Riodinid butterfly fauna (Lepidoptera) of the Cosñipata Region, Peru: Annotated checklist, community structure, and contrast with Lycaenidae

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Abstract. A team of experienced lepidopterists sampled the butterfly fauna of Peru's Cosñipata Region from 400 to 4,000 m elevation for more than a decade (7,440 field person-hours) and supplemented this sample with data from museum specimens and the scientific literature. An annotated checklist of Cosñipata Riodinidae (Lepidoptera: Papilionoidea) documents 398 species, which represents 29% of the world Riodinidae fauna. For each, it lists sample abundance, adult behavior, elevation, and temporal distribution. In the fieldwork sample, 75 species (20.9%) were sampled once and 39 (9.8%) were not encountered (collected or imaged by others). A riodinid species of median abundance was sampled an average of once every 826 field person-hours. Sampled sex ratios were 81.2% male, but were not statistically higher in species in which male perching behavior was observed. We document examples of conspicuous geographic variation in the time of male perching behavior. Species richness is greatest at low elevation and at the transition between the dry and wet seasons. There is little evidence that the community is composed of species restricted to narrow elevational bands or restricted in the adult stage to a single season. Compared with Lycaenidae, Riodinidae are significantly more restricted to lowland habitats and were sampled 2.5 times as frequently with a mean number of individuals per species more than twice as great as that of Lycaenidae.

Key words. Elevation, perching behavior, seasonality, sex ratio, species richness.

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Introduction

Building upon nearly two centuries of Lepidoptera sampling in southeastern Peru's Cosñipata Region (Lamas 1989), in 2008 we initiated sampling of the diurnal butterfly fauna at different elevations and seasons. A previous paper characterized the Cosñipata Region and the fauna belonging to the family Lycaenidae (Lamas et al. 2021).

The first purpose of this paper is to report the taxonomic composition of the Cosñipata Region lepidopteran family Riodinidae. The results are based on 7,267 adult riodinids sampled during 7,440 field person-hours over 12 years, on museum specimens, and on data from the literature. Given that most species are rarely encountered (Kunin and Gaston 1993), long-term faunal studies, such as this one, and museum collections are oftentimes the
primary sources of information about the majority of species. The Appendix in this paper includes a wealth of behavioral observations as well as details on habitat, elevation, seasonality, and sampled sex ratios.

The second purpose of this paper is to characterize elevational and seasonal patterns of species richness in the Cosñipata Riodinidae. Long-term sampling allows these patterns to be characterized quantitatively, as was done with the Lycaenidae (Lamas et al. 2021). However, adult butterfly sampling is biased by factors such as “apparency” and differential attraction to baits (Dennis et al. 2006; Busby et al. 2017). We attempt to assess these biases, especially how male mate-locating behavior biases collection samples.

The third purpose of this paper is to contrast the ecological structure of the riodinid and lycaenid communities in the Cosñipata Region. Sister families Riodinidae and Lycaenidae consist primarily of relatively small-sized butterflies that may be myrmecophilous in the larval stage (Espeland et al. 2018). The datasets in this paper and in Lamas et al. (2021) on Lycaenidae are an opportunity to ask in what ways these families differ.

Materials and Methods

The Cosñipata Region (Fig. 1–2) is an interconnected complex of valleys in Cuzco and Madre de Dios Departments, Peru. The study site was characterized, and field localities were described and mapped in Lamas et al. (2021). In brief, we conducted fieldwork along the Paucartambo-Shintuya road from Abra Acjanaco (3,600 m) to

![Figure 1](https://example.com/figure1.jpg)  
**Figure 1.** Location of the Cosñipata Region (yellow box) in southeast Peru. © Amazonia Lodge.
Riodinid fauna of the Cosñipata Region, Peru

Shintuya (400 m) (Fig. 1), a road distance of 126 kilometers. The sampling area comprises approximately 1,000 hectares with a rainy season from December to February.

Sampling methods were also detailed in Lamas et al. (2021). In brief, experienced lepidopterists sampled the riodinid fauna of the Cosñipata Region using a combination of nets, traps, and baited vegetation during field trips of 2–3 weeks. Field person-hours were recorded during weather when butterflies were active. The locality, date, and sex for each sampled specimen were recorded in an Excel spreadsheet.

Specimens were identified from Callaghan and Lamas (2004) and subsequent revisions. Vouchers for fieldwork were deposited in the Museo de Historia Natural, Universidad Nacional Mayor de San Marcos, Lima, Peru (MUSM) and in the National Museum of Natural History, Smithsonian Institution, Washington, D.C., USA (USNM). Sampled abundances and sex ratios were tabulated for each species.

Sampling projects generate prodigious quantities of specimen counts that are often analyzed statistically (e.g., Cómbita et al. 2022), but such analyses assume independence among individuals. To avoid assuming the independence of specimen counts, we limit our statistical analyses to non-parametric tests of species counts. The assumption that species are ecologically independent is plausible. There is no published evidence that the abundance of one riodinid species affects the abundance of another. For example, there is no published evidence for competition among riodinid species that use the same caterpillar food plants.

We recorded behavioral data since 2014 for over 2,800 individuals in the Annotated Checklist (Appendix 1). In addition to date and time, data include topographic forest location (Callaghan 1983), wing position, leaf position, and estimated height above the ground. Feeding activities include drinking floral or extrafloral nectar, saliva/salt water/urine (as bait on the ground or on foliage), and decaying fish liquids with or without urine on traps or foliage. We use the term perching, as characterized in Scott (1975) and adopted in the riodinid literature (Callaghan 1983; Brévignon and Gallard 1995; Hall 1999, 2005a, 2018) for male mate locating behavior. Briefly, perching describes a behavior in which landed males fly at passing individuals. If the passerby is a conspecific

Figure 2. The Cosñipata Valley at 1,200 m looking towards the northeast. © Loran D. Gibson.
male, the perched male returns to the same or nearby perch site, often following brief spiral flights. If the passerby is a female, the male initiates courtship. In some cases, male behavior was difficult to interpret and was recorded as uncertain. Behavior specific to females includes oviposition or presence at a perching site. To determine whether the occurrence of perching behavior affects sampled sex ratios, we tabulated for each species whether perching was recorded and whether it had more sampled males than females. We then did a non-parametric one-tailed Fisher exact test for a 2×2 contingency table using the calculator at http://vassarstats.net/.

To document the distribution of riodinid species by elevation, we partitioned the Cosñipata Region into seven elevation zones of 500 m (the lowest zone was 600 m) and recorded the number of species observed in each zone. As a measure of the completeness of these counts, we calculated the sample mean and standard deviation of the coverage (Good 1953; Esty 1983; Chao and Lee 1992) as follows:

\[
\text{Mean (Coverage)} = 1 - \frac{N_1}{N}, \quad \text{Standard Deviation (Coverage)} = \sqrt{\frac{(N_1 + 2 N_2)}{N^2} - \frac{(N_1)^2}{N^3}}
\]

where \(N\) is sample size, \(N_1\) is the number of species represented by one individual, and \(N_2\) is the number of species represented by two individuals. In brief, coverage is the proportion of all individuals that belong to the set of sampled species. To calculate elevational range, we assumed that each species occurred throughout the zones in which it was observed and in zones between the highest and lowest zones at which it was recorded. The bias introduced by this assumption is discussed below.

To document the distribution of riodinids by season, we recorded the month(s) during which each species was sampled and then tabulated the number of species recorded during each month. We then calculated the mean and standard deviation of the coverage by month, again as a measure of sampling completeness.

We compared the cumulative distributions of riodinid species by elevation and month with those of lycaenid species, as recorded in Lamas et al. (2021). To test distribution differences, we used the non-parametric two-sample Kolmogorov–Smirnov test as implemented in the Xrealstats add-in package for Excel software.

**Results**

**Annotated Checklist**

We recorded 7,267 riodinid adults representing 398 species in the Cosñipata Region (Appendix 1). *Mesosemia icare* Hübner, [1819] (species #104a,b) is represented by two elevational wing pattern variants that have different subspecies names. *Emesis* (*Aphacitis*) *heteroclita* Stichel, 1929 (species #305a,b,c) has three wing pattern variants with subspecies names. One is elevationally segregated, but two occur at similar elevations. The taxonomy needs resolution.

**Fieldwork Sample**

A total of 6,639 individuals and 359 species were sampled during the 12 years and 7,440 field person-hours for this project. Records for another 628 individuals and 39 species were derived from the literature or from museum specimens.

The riodinid field sample contains 75 species (21%) with one individual and 39 (10%) with zero individuals (e.g., collected or photographed by others). There is an average of 18.5 and a median of 9 specimens per species. A riodinid of median abundance was sampled on average once every 826 field person-hours.

The sex ratio of the Cosñipata Region riodinid fieldwork sample is markedly skewed. Of 6,639 individuals, 5,393 (81%) are males. Of 359 species, 312 (87%) are represented by more males than females. Of the 180 species represented by nine or more specimens (the median sampled abundance in the field sample), 173 (96%) had more males than females.

Mate locating behavior was recorded for 133 of the 359 species (37%), was unrecorded for 214 species, and was uncertain in 12 species. Among those 180 species with more than nine sampled individuals, we documented perching behavior for 107, of which 105 had more sampled males than females. For the 73 “non-perching” species, 68 had more sampled males than females. A relationship between perching behavior and sex ratio was not
statistically significant (p=0.0973, Fisher Exact Probability one-tailed test). In other words, mate locating behavior does not significantly contribute to the observed skewed sex ratios.

**Elevation**

The number of riodinid species occurring in each elevation zone decreases with increasing elevation (Table 1). Although sampling effort also decreased with increasing elevation, statistical coverage (Table 1) shows that sampling at all elevations was nearly complete. Maximum richness occurs at the lowest elevation zone for the Cosñipata Region (400–1,000 m). Cumulative species richness (Fig. 3) is a monotonically increasing convex function of elevation. A mid-elevation peak in species richness among zones was not observed.

Species richness decreases markedly above 1,500 m elevation (Table 1). The maximum elevation at which a riodinid was observed was 2,500 m, at Quebrada Buenos Aires, where *Chorinea* sp. n. 2 and *Baeotis creusis* Hewitson, 1874 were recorded. *Mesosemia zorea toparcha* Stichel, 1910, *Rhetus dysonii psecas* (Saunders, 1850) and *Emesis (Tenedia) angularis* Hewitson, 1870, were sampled in the vicinity of Quebrada Buenos Aires, at slightly lower elevations of 2,400 – 2,410 m.

The elevation range for riodinid species was a mean of 869 m and a median of 950 m. One hundred and fifty-three species (38%) were recorded from only one elevation zone (Table 1), but only one of these species was encountered more frequently than average (18.5 specimens).

The cumulative distribution of riodinid species that occur below a given elevation was significantly different from that of lycaenids (Fig. 3, *p* << 0.001). The distribution of riodinids was significantly more skewed towards lowlands than that of lycaenids.

**Table 1.** The number of species in each elevation zone. Coverage (with standard deviation) is the proportion of individuals that belongs to species sampled in that elevation zone. Elevation restricted is the number of species recorded only at that elevation. The number of restricted species more common than average in the field sample (≥19 specimens) is shown in parentheses.

<table>
<thead>
<tr>
<th>Elevation (m)</th>
<th>400–1,000</th>
<th>1,000–1,500</th>
<th>1,500–2,000</th>
<th>2,000–2,500</th>
<th>2,500–3,000</th>
<th>3,000–3,500</th>
<th>3,500–4,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Species recorded</td>
<td>307</td>
<td>223</td>
<td>59</td>
<td>19</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Coverage mean coverage</td>
<td>0.987</td>
<td>0.986</td>
<td>0.996</td>
<td>0.987</td>
<td>0.993</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>SD</td>
<td>0.003</td>
<td>0.008</td>
<td>0.002</td>
<td>0.012</td>
<td>0.014</td>
<td>0.016</td>
<td></td>
</tr>
<tr>
<td>Elevation restricted</td>
<td>93 (0)</td>
<td>47 (1)</td>
<td>10 (0)</td>
<td>3 (0)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Field person-hours</td>
<td>3,356</td>
<td>2,543</td>
<td>808</td>
<td>375</td>
<td>215</td>
<td>95</td>
<td>48</td>
</tr>
</tbody>
</table>

**Figure 3.** Proportion of species recorded below a given elevation for Riodinidae (398 species) and Lycaenidae (342 species). Using a two-sample Kolmogorov-Smirnov test for cumulative distributions differences, D-stat = 0.16650504, D-crit = 0.099199506, *p* = 6.13109E-05.
Seasonality
Riodinid species richness was greatest at all elevations from September to November during the transition from the dry to the wet season (Table 2). All but 50 species (13%) were recorded during this seasonal transition (Appendix 1). Although sampling effort was greatest during this seasonal transition, statistical coverage (Table 2) shows that sampling was nearly complete for all months except July and December.

One hundred and forty-four riodinid species (36%) were restricted to a 3-month period, including 104 species that were found only during the transition between dry and wet seasons. However, all 144 species that are potentially restricted seasonally were encountered less frequently than the average of 18.5 specimens per species.

The cumulative distribution of riodinid species that occurs earlier in the calendar year than a given month was marginally different from that of lycaenids (Fig. 4, \( p = .042 \)). While sampled adults of both families were most species rich at the transition from the dry to wet seasons, lycaenids were slightly more seasonal than riodinids.

Discussion
Species Richness
The Cosñipata Region has more than 29% (398 species) of the world’s approximately 1,366 riodinid species (Lamas 2008). Evidence that actual species richness is significantly greater is that over 30% of the field sample is

Table 2. Occurrence of riodinid species by month, including data from fieldwork, museum specimens, and the literature. Coverage (with standard deviation) is the proportion of individuals that belongs to species sampled during that month.

<table>
<thead>
<tr>
<th>Elevation</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entire fauna</td>
<td>124</td>
<td>145</td>
<td>79</td>
<td>132</td>
<td>158</td>
<td>133</td>
<td>3</td>
<td>90</td>
<td>227</td>
<td>262</td>
<td>269</td>
<td>28</td>
</tr>
<tr>
<td>400–600 m</td>
<td>96</td>
<td>105</td>
<td>59</td>
<td>106</td>
<td>132</td>
<td>110</td>
<td>3</td>
<td>59</td>
<td>192</td>
<td>209</td>
<td>212</td>
<td>23</td>
</tr>
<tr>
<td>600–1,000 m</td>
<td>99</td>
<td>102</td>
<td>64</td>
<td>108</td>
<td>125</td>
<td>105</td>
<td>3</td>
<td>63</td>
<td>170</td>
<td>176</td>
<td>177</td>
<td>23</td>
</tr>
<tr>
<td>1,000–1,500 m</td>
<td>98</td>
<td>109</td>
<td>73</td>
<td>108</td>
<td>122</td>
<td>94</td>
<td>3</td>
<td>85</td>
<td>150</td>
<td>165</td>
<td>177</td>
<td>19</td>
</tr>
<tr>
<td>1,500–2,000 m</td>
<td>27</td>
<td>41</td>
<td>25</td>
<td>29</td>
<td>24</td>
<td>24</td>
<td>0</td>
<td>29</td>
<td>33</td>
<td>43</td>
<td>42</td>
<td>10</td>
</tr>
<tr>
<td>2,000–2,500 m</td>
<td>11</td>
<td>11</td>
<td>8</td>
<td>10</td>
<td>7</td>
<td>7</td>
<td>0</td>
<td>9</td>
<td>12</td>
<td>16</td>
<td>14</td>
<td>6</td>
</tr>
<tr>
<td>% Fieldwork effort</td>
<td>5.5</td>
<td>10.2</td>
<td>2.1</td>
<td>5.9</td>
<td>9.2</td>
<td>5.6</td>
<td>0</td>
<td>3.5</td>
<td>9.4</td>
<td>22.4</td>
<td>26.2</td>
<td>0</td>
</tr>
<tr>
<td>Coverage (± SD)</td>
<td>0.983±0.012</td>
<td>0.966±0.017</td>
<td>1.000±0.006</td>
<td>0.994±0.005</td>
<td>0.996±0.010</td>
<td>na</td>
<td>0.996±0.008</td>
<td>0.993±0.005</td>
<td>0.987±0.005</td>
<td>0.989±0.0046</td>
<td>na</td>
<td></td>
</tr>
</tbody>
</table>

Figure 4. Proportion of species recorded from January to the given month for Riodinidae (398 species) and Lycaenidae (342 species). Using a two-sample Kolmogorov–Smirnov test for cumulative distributions differences, \( D\text{-stat} = 0.101443, D\text{-crit} = 0.0992, p = 0.042 \).
represented by one individual or no individuals (recorded by others). The high coverage values at each elevation emphasize the rarity of the unsampled species.

Most sampled species were rarely encountered. As noted, a species of median abundance was encountered an average of once every 826 field hours. Low encounter rates highlight the significance of the information in the annotated checklist.

Sex Ratio and Perching Behavior

The sex ratio of the Cosñipata Region riodinid sample is skewed (81% male). Given that a skewed sex ratio among reared riodinids has not been reported, as far as we are aware, the riodinid sample is markedly biased.

The location and timing of perching behavior makes males potentially more “apparent” (sensu Dennis et al. 2006) to collectors, but we were unable to support this idea. While 59% of the 180 commonest species had documented perching behavior versus 15% for the 179 rarest species, a larger sample size for a species probably increases the chances that perching behavior will be observed. For this reason, we cannot logically assess a relationship between perching and sampled abundance. Further, if perching behavior increased the sampling “apparency” of males, we would expect a greater incidence of male-skewed sex ratios among perching species. We found no significant statistical relation between skewed sex ratio and documentation of perching behavior.

The perching data in the Appendix provides new information for some species and documents geographic variation in others. New data are included for species such as *Styx infernalis* Staudinger, 1876. In some cases, our data demonstrates marked geographic variation when compared with published data from Ecuador (Hall 2005a, 2018). For example, *Nymphidium velatum* Stichel, 1914 males perch during the early morning (0636–0815 hrs. *(n = 10)*) in the Cosñipata Region whereas they perch between 1300-1445 hrs. (sample size not reported) in Ecuador. As another example, *Ithomiola tanos* (Stichel, 1910) males perch from 0856–1140 hrs. *(n = 10)* in the Cosñipata Region while they perch from 1315–1600 hrs. in Ecuador.

Elevation

Riodinids primarily inhabit lowlands with warmer temperatures (Brown and Freitas 2000; Brown 2005; Francini et al. 2011). In the Cosñipata Region, almost 77% (306 species) occur under 1,000 m elevation (Fig. 3). Less than 5% occur above 2,000 m. None have been recorded above 2,500 m elevation. With coverage values greater than 98.5% (Table 1), this pattern is unlikely to be an artifact of variation in sampling effort. The elevational distribution at which riodinids occur is significantly different – with a greater proportion of lowland species – than that of lycaenids (Fig. 3).

There is no evidence for a mid-elevation peak in riodinid species richness (Table 1, Fig. 3; Colwell and Lees 2000). However, with insufficient sampling between 600 and 1,000 m elevation because of a predominance of disturbed habitats, we would not detect a mid-elevation peak at these elevations.

Cosñipata Region riodinid species have a median elevational range of 950 m, but the calculation of elevational range suffers from three sources of error, as previously noted (Lamas et al. 2021). First, a single outlier record can overestimate elevational range. However, the use of median ranges obviates this kind of error. Second, elevational range is overestimated because we assumed that a species found in an elevation zone occurred throughout that zone. Third, elevational range is underestimated because further sampling can increase the range of zones in which each species is found. Regardless of how the sources of error in the measurement of elevational range offset each other, we are unaware of other community-wide estimates for elevational range of Neotropical riodinids.

Some riodinids in genus *Ithomiola* (C. Felder and R. Felder, [1865]) are distributed in narrow parapatric elevation zones (Hall 2005b), but narrowly stratified elevation zones do not seem to be widespread among the riodinids of the Cosñipata Region. About 62% of the species in the Cosñipata Region occur in more than one elevational zone. Of six *Ithomiola* species, four have recorded elevational ranges greater than 500 m (Appendix 1). No riodinid species that was encountered more frequently than average was restricted to one elevational zone. We cannot rule out the possibility, however, that elevationally restricted species tend to be rare species.
Seasonality

Maximum riodinid species richness at all elevations occurred from September through November during the transition from the dry to the wet seasons (Table 2). Only 50 species (12.6%) were not sampled during this transition period (Appendix 1). With coverage values for each month above 96%, this result is not likely an artifact of monthly variation in fieldwork effort.

The evidence suggests that few riodinid species have adults restricted to one season. Although 144 species were sampled in a single three-month window, none was more common than average. It is possible, once again, that some rare species are seasonally restricted.

Similarities between Riodinidae and Lycaenidae

The butterfly sister families Riodinidae and Lycaenidae share many similarities. Most species have a forewing length less than 2.5 cm. They often have slug-shaped caterpillars, which may be myrmecophilous and are sometimes predatory on ants or insects tended by ants (Pierce et al. 2002). Adult head morphology in these families is unique among the butterflies (Ehrlich 1958). These similarities are probably the reason that the two families were sometimes considered to be one family (Ehrlich 1958; Pierce et al. 2002).

The Cosñipata Region Riodinidae and Lycaenidae communities are similar in other respects. Both have diverse faunas with more than 300 species. Most species of both families are rarely encountered. Although some Andean butterfly communities are stratified by narrow elevation bands (Adams 1985; Pyrcz and Wojtusiak 2002), both families exhibit a median elevational range exceeding 900 m. Both families have a peak species richness of adults during the transition from dry to wet seasons.

Differences between Riodinidae and Lycaenidae

The butterfly sister families Riodinidae and Lycaenidae differ in many respects. While lycaenids in South America are widely reported to lay eggs on flowers and fruits (Chew and Robbins 1984; Silva et al. 2011), similar reports for riodinids in South America are rare. While the Riodinidae exhibit substantial diversity of wing shapes and patterns, the Lycaenidae tend to have a basic pattern (despite obvious exceptions, Robbins 2004), which is likely one reason why most Neotropical Lycaenidae were placed in “Thecla” for more than a century (Swainson 1820–1823). Finally, while males of about 25% of riodinid species have androconia (Hall and Harvey 2002), males of more than 90% of the lycaenid tribe Eumaeini have male secondary sexual organs (Valencia-Montoya et al. 2021).

The sampled Cosñipata Region Riodinidae and Lycaenidae communities differ in two other respects. First, the median number of sampled individuals per species for Riodinidae (9 specimens) was more than twice that for Lycaenidae (4 specimens). The number of sampled riodinid specimens (7,267 specimens) was more than twice that of lycaenids (2,692 specimens). We do not know the extent to which these differences are due to community differences in abundance versus sampling biases. Regardless, the differences in “apparenacy” to collectors might also be perceived by predators. Second, the riodinid community occurs at lower elevations than the lycaenid community (Fig. 3). Almost the entire riodinid fauna (96%) was observed under 1,500 m in contrast to 80% of the lycaenid fauna. While no riodinid species was found above 2,500 m elevation, lycaenids were recorded up to the highest elevation at which we sampled (3,520 m), with 38 species occurring above 2,500 m. This result is consistent with the relative species richness of riodinids and lycaenids in southeastern Brazil, where riodinids have richer faunas at lower elevations (Francini et al. 2011).

Whether the similarities and differences between the Cosñipata Region Riodinidae and Lycaenidae are shared with the other butterfly families awaits characterization of the entire Cosñipata butterfly fauna.

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**Literature Cited**


Swainson W. 1820–1823. Zoological illustrations, or original figures and descriptions of new, rare, or interesting animals, selected chiefly from the classes of ornithology, entomology, and conchology, and arranged on the principles of Cuvier and other modern zoologists. Baldwin, Cradock, Joy and Wood; London. [Series of unpaginated articles, originally published monthly from 1820–1823.]


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Review editor Jose Martinez.
Appendix 1. Cosñipata species checklist. Localities are mapped in Lamas et al. (2021). Male perching data is based on local time of initial observation with intervals (for two or more data points) and n = number of individuals. Raw data reported without rounding or averaging. A continuous perching interval is assumed unless there is more than a 90 minute gap between observations, in which case a bimodal pattern is assumed, as per Hall (2018).

<table>
<thead>
<tr>
<th>Species</th>
<th>Elevation range (m)</th>
<th>Monthly occurrence</th>
<th>Notes and observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>RIODINIDAE/EUSELASIINAE/EUSELASIINI</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>1 Euselasia urites urites (Hewitson, [1853])</td>
<td>400–450</td>
<td>Oct</td>
<td>A single male from the Pantiacolla Lodge.</td>
</tr>
<tr>
<td>2 Euselasia toppini Sharpe, 1915</td>
<td>400–500</td>
<td>Jun, Sep</td>
<td>Four males of this gaudy species from the Amazonia and Pantiacolla Lodges. Three of the males were visiting fish bait on the same day.</td>
</tr>
<tr>
<td>3 Euselasia arpi Gallard 2013</td>
<td>400–450</td>
<td>Nov</td>
<td>A single male, taken at the Pantiacolla Lodge.</td>
</tr>
<tr>
<td>4 Euselasia attrita Seitz, 1916</td>
<td>400–450</td>
<td>Oct–Nov</td>
<td>4 males and 2 females from the Pantiacolla Lodge, all but one of which were observed during a two-day period in 2016.</td>
</tr>
<tr>
<td>5 Euselasia serapis Stichel, 1919</td>
<td>400–450</td>
<td>Oct</td>
<td>2 males from the Pantiacolla Lodge, both in low vegetation less than a meter above ground level. Brévignon (2008) synonymized serapis with attrita, which may be correct.</td>
</tr>
<tr>
<td>6 Euselasia waponaka uypiranga Brévignon, 2008</td>
<td>400–450</td>
<td>Nov</td>
<td>A single male from the Pantiacolla Lodge at the beginning of the rainy season.</td>
</tr>
<tr>
<td>7 Euselasia eutychus (Hewitson, 1856)</td>
<td>400–800</td>
<td>Feb, Apr–May, Sep–Nov</td>
<td>Commonly encountered from the Pantiacolla and Amazonia Lodges to Pilcopata. There is a single outlier from San Pedro that is likely mislabeled. Most individuals were observed during Oct–Nov. 74% of observations were of males and this species is not attracted to bait. Perching males from 0602–0811 hrs. (n = 3) and 0948–1130 hrs. (n = 4); may represent bimodal perching activity</td>
</tr>
<tr>
<td>8 Euselasia clithra (H. W. Bates, 1868)</td>
<td>400–450</td>
<td>Oct</td>
<td>A single male from the Pantiacolla Lodge at the beginning of the rainy season.</td>
</tr>
<tr>
<td>9 Euselasia euodias euodias (Hewitson, 1856)</td>
<td>400–1,050</td>
<td>Oct–Nov</td>
<td>2 males from the Pantiacolla Lodge. There is also a very surprising photograph of a male 600 m higher at Quitacalzón. Perching males from 0951–1122 hrs. (n = 2).</td>
</tr>
<tr>
<td>10 Euselasia orba spectralis Stichel, 1919</td>
<td>400–450</td>
<td>Jun</td>
<td>A single perching male (0847 hrs.) from the Pantiacolla Lodge during the beginning of the dry season.</td>
</tr>
<tr>
<td>11 Euselasia issoria (Hewitson, 1869)</td>
<td>400–1,100</td>
<td>Aug, Oct–Nov</td>
<td>Uncommonly encountered from the Pantiacolla Lodge to Quitacalzón. Females (75%) were much more frequently seen than males. Single perching male at 0946 hrs.</td>
</tr>
<tr>
<td>12 Euselasia curiteus (Cramer, 1777)</td>
<td>400–450</td>
<td>Jun, Oct–Nov</td>
<td>All records were from the Pantiacolla Lodge, where this species is frequently encountered. Males perched between 0851–0914 hrs. (n = 3) and are attracted to bait later in the day. Individuals were also observed resting in low vegetation along forest trails from 1100 to 1300 hrs. 18 males (0 females) have been observed.</td>
</tr>
<tr>
<td>13 Euselasia corduena corduena (Hewitson, 1874)</td>
<td>450–1,450</td>
<td>Feb–Jun, Aug–Nov</td>
<td>One of the most frequently encountered mid-elevation Euselasia. This species is most common at Quitacalzón, but occurs from the Amazonia Lodge to San Pedro. Less than 20% of encounters were with females and this species is not attracted to bait. Males perch 3–5 m in height between 0642–1034 hrs. (n = 7), at forest edge.</td>
</tr>
<tr>
<td>14 Euselasia zena (Hewitson, 1860)</td>
<td>400–450</td>
<td>Oct</td>
<td>2 males of this beautiful species were taken on the same day at the Pantiacolla Lodge in 2016. It has not been seen since. One of the males was perching at 0911 hrs.</td>
</tr>
<tr>
<td>Species</td>
<td>Elevation range (m)</td>
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<td>Notes and observations</td>
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</tr>
<tr>
<td>15 Euselasia gyda gyda (Hewitson, 1860)</td>
<td>950–1,400</td>
<td>Feb–Mar, Jun, Nov</td>
<td>Uncommon from Chontachaca to San Pedro. 85% of specimens were males. One perching observation at 0955 hrs.</td>
</tr>
<tr>
<td>16 Euselasia opalescens opigena Stichel, 1919</td>
<td>475–525</td>
<td>Nov</td>
<td>A single male was captured at the Amazonia Lodge in 2012.</td>
</tr>
<tr>
<td>17 Euselasia opimia Stichel, 1919</td>
<td>1,400–1,425</td>
<td>Nov</td>
<td>A single male from San Pedro in 2007, before the survey started. We have not seen this species again in the subsequent 13 years.</td>
</tr>
<tr>
<td>18 Euselasia gelanor (Stoll, 1780)</td>
<td>1,050–1,100</td>
<td>May</td>
<td>One male, photographed at Quitacalzón in 2016.</td>
</tr>
<tr>
<td>19 Euselasia erilis Stichel, 1919</td>
<td>400–450</td>
<td>Nov</td>
<td>One male from the Pantiacolla Lodge in 2018.</td>
</tr>
<tr>
<td>20 Euselasia murina Stichel, 1925</td>
<td>450–1,100</td>
<td>Feb, Jun, Sep</td>
<td>3 males and a female from the Pantiacolla Lodge to Quitacalzón. Encounters during the dry season, rainy season, and the transition between them, indicating no seasonality.</td>
</tr>
<tr>
<td>21 Euselasia teleclus (Stoll, 1787)</td>
<td>400–950</td>
<td>May–Jun, Sep–Nov</td>
<td>Quite common from the Pantiacolla Lodge to Chontachaca and strongly attracted to bait. Perching males with wings closed under leaf, at heights of 2–3 m, between 1256–1406 hrs. (n = 2). Most other encounters with males were associated with fish bait attraction. Females represent nearly one-quarter of encounters. There were no records during the rainy season.</td>
</tr>
<tr>
<td>22 Euselasia archelaus archelaus Seitz, 1916</td>
<td>1,050–1,100</td>
<td>Oct</td>
<td>A single male from Quitacalzón in 2016.</td>
</tr>
<tr>
<td>23 Euselasia midas crotopina Seitz, 1916</td>
<td>550–1,050</td>
<td>Feb, Sep</td>
<td>A male from Pilcopata and a female from Quitacalzón. Very similar to the more common E. kartopus.</td>
</tr>
<tr>
<td>24 Euselasia kartopus Stichel, 1919</td>
<td>400–1,200</td>
<td>Jun, Sep–Nov</td>
<td>Common between the Pantiacolla Lodge and Chontachaca, with single records from Quitacalzón and Quebrada Santa Isabel.</td>
</tr>
<tr>
<td>25 Euselasia mutator Seitz, 1916</td>
<td>1,050–2,000</td>
<td>Feb, Nov</td>
<td>Six males from Quitacalzón to Rocotal. All encounters have been during the transition to the rains or the rainy season. Most encounters have been during early morning.</td>
</tr>
<tr>
<td>26 Euselasia rava Stichel, 1928</td>
<td>400–450</td>
<td>Oct</td>
<td>Known from a single female at the Pantiacolla Lodge, during October 2016. That month produced a number of unique records from the Pantiacolla Lodge.</td>
</tr>
<tr>
<td>27 Euselasia gordios Stichel, 1919</td>
<td>400–1,100</td>
<td>Sep–Nov</td>
<td>Three males, with one each from the Pantiacolla Lodge, the Amazonia Lodge and Quitacalzón.</td>
</tr>
<tr>
<td>28 Euselasia uria angustifacia Lathy. 1926</td>
<td>400–450</td>
<td>Oct–Nov</td>
<td>Three males, all from the Pantiacolla Lodge over a two-day period (Oct-31, Nov-1) in 2018. Male perching observed at a hilltop area from 1431–1605 hrs. (n = 2). One male observed at same perch site (without voucher specimen); 3-5m height, wings closed under leaf.</td>
</tr>
<tr>
<td>29 Euselasia sp. n. 7 (aff. cunithres Stichel, 1919)</td>
<td>475–525</td>
<td>Sep–Oct</td>
<td>Two males from the Amazonia Lodge, one each in 2013 and 2014.</td>
</tr>
<tr>
<td>31 Euselasia angulata (H. W. Bates, 1868)</td>
<td>400–525</td>
<td>Sep, Nov</td>
<td>One male from Mascoitania in 2008 and a second male 10 years later at the Pantiacolla Lodge.</td>
</tr>
<tr>
<td>32 Euselasia euphaes (Hewitson, [1855])</td>
<td>925–950</td>
<td>Jun</td>
<td>One male at bait on a forest trail in Chontachaca.</td>
</tr>
<tr>
<td>33 Euselasia sp. n. 9 (aff. euoras [Hewitson, [1855]])</td>
<td>400–450</td>
<td>Nov</td>
<td>A single female from the Pantiacolla Lodge in 2018.</td>
</tr>
<tr>
<td>Species</td>
<td>Elevation range (m)</td>
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</tr>
<tr>
<td>Erythia labdacus labdacus (Stoll, 1780)</td>
<td>925–975</td>
<td>Jan</td>
<td>A single male from Chontachaca.</td>
</tr>
<tr>
<td>Pelolasia ignitus (Stichel, 1924)</td>
<td>925–975</td>
<td>Jan, Apr–Jun</td>
<td>Known from 3 males and a female taken on forest trails in Chontachaca. Males were attracted to fish bait.</td>
</tr>
<tr>
<td>Pelolasia eubea eubea (Hewitson, [1853])</td>
<td>400–975</td>
<td>Feb, Jun, Oct–Nov</td>
<td>Occurs from Chontachaca to the Pantiacolla Lodge. 80% of specimens were males. Single perching observation at 1422 hrs.</td>
</tr>
<tr>
<td>Pelolasia eumedia eumedia (Hewitson, [1853])</td>
<td>575–975</td>
<td>Jun, Nov</td>
<td>Known from a male at Chontachaca (fish bait) and a female from Quebrada Bienvenida.</td>
</tr>
<tr>
<td>Pelolasia eusepus (Hewitson, [1853])</td>
<td>400–1,400</td>
<td>Jan–Feb, Apr-Jun, Aug–Nov</td>
<td>Frequently encountered from the lowlands to San Pedro. Of 84 encounters, only 7 individuals were females (8.3%). Males were observed perching between 0635–0955 hrs. (n = 15). At other times they were attracted to fish bait.</td>
</tr>
<tr>
<td>Pelolasia melaphaea condensa (Stichel, 1927)</td>
<td>450–1,400</td>
<td>Jan, Mar–Jun, Aug–Nov</td>
<td>A common mid-elevation species with most records from Quitacalzón. Our sample is strongly skewed to males, with females representing only 5% of 44 encounters. Perching occurred on the upper surface of leaves, 3–5 m in height, with wings closed, from 1400–1639 hrs. (n = 7).</td>
</tr>
<tr>
<td>Pelolasia fervida fervida (Butler, 1874)</td>
<td>475–2,300</td>
<td>Jan–Jun, Aug–Dec</td>
<td>Along with P. hahneli, the most common mid-elevation Pelolasia in the Valley. Range is primarily between Quitacalzón and San Pedro, with two of 57 records below 1,000 m and four above 2,000 m. Males outnumber females 13 to 1. Observed in every month surveyed. Males perch from 0846–1214 hrs. (n = 15) at lower elevations and from 1015–1054 hrs. at higher elevation (Rocotal, 1,970 m).</td>
</tr>
<tr>
<td>Pelolasia hahneli (Staudinger, [1887])</td>
<td>475–2,000</td>
<td>Jan–Feb, Apr-Jun, Aug–Nov</td>
<td>Most frequently encountered around Quitacalzón, with records ranging from the Amazonia Lodge to Rocotal. Males perched from 0735–1109 hrs. (n = 22) at heights up to 5–6 m. Females constitute less than 10% of sampled individuals.</td>
</tr>
<tr>
<td>Myselasia ella ella (Seitz, 1916)</td>
<td>1,000–1,400</td>
<td>Mar, May–Jun, Sep–Nov</td>
<td>Frequent from Quitacalzón to San Pedro. Females constitute 24% of observed individuals. Male perching between 0745–0940 hrs. (n = 4).</td>
</tr>
<tr>
<td>Myselasia hygenius hygenius (Stoll, 1787)</td>
<td>400–950</td>
<td>Jan–Mar, May–Jun, Sep–Nov</td>
<td>Frequently encountered between the Pantiacolla Lodge and Pilcopata with one record from Chontachaca. Males were far more numerous than females, 15 to 2. Males perched on the forest edge of a ridge plateau from 0720–0747 hrs. (n = 6). Two additional observations occurred without voucher specimens, from 0800–0820 hrs. Perching males had wings closed and were observed both above and below leaves, usually 2–3 m in height. Later in the day, this species frequents fish bait.</td>
</tr>
<tr>
<td>Myselasia eustola eustola (Stichel, 1919)</td>
<td>925–975</td>
<td>Feb</td>
<td>A single male from Villa Carmen.</td>
</tr>
<tr>
<td>Myselasia cafusa (H.W. Bates, 1868)</td>
<td>400–1,100</td>
<td>Oct–Nov</td>
<td>Two males and a female from the Pantiacolla Lodge to Quitacalzón. All were taken during the transition to the rainy season.</td>
</tr>
<tr>
<td>Myselasia jarigena (Stichel, 1919)</td>
<td>400–600</td>
<td>Jan, May, Aug–Sep, Nov</td>
<td>Not uncommon from the Pantiacolla Lodge to Villa Carmen. 33% of encounters were females.</td>
</tr>
<tr>
<td>Myselasia eulione (Hewitson, 1856)</td>
<td>925–975</td>
<td>Oct</td>
<td>A single female from Chontachaca that was attracted to bait.</td>
</tr>
<tr>
<td>Myselasia sp. n. 4 (aff. eulione (Hewitson, 1856))</td>
<td>400–450</td>
<td>Jun</td>
<td>One male from the Pantiacolla Lodge, collected during the dry season.</td>
</tr>
<tr>
<td>Species</td>
<td>Elevation range (m)</td>
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<td>Notes and observations</td>
</tr>
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</tr>
<tr>
<td>49 Myselasia sp. n. 5 (aff. eulione (Hewitson, 1856))</td>
<td>500–550</td>
<td>Sep</td>
<td>A single female from the Amazonia Lodge.</td>
</tr>
<tr>
<td>50 Myselasia alcmena (H. Druce, 1878)</td>
<td>400–450</td>
<td>Oct</td>
<td>A single female from the Pantiacolla Lodge, encountered at the onset of the rains.</td>
</tr>
<tr>
<td>51 Myselasia mys mys (Herrich-Schäffer, [1853])</td>
<td>400–450</td>
<td>Oct</td>
<td>A single male from the Pantiacolla Lodge, encountered at the onset of the rains, on the same day as M. alcmena.</td>
</tr>
<tr>
<td>52 Myselasia crinon (Stichel, 1919)</td>
<td>400–1,725</td>
<td>Feb, Jun, Sep–Nov</td>
<td>Frequent from the Pantiacolla Lodge to Quitacalzón (400–1,100 m), with one male captured at the Mirador (1,720 m). Single male observed perching at 0954 hrs.</td>
</tr>
<tr>
<td>53 Eurylasia euryone (Hewitson, 1856)</td>
<td>400–950</td>
<td>Jan, Sep, Nov–Dec</td>
<td>Frequent from the Pantiacolla Lodge to Chontachaca. 45% of specimens were females and both sexes have been observed at bait. One perching observation at 0840 hrs.</td>
</tr>
<tr>
<td>54 Eugelasia breviauda (Lathy, 1926)</td>
<td>400–500</td>
<td>Sep–Oct</td>
<td>Two males, one each from the Pantiacolla and Amazonia Lodges. Single male seen perching at 1152 hrs. This species was also attracted to toilet paper lures and has been observed resting under leaves, less than a meter in height.</td>
</tr>
<tr>
<td>55 Methone cecilia magnarea (Seitz, 1913)</td>
<td>400–1,400</td>
<td>Jan–Feb, Apr–Jun, Aug–Nov</td>
<td>Very common below 600 m, with many additional records up to San Pedro. Males perch from 0634–1149 hrs. (n = 12); 2–4m height, wings closed under leaf. 26% of the sample were females. One individual was attracted to a trap.</td>
</tr>
<tr>
<td>56 Methone hecamede hecamede (Hewitson, 1870)</td>
<td>2,135–2,250</td>
<td>Feb, Oct</td>
<td>Two males from Quebrada Morro Leguía, one each in 2010 and 2011. Despite extensive subsequent effort around Morro Leguía, no additional individuals were seen during the last nine years.</td>
</tr>
<tr>
<td>57 Methone authe ocalea (H. Druce, 1904)</td>
<td>525–1,100</td>
<td>Jan, Apr–Jun, Sep–Nov</td>
<td>Frequent from Chontachaca to Quitacalzón with two records from the lowlands. Strongly attracted to bait and normally seen less than a meter above-ground. Males were much more likely to be encountered than females.</td>
</tr>
<tr>
<td>58 Methone dolichos (Staudinger, [1887])</td>
<td>400–550</td>
<td>Oct–Nov</td>
<td>A frequent lowland species during the transition between the dry season and the rains. Strongly attracted to bait and normally seen within a meter of ground-level. Only 7% of encounters were females.</td>
</tr>
<tr>
<td>59 Methone eucrates eucrates (Hewitson, 1872)</td>
<td>825–1,400</td>
<td>May–Jun, Nov</td>
<td>An infrequently encountered species that is attracted to bait. Only males seen thus far.</td>
</tr>
<tr>
<td>60 Methone sp. n. (aff. hypophaea Godman &amp; Salvin, 1878)</td>
<td>525–550</td>
<td>Feb</td>
<td>A single female from Villa Carmen.</td>
</tr>
</tbody>
</table>

RIODINIDAE/EUSELASIINAE/NEMEOBIINI/CORRACHIINA

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<tr>
<th>Species</th>
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<tr>
<td>61 Styx (Styx) infernalis (Staudinger, 1876)</td>
<td>1,400–2,000</td>
<td>Feb, Oct–Nov</td>
<td>Females have been encountered slightly more frequently than males. Males observed, on a mostly overcast morning, perching from 0930–1035 hrs. (n = 6) at a streamside lek used by perching Myselasia ella, Ithomiola floralis, Crocozona fasciata and Ancyliris rubrofilum. Up to 4 males observed perching simultaneously along forest edge, 2–4 m height, on leaf tip with wings half open but not vertical. Relatively slow flight with occasional half spiral conspecific male interaction and spontaneous flight from perch site without interaction. Occasional exchange of perch sites by males. A mated pair was seen in tall roadside grass at Rocotal (1,970 m). This species is sometimes observed flying very slowly at heights of 2 to 6m in late afternoon and females (n = 3) are occasionally attracted to light at night, (personal observation and personal communication with J. Heppner).</td>
</tr>
<tr>
<td>Species</td>
<td>Elevation range (m)</td>
<td>Monthly occurrence</td>
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<tr>
<td><strong>RIODINIDAE/RIODININAE/MESOSEMIINI/EUNOGYRINA</strong></td>
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</tr>
<tr>
<td>62</td>
<td><em>Eunogyra satyrus</em> Westwood, 1851</td>
<td>400–1,100 May–Jun, Sep–Nov</td>
<td>Common below 500 m, during the transition to the rainy season, Sep–Nov. Two records from Quitacalzón (1,050–1,100 m). Almost one-third of records were females.</td>
</tr>
<tr>
<td>63</td>
<td><em>Teratophthalma axilla</em> axilla (H. Druce, 1904)</td>
<td>1,050–1,200 Jan, Apr–May, Sep–Nov</td>
<td>The most frequently encountered <em>Teratophthalma</em>, with all but one specimen from Quitacalzón. Most were located on a dark forest trail bordering the Quebrada. The remaining specimen is from Quebrada Santa Isabel. This species is attracted to fish bait and to paper lures. Males perching from 1329–1344 hrs. (<em>n</em> = 2); 4m height; wings spread on leaf. Male/female ratio of 5 to 1.</td>
</tr>
<tr>
<td>64</td>
<td><em>Teratophthalma sp. n. 2</em></td>
<td>1,300–1,720 Jun, Nov</td>
<td>Two females from San Pedro and an additional female along the road near the Mirador.</td>
</tr>
<tr>
<td>65</td>
<td><em>Teratophthalma adulter</em> Stichel, 1929</td>
<td>1,400–1,650 Aug</td>
<td>A single male from San Pedro in 2001. No additional records in the subsequent 19 years.</td>
</tr>
<tr>
<td>66</td>
<td><em>Teratophthalma phelina</em> phelina (C. Felder and R. Felder, 1862)</td>
<td>500–525 May</td>
<td>One female from the Amazonia Lodge in 2012.</td>
</tr>
<tr>
<td><strong>RIODINIDAE/RIODININAE/MESOSEMIINI/MESOSEMIINA</strong></td>
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</tr>
<tr>
<td>67</td>
<td><em>Mesosemia metura polyglauca</em> Stichel, 1910</td>
<td>400–1,400 Jan, Mar, May</td>
<td>Frequent from the Pantiacolla Lodge to Quitacalzón, with one record from San Pedro. Perching males observed from 1048–1133 hrs. (<em>n</em> = 4). Almost 30% of encounters were females.</td>
</tr>
<tr>
<td>68</td>
<td><em>Mesosemia teulem</em> Brévignon, 1995</td>
<td>400–1,050 Jun–Sep–Nov</td>
<td>Three males and two females, with four specimens below 500 m and a single female from Quitacalzón.</td>
</tr>
<tr>
<td>69</td>
<td><em>Mesosemia sp. n. 2</em></td>
<td>400–1,100 Jun, Nov</td>
<td>A female from the Pantiacolla Lodge and a photo of a male from Quitacalzón.</td>
</tr>
<tr>
<td>70</td>
<td><em>Mesosemia macotis macotis</em> Hewitson, 1859</td>
<td>500–525 Sep</td>
<td>One female from the Amazonia Lodge in 2011.</td>
</tr>
<tr>
<td>71</td>
<td><em>Mesosemia cippus</em> Hewitson, 1859</td>
<td>400–1,200 Jan, Mar–Jun, Sep–Nov</td>
<td>A common lowland species with most records below 500 m. There were three records from Quitacalzón and one from Santa Isabel. Perching males observed from 0825–1220 hrs. (<em>n</em> = 8). More than a third of records were females.</td>
</tr>
<tr>
<td>72</td>
<td><em>Mesosemia walteri walteri</em> Brévignon, 1998</td>
<td>400–600 Apr–Jun, Aug–Nov</td>
<td>Less frequently encountered than <em>M. cippus</em>, but still quite common in the lowlands. Perching males observed from 1210–1513 hrs. (<em>n</em> = 6). 17% of records were of females.</td>
</tr>
<tr>
<td>73</td>
<td><em>Mesosemia ibycus</em> Hewitson, 1859</td>
<td>400–1,400 Jan, Mar–Jun, Oct</td>
<td>12 of 13 sightings were during 2016 along a ditch just uphill from the Quebrada Santa Isabel bridge. The other record was surprisingly low, at the Pantiacolla Lodge, 800 m below Santa Isabel. This species tends to rest less than one-third meter above-ground and is very sedentary. Perching males were observed from 1151–1354 hrs. (<em>n</em> = 5). Similar mate locating behavior was observed in Rondônia, Brazil, adjacent to a small slow-flowing stream. Only one female was seen.</td>
</tr>
<tr>
<td>74</td>
<td><em>Mesosemia luperca</em> Stichel, 1910</td>
<td>400–550 May, Sep–Nov</td>
<td>Relatively uncommon, and limited to elevations below 550 m between the Pantiacolla Lodge and Villa Carmen. 14% of sample were females.</td>
</tr>
<tr>
<td>75</td>
<td><em>Mesosemia ahava veleda</em> Stichel, 1910</td>
<td>400–1,700 Jan–Mar, Jun, Aug–Nov</td>
<td>Very common at Quitacalzón (1,050 m), with individual records from the Pantiacolla Lodge (400 m) and the Mirador (1,700 m). Males were observed perching from 0943–1240 hrs. (<em>n</em> = 8). All 38 encounters have been with males.</td>
</tr>
<tr>
<td>76</td>
<td><em>Mesosemia olivencia</em> H.W. Bates, 1868</td>
<td>400–600 Sep–Nov</td>
<td>Four males from the Pantiacolla Lodge to Quebrada Bienvenida, all during the transition to the rains.</td>
</tr>
<tr>
<td>Species</td>
<td>Elevation range (m)</td>
<td>Monthly occurrence</td>
<td>Notes and observations</td>
</tr>
<tr>
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</tr>
<tr>
<td><em>Mesosemia philocles thyestes</em> H. Druce, 1878</td>
<td>400–1,100</td>
<td>May, Sep–Nov</td>
<td>Frequent below 500 m, with 3 records from Quitacalzón. Individuals commonly rest beneath leaves on low-growing vegetation. Almost 40% of records were females.</td>
</tr>
<tr>
<td><em>Mesosemia machaera machaera</em> Hewitson, 1860</td>
<td>400–1,400</td>
<td>Feb–Jun, Sep–Nov</td>
<td>Common between the Pantiacolla Lodge and Quebrada Santa Isabel. Males outnumber females 7 to 1 and have been observed perching at 2-5m heights, along forest edges, from 1022–1430 hrs. (n = 6).</td>
</tr>
<tr>
<td><em>Mesosemia sp.</em> (aff. <em>modulata</em> Stichel, 1910)</td>
<td>1,125–1,175</td>
<td>Nov</td>
<td>1 female photographed near Quebrada Santa Isabel.</td>
</tr>
<tr>
<td><em>Mesosemia quadralineata</em> J. Hall and Harvey, 2004</td>
<td>400–1,725</td>
<td>Apr–Jun, Aug–Nov</td>
<td>Frequent from the Pantiacolla Lodge to Villa Carmen, with two records from Quitacalzón and a single record from the Mirador (1,720 m). Males perched from 1321–1425 hrs. (n = 2). Less than 20% of records were females.</td>
</tr>
<tr>
<td><em>Mesosemia thymetus umbrosa</em> Stichel, 1909</td>
<td>400–1,600</td>
<td>Jan–Feb, May–Jun, Aug–Dec</td>
<td>Extremely common below 1,100 m, with records as high as Puente Unión. Perching males observed from 1142–1510 hrs. (n = 45) exhibited frequent flight and conspecific male spiral interaction. 8% of encounters were females.</td>
</tr>
<tr>
<td><em>Mesosemia myrmecias</em> Stichel, 1910</td>
<td>1,050–1,100</td>
<td>Nov</td>
<td>One male from Quitacalzón, attracted to fish bait, in 2017.</td>
</tr>
<tr>
<td><em>Mesosemia hedwigis</em> Stichel, 1910</td>
<td>525–1,400</td>
<td>Jan–Apr, Jun, Sep–Nov</td>
<td>Frequently seen at Quitacalzón, with one record from Villa Carmen and two from San Pedro. Males outnumber females 3 to 1 and perched from 1136- 1403 hrs. (n = 6).</td>
</tr>
<tr>
<td><em>Mesosemia amaranthus</em> Stichel, 1910</td>
<td>400–1,100</td>
<td>Mar, May, Sep–Nov</td>
<td>Not rare, with most records from the Pantiacolla Lodge to Villa Carmen. There is a single record from Quitacalzón. Males perched from 1358–1359 hrs. with mutual conspecific interaction (n = 2). Almost 40% of records were females.</td>
</tr>
<tr>
<td><em>Mesosemia naiadella naiadella</em> Stichel, 1909</td>
<td>400–1,400</td>
<td>Jan, Apr, Aug–Dec</td>
<td>Frequent from the Pantiacolla Lodge to San Pedro. Perching occurred from 1240–1506 hrs. (n = 4). Almost a third of records were females.</td>
</tr>
<tr>
<td><em>Mesosemia nerine</em> Stichel, 1909</td>
<td>490–1,400</td>
<td>Mar–May, Sep–Oct</td>
<td>Found from the Amazonia Lodge to San Pedro. Surprisingly, not recorded from the Pantiacolla Lodge. Males outnumber females 7.5 to 1. 30% of all records were from San Pedro, March 26-31, 2016.</td>
</tr>
<tr>
<td><em>Mesosemia tenebricosa anica</em> H. Druce, 1904</td>
<td>400–1,450</td>
<td>Feb–May, Sep–Nov</td>
<td>Frequent from the Pantiacolla Lodge to San Pedro. Perching occurred from 0607–0939 (n = 6) and 1555–1602 hrs. (n = 4), consistent with a bimodal pattern. Less than 13% of records were females.</td>
</tr>
<tr>
<td><em>Mesosemia sirenia</em> Stichel, 1909</td>
<td>400–1,400</td>
<td>Jan–Jun, Sep–Nov</td>
<td>Very common from the Pantiacolla Lodge to Quitacalzón, with strays to San Pedro. A quarter of records were females.</td>
</tr>
<tr>
<td><em>Mesosemia judicialis</em> Butler, 1874</td>
<td>400–1,600</td>
<td>Jan–Jun, Aug–Nov</td>
<td>The most common <em>Mesosemia</em>, ranging from the Pantiacolla Lodge to Puente Unión. Active throughout the day but mate locating behavior noted 0614–0815 hrs. (n = 7) and again 1315–1541 hrs. (n = 8), suggesting bimodal frequency. Mating pair observed mid-morning. A third of all encounters were females, which were seen more often after noon.</td>
</tr>
<tr>
<td><em>Mesosemia latissima</em> Stichel, 1909</td>
<td>400–1,400</td>
<td>Jan–Mar, May, Aug–Nov</td>
<td>Quite common from Quitacalzón to San Pedro, with two records from the lowlands, at the Pantiacolla Lodge. Males outnumber females 6 to 1.</td>
</tr>
<tr>
<td><em>Mesosemia menoetes paetula</em> Stichel, 1915</td>
<td>550–1,400</td>
<td>Apr, Jun, Sep–Nov</td>
<td>3 males and 2 females from Chontachaca to San Pedro. There is an additional female from the Erika Lodge, located on the Alto Madre de Dios River between the Amazonia and PantiacollaLodges.</td>
</tr>
<tr>
<td>Species</td>
<td>Elevation range (m)</td>
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<tr>
<td>92 Mesosemia metuana glaucoma Stichel, 1909</td>
<td>1,100–2,150</td>
<td>Aug–Nov</td>
<td>Infrequently encountered between Quitacalzón and Quebrada Morro Leguía. 55% of records were females and all encounters have been during the late dry season and the transition to the rains. Males perched from 1048–1133 hrs. ( (n = 4) ).</td>
</tr>
<tr>
<td>93 Mesosemia zorea toparacha Stichel, 1910</td>
<td>1,000–2,400</td>
<td>Jan–Feb, Apr–Jun, Aug–Nov</td>
<td>Common from San Pedro to Quebrada Morro Leguía, with single records at Quitacalzón and Quebrada Buenos Aires. Reliably found resting on vegetation adjacent to the Quebrada Morro Leguía bridge. The ratio of males to females is 14 to 1. Perching occurs later in the day as elevation increases; 0651–0925 hrs. at San Pedro ( (1,375 \text{ m}, n = 2) ), 0950–1130 hrs. ( (n = 19) ) at Rocotal and Morro Leguía ( (1,950 – 2,200 \text{ m}) ).</td>
</tr>
<tr>
<td>94 Mesosemia praeculta Stichel, 1910</td>
<td>2,125–2,150</td>
<td>Sep, Nov</td>
<td>A female and a male from Quebrada Morro Leguía in 2008 and 2011, respectively.</td>
</tr>
<tr>
<td>95 Mesosemia messeis amona Hewitson, 1876</td>
<td>400–1,450</td>
<td>Jan–May, Aug–Nov</td>
<td>Very common from Quitacalzón to San Pedro with records as low as the Pantiacolla Lodge. Males perched from 1137–1644 hrs. ( (n = 22) ). They are active in early to mid-morning without displaying features of mate locating behavior. Almost a quarter of specimens were females.</td>
</tr>
<tr>
<td>96 Mesosemia lapillus Stichel, 1910</td>
<td>1,000–1,200</td>
<td>Mar–May, Sep–Nov</td>
<td>An uncommon and beautiful species that is primarily restricted to the Quitacalzón bridge area and a trail along the quebrada. Individuals perch above the quebrada in sunlit openings. There is one record from Quebrada Santa Isabel. All records were of males, which exhibit typical perching behavior between 1036–1220 hrs. ( (n = 10) ).</td>
</tr>
<tr>
<td>97 Mesosemia sp. n. 9</td>
<td>1,350–1,450</td>
<td>Aug</td>
<td>A male and a female from San Pedro on the same day in 2001.</td>
</tr>
<tr>
<td>98 Mesosemia sp. n. 10</td>
<td>1,050–1,100</td>
<td>May, Aug</td>
<td>A male and 2 females from Quitacalzón.</td>
</tr>
<tr>
<td>99 Mesosemia sp. n. 12</td>
<td>950–1,200</td>
<td>Jun, Aug, Nov</td>
<td>4 males and a female from Chontachaca to Quebrada Santa Isabel.</td>
</tr>
<tr>
<td>100 Mesosemia sp. n. 13</td>
<td>500–1,200</td>
<td>Jan, Nov</td>
<td>A male and 2 females from the Amazonia Lodge to Quebrada Santa Isabel.</td>
</tr>
<tr>
<td>101 Mesosemia croesus siccata (Stichel, 1919)</td>
<td>400–1,100</td>
<td>May, Jun, Sep–Nov</td>
<td>Common at the Pantiacolla Lodge, with records up to Quitacalzón. Males perched from 0845–1039 hrs. ( (n = 5) ). 41% of records were females.</td>
</tr>
<tr>
<td>102 Mesosemia sp. n. 15</td>
<td>400–450</td>
<td>Jun, Nov</td>
<td>6 males and a female, all from the Pantiacolla Lodge. All but one record from November. Only 2 data points for perching males, 0951 and 1146 hrs.</td>
</tr>
<tr>
<td>103 Mesosemia tenella tenella (Stichel, 1910)</td>
<td>400–950</td>
<td>May–Jun, Sep–Nov</td>
<td>Most frequently seen at the Amazonia Lodge, but recorded as high as Chontachaca. Only 16% of records were females.</td>
</tr>
<tr>
<td>104a Mesosemia icare subalbata (Seitz, 1913)</td>
<td>1,050–1,500</td>
<td>Jan–May, Aug–Sep, Nov–Dec</td>
<td>Ranging from Quitacalzón to San Pedro with 57% females.</td>
</tr>
<tr>
<td>104b Mesosemia icare icare Hübner, [1819]</td>
<td>400–950</td>
<td>Jan, Apr–Jun, Sep–Nov</td>
<td>The low elevation subspecies of ( M. ) icare, ranging up to Chontachaca ( (950 \text{ m}) ) with 23% females.</td>
</tr>
<tr>
<td>105 Mesosemia lagora (Herrich-Schäffer, [1853])</td>
<td>500–550</td>
<td>Sep–Nov</td>
<td>A male from the Amazonia Lodge and a female from the Pantiacolla Lodge. Males perched from 1234–1304 hrs. ( (n = 2) ).</td>
</tr>
<tr>
<td>106 Mesosemia hyphea pallida (Lathy, 1932)</td>
<td>500–1,200</td>
<td>Jan–Apr, Jun, Sep–Nov</td>
<td>Frequently encountered between the Amazonia Lodge and Quebrada Santa Isabel. Males perched from 1326–1522 hrs. ( (n = 6) ). 21% of the sample were females.</td>
</tr>
<tr>
<td>Species</td>
<td>Elevation range (m)</td>
<td>Monthly occurrence</td>
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</tr>
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</tr>
<tr>
<td>108 <em>Mesosemia anophthalma</em> (C. Felder and R. Felder, 1865)</td>
<td>1,050–2,000</td>
<td>Mar, Apr, Oct</td>
<td>4 males and a female from Quitacalzón to Rocotal. Perching males observed from 1335–1406 hrs. ($n = 2$). No perching was observed during morning flight activity.</td>
</tr>
<tr>
<td><em>Mesosemia tullius</em> (Fabricius, 1787)</td>
<td>500–950</td>
<td>Jan, May, Sep–Nov</td>
<td>From Mascoitania to Chontachaca with 15% females. Males perched between 1142–1412 hours ($n = 9$). Additional observations without voucher specimens occurred on ridge plateaus, hilltops, and at streamsides.</td>
</tr>
<tr>
<td>110 <em>Ectosemia eumene furia</em> (Stichel, 1910)</td>
<td>400–1,100</td>
<td>Mar–May, Sep–Nov</td>
<td>Ranges from the Pantiacolla Lodge to Quitacalzón. Half of all records came during a 6-day period in 2017 at the Pantiacolla Lodge. There were several observations of activity, but only one at 0926 hrs. with features of mate locating behavior. Almost a third of records were females.</td>
</tr>
<tr>
<td>111 <em>Ectosemia erinnya</em> (Stichel, 1910)</td>
<td>400–450</td>
<td>Nov</td>
<td>All records were from a 6-day period in 2017 at the Pantiacolla Lodge. A third of specimens were females.</td>
</tr>
<tr>
<td>112 <em>Ectosemia steli</em> (Hewitson, 1858)</td>
<td>400–650</td>
<td>Feb–May, Aug–Nov</td>
<td>Frequently encountered between the Pantiacolla Lodge and Villa Carmen. Adults were found along trails in dense shaded forest. They usually rest under leaves, on vegetation less than a meter high. Several observation times, but unable to separate chance encounter with resting position vs. mate locating behavior. A third of records were females.</td>
</tr>
<tr>
<td>113 <em>Endosemia ulrica ulrica</em> (Cramer, 1777)</td>
<td>400–750</td>
<td>Feb, May–Jun, Aug–Sep, Nov–Dec</td>
<td>A lowland species with all records between the Pantiacolla Lodge and Quebrada Bienvenida. 25% of records were females.</td>
</tr>
</tbody>
</table>

**RIODINIDAE/RIODININAE/MESOSEMIINI/NAPAENINA**

<table>
<thead>
<tr>
<th>Species</th>
<th>Elevation range (m)</th>
<th>Monthly occurrence</th>
<th>Notes and observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>115 <em>Hyphilaria parthenis</em> (Westwood, 1851)</td>
<td>400–1,100</td>
<td>May, Sep, Nov</td>
<td>Uncommon, with 4 males and 2 females from the Pantiacolla Lodge to Quitacalzón.</td>
</tr>
<tr>
<td>116 <em>Hyphilaria nicia</em> Hübner, [1819]</td>
<td>400–1,100</td>
<td>Mar–May, Sep–Nov</td>
<td>Frequently encountered from the Pantiacolla Lodge to Quitacalzón. Males perched from 1422–1550 hrs. ($n = 11$); usually at 4–6m height. Males outnumbered females 9 to 1.</td>
</tr>
<tr>
<td>117 <em>Hyphilaria anthias</em> (Hewitson, 1874)</td>
<td>1,350–1,400</td>
<td>Apr</td>
<td>One male from San Pedro in 2015.</td>
</tr>
<tr>
<td>118 <em>Crema</em> (<em>Crema</em>) <em>heteroea</em> H. W. Bates, 1867</td>
<td>400–1,100</td>
<td>Jan–Feb, Apr–Jun, Aug–Sep, Nov–Nov</td>
<td>Frequent below 600 m, with two records from Quitacalzón. Males perched from 1030–1138 hrs. ($n = 5$). Females constituted 11% of records.</td>
</tr>
<tr>
<td>119 <em>Napaea betiana</em> (H. W. Bates, 1867)</td>
<td>400–1,100</td>
<td>Apr, Nov</td>
<td>A male from the Pantiacolla Lodge and a photo of a male from Quitacalzón.</td>
</tr>
<tr>
<td>120 <em>Napaea mellosa</em> J. Hall and Harvey, 2005</td>
<td>1,050–1,100</td>
<td>May</td>
<td>A single female from Quitacalzón.</td>
</tr>
<tr>
<td>121 <em>Ithomiola</em> (<em>Ithomiola</em>) <em>floralis celtilla</em> (Hewitson, 1870)</td>
<td>500–1,400</td>
<td>Jan–Jun, Aug–Nov</td>
<td>Very common at Quitacalzón, with records from the Amazonia Lodge to San Pedro. Males perched from 1118–1448 hrs. ($n = 26$). Females were rarely encountered (5% of records).</td>
</tr>
<tr>
<td>122 <em>Ithomiola</em> (<em>Ithomiola</em>) <em>orpheus</em> (Westwood, 1851)</td>
<td>475–1,100</td>
<td>Feb, Oct</td>
<td>A male, perching at 1125 hrs., from the Amazonia Lodge and a female from Quitacalzón.</td>
</tr>
<tr>
<td>Species</td>
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</tr>
<tr>
<td>123 Ithomiola (Ithomiola) bajotanos J. Hall, 2005</td>
<td>1,050–1,650</td>
<td>Sep–Nov</td>
<td>6 males and 3 females from Quitacalzón to Puente Unión. All encounters during the transition from the dry season to the rains.</td>
</tr>
<tr>
<td>124 Ithomiola (Ithomiola) tanos (Stichel, 1910)</td>
<td>1,050–2,250</td>
<td>Jan, Mar, Aug–Nov</td>
<td>Frequent from San Pedro to Quebrada Morro Leguía, with 13% females. Most records during brief periods (4 days or less) in Aug. 2009, Nov. 2012, Nov. 2017, and Oct. 2018. Males perched from 0856–1140 hrs. (n = 10); usually 2-4m (but up to 6m) above-ground level on leaf tip.</td>
</tr>
<tr>
<td>125 Ithomiola (Ithomiola) sp. n. (aff. tanos (Stichel, 1910))</td>
<td>1,975–2,300</td>
<td>Oct</td>
<td>A male (photo) from Rocotal and a female from Quebrada Morro Leguía.</td>
</tr>
<tr>
<td>126 Ithomiola (Hermathena) candidata (Hewitson, 1874)</td>
<td>1,000–1,400</td>
<td>May, Aug, Oct–Nov</td>
<td>Uncommon at Quitacalzón, with one record from San Pedro. Males rest under leaves on trees above quebradas, at heights of 6 to 8m. No voucher specimens with specific times but perching was observed at 5-7m height during mid-late morning with conspecific flight interaction. 20% of records were females.</td>
</tr>
<tr>
<td>Riodinidae/Riodininae/Eurybiini</td>
<td>Eurybia nicaeus nicaeus (Fabricius, 1775)</td>
<td>400–900</td>
<td>Jan–Feb, Apr–Jun, Sep–Nov</td>
</tr>
<tr>
<td>128 Eurybia caeruleensis caeruleensis H. Druce, 1904</td>
<td>400–1,100</td>
<td>Jan–Jun, Sep–Nov</td>
<td>Common at the Amazonia and Pantiacolla Lodges with two records from Quitacalzón. Behavior similar to E. nicaeus with male/female ratio of 6 to 1. Males perched from 1533–1604 hrs. (n = 3).</td>
</tr>
<tr>
<td>129 Eurybia franciscana C. Felder and R. Felder, 1862</td>
<td>400–1,100</td>
<td>Feb–Jun, Sep–Nov</td>
<td>Slightly less frequently encountered than E. nicaeus or E. caeruleensis, but still quite common at the Amazonia and Pantiacolla Lodges. One record from Quitacalzón. Habits were similar to those species and males outnumber females 28 to 1. Perching males observed from 1409–1602 hrs. (n = 5). This species is often observed after disturbing individuals from resting or roosting sites.</td>
</tr>
<tr>
<td>130 Eurybia annulata Stichel, 1910</td>
<td>400–1,450</td>
<td>Jan–Jun, Aug–Nov</td>
<td>The most common Eurybia, ranging from the Pantiacolla Lodge to San Pedro. A common visitor to flowers in lodge gardens. Males perched from 1106–1356 hrs. (n = 15). Like other Eurybia, females were much less commonly encountered than males.</td>
</tr>
<tr>
<td>131 Eurybia dardus fassli Seitz, 1913</td>
<td>400–1,400</td>
<td>Jan–Jun, Sep–Dec</td>
<td>Occurs from the Pantiacolla Lodge to San Pedro. Similar in appearance and habits to E. annulata and like that species, fond of garden flowers. Males perched from 0951–1319 hrs. (n = 17). Almost 13 to 1 ratio of males to females.</td>
</tr>
<tr>
<td>132 Eurybia patrona promota Stichel, 1910</td>
<td>400–550</td>
<td>Feb, May–Jun, Sep–Nov</td>
<td>Uncommon from the Pantiacolla Lodge to Villa Carmen. Perching observed from 1430–1608 hrs. (n = 3). One third of records were females.</td>
</tr>
<tr>
<td>133 Eurybia juturna hari Weeks, 1901</td>
<td>525–1,200</td>
<td>Jan–Jun, Aug–Dec</td>
<td>Uncommon and primarily restricted to small quebradas near Quitacalzón. There is one record from Villa Carmen and another from Quebrada Santa Isabel. Males search for mates 2 to 4m above small streams from 1100 to 1300 hrs. Almost a quarter of records were females.</td>
</tr>
<tr>
<td>134 Eurybia albiseriata stellifera Stichel, 1910</td>
<td>400–950</td>
<td>Jan–Feb, Apr–Jun, Sep–Nov</td>
<td>Frequent from the Pantiacolla Lodge to Pilcopata, with one record from Chontachaca. Almost 40% of records were females.</td>
</tr>
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</tr>
<tr>
<td>Eurybia elvina granulata</td>
<td>400–1,400</td>
<td>Apr, Jun, Sep–Oct</td>
<td>Less common than <em>E. albiseriata</em>, with 5 males and 2 females. Ranges from the Pantiacolla Lodge to the Amazonia Lodge. There is also a male from San Pedro.</td>
</tr>
<tr>
<td>Alesia prema (Godart, [1824])</td>
<td>925–975</td>
<td>Mar</td>
<td>One male from Chontachaca in 2016.</td>
</tr>
<tr>
<td>Alesia telephae (Boisduval, 1836)</td>
<td>550–600</td>
<td>Nov</td>
<td>A single female from Quebrada Bienvenida.</td>
</tr>
<tr>
<td>Alesia amesis (Cramer, 1777)</td>
<td>400–950</td>
<td>Feb, Apr, Jun, Sep–Dec</td>
<td>Common from the Pantiacolla Lodge to Pilcopata, with one record from Chontachaca. Males perched from 12:07–14:12 hrs. (<em>n</em> = 4). 51% of encounters were with females.</td>
</tr>
<tr>
<td>Alesia hemiurga H. W. Bates, 1867</td>
<td>400–450</td>
<td>Jun, Oct–Nov</td>
<td>Uncommon, and restricted to trails at the Pantiacolla Lodge. One third of records were females.</td>
</tr>
<tr>
<td>Lyropteryx apollonia apollonia Westwood, 1851</td>
<td>500–1,400</td>
<td>Jan–Jun, Sep–Nov</td>
<td>Not common, but occurs from Amazonia to San Pedro. Adults often sit on moist sand or mud and occasionally occur in small groups (5 specimens on 25-Sep-2014 at Chontachaca). Less than 14% of records were of females. One female specimen belongs to form <em>canens</em> Stichel, 1910.</td>
</tr>
<tr>
<td>Necyria bellona whitelyiana H. Druce, 1874</td>
<td>1,050–2,150</td>
<td>Jan–May, Aug–Dec</td>
<td>Occurs from Quitacalzón to Quebrada Morro Leguía, with most encounters between San Pedro and Rocotal. Only 15% of encounters were with females.</td>
</tr>
<tr>
<td>Cyrenia martia martia Westwood, 1851</td>
<td>400–950</td>
<td>Jun, Sep–Nov</td>
<td>Occurs at the Amazonia and Pantiacolla Lodges and is common at Chontachaca. Only seen on traps and vegetation baited with rotten fish. Males outnumber females 16 to 1.</td>
</tr>
<tr>
<td>Ancyluris &quot;meliboeus&quot; eudaemon Stichel, 1910</td>
<td>475–1,400</td>
<td>Jan–Jun, Aug–Nov</td>
<td>The most common Ancyluris, with males very attracted to bait. Ranges from just north of Salvación to San Pedro. Males perched from 07:25–10:52 hrs. (<em>n</em> = 27). 18% of records were females.</td>
</tr>
<tr>
<td>Ancyluris rubrofilum Stichel, 1909</td>
<td>500–1,400</td>
<td>Jan–Feb, Jun, Aug–Nov</td>
<td>Frequently seen at Chontachaca and Quitacalzón, with strays as low as the Amazonia Lodge and as high as San Pedro. Males perched from 08:18–09:04 hrs. (<em>n</em> = 2). Attracted to bait, with females as 13% of sample. It is not clear if A. &quot;meliboeus&quot; eudaemon and A. rubrofilum are separate species and/or how to reliably separate them.</td>
</tr>
<tr>
<td>Ancyluris etias mendita (H. Druce, 1904)</td>
<td>500–1,050</td>
<td>Jan–Feb, Apr–Jun, Sep–Nov</td>
<td>Uncommon from the Amazonia Lodge to Quitacalzón. Attracted to bait. 17 male sightings, without a single female.</td>
</tr>
<tr>
<td>Ancyluris tedea silvicultrix Stichel, 1909</td>
<td>950–1,200</td>
<td>Jan–Feb, Apr–Jun, Aug–Nov</td>
<td>Uncommon from Chontachaca to Quebrada Santa Isabel. Comes to bait, with females comprising 22% of the sample.</td>
</tr>
<tr>
<td>Ancyluris auleste seryxo (Saunders, 1859)</td>
<td>500–1,400</td>
<td>Jan–Feb, Apr–May, Aug–Nov</td>
<td>Occurs from the Amazonia Lodge to San Pedro. Attracted to bait, with 26% females.</td>
</tr>
<tr>
<td>Ancyluris colubra (Saunders, 1859)</td>
<td>950–1,200</td>
<td>Jan–Jun, Aug–Nov</td>
<td>Common at Quitacalzón and strongly attracted to bait. Ranges from Chontachaca to Quebrada Santa Isabel. Females were only 6% of sample.</td>
</tr>
</tbody>
</table>
| Ancyluris mira thaumasia Stichel, 1910 | 1,050–1,725 | Jan–Jun, Aug–Nov | Very common at Quitacalzón, ranging to San Pedro. There is one record from the Mirador, at 1,720 m. Strongly attracted to bait, with 9% of encounters being females. Perching males observed from 10:35–13:03 hrs. (*n* = 2). An insufficient number of
<table>
<thead>
<tr>
<th>Species</th>
<th>Elevation range (m)</th>
<th>Monthly occurrence</th>
<th>Notes and observations</th>
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<tbody>
<tr>
<td>Ancyluris formosissima venerabilis Stichel, 1916</td>
<td>1,050–1,450</td>
<td>Jan–Feb, May–Jun, Oct</td>
<td>The least frequently encountered Ancyluris in the Valley, this species is always found in proximity to Quebradas. Fond of resting on vegetation, 2 to 5m over the water, at mid-day. There were 6 males and a female from Quitacalzón and a male from San Pedro. Not attracted to fish bait. Perching observed between 1152–1326 hrs. (without voucher specimens).</td>
</tr>
<tr>
<td>Ancyluris inca miranda (Hewitson, 1874)</td>
<td>500–1,720</td>
<td>Jan–May Aug–Nov</td>
<td>Frequent at Quitacalzón. Ranging from the Amazonia Lodge to the Mirador. Perching observed from 0842–1013 hrs. ((n = 7)), with wings spread on leaves, at 3-5m height. Only 4% of records were females.</td>
</tr>
<tr>
<td>Rhetus arcus huana (Saunders, 1859)</td>
<td>400–500</td>
<td>Jun, Nov</td>
<td>2 males, one each from the Amazonia and Pantiacolla Lodges. Both were attracted to fish-baited traps.</td>
</tr>
<tr>
<td>Rhetus perianter laonome (Morisse, 1838)</td>
<td>400–1,400</td>
<td>Feb, Apr–Jun, Sep–Nov</td>
<td>Most common below 600 m, with records as high as San Pedro. 12% of records were females.</td>
</tr>
<tr>
<td>Rhetus dysonii psecas (Saunders, 1850)</td>
<td>1,050–2,425</td>
<td>Jan–Jun, Aug–Nov</td>
<td>Very common at Quitacalzón and above, where it gradually replaces R. perianter. There is one record from Villa Carmen that is likely mis-labeled. 10% of records were of females.</td>
</tr>
<tr>
<td>Chorinea octauius ssp. n.</td>
<td>500–1,050</td>
<td>May–Jun Sep–Nov</td>
<td>Uncommon from the Amazonia Lodge to Quitacalzón. Attracted to bait, and in one case to a dead snake. 12 males have been observed, but no females.</td>
</tr>
<tr>
<td>Chorinea sylphina (H. W. Bates, 1868)</td>
<td>1,000–2,150</td>
<td>Mar–Apr Oct–Nov</td>
<td>Common at Quitacalzón and ranging up to the bridge at Quebrada Morro Leguía. Adults were frequently observed sitting on sand and were attracted to bait. Males perched from 0909–1257 hrs. ((n = 7)). Only one of 71 specimens was a female.</td>
</tr>
<tr>
<td>Chorinea sp. n. 2</td>
<td>1,600–2,500</td>
<td>Jan–Feb, Apr, Oct–Dec</td>
<td>Differs from C. sylphina in the red markings on the anal angle of the dorsal hindwing. This species is most often seen between 1000 and 1200 hrs. around the Quebrada Morro Leguía bridge. It ranges from Puente Unión to Quebrada Buenos Aires (the highest elevation that a riodinid has been observed in the Valley). Known from 22 males and 1 female.</td>
</tr>
<tr>
<td>Ithomeis astrea (C. Felder and R. Felder, 1862)</td>
<td>1,100–1,400</td>
<td>Jan, May Sep, Nov</td>
<td>4 males and 3 females from Quitacalzón to San Pedro.</td>
</tr>
<tr>
<td>Ithomeis aurantiaca lauronia Schaus, 1902</td>
<td>500–1,100</td>
<td>Jan, Mar Sep–Nov</td>
<td>From the Amazonia Lodge to Quitacalzón, where it is most often seen. Attracted to bait, with 11% of records being females.</td>
</tr>
<tr>
<td>Isapis agyr tus sestus (Stichel, 1909)</td>
<td>550–1,100</td>
<td>Jan–Feb May–Jun, Sep–Nov</td>
<td>From the Erika Lodge to Quitacalzón. It is very common at Chontachaca when fish bait is sprayed on vegetation. 10% of observations were females.</td>
</tr>
<tr>
<td>Brachyglenis esthema esthema C. Felder and R. Felder, 1862</td>
<td>500–1,725</td>
<td>Jan–Jun Aug–Nov</td>
<td>Frequent at the Amazonia and Pantiacolla Lodges. There is one Cuzco Department record from Atalaya. Females outnumber males 23 to 1. Fond of sitting on sand and mud.</td>
</tr>
<tr>
<td>Notheme erota diadema Stichel, 1910</td>
<td>400–525</td>
<td>May–Jun Sep–Nov</td>
<td></td>
</tr>
<tr>
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</tr>
<tr>
<td>167</td>
<td>Monethe albertus albertus</td>
<td>400–1,200</td>
<td>Mar–May, Aug–Dec</td>
</tr>
<tr>
<td>168</td>
<td>Paraphthonia cteatus</td>
<td>500–1,400</td>
<td>Sep–Nov</td>
</tr>
<tr>
<td>169</td>
<td>Chalodeta theodora (C. Felder and R. Felder, 1862)</td>
<td>400–1,100</td>
<td>Jan–Feb, Apr–Jun, Sep–Nov</td>
</tr>
<tr>
<td>170</td>
<td>Chalodeta lypera (H. W. Bates, 1868)</td>
<td>400–1,050</td>
<td>Jan, Jun, Oct–Nov</td>
</tr>
<tr>
<td>171</td>
<td>Chalodeta panurga Stichel, 1910</td>
<td>400–450</td>
<td>Jun</td>
</tr>
<tr>
<td>172</td>
<td>Chalodeta pescada J. Hall and Willmott, 1998</td>
<td>1,700–1,725</td>
<td>Feb</td>
</tr>
<tr>
<td>173</td>
<td>Chalodeta chitinosa J. Hall, 2002</td>
<td>400–1,100</td>
<td>Jan–Feb, Apr–May, Sep–Nov</td>
</tr>
<tr>
<td>176</td>
<td>Metacharis lucius (Fabricius, 1793)</td>
<td>400–550</td>
<td>Jan, Jun, Sep–Nov</td>
</tr>
<tr>
<td>177</td>
<td>Metacharis regalis regalis Butler, 1867</td>
<td>400–1,100</td>
<td>Feb, May–Jun, Sep–Nov</td>
</tr>
<tr>
<td>179</td>
<td>Metacharis syloes Hewitson, 1877</td>
<td>1,050–1,400</td>
<td>Aug, Oct–Nov</td>
</tr>
<tr>
<td>180</td>
<td>Carimothis erythromelas erythromelas (Sepp, [1840])</td>
<td>500–550</td>
<td>Oct</td>
</tr>
<tr>
<td>181</td>
<td>Carimothis erotylus Stichel, 1910</td>
<td>1,050–1,400</td>
<td>Jun, Nov</td>
</tr>
<tr>
<td>182</td>
<td>Phales heliconides ssp. n.</td>
<td>425–1,100</td>
<td>Sep–Nov</td>
</tr>
<tr>
<td>184</td>
<td>Syrmatia aethiops Staudinger, 1888</td>
<td>500–550</td>
<td>Sep–Nov</td>
</tr>
</tbody>
</table>


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<tr>
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<tbody>
<tr>
<td><strong>185</strong> <em>Chamaelimnas tircis iaeris</em> &lt;br&gt;H. W. Bates, 1868</td>
<td>500–600</td>
<td>May, Sep–Oct</td>
<td>Uncommon from the Amazonia Lodge to Pilcopata. Females represent almost 30% of records.</td>
</tr>
<tr>
<td><strong>186</strong> <em>Chamaelimnas briola urbana</em> &lt;br&gt;Stichel, 1916</td>
<td>400–500</td>
<td>Oct–Nov</td>
<td>2 males from the Pantiacolla Lodge and a female from the Amazonia Lodge.</td>
</tr>
<tr>
<td><strong>187</strong> <em>Detritivora matic</em> &lt;br&gt;(Harvey and J. Hall, 2002)</td>
<td>400–1,450</td>
<td>Jan–Feb, Apr–Jun, Aug–Nov</td>
<td>Common from the Pantiacolla Lodge to Quitacalzón, with one record from San Pedro. Male/female ratio of 11 to 3.</td>
</tr>
<tr>
<td><strong>188</strong> <em>Detritivora manu</em> &lt;br&gt;(Harvey and J. Hall, 2002)</td>
<td>400–1,050</td>
<td>Jan–Feb, May, Jul–Nov</td>
<td>Common from the Pantiacolla Lodge to Villa Carmen, with one record each from Chontachaca and Quitacalzón. 36% of records were females.</td>
</tr>
<tr>
<td><strong>189</strong> <em>Detritivora zama</em> &lt;br&gt;(H. W. Bates, 1868)</td>
<td>400–950</td>
<td>Jan, Oct–Nov</td>
<td>4 males from the Pantiacolla Lodge and two males from Chontachaca.</td>
</tr>
<tr>
<td><strong>190</strong> <em>Putridivora argyrea</em> &lt;br&gt;(H. W. Bates, 1868)</td>
<td>400–1,200</td>
<td>Apr–May, Sep–Oct</td>
<td>Common at the Amazonia Lodge. Rarely encountered elsewhere (Pantiacolla Lodge, Quitacalzón, and Santa Isabel). Perching from 0635–0859 hrs. ((n = 13)); at 1–2 m height; at or near forest edges. Male/female ratio of 3 to 1.</td>
</tr>
<tr>
<td><strong>191</strong> <em>Charis anius</em> &lt;br&gt;(Cramer, 1776)</td>
<td>400–1,400</td>
<td>Jan–Jun Sep–Dec</td>
<td>Very common from the Pantiacolla Lodge to Quitacalzón, with a single record from San Pedro. Perching from 0634–1010 hrs. ((n = 13)). Despite the wide range of perching times, a bimodal pattern was not suggested. Females were 27% of sample.</td>
</tr>
<tr>
<td><strong>192</strong> <em>Parcella amarynthina</em> &lt;br&gt;(C. Felder and R. Felder, 1865)</td>
<td>500–950</td>
<td>Feb, Sep–Nov</td>
<td>7 males from the Amazonia Lodge to Chontachaca. This species flies very low to the ground and is fond of sitting on damp sand or mud. It is also attracted to urine-soaked soil.</td>
</tr>
<tr>
<td><strong>193</strong> <em>Caria trochilus arete</em> &lt;br&gt;(C. Felder and R. Felder, 1861)</td>
<td>500–1,050</td>
<td>Jan, Apr–May, Sep–Nov</td>
<td>Frequently encountered at the Amazonia Lodge. Occurs from there to Quitacalzón. Male/female ratio of 8 to 1. Males of <em>Caria</em> were attracted to damp and urine-soaked soil. Males perched from 0752–0920 hrs. ((n = 4)); at 5–6m height; usually with wings spread under leaf (but occasionally on upper leaf surface).</td>
</tr>
<tr>
<td><strong>194</strong> <em>Caria castalia</em> &lt;br&gt;(Ménétriés, 1855)</td>
<td>500–575</td>
<td>Feb, Oct–Nov</td>
<td>3 males from the Amazonia Lodge and the road above Atalaya, between 2011 and 2013.</td>
</tr>
<tr>
<td><strong>195</strong> <em>Caria mantinea mantinea</em> &lt;br&gt;(C. Felder and R. Felder, 1861)</td>
<td>400–500</td>
<td>May, Sep, Nov</td>
<td>6 males from the Amazonia Lodge and one male from the Pantiacolla Lodge.</td>
</tr>
<tr>
<td><strong>196</strong> <em>Caria plutargus amazonica</em> &lt;br&gt;(H. W. Bates, 1868)</td>
<td>500–600</td>
<td>Sep–Nov</td>
<td>12 males from the Amazonia Lodge to Pilcopata. All records were during the transition to the rainy season.</td>
</tr>
<tr>
<td><strong>197</strong> <em>Caria chrysame psittacus</em> &lt;br&gt;(Hopffer, 1874)</td>
<td>1,100–1,450</td>
<td>Oct–Nov</td>
<td>6 males from Quitacalzón to San Pedro. Males were attracted to damp soil and bait. All records were during the transition to the rainy season.</td>
</tr>
<tr>
<td><strong>198</strong> <em>Caria sponsa</em> &lt;br&gt;(Staudinger, [1887])</td>
<td>500–1,050</td>
<td>Sep, Nov</td>
<td>3 males from the Amazonia Lodge and one from Quitacalzón. All records were during the transition to the rainy season.</td>
</tr>
<tr>
<td><strong>199</strong> <em>Crocozona fasciata fasciata</em> &lt;br&gt;(Hopffer, 1874)</td>
<td>1,050–1,600</td>
<td>Feb–Jun, Aug–Dec</td>
<td>Very common from Quitacalzón to Puente Unión. Perching from 0833–1053 hrs. ((n = 16)). 18% of records were females.</td>
</tr>
<tr>
<td><strong>200</strong> <em>Crocozona coecias coecias</em> &lt;br&gt;(Hewitson, 1866)</td>
<td>400–1,100</td>
<td>Feb, Apr–May, Aug–Dec</td>
<td>Common from the Pantiacolla Lodge to Quitacalzón. Males perched from 0746–0907 hrs. ((n = 8)). Like <em>C. fasciata</em>, 18% of records were females.</td>
</tr>
<tr>
<td>Species</td>
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</tr>
<tr>
<td>201 <em>Baeotis elegantula</em> Hopffer, 1874</td>
<td>1,050–2,150</td>
<td>Jan–Jun, Aug–Nov</td>
<td>Abundant from Quitacalzón to the Mirador. Three records from Quebrada Morro Leguía. Attracted to bait and to moist soil. No females among 75 individuals observed.</td>
</tr>
<tr>
<td>202 <em>Baeotis creusis</em> Hewitson, 1874</td>
<td>1,950–2,500</td>
<td>Jan–Feb, Oct–Dec</td>
<td>Common from Rocotal to Quebrada Yanamayo, with one record from Quebrada Buenos Aires. Only males recorded (66 specimens). Most frequently seen at moisture where small quebradas cross the road. At Rocotal we observed perching behavior by males from 1136–1238 hrs. ((n = 9)), while other individuals were simultaneously puddling, in a separate area, from 1130–1215 hrs.</td>
</tr>
<tr>
<td>203 <em>Baeotis staudingeri</em> D’Abrera, 1994</td>
<td>500–1,050</td>
<td>May, Sep–Nov</td>
<td>10 males from the Amazonia Lodge to Quitacalzón. Males perched from 1510–1546 hrs. ((n = 2)) and are attracted to rotten fish and urine.</td>
</tr>
<tr>
<td>205 <em>Baeotis felix felix</em> Hewitson, 1874</td>
<td>1,050–1,600</td>
<td>Jan–Jun, Aug, Oct–Nov</td>
<td>Frequent from Quitacalzón to Puente Unión. There were two low-elevation records that may be mis-labeled. <em>B. felix</em> is attracted to bait and moist soil. Mate locating behavior from 1202–1526 hrs. ((n = 33)). In contrast to most other riodinid perching, male mate locating behavior involves almost continuous flight between several small trees (up to 7–8m), often at forest edges, along streams. Only occasionally do the males alight on leaves. Flight height is variable, between 2–8m, and this species often encircles treetops and interacts with conspecific males. Similar behavior has been seen with certain other species in this genus. Later in the perching interval, individuals tended to fly less and to spend more time at the perch site. It is the only <em>Baeotis</em> species whose female has been observed (20% of records).</td>
</tr>
<tr>
<td>206 <em>Lasaia arsis</em> Staudinger, [1887]</td>
<td>500–1,050</td>
<td>May, Sep–Nov</td>
<td>6 males from the Amazonia Lodge to Quitacalzón. <em>Lasaia</em> were strongly attracted to moist or urine-soaked soil.</td>
</tr>
<tr>
<td>207 <em>Lasaia agesilas agesilas</em> (Latreille, [1809])</td>
<td>500–1,050</td>
<td>Jan–Feb, Apr, Sep–Nov</td>
<td>Occurs from the Amazonia Lodge to Quitacalzón. Male/female ratio of 19 to 1.</td>
</tr>
<tr>
<td>208 <em>Lasaia moeros</em> Staudinger, 1888</td>
<td>1,100–1,400</td>
<td>May, Nov</td>
<td>4 males from Quitacalzón to San Pedro.</td>
</tr>
<tr>
<td>209 <em>Lasaia</em> sp. n.</td>
<td>1,700–1,725</td>
<td>Feb</td>
<td>A male and 2 females from the Mirador between 2010 and 2013, during the rainy season. Subsequent visits to this location during the rainy season have failed to produce additional observations.</td>
</tr>
<tr>
<td>210 <em>Amarynthis meneria</em> (Cramer, 1776)</td>
<td>400–1,200</td>
<td>Jan–Feb, Apr–Jun, Aug–Dec</td>
<td>Frequent between the Pantiacolla Lodge and Quebrada Santa Isabel. Commonly active throughout the day. Perching observed only in early morning. 19% of records were of females.</td>
</tr>
<tr>
<td>211 <em>Exoplisia cadmeis</em> (Hewitson, 1866)</td>
<td>400–600</td>
<td>Feb, May–Jun, Sep–Nov</td>
<td>16 males from the Pantiacolla Lodge to Quebrada Bienvenida.</td>
</tr>
</tbody>
</table>
### Table: Riodinid Fauna of the Cosñipata Region, Peru

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<tr>
<th>Species of Riodinid</th>
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<tr>
<td>Melanis passiena (Hewitson, 1870)</td>
<td>1,050–2,000</td>
<td>Feb, Nov</td>
<td>Rarely encountered, with a female from Quitacalzón and a photo of a male from Rocotal.</td>
</tr>
<tr>
<td>Melanis marathon stenotaenia (Röber, 1904)</td>
<td>400–1,100</td>
<td>Jan–Feb, Apr–May, Aug–Nov</td>
<td>Common from the Amazonia Lodge to Villa Carmen, with records from the Pantiacolla Lodge to Quitacalzón. Attracted to bait. Active during morning and early afternoon. Only two data points for perching activity, 1034 and 1105 hrs. Male/female ratio of 4.5 to 1.</td>
</tr>
<tr>
<td>Siseme alectryo lucilius Hopffer, 1874</td>
<td>400–2,150</td>
<td>Jan–Jun, Aug–Nov</td>
<td>Common from Quitacalzón to the Mirador, with records up to Quebrada Morro Leguías. Male/female ratio of 11 to 1. Attracted to moist or urine-soaked soil. The record from Pantiacolla Lodge is very doubtful.</td>
</tr>
<tr>
<td>Siseme atrytone Thieme, 1907</td>
<td>1,050–1,400</td>
<td>May, Aug</td>
<td>3 males from Quitacalzón to San Pedro.</td>
</tr>
<tr>
<td>Siseme neurodes caudalis H. W. Bates, 1868</td>
<td>950–1,400</td>
<td>Jan–Apr, Aug–Nov</td>
<td>Frequent from Quitacalzón to San Pedro, with one record from Chontachaca. 41 males encountered, without a single female. Most frequently observed puddling at moist or urine-soaked soil. Mate locating behavior observed at San Pedro at 6m height, along stream, from 1207–1246 hrs. ((n = 2)). At least 3 additional observations occurred at the same site without voucher specimen.</td>
</tr>
<tr>
<td>Mesene leucophrys H. W. Bates, 1868</td>
<td>400–650</td>
<td>May, Sep–Nov</td>
<td>7 males and a female from the Pantiacolla Lodge to Pilcopata.</td>
</tr>
<tr>
<td>Mesene paraena ssp. n.</td>
<td>500–1,050</td>
<td>May, Aug</td>
<td>The most frequently seen Mesene, with all but one record from the Amazonia Lodge. The remaining record is from Quitacalzón in 2009. Males perch (1538–1604 hrs. ((n = 3))) over small quebradas on vegetation 1 to 2m from the water and outnumber females 4 to 1.</td>
</tr>
<tr>
<td>Mesene cyneas (Hewitson, 1874)</td>
<td>1,050–1,400</td>
<td>Feb, Sep</td>
<td>One female from Quitacalzón in 1989 and a second female from San Pedro in 2010.</td>
</tr>
<tr>
<td>Mesene leucogyna notia J. Hall and Lamas, 2007</td>
<td>1,100–1,600</td>
<td>Aug–Sep, Nov</td>
<td>One male and 3 females from Quitacalzón to Puente Unión.</td>
</tr>
<tr>
<td>Mesene monostigma discolor Stichel, 1929</td>
<td>475–500</td>
<td>Sep</td>
<td>A female (2011) and male (2014) from the Amazonia Lodge.</td>
</tr>
<tr>
<td>Mesene margaretta anartia J. Hall and Lamas, 2007</td>
<td>500–750</td>
<td>Feb–Sep, Oct</td>
<td>2 males and a female from the Amazonia Lodge during 2010 and 2011. There is also a record of a female from Pilcopata in 1975.</td>
</tr>
<tr>
<td>Mesene silaris Godman and Salvin, 1878</td>
<td>475–500</td>
<td>Oct</td>
<td>A single male from the Amazonia Lodge in 2010.</td>
</tr>
<tr>
<td>Mesene celina (H. W. Bates, 1868)</td>
<td>500–1,050</td>
<td>Apr–May, Sep–Nov</td>
<td>12 males from the Amazonia Lodge and 1 female from Quitacalzón. Males perched from 1628–1645 hrs. ((n = 3)) at edge of secondary growth (2m height with wings spread under leaf). Con-specific males were engaged, with spiraling interaction.</td>
</tr>
<tr>
<td>Esthemopsis (Esthemopsis) jesse aeniacus Hewitson, 1876</td>
<td>1,050–1,725</td>
<td>Feb, Sep, Nov</td>
<td>4 males and 2 females from Quitacalzón to the Mirador.</td>
</tr>
<tr>
<td>Esthemopsis (Esthemopsis) sericina (H. W. Bates, 1867)</td>
<td>600–1,050</td>
<td>Jan–Feb, Jun</td>
<td>A male and 2 females from the Río Tono (near Pilcopata) to Quitacalzón.</td>
</tr>
<tr>
<td>Species</td>
<td>Elevation range (m)</td>
<td>Monthly occurrence</td>
<td>Notes and observations</td>
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</tr>
<tr>
<td><strong>230</strong></td>
<td><strong>Esthemopsis (Lucillella) pomposa</strong> (Stichel, 1910)</td>
<td>1,050–1,725</td>
<td>Jan–Jun, Aug–Sep, Nov</td>
</tr>
<tr>
<td><strong>231</strong></td>
<td><strong>Symmachia (Symmachia) probetor</strong> (Stoll, 1782)</td>
<td>925–950</td>
<td>Jun</td>
</tr>
<tr>
<td><strong>232</strong></td>
<td><strong>Symmachia (Symmachia) estellina</strong> Gallard, 2008</td>
<td>450–1,100</td>
<td>Jan, Jul, Sep, Nov</td>
</tr>
<tr>
<td><strong>233</strong></td>
<td><strong>Symmachia (Symmachia) rubina separata</strong> Lathy, 1932</td>
<td>475–600</td>
<td>Apr–May, Sep–Nov</td>
</tr>
<tr>
<td><strong>234</strong></td>
<td><strong>Symmachia (Symmachia) suevia</strong> Hewitson, 1877</td>
<td>1,100–1,400</td>
<td>Apr, Nov</td>
</tr>
<tr>
<td><strong>235</strong></td>
<td><strong>Symmachia (Symmachia) pardala</strong> Stichel, 1924</td>
<td>1,700–1,725</td>
<td>Feb</td>
</tr>
<tr>
<td><strong>236</strong></td>
<td><strong>Symmachia (Symmachia) accusatrix</strong> Westwood, 1851</td>
<td>500–525</td>
<td>Nov</td>
</tr>
<tr>
<td><strong>237</strong></td>
<td><strong>Symmachia (Symmachia) busbyi</strong> J. Hall and Willmott, 2007</td>
<td>1,050</td>
<td>Nov</td>
</tr>
<tr>
<td><strong>238</strong></td>
<td><strong>Symmachia (Symmachia) aurigera</strong> (Weeks, 1902)</td>
<td>1,100–1,400</td>
<td>Jan, Aug</td>
</tr>
<tr>
<td><strong>239</strong></td>
<td><strong>Symmachia (Symmachia) tricolor</strong> Hewitson, 1867</td>
<td>1,050–1,100</td>
<td>Nov</td>
</tr>
<tr>
<td><strong>240</strong></td>
<td><strong>Symmachia (Symmachia) sp. n.</strong></td>
<td>1,700–1,725</td>
<td>Feb, Oct</td>
</tr>
<tr>
<td><strong>241</strong></td>
<td><strong>Symmachia (Mesenopsis) lithosina cynosema</strong> (Hewitson, 1874)</td>
<td>500–1,400</td>
<td>Jan–Feb, Apr–Aug, Nov</td>
</tr>
<tr>
<td><strong>242</strong></td>
<td><strong>Symmachia (Xenandra) helius cruentata</strong> (Stichel, 1909)</td>
<td>1,100</td>
<td>Nov</td>
</tr>
<tr>
<td><strong>243</strong></td>
<td><strong>Symmachia (Xenandra) poliotactis</strong> (Stichel, 1910)</td>
<td>500</td>
<td>Oct</td>
</tr>
<tr>
<td><strong>244</strong></td>
<td><strong>Phaenochitonia sophists sophistes</strong> (H. W. Bates, 1868)</td>
<td>1,100</td>
<td>Feb</td>
</tr>
<tr>
<td><strong>245</strong></td>
<td><strong>Pterographium (Pirascca) arbuscula arbuscula</strong> (Möschler, 1883)</td>
<td>1,050</td>
<td>Apr</td>
</tr>
<tr>
<td><strong>246</strong></td>
<td><strong>Pterographium (Pirascca) iasis</strong> (Godman, 1903)</td>
<td>1,200</td>
<td>Apr</td>
</tr>
<tr>
<td><strong>247</strong></td>
<td><strong>Pterographium (Pirascca) pluto</strong> (Stichel, 1911)</td>
<td>1,050</td>
<td>Oct</td>
</tr>
<tr>
<td>Species</td>
<td>Elevation range (m)</td>
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</tr>
<tr>
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</tr>
<tr>
<td>248 Pterographium (Pirascca) sp. n. 1</td>
<td>975–1,400</td>
<td>Sep–Nov</td>
<td>A male and a female photographed at Chontachaca and San Pedro, respectively.</td>
</tr>
<tr>
<td>249 Pterographium (Pirascca) sp. n. 2</td>
<td>1,700–1,725</td>
<td>Jan</td>
<td>A single male from the Mirador in 2020.</td>
</tr>
<tr>
<td>250 Astraedodes areuta (Westwood, 1851)</td>
<td>400</td>
<td>Jun</td>
<td>One male from the Pantiacolla Lodge, in 2019.</td>
</tr>
<tr>
<td>251 Argyrogrammana stilbe stilbe (Godart, [1824])</td>
<td>1,100</td>
<td>Oct</td>
<td>A single female from Quitacalzón, in 2010.</td>
</tr>
<tr>
<td>252 Argyrogrammana sublimis Brévignon and Gallard, 1995</td>
<td>1,100</td>
<td>Feb</td>
<td>A single female from Quitacalzón, in 2013.</td>
</tr>
<tr>
<td>253 Argyrogrammana nuritia nuritia (Stichel, 1911)</td>
<td>1,375–1,720</td>
<td>Feb, Aug–Oct</td>
<td>11 females, from San Pedro to the Mirador.</td>
</tr>
<tr>
<td>254 Argyrogrammana praestigiosa (Stichel, 1929)</td>
<td>400–1,050</td>
<td>Nov</td>
<td>A male from the Pantiacolla Lodge and a photo of a male from Quitacalzón.</td>
</tr>
<tr>
<td>255 Argyrogrammana trochilia (Westwood, 1851)</td>
<td>1,050–1,200</td>
<td>May, Sep–Oct</td>
<td>A male and 2 females from Quitacalzón and a male from Quebrada Santa Isabel.</td>
</tr>
<tr>
<td>256 Argyrogrammana rameli (Stichel, 1930)</td>
<td>500–550</td>
<td>Apr</td>
<td>A photo of a male from Villa Carmen, in 2016.</td>
</tr>
<tr>
<td>258 Argyrogrammana natalita J. Hall and Willmott, 1995</td>
<td>1,575–1,625</td>
<td>Apr, Sep–Oct</td>
<td>3 males and 2 females, from Puente Unión. Males observed perching from 1245–1318 hrs. (n = 3) at 6-7m height.</td>
</tr>
<tr>
<td>259 Argyrogrammana paca J. Hall and Willmott, 1998</td>
<td>1,720</td>
<td>Feb</td>
<td>1 male from the Mirador, in 2010.</td>
</tr>
<tr>
<td>260 Argyrogrammana pastaza J. Hall and Willmott, 1996</td>
<td>1,050–2,200</td>
<td>Jan–Apr, Aug–Nov</td>
<td>The only commonly observed Argyrogrammana in the Valley. Its primary range is from Quitacalzón to the Mirador. Males perched from 1234–1355 hrs. (n = 10) at 2.5-5m height. The male/female ratio is 4.2 to 1.</td>
</tr>
<tr>
<td>261 Argyrogrammana willmotti Dolibaina and Dias, 2015</td>
<td>1,100</td>
<td>Apr</td>
<td>One single female from Quitacalzón, in 2015.</td>
</tr>
<tr>
<td>262 Argyrogrammana sp. n. 1</td>
<td>1,720</td>
<td>Feb, Oct</td>
<td>Five males from the Mirador.</td>
</tr>
<tr>
<td>263 “Argyrographana” sp. n. 2</td>
<td>500–600</td>
<td>Feb, Nov</td>
<td>One female from Mascoitania and an additional female, from Quebrada Bienvenida.</td>
</tr>
<tr>
<td>264 “Argyrographana” sp. n. 3</td>
<td>1,050</td>
<td>Nov</td>
<td>A photograph, of a male from Quitacalzón, in 2016.</td>
</tr>
<tr>
<td>265 Argyrogrammana sp. n. 4</td>
<td>800–850</td>
<td>Nov</td>
<td>A photograph, of a male from Chontachaca, in 2017.</td>
</tr>
</tbody>
</table>

**Riodinidae/Riodininae/Helicopini**

<table>
<thead>
<tr>
<th>Species</th>
<th>Elevation range (m)</th>
<th>Monthly occurrence</th>
<th>Notes and observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>266 Sarota chrysus (Stoll, 1781)</td>
<td>500–1,400</td>
<td>Jan–Feb, Apr–May, Aug–Nov</td>
<td>Occurs from the Amazonia Lodge to San Pedro. Frequently rests on trailside vegetation less than 2m high. Male/female ratio of 1.6 to 1.</td>
</tr>
<tr>
<td>267 Sarota spicata (Staudinger, 1888)</td>
<td>500–1,050</td>
<td>Feb, Apr–May, Sep–Nov</td>
<td>The second most commonly encountered Sarota, ranging from the Amazonia Lodge to Quitacalzón. Perching occurred from 0630–0820 hrs. (n = 21). Usually males perched on a leaf, at 1.5-2.5m, with wings closed. Frequent spiral interactions occurred with conspecific males. Male/female ratio of 15 to 1.</td>
</tr>
<tr>
<td>268 Sarota wilmotti J. Hall, 1998</td>
<td>500–1,050</td>
<td>Apr, Aug–Oct</td>
<td>2 males and 2 females, from the Amazonia Lodge to Quitacalzón.</td>
</tr>
<tr>
<td>Species</td>
<td>Elevation range (m)</td>
<td>Monthly occurrence</td>
<td>Notes and observations</td>
</tr>
<tr>
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</tr>
<tr>
<td>269 Sarota estrada sabaillia J. Hall, 1998</td>
<td>1,400–2,000</td>
<td>Feb, Sep</td>
<td>Two males from San Pedro and a female from Rocotal.</td>
</tr>
<tr>
<td>270 Sarota gamelia alba J. Hall, 1998</td>
<td>540</td>
<td>Jan</td>
<td>A single female from Villa Carmen.</td>
</tr>
<tr>
<td>271 Sarota acantus (Stoll, 1781)</td>
<td>500–550</td>
<td>Apr–May, Nov</td>
<td>3 males from the Amazonia Lodge (2012 and 2015). A single male was observed perching at 0649 hrs.</td>
</tr>
<tr>
<td>272 Sarota miranda Brévignon, 1998</td>
<td>500–750</td>
<td>Jan–Feb, Sep, Dec</td>
<td>A male and 3 females, from the Amazonia Lodge to 6 km north of Patria.</td>
</tr>
<tr>
<td>273 Sarota gys (Cramer, 1775)</td>
<td>400–1,100</td>
<td>May, Aug–Nov</td>
<td>85% of records from the Amazonia and Pantiacolla Lodges, with additional records from Villa Carmen and Quitacalzón. Males perched, with wings closed, from 0628–0720 hrs. (n = 7), on a leaf 2–3 m high. Frequent conspecific spiral interaction was observed. Male/female ratio of 4.3 to 1.</td>
</tr>
<tr>
<td>274 Sarota myrtea Godman and Salvin, 1886</td>
<td>500–1,720</td>
<td>Jan–Jun, Aug–Nov</td>
<td>The most frequently encountered Sarota, occurring from Pilcopata to the Mirador. Perching from 0852–1007 hours (n = 6). 16% of records were females.</td>
</tr>
<tr>
<td>275 Sarota flavicincta (Lathy, 1932)</td>
<td>500–1,100</td>
<td>May, Oct–Nov</td>
<td>3 males and a female, from the Amazonia Lodge to Quitacalzón. Single male perching at 0754 hrs.</td>
</tr>
<tr>
<td>276 Sarota completa J. Hall, 1998</td>
<td>400–1,400</td>
<td>May, Aug–Nov</td>
<td>7 males and a female from the Pantiacolla Lodge to San Pedro. Single male perching at 1023 hrs.</td>
</tr>
<tr>
<td>277 Anteros allactus allactus Westwood, 1851</td>
<td>1,050–1,200</td>
<td>Jan–Mar, Aug–Oct</td>
<td>Commonly encountered at Quitacalzón, with one record from Quebrada Santa Isabel. Attracted to bait with a male/female ratio of 6.1 to 1.</td>
</tr>
<tr>
<td>278 Anteros chrysoprasta chrysoprasta Hewitson, 1867</td>
<td>500–1,100</td>
<td>Jan, Apr–Jun, Aug–Oct</td>
<td>Commonly seen at Quitacalzón, with additional records from the Amazonia Lodge and Chontachaca. Strongly attracted to bait. Perching from 0934–0945 hrs. (n = 3). Males outnumber females 24 to 1.</td>
</tr>
<tr>
<td>279 Anteros formosus formosus (Cramer, 1777)</td>
<td>400–1,400</td>
<td>Jan–Feb, Apr–Jun, Aug–Nov</td>
<td>With A. allactus and bracteata, the most frequently observed Anteros. Strongly attracted to bait, ranging from the Pantiacolla Lodge to San Pedro. Male/female ratio of 9 to 1.</td>
</tr>
<tr>
<td>280 Anteros theleia Stichel, 1910</td>
<td>1,550–1,600</td>
<td>Nov</td>
<td>A single male from Puente Unión, in 2012.</td>
</tr>
<tr>
<td>281 Anteros gentilis Rebillard, 1958</td>
<td>2,250–2,275</td>
<td>Sep</td>
<td>Besides the male holotype, described from Pasco, Peru, this is the second known specimen, a male from Quebrada Morro Leguía. This individual was basking in the sun 2 m up a steep rocky ledge, just above the bridge, during mid-morning.</td>
</tr>
<tr>
<td>282 Anteros acheus troas Stichel, 1909</td>
<td>500–1,050</td>
<td>Jan, May–Jun, Sep–Nov</td>
<td>Frequently seen, at bait, along the Ticary Amazon Lodge trail, near Chontachaca. Ranges from the Pantiacolla and Amazonia lodges to Quitacalzón, with a male/female ratio of 5 to 1.</td>
</tr>
<tr>
<td>283 Anteros kupris aureoaltus Stichel, 1909</td>
<td>950–2,000</td>
<td>Feb–Apr, Oct–Nov</td>
<td>Uncommon from Chontachaca to Rocotal. Females have been taken nectaring on Miconia blooms and tall yellow composites. Males infrequently visit bait. Single perching male at 1254 hrs. Observed at nectar from 1055–1101 hrs. (n = 3). Males outnumber females 6.5 to 1.</td>
</tr>
<tr>
<td>284 Anteros bracteata bracteata Hewitson, 1867</td>
<td>500–1,100</td>
<td>Jan–Apr, Jun, Sep–Nov</td>
<td>The most commonly observed Anteros is strongly attracted to bait and occurs from the Amazonia Lodge to Quitacalzón. Male/female ratio is 22 to 1.</td>
</tr>
<tr>
<td>285 Ourocnemis aerosus (Stichel, 1924)</td>
<td>525–1,050</td>
<td>Oct–Nov</td>
<td>2 males and 1 female photographed visiting bait, at Villa Carmen (2) and Quitacalzón (1).</td>
</tr>
<tr>
<td>286 Ourocnemis renaldus renaldus (Stoll, 1790)</td>
<td>400–950</td>
<td>Jan, Jun, Sep–Nov</td>
<td>Common at fish-baited traps and bait, from the Pantiacolla Lodge to Chontachaca. All observations have been of males.</td>
</tr>
<tr>
<td>Species</td>
<td>Elevation range (m)</td>
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<td>Notes and observations</td>
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</tr>
<tr>
<td>287 Ourocnemis archytas (Stoll, 1787)</td>
<td>500–550</td>
<td>Nov</td>
<td>A single male, photographed at Villa Carmen (visiting bait), in 2016.</td>
</tr>
<tr>
<td>288 Ourocnemis bouleti Le Cerf, 1911</td>
<td>1,700–1,725</td>
<td>Feb</td>
<td>A single male, nectaring on <em>Miconia</em> blooms below the Mirador, during the rainy season.</td>
</tr>
<tr>
<td><strong>RIODINIDAE/RIODININAE/CALYDNINI</strong></td>
<td></td>
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</tr>
<tr>
<td>289 Echydna punctata (C. Felder and R. Felder, 1861)</td>
<td>400–1,050</td>
<td>May–Jun, Sep–Nov</td>
<td>Very common at the low-elevation lodges, with records up to Quitacalzón. Active during entire day and especially attracted to fish bait. Mate locating behavior during early morning, from 0620–0628 hrs. ((n = 2)). In Ecuador (personal observation), perching occurred from approximately 0630–0800 hrs. Male/female ratio of 8.3 to 1.</td>
</tr>
<tr>
<td>290 Echenais (Imelda) aenetus (Hewitson, 1874)</td>
<td>1,050–1,720</td>
<td>Jan–Jun, Aug–Nov</td>
<td>Very common from Quitacalzón to Puente Unión. Range extends to the Mirador. A record from Atalaya is probably erroneous. Most individuals were encountered resting or perching over small quebradas. Perching observed from 1251–1548 hrs. ((n = 21)). Male/female ratio is 5.9 to 1.</td>
</tr>
<tr>
<td><strong>RIODINIDAE/RIODININAE/EMESIDINI</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>291 Emesis (Emesis) fatimella Westwood, 1851</td>
<td>400–2,150</td>
<td>Jan, Jun, Sep–Nov</td>
<td>Uncommon from the Pantiacolla Lodge to Chontachaca, with an unusual record from Quebrada Morro Leguía. Will visit bait occasionally. Females represent over a third of records.</td>
</tr>
<tr>
<td>292 Emesis (Emesis) cercus cercus (Linnaeus, 1767)</td>
<td>500–1,100</td>
<td>Jan, Mar, Jun, Sep–Oct</td>
<td>Uncommon from the Amazonia Lodge to Quitacalzón. Equal numbers of males and females have been observed. Both sexes attracted to bait. A single perching observation at 1402 hrs. and 4.5m height.</td>
</tr>
<tr>
<td>293 Emesis (Emesis) orichalceus Stichel, 1916</td>
<td>550–600</td>
<td>Nov</td>
<td>One single male from km 115 of the Pilcopata/Atalaya road, in 2012.</td>
</tr>
<tr>
<td>294 Emesis (Mandania) mandana (Cramer, 1780)</td>
<td>400–1,200</td>
<td>Jan–Mar, Jun, Aug–Dec</td>
<td>Commonly seen at Quitacalzón and highly attracted to bait. Ranges from the Pantiacolla Lodge to Quebrada Santa Isabel. Males outnumber females 16 to 1.</td>
</tr>
<tr>
<td>295 Emesis (Brimia) temesa peruviana (Lathy, 1904)</td>
<td>500–1,200</td>
<td>Jan–Jun, Aug–Nov</td>
<td>Frequent from the Amazonia Lodge to Quitacalzón, with one record from Quebrada Santa Isabel. Attracted to bait, with a male/female ratio of 14.5 to 1.</td>
</tr>
<tr>
<td>296 Emesis (Brimia) progne (Godman, 1903)</td>
<td>500–550</td>
<td>Sep–Nov</td>
<td>4 males, with two each from the Amazonia Lodge and Villa Carmen. All records from the transition period to the rainy season.</td>
</tr>
<tr>
<td>297 Emesis (Tenedia) ocyvore ocyvore (Geyer, 1837)</td>
<td>500–1,400</td>
<td>Feb–Jun, Sep–Nov</td>
<td>Frequent from the Amazonia Lodge to Quitacalzón, with one record from San Pedro. 80% of records were males. Like most other <em>Emesis</em>, this species is attracted to bait. Male perching from 1007–1206 hrs. ((n = 3)).</td>
</tr>
<tr>
<td>298 Emesis (Tenedia) angularis Hewitson, 1870</td>
<td>1,375–2,425</td>
<td>Jan, Apr–Jun, Aug, Oct–Dec</td>
<td>Frequent from Rocotal to Quebrada Morro Leguía, with records as low as San Pedro. This species has not been observed at bait, but frequents moist soil. Ratio of males to females is 4.3 to 1.</td>
</tr>
<tr>
<td>299 Emesis (Tenedia) cypria cypria C. Felder and R. Felder, 1861</td>
<td>500–1,720</td>
<td>May–Jun, Sep–Nov</td>
<td>Not uncommon from the Amazonia Lodge to Quitacalzón. There is one record from the Mirador. Adults will visit bait. Perching observed from 1220–1225 hrs. ((n = 2)), at a height of 2-3m. Only 1 female observed in 21 encounters.</td>
</tr>
<tr>
<td>300 Emesis (Tenedia) heterochroa Hopffer, 1874</td>
<td>1,050–1,400</td>
<td>Feb, Oct–Nov</td>
<td>Uncommon from Quitacalzón to San Pedro (8 males, 0 females). Attracted to bait. Not seen since 2016.</td>
</tr>
<tr>
<td>301 Emesis (Aphacitis) castigata Stichel, 1910</td>
<td>400–1,600</td>
<td>Jan–Jun, Aug–Dec</td>
<td>Common from the Pantiacolla Lodge to Quitacalzón, with records up to Puente Unión. Attracted to damp soil and bait with a male/female ratio of 9.6 to 1.</td>
</tr>
<tr>
<td>Species</td>
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<td>Notes and observations</td>
</tr>
<tr>
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</tr>
<tr>
<td>302 Emesis (Aphacitis) <em>condigna</em> Stichel, 1925</td>
<td>400–1,400</td>
<td>Jan–Feb, Apr–Jun, Aug–Nov</td>
<td>Very similar to <em>E. castigata</em> and slightly less commonly seen than that species. Ranges from the Pantiacolla Lodge to San Pedro. Males exceed females by 8.4 to 1. This species also favors damp soil and bait. A single perching observation at 0909 hrs.</td>
</tr>
<tr>
<td>303 Emesis (Aphacitis) <em>spreta</em> H. W. Bates, 1868</td>
<td>400–1,100</td>
<td>May–Jun, Sep–Nov</td>
<td>Frequent from the Pantiacolla Lodge to Quitacalzón. Male/Female ratio of 7.5 to 1.</td>
</tr>
<tr>
<td>304 Emesis (Aphacitis) <em>diogenia</em> Prittwitz, 1865</td>
<td>500–1,400</td>
<td>Feb, Jun, Sep–Nov</td>
<td>Common from the Amazonia Lodge to Quitacalzón, with one record from San Pedro. Attracted to bait with a male/female ratio of 23 to 1. Perching observed from 0950–1153 hrs. (n = 3).</td>
</tr>
<tr>
<td>305a Emesis (Aphacitis) <em>heteróclita adelpha</em> Le Cerf, 1958</td>
<td>400–450</td>
<td>Jun</td>
<td>1 male from the Pantiacolla Lodge, on bait, during 2019.</td>
</tr>
<tr>
<td>305b Emesis (Aphacitis) <em>heteroclita vicaria</em> Le Cerf, 1958</td>
<td>950–1,100</td>
<td>Jan–Feb, May, Oct–Nov</td>
<td>9 males and 3 females from Quitacalzón, most on bait. One additional male from Chontachaca.</td>
</tr>
<tr>
<td>305c Emesis (Aphacitis) <em>heteróclita heteróclita</em> Stichel, 1929</td>
<td>500–550</td>
<td>Sep</td>
<td>One male from the Amazonia Lodge, in 2011. Zhang, <em>et al.</em> (2019) analyzed whole genome shotgun sequences of <em>E. heteroclita adelpha</em> and <em>E. heteroclita heteroclita</em>, and concluded that they were subspecies. However, the proximity (both spatially and elevationally) of these two taxa may warrant additional research. It may be best to consider <em>heteroclita</em> and <em>adelpha</em> as synonyms, as their phenotypic differences are quite slight, whereas <em>vicaria</em> is rather distinct, and the spatial relationships of <em>heteroclita</em> and <em>vicaria</em> resemble those of <em>Mesosemia icare subalbata</em> and <em>M. i. icare</em>.</td>
</tr>
<tr>
<td>306 Emesis sp. n.</td>
<td>1,050–1,720</td>
<td>Feb, Oct</td>
<td>7 males and 3 females of this beautiful species were taken on Micronia flowers during February 2010 and 2011. It was not seen again, until a male was photographed at Quitacalzón in October 2019. This new species was illustrated by D’Abrera (1994: 1066).</td>
</tr>
<tr>
<td>307 Apodemia (Roeberella) <em>calvus</em> (Staudinger, [1887])</td>
<td>1,050–1,100</td>
<td>Jan, Oct–Nov</td>
<td>5 males from Quitacalzón. Adults sit on moist earth.</td>
</tr>
</tbody>
</table>

**RIODINIDAE/RIODININAE/NYMPHIDIINI/PACHYTHONINA**

<table>
<thead>
<tr>
<th>Species</th>
<th>Elevation range (m)</th>
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</thead>
<tbody>
<tr>
<td>308 Pachythone (Pachythone) sp. n. (aff. distigma) H. W. Bates, 1868</td>
<td>500–1,050</td>
<td>Apr–May, Sep, Nov</td>
<td>7 males from the Amazonia Lodge and one male from Quitacalzón. Typical perching behavior under leaf at 3m height (1530–1608 hrs. (n = 2)).</td>
</tr>
</tbody>
</table>

**RIODINIDAE/RIODININAE/NYMPHIDIINI/ZABUELLINA**

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>311 Teenie tinea (H. W. Bates, 1868)</td>
<td>500–550</td>
<td>Sep–Oct</td>
<td>9 males from the Amazonia Lodge. All records were during the transition from dry to wet seasons.</td>
</tr>
</tbody>
</table>

**RIODINIDAE/RIODININAE/NYMPHIDIINI/LEMONIADINA**

<table>
<thead>
<tr>
<th>Species</th>
<th>Elevation range (m)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>312 Lemonias egaensis (Butler, 1867)</td>
<td>500–1,100</td>
<td>Jan–Jun, Aug–Nov</td>
<td>Very common at Quitacalzón, with a single record from Chontachaca and three low elevation records (Quebrada Bienvenida and Amazonia and Pantiacolla lodges). Perching occurred from 1313–1515 hrs. (n = 8). Male/female ratio of 1.2 to 1.</td>
</tr>
<tr>
<td>313 Thisbe irenea (Stoll, 1790)</td>
<td>400–1,400</td>
<td>Jan–Jun, Aug–Nov</td>
<td>Very common at Quitacalzón, with records from the Pantiacolla Lodge to San Pedro. Perching observed from 1254–1430 hrs. (n = 11). Females represent 15% of individuals.</td>
</tr>
<tr>
<td>Species</td>
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</tr>
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</tr>
<tr>
<td>314 Thisbe molela (Hewitson, 1865)</td>
<td>400–450</td>
<td>Unknown</td>
<td>One male from Shintuya, cited by Penz and DeVries (2001: 11).</td>
</tr>
<tr>
<td>315 Thisbe hyalina (Butler, 1867)</td>
<td>400–1,200</td>
<td>Feb, Apr, Oct–Nov</td>
<td>5 males and a female, from the Pantiacolla Lodge to Quebrada Santa Isabel.</td>
</tr>
<tr>
<td>317 Juditha pulcherrima comparata (Stichel, 1911)</td>
<td>400–1,400</td>
<td>Jan–Mar, May–Jun, Aug–Nov</td>
<td>Commonly seen from the Pantiacolla Lodge to San Pedro. Perching observed from 1430–1620 hrs. ($n = 4$). Females represent a third of encounters.</td>
</tr>
<tr>
<td>318 Juditha azan completa (Lathy, 1904)</td>
<td>475–1,050</td>
<td>Jan–Feb, Apr, Aug–Nov</td>
<td>Frequent, from just north of Salvación to Quitacalzón.</td>
</tr>
<tr>
<td>319 Juditha molpe (Hübner, [1808])</td>
<td>400–1,100</td>
<td>Jan–May, Sep–Dec</td>
<td>Frequent, from the Amazonia and Pantiacolla Lodges, with records to Quitacalzón. Males perch from 1413–1628 hrs. ($n = 6$). Male/female ratio of 2 to 1.</td>
</tr>
<tr>
<td>320 Synargis orestessa Hübner, [1819]</td>
<td>400–950</td>
<td>Feb, Jun, Sep–Nov</td>
<td>Frequent, from the Amazonia and Pantiacolla Lodges, with records to Chontachaca. A single male observed perching at 1532 hrs. Females outnumber males 3 to 2.</td>
</tr>
<tr>
<td>321 Synargis abaris (Cramer, 1776)</td>
<td>400–650</td>
<td>Feb, May, Sep–Nov</td>
<td>Frequent, from the Amazonia Lodge, with records from the Pantiacolla Lodge and from Erika to Quebrada Bienvenida. Males perch from 1256–1335 hrs. ($n = 4$). Male/female ratio of 5.3 to 1.</td>
</tr>
<tr>
<td>322 Synargis gela (Hewitson, [1853])</td>
<td>400–625</td>
<td>Feb, Apr–May, Sep–Nov</td>
<td>2 males and 2 females, from the Pantiacolla Lodge to Villa Carmen. A single male observed perching at 1426 hrs.</td>
</tr>
<tr>
<td>323 Synargis ochra (H. W. Bates, 1868)</td>
<td>500–600</td>
<td>unknown</td>
<td>Frequently seen, from the Pantiacolla Lodge to the vicinity of Patria. Females were 22% of sample.</td>
</tr>
<tr>
<td>324 Synargis regulus (Fabricius, 1793)</td>
<td>1,050–1,100</td>
<td>Sep, Nov</td>
<td>3 males from Quitacalzón, in 2012 and 2014. One perching observation at 1425 hrs.</td>
</tr>
<tr>
<td>325 Minstrellus grandis (Callaghan, 1999)</td>
<td>400–550</td>
<td>Apr–May, Sep–Oct</td>
<td>Most sightings were from the Amazonia Lodge, but records exist from the Pantiacolla Lodge to Villa Carmen. Males perch, with wings spread, at 2–4m height, on upperside of leaves, from 1250–1359 hrs. ($n = 3$). 25% of encounters were with females.</td>
</tr>
<tr>
<td>326 Minstrellus leucotopus (Stichel, 1911)</td>
<td>500–575</td>
<td>Nov</td>
<td>3 males, from the road to Pilcopata, above Atalaya. Observed perching on small trees above a quebrada at 4 to 5m, during late morning.</td>
</tr>
</tbody>
</table>

**RIODINIDAE/RIODININAE/NYMPHIDIINI/NYMPHIDIINA**

<table>
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<tbody>
<tr>
<td>327 Periplacis apotheta (H. W. Bates, 1868)</td>
<td>1,050–1,375</td>
<td>Sep–Oct</td>
<td>5 males, from 5 km ENE Shintuya to San Pedro.</td>
</tr>
<tr>
<td>328 Periplacis coruscans (Butler, 1867)</td>
<td>1,050–1,100</td>
<td>unknown</td>
<td>2 males from Quitacalzón, cited by Hall (2018: 599).</td>
</tr>
<tr>
<td>329 Periplacis menander (Stoll, 1780)</td>
<td>500–1,200</td>
<td>Jan–Apr, Sep–Nov</td>
<td>Frequently encountered, from the Amazonia Lodge to Quebrada Santa Isabel. Male/female ratio of 3.3 to 1.</td>
</tr>
<tr>
<td>330 Periplacis pretus (Cramer, 1777)</td>
<td>500–1,400</td>
<td>May, Oct–Nov</td>
<td>4 males and a female, from the Amazonia Lodge to San Pedro.</td>
</tr>
</tbody>
</table>
| 331 Periplacis hebrus (Cramer, 1775) | 500–1,100 | Jan–Feb, Apr–May, Aug–Nov | Formerly common downstream of the Quebrada Quitacalzón bridge, perching during early afternoon, on the east side of the quebrada. It has not been seen since 2017. This disappearance may be due to vegetation growth that disrupted the lek or a popu-
<table>
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<tbody>
<tr>
<td><strong>Pandemos pasiphae</strong> (Cramer, 1775)</td>
<td>500–525</td>
<td>Oct</td>
<td>A single male from the Amazonia Lodge in 2010. The specimen flew under a trailside leaf, less than one-third meter above ground-level, during early afternoon. In Ecuador, this species has been observed perching 5 to 6m above small clearings on ridges from 1400–1500 hrs.</td>
</tr>
<tr>
<td><strong>Calospila rhodope amphis</strong> (Hewitson, 1870)</td>
<td>400–500</td>
<td>Apr–May, Sep–Nov</td>
<td>Frequent, but restricted to the Amazonia and Pantiacolla Lodges.</td>
</tr>
<tr>
<td><strong>Calospila parthaon parthaon</strong> (Dalman, 1823)</td>
<td>400–650</td>
<td>Jan, Apr, Jun, Sep–Nov</td>
<td>Ranges from the Pantiacolla and Erika Lodges to Villa Carmen, with most records from the Amazonia Lodge. Males were seen 9 times more often than females.</td>
</tr>
<tr>
<td><strong>Calospila furvolinea J. Hall, 2018</strong></td>
<td>925–950</td>
<td>Oct</td>
<td>Two males from Chontachaca, in 2018 and 2020. One male was observed perching at 1212 hrs. The other male was attracted to fish bait.</td>
</tr>
<tr>
<td><strong>Ar gyraspila t avakili ani (Brévignon and Gallard, 1995)</strong></td>
<td>500–525</td>
<td>May, Sep</td>
<td>2 females from the Amazonia Lodge (2011 and 2015).</td>
</tr>
<tr>
<td><strong>Ar gyraspila gyges</strong> (Stichel, 1911)</td>
<td>550–650</td>
<td>Sep</td>
<td>A single male from the Erika Lodge, in 1989.</td>
</tr>
<tr>
<td><strong>Ar gyraspila zeanger</strong> (Stoll, 1790)</td>
<td>525–550</td>
<td>May</td>
<td>One single male from Villa Carmen, in 2015.</td>
</tr>
<tr>
<td><strong>Calliona irene</strong> (Westwood, 1851)</td>
<td>480–950</td>
<td>Jan–Feb, Apr, Sep–Nov</td>
<td>Uncommon, with most records from Chontachaca and the Rio Tono road, 6 km from Patria. The species is also known from Mascoitania. Male perching observed from 1215–1555 hrs. (n = 6). The strikingly dimorphic females were seen only 18% as often as males.</td>
</tr>
<tr>
<td><strong>Livendula balista</strong> (Hewitson, 1863)</td>
<td>400–500</td>
<td>Oct–Nov</td>
<td>One male each from the Pantiacolla and Amazonia Lodges.</td>
</tr>
<tr>
<td><strong>Livendula anminias</strong> (Hewitson, 1863)</td>
<td>400–500</td>
<td>Oct–Nov</td>
<td>2 males and 4 females from the Pantiacolla and Amazonia Lodges. Thus far, temporally restricted to the transition period between dry and wet seasons.</td>
</tr>
<tr>
<td><strong>Livendula jasonhalli</strong> (Brévignon and Gallard, 1999)</td>
<td>400–425</td>
<td>Jun, Oct–Nov</td>
<td>4 males, all from the Pantiacolla Lodge. Perching observed from 0944–1140 hrs. (n = 3).</td>
</tr>
<tr>
<td><strong>Livendula pauxilla</strong> (Stichel, 1911)</td>
<td>400–500</td>
<td>Jun, Sep–Nov</td>
<td>Restricted to the Pantiacolla and Amazonia Lodges, where it is frequently seen, 19% of encounters were females. A single perching male was observed at 1110 hrs.</td>
</tr>
<tr>
<td><strong>Livendula violacea</strong> (Butler, 1867)</td>
<td>400–1,050</td>
<td>Apr–Jun, Sep–Dec</td>
<td>Common from the Pantiacolla Lodge to Villa Carmen, with records up to Quitacalzón. Perching males observed from 1423–1652 hrs. (n = 5). Females constitute 11% of the sample.</td>
</tr>
<tr>
<td><strong>Anmulata annullifera</strong> (Godman, 1903)</td>
<td>400–600</td>
<td>Oct–Nov</td>
<td>One male each from the Pantiacolla Lodge and Quebrada Bienvenida, during the transition to the rains. Perching observed from 1332–1356 hrs. (n = 2).</td>
</tr>
<tr>
<td><strong>Thenpea penthea</strong> (Cramer, 1777)</td>
<td>400–450</td>
<td>Oct–Nov</td>
<td>8 males and 3 females, all from the Pantiacolla Lodge during the transition to the rains. Perching observed from 1328–1549 hrs. (n = 7).</td>
</tr>
<tr>
<td><strong>Parvospila lucianus</strong> (Fabricius, 1793)</td>
<td>475–1,050</td>
<td>Jan–Feb, Apr–May, Sep–Nov</td>
<td>Frequent, from 7.3 km N of Salvación to Quitacalzón. Females outnumber males by 2 to 1.</td>
</tr>
<tr>
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</tr>
<tr>
<td>Parvospila emylius (Cramer, 1775)</td>
<td>400–1,050</td>
<td>Feb, Apr–Jul, Sep–Nov</td>
<td>Very commonly encountered between the Pantiacolla Lodge and Quebrada Bienvenida. There is one record from Quitacalzón. Perching on upper side of leaves with wings spread, at 1-2m, from 1203–1536 hrs. ((n = 9)). Male/female ratio is 1.3 to 1.</td>
</tr>
<tr>
<td>Setabis pythioides (Butler, 1867)</td>
<td>450–1,375</td>
<td>Apr–Jun, Sep–Nov</td>
<td>The second most frequently encountered Setabis, ranging from the Pantiacolla Lodge to San Pedro. Females outnumber males almost 2 to 1.</td>
</tr>
<tr>
<td>Setabis buckleyi (Grose-Smith, 1898)</td>
<td>1,050–1,100</td>
<td>Unknown</td>
<td>One female from Quitacalzón, cited by Hall (2018: 919).</td>
</tr>
<tr>
<td>Setabis epitus (Cramer, 1780)</td>
<td>400–1,100</td>
<td>Feb, Apr, Sep–Dec</td>
<td>The most frequently encountered Setabis occurs from the Pantiacolla Lodge to Quitacalzón. 55% of the sample were females.</td>
</tr>
<tr>
<td>Setabis velutina (Butler, 1867)</td>
<td>500–950</td>
<td>Sep–Dec</td>
<td>From the Erika and Amazonia Lodges to Chontachaca. Male/female ratio is 1.6 to 1. Records extend from the transition period to the early wet season.</td>
</tr>
<tr>
<td>Nymphidium nearctes (Hewitson, 1871)</td>
<td>1,050–1,100</td>
<td>May, Nov</td>
<td>2 females from Quitacalzón, in 2008 and 2012.</td>
</tr>
<tr>
<td>Nymphidium azanoides amazonensis Callaghan, 1986</td>
<td>400–1,400</td>
<td>Apr–May, Sep–Nov</td>
<td>Very commonly encountered below 600 m, with strays to San Pedro. Perching observed from 1205–1622 hrs. ((n = 5)). Male/female ratio of 6.4 to 1.</td>
</tr>
<tr>
<td>Nymphidium mantus (Cramer, 1775)</td>
<td>400–1,050</td>
<td>Sep, Nov</td>
<td>One male each from the Pantiacolla Lodge and Quitacalzón.</td>
</tr>
<tr>
<td>Nymphidium minutia H. Druce, 1904</td>
<td>400–550</td>
<td>Apr–May, Sep–Nov</td>
<td>Uncommon from the Pantiacolla Lodge to Villa Carmen. Females outnumber males almost 3 to 1.</td>
</tr>
<tr>
<td>Nymphidium bacotia Hewitson, [1853]</td>
<td>400–650</td>
<td>Jan–May, Sep–Nov</td>
<td>Frequent, from the Pantiacolla Lodge to the Erika Lodge and Quebrada Bienvenida. Males perch from 1252–1528 ((n = 6)). Morning perching was not observed. Male/female ratio of 1.4 to 1.</td>
</tr>
<tr>
<td>Nymphidium medusa medusa H. Druce, 1904</td>
<td>400–1,050</td>
<td>Jan–Feb, Apr–Jun, Sep–Nov</td>
<td>Common below 600 m, with one stray from Quitacalzón. Males observed perching from 1219–1422 hrs. ((n = 3)). Male/female ratio of 3.4 to 1.</td>
</tr>
<tr>
<td>Nymphidium cachrus (Fabricius, 1787)</td>
<td>400–1,400</td>
<td>Jan–Jun, Aug–Dec</td>
<td>Abundant from the Pantiacolla Lodge to San Pedro. This species is active mid to late morning, but is more frequently seen after noon. Perching occurs 3 to 6m above trails or quebradas from 1154–1529 hrs. ((n = 41)). Male/female ratio of 2.5 to 1.</td>
</tr>
<tr>
<td>Nymphidium acherois (Boisduval, 1836)</td>
<td>400–550</td>
<td>May–Jun, Sep–Nov</td>
<td>Common below 600 m, from the Pantiacolla Lodge to Villa Carmen. Perching males observed from 1156–1301 hrs. ((n = 4)). Male/female ratio of 7.7 to 1.</td>
</tr>
<tr>
<td>Nymphidium lisimon (Stoll, 1790)</td>
<td>400–1,100</td>
<td>Jan–Jun, Aug–Nov</td>
<td>Abundant from the Pantiacolla Lodge to Quitacalzón. Perching occurred from 1255–1643 hrs. ((n = 20)). Male/female ratio of 2.9 to 1.</td>
</tr>
<tr>
<td>Species</td>
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</tr>
<tr>
<td>Nymphidium velatum</td>
<td>400–625</td>
<td>Jan–Feb, May, Sep–Oct</td>
<td>Frequent below 600 m, from the Pantiacolla Lodge to Quebrada Bienvenida. One record from the Río Tono-Patria road. Males perch on leaf tips, at 3-5 m height, from 0636–0815 hrs. (n = 10), at forest edges. Afternoon perching was not observed. Male/female ratio of 4 to 1.</td>
</tr>
<tr>
<td>Nymphidium plinthobaphis</td>
<td>400–425</td>
<td>Oct–Nov</td>
<td>4 males from the Pantiacolla Lodge. All records were in the transition period before the rainy season. Perching observed from 1326–1430 hrs. (n = 2).</td>
</tr>
<tr>
<td>Nymphidium carmentis</td>
<td>540–950</td>
<td>Jan</td>
<td>2 males, one from Villa Carmen, the other from Chontachaca, in 2020.</td>
</tr>
<tr>
<td>Nymphidium caricae</td>
<td>400–1,200</td>
<td>Jan–Jun, Sep–Dec</td>
<td>Very common below 600 m, with strays as high as Quebrada Santa Isabel. Perching occurred from 1356–1516 hrs. (n = 8). Male/female ratio of 2.6 to 1.</td>
</tr>
<tr>
<td>Catocyclotis malca</td>
<td>1,050</td>
<td>Jan</td>
<td>One single female from Quitacalzón, in 2020.</td>
</tr>
<tr>
<td>Catocyclotis sejuncta</td>
<td>1,050–1,375</td>
<td>Aug–Oct</td>
<td>Occurs from Quitacalzón to San Pedro with all records during the late dry season and the transition to the rains. Perching males observed from 1040–1418 hrs. (n = 6). Male/female ratio of 18 to 1.</td>
</tr>
<tr>
<td>Catocyclotis densemaculara</td>
<td>400–1,100</td>
<td>Feb, Sep–Nov</td>
<td>Occurs from the Pantiacolla Lodge to Quitacalzón. Mate selection occurs 2 to 3 m above ground from 1128–1536 hrs. (n = 18), with many males perching on tree trunks. Male/female ratio of 41 to 1.</td>
</tr>
<tr>
<td>Protonymphidia senta</td>
<td>400–550</td>
<td>Sep–Nov</td>
<td>4 males from Mascoitania to the Río Coloradito (a quebrada between Atalaya and Pilcopata). Only seen during the dry/wet transition.</td>
</tr>
<tr>
<td>Archaeonympha sp. n.</td>
<td>600–625</td>
<td>Oct</td>
<td>A single female from near Patria (Río Hospital) in 2014.</td>
</tr>
<tr>
<td>Pseudotinea sp. n.</td>
<td>1,050–1,100</td>
<td>Aug</td>
<td>One male from Quitacalzón in 2009.</td>
</tr>
<tr>
<td>Theope nyctes</td>
<td>500–550</td>
<td>Sep</td>
<td>One male from the Amazonia Lodge, in 2014.</td>
</tr>
<tr>
<td>Theope brevignoni</td>
<td>1,050–1,100</td>
<td>Aug–Oct</td>
<td>A male and 3 females from Quitacalzón.</td>
</tr>
<tr>
<td>Theope faynelli</td>
<td>950–1,100</td>
<td>Jun, Aug, Oct–Nov</td>
<td>4 males and 3 females from Quitacalzón and one female from Chontachaca.</td>
</tr>
<tr>
<td>Theope philotes</td>
<td>950–1,050</td>
<td>Jan, Jun</td>
<td>A single female from Chontachaca, in 2019 and a single male from Quitacalzón in 2020.</td>
</tr>
<tr>
<td>Theope hypoleuca H. W.</td>
<td>500</td>
<td>Sep</td>
<td>One male from the Amazonia Lodge, in 2014.</td>
</tr>
<tr>
<td>Theope archimedes</td>
<td>400–500</td>
<td>unknown</td>
<td>One female from 5 km NE of Shintuya, cited by Hall (1999: 43).</td>
</tr>
<tr>
<td>Theope pedius</td>
<td>400–650</td>
<td>Sep–Nov</td>
<td>The most commonly observed Theope. 7 males and 5 females from the Pantiacolla Lodge to the Erika and Amazonia Lodges. Only seen during the transition period to the rains.</td>
</tr>
<tr>
<td>Theope eudocia</td>
<td>540–1,100</td>
<td>Jan–Feb</td>
<td>One male from Quitacalzón, in 2013 and one female from Villa Carmen, in 2020.</td>
</tr>
<tr>
<td>Species</td>
<td>Elevation range (m)</td>
<td>Monthly occurrence</td>
<td>Notes and observations</td>
</tr>
<tr>
<td>---------</td>
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</tr>
<tr>
<td>387 Theope antanitis (Hewitson, 1874)</td>
<td>1,050–1,100 Mar, May, Sep, Nov</td>
<td>Other than the syntype, labeled &quot;Bolivia&quot;, all known specimens of this species (3 males, 1 female) were from Quitacalzón. Adults fly in a large sunlit opening, over the eastern side of the quebrada, at mid-day.</td>
<td></td>
</tr>
<tr>
<td>388 Theope terambus (Godart, [1824])</td>
<td>500</td>
<td>Oct</td>
<td>One female from the Amazonia Lodge, in 2011.</td>
</tr>
<tr>
<td>389 Theope phaeo Prittwitz, 1865</td>
<td>500–550 Sep–Oct</td>
<td>2 males and a female from the Amazonia Lodge to Villa Carmen.</td>
<td></td>
</tr>
<tr>
<td>390 Theope theotites Hewitson, 1860</td>
<td>500</td>
<td>Sep–Oct</td>
<td>2 males and a female from the Amazonia Lodge.</td>
</tr>
<tr>
<td>392 Theope decorata Godman and Salvin, 1878</td>
<td>1,050–1,100 Feb</td>
<td>A single female from Quitacalzón, in 2011.</td>
<td></td>
</tr>
<tr>
<td>396 Theope sp. n. 1</td>
<td>1,400–1,600 Oct</td>
<td>Two males, one each from San Pedro and Puente Unión, in 2016.</td>
<td></td>
</tr>
<tr>
<td>397 Theope sp. n. 2 (aff. batesi J. Hall, 1998)</td>
<td>950 Oct</td>
<td>One male from Chontachaca, in 2018.</td>
<td></td>
</tr>
</tbody>
</table>

**RIODINIDAE/RIODININAE/STALACHTINI**

<table>
<thead>
<tr>
<th>Species</th>
<th>Elevation range (m)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>398 Stalachtis calliope ssp. n. 3</td>
<td>400–550 Oct–Nov</td>
<td>Only known from the Pantiacolla Lodge, where it is primarily seen on the lower trails. It has only been observed during the transition season to the rains. Males outnumber females 2 to 1.</td>
<td></td>
</tr>
</tbody>
</table>