

## Systematic notes on Asian birds. 59.

### Taxonomy as tar-baby: the type locality and nomenclature of the Mindanao Bleeding-heart *Gallicolumba crinigera* (Pucheran, 1853)

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The type specimen of the Mindanao Bleeding-heart *Gallicolumba crinigera* was acquired on Jolo in the Sulu Archipelago, southern Philippines, but a presumption of biogeographic improbability led to the type locality being “corrected” to Mindanao. Birds from Basilan, geographically interposed between Mindanao and Jolo, have been separated as *G. c. bartletti* chiefly for their smaller size, but comparison with the type of *crinigera* is impossible owing to the latter’s lack of outer primaries and tail; in any case *bartletti* and Mindanao *crinigera* overlap strongly in size and differ in no diagnostic plumage feature so that *bartletti* is probably invalid. Given that a *Gallicolumba* was seen in the wild on Jolo in the nineteenth century, at least five slightly different taxonomic arrangements are possible depending on viewpoint. Reversion of type locality to Jolo would be destabilising at this stage, but it is plausible that the type of *crinigera* did in fact derive from native birds on Jolo. Resolution of the issue might still be possible, as a local man recently reported that a bird resembling *G. crinigera* survives on the island.

#### *Gallicolumba crinigera* in outline

The erection of taxa based on small sample sizes, and the assignment of type localities based on assumption, probability or even mere convenience, are sometimes necessary conditions of taxonomy, but inevitably occasionally create problems of interpretation and uncertainty. When habitat destruction and/or political instability reduce to near-zero the chances of obtaining further material that might resolve these problems, the situation may appear inextricable. This seems to be the case for the Mindanao Bleeding-heart *Gallicolumba crinigera* (formerly *criniger*, but here following Dickinson, 2003), a globally threatened species (IUCN category Endangered) endemic to the Philippines (Collar et al., 1999). Its taxonomic history is worth closer inspection, if only because the conservation status of the species is so serious that any light shed on its distribution may be helpful for its long-term survival.

*Gallicolumba crinigera*, as currently circumscribed (e.g., by Dickinson et al., 1991; Baptista et al., 1997; Collar et al., 1999; Kennedy et al., 2000; Gibbs et al., 2001), is known from the southern half of the Philippine archipelago in Samar, Leyte and Bohol (race *leytensis*, an entirely valid taxon which is of no further concern here), Dinagat and Mindanao (n nominate *crinigera*) and Basilan (race *bartletti*). However, it was originally described from a single specimen acquired during the voyage of the *Astrolabe* and *Zélée* in the years 1837-1840 and indicated as coming from the island of “Solo (Soog)” (now commonly and hereafter Jolo, “Soog” = Sooc being a town on the island) in the “Sooloo” (Sulu) archipelago, southernmost Philippines (Pucheran, 1853). Nevertheless, Hartert

(1918) considered this provenance “probably an error”, and formally established Mindanao as the type locality, noting that by turns Salvadori (i.e., Salvadori, 1893:588), Bourns & Worcester (i.e., Worcester & Bourns, 1898; Worcester, 1898; Bourns & Worcester, ms in McGregor, 1909-1910), and McGregor (i.e., McGregor, 1909) had “silently” ignored the information in the original description and regarded Mindanao as the source of the type specimen.

### *Gallicolumba crinigera bartletti* on Basilan

In making this correction, Hartert (1918) cleared the way to recognise the race *basilana* of *G. crinigera* from the island of Basilan (south of the Zamboanga Peninsula, Mindanao). Hartert based this new form solely on its shorter wings, with (apparently five) male and two female Mindanao birds measuring 160–165 mm and 158, 160 mm respectively, *versus* 153 mm in one male and 145, 147, 145 and 152 mm in four female Basilan birds; moreover, he noted that McGregor (1909) cited seven Basilan birds of both sexes averaging 146 mm in wing-length. “It is thus obvious,” Hartert (1918) concluded, “that the Basilan race is smaller”. In making a plumage comparison he noted that the coloration of “the red of the hairy blood-patch on the crop” varied and was therefore not diagnostic, but judged that “generally the rump is a little lighter” in Basilan birds.

In this diagnosis Hartert (1918) did not discuss another form, bearing the name *bartletti*, which had been described by and illustrated in Sclater (1863) on the basis of four birds imported live at Liverpool supposedly from “an uninhabited island near the Philippines”. This omission was doubtless because Sclater (1865) himself had soon after discovered that *bartletti*, in terms of the very general description then available to him, matched (and therefore was apparently identical to) *G. crinigera* of Pucheran (1853). In synonymising the former with the latter Sclater was followed by Salvadori (1893), to whom Hartert was in any case referring.

However, E.C. Dickinson, in Dickinson et al. (1991), examined the type of *bartletti*<sup>1</sup> in the Natural History Museum (BMNH) at Tring and, noticing that “it matches Basilan birds better than Mindanao birds, the pectoral spot being consistently paler than in Mindanao birds”, evidently and reasonably presumed that the “uninhabited island near the Philippines” would probably therefore be an offshore outlier of Basilan, and restricted the type locality to Basilan itself. Thus Dickinson et al. (1991) resurrected the name *bartletti* for Basilan birds, with *basilana* as a synonym.

### *Gallicolumba* on Jolo

This arrangement is unusual in that presumptions of type locality underpin both nominate *crinigera* and subspecies *bartletti*. It appears to hold only while it remains accepted that the type of *crinigera* did indeed come from Mindanao and not Jolo, which is the next large island to the south of Basilan, and the northernmost large island in the Sulu Archipelago (see Fig. 1), or even from Basilan itself. What kind of an error did

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<sup>1</sup> Warren (1966) considered this specimen a syntype.

Hartert (1918) think had occurred? Was it that the type had *not* been obtained on Jolo at all, but elsewhere (the French team also stopped at Zamboanga, on Mindanao: Hachisuka, 1941), in which case it is an error of labelling and recording? Or was it that the type was obtained on Jolo but was mistakenly presumed to be native to the island? The former possibility is unsupported by any evidence and in any case is impossible to pursue. However, it is worth noting that Hachisuka (1931-1935) had overlooked Hartert (1918) and continued to list Jolo in the bird's range, only correcting himself a decade later, when he simultaneously reported that the type does nevertheless bear the inscription "I. Soulou" (Hachisuka 1941). I have examined the type in Paris (C.G. 11669, not 11169 as in Dickinson et al., 1991), and it is indeed labelled "I. Soulou", which must mean Jolo, unless the contraction "I." is for "Îles" rather than "Île"; a possibility reinforced by the fact that Pucheran (1853), in his original description, gave it as "originaire des îles Solo (Soog)".

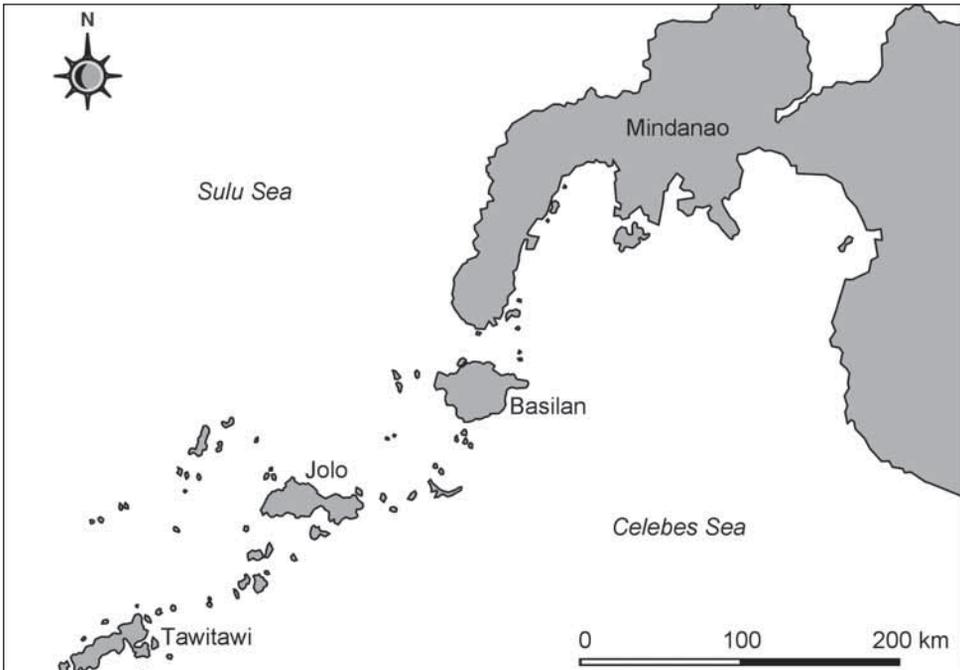


Fig. 1. Map of northern Sulu Archipelago, Basilan and western Mindanao, Philippines.

Two items of evidence, one negative, one positive, lend support to the view that the original type locality might have been correct, and indeed that the bird in question might have derived from local stock. First, circumstantially, it would be strange if Jolo had *not* supported a *Gallicolumba* (it does not in the arrangement in Dickinson et al., 1991), given the presence of the genus on similar-sized islands to the north (Basilan) and south (Tawitawi: Sulu Bleeding-heart *G. menagei*). Second, it *did*: the nineteenth-century explorers F.S. Bourns and D.C. Worcester had a sight record of a *Gallicolumba* on Jolo, reported in a manuscript quoted by McGregor (1909: 62):

"We consider the Sulu [i.e. Jolo] record of this species [i.e. Pucheran's] extremely doubtful. We saw a *Phlegoenas* [= *Gallicolumba*] there which we failed to obtain. It seems to us more probable, however, from the close relationship of the known birds of Sulu to those of Tawi Tawi that the species in question is *P. menagei*."

This passage<sup>2</sup> shows that Hartert, in citing Salvadori, Bourns & Worcester and McGregor as tacit subscribers to the view that the type came from Mindanao, was overstating the case. All Salvadori did was merge *bartletti* with *crinigera* and, perhaps because he had seen the type of *crinigera* ("type examined") and had noted its apparent captive origin, place a parenthetical question mark after "Sulu Island". All McGregor did was follow Bourns & Worcester. And, crucially (also apparently indicating the type of "error" to which Hartert was referring), all Bourns & Worcester did was doubt that Jolo could be the natural origin of Pucheran's *crinigera* based on their biogeographic views. Indeed, in the decade before McGregor published their manuscript notes in his 1909-1910 *Manual of Philippine Birds*, Worcester & Bourns (1898) had issued their own tabulation of Philippine bird distributions, with *Phlegoenas* [*sic*] *crinigera* coded for Sulu (Jolo) with a question mark, meaning "that I [Worcester] consider the identity of the specimens obtained from the locality indicated to be doubtful". In this particular instance the situation was slightly more complex: Worcester was doubting both that the type of *crinigera* was native to Jolo and that what he and Bourns had seen on Jolo could have been *crinigera*. However, that Jolo supported a *Gallicolumba* was not in question, as a further tabulation in Worcester (1898) makes clear.

Worcester was within reason to suppose that a representative of a form from Mindanao would be biogeographically out of place on Jolo. However, although the Sulu archipelago is a distinctive centre of avian endemism, its most northerly large island, Jolo, has been too little studied (and may perhaps now be too radically altered by man, although see below) to understand how completely it formed part of that centre: Stattersfield et al. (1998) listed nine birds endemic to the area, but Jolo is known to have held only three of them. Worcester (1898) himself listed two forms then thought to be endemic to Jolo, of which one, *Pericrocotus flammeus marchesae*, is still judged so (Dickinson et al., 1991). It is worth noting, moreover, that the widespread Philippine endemic Blue-crowned Racquet-tail *Prioniturus discurus* extends through Basilan onto Jolo, and only to the south, on Tawitawi and adjacent islands, is it replaced by the rare "Sulu endemic" Blue-winged Racquet-tail *P. verticalis* (Dickinson et al., 1991, Collar et al., 1999). Two other Mindanao species that extend onto Jolo (albeit not replaced on Tawitawi) are White-eared Brown-dove *Phapitreron leucotis* and Greater Coucal *Centropus sinensis*, both of them sharing the same endemic subspecies between Basilan and Jolo. Indeed, Allen (1998) remarked that "while Sulu [Jolo] and Tawi Tawi form a distinct region sharing some endemic forms... they are distinct enough from each other to merit separate consideration". The improbability of *Gallicolumba* pigeons on Jolo belonging to a species derived from Mindanao rather than from Tawitawi may therefore be more apparent than real, and Bourns & Worcester's denial of Jolo as a site for *crinigera* cannot be considered (and to be fair they never stated that it was) absolute.

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<sup>2</sup> Mentioned by Dickinson et al. (1991: 198).

Meanwhile, the probability that the type of *crinigera* was acquired as a live cage-bird on Jolo is certainly considerable. It is fairly clear, at any rate, that the French scientists did not themselves obtain it through their own efforts in the field. From my reading of Dumont d'Urville (1844) it seems that little or no biological exploration of Jolo took place during the *Astrolabe's* visit, most of the time being spent in negotiation with the sultan who presided over what was evidently an insalubrious and inhospitable island. Therefore they must have acquired the specimen as a captive trade item or gift (as its highly damaged wings further suggest). Indeed there is a passage in Dumont d'Urville (1844:177), recounting events in July 1839, in which it is reported (my italics) that

"le sultan, fidèle à sa promesse, nous envoya en cadeau deux boeufs, un axis, un nycticèbe, un paradoxure, un chevrotin, *une colombe* et plusieurs paniers de fruits [the sultan, keeping his promise, sent us a gift of two oxen, a deer, a loris, a palm-civet, a chevrotain, *a pigeon* and several baskets of fruit]."

Could this *colombe* have been the type of *G. crinigera*? And if so, was it caught locally, on Basilan or on Mindanao? Jolo was a major regional entrepôt from at least the mid-eighteenth century (Warren, 1981), and was settled several hundred years ago by people from Butuan City in Agusan del Norte, in north-central Mindanao, resulting in strong trade links between these two areas (B.R. Tabaranza, pers. comm. 2003), so it is entirely possible that cagebirds formed a standard part of the commerce. On the other hand, a relatively small and (at least presumably then) relatively abundant pigeon may seem a rather improbable element in such traffic. At any rate, I see no compelling reason why a local origin of the type of *crinigera* should be inadmissible.

### *Gallicolumba crinigera* in museums; *G. c. bartletti* in probable synonymy

I pursued two possibilities for resolving the issue. The first arose from the revelation by Blasius (1890), in a paper that restricted itself to *new* records for Jolo, that the collectors in question (the Platens) had obtained 304 skins of no fewer than 70 species on the island. That a *Gallicolumba* might be amongst this material was clearly possible, but in October 1998 an inspection of specimens in the Staatliches Naturhistorisches Museum, Braunschweig, where Blasius deposited most of the skins he received from the Platens, revealed none of this genus from the island. The second possibility resided in Hartert's basis for separating Basilan and Mindanao birds (the former having shorter wings): one might expect the Jolo bird to be more like Basilan birds in this character. Of course, this would still have been no defence against the view that the type was a cagebird from Basilan (see below), but in any case it proves to have the tips of P1–5 missing on each wing, as well as its tail (my inspection in July 2003).

This is not the end of the matter, however, because the taxonomic separation of Basilan and Mindanao birds, based on a discrepancy in wing-length or indeed other characters, is by no means clearly established. Hartert (1918) had based it on smaller size and paler rump. Dickinson et al. (1991), followed by Baptista et al. (1997), did so on paler breast-spot. Gibbs et al. (2001), however, took these three features and added two of their own:

"*G. c. bartletti* (Sclater, 1863) (Basilan) Smaller than the nominate with a finer bill. Grey tips to the wing-coverts narrower, black bases to the median coverts visible, producing a second grey wing-bar separated from the grey shoulder-patch. Rump a little paler, breast-spot consistently paler. Wing 144-152."

In the course of recent visits to various museums (American Museum of Natural History, New York, AMNH; Carnegie Museum of Natural History, Pittsburgh, CM; Natural History Museum, Tring, BMNH; United States National Museum, Washington, USNM), I have taken the opportunity to review and measure specimen material relevant to this issue, including 10 adult specimens from Basilan (including the type of *basilanica*), 11 adult specimens from Mindanao, the 'syntype' of *bartletti* and the type of *crinigera*, and from this survey I offer the following commentary on the five diagnostic features of *bartletti* in Gibbs et al. (2001).

1. Although *crinigera* is on average slightly larger than *bartletti* in all four measured traits, there is considerable overlap in range and no differences are statistically significant (Table 1 and Fig. 2). Gibbs et al. (2001) gave a range of 158–171 mm for the wing of nominate *crinigera*, but my highest value for this parameter (perhaps because I measured the wing curved) is 159 mm, and even Hartert (1918) only achieved 165 mm. It is worth noting that Hachisuka (1941) had three specimens from Mindanao in which the wing was 147-149 mm while in one or more birds from Basilan (number unclear) it was 153 mm.
2. If *bartletti* has a finer bill it is only marginally so. I could only measure a few bill depths, as most museum skins have the bill to some degree open; the small sample and fractional differences cannot be regarded with any confidence, and to my eye the bills look the same.
3. The narrower grey tips to the median coverts may not be constant, as some specimens from Mindanao do not appear to differ from Basilan birds in this character. In any case, even on Mindanao birds a second wing-bar is apparent: it is actually depicted in nominate *crinigera* in Gibbs et al. (2001)! And while it is, as expected, visible in Joseph Wolf's illustration (from life) accompanying the original description of *bartletti* (in Sclater 1863), it can also be seen, and much more clearly, in the first-ever illustration of *crinigera*, eight years before this was formally named, in Hombron & Jacquinot (1845). If the latter bird was really from Mindanao, as judged by and ever since Hartert (1918), this character certainly cannot be used to define birds from Basilan.
4. The rump is a shade paler in three AMNH birds but a shade *darker* in two BMNH specimens. Hachisuka (1941) also found that "this character does not hold good" when he compared three Mindanao birds with his own sample from Basilan.
5. I agree with Hartert (1918) that breast-spot colour is variable. In my sample, I divided coloration into four types, pale rust, dull rust, bright rust and deep rust. I recorded all four types in Basilan birds (pale 4, dull 4, bright 1, deep 1), and all but dull rust in Mindanao birds (pale 2, bright 2, deep 7). While there is unquestionably a trend towards deeper coloration in this Mindanao sample, it is by no means a constant character. Moreover, Cariño (2006) noted that in captive Negros Bleeding-hearts *G. keayi* the red breast-patch becomes brighter and deeper during the breeding season (presumably through moult/abrasion), suggesting that variation in other bleeding-hearts including *G. crinigera* may be seasonal, and have no taxonomic meaning.

Table 1. Means  $\pm$ SE of mensural data from *Gallicolumba crinigera* museum specimens. Specimen damage was responsible for the slightly lower sample sizes in wing and tail. Wings were measured curved.

Island	Sex	Bill	Tarsus	Wing	Tail
Basilan	M	20.5 $\pm$ 1.5, n=2	35.0 $\pm$ 2.0, n=2	152.0, n=1	97.0, n=1
	F	20.5 $\pm$ 0.4, n=7	35.4 $\pm$ 0.4, n=7	146.1 $\pm$ 1.3, n=7	100.6 $\pm$ 0.7, n=5
Mindanao	M	21.7 $\pm$ 0.5, n=7	37.1 $\pm$ 1.0, n=7	151.4 $\pm$ 2.2, n=7	105.2 $\pm$ 1.5, n=5
	F	20.3 $\pm$ 0.5, n=4	35.0 $\pm$ 0.7, n=4	149.5 $\pm$ 3.3, n=4	100.0 $\pm$ 2.3, n=3

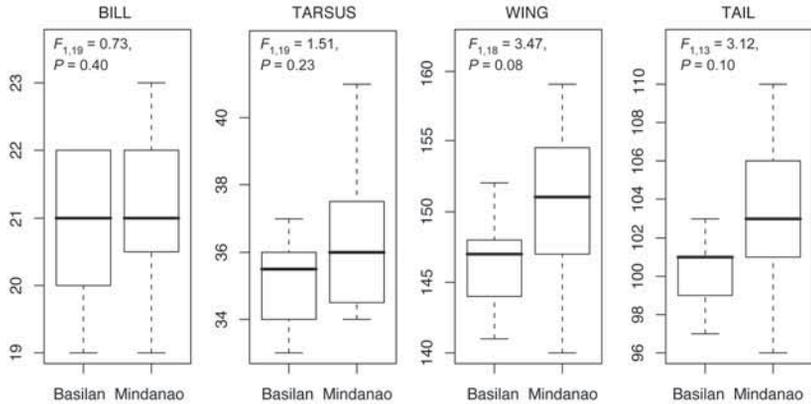


Fig. 2. Boxplots (whiskers indicate ranges) of mensural data from *Gallicolumba crinigera* museum specimens. Measurements did not differ between the sexes (see Table 1) and therefore were pooled in the plots and in the statistical tests (one-way ANOVA; results reported in plots). Sample sizes were 9 and 11 individuals from Basilian and Mindanao respectively, except wing (8 and 11 respectively) and tail (6 and 8).

For these reasons, just as Hachisuka (1941) could not accept the validity of what was then known as *basilanica*, I find no unequivocal character on which Basilian birds can be separated from *crinigera*, and feel that it may therefore be better placed in the latter's synonymy. However, further examination of specimens in other museums would give a larger sample, and the association of their month of collection with known breeding seasons and condition of breast-spot might help resolve the question over seasonality in this character, and hence its taxonomic relevance. I know of Basilian birds in Institut Royal des Sciences Naturelles, Bruxelles (1), Delaware Museum of Natural History (DMNH), Greenville (1) and Japan (at least 3), and of Mindanao/Dinagat birds in Naturalis, Leiden (2), Staatliches Naturhistorisches Museum Braunschweig (2), Field Museum of Natural History, Chicago (1), DMNH (9), Los Angeles County Museum (2), University of Michigan Museum of Zoology (2), University of the Philippines at Los Baños (1) and Japan (at least 1).

### Possible conclusions

This case possesses something of the attributes of a tar-baby, the sticky doll that entraps those who handle it. We appear to have five possible arrangements:

1. The type of *crinigera* is different from both Basilian and Mindanao birds (its bill is rather longer, and its breast-spot is faded to the point where it is almost concolorous

with the buff-tan lower breast plumage; but the bill is only 1 mm longer than the longest Mindanao bill, and in so old a specimen the breast-spot may well have been affected by length of time since collection, and/or manner of preservation, and both characters may simply be by-products of captivity), in which case the only reasonable deduction must be that it comes from Jolo. Result = a name is needed for Mindanao birds. If Mindanao and Basilan birds are judged the same, that name is *bartletti*; if they are judged different, another name needs to be provided (unless one can be found in some list of junior synonyms).

2. The type of *crinigera* is the same as Basilan birds and is assumed to come from Jolo. Result = unification with Basilan birds under name *crinigera*, with *bartletti* becoming a junior synonym, with the name of Mindanao birds either also being *crinigera* (if they are judged the same as Basilan birds) or needing to be freshly and formally provided along with a diagnostic description (if they are judged different).
3. The type of *crinigera* is different from Basilan birds and assumed to come from Mindanao. Result = unification with Mindanao birds under the name *crinigera*, with *bartletti* being applied to Basilan birds only. Any population on Jolo remains nameless.
4. The type of *crinigera* is the same as Basilan birds and is assumed to come from Basilan. Result = as 2 above, but with any population on Jolo remaining nameless.
5. The type of *crinigera* is different from any population remaining on Jolo. Result = as 1, 3 or 4 above, with taxonomic placement of the population on Jolo depending on its distinctiveness (possibly with *G. menagei*), and in the case of 1 with the type of *crinigera* being assigned to an unknown place of origin.

The current arrangement is 3. I personally favour arrangement 2, with the single name *crinigera* applying to all populations, as the evidence certainly suggests that Basilan and Mindanao birds cannot safely be distinguished. However I accept that it might be premature at this juncture either to subsume *bartletti* in *crinigera* without examination of the additional material mentioned above, or to seek to reinstate Jolo as the type locality of the species, and so I suggest no such change for the time being. Meanwhile, in the event of a population of *Gallicolumba* ever being rediscovered on Jolo (or of an adequate biomolecular sampling of the type specimen and Basilan and Mindanao material), I conclude that (a) if such a population proves not to be *G. menagei*, contrary to the assumptions of Bourns & Worcester (and one might hope that they were right, given that nothing has been seen of this species since the collection of the type material in 1891: Collar et al., 1999), then it is very likely to be close to or identical with *crinigera* (arrangement 2); but (b) if it bears characters that distinguish it in some degree from Basilan and Mindanao birds, but which are consistent with the type of *crinigera*, then *G. c. crinigera* will be restricted to Jolo and arrangement 1 will apply.

The question of course arises whether the population of *Gallicolumba*, known by Bourns & Worcester's observation, might still survive on Jolo. In a flight over the island in the late 1990s, D. Allen (in litt. 2005) noted that its 700 m-high central volcanic cone was fairly well forested, and that several square kilometres of probably secondary forest survived in the adjacent lowlands. Indeed, remotely sensed (post-2000) images viewed with the software Google Earth show considerable areas of forest cover where not obscured by cloud-cover. More intriguing still, and an important twist to the story

so far, is a report by C. Española (pers. comm., 2006), who discovered the Calayan Rail *Gallirallus calayanensis* (Allen et al. 2004) and who lived on Jolo in 2003 while pursuing her master's thesis. Owing to security considerations she was allowed very little opportunity to explore the island, and she never personally saw a bleeding-heart pigeon there. However, she met a man who confirmed that a *Gallicolumba* still exists in the forests; and, when asked to point it out among Philippine bleeding-hearts depicted in a poster painted by W.L.R. Oliver, he selected *G. crinigera*.

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