Systematic notes on Asian birds. 34. A preliminary review of the Aegithinidae

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Keywords: ioras; Aegithinidae; species-limits; intergrades; subspecies; nomenclature; convergence; eclipse plumage.
Hypotheses of iora phylogeny are reviewed up to date, and the history of the generic name investigated. Interactions between *A. nigrolutea* and *A. tiphia* are examined and reasons presented for treating them as separate species. The allowability of a widely disjunct distribution in subspecies *A. tiphia deignani* Hall, 1957 is queried, and its range narrowed substantially, forcing a re-designation of Indian populations. Additional, small systematic and distributional issues bearing on other *Aegithina* species are noticed.

Introduction

This paper continues a series preparing the way for a 'Synopsis of the Birds of Asia' (see Introduction to 'Systematic notes on Asian birds': Dickinson & Dekker, 2000). It covers the four species of the family Aegithinidae (ioras), comparing their treatment by Delacour (1960) in Peters's Check-list of Birds of the World with more recent findings. Proposed amendments happen to be few here but maintain the series policy of presenting arguments and verifiable evidence for change, as appropriate from case to case.

Summary dictionary entries by Delacour (1964) and Wells (1985) carried no directly systematic content, and no part of the family has been monographed since Marien (1952) and Hall (1957) analysed geographical variation in *A. tiphia* (Linnaeus, 1758) and the latter's interaction with the S Asian taxon *nigrolutea* Marshall, 1876. These studies dictated Delacour's treatments in the Check-list and have not been superceded. Additional subspecies of *A. tiphia* claimed for the Sunda region (Hoogerwerf, 1962; Prescott, 1970) left the established distributional pattern undisturbed, and adjustments of range in the Indian subcontinent proposed by Abdulali (1981) were founded on relatively small samples. Abdulali emphasised the general difficulty of placing individual *A. tiphia* specimens at subspecies level and, important in terms of a recommendation made here, states that Indian *A. t. deignani* Hall, 1957, 'is a very difficult race to separate'. More recently, preparation by DRW of family text for an upcoming volume of the Handbook of the Birds of the World alerted us to the possibility of fresh interpretations of existing data. Proposed amendments affecting *A. tiphia* and the *A.*

tiphia/nigrolutea relationship draw on these alternatives, with geographical outcomes that include a significant range-extension for *A. nigrolutea* itself.

The accompanying paper on types of the Aegithinidae (Dickinson et al., 2003) lists two taxa from the Sunda region: *A. tiphia djungkulanensis* Hoogerwerf, 1962, and *A. tiphia trudiae* Prescott, 1970, described after publication of the relevant section of the Check-list. No material of either has been handled and comments here deal strictly with opinions in print (Mees, 1986, 1996).

Systematic background

All of the early part of the taxonomic history of the group relates to forms now subsumed under *A. tiphia*, the Common Iora, assigned by Linnaeus to his inclusive genus, *Motacilla*. Early to mid 19th century opinion on affinities ranged from a 'warbler' connection, cf. Vieillot (1816), Horsfield (1821), Vigors (1830), and Gray (1840) who assigned *Iora* to a subfamily Accentorinae of the family Sylviadae [sic], to one with babblers (or groups thus treated since). Cabanis (1847) located *Iora* in subfamily Timaliinae of a family Liotrichidae, between *Liothrix* [sic] and *Pellorneum*. Gray (1855) transferred *Aegithina* (see below) to a position next to *Myzornis*, but in subfamily Mniotiltinae of a family Luscinidae that otherwise featured warblers, chats, accentors, tits and wagtails. Subsequently, in 1869, he erected an actual family Aegithinidae, but for a large array of babbler genera among which *Aegithina* appeared between *Mixornis* and *Malacopteron*.

Earlier, Blyth (1852) had taken a seemingly different tack by linking *Iora* with leafbirds (*Phyllornis* [= *Chloropsis*]) and fairy-bluebirds (*Irena*) in an exclusive subfamily, Phyllorninae, of the Pycnonotidae (bulbuls), an association ultimately adopted by Sharpe (1882) in his Catalogue of the Birds in the British Museum - although by then pycnonotids were themselves considered to be timalioid. Sharpe reverted Blyth's total bulbul assemblage to a timaliid subfamily Brachypodinae, a reductionist approach that lingered through the 1930s. Robinson (1927), who re-erected the family Aegithinidae exclusively for *Aegithina*, *Chloropsis* and *Irena*, still believed in its intermediacy between bulbuls and babblers.

In Peters's Check-list, the equivalent family Irenidae sits adjacent to the Pycnonotidae (Delacour, 1960), although Wetmore (1960) cited osteological grounds for restricting its link to *Chloropsis* only and, earlier, Beecher (1953) had applied comparative myology off the jaw to distance *Aegithina* from all of its erstwhile associates. Molecular techniques have pursued some of these findings deeper, revised others fundamentally. Sibley & Ahlquist's DNA-DNA hybridization studies (1990) located *Aegithina* as the sister-group of a much expanded Malaconotinae (including bush-shrikes, helmet-shrikes, wattle-eyes, puffbacks, wood-shrikes, philentomas and vangas), at the heart of these authors' oscine parvorder Corvida - well-removed from *Chloropsis* and *Irena* which they placed at its base. More recent nuclear DNA base sequencing analyses (Barker et al., 2001; Cracraft et al., 2003) identify a comparable array of sister-taxa: artamids, cracticids and vangids, but isolate *Aegithina* remotely from *Chloropsis* and *Irena* which they transfer to Sibley & Ahlquists' alternative parvorder, Passerida. By the same token, passeridan bulbul, babbler and warbler linkages no longer apply, leaving *Aegithina* to stand in an exclusive family.

Generic names

Peters's Check-list follows convention in adopting *Aegithina*, Vieillot, 1816, as the generic name of ioras, based by monotypy on *Sylvia leucoptera* - Vieillot's supposedly N American 'warbler' 'La Fauvette leucoptère' (Vieillot, 1807). In a detailed (still relevant) group review, Hume (1877) rejected its type description (admittedly seen by him only in translation) as inapplicable to any iora, although he believed Vieillot to have cited valid alternative material (an earlier Levaillant plate that Hume claimed himself to have identified as Sri Lankan [*A. t.*] *multicolor*). Though he lacked access to Vieillot's own plate, late in time Hume appears to have reflected more or less universal mid 19th century scepticism, and bias in favour of Horsfield's (1821) alternative name, *Iora* (based on Javan [*tiphia*] *scapularis*). Apparently alone over that period, G.R. Gray shifted opinion and (Gray, 1855; 1869) held out for the priority of *Aegithina*, a position adopted in the Catalogue of the Birds in the British Museum (Sharpe, 1882) and accepted more or less widely thereafter. Even now, identification of Vieillot's wording and wonderfully nondescript, monochrome plate as an iora (or indeed as anything obvious), requires a leap of faith. Only his bird's bill is convincingly iora-like.

Taxonomy at and below species-level

Aegithina tiphia (Linnaeus, 1758)

The Check-list adopted subspecific divisions proposed by Marien (1952) from a study of geographical variation in male breeding plumage, as modified by Hall (1957) in her complementary analysis of non-breeding (eclipse) plumage and supplementary data on size. We have found reason to query treatment only of *A. t. deignani* Hall, 1957. This subspecies Hall characterized as grey-green on the cap and upper body of the eclipse-plumage male, and lower back and rump of the breeding male, intermediate between the chalky-washed pale green of these parts in north-central Indian *A. t. humei* Baker, 1922, and black-dusted dark green of S Indian/Sri Lankan *A. t. multicolor* Gmelin, 1789. Having placed it in relation to these S Asian races, unexpectedly, she assigned *deignani* a type locality Yawdwin, Pakokku district, central Burma, and a distribution in Burma from Prome in the south to Myitkyina or beyond in the north (but, critically, not including W Burma), remote from its large range in the Indian subcontinent south from latitude 20°N.

The reality of a subspecies *deignani* has not been questioned. Assuming no cryptic species barriers lie hidden within *A. tiphia* (on the basis that populations appear to merge wherever they meet), nonetheless, we dispute that an entity *deignani* occupies all of the range claimed. Disjunct distributions down to subspecies level might validly arise from the chance crossing of a geographical barrier by emigrants, or where extinction has broken recent continuity and for ecological reasons leaves a range-gap. No such arguments apply here. Species *tiphia* is distributed continuously between and beyond the *deignani* range-parts, with other subspecies (*humei* and nominate *tiphia*) filling the whole space between them - up to and including W Burma. All of the contiguous subspecies of *A. tiphia* investigated intergrade freely, and the inference we draw is that geographical neighbours ought also to be one another's genetic neigh-

bour. On that basis, the two separated halves of *A. t. deignani* should be less closely related mutually than either is, separately, to other subspecies. In other words, *deignani* as designated by Hall may cohere morphologically but is unlikely to be a phyletic entity (an essential extension to subspecies of the biological species concept).

Given Hall's own remark that *deignani* characters are expressed more uniformly in Burma than in India, also that, with latitude through its Indian range, male breeding plumage varies more or less clinally between an *A. t. humei* and an *A. t. multicolor* condition (cf. Abdulali's comment, above, on the difficulty of identifying Indian *deignani*), we propose as follows: (i) that subspecies *deignani* be restricted to Burma, sandwiched there between nominate *tiphia*, *philipi* Oustalet, 1885 and *horizoptera* Oberholser, 1912; (ii) that its Indian populations be returned to a broad zone of intergradation between subspecies *humei* and *multicolor*. In the past, these have been ascribed nominally either to *humei* or to *multicolor* (Whistler & Kinnear, 1932; Whistler, 1944; Abdulali, 1981). More sensibly, they are left without a formal designation, merely as *humei*>*multicolor*, between approximate latitudinal boundaries. Within this zone, tones of dorsal eclipse plumage could be said to converge with *deignani* - but similar grey-greens are to be looked for in areas of intergradation between lighter and darker subspecies elsewhere. Finally, it should be of interest to note that Hall herself carried out a parallel exercise on a disjunction in the range of nominate *tiphia* (and accepted eastern *A. t. philipi* as an outcome).

Two additional subspecies have been described since publication of Peters's Check-list, both with exceptionally small ranges: *djungkulanensis* Hoogerwerf, 1962, on the Ujung Kulon peninsula, extreme west end of Java, and *trudiae* Prescott, 1970, on islands in Brunei bay, NW Borneo. They have had a mixed reception. Mees (1986) considered *djungkulanensis* to be an intergrade between neighbouring Sumatran *horizoptera* and Javan *scapularis* Horsfield, 1821, but later (1996), and on balance, decided to accept it. Smythies (2000) treated *trudiae* as an intergrade between neighbouring *aequanimis* Bangs, 1922, of Palawan and N Borneo and *viridis* Bonaparte, 1850, of the rest of Borneo. From published information, we find no good, independent reason for continuing to recognize them as other than intergrades. This has to be the most conservative, provisional position - potentially revisable.

Aegithina nigrolutea (Marshall, 1876)

It has long been known that individual ioras exhibiting the silvery grey or black (in adults never green), boldly white-tipped tail of *nigrolutea* Marshall, 1876, occur spasmodically far beyond the limits of the well-known NW Indian range of this taxon. Hugh Whistler (Ali & Whistler, 1939, 1943) singled out a male and female from Gwalior and Bhind, Uttar Pradesh state, i.e., within 'core' range, that he considered intermediate between *nigrolutea* and *A. tiphia* on this character, and a geographically more interesting S Indian bird from Coimbatore district, hills of S Karnataka state, identified as 'aberrant' *A. tiphia* (BMNH 1938.8.10.1, re-examined here, this has a typical *nigrolutea* tail). Marien (1952) listed occurrences east to Orissa and south to Tamil Nadu of what he considered to be a species *A. nigrolutea*, but was uncertain of breeding status outside 'core' range, i.e., is presumed to have considered the possibility of migration or long-distance dispersal. Hall (1957) actually mapped such occurrences,

but made clear in her text that she had extended the Whistler interpretation to acceptance of occasional *A. tiphia* throwing up chance *nigrolutea* characters due to long-range genetic influence (meaning introgression). In fact, Whistler & Kinnear (1932) are the source of this idea, having speculated that variability of *A. tiphia* in southeastern India (E Ghats) might be due to intergradation with *nigrolutea* - casting doubt on the latter's status as a species even though they accepted *tiphia* and *nigrolutea* as partitioned (at least by habitat) in NW India.

Hall formalized suspicion of *nigrolutea/tiphia* intergradation by treating *nigrolutea* in NW India as the terminus of clines of iora morphology running northward from Sri Lanka, (i) in the paling of the green of eclipse plumage and (ii) in the brightening (yellowing and narrowing of black feather-fringes) of the collar of the breeding male; by extension implying also that southern 'variants' fitted appropriately into these clines. It is not stated how this intergradation might sit with the fact of habitat partitioning in 'core' range, but Hall accepted species rank for *nigrolutea* only with reservation. That doubt filtered into much of the more recent literature of the subcontinent (e.g., Ali & Ripley, 1996; Grimmett et al., 1998; Ripley, 1961; 1982) - although not without the occasional anomaly, such as Salim Ali in the field in Gujarat being able to separate *nigrolutea* from *tiphia*, 'at once', by ear (Ali & Ripley, 1996).

Hall ascribed the above clines to an influence that fell away with distance from the core northwestern range of *nigrolutea*, but which nevertheless threw up spasmodic 'variants'. The Coimbatore bird is one such. Another, made much of by Hall herself, is BMNH 1948.57.54, an evident post-juvenile male just entering adult plumage, dated 21 February from Nilgala, Bibile district, Uva province, SE Sri Lanka. These two indeed do show different tones of dorsal green, the Uva bird much darker, as stated. They are also dull-collared, although this could be an age factor (and 1938.8.10.1 has green rather than black upper tail-coverts, hence could be a female). Had authors looked beyond these tonal features to a fuller diagnosis of *nigrolutea* versus *A. tiphia*: short wing and (especially) tail; white edging to tertials converging broadly at the tip, versus tertial tips black to only narrowly white in *tiphia* (Rasmussen & Anderton, in press); and Hume's (1877) 'constantly … smaller and shorter bill than in *tiphia* from any part of India', on the other hand, they might have reached an alternative (we suggest, more parsimonious) conclusion. Both specimens fit this definition totally, indeed are at the low end of its size ranges (as on measurements given are two others listed from Tamil Nadu by Marien, 1952, implying divergence from *A. tiphia* increases away from NW India). The Uva bird, in particular, is strikingly smaller than SE Sri Lankan *A. t. multicolor* males, including from the same collection locality (see Table 1).

Finally, BMNH 1949. Whi.1.14470, Whistler's Gwalior 'intermediate', was passed over by DRW as a regular adult male *nigrolutea*, unusual only in that it happened to be the largest of a set of 16 NW Indian males measured.

In short, we agree with Hume (1877), Baker (1922; 1932), Marien (1952), and Rasmussen & Anderton (in press) (who point to consistent vocal differences) that *nigrolutea* and *tiphia* deserve species rank, and that their ranges overlap not just in NW India but, possibly, over most of the subcontinent (on which basis, and when more is known about habitat selection, they might not even qualify as a superspecies). By extension, *A. nigrolutea* is accepted as varying geographically, and more collecting may ultimately cause some of this variation to be recognized taxonomically. Parts of it seem to track

clinal variation in co-occurring *A. tiphia humei>multicolor*, and a notion of parallel variation in the two taxa is preferred over the proposition that clines in one are affected remotely by the other in this one direction but apparently not, or not significantly, in others (where *nigrolutea* approaches the ranges of *A. t. tiphia* or *A. t. septentrionalis*).

In addition, our action adds *A. nigrolutea* to the fauna list of Sri Lanka.

Table 1: Comparative measurements (in mm) of northern and southern *A. nigrolutea* and of a representative population of *A. tiphia*.

Taxon	Location/ range	Age/sex	n	Wing	Tail	Culmen	Tarsus	Source
A. nigrolutea	NW India	Ad/m	16	60-67	41.2-47.7	14.3-16.1	17.5-19.7	BMNH
	Tamil Nadu	Ad/m	1	60.5	40.0	16.0	-	Marien (1952)
	Sri Lanka	?/m	1	60	40.0	15.4	18.7	BMNH
	NW India	Ad/f	15	62-65	43.1-51.7	15.4-16.6	17.6-19.3	BMNH
	S Karnataka	Ad/f	1	57	42.4	14.5	17.8	BMNH
	Tamil Nadu	Ad/f	1	60	40.0	16.5	-	Marien (1952)
A. tiphia	Sri Lanka	Ad/m	11	61-65	45.4-48.5	16.2-18.0	17.8-19.2	BMNH
multicolor	Sri Lanka	Ad/f	7	61-65	48.3-51.1	16.7-18.3	17.9-18.7	BMNH

Aegithina viridissima (Bonaparte, 1850)

The Check-list sank *A. v. nesiotica* Oberholser, 1912, described from Tanahbala Island of the Batu group, W Sumatra, into nominate *viridissima*. To our knowledge, *nesiotica* has not been resurrected (cf. van Marle & Voous, 1988). A second small-island subspecies, *A. v. thapsina* Oberholser, 1917, type locality Siantan Island, Anamba archipelago, S China Sea, is retained. We have seen no Green Iora material from the neighbouring Natuna archipelago hence are unable to adjudicate between Oberholser's (1932) view of Bunguran (Natuna Besar) Island birds as subspecies *thapsina*, and Chasen's (1935) nominate *viridissima* (also of Borneo, Sumatra and mainland SE Asia). However, a female (ZRC 3.15077) from Tioman Island, off Malaysia and 230 km west of Siantan, is paler, more yellow-washed than any examined from the Thai-Malay Peninsula, with a narrow, yellowish frontal fringe over the bill that is absent from mainland specimens. A culmen-chord of 17.9 mm (from skull) is beyond the mainland range for the species, and ten percent longer than the mean value for mainland females (Wells, in press). Bill enlargement is a well-known regional island trait, found in two other Tioman archipelago passerines (Wells, in press), but this individual resembles descriptions of subspecies *thapsina*, and may be identical with it.

Aegithina lafresnayei (Hartlaub, 1844)

Populations north of the Sunda region are green-tailed, universally. The Check-list identifies the transition zone between southern nominate *A. l. lafresnayei* and northern *A. l. innotata* (Blyth, 1847) as the Isthmus of Kra, i.e., latitude approximately 10°N, whereas Chasen (1935) considered intergradation to occupy the whole of peninsular Thailand. More recently in the Peninsula, one of us (Wells, in press) identified adult

males with all-green tails (an *innotata* marker) south to about 8°N (Trang province); mixed green and black tails between latitudes 8° and 10°30′N; and all-black tails (a nominate *lafresnayei* marker) north to latitude 9°N (Phangnga province).

Sharpe (1882) named *A. l. xanthotis* from a solitary specimen, identified as female, among Henri Mouhot's material from Cambodia, describing it without stated reference to neighbouring populations, perhaps because at that stage he had synonymized subspecies *innotata* with nominate *lafresnayei*. This holotype (BMNH 60.11.9.14) has been re-examined and from extent and brightness of yellow on its underparts is almost certainly a male. It matches other BMNH material, of both sexes, from Cambodia, S Laos (Pakse, Bassae), and S Vietnam (Kontum to Cochinchina) in being clear yellowish (lime) green over the entire upperparts, including the cap, devoid of the black dusting on these parts in subspecies *innotata* (and still more black in nominate *lafresnayei*). We have been unable to follow up the Check-list's mention of 'Siam' in connection with *A. l. xanthotis*, but Deignan (1963) makes no mention of a presence within Thai limits.

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