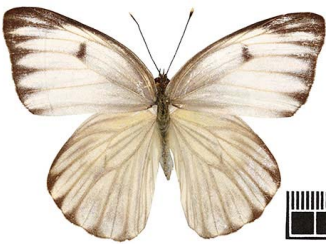
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107 *Ascia monuste monuste* (Linnaeus, 1764)  
PIERIDAE



108 *Ascia monuste monuste* (Linnaeus, 1764)  
PIERIDAE



109 *Ascia monuste monuste* (Linnaeus, 1764)  
PIERIDAE



110 *Ascia monuste monuste* (Linnaeus, 1764)  
PIERIDAE



111 *Eurema albula celata* (R. Felder, 1869)  
PIERIDAE



112 *Eurema daira eugenia* (Wallengren, 1860)  
PIERIDAE



113 *Eurema daira eugenia* (Wallengren, 1860)  
PIERIDAE



114 *Eurema daira eugenia* (Wallengren, 1860)  
PIERIDAE



115 *Nathalis iole iole* (Boisduval, 1836)  
PIERIDAE



116 *Nathalis iole iole* (Boisduval, 1836)  
PIERIDAE



# Lepidoptera on flowering plants of La Mancha, Veracruz, Mexico

# 13

Cristian Adrian Martínez Adriano<sup>1</sup>, Eduardo Guadalupe Adriano Espinoza<sup>2</sup>, Armando Aguirre Jaimes<sup>1</sup>, Cecilia Díaz Castelazo<sup>1</sup>  
<sup>1</sup>Instituto de Ecología A.C., Red de Interacciones Multitróficas, <sup>2</sup>Preparatoria en Línea – SEP.

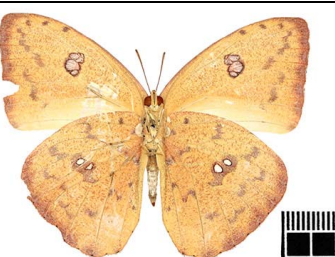
Photos: Cristian Adrian Martínez Adriano. Produced by: Cristian Adrian Martínez Adriano and Eduardo Guadalupe Adriano Espinoza, with support from Connie Keller and Andrew Mellon Foundation. © Cristian Adrian Martínez Adriano [cristian.martinez.cama@gmail.com] and other authors. Thanks to: Instituto de Ecología, A. C., Centro de Investigaciones Costeras La Mancha and their staff. Special thanks to E. Zaragoza-Quintana, R. Quintana-Bustamante and J. Sánchez-Huerta for field assistance. Eduardo Guadalupe Adriano Espinoza edited the final version of all butterfly photos.

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117 *Phoebis argante* ssp. n. DHJ01 (*P. argante* of Brown, 1929)  
PIERIDAE

118 *Phoebis sennae marcellina* (Cramer, 1777)  
PIERIDAE



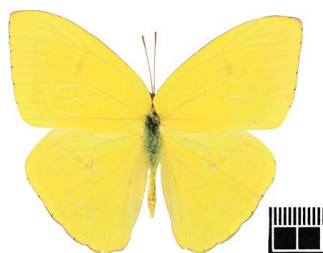
119 *Phoebis sennae marcellina* (Cramer, 1777)  
PIERIDAE

120 *Phoebis sennae marcellina* (Cramer, 1777)  
PIERIDAE



121 *Phoebis sennae marcellina* (Cramer, 1777)  
PIERIDAE

122 *Phoebis sennae marcellina* (Cramer, 1777)  
PIERIDAE



123 *Phoebis sennae marcellina* (Cramer, 1777)  
PIERIDAE

124 *Phoebis sennae marcellina* (Cramer, 1777)  
PIERIDAE



125 *Phoebis sennae marcellina* (Cramer, 1777)  
PIERIDAE

126 *Pyrisitia nise nelphe* (Cramer, 1775)  
PIERIDAE































# Lepidoptera on flowering plants of La Mancha, Veracruz, Mexico

# 14

Cristian Adrian Martínez Adriano<sup>1</sup>, Eduardo Guadalupe Adriano Espinoza<sup>2</sup>, Armando Aguirre Jaimes<sup>1</sup>, Cecilia Díaz Castelazo<sup>1</sup>  
<sup>1</sup>Instituto de Ecología A.C., Red de Interacciones Multitróficas, <sup>2</sup>Preparatoria en Línea – SEP.

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<b>127</b> <i>Anteros carasius carasius</i> (Westwood, 1851) <b>RIODINIDAE</b>	<b>128</b> <i>Calephelis perditalis donahuei</i> (McAlpine, 1971) <b>RIODINIDAE</b>
   	   
<b>129</b> <i>Calicosama lilina</i> (Butler, 1870) <b>RIODINIDAE</b>	<b>130</b> <i>Caria ino melicerta</i> (Schaus, 1890) <b>RIODINIDAE</b>
   	   
<b>131</b> <i>Emesis tenedia</i> (C. Felder & R. Felder, 1861) <b>RIODINIDAE</b>	<b>132</b> <i>Rhetus arcus thia</i> (Morisse, 1838) <b>RIODINIDAE</b>
   	<p>La reserva de La Mancha es un área administrada por el Instituto de Ecología, A. C. La reserva comprende varios tipos de vegetación en tan solo 82.29 ha. En esta área natural las mariposas son muy comunes y son un grupo importante de insectos que puede fungir como visitantes florales. Las especies de mariposas de esta guía fueron colectadas en seis tipos de vegetación distribuidas en este ecosistema costero tropical. El objetivo de esta guía es de proveer conocimiento acerca de la diversidad de mariposas a la gente local, para propósitos educativos y de ecoturismo. Las imágenes de esta guía de campo incluyen la posición dorsal y ventral de cada especie de mariposa y una escala de 1cm.</p> <p><b>Artículo complementario asociado a esta guía de campo:</b> Martínez-Adriano CA, Díaz-Castelazo C, Aguirre-Jaimes A. (2018) Flower-mediated plant-butterfly interactions in an heterogeneous tropical coastal ecosystem. PeerJ 6:e5493 <a href="https://doi.org/10.7717/peerj.5493">https://doi.org/10.7717/peerj.5493</a></p>
<b>133</b> <i>Theope eupolis</i> (Schaus, 1890) <b>RIODINIDAE</b>	