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THE ACTIVITY OF BIRDS DURING SNOWSTORMS IN HIGH-LEVEL WOODLANDS IN PERU

J Fjeldså

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Guests attending included: Dr M. ABS, A. ANDERSON, B. ARVIDSSON, Mrs J. W. ASH, Dr G. AULEN, Dr A. BANKOVICS, Ms S. BAUMAN, Dr L. BENNUM, Dr R. BIERREGAARD, Dr U. BEICHLE, M. BRAUN, Dr M. BROOKE, Mrs I. BULLOCK, K. DAVIS, Ms A. DAVIS, M. EENS, Dr R. FLEISCHER, R. C. FOTSO, Dr C. FRANCIS, Dr C. A. GALBRAITH, Mrs A. GALBRAITH, Dr A. GOLDSMITH, Ms G. GRIFFITHS, Mrs J. HAWKINS, J. R. HENDERSON, B. KING, Mrs V. LIVERSIDGE, Dr M. LOUETTE, Dr M. McNICHOLL, L. McPHERSON, G. F. MEES, Mrs V. MEES-BALCHIN, Prof. M. MILONE, Dr P. MONAGHAN, Mrs D. MONK, Ms M. MORIN, C. A. MULLER, R. NEEGAARD, Dr D. NETTLESHIP, Mrs B. PEAL, Ms R. PINXTEN, Dr A. RICHFORD, M. ROBBINS, C. ROBERTSON, Dr R. ROBERTSON, P. ROBERTSON, P. RYAN, Prof. R. RYDER, Mrs A. RYDER, F. SARIS, Dr H. SCHULZ, Dr S. SEVERINGHAUS, Dr G. SHANNON, G. SHANNON, R. SLACK, Mrs M. SPAANS-SCHEEN, Dr P. STETTENHEIM, Dr D. SUMMERS-SMITH, Dr W. SUTER, Mrs D. SUTER, Dr B. SUTHERLAND, Dr K. SWENNEN, Ms C. TARR, Dr U. THIEDE, Dr A. TURNER, Prof. M. WADA, Dr D. WALLSSCHLAGER, Ms J. WIENEKE, Mrs L. WILKINSON, Dr K. WITT.

The eight hundred and fifth meeting of the Club was held on Wednesday, 12 December 1990 in the Senior Common Room, Sherfield Building, Imperial College, South Kensington at 6.15 p.m. 25 members and 21 guests attended.

Members present were: D. GRIFFIN (*Vice-Chairman*), M. A. ADCOCK, B. M. BECK, P. J. BULL, Cdr M. B. CASEMENT RN, I. COLLINS, P. J. CONDER, Dr R. A. F. COX, S. J. FARNSWORTH, A. GIBBS, K. W. HENSHALL, T. J. JAMES, Dr J. A. K. MELDRUM, Revd G. K. McCULLOCH, T. R. MILLS, R. G. MORGAN, Dr R. P. PRYS-JONES, A. J. RANDALL, M. L. ROMER, V. SAWLE, Dr R. C. SELF, P. J. SELLAR, A. R. SWASH, N. H. F. STONE, J. J. WHEATLEY.

Guests present were: Dr A. KNYSTAUTAS (*Speaker*), Mrs B. ADCOCK, N. V. BELYALOVA, O. V. BELYALOU, N. BUCKNELL, S. CHAPMAN, Mrs F. M. FARNSWORTH, J. B. FISHER, Miss E. GREEN, G. E. GREEN, Mrs B. M. GIBBS, Mrs S. GRIFFIN, D. HARRIS, B. HILLCOAT, Ms K. HOFF, Mrs N. LIDDELL, Mrs I. McCULLOCH, E. POTAPOV, J. SAWLE, Mrs G. D. SWASH, M. WILSON.

After supper it was a pleasure to welcome again Dr A. J. Knystautas who spoke on the 'Avifaunal Composition of the USSR'. After a general introduction to the natural vegetation regions of this vast country, Dr Knystautas conducted us through a region by region account of the avifauna illustrated by superb slides. Of particular interest was his account of the distribution of species such as the accentors, of which seven species are found within the continental boundaries of the USSR.

The activity of birds during snow-storms in high-level woodlands in Peru

by J. Fjeldså

Received 24 June 1990

Small woods dominated by *Polylepis* trees occur locally in the steppe-like habitats of the high Andes, usually at 4000–4500 m and isolated some distance above the main treeline. This habitat has been reduced by long-term climatic cycles (see, e.g., Hansen *et al.* 1984) and human activity,

probably since pre-incaic times (Ellenberg 1958, Ansión 1986, Fjeldså 1987, Fjeldså & Krabbe 1990: 23–24).

Several of the bird species inhabiting these habitat islands have hardly ever been seen outside them, and therefore would seem to be sedentary. As a result of the habitat fragmentation, these birds have relict distributions. Some populations of only a few pairs may be separated by tens of kilometres from other conspecific populations. For a full understanding of the biogeographic patterns and differentiation of local populations (see, e.g., Vuilleumier 1984) it is important to know whether these birds are truly sedentary, or disperse occasionally. Some high-altitude birds make downslope migrations as part of their annual cycle. In this case, they could disperse by descending and ascending through different valleys. Other species are found in the high-level woods at all seasons. For these, the most likely opportunity for dispersal would be during spells of extreme weather, especially when the highlands sometimes become covered by snow.

O'Neill & Parker (1978) describe one incidence of a movement of birds down the Peñas canyon in Cordillera Vilcanota (Cuzco, Peru), when a snow-storm swept this area. The migration mainly involved birds of open habitat, but also *Chalcostigma stanleyi* and *Xenodacnis parina*, which live in the upper parts of the canyon in tiny *Polylepis* patches on the surrounding mountain crests. Below follows the first account of observations made within *Polylepis* woodland during snowfall.

Case studies

Snowfall in the Abancay mountains

I spent 22 November to 6 December 1989 in the highland between the Apurimac and Lambrama valleys SE of Abancay in Apurimac, Peru, as part of an extensive study of relict woodlands in the high Andes (see Fjeldså 1987, in press, Frimer & Nielsen 1989). This area of 20 × 30 km of rugged puna grassland and alpine habitat is intersected by valleys with scattered woodlands at 3400–4000 m (*Eupatorium*, *Escallonia*, and some *Myrsinanthus*, *Polylepis weberbaueri* and *Vallea stipularis*), and has several discrete habitat islands of *Polylepis incana* and *subsericans* at 4100–4600 m. These latter woodlands were exceptionally dense and lush, most trees 10–15 m tall with trunks 0.4–1 m thick, dense regrowth along most edges and in the clearings, and the larger trees heavily loaded with mosses and vines. The forest bottom was shady, with thick litter and moss, and with undergrowth of nitrophilous plants locally. (Most other *Polylepis* woods, in contrast, represent mosaic habitat with broken canopies, small and gnarled trees, and minimal regeneration because of grazing and burning of the grass. The woodlands of the Abancay mountains had an open and bushy structure only on steep, rocky crests.)

The effect of snowfall was witnessed in a 70-hectare forest patch in Quebrada Balcón. Only its lower fringe, at 4150 m, was used by man, who took fallen trunks and side-branches for firewood. The terrain was very difficult for walking, and there were no signs of human influence or grazing by cattle more than 200 m inside the lower forest edge. The most important vine, *Salpichroa* (Solanaceae), formed curtains 5–10 m high,

hanging from the canopy, adorned with myriads of yellow tubular flowers. This must be one of the least man-influenced habitat islands in this elevational zone in Peru, and the place is therefore particularly suited for studies of the functioning of the ecosystems of Andean high-altitude woods.

During October–December the weather was generally fine and sunny, but with frost every night. The situation changed during the night 26/27 November, when the area became enveloped in mist. The whole of the following day was rainy with periods of hail and snow, but the ground remained snow-free until the following night. On the morning of 28 November the canopy as well as the forest floor was covered by 5–10 cm of dry snow, and there was even deeper snow in the grassland. The conditions in the upper part of the wood, at 4500 m and within the clouds, were most unpleasant, but most terrain below 3900 m was snow-free. The snowfall diminished gradually, but inside the forest the snow continued to drop from the branches, first as fine powder, then as lumps and drops and water. In the lower part of the forest, the canopy (and tall puna grass and rocks in the open land) was snow-free at noon, but in the evening there was still some snow among the tufts of tall grass and herbs. There were still occasional showers of rain and hail, and the upper ridges continued to have snow.

Bird observations

The observations on 27 November, 28 November (from 07.45 until sunset) and on the morning of 29 November consisted of continuous watching from sheltered places among rocks and while stealing slowly through the forest. Mist-netting was done from midday of 28 November. Unfortunately, observations on the 28th did not cover the upper ridges, or woodlands situated below 3900 m.

Altogether 34 bird species were recorded in the Balcón forest in these three days. This total includes typical highland species and birds otherwise associated with lower elevations, including large numbers of hummingbirds (*Aglaeactis castelnaudii*, *Patagona gigas*, *Pterophanes cyanoptera*). Large numbers of grassland granivores (notably *Phrygilus unicolor*) spent the night in the forest. Passerines of the puna zone normally sleep in caves or holes in banks (Dorst 1956), but it was characteristic of this mountain tract that the grassland granivores assembled by night to sleep in trees.

Other woodland patches visited in this highland had 30–39 species each. A similar richness of species has only been found in a few *Polylepis* tracts in Cordilleras Blanca (Ancash) and Vilcabamba (Cuzco) out of a few hundred field stations in the puna zone (compare data in Vuilleumier & Simberloff 1980, Fjeldså 1987 and Frimer & Nielsen 1989).

The bird activity on 27 November differed from that of days with fine weather by a low incidence of song, especially in the afternoon. During the night 27/28 November (when I was often awake) no calls indicating downwards migration could be heard, but at 07.55 one *Phrygilus unicolor* was glimpsed flying down the valley. As the grassland was afterwards found to be 'lifeless', I assume that most grassland granivores had fled down the valley immediately after dawn, maybe to some 'corrales' with

cattle 1 km below, or at least to below the zone covered by snow. *Asthenes humilis* and *A. modesta* were not heard in the grassland before 10.10, but may have been hiding in nest-holes or among tall grass. *Colaptes rupicola*, *Cinclodes fuscus* and a few *Zonotrichia capensis* stayed just inside the lower forest edge in the morning, and these birds and *Phrygilus* species were not seen in the grassland until bare spots appeared on rocks and near creeks at 10.45.

Hummingbirds fed apparently unaffected in the snow-clad canopy from 07.45 (as seen by O'Neill & Parker 1978). The snow cover was rather light on the *Salpichroa* curtains, and the hummers could sweep some snow away with their wing-whirring. They sometimes perched briefly on branches with deep snow. *Diglossa brunneiventris* and *Conirostrum cinereum* were also active early, as were breeding pairs of *Ochthoeca oenanthoides* and *rufipectoralis*. The two first probed *Salpichroa* flowers, the two latter showed their usual perch-to-ground sallies, and *O. rufipectoralis* was seen hopping on the ground in 5 cm snow for shorter periods, chattering frequently. However, *O. oenanthoides* did not feed from rocks outside the forest until after noon. Also *Troglodytes aedon* fed early, in snow-free recesses below rocks and boulders.

There was no early morning song. The first *Ochthoeca* strophes were heard 08.20, full song (mainly by *Troglodytes aedon*) from 09.00 onwards, but the amount of song remained subnormal the entire day.

From 09.00 a number of bird species fed in the canopy. The feeding of *Anairetes alpinus* involved short sallies and hover-gleaning which whirled some snow off the foliage, and the bird could use hovering purposefully to wipe the foliage before perching. *Xenodacnis parina* managed well as it gleans only undersides of leaves. *Carduelis atratus* and *crassirostris* were seen in the tree-tops.

Although *Scytalopus* (unnamed; see Fjeldså & Krabbe 1990: 440 and 847) and *Grallaria andicola* were not recorded before 10.40 and 11.00, respectively, they were probably present all the time, hiding in snow-free recesses. *Turdus chiguanco* was often seen hopping in the snow, but preferred places with thin snow cover below dense canopy, as did *Cinclodes (excelsior) aricomae*, which dug through the snow with its long beak.

Anairetes alpinus showed a markedly higher density in the lower part of the forest early on 28 November than the day before, suggesting that many birds had descended from the upper parts. *Leptasthenura xenothorax* occurred in the lower part of the forest this morning, but only near the upper ridges the preceding afternoon. This species feeds along thick branches and trunks (unlike other *Leptasthenuras*), as does *Cranioleuca albicapilla* and *Oreomanes fraseri*, which remained on their territories, although apparently inactive until 10.30.

The species lists and numbers of birds present in small *Polylepis* copses 80, 250 and 800 m below the continuous forest tract did not change between 27 and 28 November, and no birds were seen crossing open land between the woodland patches. Therefore, although some forest birds may have abandoned the misty and cold upper parts of the large forest, the weather did not induce these birds to pass from the lower edge of the large woodland to the smaller woodlands below. These woodland patches

are fully visible from the large woodland, and form a chain down the valley.

There may, however, have been a few exceptions. On 28 November *Pterophanes cyanoptera* was not seen until 11.20. This extremely fast flyer may have gone lower down in the valley for a few hours. Also *Chalcostigma stanleyi* seemed to be temporarily absent, and this may also have been the case with *Polioxolmis rufipennis*. A single *Aeronautes andicolus* (otherwise seen only below 3200 m) passed at 12.40.

There was no mortality of young in 4 passerine nests checked after the snow-storm.

Other incidences of snowfall

During 14–17 March 1987, P. Arctander stayed at 4300 m near the upper edge of the *Polylepis* woodland near Abra Malaga above the Peñas canyon in Cuzco (Fjeldså 1987, loc. 47). This is a fairly open semihumid woodland, with a high number of species. The weather was foggy during this visit, with rain, hail and snow throughout the period, and on 15–16 March there was up to 10 cm snow on the ground, and the canopy was also densely covered. A detailed record was not made, but the following species were noted in the upper part of the wood during periods with snow: *Phalcobaenus megalopterus*, *Chalcostigma stanleyi*, *Colaptes rupicola*, *Cinclodes fuscus*, *Leptasthenura xenothorax* and *yanacensis*, *Grallaria andicola*, *Scytalopus magellanicus simonsi*, *Polioxolmis rufipennis*, *Ochthoeca fumigatus*, *Muscisaxicola albifrons*, *Oreomanes fraseri*, *Catamenia inornata*, *Phrygilus unicolor*, *Carduelis atratus* and *crassirostris*. Most birds retreated down-hill during the worst periods, but probably only went to the lower part of the woodland, at 4000 m. The birds of this woodland seem regularly to roam between the upper and lower parts, often in mixed feeding parties. *Leptasthenura yanacensis* maintained normal feeding routines in the upper part of the woodland throughout the period, and *Scytalopus*, *Grallaria* and the three tyrant flycatchers were seen here all the time.

N. Krabbe stayed at this same site 16–18 October 1983, and had very cold weather all the time, and a snow-storm on the last day. *Leptasthenura* species and *Cinclodes fuscus* visited the upper ridge to receive the first morning sun; for the rest of the period most birds deserted the camp-site area near the crest, or moved rapidly up- and down-hill in response to weather changes. Only a *Grallaria andicola* was seen near the crest during the worst period. However, it was N.K.'s impression that the birds remained in the lower part of the woodland, but stayed quiet and inactive for periods. Parties of *Aratinga (mitrata?)* were seen passing, but not during the periods of snowfall.

On two occasions I have seen the puna grasslands and alpine habitats surrounding the Junin Altiplano covered by 10–15 cm of snow. In this area there is no easy access to lower valleys. Finches (*Sicalis*, *Phrygilus*) congregated in large flocks on damp snow-free meadows along the shores of lakes in altiplano areas. I also noted several ground-tyrants there. This happened in October and February, when these birds would normally occur as scattered pairs or small groups on rocky or scrubby slopes with potential breeding habitat.

Discussion

Many birds of the open highlands fly down into the valleys or assemble on humid lake-shores in periods with snow. The present account shows that many of the specialized inhabitants of the *Polylepis* woodlands, in contrast, are able to stay in their high-altitude habitat, at least if the snow does not remain very long. In fact, snow very rarely lasts more than a couple of days in the puna zone, except in a few very high passes.

It seems that *Pterophanes cyanoptera* and *Chalcostigma stanleyi* are opportunists in their altitudinal distribution. Also *Polioxolmis rufipennis*, which finds its prey on the ground in open country surrounding the woodlands (Fjeldså 1990), may move in response to snowfall. However, most birds in Quebrada Balcón remained on their territories or made minor vertical movements within a tract of continuous forest habitat. They maintained fairly normal activities, except for reduced song and some hours of inactivity in the morning, until the snow fell off the foliage. There was no indication that the snowfall was a serious threat. The observations at Abra Malaga showed that the birds became very quiet, reduced their activity and avoided the most inhospitable high parts of their habitat.

It is remarkable that the birds in Quebrada Balcón were reluctant to leave the lower edge of the woodland, considering the short distances between the woodland patches. This makes me doubt that they knew that the copses formed potential 'stepping stones' by which they could reach snow-free lower-level woodland within a few minutes. We cannot conclude that downward migration never occurs, but it seems clear that the majority of birds of high-level woodland are well adapted to resist spells of severe weather.

It should be remarked that the *Polylepis* patches near Abancay and Abra Malaga are exceptionally rich in moss and creepers, which represent fine subcanopy feeding microhabitats. Other, drier and epiphyte-free woods may not offer quite the same opportunities for finding food during snowfall. Some of these woods have few species (e.g., *Ochthoeca oenanthoides*, *Oreomanes fraseri*, *Carduelis crassirostris*, *Polioxolmis rufipennis* and hummingbird species with slightly curved bills; see Fjeldså, in press). Most of these (but never *O. fraseri*) can sometimes be seen in terrain with scattered scrub or in bushy or rocky places in the valleys.

The *Polylepis* forest offers many opportunities to maintain some feeding routines despite some snow. Although few insects feed on *Polylepis*, these trees represent a good refuge habitat for insects (several moths even showing specific adaptations for crypsis on *Polylepis* bark; O. Karsholt, pers. comm.). This is due to the rich supply of sheltered and frost-free microhabitats in the loose, laminar *Polylepis* bark and in the moss and among epiphytes hanging from the branches. Thus, there will always be food available for scansorial and bark-peeling species of birds (*Leptasthenura xenothorax*, *Cranioleuca* species, and especially *Oreomanes fraseri*). Also the pendent flowers of many creepers will be accessible whilst the foliage is snow-clad. Since most *Polylepis* woods grow in rocky terrain or on coarse boulders, there will usually also be cavities with snow-free refuges for ground-feeding birds. Those members of the *Asthenes*

dorbignyi superspecies that frequent *Polylepis* woods (Fjelds  & Krabbe 1990: 365–370) feed on fairly open ground and seem to live only in semi-arid highlands, where deep snow is unlikely to occur.

It is my experience, when making study skins of *Polylepis*-adapted birds, that they have no significant reserves of subdermal fat. Either the habitat offers little surplus food, or the birds do not usually need to have energy reserves for the critical periods. (An exception is *Xenodacnis parina*, which often is very fat, and sometimes siskins. This aspect certainly deserves a more careful study.)

For woodland birds which show an innate fear of leaving wooded terrain, several days of snowfall may be fatal in *Polylepis* tracts which have become isolated far away from lower-level woodlands. A fairly rich fauna (which includes some ground-feeding birds) is found in the extensive tracts of *Polylepis* in the northern parts of the Titicaca basin (Fjelds  1987), a highland area that is remote from lower-level habitats. However, heavy snowfall is rare in this rather dry area (Monheim 1956). At present, the largest assortment of high-altitude forest birds (30–45 species per woodland patch) is found where *Polylepis* woodlands are connected with lower-level woodlands by strips of bushy vegetation or at least 'stepping stones' in the river gorges. There may be two reasons for this: first, that the potential dispersal corridor makes it easier for species which are reluctant to cross open terrain to move down to safety during extreme weather; and second, that it permits faunal enrichment from below. *Polylepis* woodlands in close contact with lower-level wood may have breeding populations of a number of species normally associated with lower-temperate woodlands (Fjelds , in press). Strict high-level woodland birds (*Leptasthenura yanacensis*, *Anairetes alpinus*, *Poospiza alticola*) will usually manage this potentially competitive situation by staying in the rather scattered wood on rock-edges and ridges in the very highest parts, except maybe during periods of snow.

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References:

- Ansi n, I. 1986. *El  rbol y el bosque en la sociedad Andina*. Inst. nac. Forestal Fauna—FAO.
- Dorst, J. 1956. Recherches  cologiques sur les oiseaux des plateaux andins du P rou m ridional. *Bull. Mus. Natn. Hist. Nat., Paris* 28: 435–445.
- Ellenberg, H. 1958. Wald oder Steppe? Die nat rliche Pflanzendecke der Anden Perus. *Die Umschau* 21: 645–8, 679–81.
- Fjelds , J. 1987. *Birds of relict forests in the high Andes of Peru and Bolivia. Technical report from the Polylepis forest expedition of the Zoological Museum, 1987, with some preliminary suggestions for habitat preservation*. Zool. Mus., Copenhagen.
- Fjelds , J. 1990. Geographic variation in the Rufous-webbed Tyrant *Polioptila rufipennis*, with description of a new subspecies. *Bull. Brit. Orn. Cl.* 110: 26–31.
- Fjelds , J. in press. Relict forests in the high Andes of Peru, and their avifauna. A progress report. *Proc. I symp. ecol. Peru*.
- Fjelds , J. & Krabbe, N. 1990. *Birds of the High Andes. A Manual to the Birds of the Temperate Zone of the Andes and Patagonia*. Zoological Museum, University of Copenhagen, and Apollo Books, Svendborg, Denmark.

- Frimer, O. & Nielsen, S. M. 1989. The status of *Polylepis* forest birds and their avifauna in Cordillera Blanca, Peru. Zool. Mus., Copenhagen.
- Hansen, B. C. S., Wright, H. E. & Bradbury, J. P. 1984. Pollen studies in the Junín area, central Peruvian Andes. *Geol. Soc. Am. Bull.* 95: 1454–1465.
- Monheim, F. 1956. Beiträge zur Klimatologie und Hydrobiologie des Titicacabeckens. Selbstverlag des Geogr. Inst. Univ. Heidelberg.
- O'Neill, J. P. & Parker, T. A. 1978. Responses of birds to a snowstorm in the Andes of southern Peru. *Wilson Bull.* 90: 446–449.
- Vuilleumier, F. 1984. Patchy distribution and systematics of *Oreomanes faseri* (Aves, ?Coerebidae) of Andean *Polylepis* woodlands. *Am. Mus. Novit.* no. 2777.
- Vuilleumier, F. & Simberloff, D. 1980. Ecology vs. history as determinants of patchy and insular distributions in high Andean birds. *Evolutionary Biology* 12: 235–379.

Address: Jon Fjeldså, Zoological Museum, University of Copenhagen, Universitetsparken 15, DK-2100 Copenhagen, Denmark.

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Sipia rosenbergi (Formicariidae) is a synonym of *Myrmeciza [laemosticta] nigricauda*, with comments on the validity of the genus *Sipia*

by Mark B. Robbins & Robert S. Ridgely

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Abstract.—*Sipia rosenbergi* is a synonym of *Myrmeciza [laemosticta] nigricauda*. We recommend, based on vocalizations, morphology and behaviour, that both *Sipia nigricauda* and *Sipia berlepschi* be transferred to *Myrmeciza*. We believe that *M. nigricauda* and *M. laemosticta* are sister taxa, and that *berlepschi* is closely related to them. In South America, *M. laemosticta* ranges only from northern Colombia east to extreme western Venezuela; it does not occur along the Pacific coast of Colombia and Ecuador. The races *bolivari* and *venezuelae* of *M. laemosticta* do not merit recognition, and should be synonymized with *M. laemosticta palliata*.

In July–August 1987, we and others from the Philadelphia Academy of Natural Sciences (ANSP) staff surveyed the avifauna at El Placer along the western base of the Andes, at c. 670 m in elevation, in western Esmeraldas in extreme northwestern Ecuador. While in the field we were puzzled as to why we could find only *Sipia rosenbergi*, and never *Myrmeciza laemosticta*, as both had been reported previously from this area (Salvin & Godman 1892, Chapman 1926). Upon our return from the field, we realized that the ANSP collection did not have any material of *Myrmeciza laemosticta nigricauda* (the race endemic to Pacific south-western Colombia and northwestern Ecuador; Chapman 1926), even though we have good representative collections from the lowlands of this area. The taxon *nigricauda* was described from a female specimen collected at Intac (= Intag), Imbabura, Ecuador, in the extreme north-western corner of the country (Salvin & Godman 1892). Further puzzled by the fact that all other races of *laemosticta* have rufous brown and not blackish tails, we compared our series of female *Sipia rosenbergi* to Salvin