

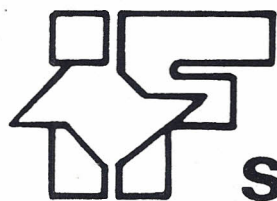


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INSTITUTO FLORESTAL

THE AVIFAUNA OF THE SERRA DA CANTAREIRA, SÃO PAULO, BRAZIL: A PRELIMINARY SURVEY



Série Registros

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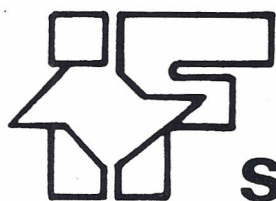


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THE AVIFAUNA OF THE SERRA DA CANTAREIRA, SÃO PAULO, BRAZIL: A PRELIMINARY SURVEY*

Douglas J. GRAHAM**

RESUMO

O presente trabalho é uma análise de um "checklist" da avifauna da Serra da Cantareira, uma cadeia de montanhas situada em uma Reserva Florestal do Estado, no limite norte do município de São Paulo. A Serra da Cantareira representa um dos poucos remanescentes da Floresta Atlântica que hoje está representado por somente 1 % (FONSECA, 1985). No Estado de São Paulo, a floresta original litorânea está agora restrita quase que na sua totalidade na Serra do Mar e Serra de Paranapiacaba. A pesquisa ornitológica do autor foi feita no período de 14 de agosto a 2 de abril de 1986. Durante este período foi efetuado o levantamento de avifauna aqui citado (no entanto, não foram realizadas observações nos seguintes períodos: 17 de dezembro a 5 de janeiro e 5 a 25 de fevereiro). Concomitantemente, com o levantamento, foi realizada pesquisa com avifauna e estrutura da vegetação em uma plantação madura de *Araucaria* comparada com floresta natural (GRAHAM, 1986a, b).

Palavras-chave: levantamento, avifauna, P. E. Serra da Cantareira.

ABSTRACT

The present report is an analysis of a checklist on the avifauna of Serra da Cantareira, a range of hills included in a state forest reserve on the northern edge of São Paulo city. The Serra da Cantareira represents one of the few remnants patches of Brazil's Atlantic Coastal Forest which perhaps only 1 % still remains (FONSECA, 1985). In the State of São Paulo, the original coastal forest is now restricted almost entirely to the Serra do Mar and the Serra da Paranapiacaba. This ornithological research was done by the author from August 14 1985 to April 2 1986. The avifauna survey reported on here was carried out during that period however no observations were made in the following periods: December 17 to January 5 and February 5 to 25. Concomitantly with survey, research was carried out on the avifauna and vegetation structure of a mature *Araucaria* plantation and compared with natural forest (GRAHAM, 1986 a e b).

Key words: survey, avifauna, Serra da Cantareira, S.P.

1 INTRODUCTION

Considering that it is one of the very few areas of natural vegetation in proximity to the enormous city of São Paulo, the Serra da Cantareira has received surprisingly little attention from ornithologists. Apart from those of the author, the only published reference to Serra da Cantareira birds is a list of 25 species of "probable occurrence" included with the management plan of the Cantareira Forest Reserve (NEGREIROS *et al.*, 1974).

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Despite the absence of formal ornithological projects, a considerable number of specimens have been collected in the Serra da Cantareira and are now part of the São Paulo Museum of Zoology's ("Museu de Zoologia da Universidade de São Paulo") extensive collection of birds. Some of these specimens are mentioned in Pinto's catalogues (PINTO, 1938; 1944; 1944) but many more were collected after the publication of the catalogues. To confirm and update the catalogue information, I went through all of the Museum's specimen registers and was thus able to compile a complete list of a Serra da Cantareira specimens in the collection. A very brief account of this collecting is of interest here.

PINTO (1957), in his history of ornithological activity of the Museum of Zoology, notes that João Leonardo Lima collected some birds in the Serra da Cantareira in 1980's. I was not able however to find records of any such specimens. The list below summarizes information on all the specimens that are in the Museum's registers.

Date	Collector	Nº of specimens
Oct. 1897	H. Pinder	1 (<i>Accipiter striatus</i>)
Aug. 1901	Hamma	1 (<i>Chlorostibon aureoventris</i>)
1907	H. Pinder	1 (<i>Phaethormis pretrei</i>)
1934	O. Pinto	14
June 1934	J. P. da Fonseca	1 (<i>Trichothraupis melanops</i>)
Oct. 1937	F. da Fonseca	1 (<i>Claravis godefrida</i>)
Nov. 1940	F. da Fonseca	3
Dec. 1940 & Apr. 1941	J. Lima & J. König	72
Dec. 1940	Pravassos Filho	1 (<i>Chondrohierax uncinatus</i>)
July 1952	Werner	1 (<i>Leucopternis lacernulata</i>)
Nov. 1953	Custodio	1 (<i>Pyroderus scutatus</i>)
June 1965	A. Olalla	150

The Museum's registers do not extend significantly beyond the 1960's but it would seem that, in more recent years, no other collecting has been done in the Serra da Cantareira (pers. comm., Sr. Hélio Camargo, Curator of Ornithology; Sr. Sebastião Fonseca Cesar, Director of the Serra da Cantareira). In summary, the Museum has a total of 247 specimens from the Serra da Cantareira, collected from 1897 to 1965 and representing 79 different species.

Many species that once occurred in the Serra da Cantareira are undoubtedly now absent. The loss of a part of the original avifauna can mostly be attributed to the deforestation of a majority of the Serra in the late 19th century. That impoverishment of the Cantareira's avifauna is now to a certain extent maintained by the relatively small size of the Reserve and by its isolation from other vestigial areas of original vegetation (the urban sprawl of São Paulo creates a 40 km gap from the Serra do Mar which however, may not represent an uncrossable barrier for some species).

WILLIS (1979) suggested that about 50 species of Barreiro Rico's original avifauna are now missing. Barreiro Rico and the Serra da Cantareira have similar numbers of woodland species.: 108 and 106 respectively (Appendix 1). His suggestion is probably also appropriate for The Serra da Cantareira. The group he specifically mentioned are similarly missing the Cantareira's present day avifauna: the large psittacids, some frugivorous toucans, large diurnal raptors (eagles, hawk-eagles, etc) and small brightly coloured treetop tanagers. The absence of the latter group from Barreiro Rico was described by him as "unaccountable". Several of such tanagers are still quite common in the Serra do Mar (personal observation). Perhaps this group of small frugivores is particularly sensitive to any disturbance of the original forest canopy. Other species now missing would be those similarly sensitive to

disturbance of their habitat.

I would be in agreement with WILLIS (1979) that the only group of birds that has been added to the avifauna is that of some forest-edge species and birds of open areas. This addition to the avifauna has undoubtedly resulted from the forestation and clearing.

There is no reason to believe that any further loss of species is currently occurring in the Serra da Cantareira. In fact, the increasingly "natural" aspect of the Reserve's suggests that the Serra may be home to increasing numbers of the area's original avifauna. The importance of the Serra da Cantareira derives in part from the fact that the ever increasing deforestation of the State means that very few other areas offer any kind of a similarly optimistic long-term outlook.

2 BACKGROUND

Virtually all of the Serra da Cantareira (23°22'S, 46°36'W) is contained in the 5 600 ha of the Cantareira Forest Reserve ("Reserva Estadual da Cantareira") (FIGURE 1). Adjoining the Reserve is a 174 ha state park ("Parque Estadual da Capital") which contains the popular "Horto Florestal" (which is, unlike the Reserve, open to the public) and the headquarters of the "Instituto Florestal". The latter has the administrative responsibility for the parks and reserves of São Paulo state.

The State Park ("Parque Estadual da Capital") contains no areas of natural forest; it is covered by residential areas and areas of parkland and scrub. The Reserve itself is almost entirely uninterrupted forest and thus the two administrative units represent quite different habitats. The only open areas of scrub vegetation in the Reserve are in the Chapada area, the Cabucu area and the fringes surrounding the few reservoirs. Aquatic habitat is represented in the Serra da Cantareira by the few small reservoirs and streams of the Reserve and the ponds of the Horto Florestal. A very small portion of the Reserve is covered by exotic conifer plantations (principally *Araucaria angustifolia*).

A large portion of Serra da Cantareira was deforested in the last century to make way for coffee and tea plantations. The area was declared a forest reserve in 1896 and apparently the forest has subsequently very nearly regenerated to its original state. The humid tropical Atlantic Coastal Forest of São Paulo, including that of the Serra da Cantareira is classified by the PROJETO RADAMBRASIL (1983) as falling within the "Dense Ombrophile Forest" phytoecological region ("Floresta Ombrófila Densa"). The Serra is furthermore classified in the "Montane Forest Subregion", defined as areas with altitudes from 500 to 1500 m. The Serra da Cantareira has a mean altitude of 850 m and a maximum altitude of 1200 m. The PROJETO RADAMBRASIL (1983) characterizes a forest of the "Montane Forest Subregion" as having a dominant stratum at about 25 m and typically with representatives of the following tree genera: *Vochysia*, *Talauma*, *Cariniana*, *Clethra*, *Ocotea* and *Nectandra*.

Furhter information on the Serra's vegetation as well as details on the area's geology, pedology and climate can be found in GRAHAM (1986a). Additional useful information was provided by NEGREIROS, et al. (1974).

The number of bird species known from the Serra da Cantareira is 216; the status of 14 additional species is hypothetical. This list can be considered preliminary as it is based on a limited

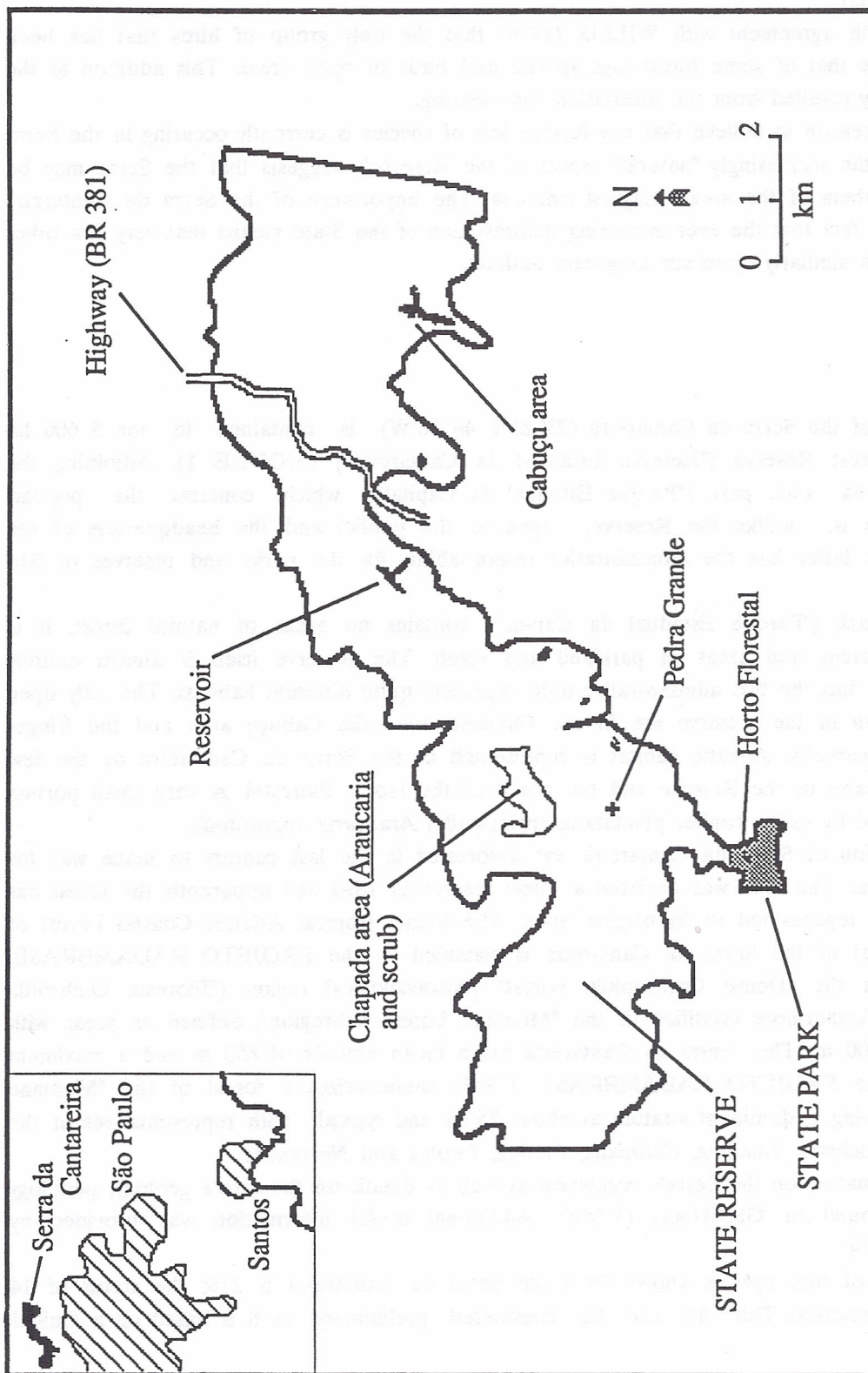


FIGURE 1 - The Serra da Cantareira.

period of field work. It is hoped however that the information included in this publication will be a starting point for further ornithological work in the Serra and will contribute to a better knowledge of the avifauna of São Paulo State.

3 METHODS

A useful insight into the composition of the Serra da Cantareira's avifauna can be obtained by grouping the species by their habitat preferences. For this purpose, we have adopted the classification proposed by DUNNING (1982) in which he gave the habitat preference of every land bird of South America.

His five habitat categories are as follows: forest ("F: thick forest with high trees, little underbrush") ("T: thin woodland, often with thick underbrush"), scrub (S: brush, thickets, shrubbery"), open ("O: few if any trees" and aquatic (W). The letters following "Status" in the annotated checklist of Part 2 give the classification for every species in the Serra da Cantareira.

About half of the 216 species of the Serra da Cantareira are restricted to the forest/trees habitat. One hundred and six species occur exclusively in such wooded areas (only 39 species exclusively occur in the "forest" habitat). One of these species (the streamside furnariid *Lochmias nematura*) is restricted to aquatic habitat within the forest. All of these species are of fairly wide occurrence in forested areas of São Paulo. Six species are however rare or unusual as they do not occur in a single one of the other nine areas considered in the biogeographical analysis below (*Chondrohierax uncinatus*, *Leucopternis lacernulata*, *Claravis godefrida*, *Ciccaba virgata*, *Phylloscartes eximius* and *Arremon taciturnus*). Only the last is recorded at any of the 13 areas of WILLIS & ONIKI (1981). In the Serra da Cantareira these six species are all either very rare or just occasional visitors as none were recorded in field work for this study. On the other hand, very few widespread tree or forest species seem to be missing from the Cantareira avifauna. Of 31 species that occur in at least seven of the nine other areas, only two have not been recorded in the Serra da Cantareira. Of these two, *Hypoedaleus guttatus* is a shy formicariid that may have been easily overlooked while *Trogon rufus* seems truly absent.

The next most important component of the Cantareira avifauna is that of the 69 "generalist" species: those that occur in both wooded and scrub or open habitats (only the wood-rail *Aramides saracura* is also associated with aquatic habitats). Again, virtually all of these generalist species are of widespread distribution. One however seems to have been rarely recorded elsewhere in the state (E. Willis, pers. comm.): the hawk *Parabuteo unicinctus*. Of 26 generalist species that occur in at least seven of the other nine areas considered in the next section (data not included), only two are absent from the Cantareira: the martin *Progne chalybea* which has probably been overlooked and the woodpecker *Colaptes melanochloros*.

A smaller number, only 28 species, are restricted to scrub and open area habitats. Three of these are also associated with aquatic habitat: *Certhiaxis cinnamomea*, *Geothlypis aequinoctialis* and *Agelaius ruficapilla*. Most of these non-woodland birds are more or less intimately associated with man and tend to be widespread in distribution. Two species are in fact exotic to Brazil: the pigeon *Columba livia* and the waxbill *Estrilda astrild* (the sparrow *Passer domesticus* is considered to be a generalist species). Four species of the 28 were not recorded from any of the other nine areas considered below (data not included) and are thus of some interest: the owl *Rhinoptynx clamator*, the gnatcatcher *Poliophtila dumicola*, the blackbird *Agelaius ruficapilla* and *E. astrild*. None of the 10 species that occur in at least six of the other nine areas are absent from the Serra da Cantareira list.

Finally, a total of 13 species are restricted to aquatic areas. The other nine areas considered

in the analysis below do not all have areas of aquatic habitat so a comparison with them is of little interest. Most of the 13 species are of widespread distribution with the notable exception of the flycatcher *Hymenops perspicillata*, one of the most unusual records from the Serra da Cantareira. This species has been previously only recorded once in the state of São Paulo (WILLIS & ONIKI, 1985).

3.1 Affinities of the Serra da Cantareira's avifauna

3.1.1 Method of analysis

Avifaunal lists are available for a few areas in São Paulo state. The avifauna of the Serra da Cantareira was compared to that of nine nearby areas in an attempt to determine its biogeographical affinities. The ten areas (FIGURE 2) and the sources of the bird lists are as follows:

- 1) Serra da Cantareira: as given in Part 2 below;
- 2) Campos do Jordão: based on observations of WILLIS & ONIKI (1981) and on his own field work, the bird list for this state park was prepared by Sr. Flávio Barbosa (pers. comm.) of the Instituto Florestal;
- 3) Ubatuba: WILLIS (1981);
- 4) Boracéia: WILLIS (1981);
- 5) Carlos Botelho: WILLIS (1981);
- 6) Jacupiranga: WILLIS (1981);
- 7) Barreiro Rico: WILLIS (1979) (the species mentioned in his introduction as having been collected from 1957 to 1964 are also included);
- 8) Lençóis: observations of Prof. J. Vielliard (pers. comm.)
- 9) Paraíso: WILLIS (1981)
- 10) Morro do Diabo: WILLIS (1981)

Species of scrub or open areas have distribution that are very much influenced by man because such habitats are created and extensively modified by human activity. The analysis of the avifaunas was therefore restricted to species that occur exclusively in woodland habitats (the forest or tree habitats of DUNNING, 1982) which more truly reflected distribution patterns. Two aquatic species that occur in forested habitats but not in scrub or open areas are also included (*Cairina moschata* and *Lochmias nematura*). The complete list of 218 species from the ten areas is given in Appendix 1.

To calculate the degree of similarity between any two areas was used the well known Sorensen Coefficient of Similarity (LEGENDRE & LEGENDRE, 1984). The coefficient is defined as:

$$\frac{2a}{a + b + c} \quad \text{where:} \quad \begin{array}{l} a = \text{number of species common to both areas} \\ b = \text{number of species in first area} \\ c = \text{number of species in second area} \end{array}$$

This similarity coefficient gives a double weight to a species present in both areas as opposed to a species in only one of the areas. This coefficient thus has the advantage of minimizing the bias inherent in comparing two areas that have been subjected to a different sampling effort. For convenience, I have multiplied all the resulting values by 200 so that possible values of the coefficient range from 0 to 100. The similarity coefficient was calculated for all 45 possible area pairs. Any species that was hypothetical in either of the two areas being compared was excluded.

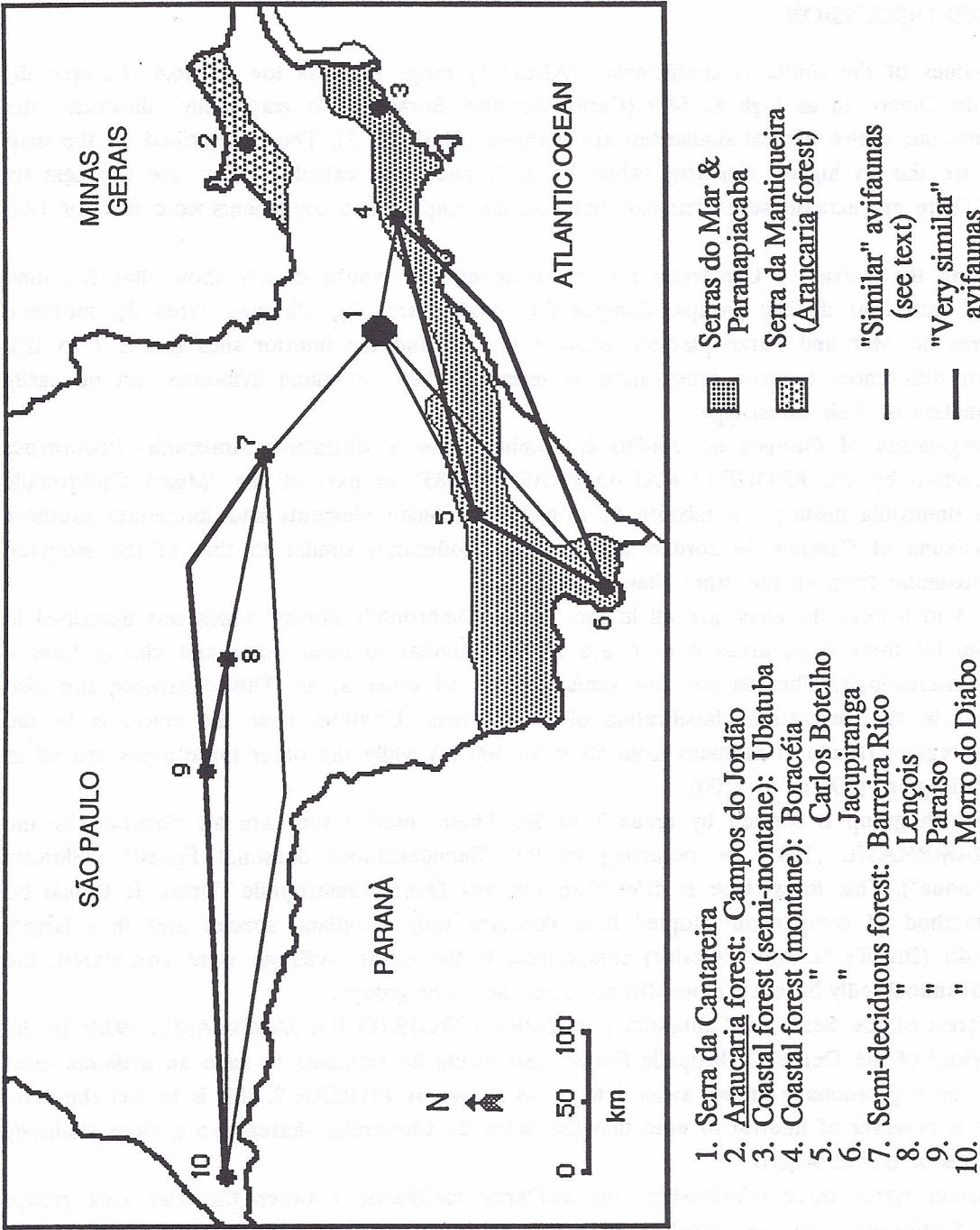


FIGURE 2 - Avifaunal relationships between ten areas of São Paulo State.

The avifaunal lists of the ten areas are based on differing amounts of field work and the areas themselves have subject to differing degrees of human interference. This statistical comparison can not therefore be extremely precise but it should reveal the major underlying biogeographical links between the forest avifauna of the various areas.

4 RESULTS AND DISCUSSION

The values of the similarity coefficients (TABLE 1) range from as low as 46.4 (Campos do Jordão: Morro do Diabo) to as high as 88.9 (Carlos Botelho: Boracéia. To graphically illustrate the closest relationships, the twelve highest similarities are mapped (FIGURE 2). Those described on the map as "very similar" are the six highest similarity values (81.1) and those called "similar" are the next six highest (76.7). There are actually seven "similar" links on the map as two coefficients were tied for 12th place.

Excluding the Serra da Cantareira for the moment, the results clearly show that the nine selected areas fall into four distinct groups: Campos do Jordão (area 2), Ubatuba (area 3), montane areas of the Serras do Mar and Paranapiacaba (areas 4 and 6) and the interior sites (areas 7 to 10). The similarities or differences between these areas in terms of their woodland avifaunas can be easily explained as a function of their forest type.

The vegetation of Campos do Jordão is dominated by a distinctive *Araucaria- Podocarpus* forest and is classified by the PROJETO RADAMBRASIL (1983) as part of the "Mixed Ombrophile Forest" ("Floresta ombrófila mista") - a mixture of tropical amazonian elements and temperate southern elements. The avifauna of Campos do Jordão seems to be moderately similar to that of the montane Serra areas but dissimilar from all the other sites.

Areas 3 to 6 near the coast are all in the "Dense Ombrophile Forest" which was described in a previous section. Of these four, areas 4 to 6 are all very similar to each other and clearly form a group apart, but interestingly, Ubatuba has low similarities to all other areas. This difference can also however be found in the vegetation classification of these areas: Ubatuba near the coast, is in the "Sub-montane Sub-region" (found at altitudes from 50 m to 500 m) while the other three areas are all in the "Montane Sub-Region" (500 m to 1500).

The fourth group is formed by areas 7 to 10. These interior sites are all classified by the PROJETO RADAMBRASIL (1983) as occurring in the "Semideciduous Seasonal Forest" ("Floresta estacional semidecídua"). This forest type is drier than the wet Dense Ombrophile Forest. It should be noted that the method of comparison adopted here concerns only woodland species and thus largely ignores the cerrado (Brazil's "savanna" interior) component. If the entire avifauna were considered, the inland sites would undoubtedly be even more distinct from the other groups.

The forest of the Serra da Cantareira is classified (PROJETO RADAMBRASIL, 1983) in the "Montane Sub-region" of the Dense Ombrophile Forest" and would be expected to have an avifauna most closely related to the vegetationally similar areas 4 to 6. As shown by FIGURE 2, this is in fact the case, as three areas. It is however of interest to note that the Serra da Cantareira shares also a close similarity with the inland area of Barreiro Rico.

To further clarify these relationships, the similarity coefficients between the four area groups and the Serra da Cantareira were also calculated (TABLE 2). In this analysis, all the avifauna list of one group are considered together. This approach demonstrates the relatively high similarity (75.5) between the interior sites and the montane Serra sites and the relatively low similarity of Ubatuba to all other areas. Campos do Jordão has a relatively high similarity (76.1) on the montane Serra sites but not particularly with the Serra da Cantareira nor any other area. The Serra da Cantareira is most similar to the Serra group.

TABLE 1 - Coefficients of similarity between ten São Paulo woodland avifaunas.

Avifaunal Area	S.da C. (1)	C.do J. (2)	Ubat. (3)	Borac. (4)	C. Bot. (5)	Jacup. (6)	B.Rico (7)	Lençóis (8)	Paraíso (9)	M.do D. (10)
S. da Cantareira(1)										
Campos do Jordão(2)	70.7									
Ubatuba(3)	68.	47.5								
Boracéia(4)	76.7	73.4	70.8							
Carlos Botelho(5)	79.1	76.4	63.9	88.9						
Jacupiranga(6)	70.8	63.4	81.1	86.3						
Barreiro Rico(7)	76.7	55.3	65.7	68.4	70.9	66.7				
Lençóis(8)	66.7	57.6	56.3	57.4	62.8	61.8	79.5			
Paraíso(9)	70.8	53.1	63.3	65.9	69.1	68.0	87.4	81.3		
Morro do Diabo(10)	65.6	46.4	50.0	50.5	58.1	61.8	76.9	79.7	82.3	
Number of species	106	91	76	92	103	84	108	77	75	68

TABLE 2 - Coefficients of similarity between woodland avifaunas of five area groups.

AREA GROUP	S. da Cant.	C. do Jordão	Ubatuba	Mont. Serras	Interior
S. Cantareira (1)					
C. do Jordão (2)	70.7				
Ubatuba (3)	68.6	47.5			
Montane Serras (4-6)	81.1	76.1	68.6		
Interior (7-10)	76.8	60.6	63.6	75.5	
Nº of species	106	91	76	127	130

In summary, in terms of the relationships between their woodland avifaunas, the Serra da Cantareira is most closely related to the montane areas of the Serras do Mar and Paranapiacaba but also shares similarities with the drier interior forests. It thus represents, to a somewhat limited degree, an intermediate link between the humid tropical forest of the coastal Serras and the drier forests of the interior of São Paulo.

PART 2. THE ANNOTATED CHECKLIST

1 Names of the birds

The English names, scientific names and their systematic order follow the American Ornithologist Union Checklist (A.O.U., 1986 and its supplements). For those species not included in the Checklist, references to standard publications on South American birds were consulted (MEYER DE SCHAUENSEE, 1982; SICK, 1985). The Portuguese names used are adopted uncritically from SICK (1985) and is not meant to suggest that the many other names and variants may not be equally valid. Scientific names in parentheses indicate a species whose status is hypothetical.

2 Status

The letters following "Status" refer to the habitat preference of the species as classified by DUNNING (1982) and as discussed in Part 1. The letters used are: (F (forest), T (trees), S (scrub), O (open) and W (aquatic). It is then indicated whether the bird is resident, migratory or just an occasional visitor and an indication is given of its abundance. The abundance classifications adopted for this study are based on the proportion of excursion (into the appropriate habitat at the appropriate season and time of day) on which the species was seen or heard. The categories are: common (virtually all excursions), fairly common (the majority), uncommon (less than half) and rare (less than a tenth). The usual habitat of the species in the Serra da Cantareira is given and, when it occurs in several habitats, and indication of its abundance is given for each.

Additional information on the relative abundance of the different species can be found in the point count and mist netting data of GRAHAM (1986a). A summary explanation of these data is given below but full details on the methodology and results can be found in the original publications. It should be noted that half of the point counts and netting were done in *Araucaria* plantations in the middle of the Reserve but, with a few exceptions, the bird populations of these two habitats were quite similar.

2.1 Point count data

In a point count I recorded, for a duration of 20 minutes, every bird seen or heard within a radius of 25 m. The counts were done from paths that passed through the forest of the Reserve. A total of 64 morning counts (from 07:00 to 10:00) were done from December 11 1985 to March 29 1986. Forty-eight afternoon counts that were included in GRAHAM (1986a) are ignored here to reduce the variability due to diurnal fluctuations in activity. Fifty-nine species were recorded on the morning point counts and for the 25 most common (recorded on at least three counts and with a frequency greater than 0.04), I include in the species accounts the frequency with which it was recorded and its rank. A frequency of 0.25 can be interpreted as a "25 % probability" of recording a species under these conditions. The highest frequency recorded was 0.69 for the warbler *Basileuterus culicivorus*.

2.2 Mist netting

Birds were mist netted only in order to evaluate their relative abundances so no banding was done. The nets used were four-shelved, 38 mm mesh nets with a height of 2.1 m and a length of 9.1 m.

The netting was done in the period from November 14 1985 to March 27 1986 and the nets were open from sunrise till about noon (some of the netting was done in the afternoon but this was insignificant in terms of the number of net-hours and the number of captured birds). The sampling consisted of a total of 917 net-hours.

A total of 247 birds of 45 different species were captured for a mean of 27.0 birds/100 net-hours. In the following species accounts, the ranking and number of captures/100 net-hours are given for the fifteen most commonly captured species (with a capture rate $\geq 0.6/100$ net-hours; equivalent to at least 6 captures). The woodcreeper *Sittasomus griseicapillus* and the manakin *Schiffornis virescens* shared the highest recorded capture rate of 2.5/100 net-hours.

Additional mist netting was also done on the grounds of the Instituto Florestal in the State Park and has not previously been reported on. This period of netting was approximately the same as reported on above. It involved a total of 432 net-hours of which 373 were in secondary woods and 59 in open areas. A total of 27 species were captured of which 16 had not been captured in the forest netting. Eighty-two birds were captured in the woods for an overall mean of 22.0 birds/100 net-hours and 38 in the open areas for a mean of 65.0/100 net-hours (high because of occasionally captured flocks of *Zonotrichia capensis*). In the species accounts that follow, the rank and frequency are given of the ten most common from the woodland netting (of a total of 21 species) and the four most common from the open area netting (of a total of 11 species; the other seven being represented by only single captures).

3 Specimens

Under this heading, reference is made to specimens that are in the Museum of Zoology's collection. With a very few exceptions, the identifications of museum specimens were not verified by the author.

4 Breeding

All information collected relative to nesting or breeding is included here. The absence of this section indicates that no indication of breeding was found. Many resident species fall into this category; further field work will eventually uncover many more proofs of breeding.

5 Feeding

Whenever a bird was observed feeding on fruits, seeds or nectar, and effort was made to identify the plant in question. Plants were identified by comparison with specimens in the Instituto Florestal's herbarium and through consultation with its staff. Some of the plants were exotic species found only on the grounds of the State Park.

SPECIES ACCOUNTS

Family TINAMIDAE

Tinamus solitarius Solitary Tinamou (macuco)

Status (F) - A fairly common species that could be heard in heavily forested areas on most evenings at dusk. It was heard throughout the study period. Very secretive and never actually seen by the author.

Specimens - NEGREIROS, *et al.* (1974) state that the species has been collected in the Reserve but they provide no further details. No such specimen was located by me.

Breeding - A recently predated egg this species was found by a guard along a Reserve trail on January 19. A brood of chicks was apparently seen this same month (A. Cassalho, pers. comm.).

Crypturellus obsoletus Brown tinamou (inhambu-guaçu)

Status (FT) - A common forest species that was heard on virtually every trip into the forest although only rarely seen. It seemed to be becoming less vocal by March. Only rarely noted on point counts.

Breeding - No proof of breeding was obtained but several local residents informed me of having seen nests or broods in the Reserve.

C. parvirostris Small-billed Tinamou (inhambu-chororó)

Status (T5) - Not recorded by me possibly because of unfamiliarity with the vocalizations. Apparently not uncommon in more open areas such as Chapada or Cabuçu (A. Cassalho, pers. comm.).

C. tataupa Tataupa Tinamou (inhambu-xintã)

Status (T5) - This species was similarly never recorded by the author but was apparently not uncommon throughout the Reserve (A. Cassalho, pers. comm.).

Specimens - A female collected on December 9 1940 is in the Museum collection.

Family PODICIPEDIDAE

Tachybaptus dominicus Least Grebe (mergulhão-pequeno)

Status (W) - Resident on a small marsh in the State Park. Probably occurred elsewhere but appropriate habitat was rarely visited.

Breeding - This species was always seen in pairs but no confirmation of breeding was obtained.

Family ARDEIDAE

Casmerodius albus Great Egret (garça-branca-grande)

Status (W) - Apparently only a rare visitor to the Reserve. Not recorded during the study period but several independent descriptions were received of a bird that visited the Horto ponds for a few days "several years ago". This species undoubtedly strays occasionally to the other reservoirs in the Reserve.

Butorides striatus Green-backed Heron (socozinho)

Status (W) - A fairly common resident species that could be found occasionally but irregularly on almost any patch of water.

GRAHAM, D. J. The avifauna of the Serra da Cantareira, São Paulo, Brazil: a preliminary survey.

Breeding - Three very recently fledged juveniles were seen together on November 22 in a tree overlooking one of the Horto ponds. The nest was believed to be hidden nearby in dense foliage.

Nycticorax nycticorax **Black-crowned Night-Heron (savacu)**

Status (W) - An apparently uncommon resident. Two immatures were resident on the Horto ponds from September to October and other birds were occasionally heard flying over the State Park at night.

Family CATHARTIDAE

Coragyps atratus **Black Vulture (urubu-de-cabeça-preta)**

Status (TSO) - A common species almost constantly to be seen soaring overhead.

Breeding - A few years ago, in forest near the Reserve's Pedra Grande, A. Cassalho (pers. common.) found a nest with chicks.

Cathartes aura **Turkey Vulture (urubu-de-cabeça-vermelha)**

Status (FTSO) - Not ever recorded by the author but apparently a rare visitor to the Reserve. (A. Cassalho, pers. comm.).

Family ACCIPITRIDAE

Leptodon cayanensis **Gray-headed Kite (gavião-de-cabeça-cinza)**

Status (FT) - An uncommon forest species that was presumably resident. Both a dark phase and a light phase bird were noted several times near Chapada (January-March).

Chondrohierax uncinatus **Hook-billed Kite (caracoleiro)**

Status (FT) - Not recorded in this study.

Specimens - A female was collected on December 8 1940 and is in the Museum collection.

Elanus caeruleus **Black-shouldered Kite (peneira)**

Status (O) - Its presence in the Reserve is considered hypothetical pending confirmation of its reported occurrence in open areas of the Reserve (A. Cassalho, pers comm.).

Harpagus diodon **Rufous-thighed Kite (gavião-bombachinha)**

Status (FT) - A rare forest species only seen on two occasions: and adult on March 17 during a point count and a juvenile on March 28.

Accipiter striatus **Sharp-shinned Hawk (gaviãozinho, gavião-papa-pinto)**

Status (FT) - Not recorded in this study.

Specimens - An immature male was collected in the Serra by Pinder on 24 October 1987. This specimen could not be found in the Museum's collection for verification of the identification.

Leucopternis lacernulata **White-necked Hawk (gavião-pomba)**

Status (FT) - Not recorded in this study.

Specimens - A female collected on July 26 1952 by Werner was his only contribution of a Serra da Cantareira bird to the Museum collection.

Parabuteo unicinctus Bay-winged Hawk (gavião-asa-de-telha)

Status (TSO) - Rare and possibly only a visitor to the Reserve. A pair was seen over the forest edge on October 9 and a single bird in the same area in late October.

Buteo magnirostris Roadside Hawk (gavião-carijó)

Status (TSO) - The most common hawk in the Reserve occurring in both forested and semi-open areas. It was only once recorded on a point count. It occasionally attacked small birds captured in the mist nets and was thus itself twice captured in the nets: and adult in a wooded area of the State Park and an immature bird in the forest.

Breeding - Other than the mist netted immature, no proof of breeding was obtained but pairs were commonly noted and were surely nesting in the Reserve.

B.brachyurus Short-tailed Hawk (gavião-de-cauda-curta)

Status (TS) - Rare and possibly only an occasional visitor. A light phase adult (and possibly a second bird) were seen soaring over Chapada on September 23.

Family FALCONIDAE

Polyborus plancus Crested Caracara (caracará)

Status (O) - Probably an occasional visitor with only one record: and individual in the State Park on September 8.

Milvago chimachima Yellow-headed Caracara (carrapateiro)

Status (TO) - A fairly common resident species seen over forest and semi-open areas.

(Herpetotheres cachinnans) Laughing Falcon (acauã)

Status (FTS) - Considered in this report as hypothetical. Several sight records of this species were reported to me but these likely referred to released individuals. (A. Cassalho, pers. comm.).

Micrastur ruficollis Barred Forest-Falcon (gavião-caburé)

Status (F) - Only three records were obtained of this secretive and apparently rare species. A juvenile was seen in dense forest on August 20 and one other bird was briefly glimpsed during a point count. An adult was captured bird. The juvenile and adult were of the "rufous phase".

M. semitorquatus Collared Forest-Falcon (gavião-relógio)

Status (FT) - Uncommon but heard calling quite regularly. On at least one occasion, two were calling simultaneously from widely separated areas. The species was never actually seen.

Family ANATIDAE

Dendrocygna viduata White-faced Whistling Duck (irerê)

Status (W) - A fairly common resident which perhaps is not present in the winter. Small flocks occurred on the ponds in the Horto Florestal and occasionally became very tame. They were recorded in August, September and January with no records from other months.

Amazonetta brasiliensis **Brazilian Duck (pé-vermelho)**

Status (W) - Only recorded on a single occasion: a pair on a small marsh in the Horto Florestal on November 6.

Family CRACIDAE*Penelope obscura* **Dusky-legged Guan (jacuguaçu)**

Status (F) - Uncommon resident which was somewhat irregularly noted: in September, seen on almost every trip into the Reserve at dusk; rarely noted from November to January. Usually seen in small groups of two to three but its apparently occasionally seen in groups of 20-30.

Breeding - Very young birds have been usually recorded from September to November (A. Cassalho, pers. comm.).

Family PHASIANIDAE*Odontophorus capueira* **Spot-winged Wood-Quail (uru)**

Status (F) - A common resident but very infrequently seen. In September it was not unusual to hear three or four different groups calling simultaneously. Vocalizations were heard much less commonly from November to January but regularly once again in March. An adult was captured in a mist net on January 30.

Breeding - No young were ever seen by the author but chicks have been seen in December (A. Cassalho, pers. comm.).

Family RALLIDAE*Laterallus melanophaius* **Rufous-side Crake (pinto-d'água-comum)**

Status (W) - Of uncertain abundance due to its extremely secretive habits. My only sure record was of two birds seen together on January 29 in a small marsh in the Horto Florestal.

Breeding - One of the two birds seen on January 29 seemed to briefly feed the other bird, suggesting an adult and a juvenile, but a more substantial indication of breeding would be desirable.

(Rallus nigricans) **Blackish Rail (saracura-sanã)**

Status (W) - This species was probably seen a few times in marshy areas of the Horto Florestal but due to possible confusion with *Aramides saracura*, its status is best considered hypothetical.

Aramides saracura **Slaty-breasted Wood-Rail (saracura-do-mato)**

Status (FTSW) - An uncommon resident of marshy and semi-open areas. Not recorded in the forest but probably also occurs there. Recorded, mostly by voice, at a variety of locations in the State Park.

Breeding - On November 20 an adult was seen with two chicks which were one-third adult size.

Gallinula chloropus **Common Moorhen (frango-d'água-comum)**

Status (W) - A fairly common resident at one small marsh in the Horto Florestal. Young birds were common at this marsh on November 6: some one to two weeks old and others very nearly adult size.

Family CARIAMIDAE**(*Cariama cristata*) Red-legged Seriema (seriema)**

Status (SO) - This cerrado species is included here only because it is occasionally seen or heard in the Reserve (e.g., a bird seen by the author on a road through the middle of the forest in mid-December). These records apparently refer to released individuals (A. Cassalho, pers comm.).

Family COLUMBIDAE***Columba livia* Rock Dove (pombo-doméstico)**

Status (O) - An introduced resistant species abundant around buildings of the State Park.

***C. plumbea* Plumbeous Pigeon (pomba-amargosa, caçaroba)**

Status (F) - A common forest species heard on almost all trip into the forest during the study period. It was however only recorded on one point count as it rarely called near to an observer.

Feeding - Recorded feeding flowers August 29 (of the exotic *Liquidambar styraciflua*) and on *Ficus* fruits in October.

***Columbina squammata* Scaled Dove (fogo-apagou)**

Status (S) - Fairly common resident in open areas of the State Park.

Breeding - Courtship displays were observed on October 19 but no other evident of breeding was recorded.

***C. talpalcoti* Rufous Ground-Dove (rolinha)**

Status (SO) - Common species in all open areas. A single bird was captured in a net set in an open field of the State Park.

***Claravis godefrida* Purple-winged Ground-Dove (pararu)**

Status (F) - Very rare or extirpated. None were observed by the author but Sr. A. Cassalho (pers.comm) described having seen, on one occasion many years ago, a pair of "rolinha azul" in deep forest, which could very well have been this species.

Specimens - One of the few known records from the state of São Paulo is a male collected in the Serra da Cantareira in October 1937 by Flávio da Fonseca. I verified the identification of this specimen in the Museum collection.

***Leptotila rufaxilla* Gray-fronted Dove (gemedeira, juriti)**

Status (F) - A fairly common species in the forest and occasionally seen in more open areas (*L. verreauxi*) would seem to be a likely species to record in open habitats but even in such areas, all positively identified *Leptotila* were *L. rufaxilla*. Quite shy and only recorded once on a point count. It was twice caught in a mist net in the forest.

Breeding - A nest of this species was found on August 21 in a vine tangle at about 15 m in an exotic conifer of the Horto Florestal. At that date, the male was bringing nesting material to the female who was arranging them on the nest. During subsequent visits (till September 5) incubating birds were noted.

***Geotrygon montana* Ruddy Quail-Dove (pariri)**

Status (T) - Only two sightings were made of this uncommon resident: on August 19 and on January 30.

It may have been overlooked because of unfamiliarity with its call.

Family PSITTACIDAE***Pyrrhura frontalis* Reddish-bellied Parakeet (tíriba-de-testa-vermelha)**

Status (FT) - Uncommon resident in forest areas and seen only once on a point count. Occasionally also occurred in open areas of the State Park.

Breeding - No proof of breeding was obtained but nests of this species have been found in the Reserve (A. Cassalho, pers. comm.).

Feeding - This species was noted several times feeding on *Morus* berries.

***Forpus xanthopterygius* Blue-rumped Parrotlet (tuim)**

Status (TSO) - Formerly occurred in the Serra (A. Cassalho, pers. comm.), but probably now extirpated from the Reserve as no sightings have been made in the last ten years.

***Brotogeris tirica* Plain Parakeet (periquito-rico)**

Status (T) - Generally fairly common in open areas of the Serra but rarely recorded in forested areas.

Breeding - Nests of this species are apparently known in the Reserve (A. Cassalho, pers. comm.).

Feeding - Occasionally seen feeding on *Morus* berries.

***Pionus maximiliani* Scaly-headed Parrot (maitaca-bronzeada)**

Status (FT) - The largest parrot in the Reserve, this species occurred uncommonly but regularly in forested areas and, less commonly, in open areas. In March, when the *Araucaria* fruits were maturing, this species was locally common in the *Araucaria* plantations. It was occasionally seen on point counts on which it had an overall ranking of 23rd and a frequency of 0.05.

Breeding - Nests of this species are apparently known in the Reserve (A. Cassalho, pers. comm.).

Family CUCULIDAE***Coccyzus melacoryphus* Dark-billed Cuckoo (papa-lagarta)**

Status (TS) - Probably a rare resident in semi-open areas. My only record was of a single bird in the Chapada area on December 12.

***C. amricanus* Yellow-billed Cuckoo (papa-lagarta-norte-americano)**

Status (T) - A rare migrant from N. America with only one record: a carefully observed individual during a point count on January 21 in a partially cleared area along one of the forest trails. This species has only been recently added to the state list (WILLIS & ONIKI, 1985).

***C. euleri* Pearly-breasted Cuckoo (papa-lagarta-de-euler)**

Status (FTS) - Apparently a rare resident in forest. A definite sighting of a bird in the canopy of a heavily forested area was made on December 11 and a probable sighting in similar habitat on November 15.

Piaya cayana Squirrel Cuckoo (alma-de-gato)

Status (T) - An uncommon but regularly encountered resident of both forest and light woodland. Only rarely seen on point counts.

Specimens - Three specimens, collected from 1934 to 1940, are in the Museum collection.

Breeding - On January 15 an adult was watched for almost ten minutes as it sat in a tree with a beakful of food, apparently waiting to feed young. The nest was believed to be in an adjacent tangle of vegetation.

Tapera naevia Striped Cuckoo (Saci, sem-fim)

Status (TS) - Although never recorded by me, this species with its distinctive, well known call, is apparently a resident of semi-open areas of the Reserve (A. Cassalho, pers. comm.)

Crotophaga ani Smooth-billed Ani (anu-preto)

Status (SO) - A common resident of open and semi-open areas in the State Park.

Specimens - The Museum has a female collected in the Reserve in 1965.

Guira guira Guira Cuckoo (anu-branco)

Status (SO) - Although apparently not uncommon in more open areas of the Reserve (A. Cassalho, pers. comm.), my only record of this species was an individual in the State Park on November 10.

Family TYTONIDAE

Tyto alba Common Barn-Owl (suindara)

Status (O) - Not recorded by me but a regular visitor to residential areas in the State Park (Dr. Cory, pers. comm.).

Family STRIGIDAE

Otus choliba Tropical Screech-Owl (corujinha-do-mato)

Status (TSO) - Generally speaking, abundances of the various owl species are poorly understood because of very little nocturnal field work in the Reserve and an incomplete knowledge of calls. This species was heard or seen very regularly in the State Park but most records were probably of the same pair. On only one occasion was it heard in a forested part of the Reserve.

Pulsatrix koensiswaldiana Tawny-browed Owl (murucututu-de-barriga-amarela)

Status (F) - Probably a not uncommon resident in forested areas. At some times of the year, particularly in March, calls that were presumed to be of this species were heard on most evenings. The only sure sighting was of an adult on October 13 in thick shrubbery of the State Park. The buff eyebrows were carefully noted thus eliminating the possibility of *P. perspicillata*.

Specimens - The Museum has two females of *P. koensiswaldiana* collected in the Serra da Cantareira in 1940.

Breeding - A juvenile *Pulsatrix* sp., estimated to be only a few days out of the nest, was found in the Reserve on January 26. It was kept for several weeks by Sra. Luci Schaeffer before being released back into the Reserve.

Athene cunicularia Burrowing Owl (caburé-do-campo)

Status (O) - Never recorded by me but a locally well-known species that apparently nests every year near the administration buildings in the State Park.

Ciccaba virgata Mottled Owl (coruja-do-mato)

Status (FT) - Presumably a resident species but of unknown abundance. On several occasions I noted calls which may have been of this species but no positive identification was ever made.

Specimens - A male (identified as "*C. barelliana*") was collected in the Reserve on December 9 1940.

(Strix hylophila) Rusty-barred Owl (coruja-listrada)

Status (F) - Although certainly to be expected, this owl can only be considered hypothetical in the Reserve. The only record I have is a vocalization heard on September 12 and identified at the time (Sr. Flávio Barbosa, pers. comm.) as very probably being this species.

Rhinoptynx clamator Striped Owl (coruja-orelhuda)

Status (O) - Apparently a rare resident in the Reserve but likely more common in adjacent residential and semi-open areas. The only individual recorded was seen on August 29 at the edge of the Reserve.

Family CAPRIMULGIDAE

Lurocalis semitorquatus Semi-collared Nighthawk (tuju, curiango)

Status (FT) - Uncommon resident seen regularly over both the forest and semi-open areas. Locally fairly common with, for example, a pair seen virtually every evening in the State Park in November and December.

Chordeiles sp. Nighthawk sp. (bacurau)

Status - A single *Chordeiles* was noted October 21 and a flock of about ten were regularly seen around the State Park in the second week of January. These were either *C. minor* or *C. acutipennis* but no definite identification was ever made.

Nyctidromus albicollis Pauraque (curiango, bacurau)

Status (TS) - Abundance of this species is unsure. Vocalizations were rarely if ever heard by the author but the call was well-known locally (A. Cassalho, pers. comm.).

Hydropsalis brasiliana Scissor-tailed Nightjar (bacurau-tesoura, curiango-tesoura)

Status (TS) - Not recorded by me but Sr. A. Cassalho (pers. comm.) clearly described the differences in call, appearance and behaviour from the following species and state that both are regularly found in the Reserve.

Macropsalis creagra Long-trained Nightjar (bacurau-tesoura-gigante)

Status (FT) - A male of this striking species was seen by me at the edge of the Reserve on August 29 and could apparently be seen every night in the same place from August through October (Sra. Luci Schaeffer, pers. comm.).

Family NYCTIBIIDAE

Nyctibius griseus Common Potoo (mãe-de-lua, urutau)

Status (FT) - Not recorded by the author but the well-known call can apparently be regularly heard in the Reserve, especially in September (A. Cassalho, pers. comm.).

Family APODIDAE

(Streptoprocne zonaris) White-collared Swift (andorinhão-de-coleira)

Status (FTO) - Flocks of what were believed to be this species apparently occur in the Reserve, especially in September and October (A. Cassalho, pers. comm.). Considered hypothetical in the Reserve pending a sure sighting but does likely occur as a regular visitor, perhaps from the Serra do Mar.

Chaetura andrei Ashy-tailed Swift (andorinhão-do-temporal)

Status (TO) - Presumably only a summer resident. This species was first recorded on August 26, subsequently becoming common throughout the Reserve (although less so over forest). It was still common at the end of March.

Family TROCHILIDAE

Phaethornis eurynome Scale-throated Hermit (rabo-branco-de-garganta-rajada)

Status (FT) - Very common in forested areas of the Reserve where it was easily the most common hummingbird although heard much more often than seen. This species was the third most common bird recorded on point counts with a frequency of 0.47. It was the seventh most commonly captured bird in the forest mist nets with a capture rate of 1.1/100 net-hours. Uncommon in semi-open areas but regularly recorded at a feeder in the State Park.

Breeding - A nest of this species was found on January 19 which had two fairly well-grown nestlings.

Feeding - This species was regularly noted at flowers of *Impatiens* sp. ("maria-sem-vergonha") and was also occasionally recorded at *Salvia splendens* (January 18), *Mendoncia* sp. (January 15) and regularly in March at *Psychotria suterella*.

P. oretrei Planalto Hermit (rabo-branco-de-sobre-amarelo)

Status (T) - Not recorded in this study. A species that would be expected to replace *P. eurynome* in open areas although all *Phaethornis* hummingbirds definitely identified in such habitats were always *eurynome*.

Specimens - An old specimen collected in 1907 by Pinder is in the Museum.

Breeding - The specimen was a female that was apparently taken from a nest with two eggs.

Eupetionema macroura Swallow-tailed Hummingbird (tesourão)

Status (SO) - A fairly common species in open areas of the State Park but never recorded in the forest. Very possibly this species leaves in the winter as it was rarely noted in January and not at all in March.

Feeding - This hummingbird was recorded feeding at flowers of *Grevillea banksi* (many records), *Erythrina crista-galli* (many records) and *Inga* sp. (October 20).

***Melanotrochilus fuscus* Black jacobin (beija-flor-preto-e-branco)**

Status (FTS) - A fairly uncommon species in the State Park and only rarely noted in the forested areas of the Reserve. Probably only a summer resident as it became very uncommon in March (although one record as late as March 31). Two individuals were captured in mist nets in the State Park.

Breeding - Juveniles were recorded at a feeder on March 2.

Feeding - This species was recorded at flowers of *Grevilea banksi*, *Erythrina* sp., *Inga* sp. (September 19) and *Spathodea* sp. (October 20).

***Lophornis chalybea* Festive Coquette (tufinho-verde)**

Status (TS) - Only a single record: an individual at a feeder in the State Park on March 7.

***Chlorostilbon aureoventris* Glittering-bellied Emerald (besourinho-de-bico-vermelho)**

Status (SO) - Seemingly a rare resident in semi-open areas of the State Park but possibly overlooked. A scattering of observations were made from August through November but with no sure subsequent identifications.

Specimens - A female was collected in the Serra by Hammar in August 1901.

Feeding - This species was observed at flowers of *Grevilea banksi* (November 2), *Impatiens* sp. and *Stachytarpheta* sp. (both November 5).

***Thalurania glaucopsis* Violet-capped Woodnymph (tesoura-de-fronte-violeta)**

Status (FTS) - A common species in the forest but somewhat less common than *Phaethornis eurynome*. With a frequency of 0.20 in the point counts, this species was ranked tenth in abundance. It was the eighth most frequently captured bird in the mist nets with a capture rate of 1.0/100 net-hours. Uncommon in semi-open areas of the Reserve. It was captured only once in a mist net in the State Park in a wooded area).

Specimens - Two males collected in 1940 are in the Museum collection.

Breeding - A nest of this species was found in a small bush at the edge of a path through the forest. A female was incubating two eggs from August 29 till September 11 and two chicks on September 13. The chicks were well-developed on October 2 but the nest was empty by October 8. A juvenile male was caught in a mist net on January 19.

Feeding - Flowers that were visited by *T. glaucopsis* include those of the following species: *Grevilea banksi* (September), *Impatiens* sp. (September), *Inga* sp. (December), *Cassia multijuga* (March 22), *Mendoncia* sp. (January 15), *Heliconia* sp. (October 24) and *Psychotris suterella* (February).

***Leucochloris albicollis* White-throated Hummingbird (papo-branco)**

Status (TS) - An uncommon but regular resident of both forested and semi-open areas. Curiously, virtually all records from the latter habitat were from the Chapada area in the middle of the Reserve with only a single observation from the State Park. A total of 3 birds were captured in forest mist nets.

Feeding - Only *Mendoncia* sp. flowers were observed to be visited.

***Amazilia versicolor* Versicolored Emerald (beija-flor-de-banda-branca)**

Status (TS) - Uncommonly but regularly observed in the forest. This hummingbird was ranked 13th in abundance on the point counts with a frequency of 0.14 and was occasionally captured in forest mist nets. It was also twice captured in mist nets in wooded areas of the State Park. It was rarely seen in more open areas.

Breeding - On January 21 a bird was observed collecting nesting material (fibrous brown hairs from an arborescent fern).

Feeding - Flowering species visited include: *Inga* sp. (September 26), *Impatiens* sp. (September, October), *Erythrina crista-galli* (October 13) and *Psychotrium suterella* (February 26).

***A. lactea* Sapphire-spangled Emerald (beija-flor-de-peito-azul)**

Status (TS) - Rare in the forest but the most common *Amazilia* in the State Park. It was captured twice in the open area nets in the State Park.

Feeding - Flowering species visited include: *Inga* sp. (September, October), *Erythrina speciosa* (September 28), *E. crista-galli* (October 13), *Grevilea banksi* and *Caesalpinia peltaphoroides* (October 8).

***Aphantochroa cirrhochloris* Sombre Hummingbird (beija-flor-cinza)**

Status (TS) - Possibly a resident but only recorded on two occasions (both in the State Park and almost certainly the same bird): October 20 and November 2.

Specimens - A male was collected in the Serra by Lima in 1940.

Feeding - The above two sight records were both of a bird feeding at flowers of an exotic *Spathodea* sp. tree.

***Clytolaema rubricauda* Brazilian Ruby (beija-flor-rubi)**

Status (TS) - Uncommon resident of forest and forest edge habitats. Recorded quite regularly from September to December but with no subsequent records.

Specimens - The museum has a female collected on December 9 1940 (identified as "*C. rubinea*").

Feeding - The only indication I have of this species feeding preferences is a record of a bird feeding at flowers of *Canna* sp. on September 27.

Family TROGONIDAE

***Trogon surrucura* Surucua Trogon (sucuruá-de-peito-azul)**

Status (FT) - Fairly common and the only trogon in the Serra da Cantareira. It was ranked 21st on the point counts with a frequency of 0.06. On a few occasions even noted in more open woodland of the State Park.

Specimens - The museum has three specimens: a female collected in 1934 and a pair in 1940.

Breeding - Juveniles were seen being fed adults on January 7.

Family ALCEDINIDAE

***Ceryle torquata* Ringed Kingfisher (martim-pescador-grande)**

Status (W) - Probably not a nesting species because of lack of suitable habitat but, in November and December, a pair was seen about five times flying around the State Park.

***Coloroceryle amazona* Amazon Kingfisher (martim-pescador-verde)**

Status (W) - Uncommonly recorded on the Horto Florestal ponds: a pair on August 14 and a single bird on November 11.

***C. americana* Green Kingfisher (martim-pescador-pequeno)**

Status (W) - Recorded regularly at a small marsh in the State Park at the Lago das Carpas in the Chapada area. Probably fairly common in suitable habitat throughout the Serra.

Family BUCCONIDAE***Malacoptila striata* Crescent-chested Puffbird (joão-barbudo)**

Status (F) - Apparently a rare forest resident with only two records (October and December).

Specimens - Two specimens were collected (identified as "*M. torquata*") in the Reserve: a male in 1940 and a female in 1965.

Family RAMPHASTIDAE***Selenidera maculirostris* Spot-billed Toucanet (araçari-poca)**

Status (F) - Either extirpated or very rare in the Serra as the species was never recorded by me and was unknown to Sr. Cassalho (pers. comm.)

Specimens - Olalla collected three males and two females in early June of 1965; these are presently in the Museum collection.

***Baillonijs bailloni* Saffron Toucanet (araçari-banana)**

Status (FT) - My only sure sighting of this species was on September 25 but on two or three other occasions they were likely heard or glimpsed.

***Ramphastos dicolorus* Red-breasted Toucan (tucano-de-bico-verde)**

Status (FT) - Rare resident species with a total of only four five sightings from September through January. The most common toucan species in the Serra.

Family PICIDAE***Picumnus temminckii* Ochre-collared Piculet (pica-pau-anão-de-coleira)**

Status (FT) - This piculet was an uncommon but regularly observed species in wooded areas of the State Park and in the forest itself. The Museum specimens (see below) were examined by the author. It would seem, as supported by my fields observations, that the population in the Serra da Cantareira is morphologically intermediate between the two taxa *temminckii* and *cirratu*s. It is perhaps only marginally more similar to typical *temminckii*.

Specimens - Four specimens, all labelled as *P. temminckii* are in the Museum collection: two males and two females collected by Olalla in 1965.

***Melanerpes flavifrons* Yellow-fronted Woodpecker (benedito-de-testa-amarela)**

Status (T) - Not recorded during this study and not known to Sr. Cassalho (pers. comm.)

Specimens - A male was collected in the Serra by Olalla on June 9, 1965.

***Veniliornis spilogaster* White-spotted Woodpecker (pica-pauzinho-verde-carijó)**

Status (F) - A fairly common forest and open woodland species and easily the most common woodpecker in the Serra. On the point counts, this species was ranked 16th and had a frequency of 0.09. The only mist netted bird was one caught in a wooded area of the State Park.

***Piculus aurulentus* White-browed Woodpecker (pica-pau-dourado)**

Status (F) - Regularly observed in the forest but uncommon and decidedly less numerous than *V. spilogaster*. Only rarely recorded on point counts.

***Colaptes campestris* Campo Flicker (pica-pau-do-campo)**

Status (TO) - Uncommon species in open cleared areas at the edge of the Reserve and in the State Park. Recorded occasionally from September to December.

***Celeus flavescens* Blond-crested Woodpecker (pica-pau-de-cabeça-amarela)**

Status (FT) - This handsome woodpecker was a rare resident of forest and forest edge habitats. Recorded a total of about ten times during the study period.

***Dryocopus lineatus* Lineated Woodpecker (pica-pau-de-banda-branca)**

Status (TS) - The largest woodpecker in the Serra and of uncommon but regular occurrence. Only record on a point count. Some (or most?) individuals had no white on the back (a morph, formerly considered a separate species: "*D. erythrops*") but at least one bird seen on November 14 had a well-marked white "V" on the back.

Family FUNARIIDAE***Furnarius rufus* Rufous Hornero (joão-de-barro)**

Status (SO) - A fairly common resident in open areas of the State Park.

Breeding - At one nest, adults were feeding nestlings from October 21 to November 12 and on November 14 fledglings were in the vicinity.

***Synallaxis spixi* Chicli Spinetail (joão-teneném)**

Status - A common resident of open areas of scrub and second growth. A single bird was caught in an open area mist net in the State Park.

***S. ruficapilla* Rufous-capped Spinetail (pichororé)**

Status (FT) - A common species in all forested areas of the Reserve.

According to the point count data, this was the fourth most commonly recorded species and had a frequency of 0.39. It was however surprisingly uncommon in the mist nets with only a total of three captures.

Specimens - The Museum has nine specimens of this species: one collected by Lima in 1941 and eight by Olalla in 1965.

Breeding - Adults were observed carrying nesting material on November 15 and an adult was seen feeding a juvenile on January 18. In addition, a juvenile was mist netted on March 17.

***S. cinerascens* Gray-bellied Spinetail (joão-teneném-da-mata)**

Status (F) - Not recorded in this study.

Specimens - The only record from the Serra da Cantareira is a female collected by Olalla on June 9 1965 and in the Museum collection.

***Certhiaxis cinnamomea* Yellow-chinned Spinetail (curutié)**

Status (SW) - Suitable habitat for this species was infrequently visited but they were fairly common at one small marsh in the State Park and likely occurred elsewhere.

Breeding - One pair at this marsh were building a nest on August 29.

***Cranioleuca pallida* Pallid Spinetail (arredio-pálido)**

Status (FT) - A fairly common species in its preferred habitat of exotic coniferous plantations. Regularly seen in stands of *Araucaria* both the Reserve and in the State Park but very rarely seen in other forested areas. Although ranked 15th on the point counts with a frequency of 0.13, this misrepresents the species abundance since it was one of the few species whose abundance differed radically the *Araucaria* and natural forest habitats. Only one bird was ever captured in a mist net.

Breeding - A pair were found building a nest on October 20 in an *Araucaria* tree on the grounds of the Instituto Florestal. What were perhaps the same pair were building another nest in the same tree on October 29 and were recycling material from the first nest. The bird that was mist netted (on March 17) was a juvenile.

***Anabazenops fuscus* White-collared Foliage-Gleaner (trepador-coleira)**

Status (F) - An apparently rare resident of forested areas. This species was seen only twice (November 14 and January 13), and, also on January 13, was mist netted once.

Specimens - The Museum has a specimen collected on December 9 1940.

***Syndactyla rufosuperciliata* Buff-browed Foliage-Gleaner (trepador-quiete)**

Status (FT) - An uncommon resident of the Reserve's forests that was rarely seen on point counts and captured only twice in mist nets.

***Anabacerthia amaurotis* White-browed Foliage-Gleaner (limpa-folha-miúda)**

Status (F) - This bird was only definitely seen on one occasion but was likely often confused with similar Furnariid species. It was mist netted on a total of five occasions suggesting it may have been commoner than the sole observation would suggest.

***Philydor atricapillus* Black-capped Foliage-Gleaner (limpa-folha-coroadada)**

Status (F) - An uncommon but regularly noted resident of densely forested areas and the Reserve's most common *Philydor* sp. Curiously however, this bird was never seen on a single point count although it was netted on three occasions.

Specimens - A single specimen, collected in 1965, is in the Museum's collection.

***P. rufus* Buff-fronted Foliage-Gleaner (limpa-folha-testa-bala)**

Status (F) - An uncommon but regularly noted forest resident with a single point count record.

Specimens - A male was collected by Pinto in July 1934.

Automolus leucophthalmus White-eyed Foliage-Gleaner (barranqueiro-olho-branco)

Status (FT) - Apparently a quite rare forest resident. Recorded by me on only three occasions (August to October).

Specimens - Two specimens have been collected in the Serra: one by Pinto in 1934 and one by Olalla in 1965.

Helliobletus contaminatus Sharp-billed Treehunter (trepadorzinho)

Status (FT) - Uncommon forest resident easily confused with other similar species. Regularly noted in January and March and probably overlooked previously. Rarely recorded on the point counts and captured only twice in a mist net (both in March).

Xenops rutilans Streaked Xenops (bico-verado-carijó)

Status (FT) - An uncommon forest species seen on a few occasions every month.

Specimens - One collected by Pinto in 1934 is in the Museum's collection.

Sclerurus scansor Rufous-breasted Leafscraeper (vira-folhas)

Status (F) - This secretive undergrowth species was rarely seen but its more frequently heard calls indicated that not rare. It was only heard on a single point count and was never captured in a mist net.

Specimens - The Museum has five specimens collected from 1934 to 1965.

Locmias nematura Sharp-tailed Streamcreeper (joão-porca)

Status (FW) - Appropriate habitat for this species (heavily forested creeks) was rarely visited but, at least at one location, it was fairly common.

Specimens - Two males were collected in June 1965.

Family DENDROCOLAPTIDAE

Sittasomus griseicapillus Olivaceous Woodcreeper (arapaçu-verde)

Status (FT) - A very common species seen or heard on every trip into the forest. On the point counts, this species had the frequency of 0.50 and was the second most commonly recorded species. Its abundance was also revealed by the mist netting in the Reserve's forest where it was the most frequently captured species (with *Schffornis virescens*). Occasionally even seen in semi-wooded areas of the State Park but never captured there in a mist net.

Specimens - The Museum has 17 specimens of this species of which 15 were collected by Olalla in 1965.

Breeding - Although no definite proof of breeding was ever obtained, groups of three or four birds were frequently noted from January to March and these were presumed to be juveniles accompanying adults.

Xiphocolaptes albicollis White-throated Woodcreeper (arapaçu-de-garganta-branca)

Status (F) - Rare with a total of about five records.

Breeding - An adult was seen feeding what was presumed to be a juvenile (they seemed however identical in plumage) on January 18.

Dendrocolaptes platyrostris **Planalto Woodpecker (arapaçu-grande)**

Status (F) - Uncommon, but apparently somewhat more common than *X. albicollis* a species easily confused with the present one. Recorded only once on a point count.

Specimens - A female was collected on December 7 1940.

Breeding - On March 5, a group of three birds species were observed foraging together. The group very likely included one or more juveniles.

Lepidocolaptes fuscus **Lesser Woodcreeper (arapaçu-rajado)**

Status (F) - A fairly common species but much less frequently noted than *S. griseicapillus*. Occasionally captured in forest mist nets (total of five birds) and once caught in a wooded area of the State Park.

Specimens - A single female, collected in 1940, is in the collection.

Breeding - On January 13, three individuals of this species were caught together in a mist net suggesting that one or more of them may have been juvenile. No plumage differences were however apparent.

Family FORMICARIIDAE*Thamnophilus caerulescens* **Variable Antshrike (choca-da-mata)**

Status (TS) - A common species seen or heard on every trip in the forest. Ranked sixth in the point count ranking, this species had a frequency of 0.33. Primarily a bird of the mid-levels, it was relatively less common in the ground-level mist nets: only the 14th most commonly captured species (capture rate of 0.7/100 net-hours). Also frequently noted in secondary woodland of the State Park where it was the ninth most frequently captured species (0.5/100 net-hours).

Specimens - A total of eight specimens are in the Museum.

T. ruficapillus **Rufous-capped Antshrike (choca-de-chapéu-vermelho)**

Status (TS) - One or two were seen or heard from October through March in an area of dense scrub in the State Park but the species was not recorded elsewhere.

Specimens - A male collected by Olalla in 1965 is in the Museum.

Dysithamnus stictothorax **Spot-breasted Ant-Vireo (choquinha-de-peito-pintado)**

Status (F) - Not recorded in this study.

Specimens - A female was collected by Olalla on May 30 1965.

D. mentalis **Plain Ant-Vireo (choquinha-lisa)**

Status (FT) - A common species and seen on virtually every trip into the Reserve. According to the point count data, the fifth most commonly recorded species and with a capture rate of 0.34. A total of nine were captured in forest mist nets which made it the eighth most abundant species (rate of 1.0/100 net-hours)

Specimens - Olalla collected a very large series of 28 birds in May and June of 1965.

Breeding - Adults were seen feeding fledglings on January 23. On March 5, a nest was found at a height of about 1 m in a small shrub in dense forest. A female was flushed from the nest which contained two half-grown chicks and ten minutes later had returned to incubate them. What appeared to be "family groups" of three to four birds were commonly noted in March.

***Myrmotherula gularis* Star-throated Antwren (choquinha-da-garganta-pintada)**

Status (F) - A fairly common species heard much more frequently than seen. Only rarely recorded on point counts perhaps because of a certain unfamiliarity with its calls during much of the survey period. Captured three times in mist nets.

***Herpsilochmus rufimarginatus* Rufous-winged Antwren (chororozinho-de-asa-vermelha)**

Status (FT) - Apparently a fairly rare resident with a total of less than five records.

Specimens - A single male is in the Museum's collection.

***Drymophila ferruginea* Ferruginous Antbird (trovoada)**

Status (FT) - Rare denizen of dense low thickets with only two records October 16 and a pair on October 24.

***Pyriglena leuoptera* White-shouldered Fire-eye (borralheira)**

Status (FT) - A fairly common species with several distinctive calls which, once recognized, betrayed its true abundance. Occasionally groups of up to ten birds were recorded associated with ant swarms. Only rarely noted on the point counts but the 12th most common species in the mist nets with a capture rate of 0.9/100 net-hours.

Specimens - Five males (collected in 1934 and 1965) have been taken in the Serra da Cantareira.

***Myrmeciza loricata* White-bibbed (papa-formigas-de-grota)**

Status (F) - An uncommon species of dense forests. Recorded occasionally on the point counts on which it was ranked 19th in abundance with a frequency of 0.08 but only captured once in mist net. The form that occurs in the Serra da Cantareira is *squamosa*.

Specimens - Three males are in the Museum's collection: one collected by Lima in 1941 and two by Olalla in 1965.

***Chamaeza campanisona* Short-tailed Antthrush (tovaca-capainha)**

Status (F) - This common but very secretive species was only seen on one occasion but was heard every morning in January and March. This species would only rarely call near to an observer so it was infrequently recorded on the point counts: ranked 19th with a frequency of 0.08. Only caught twice in a mist net but this and the following species were both too large to be effectively sampled by the nets.

Specimens - Two specimens were collected by Fonseca in 1940 and a further two by Olalla in 1965.

***Grallaria varia* Variegated Antpiper (tovacuçu)**

Status (F) - Another very secretive species seen only once but its vocalizations indicated it was a fairly common species: heard on at least every second early morning trip.

Specimens - One specimen was collected by Fonseca in 1940 and a female (labelled as "*G. nattereri*" by Olalla in 1965).

***Conopophaga lineata* Rufous Gnateater (chupa-dente)**

Status (FT) - A seemingly uncommon and generally inconspicuous bird of the forest. The mist netting data however indicated that this species was more common than believed: it was ranked as the eighth most commonly captured species (capture rate of 1.0/100 net-hours).

Specimens - The Museum has ten specimens of this species.

Family TYRANNIDAE

Phyllomyias fasciatus Planalto Tyrannulet (piolinho)

Status (FT) - This apparently rare species was only definitely recorded on a very few occasions but was perhaps overlooked.

Specimens - In his catalogue of Museum specimens, PINTO (1944) lists *Phyllomyias fasciatus brevirostris* from the Serra da Cantareira but no record of such a specimen could be found in the Museum's registers.

Breeding - A pair of birds were observed building a nest on August 30 inside a fallen, curled-up *Cecropia* leaf was suspended in a tree at a height of about 8 m. These birds were recorded till September 17 but no observations at the nest were made after this date.

Camptostoma obsoletum Southern Berarless-Tyrannulet (risadinha)

Status (SO) - Uncommonly but regularly recorded in lightly wooded and semi-open areas.

Breeding - A bird recorded on September 7 was carrying nesting material but could not be followed to a nest.

Elaenia flavogaster Yellow-bellied Elaenia (guaracava-de-barriga-amarela)

Status (TSO) - Generally fairly uncommon in semi-open areas (locally common in the State Park).

Breeding - A pair were found nesting in a pine tree in the State Park on October 19 and already had fairly old nestlings at that time. The nestlings were on October 21. What was presumed to be this pair were collecting nesting material in the same tree on November 11.

Feeding - These elaenias were recorded feeding on *Eugenia* sp. fruits on November 2.

E. mesoleuca Olivaceous Elaenia (tuque)

Status (FT) - Possibly this species is only a summer visitor as it was first recorded only on October 20 but by the end of the month was fairly common in wooded areas throughout the Reserve. Rarely noted on the point counts and only once caught in a mist net.

Specimens - The Museum has four males collected in 1940.

Breeding - A pair were active at a nest on November 21 and appeared to be incubating at that time. In a different area of the Reserve an adult was seen carrying nesting material on December 12.

Feeding - Both insects and fruits appeared to figure prominently in the diet of this species. They were recorded feeding on several different types on fruit: *Miconia inaequidens* (November 21) and *Casaeria sylvestris* (November 18).

Elaenia sp. *Elaenia* sp.

Status - Other elaenias were occasionally recorded that were definitely not either of the above species but it was not possible to identify them to species.

Serpophaga subcristata White-crested Tyrannulet (alegrinho)

Status (TS) - An uncommon species of semi-open with only two or three positive sight records (September and October).

Mionectes rufiventris Gray-hooded Flycatcher (abre-asas-barriga-vermelha)

Status (TS) - A fairly common forest species seen and heard regularly but only rarely noted on the point counts. A total of five were caught in mist nets.

Breeding - A juvenile (with distinct gape flanges) was caught in a mist net on November 14. In addition, one bird travelling with conspecifics on March 15, was giving a persistent harsh call which suggested a begging juvenile.

Leptopogon amaurocephalus Sepia-capped Flycatcher (cabeçudo)

Status (FT) - Not definitely recorded until January 13 but several subsequent sightings suggested it was not rare in the forest. One bird was caught in a mist net on January 19.

Breeding - An adult was carefully observed feeding a juvenile on January 18.

Phylloscartes eximius Southern Bristle-Tyrant (barbudinho)

Status (F) - Not recorded during this study.

Specimens - Two females were collected in the Horto Florestal on April 30 1941 and are currently in the Museum collection.

P. ventralis Mottle-cheeked Tyrannulet (borboletinha-do-mato)

Status (FT) - Recorded uncommonly in the forest and occasionally in the State Park. Noted very few times on the point counts.

Myiornis auricularis Eared Pygmy-Tyrant (miudinho)

Status (T) - A fairly common species whose abundance however seemed irregular. It was seen on only a few point counts.

Todirostrum poliocephalum Yellow-lored Tody-Flycatcher (teque-teque)

Status (T) - An uncommon bird of forest edge that was recorded on several occasions from September to October but not subsequently.

T. plumbeiceps Ochre-faced Tody-Flycatcher (ferreirinho-de-cara-canela)

Status (TS) - An apparently rare and secretive species of dense shrubbery with only a total of three sightings recorded. All records were of pairs.

Hemitriccus nidipendulum Hangnest Tody-Tyrant (tachuri-campainha)

Status (FT) - A rare forest species that was only recorded on a single occasion: a bird mist netted on November 15.

H. orbitatum Eye-ringed Tody-Tyrant (Tiririzinho-do-mato)

Status (F) - An uncommon species of the forest undergrowth that was only seen rarely but was mist netted on several occasions.

Specimens - A male was collected on December 6 1940 by J. Lima.

Breeding - On November 15 three birds were caught together in a net suggesting that they may have been a family group.

Tolmomyias sulphurescens Yellow-olive Flycatcher (bico-chato-de-orelha-preta)

Status (TS) - A fairly common species regularly noted in the crowns and upper mid-levels of the forest. Ranked 21st in abundance on the point counts with a frequency of 0.06.

Platyrinchus mystaceus White-throated Spadebill (patinho)

Status (F) - Although infrequently seen, this species was fairly commonly recorded by voice. It was ranked 11th in abundance and had a frequency of a 0.19 on the point counts. It was the eighth most common species in the mist nets with a capture rate of 1.0/100 net-hours.

Myiophobus fasciatus **Bran-colored Flycatcher (filipe)**

Status (TSO) - Uncommonly recorded in open areas of the Reserve and the State Park.

Lathotriccua wulwei **Euler's Flycatcher (enferrujado)**

Status (FT) - Although inconspicuous, this flycatcher was probably one of the commoner forest species and was recorded on virtually every trip into the forest. It was ranked 12th on the point counts and had a frequency of 0.17. It was similarly ranked as 12th most abundant in the mist nets with a capture rate of 0.9/100 net-hours. It was also fairly common in light woodland of the State Park where it was the sixth most common species in the nets (1.1/100 net-hours).

Contopus cinereus **Tropical Pewee (papa-moscas-cinzento)**

Status (TS) - Recorded a handful of times from August to October but with no subsequent records.

Cnemotricus fuscatus **Fuscou Flycatcher (guaracavaçu)**

Status (TSO) - Apparently a rare species as only one definite sighting was recorded: on January 18 along a forest path.

Fluvicola pica **Pied Water-Tyrant (lavadeira-de-cara-branca)**

Status (WA) - Recorded on three or four occasions at ponds of the Horto Florestal in August and October. Not seen in subsequent months despite frequent visits to the same area.

Colonia colonus **Long-tailed Tyrant (viuvinha)**

Status (T) - Only one record: a bird along the forest edge on September 3.

Knipolegus cyanirostris **Blue-billed Tyrant (maria-preta-de-bico-azulado)**

Status (TS) - A male was seen on several days in mid-September at Lago das Carpas in the Chapada area but the species was not otherwise recorded.

Hymmenops perspicillata **Spectacled Tyrant (viuvinha-de-óculos)**

Status (W) - This species has apparently only been recorded once in the State of São Paulo (WILLIS & ONIKI, 1985) to the appearance of an adult male at one of the ponds of the Horto Florestal on November 5 1985 was very surprising. The author did not personally see the bird but received several independent descriptions which left no doubt as to the identify.

Machetornis rixosus **Cattle Tyrant (bem-te-vi-do-gado)**

Status (SO) - Recorded uncommonly but throughout the period on lawns in the State Park.

Attila rufus **Gray-hooded Atilla (capitão-de-saíra)**

Status (F) - This bird was never seen by author. Its distinctive calls were however heard fairly regularly but uncommonly in forested areas.

Specimens - A total three individuals of *A. rufus* are in the Museum's collection (all collected in 1940).

***Myiarchus ferox* Short-crested Flycatcher (maria-cavaleira)**

Status (TS) - No positive identification was ever made of this species.

Specimens - A female collected on December 2 1940 is apparently in the collection of the Museum.

***M. tyrannulus* Brown-crested Flycatcher (maria-cavaleira-de-rabo-enferrujado)**

Status (S) - The only record of this species, with its distinctive rufous edging on tail and wings, was a group of two or three seen in dry scrub near the forest edge on January 18.

***M. swainsoni* Swainson's Flycatcher (irrê)**

Status (TS) - *Myiarchus* flycatchers were fairly common in the forest and were believed to be virtually all of this species. All positive identifications (of mist netted or closely observed calling birds) were *swainsoni*. It was noted rarely on the point counts and caught only twice in the mist nets. This species is apparently a summer visitor as it was first recorded only on September 19.

Breeding - An individual was observed collecting nesting material (the fluffy inner bark from a dead *Araucaria*) on December 11. A juvenile was being fed by an adult on January 13.

Feeding - This species was observed feeding on fruit of *Casaeria sylvestris* on November 18.

***Pitangus sulphuratus* Great Kiskadee (bem-te-vi)**

Status (TSO) - Although it did not occur in continuous tracts of forest this species was otherwise very common in the Serra da Cantareira. It was twice caught in mist nets set in the State Park.

Breeding - Nests of this species could be quite easily located; sporadic observations were made on five or six different nesting pairs. Birds carrying nesting material were evident from the start of the study period and at least one pair was just starting to build a nest on 20 November. Records of pairs feeding nestlings range from October 21 to November 16. A juvenile was mist netted on March 10.

***Megarhynchus pitangua* Boat-billed Flycatcher (bem-te-vi-de-bico-chato)**

Status (FT) - Apparently very uncommon in the Serra with the only record being a pair recorded a few times in the State Park in mid-October.

***Myiozetetes similis* Social Flycatcher (bem-te-vi-pequeno)**

Status (TSO) - A fairly common bird in all semi-open areas.

Breeding - Three different nests were located which were all under construction in late October and early November. A juvenile was seen being fed by an adult on January 11.

***Myiodynastes maculata* Streaked Flycatcher (bem-te-vi-rajado)**

Status (TS) - A migratory species that was first seen on September 19. It thereafter became fairly common in the forest (but noted only rarely on point counts) and somewhat less common in more open areas. One bird was caught in a mist net set in woodland on the State Park. This species was last seen on March 12.

***Legatus leucophaeus* Piratic Flycatcher (bem-te-vi-pirata)**

Status (T) - Only a single record: a bird seen on October 13 on the grounds of the Instituto Florestal.

***Empidonomus varius* Variegated Flycatcher (peitica)**

Status (T) - Noted irregularly in more open areas of the Reserve from September 28 through December without any definite records subsequently. Rare in forested areas.

***Tyrannus melancholicus* Tropical kingbird (suiriri)**

Status (TSO) - A common species in all of the more open areas of the Reserve. Not recorded before September.

***T. ssavana* Fork-tailed Flycatcher (tesoura)**

Status (SO) - Noted irregularly and uncommonly in open areas of the State Park from November 6 through January.

***Pachyramphus castaneus* Chestnut-crowned Becard (caneleirinho)**

Status (FT) - The only sure records of this bird were of a pair that were nesting about 50 m from the edge of the forest in an area of dense bushes and scattered trees. Their nest was under construction during all the month of October.

Specimens - A total of four birds were collected in 1940 in the Reserve.

***P. polychopterus* White-winged Becard (caneleirinho-preto)**

Status (TS) - An uncommon forest becard noted only irregularly. Rarely seen on point counts and only very occasionally taken in mist nets.

Specimens - A female was collected in 1940 in the Horto Florestal.

Breeding - A juvenile male was caught in a mist net with an adult male on feeding a bird on January 18 that looked like an adult female but was presumably a juvenile female.

***P. validus* Plain Becard (caneleiro-de-chapéu-negro)**

Status (FTS) - An uncommon becard of forested areas that was only recorded a total of about five times (rarely on point counts). This species has also been known as *Platypsaris rufus*.

Specimens - The Museum has a female collected in 1940.

Breeding - A pair was present at a nest near the Chapada area on November 14. On March 13 a band of three or four female-like birds was seen and this presumed to be a group of juveniles with a female.

***Tityra cayana* Black-tailed Tityra (anambé-branco-de-rabo-preto)**

Status (FT) - Not common but a species regularly seen in the forest canopy. It was occasionally recorded during point counts.

Breeding - The male of a pair seen on December 12 was carrying nesting material (a stick).

Family COTINGIDAE***Pyrroderus scutatus* Red-ruffed Fruitcrown (pavão-do-mato)**

Status (F) - An uncommon species that was however regularly recorded throughout the study period and in all forested parts of the reserve. Rarely by recorded even on point counts. The becoming call was heard only in September.

Specimens - The Museum has a specimen donated by Sr. Custodio that was collected in the Horto Florestal in 1953.

Breeding - On one occasion in March, a small group of males was observed engaged in lekking behaviour.

***Procnias nudicollis* Bare-throated Bellbird (araponga)**

Status (F) - This species was never seen and was heard calling in the forest on only one occasion (October 31). It is however said to be not uncommon in the Reserve and to call frequently from September to November (A. Cassalho, pers. comm.).

Specimens - A female collected on December 6 1940 is in the Museum collection.

Family PIPRIDAE***Schffornis virescens* Greenish Mabakin (flautin)**

Status (F) - A common species that was seen or heard on most walks in the forest. On the point counts, this species was 13th in abundance and had a frequency of 0.14. This may represent an underestimation of its true abundance due to an unfamiliarity with some of its calls. This is particularly suggested by the fact that it was the most frequently captured species in the mist nets (along with *Sittasomus griseicapillus* with a total of 23 captures (2.5/100 net-hours).

Specimens - Olalla collected five specimens of this species in May and June of 1965.

***Neopelma aurifrons* Wied's Tyrant-Manakin (fruxu)**

Status (F) - Not recorded on this study.

Specimens - Olalla collected a female and three unsexed birds in June 1965.

***Manacus manacus* White-bearded Manakin (rendeira)**

Status (T) - This was another species not recorded by me but the call was known locally (A. Cassalho, pers. comm.).

Specimens - Olalla collected two males and two females in the Reserve in June 1965.

***Ilicura militaris* Pin-tailed Manakin (tangarazinho)**

Status (FT) - Considered as hypothetical in the Reserve pending confirmation of its regular occurrence. A female of this species was seen by me on two occasions (once on a point count and likely the same bird both times). She was suspected as being a released cagebird as the flashy males were never recorded and were not known locally (A. Cassalho, pers. comm.).

***Chiroxiphia caudata* Swallow-tailed Manakin (tangará, dançador)**

Status (FT) - A common species that was one of the most frequently heard birds of the forest. On the point counts this species was eight in abundance and had a frequency of 0.23. It was the fifth most common bird in the forest mist nets (1.4/100 net-hours).

Specimens - The Museum has six specimens collected in 1940 and 1941 and further series of 13 collected in 1965.

Breeding - No proof of nesting was obtained but immatures were commonly captured in the mist nets.

Lek activity was noted throughout the study period.

Feeding - Manakins of this species were recorded as feeding on fruit of the amora tree *Morus* sp. on September 2, on *Psychotrium suterella* (several occasions, on seeds of *Alchornea sidaefolia* (January 18) and on *Miconia* sp. (March 29).

Family OXYRUNCIDAE

Oxyruncus cristatus Sharpbill (arapongo-do-horto)

Status (F) - A rare forest inhabitant that was only seen a total of three or four times.

Breeding - A bird, seen on November 11, collected a beakful of spider web from a dried leaf and carried it off to a presumed nest under construction (the species is known to employ spider web for building its nests: SICK, 1985).

Family HIRUNDINIDAE

Pygochelidon cyanoleuca Blue-and-white Swallow (andorinha-pequena-de-casa)

Status (S) - An abundant species near inhabited areas of the State Park and recorded fairly commonly even over the forest.

Breeding - Adults were observed entering nest holes in a building on January 11, nesting was probably widespread in buildings of the State Park.

Stelgidopteryx ruficollis Southern Rough-winged Swallow (andorinha-serrador)

Status (TSO) - Uncommonly recorded and only near inhabited areas of the State Park. Possibly a migrant to this area as first recorded only on October 26.

Breeding - A pair were observed building a nest from October 26 till at least November 10. No eggs were laid in the nest.

Family CORVIDAE

Cyanocorax caeruleus Azure Jay (gralha-azul)

Status (F) - Considered hypothetical in the Serra da Cantareira pending confirmation of its presence.

Locally, it is widely believed that jays seasonally move into the Serra to feed on the fruiting *Araucaria* but I was not able to find any supportive evidence of this (my observations terminated before the *Araucaria* were fully in fruit). At least one observer, with many years of experience in the Serra, stated that the very few records he was aware of were probably of released cage birds (A. Cassalho, pers. comm.). Prof. E. Willis (pers. comm.) notes that it is indeed "a long way from its known distribution".

Specimens - Olalla collected two females on June 13 1965 but these may well have been released cage birds.

Family TROGLODYTIDAE

Troglodytes aedon House Wren (corruíra, cambaxirra)

Status (SO) - Regularly recorded around inhabited areas of the State Park but not particularly common.

It was caught on one occasion in a mist net set in a wooded area of the State Park.

Family MUSCICAPIDAE

Polioptila dumicola Masked Gnatcatcher (balança-rabo-de-máscara)

Status (S) - A rare species with only one sighting: a single bird carefully observed in secondary woodland of the State Park on October 21.

Platycichla flavipes Yellow-legged Thrush (sabiá-úna)

Status - Fairly common in forest areas and widely recorded singing from August through December. Two males were caught in mist nets: once in the forest and once in woods of the State Park.

Specimens - The Museum has a total of six specimens collected in the Serra in 1940 and 1965.

Breeding - A juvenile was observed on January 19.

Turdus rufiventris Rufous-bellied Thrush (sabiá-laranjeira)

Status (TSO) - A very common species in all semi-open areas; present but rare in the forest itself where it was never recorded on a point count nor caught in a mist net. In the secondary woodland of the State Park, this thrush was though the commonest bird in the nets. A total of 25 captures were made (the capture rate of 6.7/100 net-hours was the highest recorded for any species except for that of *Zonotrichia capensis* in open areas). Almost all of these birds were different individuals (determined by clipping selected remiges of netted birds).

Specimens - A single male was collected by Olalla in 1965.

Breeding - A nest of this species had eggs on October 2, eggs and young on October 9 and was empty on October 22. Juveniles were being caught in mist nets as of January 16.

Feeding - These thrushes were observed feeding both on *Morus* sp. (September 17) and on *Ficus* sp. (October 25).

T. leucomelas Pale-breasted Thrush (sabiá-barranco)

Status (TSO) - Although possibly overlooked, this species was only rarely observed: a singing male recorded on September 14 and one further record on October 18.

T. amaurochalinus Creamy-bellied Thrush (sabiapoca)

Status (TS) - This species was never recorded in the forest and only uncommonly in semi-open areas of the State Park. A single adult male was taken in a mist net on November 24.

Breeding - A pair were observed on October 26 and 27 making regular feeding trips to an unseen nest and a different pair were similarly feeding nestlings on October 30. On November 14, two young nestlings which had apparently just fallen from their nest, were brought to my attention. Juveniles were first seen on November 20.

T. albicollis White-necked Thrush (sabiá-coleira)

Status (FT) - Fairly common in the forest but when not calling very discreet and thus not hardly recorded at all after December. Caught occasionally in mist nets.

Feeding - Recorded feeding on fruit of the following species: *Guarea* sp. (August), *Morus* sp. (September 2), *Ficus* sp. (September 13) and *Casaeria sylvestris* (October 31).

Breeding - The only indication of breeding was the capture of an immature (almost in adult plumage) in a mist net on January 30.

Family MIMIDAE*Mimus saturninus* **Chalk-browed Mockingbird (sabiá-do-campo, galo-do-campo)**

Status (SO) - A fairly common species near inhabited areas of the State Park.

Breeding - A group of three adults were present at a nest on October 21 in which there were three chicks. The nest was empty on October 27. A local worker informed me that a group of three to five birds nested communally every year in the same location.

Family VIREONIDAE*Vireo olivaceus* **Red-eyed Vireo (juruviária)**

Status (TS) - One of the commonest passerine species of the upper levels of the forest. Presumably migratory, as it was not recorded before September 18 but commonly thereafter. On the point counts, this species was the ninth most commonly recorded and had a frequency of 0.22. Caught only very rarely in forest mist nets but the sixth most common species in nets set in woodland of the State Park (capture rate of 1.1/100 net-hours). It was also caught twice in open area net sets.

Specimens - Three birds were collected for the Museum in 1940;

Breeding - Nests under construction were found on October 24 and November 13. A nest found by Dr. Cory (pers. comm.) in mid-December contained two eggs. A juvenile was caught in a mist net on January 28.

Feeding - Generally, this vireo seemed to be more frugivorous than insectivorous. It was observed feeding on many different fruits of which one was identified: *Casaeria sylvestris* (late October).

Hylophilus poicilotis **Rufous-crowned Greenlet (verdinho-coroado)**

Status (F) - Regularly but uncommonly recorded in the forested part of the Reserve.

Specimens - The Museum has four specimens: one from 1940 and three from 1965.

Breeding - A juvenile was being fed by two adults on March 22.

Cyclarchis guianensis **Rufous-browed Peppershrike (pitiguari)**

Status (TS) - A fairly common species of the forest which was 16th in abundance on the point counts and had a frequency of 0.09. Generally this species remained too high to be caught in the nets but, curiously, a single bird was taken in a net set in an open field on January 29.

Specimens - Two specimens were collected for the Museum in 1940 and a further two in 1965.

Family EMBERIZIDAE*Parrula pitiayumi* **Tropical Parula (mariquita)**

Status (FTS) - Recorded irregularly and uncommonly in the State Park but rarely in the forest.

Geothlypis aequinoctialis **Masked Yellowthroat (pia-cobra)**

Status (SW) - Recorded uncommonly and irregularly near inhabited areas of the State Park. Caught twice in mist nets set in open areas.

***Bassileuterus culicivorus* Golden-crowned Warbler (pula-pula)**

Status - An abundant species in the forests of the Reserve. On the point counts, with a frequency of 0.69, this warbler was easily the most high value indicating a 69 % "probability" of recording this species in any given 20 minutes period of morning observation! As it was essentially a species of the mid-levels, it was not frequently captured in the ground-level mist nets in which it was only the 14th most common species (capture rate of 0.7/100 net-hours). It also occurred in open woodland on the State Park where it was the eighth most common in the nets (0.8/100 net-hours).

Specimens -The Museum has a single male (identified as "*B. auricapillus*" collected in 1940.

Breeding - Nesting was recorded on two occasions. In the first instance (September 25), the nest was not actually found but its presence was inferred from the birds behavior: a bird flushed and gave a dramatic distraction display which was repeated later in the day at the same spot. A nest was found in a different but similar area on November 25: three eggs were being incubated. This nest was empty on December 10.

***B. leucoblepharus* White-browed Warbler (pula-pula-assoviador)**

Status (FT) - Not as common as its congener but nevertheless a common species that was recorded, usually just by voice, on every walk through the forest. On the point counts it was seventh in abundance and had a frequency of 0.27. Its abundance was best revealed by the mist nets in which it was the fourth most common species with a total of 17 captures (1.9/100 net-hours). Apparently it was restricted to the forest habitat as it was never recorded beyond the areas of continuous forest.

Specimens - A single male taken in 1941 is in the Museum's collection.

***Coereba flaveola* Bananaquit (sebinho, cambacica)**

Status (TSO) - A common species in semi-open areas of the State Park but uncommon in the forest itself. Only once seen on a point count. The only time was caught in a mist net was in an open field of the State Park on January 29.

Breeding - A nest in the crown of a small *Tibouchina* sp. was being finished seen on November 10. The bird caught in the mist net was a juvenile.

Feeding - This nectarivore was recorded feeding at flowers of a number of different plants: *Caesalpinia peltophoroides* (August 24) *Grevilea banksi* (August 26), *Erythrina speciosa* (August 26), *Pittosporum* sp. (September 1), *Inga* sp. (September 19), *E. crista-galli* (October), *Psychotrium suterella* (February 26) and *Solanum auriculatum* (March 26).

***Conirostrum speciosum* Chestnut-vented Conebil (figuinha-de-rabo-castanho)**

Status (TS) - An uncommon species of the canopy with a total of no more than five records.

***Tangara seledon* Green-headed Tanager (sete-cores)**

Status (FT) - Not recorded in this study despite the fact that, when present, it is a conspicuous and easily recorded species (pers. obs., Serra do Mar).

Specimens - A female was collected in the Serra by Olalla on May 30, 1965.

***T. desmaresti* Brassy-breasted Tanager (saíra-lagarta)**

Status (F) - A fairly common forest species almost invariably recorded in flocks of five to ten individuals feeding on fruiting bushes. Recorded as 23rd in abundance on the point counts with a frequency of 0.05 but only rarely caught in the mist nets.

Specimens - Pinto collected a female in 1934 and Museum collectors added a further five specimens in 1940.

Breeding - A single juvenile was seen with a flock on March 17.

Feeding - Fruits of the following species were fed on by this tanager: *Miconia* sp. (September 7), *Casaeria sylvestris* (November 18), *Miconia inaequidens* (November 21) and *Psychotrium suterella* (February 25).

***T. cayana* Burnished-buff Tanager (safra-amarelo)**

Status (TSO) - An infrequently recorded species noted only on a few occasions in open areas of the State Park.

Specimens - A single female collected in 1940 is in the Museum's collection.

***Dacnis cayana* Blue Dacnis (saf-azul)**

Status (FTS) - Fairly common in forested parts of the Reserve and even occasionally noted in open areas of the State Park. Rare on the point counts.

Specimens - Four specimens, all collected in December of 1940, are in the Museum collection.

Feeding - This species seemed in general to be more insectivorous than frugivorous but was nevertheless recorded feeding on fruits of several different species: *Caesalpinia peltophoroides* (August 24), *Morus* sp. (September 17) and *Casaeria sylvestris* (November 22).

***Pipraeidea melanonota* Fawn-breasted Tanager (viúva)**

Status (FT) - Irregularly recorded: uncommon in the forest itself and rare in semi-open areas. Occasional on the point counts where it was 23rd in abundance with a frequency of 0.05.

Feeding - Recorded feeding on *Morus* sp. berries on several occasions in September and on fruit of *Miconia inaequidens* on November 21.

***Euphonia pectoralis* Chestnut-bellied Euphonia (ferro-velho)**

Status (FT) - Evidently a rare forest species as only recorded on two occasions: October 23 and March 29.

Specimens - Lima collected a male in 1940 and Olalla a female in 1965.

Feeding - The male seen on March 29 was feeding on berries of the cactus *Rhipsalis* sp.

***E. sp.* *Euphonia* sp. (gaturamo)**

Status - Although never positively identified, at least one other species of *Euphonia* was occasionally seen in the State Park. This may well have been *E. violacea*.

***Thraupis sayaca* Sayaca Tanager (sanhaço-cinzentos)**

Status (TS) - A very common and almost ubiquitous species in the semi-open areas of the Serra da Cantareira but only rarely recorded in the forest.

Breeding - On November 10 a nest was located with adults feeding nestlings.

Feeding - On several occasions these tanagers were observed feeding on stamens of *Erythrina speciosa* and occasionally on *Morus* sp. berries.

***Thraupis palmarum* Palm Tanager (sanhaço-do-coqueiro)**

Status (TSO) - An uncommon species recorded only occasionally in and about exotic palms of the Horto Florestal.

Feeding - On one occasion (October 8) recorded feeding on *Morus* sp. fruit.

***Tachyphonus coronatus* Ruby-crowned Tanager (tié-preto, gurundi)**

Status (T) - Fairly common in semi-open areas of shrubbery but rare in the forest itself. In the State Park, it was the fifth most common species in the woodland nets (capture rate of 1.6/100 net-hours).

Specimens - A series of seven were collected by Olalla in May and June of 1965.

Feeding - Recorded on October 2 feeding on fruits of *Psychotrium suterella*.

***Trichothraupis melanops* Black-goggled Tanager (tié-de-topete)**

Status (FT) - A fairly common forest tanager noted however only very occasionally on point counts. Its real abundance was revealed by the mist netting data as it was the third most common species in mist nets in the forest (19 captures: rate of 2.1/100 net-hours). It was also quite common in secondary woods of the State Park where it was again the third most common species in the nets (7 captures: 1.9/100 net-hours).

Specimens: The Museum has a single male collected in 1934.

Breeding: No incontrovertible proof of breeding was obtained but many of the mist netted birds were thought to be juveniles and presumptive family groups were commonly seen in March.

Feeding - Recorded feeding on both insects and fruits. On several dates in August seen eating berries of a *Rubus* sp., fruits of *Psychotrium suterella* (February 25) and fruits of a Cactaceae sp. in January (*Lepismium* sp.?).

***Habia rubica* Red-crowned Ant-Tanager (tié-do-mato-grosso)**

Status (FT) - Fairly common in bands moving through the forest understory. It was 16th in abundance on the point counts with a frequency of 0.09 but was only very occasionally taken in the mist nets.

Specimens - Pinto collected a female in 1934.

Breeding - No proof of nesting obtained but an immature male was captured in a mist net on February 25.

***Thlypopsis sordida* Orange-headed Tanager (canário-sapé)**

Status (TS) - Rare in the forest but fairly common in the State Park where it was twice caught in mist nets.

Breeding - An adult was recorded on October 29 carrying food to an unseen nest. The following day, in a different area, an adult was seen feeding a cowbird chick (*Molothrus bonariensis*).

Feeding - Generally, this species seemed almost entirely insectivorous but was seen once feeding on a *Morus* sp. berry (September 28).

***Orchesticus abeillei* Brown Tanager (sanhaço-pardo)**

Status (F) - A rare species with only two or three positive records. Once carefully observed in a mixed species flock which also included *Phillydor rufus* to which it is uncannily similar.

***Hemithraupis ruficapilla* Rufous-headed Tanager (saíra-da-mata)**

Status (FT) - Apparently a rare species with only a single sure record: a pair seen on September 17.

Feeding - The pair referred to above were feeding on berries of *Morus* sp.

***Schistoclamys ruficapillus* Cinnamon Tanager (bico-de-veludo)**

Status (TS) - Not recorded in this study.

Specimens - Lima collected a female on December 9 1940 and Olalla took a second female on June 2 1965.

***Tersina viridis* Swallow-Tanager (saf-andorinha)**

Status (TO) - Not recorded in this study and apparently not known locally (A. Cassalho, pers. comm.)

Specimens - A female was collected on May 21 1934 by Pinto.

***Saltator similis* Green-winged Saltator (trinca-ferro-verdadeiro, pixarro)**

Status (TS) - Not uncommon in the forests of the Reserve but rarely noted on the point counts and only caught once in a forest mist net. This was however a very common species in semi-open areas of the State Park where it was the second most common species in woodland net sets (ten captures: 2.7/100 net-hours).

Specimens - The Museum has one specimen collected in 1965 by Olalla.

Breeding - Juveniles were commonly caught in the nets as of January 15.

Feeding - The fruits of the following species were fed on by this species: *Morus* sp. (August-September), *Guarea* sp. (August 23), *Solanum* sp. (September-October) and *Psychotrium suterella* (February 25).

(*Cyanocompsa brissonii*) Ultramarine grosbeak (azulão)

Status (S) - Considered as hypothetical as not recorded in this study but said to occur locally (plumage and song described by A. Cassalho, pers. comm.).

***Arremon taciturnus* Pectoral Sparrow tico-tico-do-mato-de-bico-preto)**

Status (FT) - Not recorded in this study.

Specimens - Two males and a female were collected in June 1965 by Olalla.

***Volatinia jacarina* Blue-black Grassquit (tiziu)**

Status (TSO) - Apparently migratory in this area as only first recorded on October 31. After that date it became fairly common in open grassy areas of the Serra.

***Sporophila caerulescens* Double-collared Seedeater (coleirinho, papa-capim)**

Status (SO) - First recorded on October 17; presumably is migratory in this area. Fairly common in open grassy areas throughout the Serra.

(*S. sp.*) Seedeater sp.

Status - No other species of *Sporophila* was recorded in this study but relatively little attention was paid to the open grassy areas which are the habitat for many species of the genus. A local resident (A. Cassalho, pers. comm.) provided details on several other species (*frontalis*, *lineola*, etc.) but these are best considered hypothetical pending confirmation of the identifications.

(*Oryzoborus angolensis*) Chestnut-bellied Seed-Finch (curió)

Status (TS) - Considered hypothetical as not recorded by me although the song and appearance of this bird described by Sr. A. Cassalho (pers. comm.) who claims the species is resident at Cabuçu. Because of its popularity as a cage bird, it would be desirable to confirm that these records truly represent a wild population.

***Haplospiza unicolor* Uniform Finch (cigarra-bambu)**

Status (F) - The true abundance of this species is difficult to evaluate as its vocalizations were unknown and as it was never even seen. Its frequency in the mist nets however suggested that it was not rare: in fact it was the sixth most common bird in the nets (total of 12 captures: 1.3/100 net-hours).

Specimens - A single male was collected in 1940 in the Serra.

Breeding - No proof of nesting was obtained but an immature male (nearly in adult plumage) was caught in a net on January 19.

(Sicalis flaveola) **Saffron Yellow-Finch (canário-da-terra-verdadeiro)**

Status (TSO) - Considered hypothetical in the Serra da Cantareira although I did record a female of this species on September 23 in an open grassy area of the Chapada. The popularity of this species as a cage bird and the fact that the police have been known to release confiscated cage birds in the Chapada area suggests however that this bird may not have been a wild specimen. It is worth noting that a wild population is claimed to exist in the Cabuçu area (A. Cassalho, pers. comm.).

(Coryphosphingus cucullatus) **Red-crested Finch (tico-tico-rei)**

Status (SO) - Considered as not recorded in this study. A wild population is however claimed to exist in the Cabuçu area (A. Cassalho, pers. comm.).

Zonotrichia capensis **Rufous-collared Sparrow (tico-tico)**

Status (SO) - An abundant species in all areas near human habitations but never recorded in the forest. In wooded areas of the State Park it was the third most common bird in the mist nets (seven captures: 1.9/100 net-hours) but it was particularly abundant in open areas where it was by far the commonest species in the nets (25 captures: 6.7/100 net-hours).

Specimens - The Museum has two specimens in its collection from the Serra da Cantareira.

Breeding - This well-known species apparently has a very extensive breeding season. No nest was ever actually found but birds were seen carrying nesting material on August 30, September 28, October 26 and as late as January 10. Adults carrying food to nests were recorded on several occasions: October 20, November 11 and November 15. The first of many records of juveniles was on October 13 and a recently fledged juvenile was caught in a mist net as late as March 14. Also of interest was an adult feeding a cowbird fledgling (*Molothrus bonariensis*) on November 5 and again, in a different area, on November 14.

Feeding - Only rarely recorded consuming fruit: a juvenile was seen feeding on *Morus* sp. berries on October 19.

Agelaius ruficapillus **Chestnut-capped Blackbird (garibaldi)**

Status (OW) - This marsh inhabiting was only recorded on one occasion: a group of four birds (one female, three males) in the Horto Florestal on November 6.

Molothrus bonariensis **Shiny Cowbird (chopim)**

Status (SO) - A common species throughout the semi-open areas of the State Park. Apparently a migratory species in this area (F. Barbosa, pers. comm.); recorded by me throughout the study period (from mid-August onward).

Breeding - Three different fledglings were seen being fed by host species: an Orange-headed Tanager (*Thlypopsis sordida*) on October 30 (and presumably the same birds again on November 10) and, on two occasions (November 5 and 14), Rufous-collared Sparrows (*Zonotrichia capensis*).

(Gnorimopsar chopi) **Chopi Blackbird (melro, graúna)**

Status (SO) - Considered hypothetical as not recorded by the author. This species was however well described to me and is apparently resident in the Cabuçu area (A. Cassalho, pers. comm.) but because

of its popularity as a cage bird, it would be desirable to confirm that this record is of a wild population.

Cacicus chrysopterus Golden-winged Cacique (soldado)

Status (FT) - Regularly but uncommonly recorded in forested areas of the Reserve. Rare on the point counts.

Breeding - Adults were seen on December 12 at a completed nest hanging over the Lago das Carpas in the Chapada area. A pair was seen engaged in courtship activities (singing and bowing displays) on March 13.

Family FRINGILLIDAE

Carduelis magellanicus Hooded Siskin (pintassilgo)

Status (TSO) - Irregularly and uncommonly noted in semi-open areas of the Reserve.

Family PASSERIDAE

Passer domesticus House Sparrow (pardal)

Status (TO) - An introduced species common in the vicinity of human habitations.

Breeding - A juvenile was being fed by an adult male on October 19 and adults were seen carrying nesting material into the roof of a building on November 22.

Feeding - On one occasion a House Sparrow was seen feeding on flowers of *Grevilea banksi* (August 24).

Family ESTRILIDAE

Estrilda astrild Common Waxbill (bico-de-lacre)

Status (SO) - This introduced African species was very common in grassy areas of the State Park.

Breeding - A nest with young was found on November 13 and at two different places, birds were later seen carrying nesting material (January 20 and 23).

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APPENDIX 1

List of all exclusively woodland species (i.e., excluding those that occur in scrub or open areas) from ten selected areas in the state of São Paulo.

Note: A "1" indicates the presence of the species while "x" indicates that the species is hypothetical (and therefore not included in the analyses nor in the totals). The area code equivalents (see the text for sources and FIGURE 2 for their location) are:

1. Serra da Cantareira
2. Campos do Jordão
3. Ubatuba
4. Boracéia
5. Carlos Botelho
6. Jacupiranga
7. Barreira Rico
8. Lençóis
9. Paraíso
10. Morro do Diabo

Species	Area number									
	1	2	3	4	5	6	7	8	9	10
<i>Tinamus solitarius</i>	1	1				1	1	1		1
<i>Crypturellus obsoletus</i>	1	1	1	1	1	1	1	1		
<i>Leptodon cayanensis</i>	1						1			
<i>Chondrohierax uncinatus</i>	1									
<i>Ictinea plumbea</i>							1	1	1	1
<i>Elanoides forficatus</i>		1			1	1				1
<i>Harpagus diodon</i>	1						1			
<i>Accipiter bicolor</i>		1				1				
<i>A. striatus</i>	1	1								
<i>A. superciliosus</i>								1		
<i>Leucopternis polionota</i>		1		1	1	1		1		
<i>Leucopternis lacernulata</i>	1									
<i>Buteo leucorrhous</i>		1			1					
<i>Spizastur melanoneucus</i>										1
<i>Spizastur tyrannus</i>			1	1						
<i>Falco rufigularis</i>								1		1
<i>Micrastur ruficollis</i>	1	1		1	1		1		1	
<i>M. semitorquatus</i>	1							1		1
<i>Cairina moschata</i>								1		1
<i>Penelope obscura</i>	1	1								

Species	Area number									
	1	2	3	4	5	6	7	8	9	10
<i>P. superciliaris</i>							1	1	1	1
<i>Crax fascioalta</i>								1		
<i>Odontophorus capueira</i>	1	1		1	1	1	1		1	
<i>Heliornis fulica</i>										1
<i>Columba plumbea</i>	1	1	1	1	1	1				
<i>Claravis godefrica</i>	1									
<i>Leptotila rufaxilla</i>	1	1		1			1	1		
<i>Geotrygon montana</i>	1					1	1		1	
<i>G. violacea</i>							1	1	1	
<i>Aratinga leucophthalmus</i>							1	1	1	1
<i>Ara maracana</i>							1	1	1	
<i>Amazona vinacea</i>		1				1				
<i>Pionopsitta pileata</i>		1		1	1	1				
<i>Triclaria malachitacea</i>							1			
<i>Pyrrhura frontalis</i>	1	1	1	1	1	1	1		1	1
<i>P. leucotis</i>		1								
<i>Broto geris tirica</i>	1		1	1	1	1				
<i>Pionus maximiliani</i>	1	1	1	1	1	1	1	1	1	1
<i>Touit sp.</i>			1							

Species	Area number									
	1	2	3	4	5	6	7	8	9	10
<i>Coccyzus americanus</i>	1									1
<i>Piaya cayana</i>	1	1	1	1	1	1	1	1	1	1
<i>Dromococcyx pavoninus</i>							1	1		
<i>Otus atricapillus</i>							1			
<i>Pulsatrix koeniswaldiana</i>	1			1			x			
<i>Ciccaba virgata</i>	1									
<i>Strix hylophila</i>	x	1								
<i>Lurocalis semitorquatus</i>	1	1			1		1	1	1	1
<i>Chordeiles minor</i>	x							x	1	
<i>Nyctiphrynus ocellatus</i>							1		1	1
<i>Macropsalis creagra</i>	1	1			1					
<i>Nyctibius aethereus</i>			x							
<i>N. griseus</i>	1	1					1	1		1
<i>Ramphodon naevius</i>			1							
<i>Glaucis hirsuta</i>					1					
<i>Phaethornis eurynome</i>	1	1		1	1	1				1
<i>P. pretei</i>	1						1	1	1	1
<i>Stephanoxis lalandi</i>		1								
<i>Heliothryx aurita</i>						1				
<i>Trogon surrucura</i>	1	1	1	1	1	1	1	1	1	1

Species	Area number									
	1	2	3	4	5	6	7	8	9	10
<i>T. rufus</i>		1		1	1	1	1	1	1	1
<i>Chlooceryle inda</i>						1				
<i>C. aenea</i>										1
<i>Baryphthengus ruficapillus</i>		1					1	1	1	
<i>Malacoptila striata</i>	1						1	1	1	1
<i>Nonnula rubecula</i>							1		1	1
<i>Pteroglossus castanotis</i>										1
<i>Selenidera maculirostris</i>	1							1		
<i>Baillonius bailloni</i>	1		1					1		1
<i>Ramphastos dicolorus</i>	1	1		1	1	1	1		1	
<i>R. toco</i>			1				1	1		1
<i>Picumnus temmincki/ cirrhatus</i>	1				1	1				
<i>Melanerpes flavifrons</i>	1				1	1	1		1	1
<i>Veniliornis spilogaster</i>	1	1	1	1	1	1	1	1	1	
<i>Piculus aurulentus</i>	1	1		1	1					
<i>Celeus flavescens</i>	1		1			1	1	1	1	1
<i>Campephilus robustus</i>					1	1	1	1		
<i>Leptasthenura setaria</i>		1								
<i>Synallaxis ruficapilla</i>	1	1		1	1	1	1	1	1	1
<i>S. cinerascens</i>	1	1								

Species	Area number									
	1	2	3	4	5	6	7	8	9	10
<i>Cranioleuca pallida</i>	1	1		1	1	1				
<i>Anabezenops fuscus</i>	1			1						
<i>Syndactyla rufosuperciliata</i>	1	1		1	1	1				
<i>Anabacerthia amaurotis</i>	1	1		1	1	1				
<i>Philydor lichtensteini</i>			1		1		1	1	1	1
<i>P. atricapillus</i>	1		1	1			1			
<i>P. rufus</i>	1	1			1	1				
<i>Automolus leucophthalmus</i>	1		1				1	1	1	1
<i>Cichlocolaptes leucophrys</i>		1	1	1	1	1				
<i>Heliobletes contaminatus</i>	1	1		1	1	1				
<i>Xenops rutilans</i>	1	1		1	1	1	1	1	1	1
<i>X. minutus</i>			1	1			1			
<i>Sclerurus scansor</i>	1	1	1	1	1		1		1	
<i>Lochmias nematura</i>	1	1	1	1	1	1		1	1	
<i>Sittasomus griseicapillus</i>	1	1	1	1	1	1	1	1	1	1
<i>Denrocincla turdina</i>			1	1	1		1		1	
<i>Xiphocolaptes albicollis</i>	1	1	1	1	1	1	1		1	1
<i>Dendrocolaptes platyrostris</i>	1	1	1	1	1	1	1	1	1	1
<i>Lepidocolaptes fuscus</i>	1	1	1	1	1	1	1	1	1	
<i>L. squamatus</i>		1		1	1	1	1			

Species	Area number									
	1	2	3	4	5	6	7	8	9	10
<i>Campylorhamphus falcularius</i>				1	1	1				
<i>C. trochilirostris</i>		1								
<i>Hypoedaleus guttatus</i>			1	1	1	1	1		1	1
<i>Mackenziana severa</i>					1	1	1	1	1	1
<i>Batara cinerea</i>		1		1	1	1				
<i>Dysithamus xanthopterus</i>		1		1	1					
<i>D. stictothorax</i>	1		1				1			
<i>D. mentalis</i>	1			1	1	1	1	1	1	1
<i>Myrmotherula minor</i>			1							
<i>M. gularis</i>	1		1	1	1	1				
<i>Herpsilochmus rufimarginatus</i>	1		1				1		1	
<i>Drymophila ochropyga</i>				1	1		1		1	
<i>D. ferruginea</i>	1		1	1	1		1		1	
<i>D. genei</i>		1								
<i>D. malura</i>		1		1	1			1		
<i>D. squamata</i>			1							
<i>Terenura maculata</i>				1	1	1	1		1	
<i>Pyriglena leucoptera</i>	1		1	1	1	1	1	1	1	1
<i>Myrmeciza loricata/squamosa</i>	1			1	1	1	1			

Species	Area number									
	1	2	3	4	5	6	7	8	9	10
<i>Formicarius colma</i>			1							
<i>Chamaeza ruficauda</i>		1								
<i>C. campanisona</i>	1	1			1	1	1	1		1
<i>Grallaria varia</i>	1	1	1	1	1					
<i>Hylopezus ochroleucus</i>		1			1					
<i>Conopophaga melanops</i>		1						1		
<i>C. lineata</i>	1	1	1		1	1	1	1	1	1
<i>Merulaxis ater</i>			1							
<i>Scytalopus speluncae</i>		1		1	1					
<i>S. indigoticus</i>								1		
<i>Psiloramphus guttatus</i>					1		1			
<i>Phyllomyias fasciatus</i>	1	1	1	1						
<i>Oneotriccus griseicapillus</i>		1	1	1						
<i>Xnathomyias virescens</i>		1						1		
<i>Myiopagis caniceps</i>			1				1		1	1
<i>M. gaimardii</i>										1
<i>Elaenia mesoleuca</i>	1	1						1		
<i>Corythopsis delalandi</i>							1	1	1	
<i>Leptopogon amaurocephalus</i>	1		1	1	1		1	1	1	1
<i>Phylloscartes difficilis</i>		1								

Species	Area number									
	1	2	3	4	5	6	7	8	9	10
<i>P. eximius</i>	1									
<i>P. ventralis</i>	1	1		1	1	1			1	
<i>P. sylviolus</i>			1							
<i>P. oustaleti</i>		1	1	1	1					
<i>Myiornis auricularis</i>	1		1	1	1	1	1	1	1	
<i>Todirostrum poliocephalum</i>	1		1	1	1	1	1	1	1	
<i>Hemitriccus nidipendulum</i>	1			1			1	1		1
<i>H. orbitatum</i>	1		1				1	1	1	
<i>H. diops</i>		1		1	1	1	1		1	
<i>Ramphotrigon megacephala</i>				1						
<i>Platyrinchus mystaceus</i>	1	1	1	1	1	1	1	1	1	1
<i>P. leucoryphus</i>							1			
<i>Onychorhynchus coronatus</i>				1	1					
<i>Myiobius atricaudus</i>							1			
<i>M. barbatus</i>		1	1							
<i>Lathotriccus euleri</i>	1	1			1	1	1	1	1	1
<i>Colonia colonus</i>	1		1			1	1	1	1	1
<i>Attila phoenicurus</i>		1			1	1				
<i>A. rufus</i>	1		1	1	1	1				
<i>Sirystes sibilator</i>				1	1		1	1	1	1

Species	Area number									
	1	2	3	4	5	6	7	8	9	10
<i>Megarhynchus pitangua</i>	1	1			1	1	1	1	1	1
<i>Legatus leucophaeus</i>	1				1	1	1	1		1
<i>Empidonomus varius</i>	1				1		1	1	1	1
<i>Pachyramphus castaneus</i>	1	1	1	1	1	1	1			
<i>Lipaugus lanioides</i>							1			
<i>Tityra cayana</i>	1				1	1	1	1	1	1
<i>T. inquisitor</i>						1	1	1	1	1
<i>Pyroderus scutatus</i>	1	1					1			
<i>Procnis nudicollis</i>	1			1		1	1		1	1
<i>Laniisoma elegans</i>							1			
<i>Phibalura flavirostris</i>		1			1		1	1		
<i>Tijuca atra</i>		1								
<i>Carpornis cucullatus</i>				1	1	1				
<i>Iodopleura pipra</i>			1							
<i>Antilophia galeata</i>							1	1	1	1
<i>Schiffornis virescens</i>	1	1		1	1	1	1	1	1	1
<i>Piprites chloris</i>				1	1					
<i>P. pileatus</i>		1								
<i>Neopelma aurifrons</i>	1			1	1					
<i>Manacus manacus</i>	1		1				1			1

Species	Area number									
	1	2	3	4	5	6	7	8	9	10
<i>Ilicura militaris</i>	x	1		1						
<i>Chiroxiphia caudata</i>	1	1	1	1	1	1	1	1	1	1
<i>Oxyruncus cristatus</i>	1		1	1	1		1			
<i>Neochelidon tibialis</i>			1		1					
<i>Cyanocorax caeruleus</i>	x									
<i>Platycichla flavipes</i>	1		1	1	1	1	1			
<i>Turdus nigriceps</i>		1						1		
<i>T. albicollis</i>	1	1	1	1	1		1	1		
<i>Hylophilus poicilotis</i>	1	1		1	1	1	1	1		
<i>Basileuterus culicivorus</i>	1	1	1	1	1	1	1	1	1	1
<i>B. leucoblepharus</i>	1	1		1			1	1	1	1
<i>B. rivularis</i>			1			1				
<i>Tangara seledon</i>	1		1	1		1				
<i>T. desmaresti</i>	1	1	1	1	1	1				
<i>T. cyanocephala</i>			1	1	1	1				
<i>Pipraeidea melanonota</i>	1	1	1	1	1	1	1	1		



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