

Odonata fauna of Polillo Island - revisited

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Introduction

Polillo Island is the largest among the Polillo group of islands. It is the third (ca 700sq km) largest island of the Luzon biogeographic region. The island lies in central eastern Luzon, at the western edge of Pacific Ocean and has a seasonal climate with distinct dry and wet season.

The island is biologically rich with several insular species or subspecies (McGregor, 1910; Robinson, 1911; Manuel, 1957). The recent Odonata survey revealed the rich Odonata fauna of the island (Villanueva, 2010). This paper provides an update on the known Odonata based on recent fieldwork in 2010.

Methods

Odonata were recorded and voucher specimens collected between March 25 and April 4 2010. The main goal of the trip was to survey the northern part of the island that was not explored during the 2009 survey. However, the day after we arrived on the island, the commanding army officer was killed in an ambush making the trip to the north too risky. I then decided to explore sites surveyed previously and also the headwaters of the watershed which was not explored in 2009.

Climate and hydrological situation of the island water bodies during the survey indicate a deficit in precipitation. The small seepages noted during previous trip were dried out and surrounding areas suggests that it did not rain for several weeks. Beside the four areas surveyed previously, I also explored the Sibulan Watershed.

Area surveyed

Details of the localities A-D are presented in Villanueva (2010). Locality E was explored in March/April 2010 for the first time (Figure 1).



- A. Anawan area, Polillo
- B. Pinaglubayan area, Polillo
- C. Salipsip area, Polillo
- D. Tamulaya area, Polillo
- E. Sibulan Watershed, Sibulan, Polillo

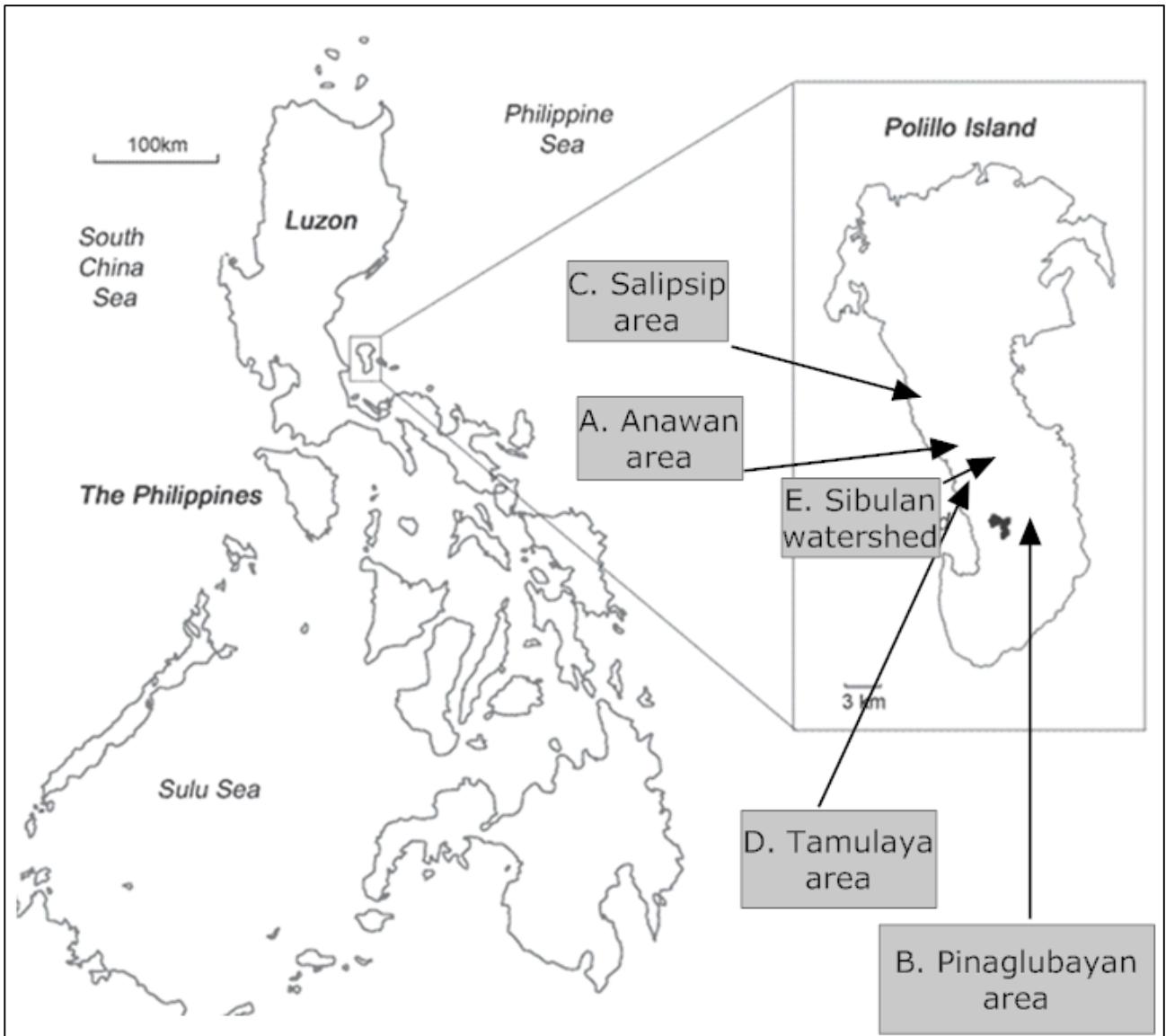


Figure 1: Map of Polillo Island

The watershed is mainly forested (Figures 2 & 3). Although most of the small seepage and trickles have dried up, good flowing springs were noted feeding the larger streams and creeks and eventually into the river of Anawan, Salipsip, Pinaglubayan and Tamulaya.





Figure 2: Secondary forest pond



Figure 3: Forest stream



Logistics

From Manila I took a 4 hour car ride to Real, Quezon. I then took a 3 hour motor boat ride to the municipality of Polillo, Polillo Island. There are regular ferries to Polillo with two trips a day. I stayed in Pinaglubayan and the town proper of Polillo. Staying in the interior is a bit risky due to recent incident. A hired motor cycle served as vehicle to visit each sites.

Use of money from the IDF

The money granted by the IDF was used for the wages of local workers and transportations. Local workers served mainly as field guides and also helped in locating and collecting Odonata. Most of the expenses incurred during the assessment came from IDF grant.

Results

The present survey revealed 73 species from 15 families and 44 genera. An additional nine species were added from the previous list. This includes two species new to science and one that is possible also new to science. Additional specimens were obtained from species of particular importance (2 individual of the new *Drepanosticta* and 2 individual of *Hemicordulia*, both noted during 2009 survey). Several species collected in 2009 were not found during the recent survey.

Annotated checklist

(Localities where species were recorded are given in brackets); (*) new island record; (**) Not seen during the present survey: records from Villanueva (2010); (***) Based from old record: Hämäläinen & Müller (1997)

Platystictidae

1. *Drepanosticta cf philippa/trimaculata* (A, B, C, D, E) (Figure 4)

The island population requires careful study, and comparison with the type material. During the present survey encounters with this species were less frequent, perhaps due to the long dry season.





Figure 4: *Drepanosticta philippa*

2. *Drepanosticta sp. n.* (B) (Figure 5)

This undescribed species is not common but another two young males were



Figure 5: *Drepanosticta sp.n.*



found in a shaded portion of an irrigation canal. Formal description of this species is in preparation.

3. *Sulcosticta sp.n.* (A, B, D, E)

This species is more common than the previous one. It occupies more habitat types, ranging from very dark seepage to open streams. Formal description of this species is in preparation.

Platycnemididae

4. *Risiocnemis serrata* (Hagen, 1863) (A, B, C, D, E)

During the present survey, this was the most abundant species and found even along forest trails well away from water sources.

5. *Risiocnemis confusa* Hämäläinen, 1991 (A, B, D, E)

6. *Risiocnemis atropurpurea* (Brauer, 1868) (A, C, D, E)

7. *Risiocnemis haematopus* (Selys, 1882) (A, B, C, D, E)

8. *Risiocnemis polilloensis* Hämäläinen, 1991 (A, B, D, E)

Protoneuridae

9. *Prodasineura integra* (Selys, 1881) (A, B, C, D, E)

Coenagrionidae

10. *Agriocnemis f. femina* (Brauer, 1868) (A, B, D)

11. *Agriocnemis pygmea* (Rambur, 1842) (A, B, D)

12. *Amphicnemis sp.n. 1* (A)

This species will be formally described on the review paper on Philippine *Amphicnemis* presently in preparation by the author.



13. *Amphicnemis sp.n. 2* (E) *

This species was previously collected by University of the Philippines-Los Banos team who conducted an invertebrate survey in the island as early as 2000. However, the species came only to my knowledge during recent study of *Amphicnemis* material placed in the VP Gapud Collection. This species was then searched for during the recent fieldwork where three males were found.

The males were collected not on the same river system where a single female was found during the 2009 survey (Villanueva, 2010). It is still uncertain if the collected female belongs to the same species (to the male).

The males will be formally described on the review paper on Philippine *Amphicnemis* presently under preparation.

14. *Amphicnemis sp.n.* (E) (Figure 6) *

A single female was found. The prothoracic structure suggests that it represent a distinct new species, and is closely allied to *Amphicnemis incallida*. However, the absence of male made me refrain from preparing a species description.



Figure 6: *Amphicnemis sp.n.*



15. *Amphicnemis cf. bonita* (E) *

The species has close affinity to *Amphicnemis bonita*. However, the posterior lobe of the prothorax is distinctly different. More material, particularly males, is required to fully elucidate the taxonomic status of this population.

16. *Argiocnemis rubescens intermedia* Selys, 1877 (A, B, C, D)

17. *Ceriagrion lieftincki* Asahina, 1967 (B)

18. *Pseudagrion p. pilidorsum* (Brauer, 1868) (A, B, C, D)

19. *Pseudagrion r. rubriceps* (Selys, 1876) (B) *

Interestingly this species was quite abundant in the pond and irrigation canal where it was not found in 2009.

20. *Teinobasis corolla* Needham & Gyger, 1939 (A, B, C, D, E) (Figure 7)

I tentatively placed some individuals to that species (*Teinobasis sp. cf. corolla*: Villanueva, 2010) but a more comprehensive treatment of the genus of at least the Philippine species is needed.



Figure 7: *Teinobasis sp. cf. corolla*



21. *Teinobasis filiformis* (Brauer, 1868) (A, B, C, D, E)
22. *Teinobasis samaritis* Ris, 1915 (B, D)
23. *Teinobasis strigosa* (A, B, C, D, E)
24. *Teinobasis olivacea* Ris, 1915 (A, B)
25. *Teinobasis martinschorri* Villanueva 2010 (D)
26. *Xiphiagrion cyanomelas* Selys, 1876 (B)

Megapodagrionidae

27. *Rhinagrion philippinum* (Selys, 1882) (A, B, C, E)

Lestidae

28. *Lestes p. praemorsus* (Selys, 1862) (B) *

This is the first record of this species on the island. It was not encountered on the pond near the camp site during the previous fieldwork in 2009.

Chlorocyphidae

29. *Cyrano unicolor* (Hagen in Selys, 1869) (A, B, C, D, E) (Figure 8)
30. *Rhinocypha colorata* (Hagen in Selys, 1869) (A, B, C, D, E)
31. *Rhinocypha turconii* Selys, 1891 (A, C)

Euphaeidae

32. *Euphaea refulgens* Hagen in Selys, 1853 (A, B, C, D, E)





Figure 8: *Cyrano unicolor*

Calopterygidae

33. *Neurobasis luzoniensis* Selys, 1879 **

Gomphidae

34. *Gomphidia kirschii* Selys, 1878 (A, B, C, E)

35. *Heliogomphus bakeri* Laidlaw, 1925 (C)

The specimens collected during the previous survey were compared with several materials from various islands present in RMNH. The Polillo population, though larger, is similar to Luzon and Mindoro population and distinct from Mindanao population. However, some individuals show intermediate characters suggesting that *H. bakeri* is a rather variable species.

36. *Paragomphus cf. balneorum* (D) *

A single female was found while ovipositing.



Macromiidae

37. *Macromia* sp. **

Aeshnidae

38. *Anax guttatus* (Burmeister, 1839) ***

39. *Anax* sp. **

40. *Gynacantha* sp. **

41. *Tetracanthagyna bakeri* Campion & Laidlaw, 1928 (B)

This species was recorded in 2009. An exuviae possibly representing this species was found along the forest trail.

Corduliidae

42. *Hemicordulia* sp. (B)

The island population is clearly distinct from known Philippine *Hemicordulia* (*H. m. mindana* and *H. apoensis*), and possibly represents a new species. However, I will leave the taxonomic status of this island population open until a full revision of the Australasian member of the genus is available.

43. *Idionyx salva* Needham & Gyger, 1937 (A, B, C)

44. *Heteronaias heterodoxa* (Selys, 1878) (C, D, E)

Libellulidae

45. *Acisoma p. panorpoides* Rambur, 1842 (B) *

46. *Agrionoptera insignis* (Rambur, 1842) (A, B, D)

47. *Brachydiplax c. chalybea* Brauer, 1868 (B) (Figure 9)





Figure 9: *Brachydiplax c. chalybea*

- 48. *Camacinia gigantea* (Brauer, 1867) ***
- 49. *Cratilla lineata assidua* Lieftinck, 1953 **
- 50. *Crocothemis s. servilia* (Drury, 1770) (B)
- 51. *Diplacina bolivari* Selys, 1882 (E)
- 52. *Diplacina lisa* Needham & Gyger, 1941 (A, E)
- 53. *Diplacina nana* Brauer, 1868 **
- 54. *Diplacodes trivialis* (Rambur, 1842) (A, B, C, D)
- 55. *Hydrobasileus croceus* (Brauer, 1867) (B)
- 56. *Lathrecista asiatica* (Fabricius, 1798) **
- 57. *Neurothemis r. ramburii* (Brauer, 1866) (A, B, C, D)



58. *Neurothemis t. terminata* Ris, 1911 (A, B, C, D)
59. *Orthetrum chrysis* (Selys, 1891) (B)
60. *Orthetrum pruinosum clelia* (Selys, 1878) (A, B, C, D)
61. *Orthetrum t. testaceum* (Burmeister, 1839) (A, B, C, D)
62. *Orthetrum s. sabina* (Drury, 1770) (A, B, C, D, E) *
63. *Pantala flavescens* (Fabricius, 1798) (A, B, C, D)
64. *Potamarcha congener* (Rambur, 1842) (B, D)
65. *Rhyothemis phyllis subphyllis* Selys, 1882 (B)
66. *Rhyothemis regia regia* (Brauer, 1867) **



Figure 10: *Tetrathemis i. irregularis*



67. *Rhyothemis resplendens* Selys, 1878 (B)

A male was caught. Attempts to find female were unsuccessful.

68. *Rhodothemis rufa* (Rambur, 1842) (B)

69. *Tetrathemis i. irregularis* Brauer, 1868 (B, C) (Figure 10)

70. *Tholymis tillarga* (Fabricius, 1798) (B)

71. *Trithemis a. aurora* (Burmeister, 1839) (B) (Figure 11) *

Interestingly, this species was not seen in the 2009 survey while it was abundant during the present fieldwork.



Figure 11: *Trithemis a. aurora*

72. *Zyxomma obtusum* Albarda, 1881 **

73. *Zyxomma petiolatum* Rambur, 1842 (B)



Discussion

The recent survey further increases the knowledge on the Odonata fauna of Polillo Island. The discovery of wide ranging Oriental species like *Trithemis a. aurora* clearly emphasizes that other oriental species are expected. The need to revisit the sites is also important. The discovery of *Lestes p. praemorsus* on the pond that was visited for a few times in 2009 shows the need for revisit to get the full faunal lists in an area, particularly visit on different season. Thus the species list of this island is far from complete.

Despite extensive survey in 2009, the discovery of new species near the area surveyed before shows that some species are very restricted. It suggests that more species await to be found once the northern part of the island is surveyed. The karst area in the north east need particular attention and the species in those habitats are still unknown.

Vestalis melania Selys, 1873, again after extensive search remained elusive. It is likely that the species is absent in the southern part of the island. Though several species seen in 2009 are absent, the very dry weather conditions in 2010 perhaps was an important factor in the low species count.

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