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A review of smaller Philippine swiftlets of the genus *Collocalia*

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The species of smaller Philippine swiftlets *Collocalia* are here judged two in number, with both White-bellied Swiftlet *C. esculenta* and Pygmy Swiftlet *C. troglodytes* being widespread. *C. esculenta* is represented by four races, *septentrionalis* and *marginata* with rump feathers clearly edged with white, *isonota* and *bagobo* with such markings faint or absent. The white-rumped *C. troglodytes* evidently does not build edible nests.

In a separate paper (Dickinson 1989) all the larger Philippine swiftlets have been reviewed. The smaller ones, dealt with here, are the white-bellied forms *esculenta* and *marginata*, which are treated here as conspecific, and the white-rumped *troglodytes*. This paper, unlike that on the larger swiftlets, is not arranged with separate texts for each subspecies.

Many museums cooperated in providing material for this study. In the text they are indicated by the following abbreviations: British Museum (Natural History), Tring, BMNH; Carnegie Museum of Natural History, CM; Delaware Museum of Natural History, DMNH; Field Museum of Natural History, Chicago, FMNH; Museum of Comparative Zoology, Cambridge, Massachusetts, MCZ; United States National Museum, Washington, D.C., USNM.

WHITE-BELLIED SWIFTLET *Collocalia esculenta*

Synonymy

Collocalia [sic] *linchi*: McGregor (1904a).

Collocalia cebuensis: Kutter (1882).

Collocalia esculenta: Parkes (1960), Alcalá and Sanguila (1969), Alcalá and Alviola (1970).

Collocalia esculenta bagobo: Hachisuka (1930), Hachisuka (1934), Peters (1940), Delacour and Mayr (1945), Ripley and Rabor (1958), Rand and Rabor (1960), Medway (1966), duPont and Rabor (1973a).

Collocalia esculenta isonota: Hachisuka (1934), Peters (1940), Delacour and Mayr (1945), Rabor (1955), Medway (1966).

Collocalia esculenta marginata: Stresemann (1925), Manuel (1939), Delacour and Mayr (1945), Rabor (1952), Rabor (1954), Rand and Rabor (1960), duPont and Rabor (1973b), Parkes (1973), Rabor (1977), Salomonsen (1983).

Collocalia esculenta mindanensis: Hachisuka (1941).

Collocalia esculenta septentrionalis: Delacour and Mayr (1945).

Collocalia isonota: McGregor (1909).

Collocalia linchi isonota: Oberholser (1906).

Collocalia linchi: Sharpe (1894), Ogilvie Grant (1895), McGregor (1905c).

Collocalia Linchi: Kutter (1883).

Collocalia marginata: Salvadori (1882), Hartert (1892), Bourns and Worcester (1894), McGregor (1903), McGregor (1904a), McGregor (1904b), McGregor (1905a), Oberholser (1906), McGregor (1909), McGregor (1910), McGregor (1921), Hachisuka (1934), Manuel (1937), Peters (1939), Peters (1940), Medway (1966).

Salangana linchi: McGregor (1905b).

Salangana marginata: McGregor (1905a), McGregor (1906a), McGregor (1906b), McGregor (1907a), McGregor (1907b), McGregor (1907c).

Specific characters

Small, wing up to 107 mm, glossy blue-black or metallic blue-green – not the oily green found in Javan *C. linchi* – with the crown and upper tail-coverts most glossy, sometimes with edges to feathers of the rump whitish, feathers of underparts with white or whitish edges.

No rattle call. Builds mossy nests, bound with salival cement and placed under overhangs or if in caves near their entrances.

Overview

Authors have disagreed on the conspecificity of eastern *esculenta*, occurring from Sulawesi eastward through the Moluccas and the Lesser Sundas east of Lombok to New Guinea, and western *linchi*. Recently Somadikarta (1986) has shown that the two both occur in Borneo and are best treated as good species. Once distinguished by the presence of white spots on the inner webs of the rectrices (Oberholser 1906) – which are said to be absent in *linchi* and typical of *esculenta* – Somadikarta underlined that neither had such spots in the Bornean and other western populations and differentiated them by colour (*linchi* being glossy green and *esculenta* glossy blue) and by the presence or absence of a feather tuft on the hind toe.

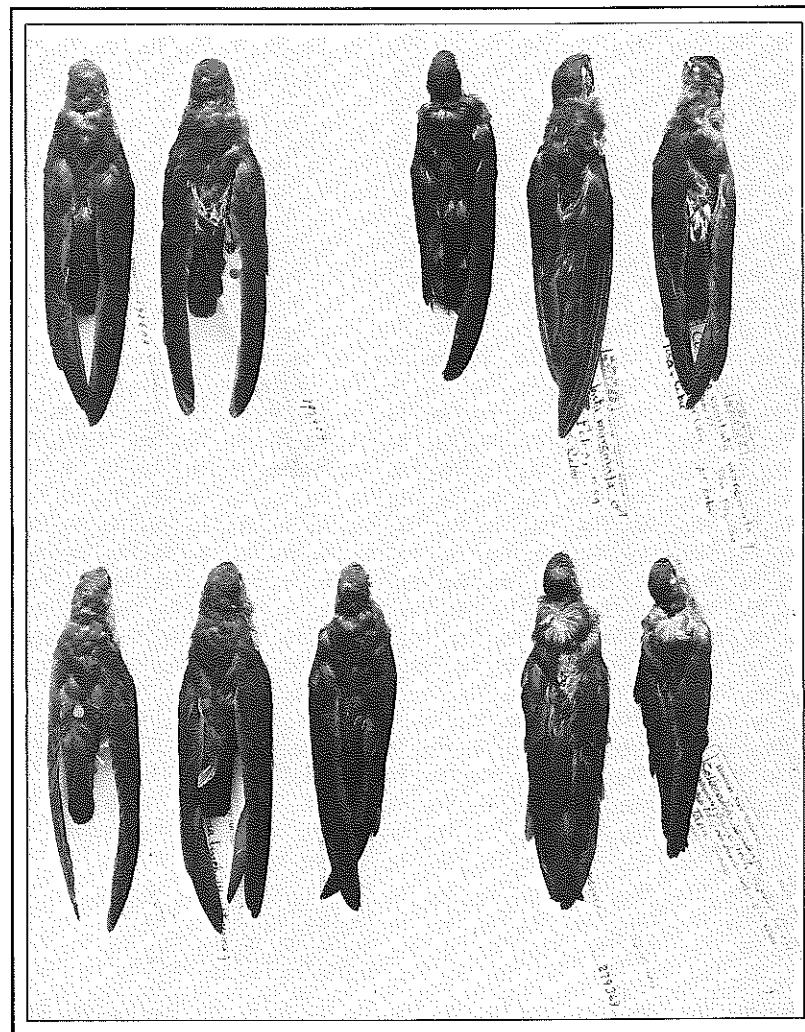
Oberholser (1906) treated Philippine birds as *linchi*, as he found white spots on the rectrices to be absent in *marginata* and *isonota*. Later authors discussing *esculenta* (Salomonsen 1983, Somadikarta 1986) have not made quite clear how the Philippine forms fitted their views. However, the tail spots do indeed seem to be absent and feather tufts do seem to be present on the hind toes (of at least some birds). In addition even the greenest population is not the oily green colour of *linchi*. The Philippine populations thus belong to the western group of *esculenta* that, as in Borneo, Sumatra and the Malay Peninsula, lacks the tail spots.

The Philippine races fall into two rather distinct groups based on the presence (*marginata*) or absence of pale edges to the feathers of the rump (Plate 1); the case for treating these as separate species is re-examined below.

I also review the reportedly anomalous nesting behaviour of *isonota*. If this

were to be confirmed it would contradict the apparent conspecificity of these two groups.

Plate 1. Top left: *Collocalia e. septentrionalis* from Calayan. Top right: *Collocalia e. marginata* from Bataan, Luzon (left) and Cebu (2 right-hand birds). Bottom left: *Collocalia e. isonota* from Benguet (2 at left) and *Collocalia e. bagobo* from Mindoro (right-hand bird). Bottom right: *Collocalia e. bagobo* from Mindanao (left) and from Bongao, Sulu Islands (right).



Discussion

(1) Early names and island records

Tweeddale (1878) reported a bird from Luzon, in Darmstadt Museum, that he called *fuciphaga*, saying that it was inseparable from the Javan *C. linchi* Horsfield and Moore 1854 – which he considered to be the same as *C. fuciphaga* (Thunberg) 1812.

Birds occurring in Cebu, with whitish edges to the feathers of the rump, were named respectively *marginata* by Salvadori (1882) and *cebuensis* by Kutter (1882). Kutter (1883) reported a Mindanao bird as *Linchi* [sic] and indicated that he believed it to be the same as the Luzon bird reported by Tweeddale (1878).

Hartert (1892) had a single skin in the British Museum (Nat. Hist.) (BMNH) that he ascribed to *marginata*. From Luzon, it had been acquired as part of the Tweeddale Bequest; I have examined it (BMNH 1888.10.1.152) and concur in its identification. As mentioned by Hartert (1892) this appears to be the skin that Tweeddale had seen in, and must have acquired from, Darmstadt. About ten years later *marginata* was collected at Mariveles in Bataan province, Luzon (McGregor 1903) – removing the remaining doubts about Hartert's identification of the Darmstadt specimen.

Subsequent island records of *marginata* – known from Cebu and Luzon – were: Masbate (Bourne and Worcester 1894), Mindoro (McGregor 1904a), Calayan (McGregor 1904b), Sibuyan (McGregor 1905a), Banton (McGregor 1906a), Tablas (McGregor 1906b), Bohol (McGregor 1907b), Camiguin Norte – sight record – and Babuyan Claro (McGregor 1907c), Polillo (McGregor 1909, 1910), Panay (McGregor 1921), Palawan (Manuel 1937, 1939), Mactan (Peters 1939), Samar (Dupond 1942, Rand and Rabor 1960), Negros (Rabor 1952), Camiguin Sur (McClure and Leclavet 1972), Dinagat (duPont and Rabor 1973b), Siargao (sight record – duPont and Rabor 1973b) and Leyte (Parkes 1973). Meanwhile *linchi* – previously known from Mindanao – was reported from Bongao (Sharpe 1894), northern Luzon (Ogilvie Grant 1895, McGregor 1904a, 1905b) and Mindoro (McGregor 1905c).

Some recent records were given only as *C. esculenta* (Calagna-an and Gigantes: Alcala and Sanguila 1969; Carabao: Alcala and Alviola 1970) and require review as to the form occurring, although the geographical probability in both cases is *marginata*.

(2) Taxonomy

Oberholser (1906) placed *cebuensis* in the synonymy of *marginata* and introduced the name *isonota* for the population of northern Luzon. Stresmann (1925) considered both *cebuensis* and *isonota* to be synonyms of *marginata*.

Hachisuka (1930) described *bagobo* from Mt Apo, and later (Hachisuka

1934) considered *marginata* distinct from *esculenta* for which he maintained the Philippine races *isonota* and *bagobo*. Peters (1940) followed Hachisuka (1934) on this. Hachisuka (1941) described *mindanensis* from "Tumadgopt" (= Tumadgo Point), south-east Mindanao, across Davao Gulf about 110 km east of Mt Apo.

Delacour and Mayr (1945) reviewed the situation and considered *marginata* a geographical race of *esculenta* occurring from the lowlands of central Luzon south to Cebu and Bohol, and named the population from Babuyan, Calayan and Camiguin Norte *septentrionalis* – and thus occurring to the north of *isonota* in the highlands of northern Luzon. The population of Mindanao and Bongao they considered *bagobo*. Apparently no specimen of *mindanensis*, which they synonymised, was available to them. The Palawan race – although differing by its 'very long tail' – was left unnamed.

Ripley and Rabor (1958), with six fresh specimens from Mindoro, considered them intermediate between *isonota* and *bagobo* but closer to the latter.

Medway (1966) kept *marginata* as a separate species only on the grounds of sympatry. He noted that *esculenta* and *marginata* had an identical type of nest and shared the inability to utter the rattle call.

(3) Geographical variation

Luzon records of *marginata* are from the central and southern parts; *isonota* appears to be confined to the northern highlands (specimens from Irisan, Mt Data, Zigzag Hill and Mt. Santo Tomas, Baguio and Hights in the Oaks). Birds from both Pampanga in central Luzon and Sorsogon in southern Luzon are typical of *marginata* but birds from Bataan – perhaps from the slopes of Mt Mariveles – show only faint white edges to the rump feathers and suggest intergradation.

Both *marginata* and *bagobo* have been collected in Mindoro: *marginata* over mangroves and *bagobo* at over 1,500 m (Ripley and Rabor 1958). In Luzon and Mindoro *isonota* and *bagobo*, with uniform rumps, would appear to be representative montane forms.

Interestingly, and perhaps in contradiction to the above, birds with uniform rumps are more frequent in collections from Mindanao, and where there is evidence of intergradation (i.e. faint white edges on the rump feathers), this has been seen essentially on montane birds (from Mt Apo, Mt Malindang and Mt Katanglad and near Gingoog). Intergradation is similarly suggested in birds from Camiguin Sur and Dinagat.

The type of *mindanensis* was a male collected on 7 April 1930 by Y. Nakamura. This cannot now be found but the female taken that day (DMNH 36283) has been examined. The race was based on a shorter wing length, not on plumage differences, and it has generally been treated as a synonym of *bagobo*. The female examined suggests this is appropriate.

Plate 1 shows examples of *marginata*-type birds from Calayan (*septentrionalis*), Bataan and Cebu (both *marginata*) as well as birds with

uniform rumps from Benguet (*isonota*), Mindoro, Mindanao and Bongao (*bagobo*).

Nesting

Nests ascribed to *linchi* or *isonota* have been reported from the highlands of northern Luzon by McGregor (1904a) and Rabor (1955). McGregor (1905b) reported in detail on two nests of *isonota*. An Igorot boy had told him this swiftlet nested on the ground and McGregor did not believe this until taken to see two nests. He wrote:

The first nest was well hidden among ferns on a gently sloping hillside and was on the ground. It is composed for the most part of dry moss; the uphill side is thin and has a few lichens mixed with moss; a few dry grass stems also enter into its composition, but the glutinous substance is almost entirely wanting.

The second nest, situated about 200 yards from the first, was similarly placed beneath weeds and ferns. This nest is composed of the lichen *Usnea*. The outer rim is well rounded and along the uphill side is a considerable patch of the characteristic glutinous material.

The second nest held two well-fledged young.

Reminiscent of this is an account from montane Mindoro in Mearns's unpublished diaries (held in the USNM library), although it is perhaps of a bigger species:

When Messrs. Merrill and Hutchinson were on the main ridge of Mount Halcon, chopping a trail towards the main peak of Halcon, on Nov. 19, 1906, they found the weather partially clear with occasional moments of sunshine; then they flushed a 'medium-sized swift' from the heather, where it seemed to have a nest as it continually flew at them in great perturbation. I had the same experience two days later, but found no nest.

Rabor (1955) reported a nest on Mt Data but no birds were taken at the nest site and the nest, which was a moss nest that, unusually, had a lining of feathers, was not recovered.

Nests of *bagobo* have been recorded on Mt Malindang, Mindanao; where they were moss nests on the underside of the steep roof of the tribal worship house (Rand and Rabor 1960), and inside the shallow caverns and crevices of the steep and sheer rocky cliffs of Bongao (duPont and Rabor 1973a).

Nests ascribed to *marginata* have been reported from Sibuyan by McGregor (1905a) as on the face of one of three boulders forming an enclosure and as composed of blackish-brown hairlike moss cemented with the characteristic glutinous saliva; from Cebu (McGregor 1907a), where the nests were said to be of sandy mud; from Bohol (McGregor 1907b) in a large cave; from Polillo (McGregor 1910) in a small cave; from Panay (McGregor 1921) in a small cave and composed of fibres of *Usnea* and a few other fine

plant stems, fastened together and to the rock wall by means of a small quantity of the glutinous substance; and from Negros (Rabor 1952, 1954, 1977) in shallow cavities or on the rock walls of streams and described as half cups composed of plant fibres and moss well glued together with the birds' hardened saliva.

The nests of the Palawan form have been discussed by Manuel (1937, 1939), and were described as consisting of dark mossy materials held together by a scanty gelatinous substance.

In sum, virtually all the nests are described as moss nests and they are rarely, perhaps never, deep inside caves.

Subspecific characters

Delacour and Mayr (1945) and Parkes (1960) have provided the best comments on the subspecific variation of these forms. Although I formed the impression that *septentrionalis* and *marginata* were more blue-green glossed and *isonota* and *bagobo* more steel-blue, I had less material together at any one time than Parkes (1960), who could not see a consistent difference.

The following is a key to the Philippine forms of *esculenta* (including *marginata*), although intergrading examples occur:

feathers of rump clearly edged with white:

green above, underparts whiter *septentrionalis*

underparts duller *marginata*

feathers of the rump faintly or not edged with white:

underparts whiter *isonota*

underparts browner *bagobo*

The unnamed Palawan form, of which few specimens are known, is reputed to be darker ventrally than any other specimens of this species (Parkes 1960) and has been reported with and without white edges to the rump feathers (Delacour and Mayr 1945).

Range in the Philippines

subsp. ? : Palawan.

septentrionalis: Babuyan Claro, Calayan, Camiguin Norte and Fuga (unpublished).

isonota: the highlands of northern Luzon.

marginata: Banton, Bohol, Camiguin Sur (unpublished), Cebu, Dinagat, Guimaras (Dickinson *et al.* 1989), Leyte, central Luzon, Mactan, Masbate, Mindoro, Negros, Panay, Polillo, Romblon (unpublished), Samar, Siargao, Sibuyan and Tablas. Birds from Calagna-an, Carabao and Gigantes are probably this race. Birds from Camiguin Sur and Dinagat are intermediate with *bagobo*.

bagobo: Bongao, Mindanao and montane Mindoro.

Material examined Bohol 2, Bongao 14, Calayan 6, Camiguin Sur 8, Cebu 33, Dinagat 18, Fuga 13, Guimaras 2, Leyte 4, northern Luzon 16, rest of

Luzon 13, Mactan 2, Mindanao 27 (including 3 syntypes of *bagobo* and 1 topotype of *mindanensis*), Mindoro 1, Negros 5, Palawan 1, Polillo 1, Romblon 3, Samar 2 and Sibuyan 1.

PYGMY SWIFTLET *Collocalia troglodytes*

Synonymy

Collocalia troglodytes: Gray (1845), Walden (1875), Tweeddale (1877), Sharpe (1877), Sharpe (1888), Steere (1890), Bourns and Worcester (1894), Ogilvie Grant (1897), McGregor (1903), McGregor (1909), Manuel (1937), Rabor (1938), Rabor (1954), Lack (1956), Meyer de Schauensee and duPont (1962), Medway (1966), duPont and Rabor (1973b), Rabor (1977), Salomonsen (1983).

Salangana troglodytes: McGregor (1906a), McGregor (1907b).

Specific characters

Small, wing 86–96 mm; glossy black above with a clearly delineated white rump band (in which the feathers show the narrow black shafts) and a white abdomen.

Echolocation ability unknown. Makes vegetable nests bound with strands of salival cement.

Plate 2 shows the white rump in comparison with a specimen of White-bellied Swiftlet *Collocalia spodiopygia eichhorni* Hartert 1924 from the Bismarck Archipelago and – to show relative size – a specimen of Edible-nest Swiftlet *Collocalia fuciphaga germani* Oustalet 1878.

Overview

The distinctness of this species has never been questioned, so no attempt has been made to review series to look for geographical variation.

However, it has been suggested that it builds an edible nest and this is shown below to be incorrect. It is thought not to echolocate, but this is not yet proven although nests have been reported up to 50 feet (15 m) inside caves.

Discussion

Described from the Philippines by Gray and Mitchell in Gray (1845), the description depending upon the plate by Mitchell, and listed for Luzon by Walden (1875), it has subsequently been reported from many islands: Mindanao (Tweeddale 1877), Panay (Sharpe 1877), Palawan (Sharpe 1888), Guimaras, Marinduque and Negros (Steere 1890), Cebu, Masbate, Mindoro, Romblon, Samar, Sibuyan and Siquijor (Bourns and Worcester 1894), Leyte (Ogilvie Grant 1897), Ticao (McGregor 1903), Banton (McGregor 1906a), Bohol (McGregor 1907b), Catanduanes (Manuel 1937), Gigantes (Rabor

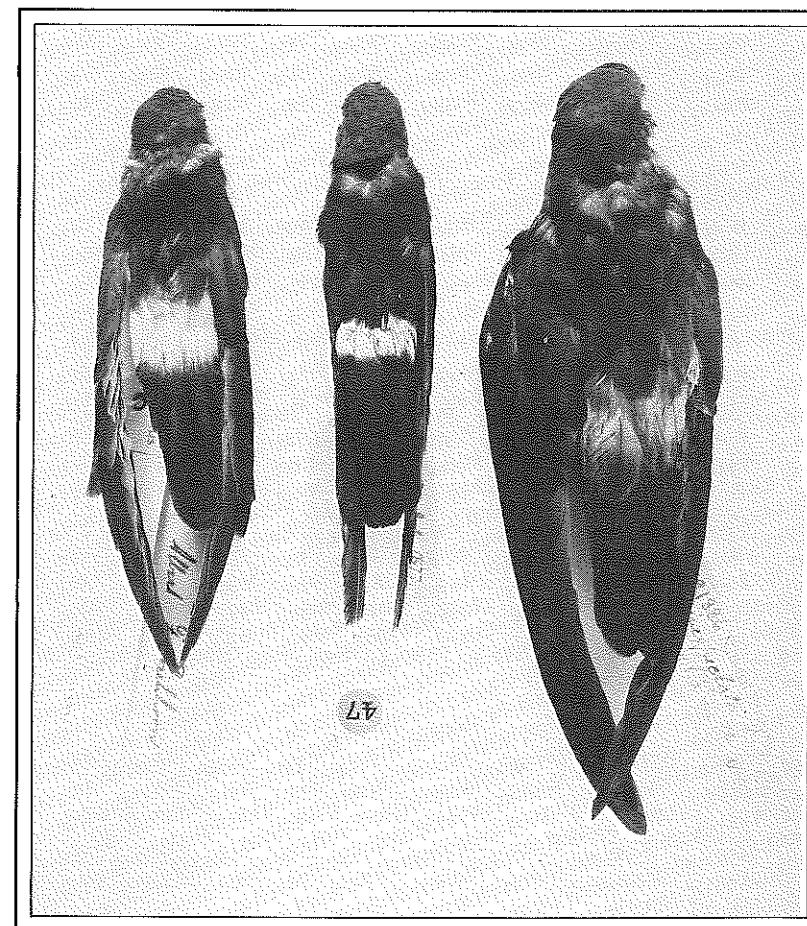
1938), Dinagat (duPont and Rabor 1973b) and Siargao – sight record (duPont and Rabor 1973b).

Nesting

Details appear in the notes of Bourns and Worcester in McGregor (1909). They considered that it built edible nests, always in caves, composed chiefly or entirely of secretion from their mouths.

More recent, consistent and thus almost certainly more accurate reports are those of Rabor (1954), who found nests in small water tunnels with the

Plate 2. From the left: *Collocalia spodiopygia eichhorni*; *Collocalia troglodytes*; *Collocalia fuciphaga germani*.



inside of the nest made of saliva strands and the outside of moss and vegetable fibre; Meyer de Schauensee and duPont (1962), who reported nests about 50 feet into the cave and made of rootlets and tendrils held together with saliva; and Rabor (1977), who described the nest as a half cup attached on one side to the wall of the cave, composed of matted hardened strands of saliva that appeared white and translucent, with reinforcements of plant fibres, well coiled and matted together.

Salomonsen (1983) suggested that the nest was more or less edible and cited Lack (1956) and Medway (1966). In fact those known to Medway – taken in Guimaras by Bourns and Worcester – were ‘bracket-shaped nests constructed of fibrous vegetable material, apparently including seaweed, held together by strands of firm nest cement’. But Medway did quote the notes of Bourns and Worcester given by McGregor (1909), which suggested that the nests are usually edible. However, it seems certain – given the nature of most recent evidence – that Bourns and Worcester were commenting on nests found in a cave housing more than one species, as suggested by Manuel (1937).

Range in the Philippines

Banton, Bohol, Catanduanes, Cebu, Dinagat, Gigantes, Guimaras, Leyte, Luzon, Marinduque, Masbate, Mindanao, Mindoro, Negros, Palawan, Panay, Romblon, Samar, Siargao, Sibuyan, Siquijor and Ticao.

Material examined Luzon 3, Marinduque 1, Mindanao 2.

Great encouragement was given by the Earl of Cranbrook, who was kind enough to visit the British Museum (Natural History) twice and share with me his knowledge of these swiftlets when I was working on some of the more difficult issues of this whole group. Thanks to the interest of the authorities at the British Museum it has been possible to bring together there many skins of *Collocalia esculenta*. Study space was kindly made available there and much help was received from Messrs Graham Cowles, Michael Walters and Derek Read. For making swiftlet skins available on loan my thanks go to Dr Storrs Olson, Messrs. Charles Ross and Ralph Browning at the USNM, Dr Raymond A. Paynter at MCZ, Dr David Niles at DMNH, Dr Kenneth Parkes at CM, Mrs Mary LeCroy at AMNH, Dr John Fitzpatrick and Mr David Willard at FMNH. At one stage or another this paper has been reviewed by the Rt. Hon. the Earl of Cranbrook, Drs Robert S. Kennedy and Kenneth C. Parkes and by Mrs Mary LeCroy and Mr Ralph Browning. Julie Gray very kindly helped prepare the final typescript.

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A breeding record of the Giant Pitta *Pitta caerulea* from Thailand

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An occupied nest of Giant Pitta *Pitta caerulea* was studied during July–August 1988 at the Khao Pra Bang Kham Non-Hunting Area, southern Thailand. The locations of four other disused nests, thought to be this species, are also described. This appears to be the first documented nesting of the species. Earthworms and land snails *Cyclophorus* were the predominant food items brought to the nestlings. Although the Giant Pitta appears primarily restricted to lowland forests, which have been almost completely destroyed in southern Thailand, the occurrence of birds in secondary growth, together with some former records of birds on hill slopes, suggests that the species may persist elsewhere in protected areas in southern and perhaps even south-western Thailand.

The Giant Pitta *Pitta caerulea* is a Sunda subregion endemic which is known from Tavoy in Burma (Smythies 1953), south through Peninsular Thailand and Peninsular Malaysia to Sumatra and Borneo. Two races are described, *P. c. caerulea* throughout the mainland and in Sumatra, and *P. c. hosei* in Borneo (Chasen 1935).

This enigmatic species is relatively seldom encountered in the field and remains one of the least known members of its genus. It was said by Davison to be unlike other pittas in that, when disturbed, it would fly off low but rapidly, and not alighting within 200 or 300 yards (Hume and Davison 1877). Even its call was unknown until 1985, when in March N. J. Redman (*in litt.*) called out a male in Taman Negara, Peninsular Malaysia, by imitating a whistle he heard, and in July J. W. Wall and G. C. Yong taped a long series of whistles at Sepilok, Sabah, East Malaysia (J. W. Wall *in litt.*). Almost nothing is known of its ecology. The collection of a half-grown nestling in Perlis, Malaysia, in early November (Medway and Wells 1976) and the collection of young attributed to this species in March 1834 at an unrecorded altitude on Mt Singgalang, Padang Highlands, Sumatra (Muller and Schlegel 1840) are the only documented fragments of breeding evidence. A nest discovered on Fraser's Hill, Malaysia, and provisionally attributed to this species (Medway and Wells 1976) was later determined to be that of a previously undescribed subspecies of Rusty-naped Pitta *Pitta oatesi* (King 1978).

Surveys of Gurney's Pitta *Pitta gurneyi* and other lowland forest birds carried out in and around the Khao Pra Bang Kham Non-Hunting Area (also known as Khao Noi Chuchi), Krabi and Trang provinces, southern Thailand, have also revealed the presence of Giant Pitta there. We give details of these sightings and provide the first documented description of the nesting of the species.

The first indications of the presence of Giant Pitta at Khao Noi Chuchi

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