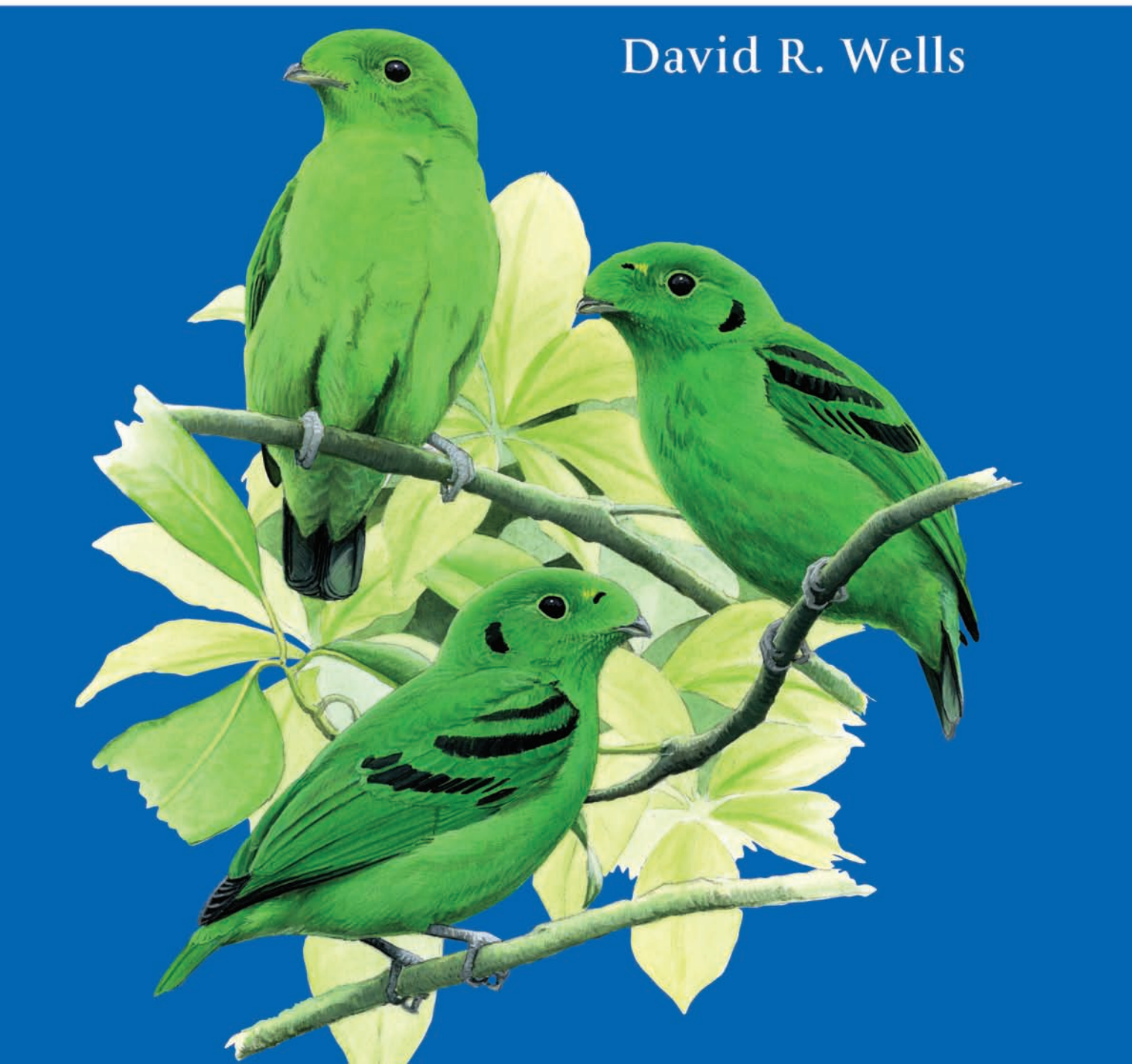
VOLUME TWO

The Birds of the Thai-Malay Peninsula

PASSERINES

David R. Wells



THE BIRDS OF THE THAI-MALAY PENINSULA

Dedicated in affectionate memory of Dato' Loke Wan Tho, lover and accomplished photographer of Asian birds, and patron of ornithological research.

. . . by his sister Lady Yuen Peng McNeice

THE BIRDS OF THE THAI-MALAY PENINSULA

Covering Burma and Thailand south of the eleventh parallel, Peninsular Malaysia and Singapore

Volume Two

Passerines

DAVID R. WELLS

With contributions from

PHILIP D. ROUND and UTHAI TREESUCON

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PREFACE TO VOLUME TWO

Volume One set arbitrary land and sea limits for recording purposes. These continue in force, and this volume covers the passerines of the Peninsula. As before, full treatment in the systematic section is reserved to species accepted as having occurred naturally (298), plus introductions now self-sustaining in at least a part of their local range, or which were over meaningful time in the past (ten). Family footnotes cater for the rest, including: (i) species more likely to have occurred naturally than otherwise but which are still under review by area record committees (two), or whose acceptance came too late for a full treatment (four); (ii) regional migrants or dispersants confirmed at least twice, but far off course and independently likely to have been assisted (two); (iii) undisputed introductions maintained from repeated release of captives, without proof of feral breeding (five); and (iv), on the debit side, species here removed from the area list or whose credentials are in real doubt (six). The footnote list of what constitutes an 'introduction' versus occasional release or escape of no likely faunal consequence could have been a little longer, but in this global hot-spot of wildlife trading judgements erred on the side of caution.

All parts of the systematic section closed to fresh information on 31 March 2005, leaving a 72-month between-volume gap to be filled by a long supplement on non-passerines, included here as an appendix. This affects about 85 percent of Volume One species accounts and, within limits, is taken as bringing the full set date-level with the passerines. It has also been used to draw those non-passerines that qualify into a system of rating 'regional' (within-Peninsula) conservation status (explained in the Introduction). For obvious space reasons, no attempt has been made to re-draw distribution maps, but the appendix gives the information for that to be done separately. A section at the end adds non-passerines admitted to the area list since 31 December 1996 (final closure date of Volume One), updating the total to 400 (against 312 passerines). Most of these newcomers, plus a few other birds not previously illustrated, are figured in four extra coloured plates (Addendum plates 1-4).

Over 300 extra recording localities in Volume Two assist coverage, although this is still patchy – and for Lowland inland forest birds (extinct as a community over probably 90 percent of early twentieth century range) will ever be so. Even so, much is left to be explored, and no-one in 1996 could have predicted an opening up of Thanintharyi (Tenasserim) state sufficient to allow the first organised avifaunal surveys of southernmost Burmese forests in 130 years (Eames *et al*. 2005; Htin Hla *et al*. in prep). Though brief, these showed the power of modern field skills over the collecting gun of an earlier era, and should be extended north as a matter of urgency. If this is achieved while plains-level forests survive, the author(s) of the next round-up may yet see fit to replace the land boundary of the present 'Peninsula' by the natural one of the full biogeographical province ('Kra'; see Volume One, p. xvi).

Finally, only a few of the taxonomic and nomenclatural issues thrown up by the writing have yet been worked through to usable outcomes. Those findings that do get a mention should be viewed as provisional, in advance of formal treatments to appear separately, under a running title *Taxonomic notes for the Thai-Malay Peninsula* (text reference used here, TNTMP).

David Wells
November 2005

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Lifeline from the outset, Lady McNeice's sponsoring grant met all remaining origination costs. As before, funds covered artwork, artists' museum bench fees, word-processing costs, and a production subsidy to the publishers. They also allowed the budgeting of yet more research time at museums holding important specimen collections from the Peninsula, with outcomes for every species account in the book.

More observers on the ground recently than at any time in the past, and some activity now in all four national territories of the Peninsula, gained Volume Two even more help from the field than Volume One. As before, contributions reached the author's desk by various routes: in direct correspondence (hugely affected by the spread of e-mail and the internet); via the files and archives of researchers, and local and national recorders and report editors; also from the pages of limited-circulation, local and national bulletin series. Acknowledgements vary accordingly, wherever possible in the form of a publication reference, given scientific paper-style. The most consulted sources included all of those listed in the Preamble to Volume One plus, since 1996, *The Southern Johor Bird Report* (editor A.R. Lamont), serving an area of the far south well-visited by birdwatchers from nearby Singapore.

The list below supplements Volume One Acknowledgements. Many people contributed to both volumes, and absence of a mention here has no bearing on the value attached to total information received – all of it appreciated and put to fullest use. Thanks are due to everyone concerned, including now:

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As ever, many apologies are offered to those whose names have been overlooked, or misrepresented in a confusion over spelling, aliases, etc.

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Elsewhere, Jonathan Eames put me in touch with new happenings in Tenasserim, Ken Scriven compiled the discography (published sound archive) of the area, Edward Dickinson checked references and taxonomic citations, and at stages of the drafting of Appendix One queries were answered by Henry Barlow, Lord Cranbrook and, pre-eminently, John Gullick who gave generously of his expert knowledge of sources. Chiu Sein Chiong, Kanda Kumar, Lim Kim Chye, Glenda Noramly and Yeap Chin Aik in Malaysia, and Ho Hua Chew, Morten Strange and Ng Bee Choo in Singapore helped with the gazetteer and responded to various other requests.

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Here is also the place to note that Guy Madoc, pioneer field observer and bird photographer of the Peninsula, died shortly after publication of Volume One hence, sadly, may never have seen the fruit of a long submission he had compiled in time for the start of the project. This was drawn on heavily again for Volume Two, with opportunities taken to consult the field-books from which it was taken when these became available publicly. Organised by family and illustrated with original photo prints, they contain far more than in his long career even Madoc ever managed to publish, including extracts from rescued correspondence with F.N. Chasen of the Raffles Museum in the 1930s.

Artwork and important parts of the species accounts were researched from bird skins in the hand and, once again, museums answered queries, made or hosted loans of specimens, and were generous with study facilities on site. For all of this, many thanks are due to the directors, curators and librarians of the ornithology sections of: the Academy of Natural Sciences, Philadelphia (ANSP); the American Museum of Natural History, New York (AMNH); the Bishop Museum, Honolulu (BBM); Chulalongkorn University zoology museum, Bangkok (CHULA); the Division of Wildlife Conservation, Royal Thai Forest Department, Bangkok (RTFD); the Institute for Medical Research, medical ecology museum, Kuala Lumpur (IMR); Liverpool Museum (LM); the Museum of Comparative Zoology, Harvard (MCZ); the National Museums of Scotland, Edinburgh (NMS); the National University of Malaysia zoology museum, Bangi, Selangor; Oxford University Museum (OUM); the Peabody Museum, Yale (YPM); the Raffles Museum of Biodiversity Research, National University of Singapore (ZRCNUS); the Sarawak Museum, Kuching (SM); the Thai National Reference Collection (incorporating the late Dr Boonsong Lekagul's private collection), Bangkok (TISTR); the United States National Museum of Natural History, Washington D.C. (USNM); the University of Malaya zoology museum, Kuala Lumpur (ZDUM); the University Museum of Zoology, Cambridge (UMZC); the Western Foundation of Vertebrate Zoology, Camarillo, California (WFVZ); and the Zoological Museum, Tring (BMNH). For access and help at the above, special thanks are due to M.P. Adams, M. Akam, M. Brooke, R. Corado, J. Dean, C.T. Fisher, A. Harding, L. Joseph, S. Kenney, C. Kishinami, C. Ley, Lua Hui Kheng, R. McGowan, M. Nowak-Kemp, R. Prys-Jones, Niphan Ratanaworabhan, Phairot Suvannakorn, R. Simons, P. Sweet, T.J. Trombone, M.P. Walters, Wang Luan Keng, F.E. Warr, P. Whiteherd, and Yang Chang Man.

As will have been noticed, a change of publisher occurred between volumes. At a mid stage of drafting, Volume Two passed to A&C Black Limited, where editors Nigel Redman and Jim Martin rose to the challenge of absorbing a half-done job. For what it took to steer this through to final form, accommodations made along the way, and insistence on a stunning new pair of dust jackets for the set by artist John Gale, the author is most grateful.

This has been Project MYS 89/156 of Worldwide Fund for Nature Malaysia and Project 'Birds of the Thai-Malay Peninsula' of the Trust for Oriental Ornithology. From its Kuala Lumpur base, WWF Malaysia maintained a hand on the running of project finances throughout, but in 2001 sought to protect the grant's international value by transferring to the currency of most of the Volume Two costs. Accordingly, an approach was made to the Trust for Oriental Ornithology, a United Kingdom-based charity dedicated to research, education and publishing in the field of Asian birds, with the request that it take charge. Happily, this was agreed and for the administration involved at all stages many thanks are due to the Boards and Secretariats of both organisations, with special mention of Ken Scriven, Dato' Mikaail Kavanagh,

Cindy Cheah, Lai Lye Keng and Intan Zurani at WWF Malaysia, and Edward Dickinson, Richard Howard and Sir Anthony Galsworthy at T.O.O. In the meantime, the Sponsor's stipulation that all royalties from sales of both volumes worldwide accrue to WWF Malaysia's Conservation Fund continues in force.

Separate from all of the above is the author's appreciation of the Chairman and Board of T.O.O. for a personal grant from the Trust during year 2000, made to help lay the ground for Volume Two. Extra special thanks and appreciation throughout are owed to Jeyamalar Kathirithamby-Wells for having shared life with this project over many years – and for her own thorough understanding of what it takes to do a book.

INTRODUCTION

BIOGEOGRAPHY SUPPLEMENT

The biogeography section of Volume One divided the Peninsula's avifauna into 'habitat assemblages'; highlighted the rich representation of Sunda regional endemics in the Lowland inland forest assemblage; and plotted the range-limits of Lowland forest species against latitude, updating an exercise in chapter one of BMP5. Map 3 gave the information then available just on resident non-passerines. Since that time, interest in the contact made between Sunda and Indochinese biota has grown, with papers from Thailand on the ecology of the avifaunal transition (Hughes, Round and Woodruff 2003; Round, Hughes and Woodruff 2003), and ancient isolating events that might have caused these faunas to diverge in the first place (Woodruff 2003). The notion of terrestrial distributions broken or blocked by past seaways driven across the Peninsula is not a new one, but Woodruff considered marine barriers in the north-central part of the Peninsula formed by upper Tertiary seas postulated to have stood up to 100m above recent levels, for long enough to have set off evolutionary splits. This is a challenging idea with repercussions of its own, on climates especially in the north, and landscape especially in the south. Sea-level gains of this order would have overwhelmed the Sunda plains leaving, at most, only a narrow fringe of land around the immediate base of hills (i.e., below the steepland boundary). With this drowning of the land, of course, would have gone most plains-level forest, the habitat that now supports greatest species richness and the highest level of regional endemism. Assuming this is where most diversity arose, either much of it came later (a contrary idea) or representations persisted (for long enough to have diverged?) in some unexpectedly small spaces.

The ecologists came to the expected conclusion that range-limits peak in frequency across the zone of transition between evergreen rain forest and deciduous 'monsoon' forest, itself a mainly hill-foot to plains-level phenomenon. They covered the complete transition, from one fauna to the other, with data taken from all land-bird habitats rather than just Lowland forest – on the basis that evidence of the past position of some all-embracing physical rather than merely ecological barrier might still be discoverable. As such, their results do not compare directly with those here.

Much remains to be done on the ground but Figure 1, opposite, completes the exercise begun in Volume One now for all Sunda Lowland inland forest residents, including fresh data on non-passerines taken from Appendix Two. With no involvement of species other than those indigenous to Lowland inland forests, what is shown is the response to latitude of just one habitat assemblage. As in Volume One, for convenience, the

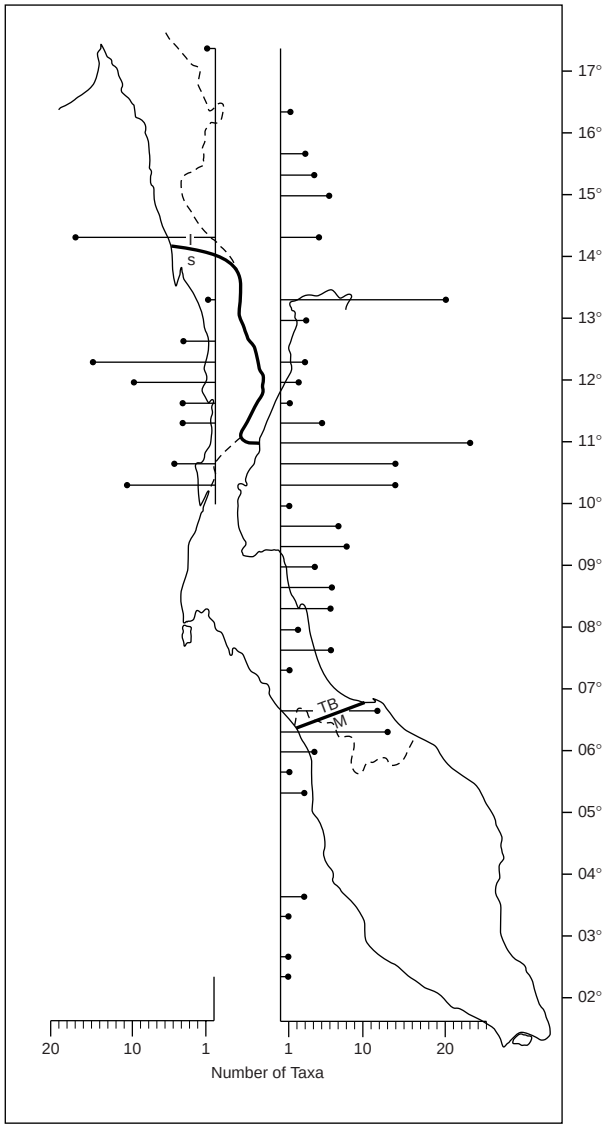


Figure 1. *Historical limits of occurrence of species and the better delineated subspecies resident in Lowland inland forest, rounded up by 20-minute intervals of latitude; the whole picture. I = Indochinese; S = Sunda; TB = Thai-Burmese-type forest; M = Malayan-type forest.*

Figure has been given two 'x' axes, separated by a hill range, the one on the left serving range-limits in Burma (i.e., north from latitude 10°N), the one on the right those in Thailand and Malaysia. As before, many species occur on both, hence the combined number of entries is no simple measure of the number of taxa involved. This time, as well, the geographically better-defined subspecies have been included, and range-limits are rounded out to the nearest 20 rather than 30 minutes of latitude. Also, because southern as well as northern limits are covered, the spread of entries runs through most of Malaysia, down close to latitude 2°N (Great Iora).

Peaks of frequency occur in more or less the same places as before: on the right-hand axis, (a) at 11°N, close to the recent regional evergreen/monsoon vegetation boundary in Thailand, with build-up as of slightly above 10°N; and (b) at just above 13°N, representing the continental moist forest outlier of Kaeng Krachan national park; but, interestingly, with no proportionate effect at 15°N (prominent in Volume One), implying this more northerly outlier (including Bung Kroeng Kavia non-hunting area) may be of lesser significance for passerines. On the left-hand axis, once again, the main peak at slightly above 14°N lies close to the regional vegetation boundary; but two others below it on this axis have shifted position from Volume One, at least partly in response to fresh exploration (Htin Hla *et al.*, in prep.). As they have also switched relative importance, they may eventually be shown to be artefacts that might vanish altogether were survey work to be pushed north in Tenasserim. The new feature, not appearing in any earlier analysis, is a small but obvious spike on the right-hand axis at about the position of the Thai-Burmese/Malayan Lowland forest floristic boundary, i.e., wholly inside the evergreen zone. This proves to be an avifaunal as well as a plant boundary, but would not have shown up as clearly against background 'noise' without the recent exploration from Thailand of conservation areas in Narathiwat province, and the adding in of subspecies boundaries.

FAMILY SEQUENCE

As nucleic acid sequencing opens windows on the genealogy of birds so the views of those who find a use for classifications only in their familiarity and others who would have them track new findings drift progressively apart. Behind this stalemate lies the affair with the 'linear sequence' of families, a device that appears to convey information but whose real contribution has been to cram the time and space elements of evolutionary history into a single dimension. No sensible gains will be made until the shortcomings of this bookish tool are understood and accepted more widely, and its usefulness (relative to clustering systems) is reconsidered.

The approach here follows on from Volume One, with substitutions in the arrangement of families influenced by Barker *et al.*'s (2001) survey of passerines based on DNA from nuclear genes, and an overview and update of results by Cracraft *et al.* (2003). These assume the monophyly (common ancestry) of the passerines and ancient (Ericson *et al.* 2003 suggest geography-based) divergence of sub-oscines and oscines ('song-birds'). Among the latter, support has been found for certain apparently long-independent lineages plus two large, later-derived clusters that equate more or less with the former grand division of all song-birds into 'parvorders' Corvida and Passerida (Sibley and Ahlquist 1990). These clusters themselves comprise older lineages, one to several 'clades' (undisputed monophyletic assemblages) relatively recently diversified and, within them, further lines and groupings. Summarised from Cracraft *et al.*, with a few attributions from Sibley and Ahlquist and later sources, Volume Two covers:

- sub-oscine families Pittidae and Eurylaimidae;
- apparently anciently independent oscine families Acanthizidae and Eupetidae;
- within the 'corvidan' cluster of oscines: (i) old independent families in the series Oriolidae to Pachycephalidae, and (ii) clades represented by the series Aegithinidae/Artamidae and Corvidae to Malaconotidae;
- within the 'passeridan' cluster: (i) in the 'sylvioid' clade, older families Paridae and Hirundinidae, and groupings represented by the series Pycnonotidae to Timaliidae, and Cisticolidae; (ii) in the 'muscicapoid' clade, groupings represented by Sittidae, Sturnidae, and Turdidae/Muscicapidae; and (iii) in the 'passeroid' clade, groupings represented by series Irenidae to Nectariniidae and Motacillidae to Fringillidae.

Below family level, converting molecular taxonomy to classification has further to go, typically because too few species are sampled to be of much help in re-setting the limits of genera. Waiting for coverage to catch up randomly implies frustrating delay, which can easily result in the setting aside of new findings – as anyone following recent molecular research will have no difficulty in spotting among trial arrangements here. Such a mismatch of outcomes is certainly strange, although there are down-to-earth explanations. In the meantime, future changes are bound to include more instances of established families having some of their parts re-distributed to other families, or being absorbed in total as cryptic relationships and instances of evolutionary convergence continue to come to light (cf. Pasquet *et al.* 1999 on thrushes, chats and flycatchers; and Cibois 2003, 2003a, and Cibois *et al.* 2002 on warblers, white-eyes, babblers, etc.). An arbitrary decision returns family status to groups, especially of 'corvidans', that Sibley and Ahlquists' DNA hybridisation analyses reduced to sub-families or even tribes. Following Cheke and Mann (2001), however, flowerpeckers (former family Dicaeidae) have been accepted as a sub-family of

the Nectariniidae while the suggestion is made that spiderhunters differ enough from other sunbirds to deserve equivalent status. Certain other recent treatments (Collar 2004a; H&M3) have placed a few groups *incertae sedis* (evolutionary position uncertain). Apart from tailorbirds (*Orthotomus*), transferred provisionally to Cisticolidae on account of prinia-like behaviour, here, the groups involved automatically retain their 'traditional' family positions.

UPDATE ON BIRD NAMES

Responses have been made to some valuable new sources on the forming and applying of scientific bird names, including papers by David and Gosselin (2002, 2002a), a third, revised edition of *The Howard and Moore Complete Checklist of the Birds of the World* (Dickinson 2003), and a series 'Systematic notes on Asian birds' (editors R.W.R.J. Dekker and E.C. Dickinson) on-going in *Zoologische Verhandelingen*, one of the journals of the Netherlands National Museum of Natural History (Leiden). Thanks to these, good numbers of entrenched spelling, date and other citation errors have been corrected, with those applying to non-passerines added to Appendix Two. Most have been made without comment but actual name replacements, including those arising from fresh understanding of where taxonomic boundaries lie in nature, are explained on the spot or referenced to 'TNTMP'.

Most vernacular names in English follow the Oriental Bird Club *Checklist* and most of those in Malay, this time, the field guide by Jeyarajasingam and Pearson (1999). A few of each have been replaced by experimental alternatives aired for a user reaction, e.g., 'Spectacled' Laughingthrush in place of Chestnut-capped, to reduce long-standing confusion with Chestnut-crowned for a second species in overlapping space. As before, Thai names in romanised spelling were all supplied by Uthai Treesucon and Philip Round, and they remain the authority on this subject. For the most part, at least in written form, Thai names retain their ancient Southeast Asian 'bird' prefix, 'Nok', whereas the Malay equivalent, 'Burung', has begun to fall away as family and other group-level inventions gain currency among those interested in wildlife. The need for vernacular vocabularies at species level was suggested in Volume One. Assembling and making accessible Burmese names could be the next challenge (or perhaps now a pinyin Chinese equivalent for Singapore?). Romanised spellings from tonal languages are far from fixed as yet, with trends still towards simplification.

FORMAT CHANGES

The 16 headings of the species-account text have been kept from Volume One, and limits placed on information included are also the same, i.e., sourced from within the review area only, unless indicated otherwise. 'No information' again means none just from within the review area, the purpose being to highlight neglected topics and alert observers to a data-gap in need of bridging. Two changes that apply throughout affect:

IDENTIFICATION/DESCRIPTION: Unevenness of treatments in Volume One together with the greater in-the-hand challenges posed by many passerines over most non-passerines, decided a shift (a) to greater detail, (b) to standardisation. Except where real simplification has been possible, the routine order of coverage now is: face from lores and supercilium (if present) to jaw-level, including ear-coverts; cap and top and side of neck; upper body from mantle and scapulars to tail-coverts; upper wing-surface, in order from lesser- to primary-coverts, alula and external carpus-edge, then flight-feathers descendant from tertials; tail; and underparts from chin to tail-coverts, with leg-feathering and lower wing-coverts plus, where informative, remaining under-wing pattern. Age/sex-classes, with any seasonal variation, are covered separately, adult male always in full, adult female as far as possible relative to the male, then juvenile/immature/first-winter relative to adults. All descriptions cover the more obvious variation found within the review area, followed as before by a sorting of essential characters to geographic and taxonomic level under the separate heading Geographical Variation.

CONSERVATION: BirdLife International's *Birds to Watch* 2 (BTW2) and more recent *Threatened Birds of Asia* in the Red Data Book (RDB) series (Collar *et al.* 2001) employed revised IUCN criteria to grade global extinction risk at species level. These ratings are quoted widely, although not always with sufficient attention paid to their local application. That level of threat will be uniform across a world range is inherently unlikely, and conservation planners at country level and below were quick to emphasise the danger of a global rating that happened to underplay threat within their particular sphere of operation. By 1996, ornithologists in Thailand had decided on the need for national threat assessments, and a partial set appeared four years later (Round 2000). Over much the same period, an IUCN working party drew up guidelines for standardising regional rating procedures, and its rules have since been published (IUCN 2003).

Volume Two's ratings are for the Peninsula alone, i.e., with some overlap of the Thailand exercise but worked out independently. Marked (R) = regional versus (G) = global rating, they cover all non-vagrants written up in full. The categories observed are the standard IUCN/RDB set, in ascending order of urgency: *Least Concern*, *Near-threatened* and, in the 'threatened' bracket, *Vulnerable* (facing a high risk of extinction in the medium term), *Endangered* (facing a very high risk of extinction in the near future) and *Critically Endangered* (facing an extremely high risk of extinction in the immediate future). IUCN guidelines disallow the downgrading of a

global *Data Deficient* assessment, and the Thailand exercise avoided downgrading any global assessment in the threatened bracket. Here, all allowed categories have been adjusted as needed, although downgradings in the threatened bracket affect mainly those few species with naturally tiny regional populations/ranges in areas or habitats reckoned to be secure. Real procedural problems have arisen only with local endemics, such as Malayan Whistling Thrush, where regional and global ranges are by definition the same but where views on risk have genuinely diverged.

Within limits allowed, judgements otherwise took account of the recent historical loss of more than 90 percent of the Peninsula's back-mangroves, at least 80 percent of Lowland inland forest cover, and over 95 percent of the latter's plains-level component – its remnant much fragmented, and probably now past the 2000 km^2 limit of well-structured habitat left that, on a global scale, would trigger 'threatened' status automatically. In this connection, they also considered 'core' versus 'peripheral' habitat between which, in theory, a population shifts from being a 'source' to a colonist-dependent 'sink'; with gradation of abundance, or disappearance before the boundary of the habitat is reached, taken as evidence of that happening. Other factors included likely reaction to logging (affected, e.g., by ability to cross exposed gaps; normal in forest canopy species, abnormal in shade-layer residents), and for non-forest species in agriculture, vulnerability to crop-cycle modification and impacts of agri-chemicals.

As a general indication, (i) non-forest species and those of Montane forest (or whose core habitat lies in Montane forest) rarely rate worse than *Near-threatened*; (ii) mangrove specialists for which back-mangroves are considered to have been important rarely rate less than *Near-threatened*; (iii) species tied to well-structured Lowland inland forest of any type rarely rate less than *Near-threatened*; (iv) Lowland inland forest species whose core habitat lies below the steepland boundary rarely rate less than *Vulnerable*; and (v) species tied to well-structured forest below the steepland boundary never rate less than *Endangered*. In coming to decisions, no special account was taken of the habitat contribution of nature reserves. All those of old Malaya that once held largish tracts of plains forest did so for big mammal population rather than general biodiversity reasons, and virtually all were rescinded long before the end of the colonial era (Kathirithamby-Wells 2005). Nowhere in the Peninsula have more recent reserves been given purposefully large areas below the steepland boundary (generally, quite the reverse) and none, including Taman Negara national park, has avoided loss of at least some of its original holding. The Red Data Book principles of precaution and 'responsible pessimism' in forecasting trends surely also apply at this regional assessment level.

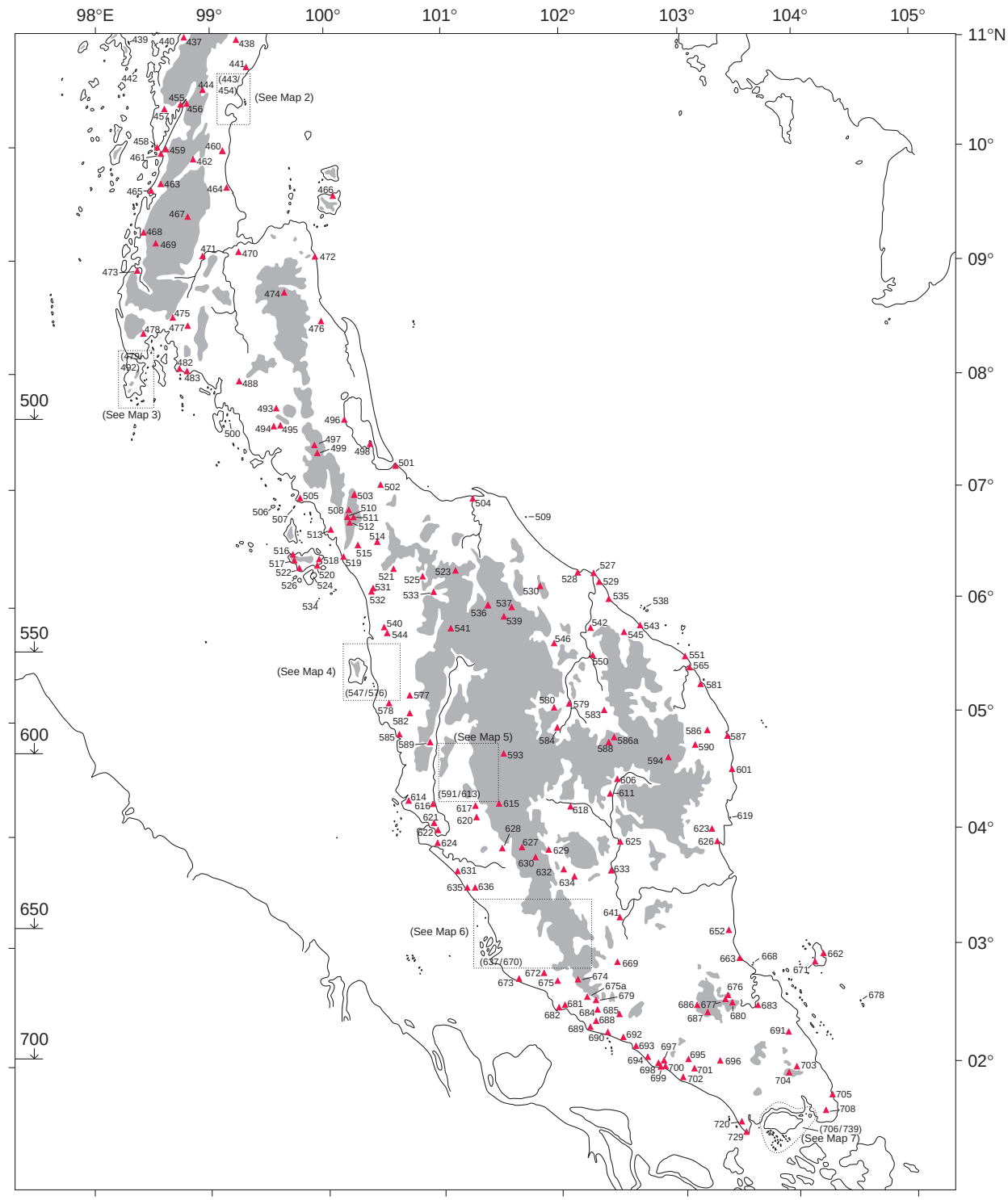
A spot check of species occurring in the area of geographical overlap showed good concordance between ratings for the Peninsula and for Thailand generally. Unsurprisingly, both assessments shifted substantially more species across the threshold into threatened-bracket categories than did *Threatened Birds of Asia* in its global treatment. Hardly any of these species is endemic to the Peninsula but were ratings to be drawn up separately for other parts of their ranges, the statistics are likely to be as bleak. This demands attention.

GAZETTEER SUPPLEMENT

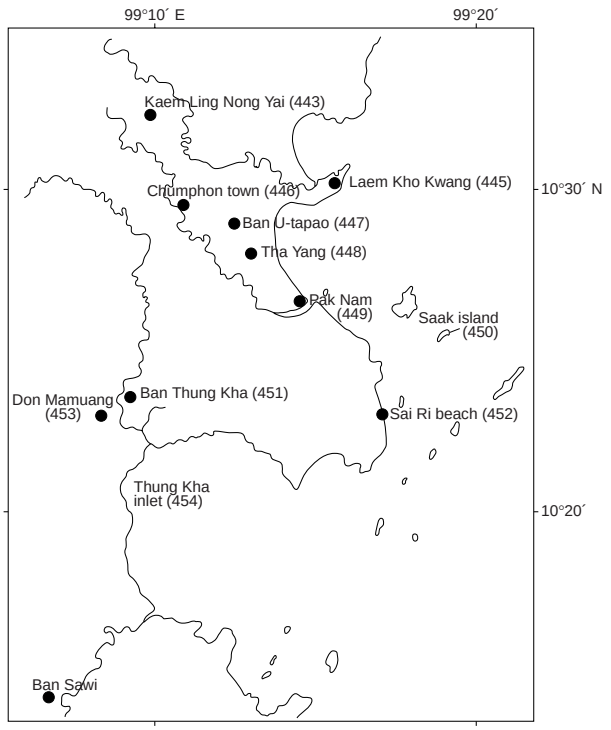
PLACE-NAME SPELLINGS: Volume One spellings apply except where an undoubted error has been corrected or some recent change came quickly into general use. Beyond that, standardisation of Thai and Malaysian place names is still an issue (at least for outsiders). Romanisation of Thai continues to progress towards shorter, simpler outcomes, but state administrations in Malaysia disagreed about the application of national spelling rules to place names and used or withheld them arbitrarily, setting back a progressive idea. To this extent, some decisions in Volume Two will still be provisional. As before, category words have been translated to English except where they have become part of a particular proper name. Additional to the Volume One list retained for this purpose are *Alor* (= channel; M); *Bagan* (= landing-stage; M); *Bang* (= waterside; T); *Batang* (= river, in the sense meant; M); *Chaung* (= river; B); *Gua* (= cave; M); *Gunung* (= mountain; M); *Hat* (= shore, beach; T); *Jeram* (= rapids; M); *Kaw* (= town; B); *Lubuk* (= river deep; M); *Lorong* (= lane; M); *Pengkalan* (= jetty; M); *Permatang* (= sandy ridge; M); *Tanah* (= land, soil; M); and *Tha* (= landing-stage; T). These spellings are believed to be the ones in widest use.

ACCESS: Maps 1–7 show only the extra and re-named/re-located places, as before numbered roughly west to east then north to south in a unified series. To avoid confusion when the volumes are used together, the new numbers continue directly on from Volume One, starting at 437. Map positions will then be found from the following two new directories (with corrections included). Again, rivers are identified at their confluence or estuary, large features such as districts or reserves more or less at their centre, and the contour is 150m a.s.l. (the average steepland boundary in the Peninsula).

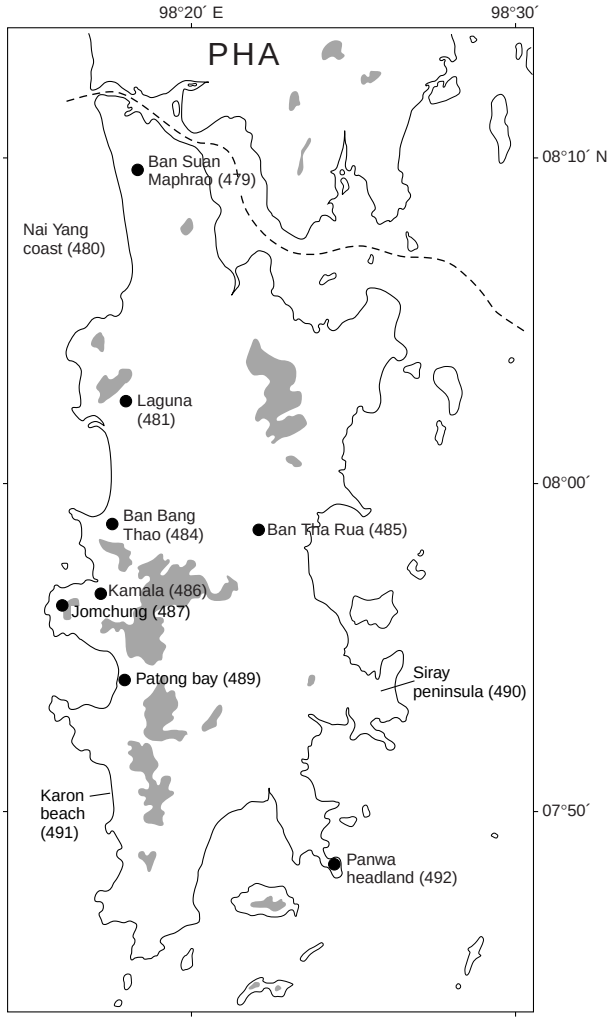
LOCALITIES NUMBERED NORTH TO SOUTH: 437 – Karathuri; 438 – Bang Thalae river; 439 – Dolphin island; 440 – Campbell island; 441 – Patiyu district; 442 – Myang island; 443 – Kaem Ling Nong Yai; 444 – Ban Tha San; 445 – Laem Kho Kwang; 446 – Chumphon town; 447 – Ban U-tapao; 448 – Tha Yang; 449 – Pak Nam, Chumphon; 450 – Saak (Sak) island; 451 – Ban Thung Kha; 452 – Sai Ri beach; 453 – Don Mamuang; 454 – Thung Kha inlet; 455 – Namchut; 456 – Kraburi; 457 – Kamaukgyi; 458 – Kawthoung; 459 – Ban Bang Non; 460 – Langsuan; 461 – Ranong port; 462 – Pha To;



Map 1. *Localities additional to the Volume One list.*

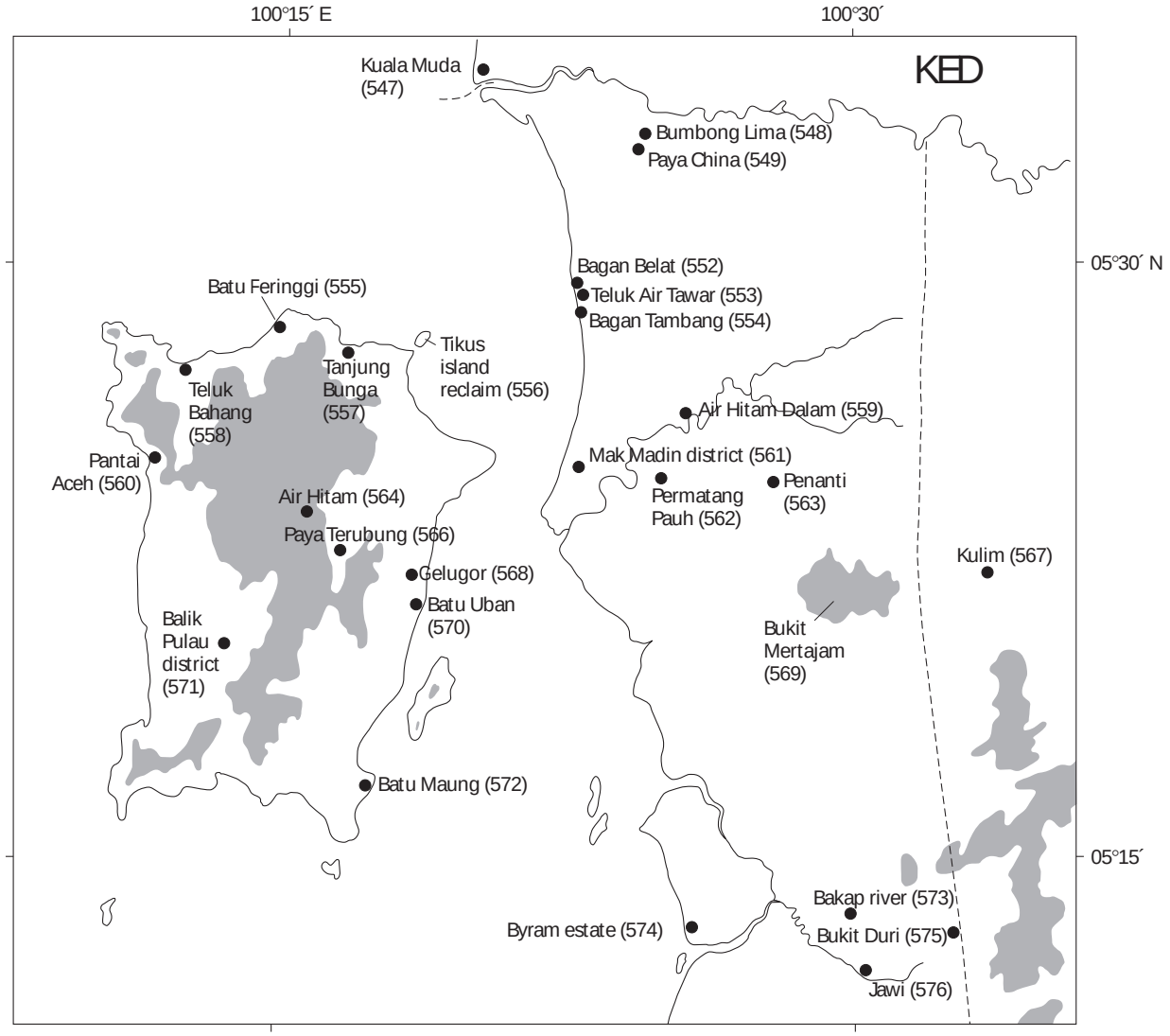


Map 2. *Central Chumphon province.*



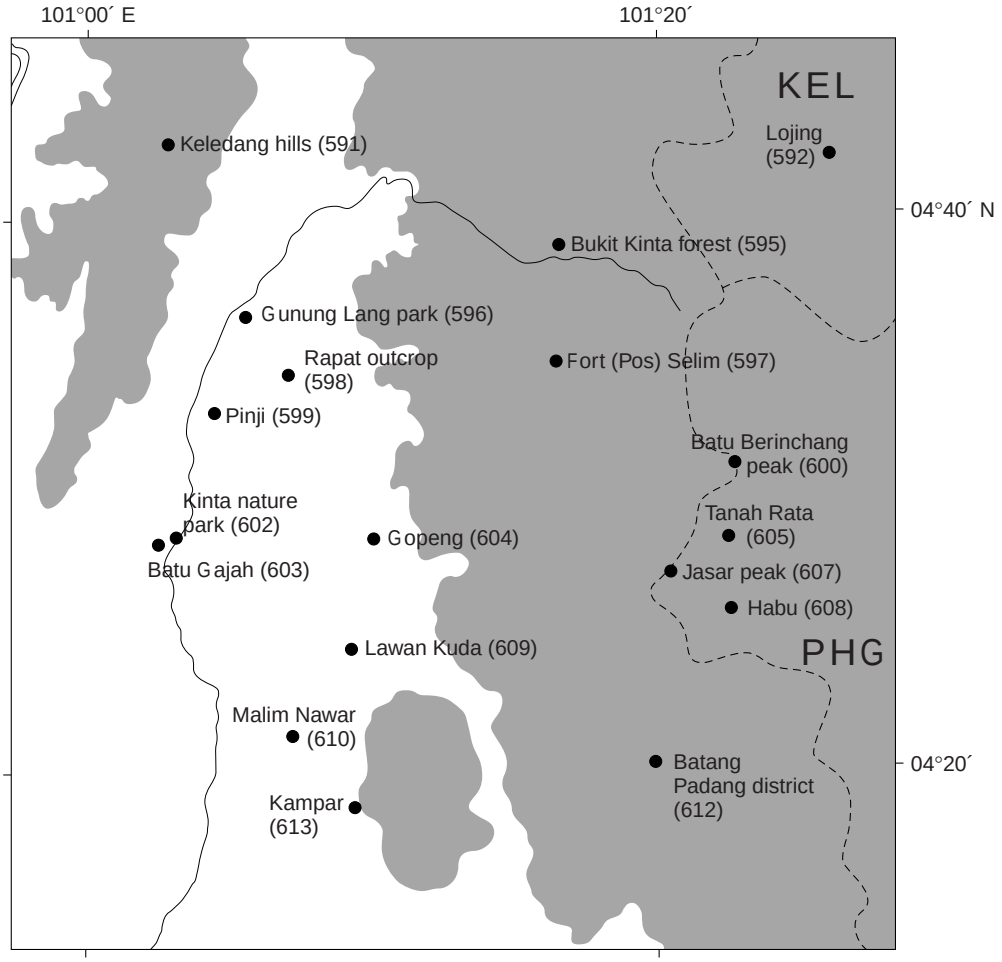
Map 3. *Phuket province and border.*

463 – Kapoe; 464 – Khandhuli; 465 – Bang Ben coast; 466 – Bang Rak swamp; 467 – Tha Chana; 468 – Khuraburi; 469 – Sri Phangnga national park; 470 – Ban Tha Lo; 471 – Khiri Ratthanikom; 472 – Sichol district; 473 – Takua Pa; 474 – Krung Ching plateau; 475 – Thap Phut; 476 – Thung Tha Laad; 477 – Ban Nong Kok; 478 – Ban Krasom; 479 – Ban Suan Maphrao; 480 – Nai Yang coast; 481 – Laguna; 482 – Prasong (Son?) river; 483 – Nopparat Thara beach; 484 – Ban Bang Thao; 485 – Ban Tha Rua; 486 – Kamala; 487 – Jomchung; 488 – Ban Bang Khram; 489 – Patong bay; 490 – Siray peninsula; 491 – Karon beach; 492 – Panwa headland; 493 – Lam Phila (Lamra); 494 – Ban Tha Chin; 495 – Ban Khok Khan; 496 – Khuan Kut; 497 – Nok Ra (Ram) peak; 498 – Pak Phayun; 499 – Soi Dao peak; 500 – Bu Bu island; 501 – Songkhla town; 502 – Hadyai; 503 – Ton Nga Chang wildlife sanctuary; 504 – Pattani town; 505 – Langu; 506 – Phulo ('Phu Lon') Le island; 507 – Phulo Bulan island; 508 – China peak; 509 – Loopee island; 510 – Wang Kelian; 511 – Perlis state park; 512 – Wang Tangga; 513 – Satul town; 514 – Bukit Kayu Hitam; 515 – Chuping; 516 – Datai bay; 517 – Telaga Tujuh; 518 – Kisap forest reserve; 519 – Kuala Perlis; 520 – Kuah; 521 – Padang Terap district; 522 – Pantai Cenang; 523 – Labu, *Yala*; 524 – Tuba island; 525 – Pedu reservoir; 526 – Beras Besar island; 527 – Kuala Besar; 528 – Tak Bai district; 529 – Pengkalan Chepa; 530 – Budo/Sungai Padi national park; 531 – Jerlun; 532 – Alor Setar; 533 – Muda reservoir; 534 – Segantang island; 535 – Bachok; 536 – Hala river; 537 – Hala-Bala wildlife sanctuary; 538 – Perhentian Kecil island; 539 – Belum state park; 540 – Gurun; 541 – Betong district; 542 – Machang district; 543 – Kuala Besut; 544 – Bedong district; 545 – Jertih; 546 – Gua Setir outcrop; 547 – Kuala Muda; 548 – Bumbong Lima; 549 – Paya China; 550 – Kuala Kerai; 551 – Batu Rakit; 552 – Bagan Belat; 553 – Teluk Air Tawar; 554 – Bagan Tambang; 555 – Batu Feringgi; 556 – Tikus island reclaim; 557 – Tanjung Bunga; 558 – Teluk Bahang; 559 – Air Hitam Dalam; 560 – Pantai Aceh; 561 – Mak Madin district; 562 – Permatang Pauh; 563 – Penanti; 564 – Air Hitam, *Penang island*; 565 – Kuala Terengganu; 566 – Paya Terubung; 567 – Kulim; 568 – Gelugor; 569 – Bukit Mertajam district/forest reserve; 570 – Batu Uban; 571 – Balik Pulau district; 572 – Batu Maung; 573 – Bakap river; 574 – Byram estate; 575 – Bukit Duri; 576 – Jawi; 577 – Selama town; 578 – Bukit Panchor forest reserve; 579 – Nenggiri river; 580 – Pulau Raba outcrop; 581 – Marang; 582 – Tanjung Pondok forest reserve; 583 – Aring river; 584 – Gua Musang; 585 – Kuala Sepetang; 586 – Jerangan forest reserve; 586a – Kuala Koh; 587



Map 4. *Penang territory (island and Seberang Prai) and border.*

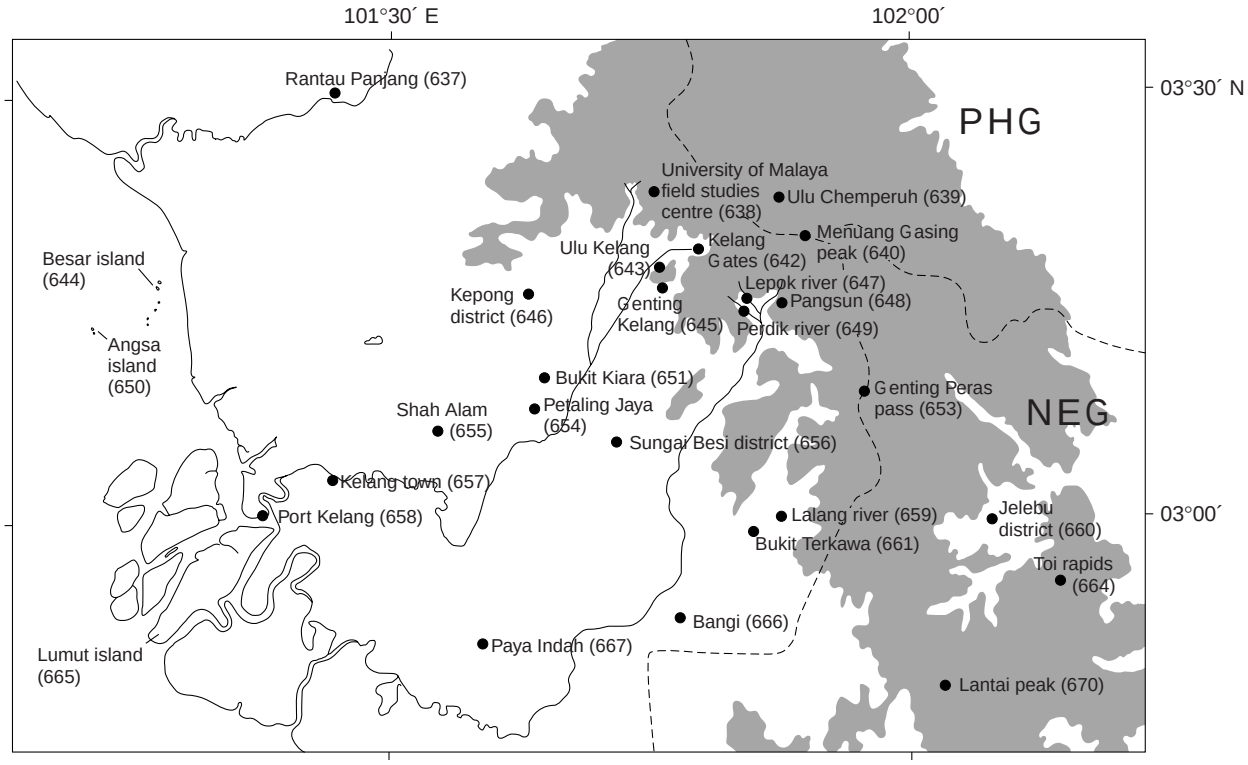
– Dungun town; 588 – Kuala Juram; 589 – Padang Rengas outcrop; 590 – Jengai forest reserve; 591 – Keledang hills; 592 – Lojing; 593 – Belatop river; 594 – Gelemat peak; 595 – Bukit Kinta forest reserve; 596 – Gunung Lang park/outcrops; 597 – Fort (Pos) Selim; 598 – Kek Look Tong cave temple, Rapat outcrop; 599 – Pinji; 600 – Batu Berinchang peak; 601 – Kerteh; 602 – Kinta nature park; 603 – Batu Gajah; 604 – Gopeng; 605 – Tanah Rata; 606 – Kuala Terengan; 607 – Jasar peak; 608 – Habu and Habu reservoir; 609 – Lawan Kuda; 610 – Malim Nawar; 611 – Lubuk Simpang; 612 – Batang Padang district; 613 – Kampar; 614 – Sitiawan; 615 – Batu Putih peak; 616 – Kampung Gajah; 617 –Tapah; 618 – Lipis district; 619 – Ular island; 620 – Bidor; 621 – Ulu Dedap; 622 – Kota Setia; 623 – Sagu forest reserve/outcrop; 624 – Hutang Melintang; 625 – Pulau Tawar; 626 – Kuantan; 627 – Ulu Liang; 628 – Selim district; 629 – Teras; 630 – Jeriau; 631 – Sungai Nibong; 632 – Lakum forest reserve; 633 – Kerau river; 634 – Kuala Gandah; 635 – Sungai Burung; 636 – Tengi river; 637 – Rantau Panjang, *N Selangor*; 638 – University of Malaya field studies centre; 639 – Ulu Chemperuh; 640 – Menuang Gasing peak; 641 – Teriang; 642 – Kelang Gates outcrop/reservoir; 643 – Ulu Kelang district; 644 – Besar island, Selangor; 645 – Genting Kelang; 646 – Kepong district; 647 – Lepok river; 648 – Pangsun; 649 – Perdik river; 650 – Angsa island/lighthouse; 651 – Bukit Kiara; 652 – Nenasi forest reserve; 653 – Genting Peras pass; 654 – Petaling Jaya; 655 – Shah Alam; 656 – Sungai Besi district; 657 – Kelang town; 658 – Port Kelang; 659 – Lalang river; 660 – Jelebu district; 661 – Bukit Terkawa estate; 662 – Juara; 663 – Kuala Rompin; 664 – Toi rapids; 665 – Lumut island; 666 – Bangi; 667 – Paya Indah wetland park; 668 – Ducung Laut island; 669



Map 5. *Central Perak state and borders.*

– Bahau; 670 – Lantai peak; 671 – Kampung Paya; 672 – Labu, *Negeri Sembilan*; 673 – Sepat headland; 674 – Kuala Pilah pass; 675 – Seremban town; 675a – Rembau district; 676 – Keriong plateau; 677 – Kinchin river; 678 – Dayang island; 679 – Tampin peak; 680 – Janing peak; 681 – Linggi district; 682 – Seginting beach; 683 – Semberong river; 684 – Keru; 685 – Nyalas; 686 – Bekok reservoir; 687 – Bekok forest reserve; 688 – Alor Gajah; 689 – Batang Tiga, *Melaka*; 690 – Umbai; 691 – Jemaluang district/forest reserve; 692 – Merlimau forest reserve; 693 – Muar; 694 – Parit Jawa; 695 – Yong Peng; 696 – Keluang district; 697 – Tengah river; 698 – Balang river; 699 – Sarang Buaya river; 700 – Semerah; 701 – Air Hitam, *Johor*; 702 – Batu Pahat; 703 – Mawai; 704 – Panti forest reserve; 705 – Sedili Kecil headland; 706 – Johor river; 707 – Johor Baru; 708 – Pengerang peninsula; 709 – Woodlands; 710 – Semechek island; 711 – Seletar; 712 – Seletar river reservoir; 713 – Ketam island, *Singapore*; 714 – Seletar reservoir; 715 – Fairy rocks; 716 – Singapore central catchment area; 717 – Upper Peirce reservoir; 718 – Lower Peirce reservoir; 719 – Bukit Batok nature park; 720 – Permas; 721 – McRitchie reservoir; 722 – Xilin; 723 – Maju camp; 724 – Tanah Merah; 725 – Tanglin district; 726 – Kallang; 727 – Kent Ridge; 728 – Pasir Panjang; 729 – Piai point; 730 – Ayer Chawan island (see Jurong offshore reclaim); 731 – Jurong offshore reclaim; 732 – Serapong hill; 733 – Rengget island; 734 – Jong island; 735 – Subar Darat island; 736 – Subar Laut island; 737 – Sebarok island; 738 – Biola island; 739 – Satumu island.

LOCALITIES IN ALPHABETICAL SEQUENCE: **A**ir Hitam, *Penang island* (564, location corrected from 182); **A**ir Hitam, *Johor* (701); **A**ir Hitam Dalam (559); **A**lor Gajah (688); **A**lor Setar (532); **A**mpang forest reserve/reservoir (see 297); **A**ngsa island/lighthouse (650); **A**ring river (583); **A**yer Chawan island (see Jurong offshore reclaim) (730).
Bachok (535); **B**agan Belat (552); **B**agan Tambang (554); **B**ahau (669); **B**akap river (573); **B**alang river (698); **B**alik Pulau district (571); **B**an Bang Khram (488); **B**an Bang Non (459); **B**an Bang Thao (484); **B**ang Ben coast (465);



Map 6. *Central Selangor state and borders.*

Bangi (666); Bang Khram forest (see 82); Bang Rak swamp (466); Bang Thalae river (438); Bankasoon (see 16); Ban Khok Khan (495); Ban Krasom (478); Ban Mamoh (upper Pakchan estuary, *Ranong*, not located); Ban Nong Kok (477); Ban Salui (see 438); Ban Suan Maphrao (479); Ban Tha Chin (494); Ban Tha Lo (470); Ban Tha Rua (485); Ban Tha San (444); Ban Thung Kha (451); Ban U-tapao (447); Batang Padang district (612); Batang Tiga, *Melaka* (689); Batu Berinchang peak (600); Batu Feringgi (555); Batu Gajah (603); Batu Maung (572); Batu Pahat (702); Batu Putih peak (615); Batu Rakit (551); Batu Uban (570); Bedong district (544); Bekok forest reserve (687); Bekok reservoir (686); Belatop river (593); Belum state park (539); Beras Besar island (526); Besar island, *Selangor* (644); Betong district (541); Bidor (620); Biola island (738); Bu Bu island (500); Budo/Sungai Padi national park (530); Bukit Batok nature park (719); Bukit Duri (575); Bukit Kayu Hitam (514); Bukit Kiara (651); Bukit Kinta forest reserve (595); Bukit Merah reservoir (see 193); Bukit Mertajam district/forest reserve (569); Bukit Panchor forest reserve (578); Bukit Terkawa estate (661); Bumbong Lima (548); Byram estate (574).

Campbell island (440); China peak (508); Chumphon town (446); Chuping (515).

Datai bay (516); Dayang island (678); Dolphin island (439); Don Mamuang (453); Ducung Laut island (668); Dungun town (587).

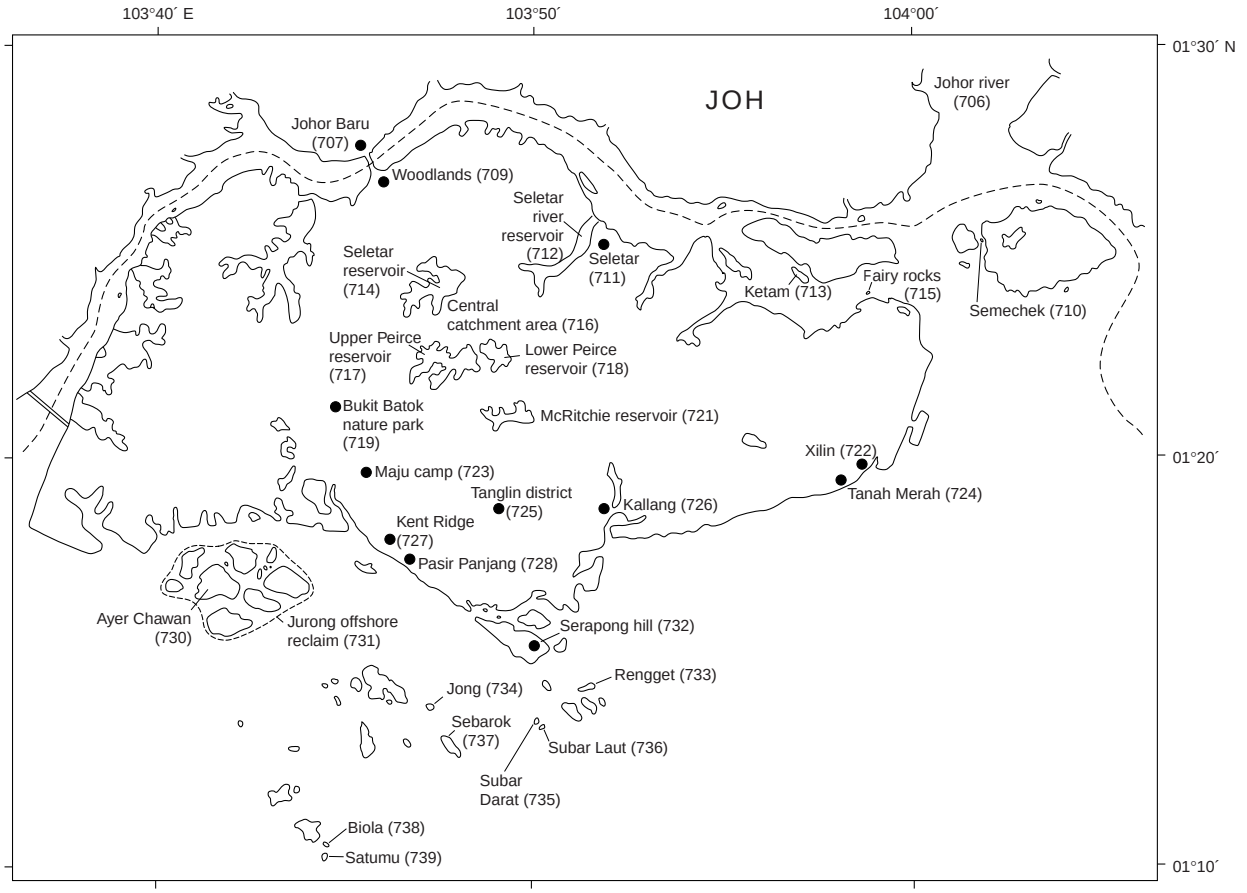
Fairy rocks (715); Fort Beruk (see 593); Fort (Pos) Selim (597).

Gelemat peak (594); Gelugor (568); Genting Bidai pass (see 288); Genting highlands (see 281); Genting Kelang (645); Genting Peras pass (653); Gerik (see 172); Gombak forest reserve (see 286); Gopeng (604); Gua Musang (584); Gua Setir outcrop (546); Gunung Lang park/outcrops (596); Gurun (540).

Habu and Habu reservoir (608); Hadyai (502); Hala-Bala wildlife sanctuary (537); Hala river (536); Hutang Melintang (624).

Janing peak (680); Jasar peak (607); Jawi (576); Jelebu district (660); Jemaluang district/forest reserve (691); Jengai forest reserve (590); Jerangan forest reserve (586); Jeriau (630); Jerlun (531); Jertih (545); Johor Baru (707); Johor river (706); Jomchung (487); Jong island (734); Juara (662); Jurong offshore reclaim (731).

Kaem Ling Nong Yai (443); Kallang (726); Kamala (486); Kampar (613); Kamaukgyi (457); Kampung Gajah (616); Kampung Paya (671); Kang island (*Krabi*, not located); Kapoe (463); Karathuri (437); Karon beach (491); Ka Wa river (see 537,*Yala* division); Kawthoung (458); Kek Look Tong cave temple, Rapat outcrop (598); Kelang Gates outcrop/reservoir (642); Kelang town (657); Keledang hills (591); Keluang district (696); Kent Ridge (727); Kepong district (646); Kerau river (633); Keriong plateau (676); Kerteh (601); Keru (684); Ketam island, *Singapore* (713); Khandhuli



Map 7. *Singapore territory and border.*

(464); **K**hao Pra-Bang Khram wildlife sanctuary (see 82); **K**hao Pra Thaew non-hunting area (see 70); **K**hao Pu-Khao Ya national park (see 94); **K**hao Yai island (*Phangnga* bay, not located); **K**hiri Ratthanikom (471); **K**hlong Nakha wildlife sanctuary (see 35); **K**huan Kut (496); **K**huraburi (468); **K**inchin river (677); **K**inta nature park (602); **K**isap forest reserve (518); **K**ota Setia (622); **K**raburi (456); **K**rung Ching plateau (474); **K**rung Nang (see 474); **K**uah (520); **K**uala Besar (527); **K**uala Besut (543); **K**uala Gandah (634); **K**uala Juram (588); **K**uala Kerai (550); **K**uala Koh (586a); **K**uala Muda (547); **K**uala Perlis (519); **K**uala Pilah pass (674); **K**uala Rompin (663); **K**uala Sepetang (585); **K**uala Terengan (606); **K**uala Terengganu (565); **K**uantan (626); **K**ulim (567).

Labu, *Negeri Sembilan* (672); **L**abu, *Yala* (523); **L**eam Kho Kwang (445); **L**aem Son national park (see 465); **L**aguna (481); **L**ahia river (see 6); **L**akum forest reserve (632); **L**alang river (659); **L**am Phila (Lamra) (493); **L**angsuan (460); **L**angu (505); **L**antai peak (670); **L**awan Kuda (609); **L**epok river (657); **L**inggi district (681); **L**ipis district (618); **L**ojing (592); **L**oopee island (509); **L**orong Halus (see 402); **L**ower Peirce reservoir (718); **L**ubuk Simpang (611); **L**umut island (665).

Machang district (542); **M**ahkota bay (see 372); **M**ai Ngaam island (see 96); **M**aju camp (723); **M**ak Madin district (561); **M**alim Nawar (610); **M**arang (581); **M**awai (703); **M**cRitchie reservoir (721); **M**elawati fort (see 284); **M**enuang Gasing peak (640); **M**erlimau forest reserve (692); **M**uang district, *Chumphon* (see 446); **M**uang district, *Krabi* (see 72); **M**uang district, *Satul* (see 513); **M**uar (693); **M**uda reservoir (533); **M**u Ko Chumphon national park (see 452); **M**yang island (442).

Nai Yang coast (480); **N**amchut (455); **N**enasi forest reserve (652); **N**enggiri river (579); **N**ok Ra (Ram) peak (497); **N**opparat Thara beach (483); **N**uang peak (see 640); **N**yalas (685).

Padang Rengas outcrop (589); **P**adang Terap district (521); **P**ak Nam, *Chumphon* (449); **P**ak Phayun (498); **P**angsun (648); **P**antai Aceh (560); **P**antai Cenang (522); **P**anti forest reserve (704); **P**anwa headland (492); **P**arit Jawa (694); **P**asir Panjang (728); **P**atiyu district (441); **P**atong bay (489); **P**attani town (504); **P**aya Bongkok (*Pahang*, not located); **P**aya China (549); **P**aya Indah wetland park (667); **P**aya Terubung (566); **P**edu reservoir (525, location corrected from 146); **P**enaga (see 169); **P**enanti (563); **P**engerang peninsula (708); **P**engkalan Chepa (529); **P**erdik river (649); **P**erhentian Kecil island (538); **P**erlis state park (511); **P**ermas (720); **P**ermatang

Pauh (562); Petaling Jaya (654); Pha To (462); Phanom Bencha peak (see 62); Phingkan island (*Phangnga bay*, not located); Phru To Daeng (see 142); Phulo Bulan island (507); Phulo ('Phu Lon') Le island (506); Piai point (729); Pinji (599); Port Kelang (658); Prasong (Son?) river (482); Pratong island (see 39); Pulau Raba outcrop (580); Pulau Tawar (625).

Raffles's lighthouse (see 739); Ranong port (461); Rantau Panjang, *N Selangor* (637); Rembau district (675a); Rengget island (733); Rubiah creek (= Belanak point, location corrected from 191 to 200).

Saak (Sak) island (450); Sagu forest reserve/outcrop (623); Sai Ri beach (452); Samran coast (*Trang*, not located); Sarang Buaya river (699); Satumu island (739); Satul town (513); Sauk island (see 192); Sebarok island (737); Sedili Kecil headland (705); Segantang island (534); Seginting beach (682); Sejahat island (see 399); Sekudu island (see 428); Selama town (577); Seletar (711); Seletar reservoir (714); Seletar river reservoir (712); Selim district (628); Semberong river (683); Semechek island (710); Semerah (700); Separi forest reserve (see 675a); Sepat headland (673); Serapong hill (732); Seremban town (675); Shah Alam (655); Sichol district (472); Simbang sea-stack (see 320); Singapore central catchment area (716); Siray peninsula (490); Sitiawan (614); Soi Dao peak (499); Songkhla town (501); Sri Phangnga national park (469); Stok island (see 34); Subang Jaya (see 302); Subar Darat island (735); Subar Laut island (736); Sungai Besi district (656); Sungai Buloh nature reserve, *Singapore* (see 386); Sungai Burung (635); Sungai Nibong (631).

Tak Bai district (528); Takua Pa (473); Tampin peak (679); Tanah Merah (724); Tanah Rata (605); Tanglin district (725); Tanjung Bunga (557); Tanjung Pondok forest reserve (582); Tapah (617); Tekek (see 326); Telaga Tujuh (517); Telapak Buruk peak (see 323); Teluk Bahang (558); Teluk Air Tawar (553); Tengah river (697); Tengi river (636); Teras (629); Teriang (641); Tha Chana district (467, location corrected from 9); Thai Muang coast (see 61); Tham Thot island (*Phangnga bay*, not located); Thap Phut (475); Tha Yang (448); Thung Kha inlet (454); Thung Tha Laad (476); Thung Tieo (see 82); Tikus island reclaim (556); Toi rapids (664); Ton Nga Chang wildlife sanctuary (503); Tuba island (524).

Ular island (619); Ulu Chemperuh (639); Ulu Dedap (621); Ulu Kali peak (see 281); Ulu Kelang district (643); Ulu Liang (627); Ulu Muda (see 533); Umbai (690); University of Malaya field studies centre (638); Upper Peirce reservoir (717).

Wang Kelian (510); Wang Tangga (512); Woodlands (709).

Xilin (722).

Yong Peng (695).

Plate 1 (John Gale): *Pitta caerulea* (Giant Pitta) fledgling (1); ad. female (2); ad. male (3). *Pitta sordida* (Hooded Pitta) juv. (4); ad. (5). *Pitta oatesi* (Rusty-naped Pitta) ad. male (6).

Plate 2 (John Gale): *Pitta granatina* (Garnet Pitta) fledgling (1); imm. (2); ad. (3). *Pitta guajana* (Banded Pitta) fledgling (4); ad. female (5); ad. male (6). *Pitta gurneyi* (Gurney's Pitta) fledgling (7); ad. female (8); ad. male (9).

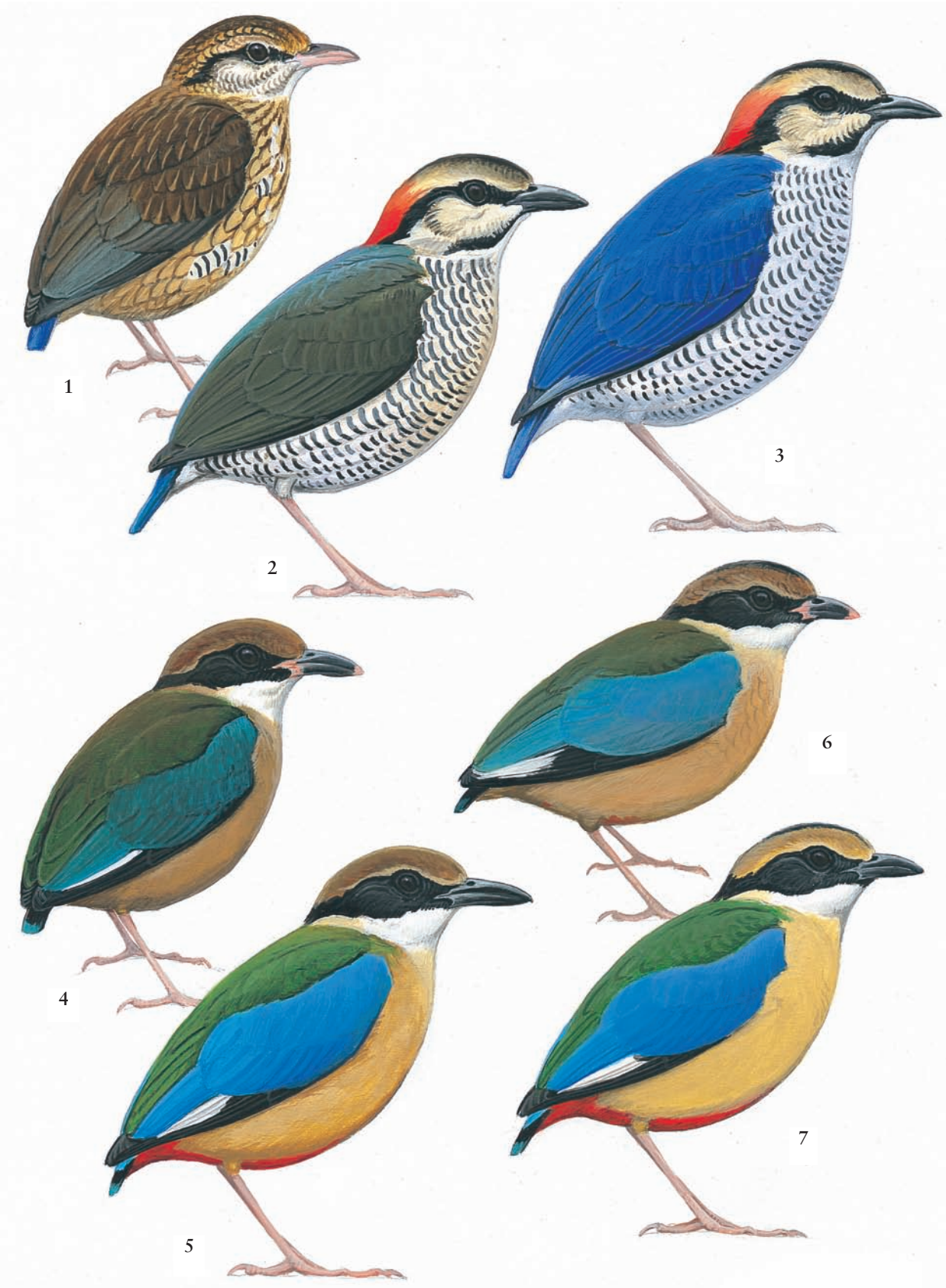


Plate 3 (John Gale): *Pitta cyanea* (Blue Pitta) juv. (1); ad. female (2); ad. male (3). *Pitta megarhyncha* (Mangrove Pitta) juv. (4); ad. (5). *Pitta moluccensis* (Blue-winged Pitta) juv. (6); ad. (7).

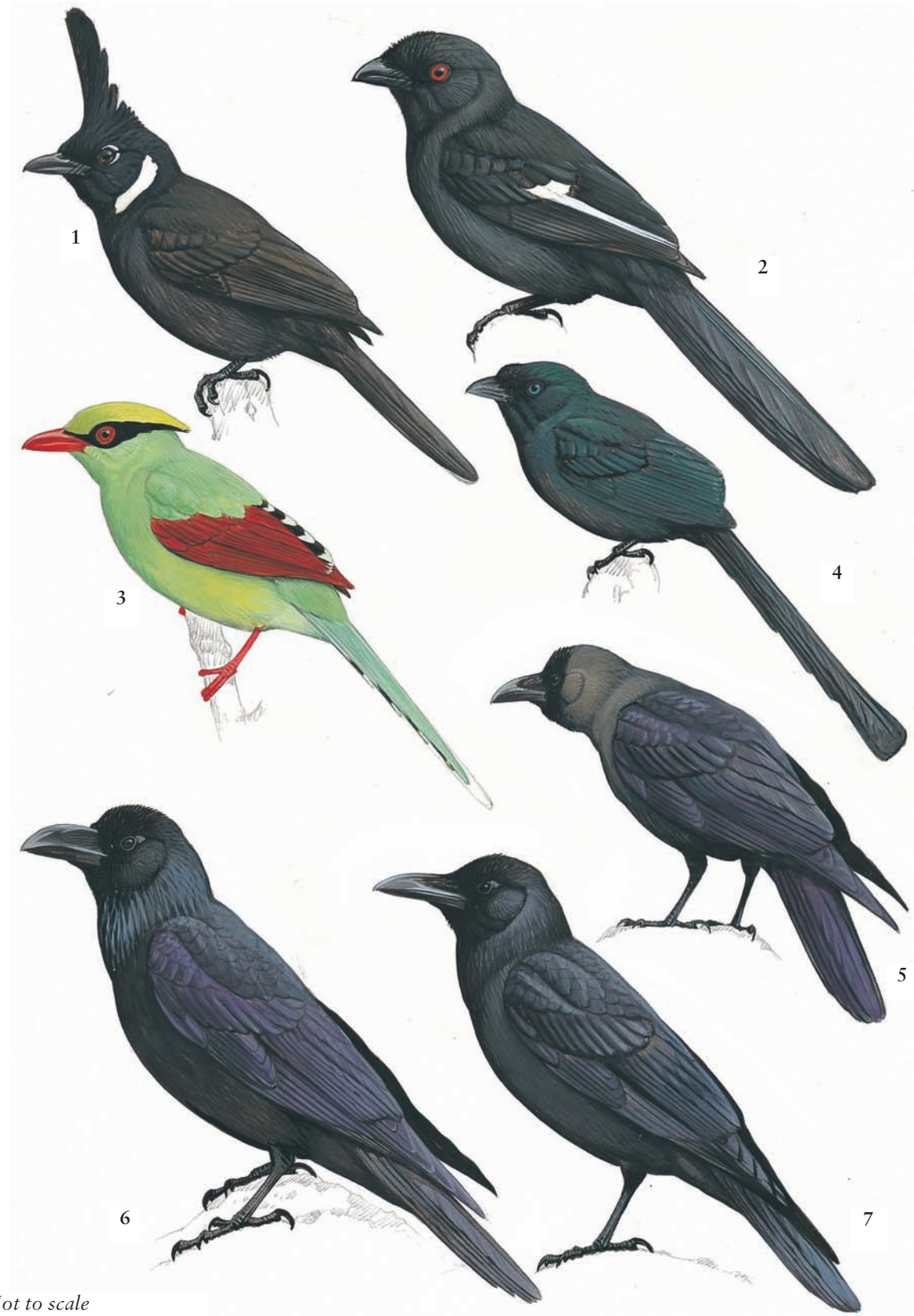
Plate 4 (Dana Gardner): *Calyptomena viridis* (Green Broadbill) ad. male (1); ad. female (2). *Psarisomus dalhousiae* (Long-tailed Broadbill) ad. (3). *Corydon sumatranus* (Dusky Broadbill) southern ad. (4); *Cymbirhynchus macrorhynchos* (Black-and-red Broadbill) ad. (5); *Eurylaimus javanicus* (Banded Broadbill) ad. female (6); ad. male (7). *Eurylaimus ochromalus* (Black-and-yellow Broadbill) ad. female (8); ad. male (9). *Serilophus lunatus* (Silver-breasted Broadbill) ad. female *rothschildi* (10).

Plate 5 (Brian Small): *Oriolus cruentus* (Black-and-crimson Oriole) ad. female (1); ad. male (2). *Oriolus xanthonotus* (Dark-throated Oriole) ad. female (3); ad. male (4). *Oriolus xanthornus* (Black-hooded Oriole) ad. male (5); ad. female (6). *Oriolus chinensis* (Black-naped Oriole) imm. *maculatus* (7); ad. male *maculatus* (8); ad. male *diffusus* (9); ad. female *diffusus* (10).

Plate 6 (Brian Small): *Coracina javensis* (Javan Cuckooshrike) ad. male (1); imm. (2). *Coracina striata* (Bar-bellied Cuckooshrike) ad. male (3); ad. female (4). *Coracina melaschistos* (Black-winged Cuckooshrike) ad. male *intermedia* (5); ad. female (6). *Coracina fimbriata* (Lesser Cuckooshrike) ad. male (7); ad. female (8). *Lalage nigra* (Pied Triller) ad. male (9); ad. female (10).

Plate 7 (John Gale): *Pericrocotus roseus* (Rosy Minivet) ad. female (1); ad. male (2). *Pericrocotus divaricatus* (Ashy Minivet) ad. female (3); ad. male (4). *Pericrocotus cantonensis* (Swinhoe's Minivet) ad. female (5); ad. male (6). *Pericrocotus cinnamomeus* (Small Minivet) ad. female (7); ad. male (8). *Pericrocotus igneus* (Fiery Minivet) ad. female (9); ad. male (10). *Pericrocotus solaris* (Grey-chinned Minivet) ad. female (11); ad. male (12). *Pericrocotus flammeus* (Scarlet Minivet) ad. female *flammifer* (13); ad. male (14).

Plate 8 (Dana Gardner): *Hemipus picatus* (Bar-winged Flycatcher-shrike) ad. female (1); ad. male (2). *Hemipus hirundinaceus* (Black-winged Flycatcher-shrike) ad. female (3); ad. male (4). *Aegithina lafresnayei* (Great Iora) ad. female (5); ad. male nominate *lafresnayei* (6). *Aegithina tiphia* (Common Iora) subad. male (7); ad. male (8). *Aegithina viridissima* (Green Iora) ad. female (9); ad. male (10).



Not to scale

Plate 9 (Brian Small): *Platylophus galericulatus* (Crested Jay) ad. (1). *Platysmurus leucopterus* (Black Magpie) ad. (2). *Cissa chinensis* (Common Green Magpie) ad. (3). *Crypsirhina temia* (Racket-tailed Treepie) ad. (4). *Corvus splendens* (House Crow) ad. (5). *Corvus macrorhynchos* (Large-billed Crow) ad. (6). *Corvus enca* (Slender-billed Crow) ad. (7).

Plate 10 (John Gale): *Lanius cristatus* (Brown Shrike) fw. nominate *cristatus* (1); ad. *lucionensis* (2); ad. *superciliosus* (3); ad. nominate *cristatus* (4). *Lanius tigrinus* (Tiger Shrike) fw. (5); ad. female spring (6); ad. male spring (7). *Lanius schach* (Long-tailed Shrike) juv. (8); ad. male (9). *Artamus leucorynchus* (White-breasted Woodswallow) juv. (10); ad. (11).

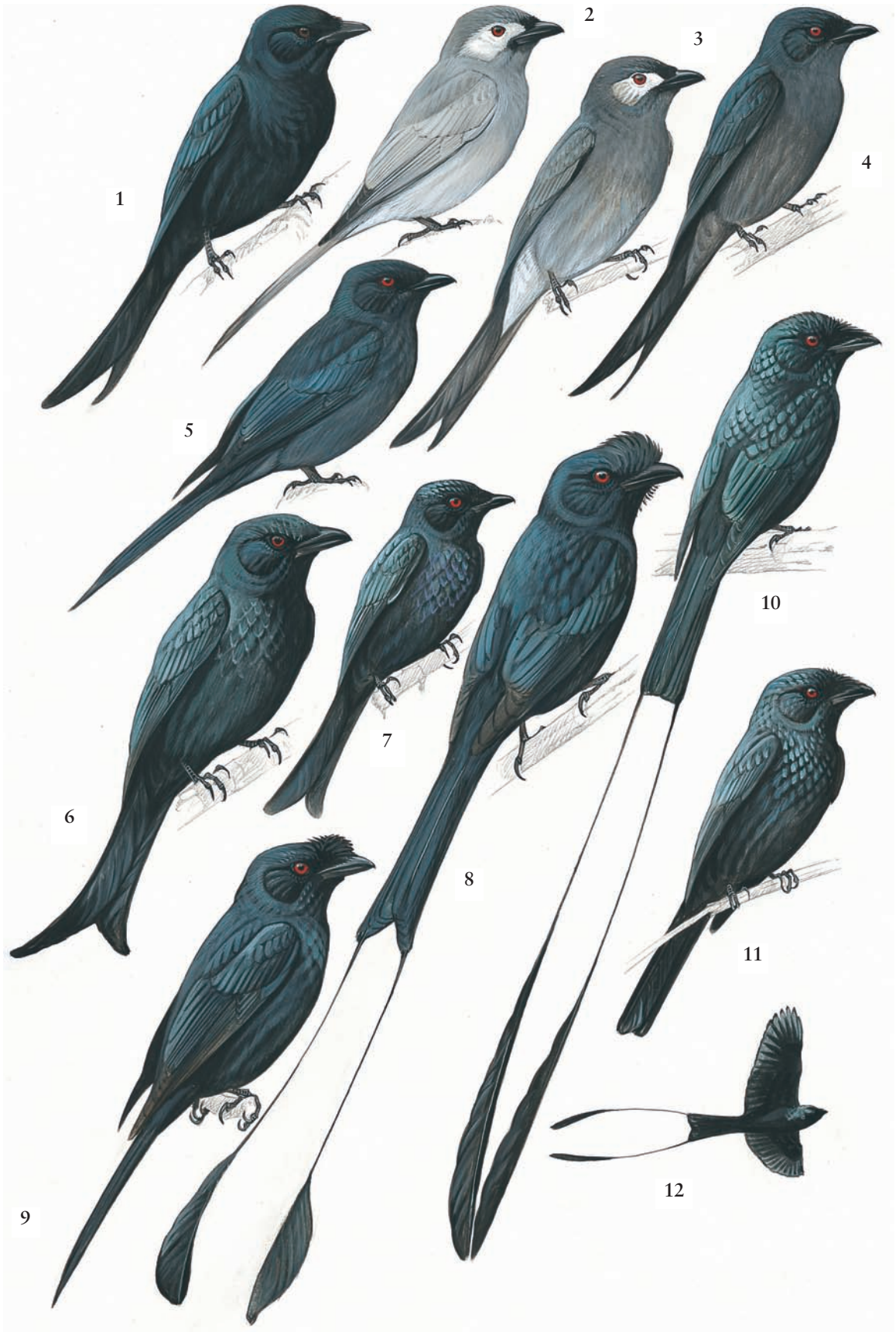


Plate 11 (Brian Small): *Dicrurus macrocercus* (Black Drongo) ad. (1). *Dicrurus leucophaeus* (Ashy Drongo) ad. *leucogenys* (2); ad. *salangensis* (3); ad. *mouhoti* (4); ad. *nigrescens* (5). *Dicrurus annectans* (Crow-billed Drongo) ad. (6). *Dicrurus aeneus* (Bronzed Drongo) ad. (7). *Dicrurus paradiseus* (Greater Racket-tailed Drongo) ad. nominate *paradiseus* (8); ad. *platurus*, rackets dropped (9). *Dicrurus remifer* (Lesser Racket-tailed Dongo) ad. (10); ad., rackets dropped (11); ad. in flight (12).

Plate 12 (Brian Small): *Rhipidura albicollis* (White-throated Fantail) ad. (1); juv. (2). *Rhipidura javanica* (Pied Fantail) ad. (3); juv. (4). *Rhipidura perlata* (Spotted Fantail) ad. (5). *Terpsiphone paradisi* (Asian Paradise-flycatcher) ad. male white morph (6); ad. male *indochinensis*, brown morph (7); ad. male *affinis*, brown morph (8); ad. male *incei*, brown morph (9). *Terpsiphone atrocaudata* (Japanese Paradise-flycatcher) ad. male (10). *Hypothymis azurea* (Black-naped Monarch) ad. male (11); ad. female (12).

Plate 13 (Brian Small): *Terpsiphone atrocaudata* (Japanese Paradise-flycatcher) ad. female (1). *Terpsiphone paradisi* (Asian paradise-flycatcher) ad. female *incei* (2); ad. female *indochinensis* (3); ad. female *affinis* (4). *Philentoma velata* (Maroon-breasted Philentoma) ad. male (5); ad. female (6). *Philentoma pyrhoptera* (Rufous-winged Philentoma) ad. male rufous morph (7); ad. female (8). *Pachycephala cinerea* (Mangrove Whistler) ad. (9); juv. (10). *Tephrodornis virgatus* (Large Woodshrike) ad. male *fretensis* (11); ad. male *annectens* (12).

Plate 14 (John Gale): *Hirundo rustica* (Barn Swallow) fw. *gutturalis* (1); ad. *mandschurica* (2); ad. *gutturalis* (3). *Hirundo tahitica* (Pacific Swallow) juv. (4); ad. (5). *Crecopsis daurica* (Red-rumped Swallow) first autumn nominate *daurica* (6); ad. nominate *daurica* (7). *Crecopsis striolata* (Striated Swallow) juv. (8); ad. (9). *Riparia riparia* (Collared Sand Martin) ad. (10). *Delichon dasypus* (Asian House Martin) ad. (11). *Ptyonoprogne concolor* (Dusky Crag Martin) ad. (12).

Plate 15 (Kamol Komolphalin): *Pycnonotus zeylanicus* (Straw-headed Bulbul) ad. (1). *Pycnonotus melanoleucos* (Black-and-white Bulbul) juv. (2); ad. (3). *Pycnonotus melanicterus* (Black-crested Bulbul) ad. (4). *Pycnonotus atriceps* (Black-headed Bulbul) ad. (5); ad. grey-phase (6); juv. (7). *Pycnonotus jocosus* (Red-whiskered Bulbul) ad. (8). *Pycnonotus squamatus* (Scaly-breasted Bulbul) ad. (9). *Pycnonotus cyaniventris* (Grey-bellied Bulbul) ad. (10). *Pycnonotus aurigaster* (Sooty-headed Bubul) ad. (11).

Plate 16 (Kamol Komolphalin): *Pycnonotus eutilotus* (Puff-backed Bulbul) ad. (1). *Pycnonotus finlaysoni* (Striped-throated Bulbul) ad. (2). *Pycnonotus goiavier* (Yellow-vented Bulbul) ad. (3). *Pycnonotus plumosus* (Olive-winged Bulbul) ad. (4). *Pycnonotus blanfordi* (Streak-eared Bulbul) ad. (5). *Pycnonotus simplex* (Cream-vented Bulbul) ad. (6). *Pycnonotus brunneus* (Red-eyed Bulbul) ad. (7). *Pycnonotus erythrophthalmus* (Spectacled Bulbul) ad. (8). *Alophoixus ochraceus* (Ochraceous Bulbul) ad. (9). *Alophoixus bres* (Grey-cheeked Bulbul) ad. (10).

Plate 17 (Kamol Komolphalin): *Alophoixus phaeocephalus* (Yellow-bellied Bulbul) ad. (1). *Alophoixus finschii* (Finsch's Bulbul) ad. (2). *Tricholestes criniger* (Hairy-backed Bulbul) ad. (3). *Iole olivacea* (Buff-vented Bulbul) ad. (4). *Iole propinqua* (Grey-eyed Bulbul) ad. (5). *Ixos malaccensis* (Streaked Bulbul) ad. (6). *Ixos flavala* (Ashy Bulbul) ad. (7). *Ixos mcclellandii* (Mountain Bulbul) ad. (8). *Hypsipetes leucocephalus* (Black Bulbul) ad. (9).

Plate 18 (John Gale): *Acrocephalus orientalis* (Oriental Reed Warbler) ad. late winter (1); ad. early winter (2). *Acrocephalus bistrigiceps* (Black-browed Reed Warbler) ad. (3). *Acrocephalus aedon* (Thick-billed Warbler) ad. (4). *Cisticola juncidis* (Zitting Cisticola) ad. female (5); ad. male (6). *Locustella lanceolata* (Lanceolated Warbler) fw. (7); ad. (8). *Locustella certhiola* (Pallas's Grasshopper Warbler) fw. (9); ad. (10). *Urosphena squameiceps* (Asian Stubtail) ad. (11).

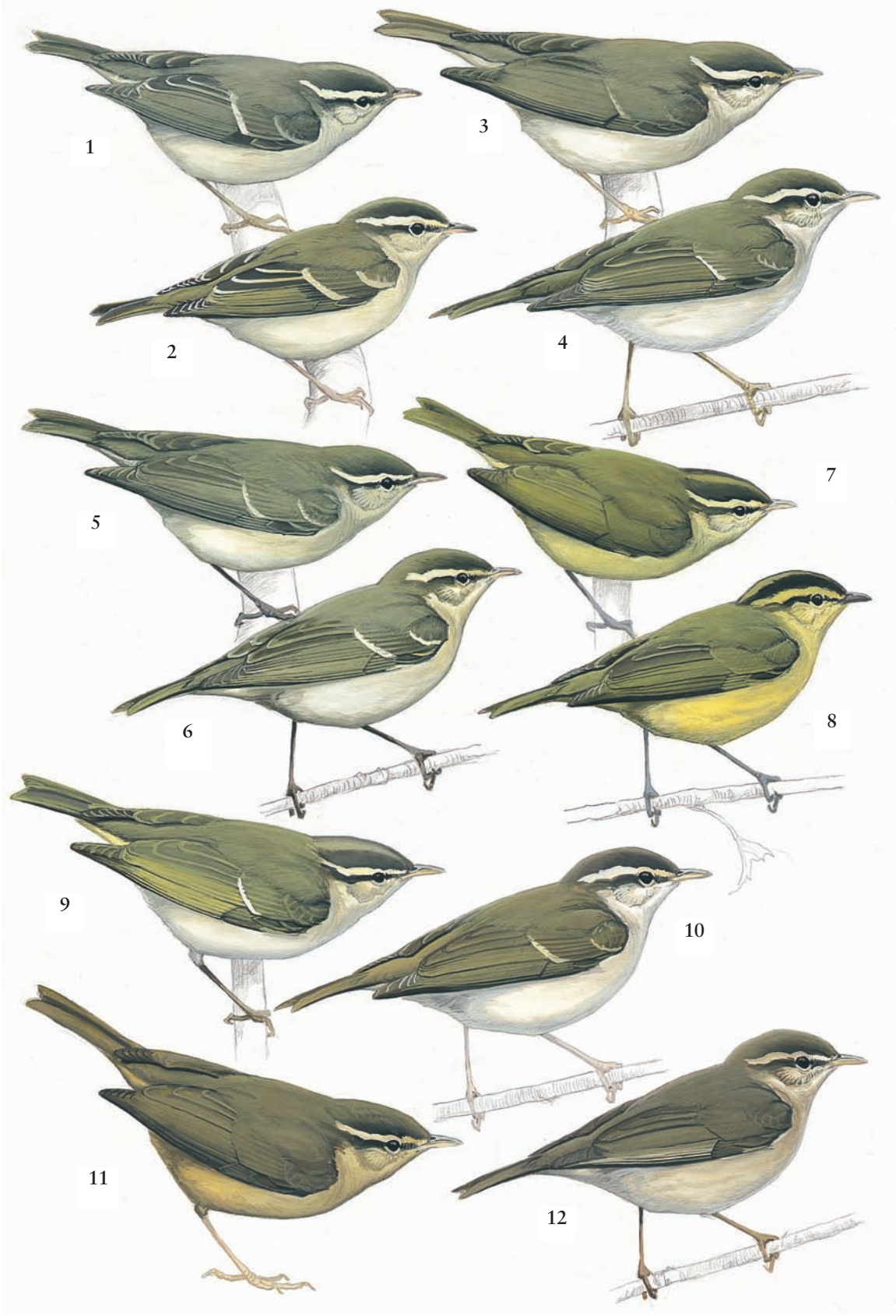


Plate 19 (John Gale): *Phylloscopus humei* (Hume's Leaf Warbler) ad. (1). *Phylloscopus inornatus* (Yellow-browed Warbler) ad. (2). *Phylloscopus borealis* (Arctic Warbler) ad. worn (3); ad. fresh (4). *Phylloscopus plumbeitarsus* (Two-barred Leaf Warbler) ad. worn (5); ad. fresh (6). *Phylloscopus trivirgatus* (Mountain Leaf Warbler) juv. (7); ad. (8). *Phylloscopus coronatus* (Eastern Crowned Warbler) ad. (9). *Phylloscopus tenellipes* (Pale-legged Leaf Warbler) ad. (10). *Phylloscopus schwarzi* (Radde's Warbler) ad. (11). *Phylloscopus fuscatus* (Dusky Warbler) ad. (12).

Plate 20 (John Gale): *Zosterops palpebrosus* (Oriental White-eye) ad. *auriventer* (1); *Zosterops japonicus* (Japanese White-eye) ad. (2); *Zosterops everetti* (Everett's White-eye) ad. *wetmorei* (3). *Gerygone sulphurea* (Golden-bellied Gerygone) juv. (4); ad. (5). *Abroscopus superciliaris* (Yellow-bellied Warbler) ad. (6). *Seicercus montis* (Yellow-breasted Warbler) juv. (7); ad. (8). *Seicercus castaniceps* (Chestnut-crowned Warbler) ad. *youngi* (9); ad. *butleri* (10); juv. (11). *Seicercus soror* (Plain-tailed Warbler) ad. (12).

Plate 21 (John Gale): *Minla cyanouroptera* (Blue-winged Minla) ad. (1). *Minla strigula* (Chestnut-tailed Minla) ad. (2). *Alcippe peracensis* (Mountain Fulvetta) ads, showing variation (3 & 4). *Alcippe brunneicauda* (Brown Fulvetta) ad. (5). *Alcippe poioicephala* (Brown-cheeked Fulvetta) ad. (6). *Alcippe castaneceps* (Rufous-winged Fulvetta) ad. (7). *Erpornis zantholeuca* (White-bellied Erpornis) ad. (8).

Plate 22 (John Gale): *Kenopia striata* (Striped Wren Babbler) ad. (1). *Pnoepyga pusilla* (Pygmy Wren Babbler) ad. (2). *Napothera brevicaudata* (Streaked Wren Babbler) ad. (3). *Napothera marmorata* (Marbled Wren Babbler) ad. (4); *Napothera macrodactyla* (Large Wren Babbler) ad. male (5). *Napothera epilepidota* (Eyebrowed Wren Babbler) ad. (6). *Pomatorhinus schisticeps* (White-browed Scimitar Babbler) ad. (7). *Pomatorhinus montanus* (Chestnut-backed Scimitar Babbler) ad. (8). *Pomatorhinus hypoleucos* (Large Scimitar Babbler) ad. (9).

Plate 23 (John Gale): *Stachyris nigricollis* (Black-throated Babbler) ad. (1). *Stachyris striolata* (Spot-necked Babbler) ad. *guttata* (2). *Stachyris leucotis* (White-necked Babbler) ad. (3). *Stachyris maculata* (Chestnut-rumped Babbler) ad. (4). *Stachyris rufifrons* (Rufous-fronted Babbler) ad. (5). *Stachyris poliocephala* (Grey-headed Babbler) ad. (6). *Stachyris nigriceps* (Grey-throated Babbler) ad. (7). *Stachyris chrysaea* (Golden Babbler) ad. (8). *Stachyris erythroptera* (Chestnut-winged Babbler) ad. (9).

Plate 24 (John Gale): *Malacopteron affine* (Sooty-capped Babbler) juv. (1); ad. (2). *Malacopteron magnirostre* (Moustached Babbler) juv. (3); ad. (4); *Malacopteron magnum* (Rufous-crowned Babbler) ad. (5). *Malacopteron cinereum* (Scaly-crowned Babbler) ad. (6). *Malacopteron albogulare* (Grey-breasted Babbler) juv. (7); ad. (8). *Macronous gularis* (Striped Tit Babbler) ad. *connectens* (9). *Macronous ptilosus* (Fluffy-backed Tit Babbler) ad. (10).

Plate 25 (John Gale): *Pellorneum capistratum* (Black-capped Babbler) imm. (1); ad. (2). *Pellorneum ruficeps* (Puff-throated Babbler) juv. (3); ad. *acrum* (4). *Trichastoma tickelli* (Buff-breasted Babbler) ad. (5). *Trichastoma rostratum* (White-chested Babbler) ad. (6). *Trichastoma bicolor* (Ferruginous Babbler) ad. (7). *Trichastoma abbotti* (Abbott's Babbler) juv. (8); ad. *abbotti* (9). *Trichastoma sepiarium* (Horsfield's Babbler) ad. (10). *Trichastoma malaccense* (Short-tailed Babbler) ad. (11).

Plate 26 (John Gale): *Garrulax lugubris* (Black Laughingthrush) ad. (1). *Garrulax leucolophus* (White-crowned Laughingthrush) ad. (2). *Garrulax mitratus* (Spectacled Laughingthrush) ad. (3). *Garrulax erythrocephalus* (Chestnut-crowned Laughingthrush) ad. (4). *Heterophasia picaoides* (Long-tailed Sibia) ad. (5). *Eupetes macrocerus* (Rail-babbler) juv. (6); ad. (7); ad. displaying (8).

Plate 27 (John Gale): *Cutia nipalensis* (Cutia) ad. female (1); ad. male (2). *Leiothrix argentauris* (Silver-eared Mesia) ad. female (3); ad. male (4). *Pteruthius melanotis* (Black-eared Shrike-babbler) juv. (5); ad. female (6); ad. male (7). *Pteruthius flaviscapis* (White-browed Shrike-babbler) ad. female (8); ad. male (9). *Gamsorhynchus torquatus* (White-hooded Babbler) ads, showing variation (10 & 11).

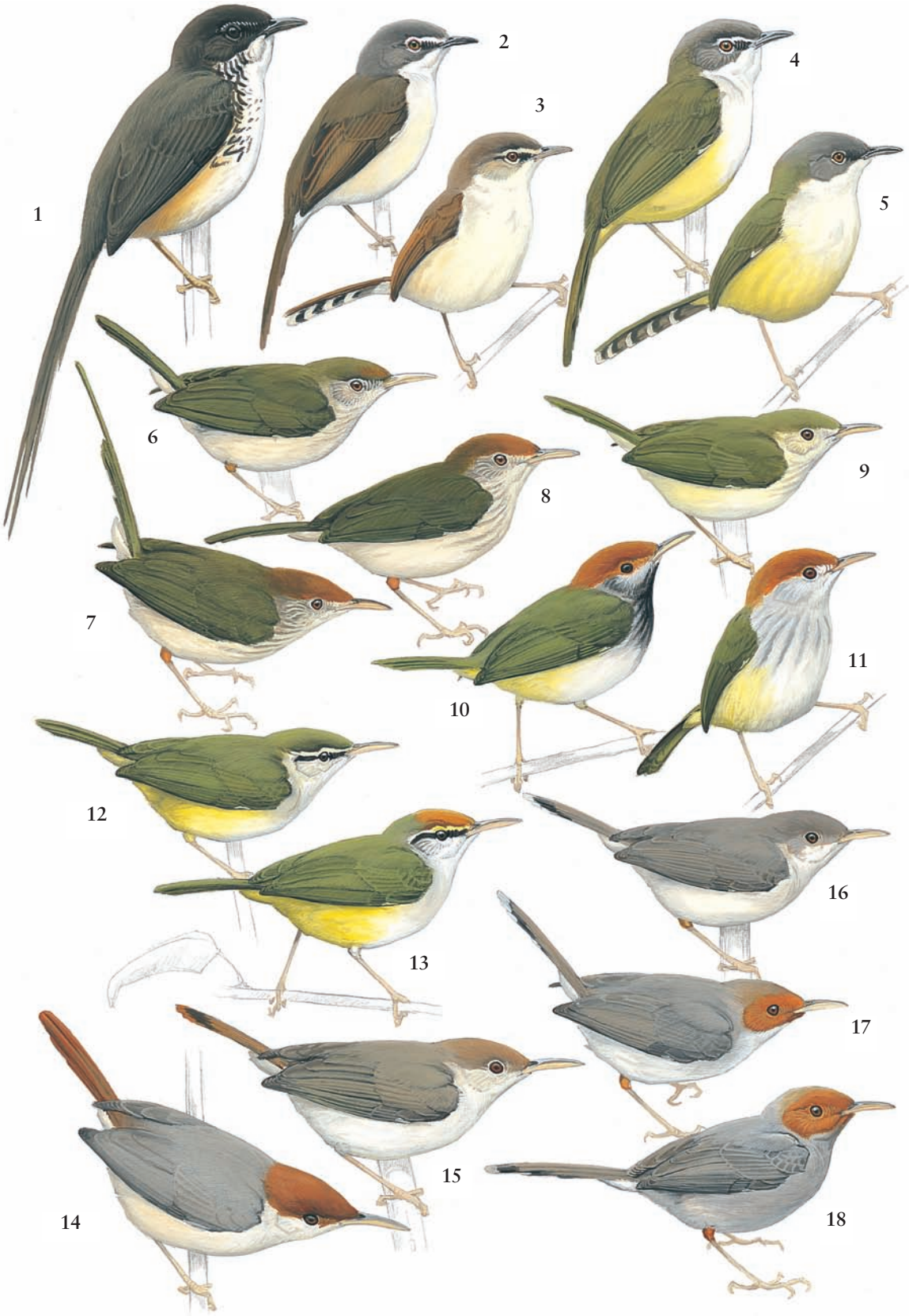


Plate 28 (John Gale): *Prinia atrogularis* (Hill Prinia) ad. (1). *Prinia rufescens* (Rufescent Prinia) ad. *extrema* (2); juv. (3). *Prinia flaviventris* (Yellow-bellied Prinia) ad. female (4); ad. male (5). *Orthotomus sutorius* (Common Tailorbird) juv. (6); ad. male (7); ad. female (8). *Orthotomus atrogularis* (Dark-necked Tailorbird) juv. (9); ad. male (10); ad. female (11). *Orthotomus cucullatus* (Mountain Tailorbird) juv. (12); ad. (13). *Orthotomus sericeus* (Rufous-tailed Tailorbird) ad. male (14); juv. (15). *Orthotomus ruficeps* (Ashy Tailorbird) juv. (16); ad. female (17); ad. male (18).

Plate 29 (Brian Small): *Aplonis panayensis* (Asian Glossy Starling) ad. (1); juv. (2). *Sturnus sturninus* (Purple-backed Starling) ad. male (3); ad. female (4). *Sturnus malabaricus* (Chestnut-tailed Starling) ad. *nemoricola* (5); ad. nominate *malabaricus* (6). *Sturnus philippensis* (Chestnut-cheeked Starling) ad. male (7); ad. female (8). *Sturnus sinensis* (White-shouldered Starling) ad. male (9); ad. female (10).

Plate 30 (Brian Small): *Sturnus pagodarum* (Brahminy Starling) ad. (1). *Sturnus roseus* (Rosy Starling) ad. winter (2); fw. (3). *Acridotheres melanopterus* (Black-winged Myna) ad. nominate *melanopterus* (4). *Acridotheres burmannicus* (Vinous-breasted Myna) ad. (5); juv. (6). *Gracupica nigricollis* (Black-collared Starling) ad. (7); juv. (8).

Plate 31 (Brian Small): *Acridotheres tristis* (Common Myna) ad. (1). *Acridotheres fuscus* (Jungle Myna) ad. (2); juv. (3). *Acridotheres javanicus* (Javan Myna) ad. (4). *Acridotheres cristatellus* (Chinese Myna) ad. male (5). *Acridotheres grandis* (Great Myna) ad. male (6). *Gracula religiosa* (Hill Myna) ad. (7). *Ampeliceps coronatus* (Golden-crested Myna) ad. (8); juv. (9).

Plate 32 (Dana Gardner): *Monticola solitarius* (Blue Rock Thrush) ad. male *madoci* (1); ad. male *philippensis* (2); ad. female *philippensis* (3). *Monticola gularis* (White-throated Rock Thrush) ad. male (4); fw. (5). *Myophonus robinsoni* (Malayan Whistling Thrush) ad. (6). *Myophonus caeruleus* (Blue Whistling Thrush) ad. *dicrorhynchus* (7); ad. *crassirostris* (8).

Plate 33 (Dana Gardner): *Zoothera sibirica* (Siberian Thrush) ad. male *davisoni* (1); ad. female nominate *sibirica* (2). *Zoothera dauma* (Scaly Thrush) ad. (3). *Turdus obscurus* (Eyebrowed Thrush) ad. female (4); ad. male (5). *Zoothera interpres* (Chestnut-capped Thrush) ad. female (6); ad. male (7). *Zoothera citrina* (Orange-headed Thrush) ad. female *citrina* (8); ad. male *citrina* (9); ad. male *innotata* (10).

Plate 34 (John Gale): *Luscinia calliope* (Siberian Rubythroat) ad. female (1); ad. male (2). *Luscinia ruficeps* (Rufous-headed Robin) ad. female (3); ad. male (4). *Luscinia cyane* (Siberian Blue Robin) ad. female (5); ad. male (6). *Myiomela leucura* (White-tailed Robin) ad. female (7); ad. male (8). *Saxicola torquatus* (Common Stonechat) fw. (9); ad. male *stejnegeri* spring (10); ad. male *stejnegeri* early winter (11). *Brachypteryx leucophrys* (Lesser Shortwing) ad. female (12); ad. male from E-central Range (13); ad. male *wrayi* (14).

Plate 35 (John Gale): *Copsychus malabaricus* (White-rumped Shama) ad. male (1); ad. female *mallopercnus* (2); late juv. (3). *Trichixos pyrropygus* (Rufous-tailed Shama) ad. male (4); imm. (5); ad. female (6). *Copsychus saularis* (Oriental Magpie Robin) ad. female south (7); ad. female north (8); juv. (9); ad. male (10).

Plate 36 (John Gale): *Enicurus ruficapillus* (Chestnut-backed Forktail) juv. (1); ad. female (2); ad. male (3). *Enicurus leschenaulti* (White-crowned Forktail) juv. (4); ad. female (5); ad. male (6). *Enicurus schistaceus* (Slaty-backed Forktail) juv. (7); ad. (8).

Plate 37 (Brian Small): *Culicicapa ceylonensis* (Grey-headed Canary Flycatcher) ad. (1). *Ficedula zanthopygia* (Yellow-rumped Flycatcher) ad. male (2). *Ficedula narcissina* (Narcissus Flycatcher) ad. male *narcissina* (3); ad. male *elisae* (4). *Ficedula mugimaki* (Mugimaki Flycatcher) ad. male (5). *Ficedula dumetoria* (Rufous-chested Flycatcher) ad. male (6). *Ficedula hyperythra* (Snowy-browed Flycatcher) ad. male (7). *Ficedula westermanni* (Little Pied Flycatcher) ad. male (8). *Ficedula solitaris* (Rufous-browed Flycatcher) ad. (9). *Muscicapella hodgsoni* (Pygmy Blue Flycatcher) ad. male (10).

Plate 38 (Brian Small): *Ficedula zanthopygia* (Yellow-rumped Flycatcher) ad. female (1). *Ficedula narcissina* (Narcissus Flycatcher) ad. female (2); late fw. male *elisae* (3). *Ficedula mugimaki* (Mugimaki Flycatcher) ad. female (4). *Ficedula dumetoria* (Rufous-chested Flycatcher) ad. female (5). *Ficedula westermanni* (Little Pied Flycatcher) ad. female (6). *Ficedula albicilla* (Taiga Flycatcher) ad. female (7); ad. male (8). *Ficedula hyperythra* (Snowy-browed Flycatcher) ad. female (9). *Muscicapella hodgsoni* (Pygmy Blue Flycatcher) ad. female (10).

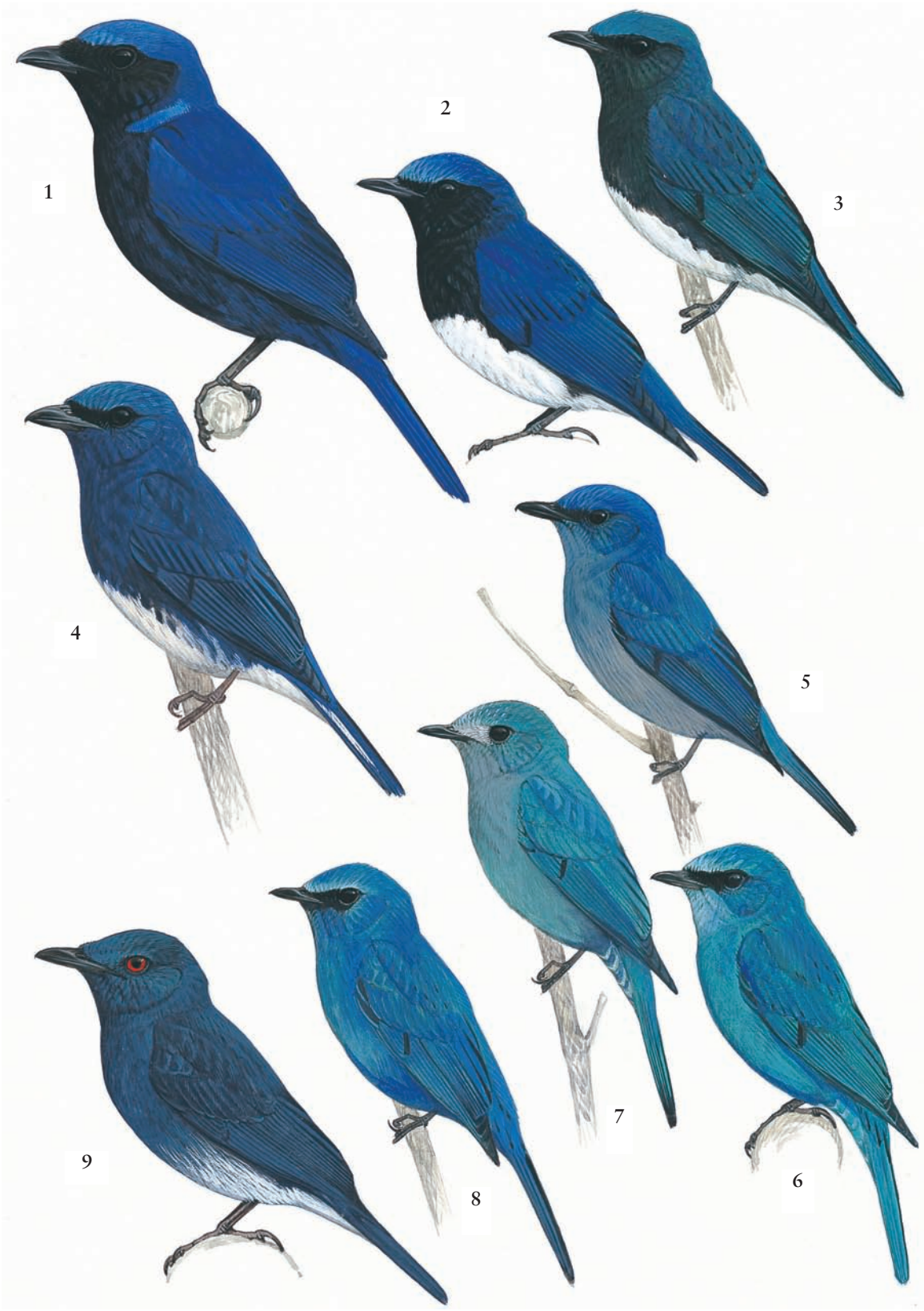


Plate 39 (Brian Small): *Niltava grandis* (Large Niltava) ad. male (1). *Cyanoptila cyanomelana* (Blue-and-white Flycatcher) ad. male *cyanomelana* (2); ad. male *cumatilis* (3). *Cyornis concretus* (White-tailed Blue Flycatcher) ad. male (4). *Cyornis unicolor* (Pale Blue Flycatcher) ad. male (5). *Eumyias thalassinus* (Verditer Flycatcher) ad. male nominate *thalassinus* (6); ad. female *thalassoides* (7); ad. male *thalassoides* (8). *Philentoma pyrhoptera* (Rufous-winged Philentoma) ad. male blue morph (9).

Plate 40 (Brian Small): *Niltava sumatrana* (Rufous-vented Niltava) ad. male (1). *Cyornis banyumas* (Hill Blue Flycatcher) ad. male *magnirostris* (2); ad. male *coerulifrons* (3). *Cyornis rubeculoides* (Blue-throated Flycatcher) ad. male *glaucicomans* (4). *Cyornis turcosus* (Malaysian Blue Flycatcher) ad. male (5); ad. female (6). *Cyornis rufigastra* (Mangrove Blue Flycatcher) ad. male (7); ad. female (8). *Cyornis tickelliae* (Tickell's Blue Flycatcher) ad. female *indochina* (9); ad. female *sumatrensis* (10); ad. male (11).

Plate 41 (Brian Small): *Niltava grandis* (Large Niltava) ad. female (1). *Niltava sumatrana* (Rufous-vented Niltava) ad. female (2). *Cyanoptila cyanomelana* (Blue-and-white Flycatcher) ad. female (3). *Cyornis banyumas* (Hill Blue Flycatcher) ad. female *coerulifrons* all-brown morph (4); ad. female *coerulifrons* grey/blue morph (5). *Cyornis concretus* (White-tailed Blue Flycatcher) ad. female (6). *Cyornis rubeculoides* (Blue-throated Flycatcher) ad. female *glaucicomans* (7). *Cyornis unicolor* (Pale Blue Flycatcher) ad. female (8). *Rhinomyias brunneatus* (Brown-chested Jungle Flycatcher) ad. (9). *Rhinomyias olivaceus* (Fulvous-chested Jungle Flycatcher) ad. (10). *Rhinomyias umbratilis* (Grey-chested Jungle Flycatcher) ad. (11).

Plate 42 (Brian Small): *Muscicapa sibirica* (Dark-sided Flycatcher) ad. nominate *sibirica* (1); ad. *cacabata/rothschildi* (2). *Muscicapa dauurica* (Asian Brown Flycatcher) ad. nominate *dauurica* (3); ad. *williamsoni* (4). *Muscicapa ferruginea* (Ferruginous Flycatcher) ad. (5). *Sitta azurea* (Blue Nuthatch) ad. (6). *Sitta frontalis* (Velvet-fronted Nuthatch) ad. male *saturatior* (7). *Melanochlora sultanea* (Sultan Tit) ad. male (8); ad. female (9). *Parus major* (Great Tit) ad. *ambiguus* (10).

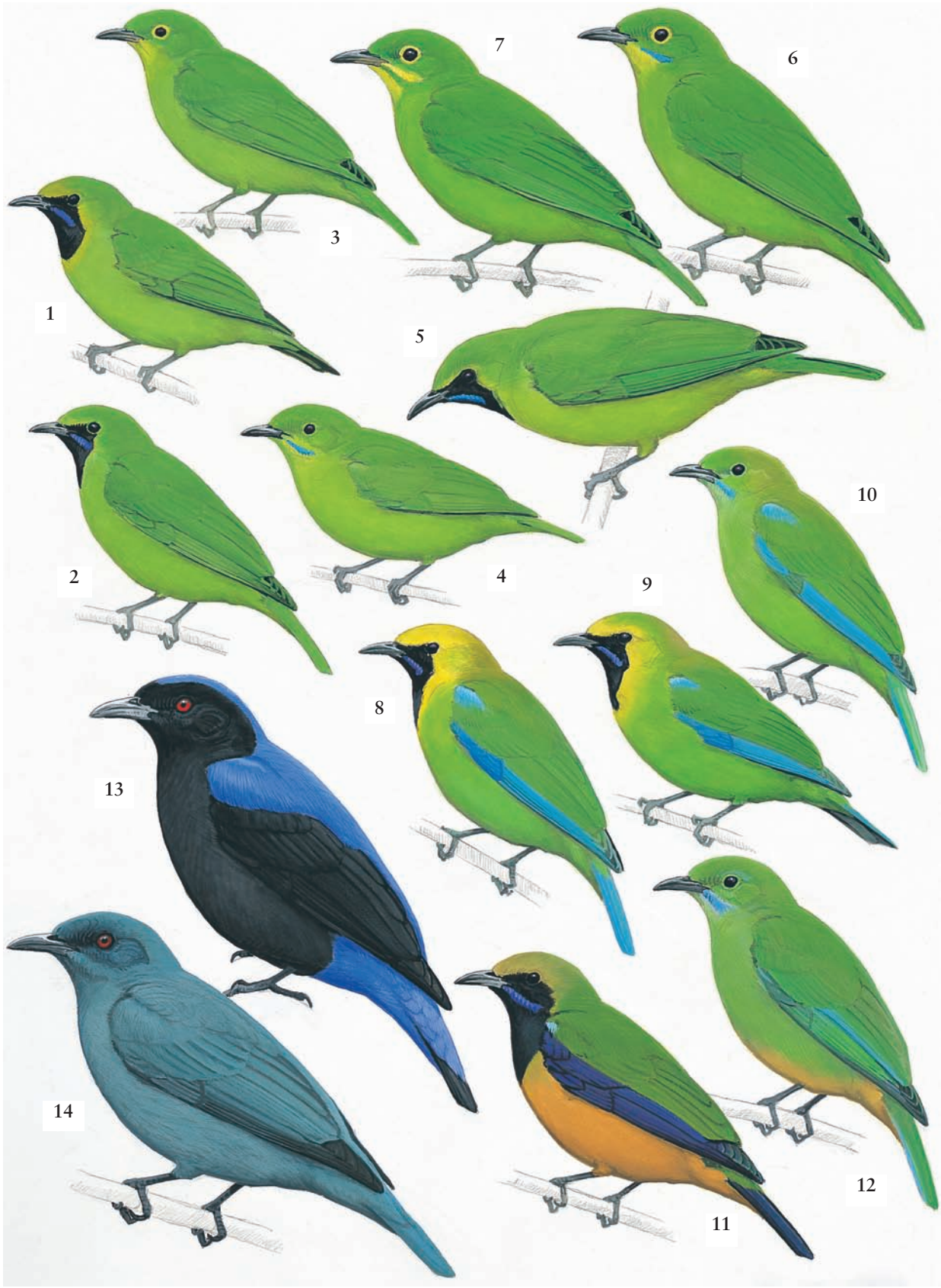


Plate 43 (John Gale): *Chloropsis cyanopogon* (Lesser Green Leafbird) ad. male *septentrionalis* (1); ad. male nominate *cyanopogon* (2); juv. male (3); ad. female (4). *Chloropsis sonnerati* (Greater Green Leafbird) ad. male (5); ad. female (6); juv. (7). *Chloropsis cochinchinensis* (Blue-winged Leafbird) ad. male *moluccensis* (8); ad. male *serithai* (9); ad. female (10). *Chloropsis hardwickii* (Orange-bellied Leafbird) ad. male (11); ad. female (12). *Irena puella* (Asian Fairy-bluebird) ad. male *malayensis* (13); ad. female (14).

Plate 44 (John Gale): *Prionochilus maculatus* (Yellow-breasted Flowerpecker) ad. female (1); ad. male (2). *Prionochilus percussus* (Crimson-breasted Flowerpecker) ad. female (3); ad. male (4). *Prionochilus thoracicus* (Scarlet-breasted Flowerpecker) ad. female (5); ad. male (6). *Dicaeum agile* (Thick-billed Flowerpecker) ad. (7). *Dicaeum everetti* (Brown-backed Flowerpecker) ad. (8). *Dicaeum concolor* (Plain Flowerpecker) ad. (9). *Dicaeum chrysorrheum* (Yellow-vented Flowerpecker) ad. female (10). *Dicaeum trigonostigma* (Orange-bellied Flowerpecker) ad. female (11); ad. male *rubropygium* (12). *Dicaeum cruentatum* (Scarlet-backed flowerpecker) ad. female (13); ad. male (14). *Dicaeum ignipectus* (Buff-bellied Flowerpecker) ad. female (15); ad. male (16).

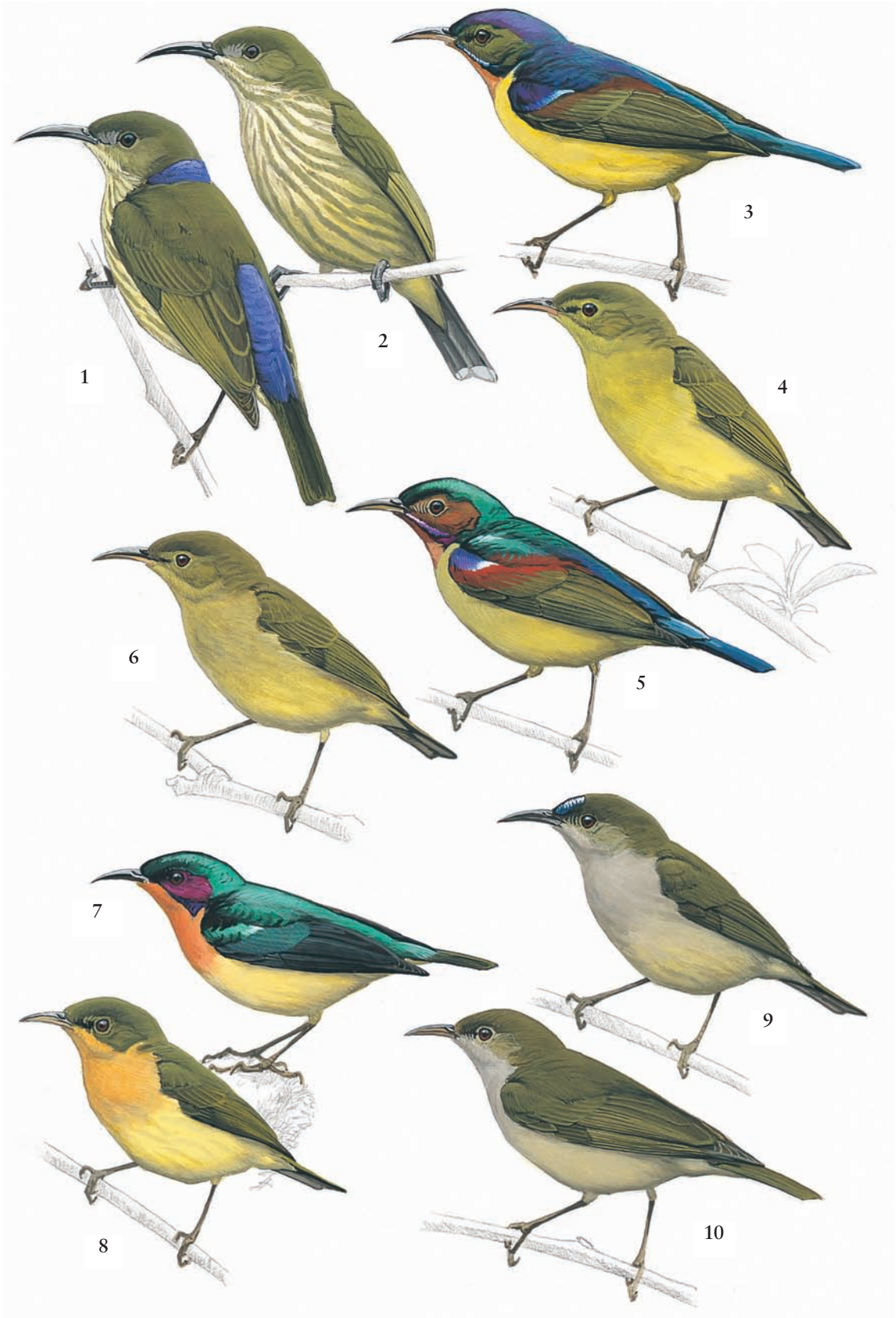


Plate 45 (John Gale): *Hypogramma hypogrammicum* (Purple-naped Sunbird) ad. male (1); ad. female (2). *Anthreptes malacensis* (Brown-throated Sunbird) ad. male (3); ad. female (4). *Anthreptes rhodolaemus* (Red-throated Sunbird) ad. male (5); ad. female (6). *Chalcoparia singalensis* (Ruby-cheeked Sunbird) ad. male (7); ad. female (8). *Anthreptes simplex* (Plain Sunbird) ad. male (9); ad. female (10).

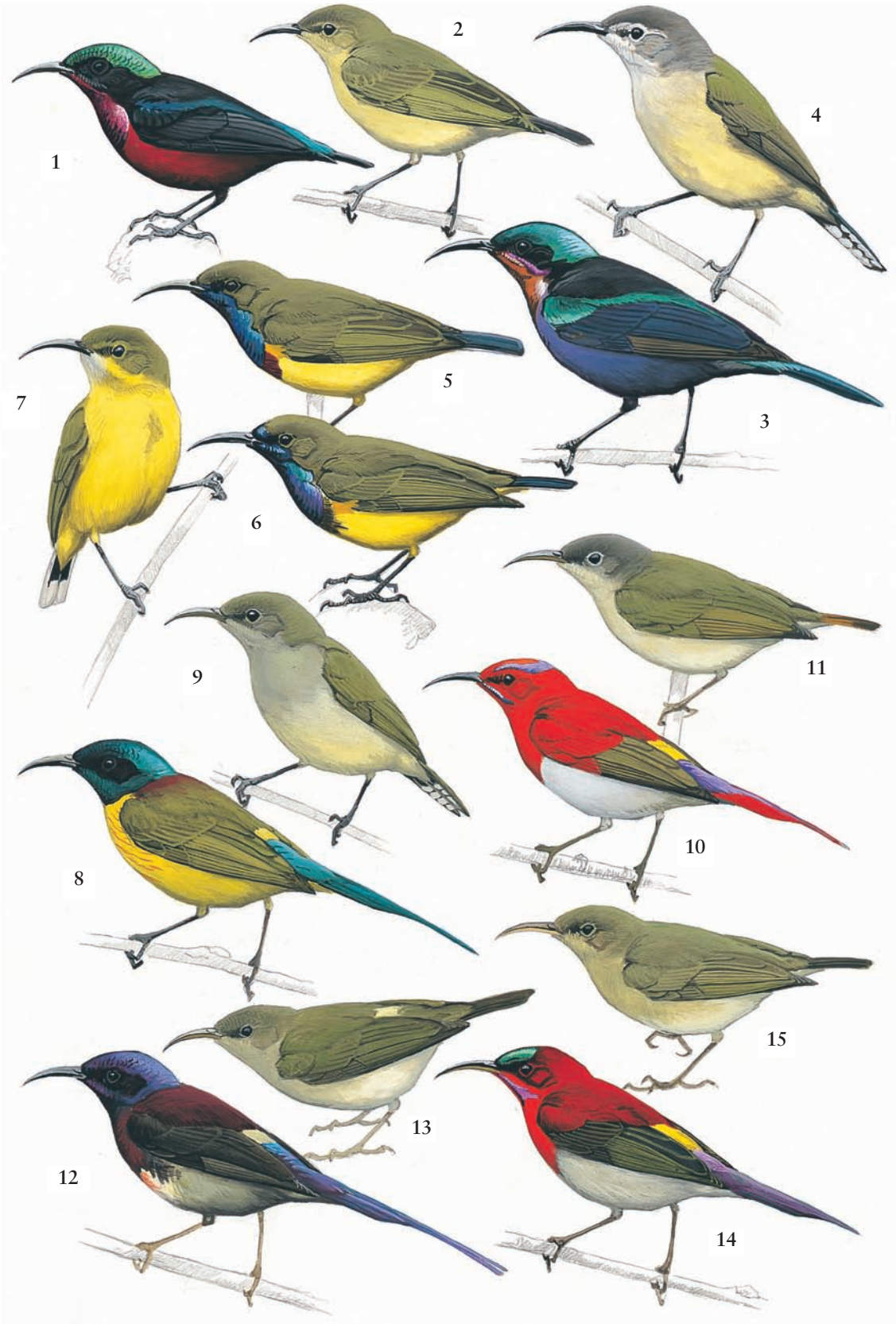


Plate 46 (John Gale): *Leptocoma sperata* (Purple-throated Sunbird) ad. male (1); ad. female (2). *Leptocoma calcostetha* (Copper-throated Sunbird) ad. male (3); ad. female (4). *Cinnyris jugularis* (Olive-backed Sunbird) ad. male *flammaxillaris* (5); ad. male *ornatus* (6); ad. female (7). *Aethopyga nipalensis* (Green-tailed Sunbird) ad. male (8); ad. female (9). *Aethopyga temminckii* (Temminck's Sunbird) ad. male (10); ad. female (11). *Aethopyga saturata* (Black-throated Sunbird) ad. male *wrayi* (12); ad. female (13). *Aethopyga siparaja* (Crimson Sunbird) ad. male *trangensis* (14); ad. female (15).

Plate 47 (John Gale): *Arachnothera crassirostris* (Thick-billed Spiderhunter) ad.(1); juv. (2). *Arachnothera longirostra* (Little Spiderhunter) ad. (3); juv. (4). *Arachnothera modesta* (Grey-breasted Spiderhunter) ad. (5). *Arachnothera robusta* (Long-billed Spiderhunter) ad. (6). *Arachnothera magna* (Streaked Spiderhunter) ad. (7). *Arachnothera chrysogenys* (Yellow-eared Spiderhunter) ad. (8); juv. (9). *Arachnothera flavigaster* (Spectacled Spiderhunter) ad. (10).

Plate 48 (Brian Small): *Motacilla citreola* (Citrine Wagtail) ad. male spring (1); ad. winter (2). *Motacilla flava* (Yellow Wagtail) ad. male *taivana* spring (3); ad. male *thunbergi* spring (4); ad. male *tschutschensis* spring, showing variation (5 & 6); fw. *tschutschensis* pale variant (7); ad. male *macronyx* spring (8). *Motacilla cinerea* (Grey Wagtail) ad. male spring (9); ad. winter (10).

Plate 49 (Brian Small): *Motacilla alba* (White Wagtail) ad. *leucopsis* winter (1); ad. male *leucopsis* spring (2); fw. *leucopsis* (3); ad. male *ocularis* spring (4); ad. male *lugens* spring (5). *Dendronanthus indicus* (Forest Wagtail) ad. (6). *Anthus richardi* (Richard's Pipit) ad. (7). *Anthus rufulus* (Paddyfield Pipit) ad. (8); juv. (9). *Anthus hodgsoni* (Olive-backed Pipit) ad. (10). *Anthus cervinus* (Red-throated Pipit) ad. male (11); fw. (12).

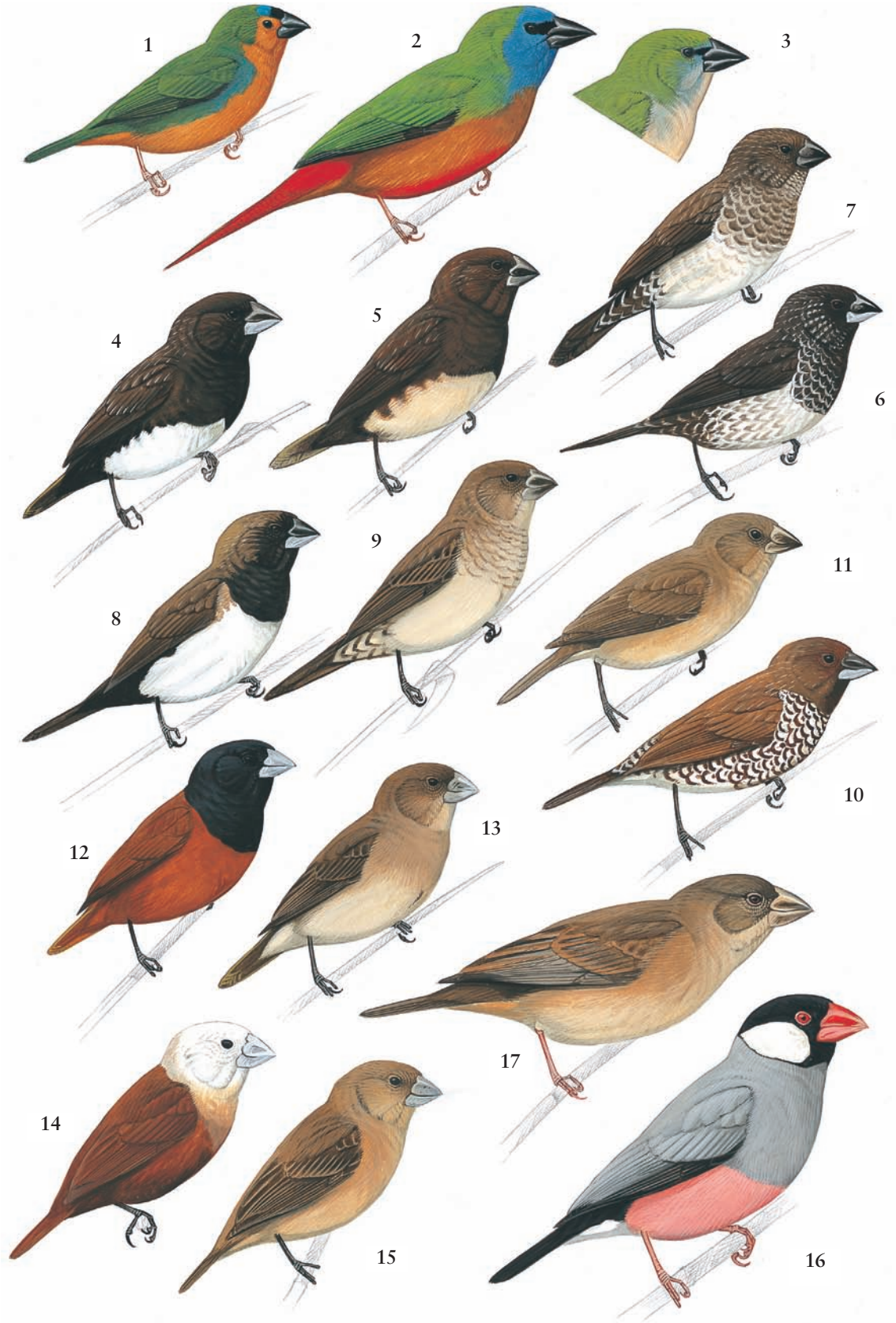


Plate 50 (Brian Small): *Erythrura hyperythra* (Tawny-breasted Parrotfinch) ad. male (1). *Erythrura prasina* (Pin-tailed Parrotfinch) ad. male (2); ad. female (3). *Lonchura leucogastra* (White-bellied Munia) ad. (4); juv. (5). *Lonchura striata* (White-rumped Munia) ad. (6); juv. (7). *Lonchura leucogastroides* (Javan Munia) ad. (8); juv. (9). *Lonchura punctulata* (Scaly-breasted Munia) ad. (10); juv. (11). *Lonchura malacca* (Chestnut Munia) ad. *sinensis* (12); juv. (13). *Lonchura maja* (White-headed Munia) ad. (14); juv. (15). *Lonchura oryzivora* (Java Sparrow) ad. (16); juv. (17).

Plate 51 (Brian Small): *Ploceus philippinus* (Baya Weaver) ad. male breeding (1); ad. female (2). *Passer flaveolus* (Plain-backed Sparrow) ad. male (3); ad. female (4). *Passer domesticus* (House Sparrow) ad. male (5); ad. female (6). *Passer montanus* (Tree Sparrow) ad. (7). *Emberiza fucata* (Chestnut-eared Bunting) ad. male spring (8); ad. winter (9). *Emberiza aureola* (Yellow-breasted Bunting) ad. male *ornata* spring (10); ad. male winter (11); ad. female spring (12). *Emberiza pusilla* (Little Bunting) ad. (13). *Emberiza melanocephala* (Black-headed Bunting) ad. male winter (14). *Pyrrhula nipalensis* (Brown Bullfinch) ad. male (15).

Addendum plate 1 (Brian Small): *Polyplectron bicalcaratum* (Grey Peacock Pheasant) ad. male (1); ad. female (2). *Ardeola grayii* (Indian Pond Heron) ad. (3). *Botaurus stellatus* (Great Bittern) ad. (4). *Anorrhinus tickelli* (Brown Hornbill) ad. male (5). *Rallus aquaticus* (Water Rail) ad. (6). *Pelecanus philippensis* (Spot-billed Pelican) ad. (7). *Pelecanus onocrotalus* (Great White Pelican) ad. (8).

Not to scale

Addendum plate 2 (Brian Small): *Turnix tanki* (Yellow-legged Buttonquail) ad. male (1); ad. female (2). *Numenius minutus* (Little Curlew) ad. (3). *Arenaria interpres* (Ruddy Turnstone) ad. spring (4); ad. winter (5). *Limnodromus scolopaceus* (Long-billed Dowitcher) ad. spring (6); ad. winter (7). *Calidris melanotos* (Pectoral Sandpiper) ad. (8). *Vanellus malabaricus* (Yellow-wattled Lapwing) ad. (9). *Recurvirostra avosetta* (Pied Avocet) ad. (10).

Addendum plate 3 (Brian Small): *Circus macrourus* (Pallid Harrier) ad. male (1); ad. female (2). *Larus atricilla* (Laughing Gull) ad. spring (3); ad. winter (4). *Anous minutus* (Black Noddy) ad. (5). *Sterna aleutica* (Aleutian Tern) ad. spring (6); ad. winter (7). *Sterna acuticauda* (Black-bellied Tern) ad. breeding (8); ad. non-breeding (9). *Pelagodroma marina* (White-faced Storm-petrel) ad. (10 & 11).

Not to scale

Addendum plate 4 (Brian Small): *Accipiter virgatus* (Besra) ad. male (1); imm. (2). *Falco naumanni* (Lesser Kestrel) ad. male (3); ad. female (4). *Falco amurensis* (Amur Falcon) ad. male (5); ad. female (6). *Clamator jacobinus* (Pied Cuckoo) ad. (7). *Glaucidium castanopterum* (Asian Barred Owlet) ad. *bruegeli* (8). *Jynx torquilla* (Eurasian Wryneck) ad. (9). *Hemicircus canente* (Heart-spotted Woodpecker) ad. male (10); ad. female (11).

SPECIES ACCOUNTS

Family PITTIDAE
Pittas: nine species

RUSTY-NAPED PITTA; Nok Taew Laew yai hua see namtaal (Thai); Burung Pacat gunung (Malay)

Pitta oatesi (Hume) 1873, *Stray Feathers* 1: 477. TL Toungoo district, S Burma.

Plate 1

GROUP RELATIONS Free-standing; overlaps the geographical ranges of similar, presumed related *P. nipalensis* and *P. soror* (Blue-naped and Blue-rumped Pittas) (Lambert and Woodcock 1996).

GLOBAL RANGE W and S Yunnan, and SE Asia in Vietnam, Laos, N Thailand, and E and S Burma to the Peninsula.

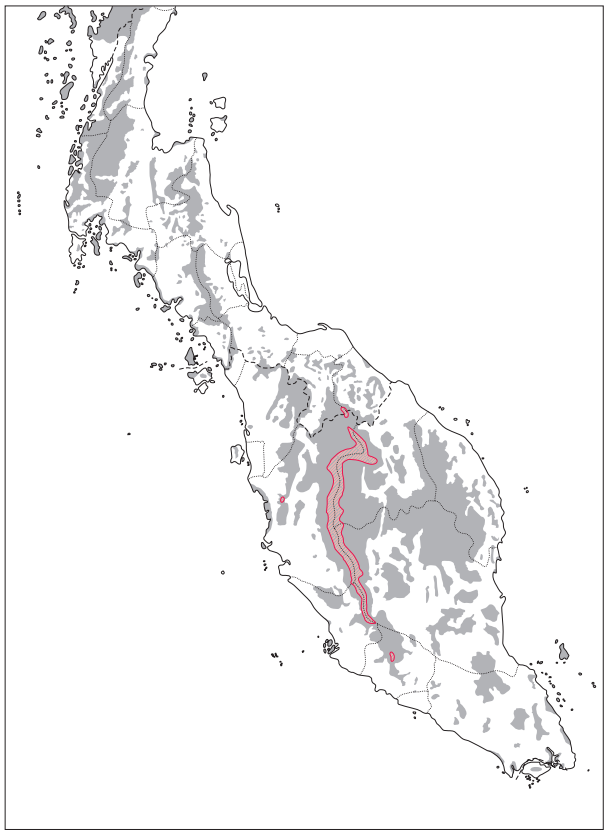
IDENTIFICATION/DESCRIPTION Smaller than Giant Pitta, with green rather than blue wings and mantle, much brighter rufous head, and no contrasting cap pattern.

Adult male. Narrow loral line from base of upper mandible, and bolder line from rear margin of eye over ear-coverts to nape, black; face and ear-coverts ashy pink; and rest of cap and neck rich tawny cinnamon, tinged pink (feathers pink-tipped). Mantle and scapulars bronze-tinged grass green; and back to upper tail-coverts bright blue (intensity varies individually), tips of tail-coverts suffused greenish. Lesser- to secondary wing-coverts as mantle; primary-coverts black. Tertials and outer-web edging of secondaries also as mantle; flight-feathers otherwise sooty brown, extreme base of primaries, white. Tail all bluish green, underside sooty brown. Below, chin and throat ashy pink merging into tawny cinnamon of neck, breast and flanks, with variably developed dark brown basal bars forming an obscure necklace across the upper breast. Belly and lower tail-coverts ashy pink; leg-feathering as flanks; and lower wing-coverts rusty buff, with primary-coverts black.

Adult female. Not described from the review area, thus it is not yet recorded, e.g., whether local females show any blue.

Juvenile. Not yet described but expected to be blackish brown above, with white-streaked cap; and rest of upperparts boldly marked with buff droplets. Below, breast dark brown spotted with white.

Bare-part colours. (Adult male only) iris dark brown; bill black, finely tipped horn brown; feet brownish pink. Other age/sex-classes undescribed.



Size (mm). (Skins: 2 males; adult) wing: 109, 110; tail 58, 58; bill 27.0, 31.8; tarsus 54.0, 51.6 (BMNH).

Weight (g). Adult males, 112, 116.

DISTRIBUTION Historical summary: *Yal*, *Pek*, *Phg*, *Sel* and *Neg*, on the Larut Range and the Main Range from Hala-Bala wildlife sanctuary (BCSTB-18) south to Telapak Buruk peak, Negeri Sembilan (two calling in a densely vegetated gulley not far below the summit on 8 August 1992) (Bromley 1952; ENGGANG-2; OBCB-10). Lambert and Woodcock (1996) assumed the specimens, including a nest and eggs, received by E. C. S. Baker (Baker 1922–26) came from the extreme north of Malaysia but W. A. T. Kellow, Baker's collector, worked in the Taiping area. Circumstantial evidence favours the

neighbouring southern part of the Larut Range over any more remote location.

GEOGRAPHICAL VARIATION On the Main Range, endemic *deborah* King 1978 (TL Fraser's Hill, Pahang): by a narrow margin the smallest (shortest-winged) subspecies, slightly darker, more richly coloured than others; in particular, brighter, more intensely blue on the rear upperparts. Baker's 1906 specimen(s) have not been relocated, and no birds from the Larut Range have been handled since.

STATUS AND POPULATION Resident and common, but not enough of its particular habitat-zone has been explored to be sure yet of a regularity rating. Up to six loud-calling, presumed territorial males counted from less than one kilometre of contour path through mature forest on the Main Range at Fraser's Hill imply Lambert and Woodcocks' (1996) five pairs per km^2 is a probable under-estimate.

HABITATS AND ECOLOGY The floor and understorey of mature Lower montane forest, with a special liking for sheltered, thickly vegetated slopes and defiles inevitably having small streams nearby, in a narrow zone between about 1000 and 1220m – constituting the most restricted elevational range of any bird in the purely Montane fauna. More strictly terrestrial, apparently, than any Lowland forest pitta of the review area, this species seems not to use raised perches for calling, is rarely caught out in the open, retreats quickly when it is, and stays largely under cover when approaching playback or imitated calls. Its only recorded use of aboveground sites is for nesting (King 1978; Lambert and Woodcock 1996) but, like other pittas, presumably, it also roosts off the ground.

FORAGING AND FOOD Picks through leaf-litter on the forest floor, presumably after concealed small animals, but no prey identified.

SOCIAL ORGANISATION Loners, and one record of a family party, at the time taken for Giant Pitta but evidently this species, that included pair-members and at least one juvenile (Allen 1959).

MOVEMENTS None reported.

SURVIVAL No information.

SOCIAL INTERACTIONS Lambert and Woodcock recorded the driving off by a breeding adult of a Common Green Magpie about to raid its nest.

VOICE The loud advertising-call, assumed to be given by territorial males, is a rich, explosive disyllable, *chiau whet* (or *whek*), the first note modulated sharply down, the second emphatic, given from cover and during a short season repeated spontaneously 6–8 times per minute in bouts of several minutes. At other times, given in response to other individuals, also to imitated calls or play-back of recordings. The peak season of spontaneous loud calling is February/early March – early June (whereas the earliest nest is dated January), with more occasional calls into August. A sharp *chek* or *whek* is given in an alarm context, near a nest under observation or to a fledgling hidden near observers, and can be prolonged into a soft churr: *wer-r-r-r-r-rt* (King 1978; Lambert and Woodcock 1996).

BREEDING

Nest. Large, globular, slightly compressed dorsoventrally, and with a side-entrance; two sited in palms, supported by old leaf-bases of a large fish-tail palm *Caryota*, and in the spiny leaf-axil of a rattan, 3–7m up. Both nests were built mainly of thick layers of dead tree and palm leaves and leaf skeletons on a base of coarse sticks, the nest-cup lined in one instance with black fibre that included (horsehair) fungal hyphae, in the other with material resembling fine grass, and roofed over with leaves. Outside diameter 22cm (longest from front to back) by 18cm high, the entrance-hole about 10cm wide. Other nests, not proven to belong to this species but in appropriate habitat and, except for presence of a platform below the entrance-hole, of similar size and make, were built at the base of overhanging rocks.

Eggs and brood. Eggs lightly glossed, white with masked, purple red flecks over the broad end and rather sparse surface speckles and squiggles of chestnut red all over but denser at the broad end. Shape broad ovate. Size (mm): 32.0–29.3 × 25.4–22.9 (n=8). One fresh (i.e., possibly not complete) clutch of two (E. C. S. Baker claimed one of four); one incubated clutch of two; and one brood of two. Incubation and fledging periods unrecorded.

Cycle. A male flushed off eggs at 1300 hours. Lambert and Woodcock mention chicks that fledged on 27/28 May from a nest that had contained two eggs on 3 March. A replacement clutch, or second brood in the same nest, is implied.

Seasonality. Eggs collected by Kellow, supposedly from the Larut Range, are dated 2 January. Main Range (Fraser's Hill) egg- and nestling dates extrapolate to laying in March (possibly February) and April (Allen 1953; BMNH; King 1978; Lambert and Woodcock 1996; M. P. Walters).

MOULT The only handlings are dated late March and early April; neither bird was moulting.

CONSERVATION *Least Concern*, bordering on *Near-threatened* (R) from the exceptional narrowness of its altitudinal range, close to the Montane/Lowland forest ecotone. *Least Concern* (G).

GIANT PITTA; Nok Taew Laew yak (Thai); Burung Pacat besar (Malay)

Pitta caerulea (Raffles) 1822, *Transactions of the Linnean Society* 13(2): 301. TL Sumatra.

Plate 1

GROUP RELATIONS Free-standing.

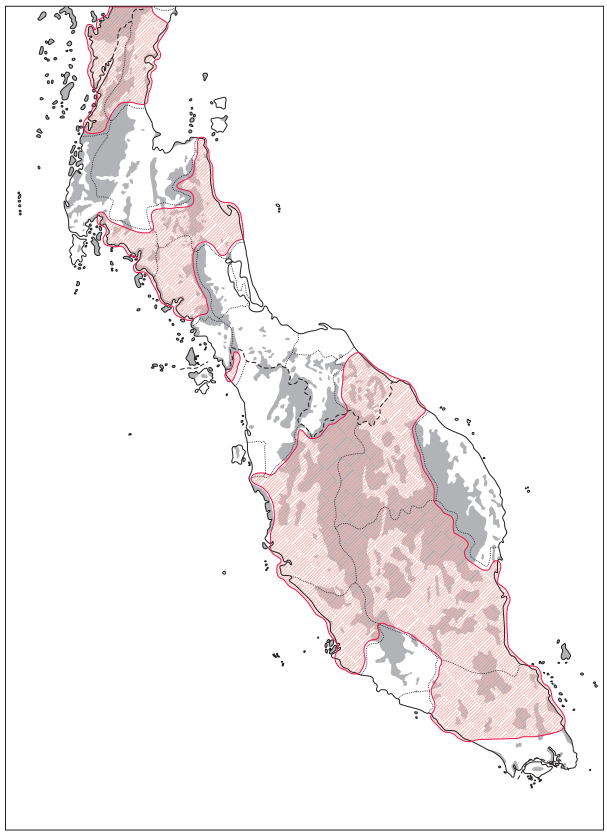
GLOBAL RANGE Tenasserim to about 14°N and SW Thailand at 13°N (BCSTB-20; OBCB-38), the Peninsula, Sumatra and Borneo.

IDENTIFICATION/DESCRIPTION Large size, and lack of any green on the wings or red on the underparts.

Adult male. An individually variable amount of the forehead to fore-crown, broad lateral crown-band, and side of face and neck, stone white to ash grey; often warmer buff on lores, around eye and/or on ear-coverts; and narrow black barring and fringing on all of this pale area gives a fine scaly pattern. Narrow band from rear edge of eye over ear-coverts, and remaining cap and upper neck to anterior mantle, black. Rest of the upper body shiny, slightly violet-shot blue. Lesser- and secondary wing-coverts as mantle; primary-coverts sooty black; and carpus-edge black with buff tipping. Distal outer-web and tip of flight-feathers ascendant from P9 smoky blue, blue area expanding and brightening on the secondaries, and tertials all blue; flight-feathers otherwise sooty black. Tail as upper body. Below, chin and throat pale pinkish grey, rest of underparts to lower tail-coverts yellow buff; fine scaly pattern of face continues across throat and upper breast, and variable black feather-bases mottle the lower throat. Leg-feathering yellow buff; and lower wing-coverts black with buff tipping.

Adult female. Whole cap to upper neck yellow buff, finely vermiculated black (3–4 bars per feather), and band from eye over ear-coverts, and anterior mantle, black. Rest of mantle tawny rufous; and back to upper tail-coverts blue, feather-edging on back tawny. Lesser- to secondary wing-coverts as mantle, and blue on flight-feathers confined to outer-web fringe. Below, black mottling reaches edge of lower throat. Otherwise as male.

Juvenile. Side of face, and cap to anterior mantle stone buff, fringed black brown in a fine scale-pattern, i.e., without contrasting cap pattern. Band from rear of eye over ear-coverts sooty black. Otherwise, upperparts and wings dull sooty brown, outer-webs of flight-feathers edged blue (in both sexes?); and tail smoky blue. Below, chin to lower tail-coverts pale sandy buff; lower throat mottled by broad black feather-bases; and breast- to flank feathers fringed whitish.



Bare-part colours. Iris dark brown (adults); bill black with red tip, and mouth-edge and lining orange red (young juvenile), all black (adult male), black with base and nostril area horn white (adult female); feet light purplish grey to lavender grey.

Size (mm). (Skins: 9 males, 3 females; adult): wing 150–158 and 154–155 (down to 139 in juveniles); tail 62.0–68.0 and 63.7–64.8 (down to 52.0 in juveniles); bill 34.5–37.8 (45.7 in one with overgrown upper mandible) and 33.3–38.6; tarsus 53.3–61.0 and 52.9–59.6 (BMNH; ZRCNUS).

Weight (g). Adult males, 202.0, 205.4 (Medway 1972; UMBRP).

DISTRIBUTION Historical summary: *Pak*, *Chu*, *Ran*, *Nak*, *Kra*, *Tra*, *Nar*, *Pes*, *?Ked*, *Kel*, *Pra*, *Pek*, *Phg*, *Sel* and *Joh*, south to Panti forest reserve (SINGAV-15).

GEOGRAPHICAL VARIATION None reported; subspecies *caerulea*, in which the female cap is finely cross-barred rather than scale-patterned black, probably throughout and of the global range except Borneo (but no determinations yet from SW Thailand).

STATUS AND POPULATION Resident, local and uncommon; more secretive, vocal over a shorter season, and generally harder to detect than other pittas, but rates of contact also suggest a population density that is naturally low, especially in the south. Twelve of the 14 specimens located were from Trang northward, where formerly at least it may have been more regular and commoner than in Malaysia (cf. Robinson and Kloss 1921–24). Annually over the mid/late 1980s, and in some years since, up to four occupied territories detected in Khao Pra-Bang Khram wildlife sanctuary, Krabi, with proof of breeding there even in small fragments of forest (Round *et al*. 1989).

HABITATS AND ECOLOGY Ground layer and understorey of the Lowland dry-land forests, mature and disturbed to the point where the stand may contain few or no large trees but has regenerated back to a more or less stratified, closed-canopy structure; also freshwater swamp forest, and occasionally enters overgrown rubber gardens adjacent to forest – at plains-level (including extreme lowland sites: BR 1962) and on slopes. Recorded to 885m on the E-central Range (Khao Luang), but not above 245m in Malaysia (King 1966; Medway 1972; Round *et al*. 1989). A claim of 915m on Khao Phanom Bencha (Krabi) (Meyer de Schauensee 1946) is unsafe, and there has been no confirmation of occurrence anywhere in Montane forest (see Rusty-naped Pitta).

Like other pittas, roosts off the ground on a thin, pliable perch in the understorey (Medway 1972).

FORAGING AND FOOD Large ants (from stomach contents); gastropods including tough-shelled forest snails (*Cyclophorus*), up to 6cm across, held in the bill, anvilled on rocks and extracted with operculum attached (Hume and Davison 1878; Round *et al*. 1989); and Robinson and Kloss (1921–24) collected a male as it ate a small snake. Almost 40 percent of 65 items identified as they were delivered by a pair to its young in a Krabi nest were snail bodies, a further 40 percent large earthworms, the balance a mixture of small worms, large insects, insect larvae and a frog (Round *et al*. 1989). Most prey is likely to have been taken on or under forest-floor litter, and Lambert and Woodcock (1996) mention searching by litter-flicking.

SOCIAL ORGANISATION Loners, pairs and family parties are the only known social units. Believed to be strongly territorial (Lambert and Woodcock 1996).

MOVEMENTS None confirmed. Whereas localised shifts between seasonally wetter or drier ground are likely, no support has been found for W. R. Davison's claim (Hume and Davison 1878) that in Tenasserim Giant Pittas are migratory (see also Gurney's Pitta).

SURVIVAL No information.

SOCIAL INTERACTIONS No information.

VOICE The loud, presumed territorial advertising-call (attracting males when imitated or played back), given by a male in captivity (D.A. Holmes) and traced only to males in the field, is a mournful whistle, down-inflected towards the end, *hwoo-er* or *hwee-er* (Lambert and Woodcock 1996). A shorter, discordant *phreew* heard from adults of both sexes and also from juveniles is repeated in bouts of up to three minutes, but occasionally much longer, with intermittent insertion (apparently only by males) of a lower or flatter-sounding note. Calls are given from the ground, fallen timber or, occasionally, a branch in the understorey, most intensively in the early morning and late evening (Lambert and Woodcock 1996; McLoughlin 1988; Round *et al*. 1989). The main months of territorial calling are April and June, with occasional vocalising at other times (including, at Khao Pra-Bang Khram, late January and mid-August: BCSTB-13, -15).

BREEDING

Nest. Large, domed, higher than wide but roof slightly flattened, with lateral entrance, sited quite conspicuously 0.85–3m up within the frond bunch of a spiny, stemless, understorey palm (*Licuala*) or in the leaf-axil of a rattan, in both tall and disturbed forest, once only 10m from the edge of a farm clearing. Built on a stick base, of a mix mainly of dry palm and bamboo leaflets, with fibrous lining to the cup; one nest was 21cm across by 32 high, its entrance-hole 14 × 12cm in diameter, fronted by a ledge.

Eggs and brood. The only eggs described from the review area were off-white speckled with brown, the speckles largest and sparsest at the narrow apex, finest and most concentrated in a ring around the broad end. Shape ovate. Size (mm): 35 × 30 (average of two). Two clutches of two, and a brood of two. Incubation period not recorded, but fledglings left the nest at about day 16 from hatching.

Cycle. Both sexes incubate and brood, the female overnight and to within two days of chicks leaving the nest. Even so, one of two broods under observation at Khao Pra-Bang Khram was taken by a snake. Mates