

Notes on the Avifauna of the Balinsasayao Rainforest Region, Negros Oriental, Philippines

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ABSTRACT. Fifty species of birds were recorded within a 300 ha watershed that lies within approximately 2400 ha of primary forest in the mountains of southern Negros. Thirteen of those species had not been recorded previously at the site; a total of 114 species of birds have now been recorded at the site. An immature male *Zoothera andromedae* is the first specimen of that species taken on the island of Negros.

The published bird records for the Philippines are not extensive, and only a few authors attempt to list the variety of species present at a single site. The bird records and discussion which follow supplement a fairly extensive set of papers dealing with the birds of a single location on southern Negros (Rand 1951, Rand and Rabor 1952, Rabor et al. 1971, Alcala and Carumbana 1980). The most recent of these (Alcala and Carumbana 1980) differs from the earlier papers in several respects, principally: (1) the focus is primarily ecological, rather than systematic; and (2) extensive species lists are given for two rather small (less than 600 ha) areas.

We present a list of bird species netted or observed in the Twin Lakes region of the Balinsasayao rainforest (Negros Oriental, Philippines: 9° 22' N, 123° 11' E, 14 km W, 6 km N of Dumaguete City, elevation 830 — 1200 m). This is one of the two sites studied by Alcala and Carumbana (1980). We collected most of our data during monthly 2-3 week field sessions completed during the period 26 June 1982 — 7 June 1983. Also included are a few additional data collected by Heideman, 8-15 June 1981.

The Twin Lakes area is sparsely populated by subsistence farmers who employ "slash and burn" agricultural techniques. Approximately 25% of the roughly 300 ha comprising the study site has been cleared in the last 30 years; most of that cleared area is now second growth or currently under cultivation. Certain topographic and climatic features promote the heterogeneity characteristic of Balinsasayao rainforest habitats (Abregana 1983); however, the most striking habitat variations result from agricultural activity.

In order to discuss habitat usage by Balinsasayao bird species, each habitat sampled was characterized as one of the following: (1) primary dipterocarp forest; (2) secondary forest (old second growth in areas known to have been cleared after World War II); (3) second growth (areas cleared within the last ten years and colonized by fast-growing trees, shrubs, weeds and cogonal grasses); or (4) ecotone-like areas at

the edges of primary forest (generally not true ecotones, rather areas of abrupt habitat change created during forest clearing).

Methods

Birds were caught in Japanese mist nets (mesh size 26 mm) set for bats as part of a study on bat reproduction. Most data contained herein are day or night net-capture records. The remainder are field sightings. We identified a few species in the field; however, most were identified for us by R. W. Storer, S. M. Goodman and J. G. Hinshaw of the University of Michigan Museum of Zoology, Ann Arbor, Michigan, U.S.A., from specimens we provided. These specimens are deposited at the University of Michigan Museum of Zoology and at the National Museum of the Philippines, Rizal Park, Manila (Table 1 lists the locations of these specimens). Species not represented by preserved specimens and difficult to identify in the field are not included in the species list (Table 1). Our listing follows the systematic order used by Medway and Wells (1976).

Results and Discussion

We positively identified 50 species (Table 1), of which 8 were recorded only from observations, and 42 species were netted at least once (Table 2). Of the 42 species captured at least once, 24 were captured one to four times, 10 were captured five to ten times, and the remaining 8 were captured ten or more times. Nine of our 24 "uncommon" species were not observed by Alcalá and Carumbana (1980) during their nineteen-month survey of the birds of the Twin Lakes area in 1976-78. They also missed two of the 10 species for which we have five to ten records and two of the species for which we have only sight records but with the possible exception of *Phylloscopus cebuensis*, they recorded all of the species for which we have more than ten records. Conversely 63 of the 99 species reported by Alcalá and Carumbana were not noted during our study. One species, *Chaetura gigantea*, was not recorded at the Twin Lakes during either study, although Rand (1951) referred to specimens collected at Lake Balinsasayao. We did not record the hornbill *Aceros leucocephalus*; unaware of the potential presence of a second species of hornbill, we assumed that all of our records (usually of individuals in dense foliage) were of *Penelopides panini*. It seems likely that both species still occur at the site. Alcalá and Carumbana

(1980) listed *M. cinerea* as the only motacillid observed at the Twin Lakes. Although we did not collect *Motacilla*, some of the individuals we observed were a much deeper shade of yellow below, suggestive of *M. flava*. However, two specimens collected by Heideman in 1984 were identified as *M. cinerea*. (Although dated 1983, this issue of *SJ* was actually printed in late 1984 [Ed].)

While Alcala and Carumbana (1980) reported *Phylloscopus borealis* and *P. trivirgatus* at the Twin Lakes, ten of our eleven preserved specimens (i.e., those deposited at the University of Michigan Museum of Zoology) were identified as *P. cebuensis*. The remaining specimen (deposited at the National Museum of the Philippines) has not been re-examined. Alcala and Carumbana relied on field sightings, and Alcala (pers. comm.) has suggested that their specific identifications for this genus may have been in error. Rand and Rabor (1952) took only *P. cebuensis* at Lake Balinsasayao, and our material matches their description of *P. cebuensis*.

We believe that the differences between our study and that of Alcala and Carumbana reflect three factors: (1) our study relied almost exclusively on net-captures, a technique which may be advantageous for obtaining secretive or nocturnal birds, while they relied on field sightings; (2) many tropical rainforest bird species are relatively rare, and thus both studies are likely to have missed a number of species; and (3) temporal variation in the movements of migrants through the area may have influenced the results of either survey.

We report one new record for Negros:

Order PASSIFORMES

Family MUSCICAPIDAE

Zoothera andromedae (Temminck)

An immature male *Z. andromedae* molting into adult plumage and weighing 68.7 g was captured in a small clearing in primary forest, approximately 830 m above sea level, on 2 July 1982. Our specimen matched specimens of immature *Z. andromedae* in the collection of the Delaware Museum of Natural History. Rabor et al. (1970) did not list *Z. andromedae* among the birds of Negros, and DuPont (1971) gave the distribution of this species in the Philippines as Luzon, Mindanao and Mindoro. The presence of an immature individual implies that this species breeds on Negros.

Habitat Usage

Because our net-capture data would provide highly biased estimates of relative abundance, we have not made such estimates. Our data can, however, be grouped according to capture frequency for each species in each habitat (Table 2). Having corrected in each case for the unevenness of our netting effort relative to habitat type, we offer the following comments concerning habitat usage by a few of our most frequently captured species.

Sitta frontalis is a typical nuthatch in its habits and therefore it is not surprising that they were not captured in second growth (Table 2), although they were frequently taken in the "edge" habitat just outside primary forest.

Phylloscopus cebuensis were not taken in second growth (Table 2). Delacour and Mayr (1946) stated that *Phylloscopus* species are insectivorous leaf and twig gleaners, continually on the move. These habits may explain why we caught *P. cebuensis* within (or adjacent to) primary or secondary forest, probably the most attractive foraging areas.

Rabor (1977) described *Parus elegans* as gregarious and hyperactive, foraging primarily in the lower stories of mature forest. Our capture data (Table 2) do not contradict his characterization, although we did occasionally capture *P. elegans* outside of mature forest.

Rabor (1977) and Delacour and Mayr (1946) stated that *Phapitreon leucotis* live in forest or second growth habitats, amid thick foliage near the ground. Our data (Table 2) show a similar pattern, for we captured *P. leucotis* in all habitats.

Hypsipetes philippinus (= *Microscelis gularis* of Delacour and Mayr 1946) was the most frequently captured species. It is apparently very common throughout the Philippines, and reportedly frequents forest edges and open areas. Our capture rates for the species were similar in primary forest, second growth and edge habitats, but were approximately double in secondary forest (Table 2).

Our second most frequently captured species was *Rhipidura cyaniceps*. We found *R. cyaniceps* in all habitats, but it was more common in primary forest (Table 2). This is consistent with Delacour and Mayr's (1946) characterization of the species as common in forest and forest edge habitats.

While we captured ten or more of *Aethopyga siparaja* and *Dicaeum trigonostigma*, our data for these and all of the remaining species listed in

Table 1 and 2 are too few and too ambiguous to merit any generalizations.

Summary and Conclusion

In our twelve-month study we recorded considerably fewer species than did Alcalá and Carumbana (1980) at the same study area. Nevertheless, we captured or observed 13 species not included on their list, including one species, *Zoothera andromedae*, previously unknown from Negros. This suggests either that relatively uncommon species are yet to be reported for the site, or that the avifauna of the Twin Lakes region is a dynamic fauna undergoing changes in species composition. Although we suspect that the two studies together yield a relatively complete list of the avifauna of the Twin Lakes area, the area certainly merits further long-term ornithological study.

A number of comments concerning habitat usage based on netting records for our most frequently captured species may be of use to other researchers in the Balinsasayao rainforest area. Since forest clearing continues in the area, bird species requiring undisturbed forest habitats face eventual extirpation. We cannot state how many species share this prospect, nor can we predict the species which would colonize the open areas and second growth which would come to predominate. We can state, however, that none of the most frequently captured species appear to prefer second growth to forest or forest edge habitats. While a variety of bird species could inhabit a deforested Balinsasayao region, we suggest that the transformation would approach complete replacement of the area's natural avifauna.

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Table 1. Bird species captured or observed in the Lake Balinsasayao study area, 8-15 June 1981 and 27 June 1982 - 6 June 1983. Systematic order follows Medway and Wells (1976). An asterisk indicates a new record for Balinsasayao. "Photo" indicates a species identified from photographs. "N" indicates preserved material of the species has been deposited at the National Museum of the Philippines. "M" indicates preserved material of the species has been deposited at the University of Michigan Museum of Zoology.

- Order CICONIIFORMES
Family ARDEIDAE
Butorides striatus
- Order FALCONIFORMES
Family ACCIPITRIDAE
Pernis sp.
Haliastur indus
Photo *Accipiter trivirgatus extimus* Mayr
- Order GALLIFORMES
Family PHASIANIDAE
M *Gallus gallus gallus* (Linnaeus)
- Order COLUMBIFORMES
Family COLUMBIDAE
Chalcophaps indica
M *Macropygia phasianella tenuirostris* Bonaparte
N,M *Phapitreron amethystina maculipectus* (Bourns and Worcester)
N,M *Phapitreron leucotis nigrorum* (Sharpe)
M, * *Ptilinopus occipitalis* G. R. Gray
- Order CUCULIFORMES
Family CUCULIDAE
N,M, * *Cacomantis variolosus sepulcralis* (P.L.S. Muller)
Centropus viridis
- Order STRIGIFORMES
Family STRIGIDAE
Photo *Otus bakkamoena nigrorum* Rand
Photo *Ninox philippensis centralis* Mayr
- Order CAPRIMULGIFORMES
Family PODARGIDAE
Photo, * *Batrachostomus septimus menagei* Bourns and Worcester
- Order APODIFORMES
Family APODIDAE
* *Collocalia troglodytes* G. R. Gray
N,M *Collocalia esculenta marginata* Salvadori
Chaetura picina Tweeddale (recorded at Balinsasayao by Rand, 1951)
- Order CORACIIFORMES
Family ALCEDINIDAE
M *Halcyon lindsayi moseleyi* (Steere)
Family BUCEROTIDAE

- Penelopides panini*
- Order PICIFORMES
 Family PICIDAE
 * *Dryocopus javensis philippensis* (Steere)
 M *Chrysocolaptes lucidus xanthocephalus* Walden and Layard
- Order PASSERIFORMES
 Family HIRUNDINIDAE
 M *Hirundo tahitica javanica* Sparrman
 Family PYCNONOTIDAE
 N,M *Hypsipetes philippinus guimarasensis* (Steere)
 Family DICRURIDAE
 N,M *Dicrurus balicassius mirabilis* Walden and Layard
 Family ORIOLIDAE
 M *Oriolus xanthonotus steeri* Sharpe
 Family PARIDAE
 N,M *Parus elegans albescens* (McGregor)
 Family SITTIDAE
 N,M *Sitta frontalis aenochlamys* Sharpe
 Family MUSCICAPIDAE
 M *Stachyris speciosa* (Tweeddale)
 M *Brachypteryx montana brunneiceps* Ogilvie-Grant
 M, * *Zoothera andromedae* Temminck
 N,M, *Phylloscopus cebuensis* (Dubois)
 M * *Prionochilus olivaceus*
 M, * *Locustella fasciolata* (J. E. Gray)
 M *Orthotomus atrogularis rabori* Parkes
 M *Muscicapa panayensis panayensis* (Sharpe)
 N,M, * *Ficedula hyperythra nigrorum* (Whitehead)
 N,M, * *Culicicapa helianthea panayensis* (Sharpe)
 N,M *Rhipidura cyaniceps albiventris* (Sharpe)
 M *Hypothymis azurea azurea* (Boddaert)
 N,M, * *Pachycephala cinerea winchelli* (Bourne and Worcester)
 Family MOTACILLIDAE
 * *Motacilla flava*
 Family LANIIDAE
Lanius cristatus
 Family NECTARINIIDAE
 N,M *Aethopyga flagrans guimarasensis* (Steere)
 N,M *Aethopyga siparaja magnifica* Sharpe
 Family DICAEDIDAE
 M, * *Dicaeum bicolor inexpectatum* (Hartert)
 N,M *Dicaeum trigonostigma dorsale* Sharpe
 Family ZOSTEROPIDAE
 N,M *Zosterops montana pectoralis* Mayr
 M *Zosterops nigrorum nigrorum* Tweeddale
 Family PLOCEIDAE
 N,M *Lonchura leucogastra manueli* Parkes
 M *Lonchura malacca jadori* (Martens)

Table 2. List of captures and associated habitats. Only those captures for which we have positive identification—either in the field or subsequently—are included.

Species	Habitat				total
	primary forest	secondary forest	second growth	edge	
<i>Accipiter trivirgatus</i>	—	—	1	—	1
<i>Chalcophaps indica</i>	—	1	—	—	1
<i>Macropygia phasianella</i>	—	1	—	—	1
<i>Phapitreron amethystina</i>	1	—	1	—	2
<i>Phapitreron leucotis</i>	6	2	5	—	15
<i>Ptilinopus occipitalis</i>	1	—	—	—	1
<i>Cacomantis variolosus</i>	—	—	1	1	2
<i>Otus bakkamoena</i>	5	—	2	1	8
<i>Ninox philippensis</i>	—	2	3	2	7
<i>Batrachostomus septimus</i>	2	—	—	—	2
<i>Collocalia troglodytes</i>	—	—	—	1	1
<i>Collocalia esculenta</i>	—	—	—	4	4
<i>Chaetura picina</i>	—	—	—	1	1
<i>Halcyon lindsayi</i>	2	1	1	—	4
<i>Chrysocolaptes lucidus</i>	1	—	—	—	1
<i>Hypsipetes philippinus</i>	30	11	22	14	77
<i>Dicrurus balicassus</i>	4	2	2	1	9
<i>Oriolus xanthonotus</i>	1	—	—	—	1
<i>Parus elegans</i>	10	2	1	—	13
<i>Sitta frontalis</i>	4	—	—	—	4
<i>Stachyris speciosa</i>	4	—	5	8	12
<i>Brachypteryx montana</i>	5	—	2	1	8
<i>Zoothera andromedae</i>	—	—	—	1	1
<i>Phylloscopus cebuensis</i> *	6	3	—	5	14

Species	Habitat				total
	primary forest	secondary forest	second growth	edge	
<i>Prionochilus olivaceus</i>	—	—	—	1	1
<i>Locustella fasciolata</i>	1	—	—	1	2
<i>Orthotomus atrogularis</i>	1	—	—	—	1
<i>Muscicapa panayensis</i>	1	1	—	—	2
<i>Ficedula hyperythra</i>	3	—	2	—	5
<i>Culicicopa helianthus</i>	24	2	5	2	33
<i>Rhipidura cyaniceps</i>	1	—	2	1	4
<i>Hypothymis azurea</i>	—	—	3	—	3
<i>Pachycephala cinerea</i>	2	—	2	4	8
<i>Lanius cristatus</i>	3	—	—	—	3
<i>Aethopyga flagrans</i>	5	—	3	4	12
<i>Aethopyga siparaja</i>	—	—	2	1	3
<i>Dicaeum bicolor</i>	10	—	4	3	17
<i>Dicaeum trigonostigma</i>	—	—	—	6	6
<i>Zosterops montana</i>	—	2	—	1	3
<i>Zosterops nigrorum</i>	—	—	—	4	4
<i>Lonchura leucogastra</i>	—	—	1	—	1
<i>Lonchura malacca</i>	—	—	—	—	—
Number of Net-Days**	250.5	44	173	139	604.5

* May include other species of *Phylloscopus*. See text for explanation.

** A net-day is one net set for one day. Six-meter nets were counted as one-half net; 12-meter nets as one net. Approximately 80% of all nets set were 12-meter nets.