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Revision of the *Bengalia torosa* Wiedemann, 1819 species-group (Diptera: Calliphoridae), with notes on the systematic position of *B. robertsi* Kurahashi, 1987 and *B. subnitida* James, 1964

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Abstract

The mainly Oriental *Bengalia torosa* Wiedemann species-group is revised on the basis of males. Species concepts are based on male terminalia. Monophyly of the species-group is established on the basis of two unique synapomorphies of the distiphallus. Eleven species are recognized as valid, viz. *Bengalia chekiangensis* Fan, 1965, *Bengalia chiangmaiensis* Kurahashi & Tumrasvin, 1979, *Bengalia concava* Malloch, 1927, *Bengalia escheri* Bezzi, 1913, *Bengalia fuscipennis* Bezzi, 1913, *Bengalia jejuna* (Fabricius, 1787), *Bengalia kanoi* Kurahashi & Magpayo, 2000, *Bengalia martinleakei* Senior-White, 1930, *Bengalia recurva* Malloch, 1927, *Bengalia torosa* (Wiedemann, 1819), *Bengalia xanthopyga* Senior-White, 1924, and their geographical distributions are updated. The following new synonymies are proposed: *Bezzigalia rivanella* Lehrer, 2005 is a junior synonym of *B. escheri*, **syn. nov.**; *Bengalia siamensis* Senior-White, 1924, *Gangelomyia kosungana* Lehrer, 2007 and *G. laoziella* Lehrer, 2007 are junior synonyms of *B. fuscipennis*, **syn. nov.**; *Gangelomyia evafoneae* Lehrer, 2005 and *G. senausmarta* Lehrer, 2005 are junior synonyms of *B. jejuna*, **syn. nov.**; *Gangelomyia indipyga* Lehrer, 2005, *G. philipyga* Lehrer, 2005, *G. schiavoae* Lehrer, 2005, *G. shivanella* Lehrer, 2005, *G. tagaloga* Lehrer, 2005 and *G. phantastika* Lehrer, 2007 are junior synonyms of *B. kanoi*, **syn. nov.**; *Gangelomyia gandhiana* Lehrer, 2005 and *G. krishna* Lehrer, 2005 are junior synonyms of *B. martinleakei*, **syn. nov.**; *Laoziana camerina* Lehrer, 2005, *L. mandarina* Lehrer, 2005 and *L. singhasaria* Lehrer, 2005 are junior synonyms of *B. recurva*, **syn. nov.** Lectotypes are designated for *Musca favillacea* Walker, 1859 and *Bengalia escheri* Bezzi, 1913. A male syntype of *Musca torosa* Wiedemann, 1819 has been located in NHMD and a female syntype of the same nominal species has been located in NMW. A male specimen in NHMD is proposed as neotype for *Musca jejuna* Fabricius, 1787, to replace the three existing female syntypes. A male specimen in NHMD is proposed as neotype for *Musca torosa* Wiedemann, 1819, to replace the newly located syntypes. The ICZN Commission will be requested, in a forthcoming paper, to formally set aside the existing name-bearing types of both nominal species and designate the proposed specimens as neotypes, in order to preserve the current usage of both names. *Musca favillacea* Walker, 1859 is removed from synonymy with *Bengalia jejuna* and treated as an unplaced name in the *Bengalia torosa* species-group. *Bengalia robertsi* Kurahashi, 1987 is removed from the *Bengalia torosa* species-group and re-assigned to the *Bengalia labialis* Robineau-Desvoidy species-group. *Bengalia subnitida* James, 1964 is assigned to the *Bengalia peuhi* Villeneuve species-group even though it lacks discal setae on the fifth abdominal tergite. Two new terms are introduced for description of the distiphallus of the *B. torosa* species-group. *Bengalia recurva* Malloch is reported for the first time from China.

Key words: Diptera, Calliphoridae, Bengaliinae, *Bengalia*, *Bengalia torosa* species-group, *Bengalia peuhi* species-group, revision, new synonyms, syntypes, neotypes, Oriental Region

Introduction

The present work is a sequel to my earlier papers on the genus *Bengalia* Robineau-Desvoidy (Rognes 2006, 2009b, 2011a, 2011b, 2012). Those papers completed the revision of the *Bengalia peuhi* Villeneuve and *Bengalia spinifemorata* Villeneuve species-groups.

The present paper revises the *Bengalia torosa* Wiedemann species-group, based on males only. Lehrer (2005, 2007) treated 24 species in this group (as Gangelomyiinae, a subfamily of his "family" Bengaliidae, equivalent to the genus *Bengalia* of current authors). Eighteen species were described by him as new to science, even though he omitted to study a number of nominal species that were obvious candidates as senior synonyms of his own species. Lehrer (2005) also created five new "genera" for these species. These generic names were all synonymized under *Bengalia* by Rognes (2006), who also listed the names of the nominal species neglected by Lehrer. A sixth new nominal genus, *Sindhigalia* Lehrer, 2006b, was created to replace *Ochromyia* Lehrer, 2005.

A long-standing nomenclatural problem in the group has been that of the names of species based on assumed female types, such as *Musca jejuna* Fabricius, 1787 and *Musca torosa* Wiedemann, 1819, for a long time assigned to the genus *Bengalia*. Very few females are identifiable to species at present, and the assumed female types of these two nominal species had not been studied for a long time (*Musca jejuna*) or had not been traced at all (*Musca torosa*), which led to opposing interpretations of the names, not based on hard evidence.

Lehrer (2005) rejected the use of female types altogether, did not examine any of them, and chose instead to create his own names, an approach doomed from the start (Rognes 2006).

The objectives of the present work are:

(1) to revise and diagnose males of all the species in the *Bengalia torosa* species-group, mainly on the basis of genital features;
(2) to establish complete synonymies and a sound nomenclature based on the name-bearing types of all nominal species belonging to the group;
(3) to propose neotypes in those cases where the identity of the types threatens the currently accepted nomenclature;
(4) to document in considerable detail the morphology of the terminalia of all the species under study, and to document the morphology of the distiphallus from several angles of view using light microscopy;
(5) to introduce two new descriptive terms for the distiphallus;
(6) to update the geographical distributions of the species.

Material and methods

Abbreviations for specimen depositories. BPBM—Bernice Pauahi Bishop Museum, Honolulu, Hawaii, USA; CMNH—Carnegie Museum of Natural History, Pittsburgh, Pennsylvania, USA; CNC—Canadian National Collection of Insects, Arachnids and Nematodes, Ottawa, Canada; ETHZ—Eidgenössische Technische Hochschule Zürich, Switzerland; HUS—Systematic Entomology, Research Faculty of Agriculture, Hokkaido University, Sapporo Japan [Matsumura's collection]; IDD—International Department of Dipterology, Tokyo, Japan [Hiromu Kurahashi's collection]; KR—Private collection of Knut Rognes, Oslo, Norway [ultimately to be transferred to OUMNH]; MNHN—Muséum national d'Histoire naturelle, Paris, France; MSNM—Museo Civico di Storia Naturale, Milan, Italy [Bezzi's Diptera collection, box 167]; NHMD—Zoological Museum, Natural History Museum of Denmark, University of Copenhagen, Copenhagen, Denmark (formerly ZMUC); NHMUK—Natural History Museum, London, United Kingdom (formerly BMNH); NIID—Reference Museum, Department of Medical Entomology, National Institute of Infectious Diseases, Tokyo, Japan; NMW—Naturhistorisches Museum Wien, Vienna, Austria; NSMT—Department of Zoology, National Museum of Nature and Science, Ibaraki, Japan; OUMNH—Oxford University Museum of Natural History, Oxford, United Kingdom; SDEI—Senckenberg Deutsches Entomologisches Institut, Müncheberg, Germany; SMNS—Staatliches Museum für Naturkunde Stuttgart, Stuttgart, Germany; SIBSCAS—Shanghai Entomological Museum, Institute of Plant

Physiology and Ecology, Shanghai Institute of Biological Sciences, Chinese Academy of Science, Shanghai, China [formerly Shanghai Institute of Entomology, IEAS]; USNM— National Museum of Natural History, Smithsonian Institution, Washington, D.C., USA; WSU—Washington State University, The James Entomological Collections, Pullman, Washington, USA; ZMHB—Museum für Naturkunde, Leibniz-Institut für Evolutions- und Biodiversitätsforschung an der Humboldt-Universität zu Berlin, Berlin, Germany; ZMUM—Zoological Museum, Moscow State University, Moscow, Russia.

Abbreviations used in text for setae and abdominal sclerites. *a*—anterior; *ad*—anterodorsal; *av*—anteroventral; *ia*—intra-alar seta; *p*—posterior; *pv*—posteroventral; *v*—ventral; ST—abdominal sternite; T—abdominal tergite.

Abbreviations used in figures of terminalia. *bsp*—bacilliform sclerite process; *dlp*—distal lip projection or process; *dsur*—distal surstylus; *e*—external hypophallic lobe; *i*—internal hypophallic lobe; *lf*—lateral finger; *pog*—postgonite; *prg*—pregonite; *psur*—proximal surstylus; *sd*—semidomes; *ul*—upper lip.

Condition of material, photography, scale bars, measurements, terminology, distribution and geographic names. Almost all primary types of all nominal species were studied, as well as non-type material from a number of museums. The studied material had in general been correctly identified and published, but some museum collections contained unidentified or misidentified material. The study includes specimens previously studied by Lehrer (2005, 2006a, 2007). This material has, in general but with some exceptions (e.g., the holotype of *Gangelomyia gandhiana* Lehrer), been impossible to use for photography under a compound microscope because of its infiltration with a substance (likely Canada balsam) that not only limits the amount of light passing through these fragile structures, but also considerably distorts them. Figures 193–194, showing the distiphallus of the holotype of *Laoziella singhasaria* Lehrer (a junior synonym of *Bengalia recurva* Malloch), highlight the effect of the infiltrated Canada balsam on the distiphallus of *Bengalia recurva* and should be compared with Figs 187–190, which are based on a method of preparation not involving Canada balsam. The problem with Lehrer's method of preparation was discussed in detail by Rognes (2011a: 3, 2012: 6), based on Lehrer's own description of his method (Lehrer 2011). The best photographs of Lehrer's material are obtained through a stereomicroscope, which unfortunately does not deliver the high resolution or contrast of a compound microscope. Nevertheless, low quality photographs were deemed better than none at all for the purposes of the current paper. A useful comparison is that between Figs 103–105, 110 (made through a compound microscope) and Figs 117–119, 122 (made through a stereomicroscope). Both series show specimens of *Bengalia jejuna* (Fabricius), but the second series is based on a specimen prepared by Lehrer and likely infused with Canada balsam.

Dissection of material not already dissected by Lehrer was done following the method described in Rognes (2009b).

Labels were photographed with an Olympus TG2 camera. This has a zoom option and the labels were photographed at high magnification. The method used for other photographs is explained in Rognes (2009b, 2012). Images were edited with Adobe Photoshop Elements version 9.0.3.

The distiphallus was, as a rule, photographed under a compound microscope (see Rognes 2009b) from four angles: dorsal, lateral (usually from the left side), ventral and apical (i.e., from the tip). It was a difficult and very time-consuming task, involving numerous repetitive attempts even to position the object in glycerol so that it remained still for a sufficient length of time for a series of exposures to be obtained for stacking. In most cases it was not possible to place the object exactly in the desired positions. Furthermore, it was impossible to reproduce exactly the same position of the distiphallus or other structures from one specimen to the next, so the reader must refrain from interpreting minor differences in the details of the photographs as being of great significance. From the four directions of view it is hoped that the reader is able to mentally visualize the three-dimensional structure of the distiphallus. For some species and features (e.g., the distiphallus in apical view), several figures have been included, each at a different focus point in order to illustrate certain characteristics.

Scale bars are placed only on the figures based on photographs taken under a compound microscope. In all cases, an eye-piece with magnification of 6.5x was used. Depending on the size of the object, 3.5x or 10x magnification objectives were used. Figures taken under a stereomicroscope (see Rognes 2009b) have not been given scale bars because the photographs were not taken from fixed magnification stops. To put scale bars on these photographs would have required photography of a micrometer slide for each and every photograph, which was not feasible with the equipment available.

Body length was measured from front of head to tip of abdomen to the nearest 0.5mm, by holding the

specimen over a ruler with a millimetre scale; wings were excluded. In many specimens dissected by Lehrer, the terminalia had been removed from the underside of the abdomen and not by cutting off the tip of the abdomen, so the measurements are only slightly too short. Frons width / head width ratios were measured with an eyepiece reticule with 120 subdivisions, the head width zoomed to fill the whole length of the reticule.

The general morphological terminology follows Rognes (1991), except that *phallus* is employed instead of *aedeagus*. The various terms used for the description of the *Bengalia* phallus follow those defined and employed by Rognes (2009b) for the *Bengalia peuhi* species-group. Geographical names follow *The Times Comprehensive Atlas of the World*, *10th Edition*, *1999* (*Millenium Edition*), or *Google Earth* (version 6.1.0.5001). Malaysia is treated as consisting of three parts: West Malaysia (the peninsular part), Sarawak and Sabah (both on the island of Borneo). In the Distribution section, an asterisk (*) means that specimens from that country were examined in this study.

Format of lists of material. In lists of specimens, label data are cited from top to bottom of the pin and lines on labels are separated by a forward slash (/). Labels are individually numbered with numbers in parentheses. Specimens are listed according to alphabetical order of depository. Within each depository, specimens are sorted according to country. Bullets (•) are used to separate records for increased readability. Most specimen data are annotated with additional information about the specimen. This applies particularly to specimens treated by Lehrer, and the state of the terminalia preparations made by him is briefly described. In general, only previously unidentified or misidentified material has been given my determination labels, although this is not always stated.

Format of synonymy lists. These are formatted as in my earlier *Bengalia* publications (Rognes 2006, 2009b, 2011a, 2011b, 2012), with all entries on separate lines or in longer paragraphs. This provides a good overview and space for information on types, annotations on distribution, indispensable information concerning the entries, and other, often elaborate explanatory notes.

Taxonomy

Genus *Bengalia* Robineau-Desvoidy

Bengalia Robineau-Desvoidy, 1830: 425. Type species: *Bengalia testacea* Robineau-Desvoidy, 1830, by designation of Duponchel (1842: 542) (= *Musca torosa* Wiedemann, 1819).

For lists of generic synonyms see James (1977) and Pont (1980). An updated list is given by Rognes (2011b). Rognes (2015) established that an old, hitherto misunderstood name, *Plinthomyia* Rondani, 1875, is also a synonym of *Bengalia*. The genus *Bengalia* has been characterized by several authors, including Bezzi (1911, 1913), Surcouf (1920), Malloch (1927), Senior-White *et al*. (1940), Zumpt (1956), Lehrer (2005, as Bengaliidae) and Rognes (2011b), and its defining character states need not be repeated here. Rognes (1997) discussed the systematic position of Auchmeromyiinae and Bengaliinae (then considered separate) in the broader context of non-monophyly of the Calliphoridae, whereas Rognes (2011b) presented a phylogenetic analysis of the relationship of the genera of the Bengaliinae (including *Bengalia*) within a revised concept of this subfamily.

Diagnosis and monophyly of the *Bengalia torosa* Wiedemann species-group

The following discussion is based only on males. Females have not been studied closely.

The name *Bengalia torosa* Wiedemann species-group was introduced by Rognes (2006) as an informal name to replace the subfamily name Gangelomyiinae, erected by Lehrer (2005) within his family Bengaliidae (= *Bengalia* of current authors). Gangelomyiinae was defined in a figure (Lehrer 2005: 20 fig. 7), in a key (Lehrer 2005: 21), and in the main text (Lehrer 2005: 108). The important features were (p. 21):

(1) T5 without discal setae ["…dépourvue de macrochètes discaux …"] (Figs 35–36). [Lehrer claimed that the nominal species *Gangelomyia philipyga* Lehrer, by way of exception, had a series of discal setae on T5; apparently a lapsus, discussed below under that name];
(2) the presence of lateral projections distally on the distiphallus in the form of more or less half-circular "wings" ["Apophyses latérales postérieures du distiphallus ont la forme d'ailes plus ou moins demi-circulaires"];

(3) the presence of terminal structures ["apophyses terminales"] distally on the dorsal side of the distiphallus, often very long ["parfois très longues"], directed posteriorly or downwards ["orientées en arrière ou en bas"], usually more or less membranous and sometimes sclerotized ["de règle plus ou moins membraneuses et parfois sclérifiées"]. Note that Lehrer used the plural to describe what in reality is a single structure.

On p. 108, Lehrer gave a few additional features of which I mention:

(4) an oval greater ampulla ["La grande ampoule est ovale."] and
(5) the absence of a fringe of long thin setae ventrally on the hind tibia ["Tibias postérieurs sont dépourvus de la longue pilosité ventrale."].

Lehrer (2005: 108) created five new nominal genera in his new subfamily, all subsequently synonymized under *Bengalia* by Rognes (2006). Unfortunately, he included a species in this group, *Bengalia robertsi* Kurahashi, 1987, which he assigned to his nominal genus *Temaseka* Lehrer, even though, by his own admission, he had never seen any material of that species. Although he copied Kurahashi's description *in toto*, including the description of the greater ampulla (prealar knob) as "gourd-shaped" (pointed) and not oval, he did not mention that this discrepancy made it very doubtful that the species belonged in his subfamily.

Lehrer's propensity to illustrate the distiphallus in lateral view only made him miss not only the real structure of the features listed under items (2) and, in particular, (3) above, but also their importance for species recognition and definition. Furthermore, his terminology – "apophyses latérales postérieures du distiphallus" and "apophyses terminales" – was used elsewhere (Lehrer 2005) for quite different structures in the *Bengalia spinifemorata* Villeneuve (see Rognes 2011a) and *B. peuhi* Villeneuve (see Rognes 2009b, 2012) species-groups.

Below, I replace the terminology of items (2) and (3) with two new terms, marked with an asterisk (*), appropriate for the *torosa* species-group, and explain them in some detail. Only these features are interpreted as synapomorphies corroborating the *Bengalia torosa* species-group as monophyletic. Thereafter, I discuss other features of importance for the taxonomy of the species-group, in alphabetical order.

**Semidomes* (sd) [item (2) above]. These are outgrowths of the distal end of each lateral wall of the distiphallus and each expands distally into a more or less half-spherical structure (semidome, like half of a satellite dish) with a distad-facing concavity. To appreciate their true appearance the distiphallus must be viewed from the front (apical view). They are almost perfectly half-spherical in *B. chekiangensis* Fan (Fig. 18) and vary in shape according to species. Ventrally they often end in a point (Fig. 166). In *B. recurva* Malloch they are very narrow (Fig. 199). These structures are unique in *Bengalia* and are an obvious synapomorphy corroborating the monophyly of the *Bengalia torosa* species-group.

**Distal lip process* (dlp) [item (3) above]. This is a median middorsal structure projecting apically from the distal end of the dorsal wall of the distiphallus. It varies among the species, but consists basically of a median rod-like portion, sometimes well sclerotized, and two lateral, wing-like projecting membranes on each side, one oriented more or less vertically and one more or less horizontally, often with a dentate margin. Its true structure is best appreciated in dorsal, apical or oblique views. The lateral view (the only one used by Lehrer) is not very suitable. The basic structure is well exemplified by *B. martinleakei* (Figs 162–164). The median portion usually terminates with an emargination of varying size (Figs 18, 154, 157, 162–165). In *B. chekiangensis* (Fig. 18) only the lateral, horizontally oriented membrane is present in addition to the sclerotized central portion. In *B. chiangmaiensis* the lateral membrane constitutes the vertical wall of a kind of gutter (Figs 31–34). In *B. escheri*, *B. fuscipennis*, *B. recurva* and *B. torosa* the distal lip projection appears bifid in apical view (Figs 57, 86, 191, 216–218, 220), and its detailed structure is sometimes difficult to make out. In *B. jejuna* the distal lip projection is very characteristic (Figs 103, 105, 123), allowing for safe identification of this species. The distal lip projection is also unique within *Bengalia* and is an obvious synapomorphy corroborating the monophyly of the *Bengalia torosa* species-group. Its shape has never been used to define species in the *B. torosa* species-group, but was referred to in the description of the distiphallus of *B. fuscipennis* (as *B. siamensis*) by Sinha & Banerjee (2016).

Abdominal colour pattern. This is rather variable both among and within species. The abdominal T1+2 has a very narrow dark marginal band, while tergites T3–T5 may have narrow dark marginal bands (Figs 35–36, 196, 228, 241) or broad ones (Figs 61–62, 127). The tergites are always covered with a pattern of whitish microtrichosity shifting according to the direction of view. Sometimes a middorsal black stripe is present on T3 or

other tergites. T5 may also be of varying shade, from almost all dark to all pale. The amount of darkening seems to be a variable feature in some species, and should be used with caution for identification purposes. I have seen specimens of *B. torosa* with almost totally black T4 and T5, and T3 with a broad medial black vitta but lateral yellow areas, whereas it is usually almost totally yellow with very narrow dark marginal bands. A problem with the abdominal (and also thoracic) colour is that many specimens extrude a fatty substance after a while, which obscures the pattern of microtrichosity and makes the integument appear black. Defatting by submersion in ethanol followed by ethyl acetate should restore the pattern of microtrichosity.

Anepimeron. The number and distribution of dark and pale setulae are of diagnostic value, having been used for identification purposes for a long time.

Bacilliform sclerite process (bsp). This structure varies among species and is of diagnostic importance; it is sometimes of a quite remarkable shape, e.g. in *B. chekiangensis* (Fig. 20) and *B. torosa* (Fig. 214). In several species there is a small pointed projection forming a right angle with the main "stalk" of the process. This projection is directed towards the proximal end of the cerci, thus "retrograde" (*B. chekiangensis*, Figs 2, 20; *B. escheri*, Figs 49–50; *B. fuscipennis*, Fig. 79; *B. recurva*, Figs 185, 202, 205). Unfortunately, Lehrer (2005, 2007) overlooked this important structure. The only former uses of this structure that I know of are by Senior-White (1924) in his definition of *B. fuscipennis* (as *B. siamensis*) and Malloch (1927) in his definition of *B. recurva*.

The *cerci* are of variable length and width in posterior view. In two species they are evenly and gradually narrowing towards their distal end (*B. escheri*, *B. fuscipennis*; Figs 47, 71). In most species they are broad basally, each narrowing more or less abruptly at some point (Figs 1, 37, 131, 159, 183, 213, 237) and continuing as bare prongs of variable length distally. They are strongly setose from the base to at least the point where they narrow abruptly. In *B. jejuna* the prongs are hardly developed (Fig. 100). The prongs often form the lateral boundary of a wide empty space with more or less parallel sides. In profile, the shape of the dorsal edge of the cerci is of diagnostic importance for at least one species (*B. xanthopyga*, Fig. 238).

Chaetotaxy of legs other than fore femur and fore tibia. The mid tibia has 1 *ad* and 2 *p* setae. The mid femur has 2 strong *a* setae at midlength. The hind tibia has 2–3 *av* setae, 2 *ad* setae and no fringe of long soft setae, but some *av* ground setulae may be elongate in distal half.

Dorsolateral wings (Rognes 2009b) are absent from the distiphallus.

Epiphallus. This structure is lacking in all members of the *Bengalia torosa* species-group (Fig. 84), as opposed to, e.g., the *Bengalia peuhi* species-group (Fig. 267).

External (e*) and internal* (i) *hypophallic lobes* (Rognes 2009b, 2011b). These are present, well developed, with numerous denticles directed proximally, and vary in detailed appearance from species to species. The internal hypophallic lobes are usually converging distally, forming a triangle (Figs 135, 218). The external hypophallic lobes are larger and usually with parallel lateral edges, distally prolonged below the lateral finger (*lf*).

Fore femur, a *and* av *vestiture*. In all species of the *B. torosa* species-group there is an area on at least the basal part of the *a* and *av* surface of the fore femur with a dense cover of long, fine setae, often curled at the tip (e.g., *B. chekiangensis*, Fig. 8; *B. chiangmaiensis*, Fig. 27; *B. concava*, Fig. 46; *B. escheri*, Figs 59, 63; *B. fuscipennis*, Figs 97–98; *B. kanoi*, Fig. 152; *B. martinleakei*, Fig. 170; *B. recurva*, Fig. 201; *B. xanthopyga*, Fig. 243). These setae are also present in the female but are much shorter and less prominent. The *av* vestiture was used by Malloch (1927) in the description of *B. recurva* and by Fan (1997) in the description (in key) of *B. chekiangensis*, *B. fuscipennis* (as *B. taiwanensis*) and *B. escheri*.

Fore femur, pv *vestiture*. Like in the *Bengalia spinifemorata* species-group (Rognes 2011a) the fore femur has 2–3 very strong *pv* setae among the row of ordinary *pv* setae (*B. escheri*, Figs 59, 64, 73; *B. fuscipennis*, Fig. 98; *B. kanoi*, Fig. 152). These strong setae may even be much shorter than the other *pv* setae (*B. chekiangensis*, Fig. 7).

Fore tibia. This usually has a group of 2–5 (or more, *B. escheri*, Fig. 64) strong spinous setae on the ventral side. They are about as long as the width of the tibia (e.g., *B. kanoi*, Fig. 152; *B. recurva*, Fig. 200) and located on the basal, slightly expanded part of the ventral portion of the tibia. In one species (*B. torosa*, Fig. 209) there are two groups of such setae, an upper one of 3–5 setae and a lower one of 1–3 setae. In addition to these there are 3 evenly spaced *ad* setae and 1 *pv* seta in the distal fourth of the fore tibia. The spinulation of the fore tibia has been used for species descriptions in *Bengalia* for a long time.

Pre- and postgonite. These are of rather constant shape. In many species, the pregonite carries an anterior, almost spherical plate with several corrugations distad to the setose part. The postgonite is long and evenly curved, carrying a basal seta and numerous sensillae along the main shaft (Figs 19, 43). One exception are the pre- and

postgonite of *B. chiangmaiensis* (Fig. 24). The pregonite is a straight rod with a distal, weakly sclerotized shallow bifurcation, while the postgonite has a narrow long shaft with an expanded and pointed apex shaped like a bird's head.

r-m *crossvein of wing*. In *B. escheri* (Figs 61, 67) and *B. fuscipennis* (Fig. 95) there is a pale area of the wing membrane surrounding the *r-m* crossvein (unfortunately more easily seen on the specimens than in the figures). In all the other species there is no such pale area on the wing (e.g., Fig. 14).

ST5 flap. The shape of the ST5 flap, not be confused with ST5 itself, varies among species and is of strong diagnostic value, a fact known and used for a long time, since it is usually an easily observed external feature. It can be almost circular (*B. chekiangensis*, *B. torosa*; Figs 10, 210–211, 215), short and broad (*B. recurva*, Figs 197–198, 203–204, 206), with a straight hind border (*B. jejuna*, Fig. 107, 116), with a concave hind border (*B. kanoi*, Figs 138–142), with a convex hind border with two shallow lateral concavities (*B. martinleakei*, Figs 168, 177–178), or asymmetric (*B. xanthopyga*, Figs 239–240). Its inner surface is often concave (Figs 169, 211).

Surstylus (*proximal and distal surstylus,* psur *and* dsur*, respectively*) (Rognes 2011b). The proximal and distal surstyli (the latter referred to simply as "surstylus" in the text to follow) generally form a pronounced angle when the epandrial complex is observed in lateral view, and the distal surstylus often points more or less upwards (Figs 22, 49, 78, 101–102, 115, 132, 184), not proceeding parallel with the cerci. This is in contrast with the condition observed in the *B. peuhi* species-group (Rognes 2009b, 2012). In the *torosa*-group the distal surstylus is of a relatively complex shape, but varies among species. In two species it is very broad and has a pronounced nick or small excavation distally in the ventral margin (*B. escheri*, *B. fuscipennis*; Figs 72, 76–79). The proximal surstylus is most often a simple plate-like structure (Fig. 183), but in *B. torosa* it is very narrow when observed in posterior view (Fig. 213).

Key to males of the *Bengalia torosa* Wiedemann species group

All *B. torosa* species-group species lack discal setae on T5. This feature is shared with species belonging to the *B. labiata* Robineau-Desvoidy species-group [equivalent to the subfamily "Bengaliinae" of Lehrer (2005)]. All species in the latter group have a ventrally pointed ("gourd-shaped") greater ampulla (Figs 259, 262) and a pair of strong marginal setae on ST4 (Rueda 1985; Kurahashi & Magpayo 2000), whereas the greater ampulla in the *B. torosa* species-group is always oval (Figs 151, 172, 195, 256). Species in the *torosa*-group are in general very similar to one another. Good starting points for identification of male specimens are the shape of the ST5 flap and the pattern of strong ventral setae on the fore tibia. However, the shape of the ST5 flap is variable (especially in *B. kanoi*, see Figs 138–148) and should be used with caution. Note also that its shape may be difficult to ascertain in dry specimens, because it does not always present itself in its broadest aspect (compare Figs 28 and 30), and the lack of microtrichia close to the margin may obscure its true shape. The anepimeron also provides useful characters. Its vestiture is often all pale, or consists of a bundle of black setulae in the upper part and pale or dark setulae in the lower part. Colour pattern should be used with caution. Very dark specimens may occur in species that normally are rather pale, and the opposite is also sometimes true. As a general rule, the phallus (aedeagus) should always be examined for safe identification. Some females may be identified from the typical external features also found in males (e.g., *B. escheri* and *B. torosa*), and with a fair degree of certainty if they have been captured together with males all belonging to a single species. So far, the ovipositor has not been investigated for any species of the *B. torosa* species-group.

1 Posterior margin of eye with a distinct concavity in profile (Fig. 207); fore tibia ventrally with two groups of spinous setae in a 5+2 pattern (Fig. 209); no strong erect marginal setae on T4; distance between vibrissae equal to or less than distance between vibrissa and eye; transverse line connecting vibrissae separated from lower facial margin by a distance greater than width of first flagellomere (Fig. 208); clypeus strongly projecting below lower facial margin (Fig. 208); anepimeron with pale setulae only (Fig. 212) . . . . . ***Bengalia torosa*** (Wiedemann)

\- Posterior margin of eye straight, without a concavity in profile (Figs 106, 252); fore tibia with a single group of spinous setae ventrally; strong marginal setae present on T4; distance between vibrissae greater than distance between vibrissae and eye; vibrissa level with lower facial margin; clypeus less strongly projecting below lower facial margin; anepimeron with pale setulae only or at least a group of black setulae in upper part 2

2 Anepimeron with pale setulae only (as in Figs 12 and 212) 3

\- Anepimeron with black setulae all over, or black setulae in a group in upper part in combination with exclusively or several

pale setulae in lower part (as in Fig. 92) (*B. kanoi* very rarely without black setulae or with a single black setula on anepimeron) 6

3 Tegula black, sometimes with a pale margin (Fig. 9); mesonotum and mesopleuron bluish grey (Figs 3, 12); T4 and T5 with broad dark marginal bands (Fig. 4), often appearing all dark; T1+2 and T3 mostly yellow with dark marginal bands (Fig. 4), sometimes with middorsal dark stripe; ST5 flap large, triangular-circular (Figs 10–11); bacilliform sclerite process of complex structure (Fig. 20); semidomes forming an almost perfectly circular structure when viewed apically (Fig. 18) . . . . . ***Bengalia chekiangensis*** Fan

- Tegula yellow; mesonotum and mesopleuron yellowish-brown, not bluish; semidomes not forming an almost perfectly circular structure when viewed apically 4

4 Anepisternum usually dark in upper third (Fig. 242); T5 yellow on disc (Fig. 241); ST5 flap asymmetric (Figs 239–240); cercus with pronounced dorsal projections (Fig. 238), appearing as pale buttons in posterior view (Fig. 237) . . . . . ***Bengalia xanthopyga*** Senior-White

- Anepisternum usually all yellow; T5 yellow or dark on disc; cercus without such projections 5

5 Abdominal tergites with broad hind marginal bands, occupying about a third of tergite length; ST5 flap longer than wide, with a nick in the distal edge and with a narrow projection, almost as long as the flap itself, alongside it on both sides (Figs 42, 45); bacilliform sclerite process long, thin and pointed (Fig. 38); distal lip process (*dlp*) large, like a half cylindrical tube directed apically, with a distal nick (Figs 39–41) . . . . . ***Bengalia concava*** Malloch

- Abdominal tergites with very narrow black marginal bands (Fig. 196), T5 all pale or with a narrow dark marginal band; ST5 flap very short, much shorter than wide (Figs 186, 197–198, 203–204, 206), without narrow projections alongside it; bacilliform sclerite process with a backward projection (Figs 185, 202, 205); distal lip projection bifid (Figs 187–188, 191) . . . . . ***Bengalia recurva*** Malloch

6 Wing with pale area around *r-m* crossvein (Figs 61, 67, 95) (easier to see on actual specimens than in the photographs); distal lip process apparently bifid in anterior view (Figs 57, 86) 7

- Wing without pale area around *r-m* crossvein; distal lip process different 8

7 Pale species. ST5 flap as in Figs 80, 83, 91, 96. Narrow black marginal bands on T1+2–4 (Figs 94, 99). Fore tibial vestiture as in Fig. 90. Femora yellow. Anepimeron with a bundle of dark setulae in upper part, and with pale setulae in more than lower half (Fig. 92). Bacilliform sclerite process distally with an apically rounded projection directed towards hypandrium, and a narrow pointed projection directed towards base of cercus; lower edge of bacilliform sclerite process strongly concave (Figs 78–79) . . . . . ***Bengalia fuscipennis*** Bezzi

- Dark species. ST5 flap as in Figs 51–52, 68. Usually with broad black marginal bands on T1+2–4 (Figs 61–62). Fore tibial vestiture as in Figs 59, 64, 73–74. Femora dark in distal half (Fig. 60). Anepimeron usually with dark setulae all over, sometimes with some pale setulae in much less than lower half (Fig. 70). Bacilliform sclerite process distally without rounded projection directed towards hypandrium, only with the narrow pointed projection directed towards base of cercus; lower edge of bacilliform sclerite process straight (Figs 49–50, 75–76) . . . . . ***Bengalia escheri*** Bezzi

8 ST5 flap as in Figs 107 and 116, broad with hind edge straight or very slightly concave, with rounded lateral angles; distal lip process complex, broader than long and with broad lateral wing-like projecting membranes in dorsal view (Figs 103, 105) . . . . . ***Bengalia jejuna*** (Fabricius)

- ST5 flap as in Figs 28, 30, 138–148, 168, 177–178; distal lip process different (Figs 31–34, 134, 154, 156–157, 162–164) . . 9

9 ST5 flap with broad and evenly convex distal edge (Figs 28, 30); pregonite elongate with a distal bifid tip (Fig. 24), postgonite with a broad tip, shaped as a bird's head with a beak (Fig. 24); distal lip process a prominent trough or gutter with parallel edges and with low lateral walls at a right angle to floor of trough, with a narrow distal excavation (Figs 31, 33); semidomes with a horizontal upper edge forming an angle with lateral edge, as seen in apical view (Fig. 34) . . . . . ***Bengalia chiangmaiensis*** Kurahashi & Tumrasvin

- ST5 flap with a concave or straight distal edge (Figs 138–148), or distal edge with a small convex projection with concave sections on each side (Figs 168, 177–178); pre- and postgonite of the normal type (Figs 136, 181); distal lip process different, with lateral and ventral dentate keels (Figs 134, 154, 156–157, 162–164); semidomes different, upper edge rounded (Fig. 154, 165) 10

10 Distal edge of ST5 flap varying from concave to straight (Figs 138–148). . . . . ***Bengalia kanoi*** Kurahashi & Magpayo

- Distal edge of ST5 flap with a small convex projection with concave sections on each side (Figs 168, 177–178) . . . . . ***Bengalia martinleakei*** Senior-White

Bengalia chekiangensis Fan, 1965

(Figs 1–20)

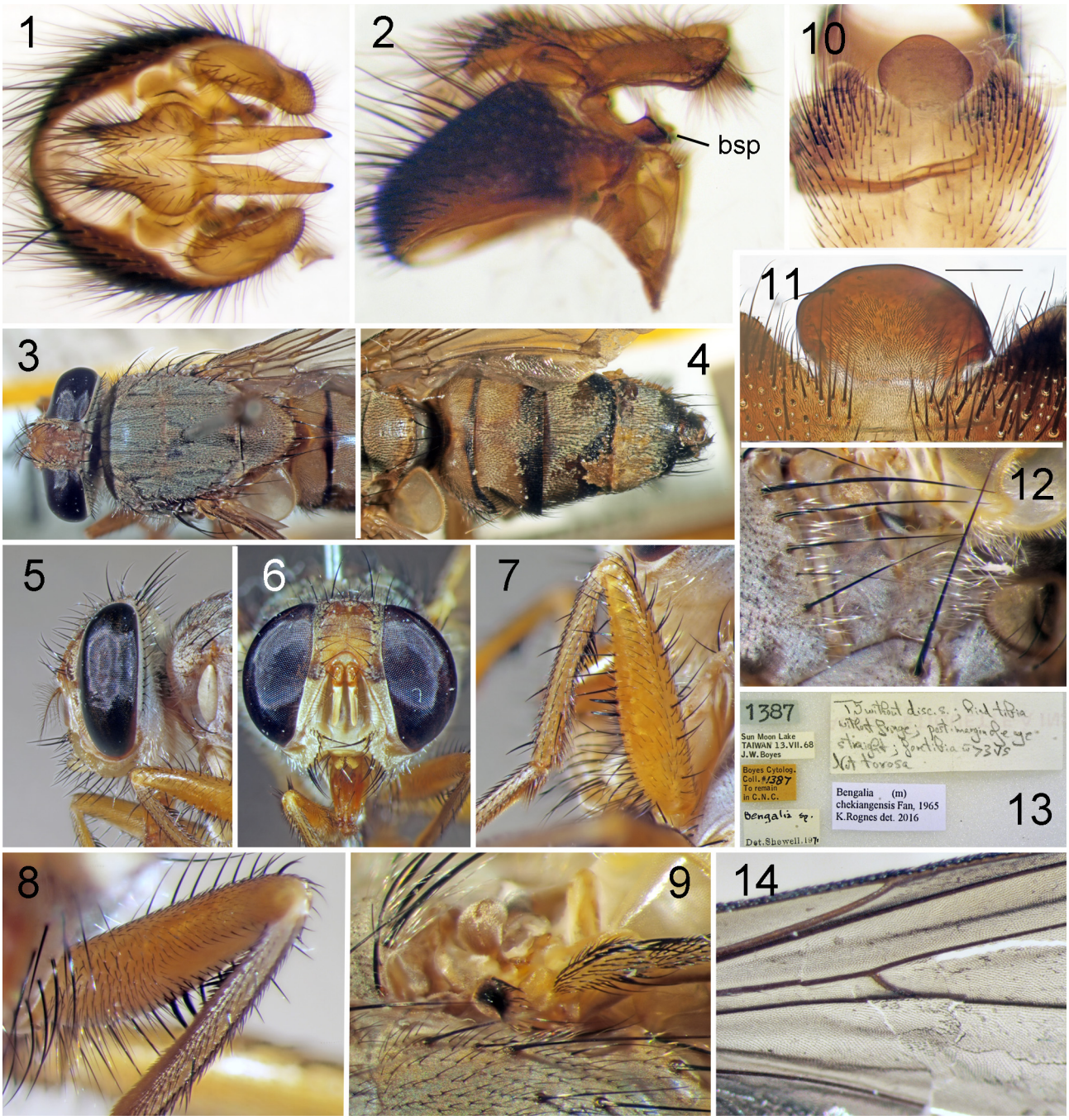
Bengalia (*Ochromyia*) *chekiangensis* Fan, 1965: 194 (in key; also p. 192, fig. 756 [apex of ST5 with flap only]). Holotype ♂ (SIBSCAS; not examined), by monotypy ("a single specimen"). Type locality: China, Zhejiang Province, Tianmushan. [NB: the species is not listed in Shanghai Institute of Entomology Academia Sinica (1992), but I was informed by Dr. Weibing Zhu (Shanghai) that the type is present in SIBSCAS.]

Bengalia chekiangensis: Fan (1992: 534; 1997: 454); Feng *et al*. (1998: 1378) (China [Anhui, Jiangxi, Zhejiang]).

Bengalia chekiangensis: Thinh (2004: 7) (Vietnam).

Bengalia chekiangensis: Verves (2005: 238; catalogue entry).

Bengalia chekiangensis: Yang *et al*. (2014: 88) (Taiwan; examined).

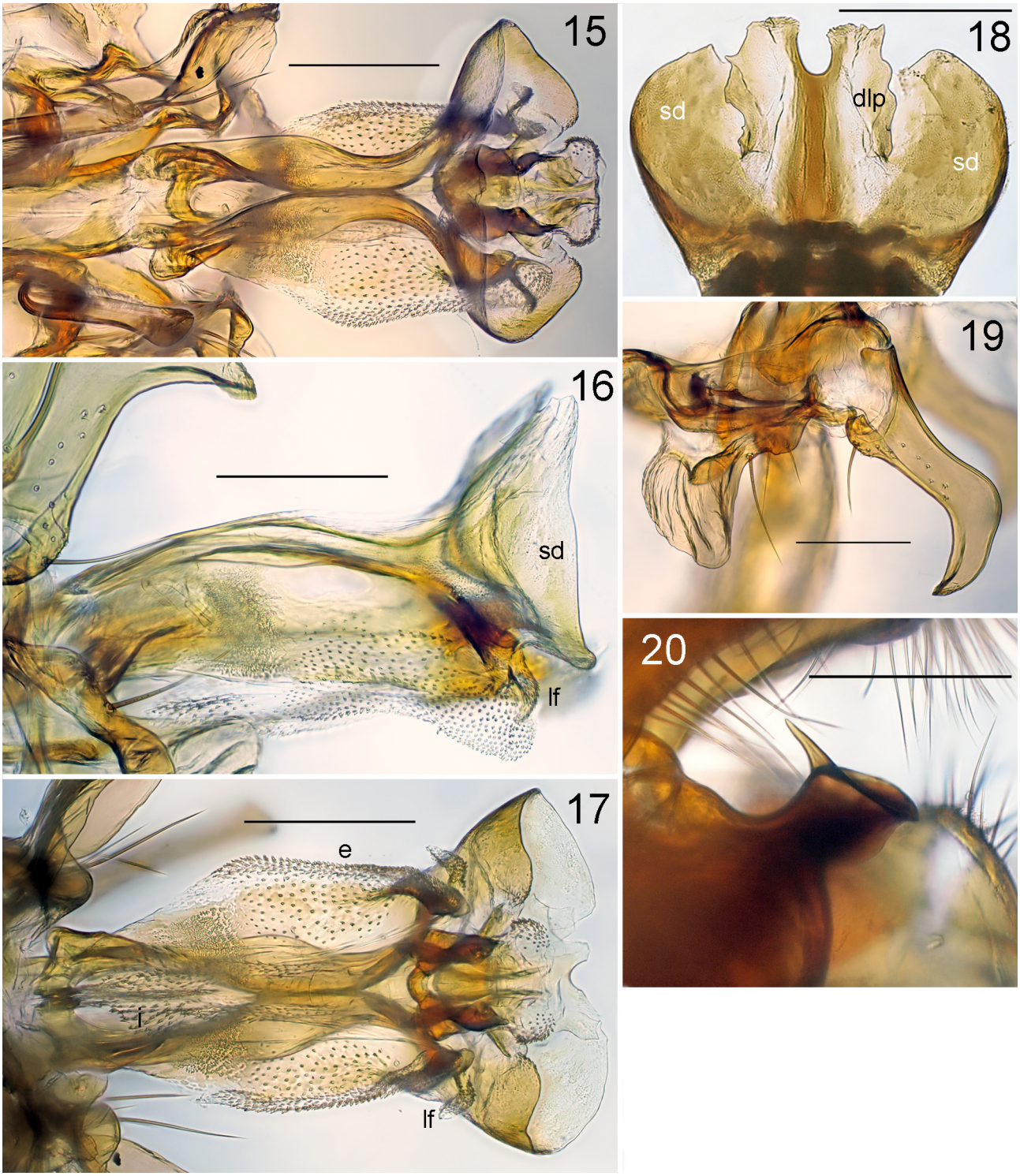


FIGURES 1–14. *Bengalia chekiangensis* Fan (1–10, 12–14: male from Taiwan, CNC; 11: male from Taiwan, CMNH). **1.** Epandrial complex, posterior view. **2.** Epandrial complex, left lateral view. **3.** Head and thorax, dorsal view. **4.** Abdomen, dorsal view. **5.** Head, left lateral view. **6.** Head from front. **7.** Left fore leg, outside view. **8.** Left fore leg, inside view. **9.** Base of right wing showing basicosta and tegula. **10.** ST5 flap and much of ST5. **11.** ST5 flap; scale bar = 0.25mm. **12.** Left anepimeron. **13.** Labels. **14.** Right wing, dorsal view. Abbreviations: *bsp* = bacilliform sclerite process.

Diagnosis. *Male*. Length: 10.0–11.0mm (n=4). Frons at vertex / head width ratio 0.29–0.31 (mean 0.31, n=6). Mesonotum bluish-grey. Anepimeron with pale setulae only (Fig. 12). Legs yellow. Fore tibia with strong spinous setae intermingled with shorter ones (Fig. 7). Fore femur with 2–3 strikingly short strong spinous setae (Fig. 7). Tegula black with pale edges (Fig. 9). ST5 flap transversely oval, with projections on each side (Fig. 10). Cercus with long distal prong. Surstylus with almost parallel upper and lower edges, obliquely truncated distally (Fig. 2). Uniquely shaped bacilliform sclerite process (Fig. 20). Dorsal surface of phallus curved in lateral view (Fig. 16). Internal hypophallic lobes close together (Fig. 17). Semidomes almost circular in apical view. Distal lip projection almost flat, flush with inner surface of dorsal half of semidomes, with a distal, rather deep bay, a central sclerotisation, and an undulating lateral edge (Figs 16–18).

Female. Length: 10.0–11.5mm (n=5). Frons at vertex/head width ratio: 0.32–0.33 (mean 0.32, n=3). Main external features as in male.

Remarks. Only the ST5 flap had previously been illustrated for this species (Fan 1965). Nothing was known about its terminalia.



FIGURES 15–20. *Bengalia chekiangensis* Fan (15–17, 19–20: male from Taiwan, CNC; 18: male from Taiwan, CMNH). **15.** Distiphallus, dorsal view. **16.** Distiphallus, left lateral view. **17.** Distiphallus, ventral view. **18.** Semidomes and distal lip projection, anteroventral view. **19.** Pre- and postgonites. **20.** Bacilliform sclerite process. All scale bars = 0.25mm. Abbreviations: *dlp* = distal lip process; *e* = external hypophallic lobe; *lf* = lateral finger; *i* = internal hypophallic lobe; *sd* = semidomes.

Biology. *B. chekiangensis* has been captured at an altitude above 1200m in Vietnam (Thinh 2004).

Distribution. China, Taiwan*, Vietnam.

Material examined (non-type). CMNH. Taiwan: 5 ♂, 5 ♀, labelled (1) TAIWAN: Nantou / Mushe. 24 May 1988 / C. Young, J. Rawlins / R. Davidson; (2) Bengalia ♂ (or ♀) / chekiangensis / Fan, 1965 / Det.H.Kurahashi [both labels printed]. [T1+2 yellow with narrow black marginal band; T3 yellow with black marginal band in hind 1/4 and middorsal black stripe of about same width; T4 and T5 black and greasy. 1 male dissected: dried abdominal tergites glued to a piece of card on pin above labels; terminalia in glycerol in glass microvial on pin below labels.]. **CNC.** Taiwan: 1 ♂, labelled (1) 1387 [printed, pale blue label]; (2) Sun Moon Lake / TAIWAN 13.VII.68 / J.W.Boyes [printed]; (3) Boyes Cytolog. / Coll. #1387 / To remain / in C.N.C. [yellow label with black print, except handwritten number in black ink]; (4) Bengalia sp. / Det. Shewell 1971 [printed, except first line and "71" in last line, which are handwritten]; (5) T5 without discal.s.; hind tibia / without fringe; post. margin of eye / straight; fore tibia w > 3vs / Not torosa [pencil writing by T. Tantawi]; (6) Bengalia (m) / chekiangensis Fan, 1965 / K.Rognes det. 2016 [printed] [T5 partly torn from T4 and terminalia partly extruded; I had an accident with the forceps and tore parts of the right wing (see Fig. 14); the genital capsule had already been extruded prior to my examination and, together with T5 and ST5, partly separated from T4 by a tear; I managed to remove the genital capsule together with T5 and ST5 from the rest of the abdomen by continuing the tear between T4 and T5; dissected; abdominal tergites glued to a piece of card on pin above labels; terminalia in glycerol in glass microvial on pin below labels].

Bengalia chiangmaiensis Kurahashi & Tumrasvin, 1979

(Figs 21–36)

Bengalia chiangmaiensis Kurahashi & Tumrasvin, 1979: 298. Holotype ♂ (BPBM; not examined), by original designation. Type locality: Thailand, N. W. Chiangmai Province, Chiangdao.
Bengalia chiangmaiensis: Kurahashi & Chowanadisai (2001: 202; Laos) (two males in BPBM; examined).
Bengalia chiangmaiensis: Verves (2005: 238; catalogue entry).
Bengalia chiangmaiensis: Kurahashi & Bunchu (2011: 263) (Thailand records; some listed below).

Diagnosis. *Male*. Length: 12.0–14.0mm (n=4). Frons at vertex / head width ratio 0.31–0.33 (mean 0.32, n=4). Anepimeron with almost exclusively black setulae, reaching katepisternum anteroventrally, but with some pale setulae in lower hind corner (Fig. 25). Most of T5 pale dorsally (Figs 35–36). Femora darkened in less than distal half (Fig. 35). ST5 flap transversely oval, but without projections beside it (Figs 28, 30; viewed under different angles). Terminalia very dark. Cerci with setose prongs diverging along more than distal half (Fig. 21). Surstylus with a ventral projection basally and a rounded tip (Fig. 23). Bacilliform sclerite process triangular, broad basally, with blunt tip (Fig. 22). Pregonite weakly sclerotized distally, tip bifurcate. Postgonite with an expanded distal portion and a pointed process shaped like a bird's head with a beak (Fig. 24). Semidomes (*sd*) angulate in dorsolateral corner (Figs 31, 34). Distal lip process (*dlp*) shaped like a gutter, flat in the bottom, with low vertical lateral walls projecting dorsally (Figs 31–34). Distiphallus with a midventral keel basally (Fig. 32).

Female. Length 10.0mm (n=1). Frons at vertex / head width ratio 0.33 (mean 0.33, n=1). Anepimeron with black setulae in upper half and pale setulae in lower half, these being much more numerous than in the male.

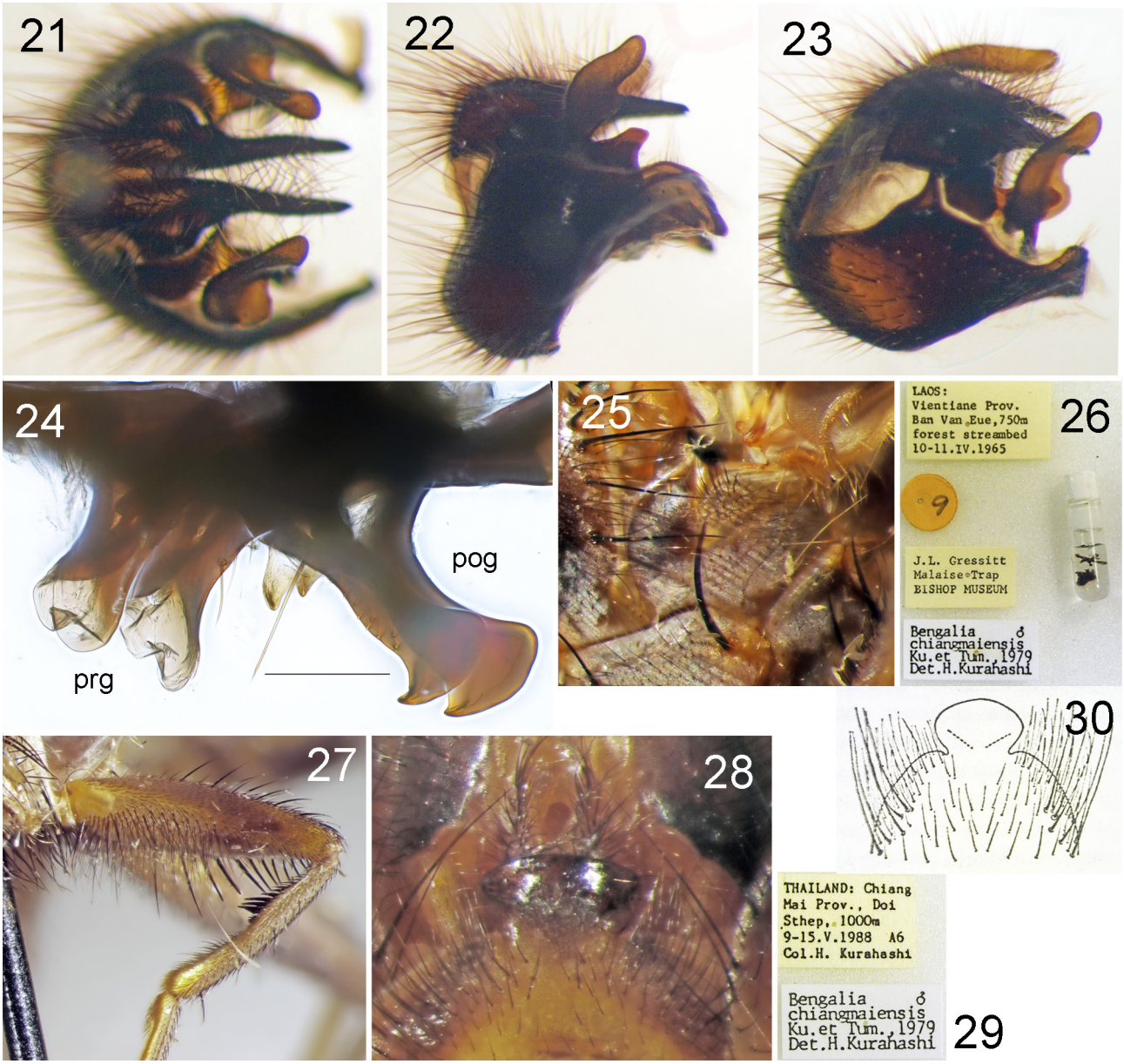
Discussion. This is a rare species with a peculiar distal lip projection and semidomes, quite unlike other members of the *Bengalia torosa* species-group. The pre- and postgonites are also of exceptional shape.

Biology. Unknown.

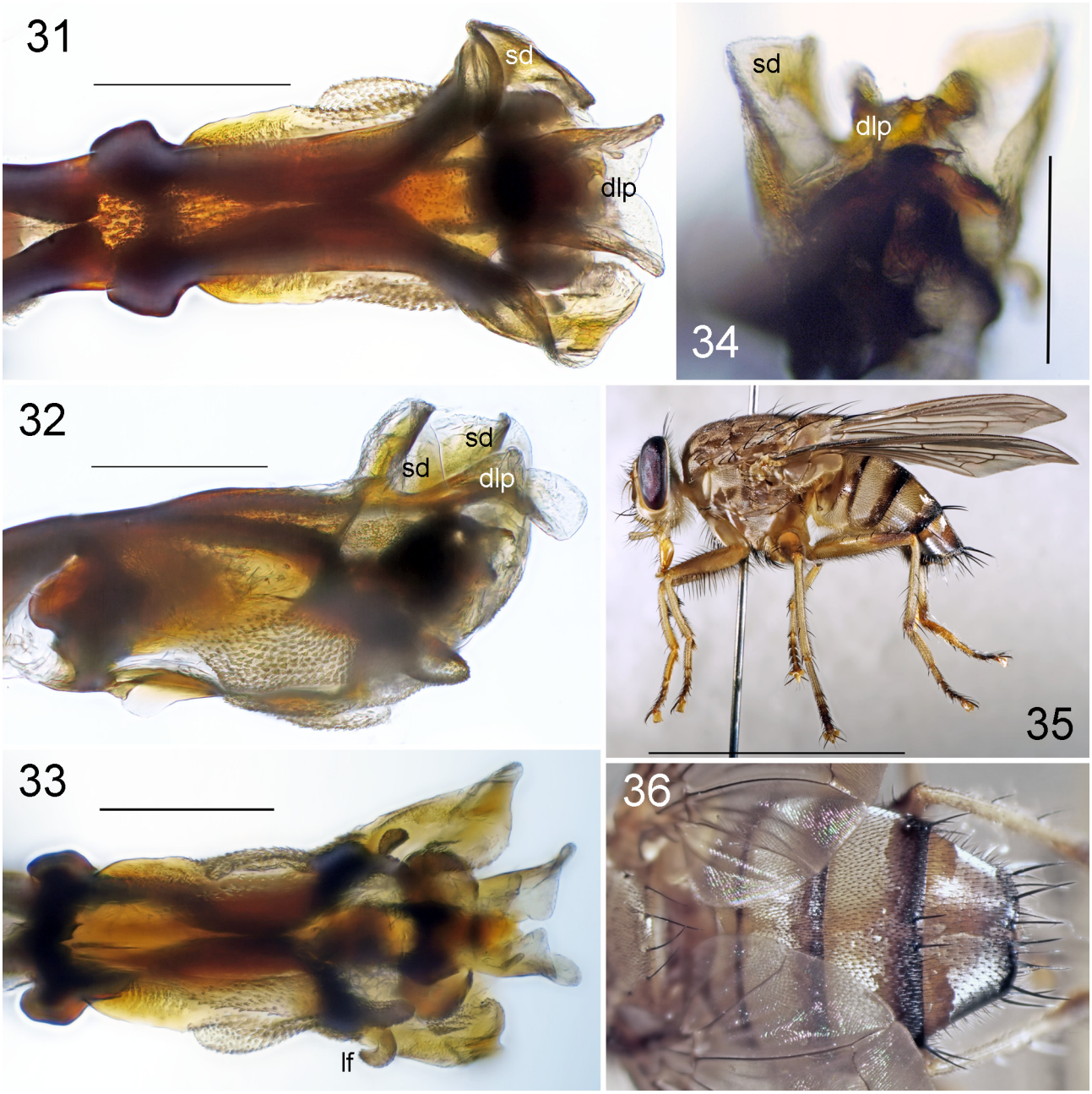
Distribution. Laos*, Thailand*.

Material examined (non-type). BPBM. Laos: 1 ♂, labelled (1) LAOS: / Vientiane Prov. / Ban Van Eue / 15.V.1966 [printed]; (2) Native Collector / RONDON-BISHOP MUS. / COLLECTION [printed]; (3) Bengalia ♂ / chiangmaiensis / Ku. et Tum., 1979 / Det. H.Kurahashi [printed] [Already dissected when received; the terminalia were previously stored in a glass microvial with a cork stopper; the lacquered black pin was corroded and black substances had moved through the cork and into the glycerol fluid and apparently had stained all genital parts black; I moved terminalia to a new glass microvial with a soft white plastic stopper and changed the glycerol]; • 1 ♂, labelled (1) LAOS: / Vientiane Prov. / Ban Van Eue, 750 m / forest streambed / 10-11.IV.1965 [printed]; (2) 9 [number in pencil on circular orange label]; (3) J.L.Gressitt / Malaise Trap / BISHOP MUSEUM [printed]; (4)

Bengalia ♂ / chiangmaiensis / Ku. et Tum., 1979 / Det. H.Kurahashi [printed] (Fig. 26) [Already dissected when received; the terminalia were previously stored in a glass microvial with a cork stopper; I moved the terminalia to a new glass microvial with a soft white plastic stopper and changed the glycerol; hypandrial sclerite brittle]. [None of the BPBM terminalia vials contained an ST5 flap.] **NSMT.** Thailand: 1 ♂, labelled (1) THAILAND: Chiang / Mai Prov., Doi / Sthep, 1000m / 9–15.V.1988 A6 / Col. H. Kurahashi; (2) Bengalia ♂ / chiangmaiensis / Ku. et Tum., 1979 / Det. H. Kurahashi [printed labels] (Fig. 29); • 1 ♂, 1 ♀, labelled (1) THAILAND: 1000m / Chiangmai Prov. / Doi Sthep / 16.VII.1989 / Col. H. Kurahashi; (2) Bengalia ♂ [or ♀] / chiangmaiensis / Ku. et Tum., 1979 / Det. H. Kurahashi [printed labels]. [Both NSMT males with intact ST5 flaps *in situ*.]



FIGURES 21–30. *Bengalia chiangmaiensis* Kurahashi & Tumrasvin (21–27: male from Laos, BPBM; 28–29: male from Thailand, Chiang Mai Province, NSMT; 30: reproduced with permission from Kurahashi & Tumrasvin [1979, fig. 2C]). **21.** Epandrial complex, posterior view. **22.** Epandrial complex, left lateral view. **23.** Epandrial complex, posterolateral view. **24.** Pre- and postgonites; scale bar = 0.25mm. **25.** Left anepimeron. **26.** Labels (4) and glass genitalia microvial. **27.** Left fore leg, inside view. **28.** ST5 flap (not in widest aspect). **29.** Labels (2). **30.** ST5 flap. Abbreviations: *pog* = postgonite; *prg* = pregonite.

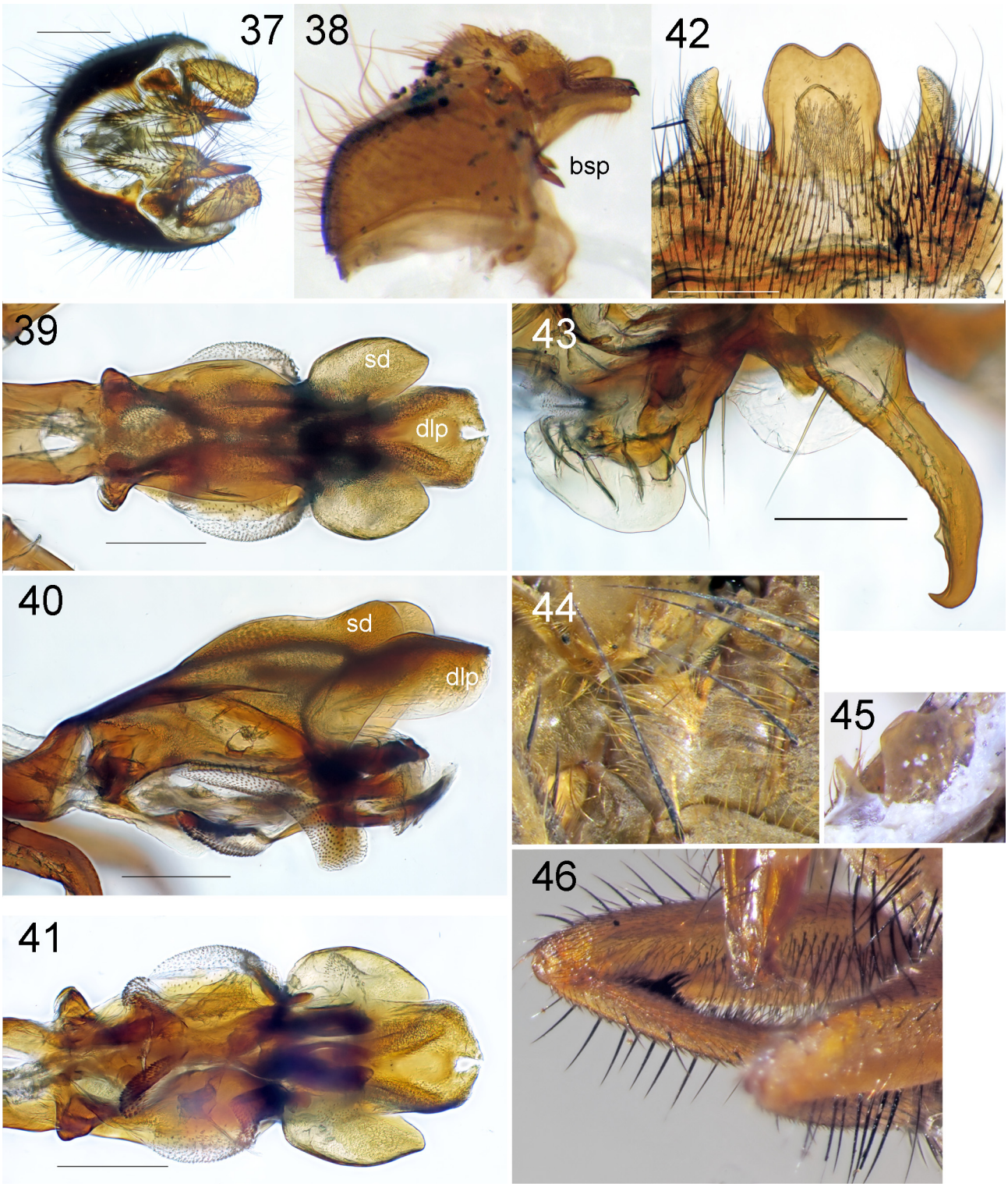


FIGURES 31–36. *Bengalia chiangmaiensis* Kurahashi & Tumrasvin (31–34: male from Laos, BPBM; 35–36: male from Thailand, NSMT). **31.** Distiphallus, dorsal view. **32.** Distiphallus, left lateral view, obliquely from front. **33.** Distiphallus, ventral view. **34.** Distiphallus, apical view. **35.** Habitus. **36.** Abdomen, posterodorsal view. Scale bars: 0.25mm (Figs 31–34); 10mm (Fig. 35). Abbreviations: *dlp* = distal lip process; *lf* = lateral finger; *sd* = semidomes.

***Bengalia concava* Malloch, 1927**

(Figs 37–46)

Bengalia concava Malloch, 1927: 407 (also p. 405, figs 6 a–f). Holotype ♂ (NHMUK; examined), by original designation ("Type"). Type locality: Malaysia (West Malaysia), Perak, Taiping Hill.
Bengalia concava: Senior-White *et al.* (1940: 94) (Malaysia [West Malaysia]).
Bengalia concava: James (1977: 528; catalogue entry) (Malaysia [West Malaysia]).
Bengalia concava: Kurahashi *et al.* (1997: 40) (Malaysia [West Malaysia]).
Temaseka concava: Lehrer (2005: 146, 147, figs 66A–E) (Malaysia [West Malaysia], Singapore).
Temaseka mallochi Lehrer (2005: 148–149, figs 67A–E). Holotype ♂ (NHMUK; examined), by original designation. Type locality: Malaysia (Sabah, Mt. Kinabalu). Synonymy proposed by Rognes (2006: 467).
Bengalia concava: Verves (2005: 238; catalogue entry).



FIGURES 37–46. *Bengalia concava* Malloch (37, 39–43, 46: male from Kuala Lumpur, NHMUK; 38, 44: male from Malaysia, nr. Petaling, NHMUK; 45: holotype, NHMUK). **37.** Epandrial complex, posterior view. **38.** Epandrial complex, left lateral view. **39.** Distiphallus, dorsal view. **40.** Distiphallus, left lateral view. **41.** Distiphallus, ventral view. **42.** ST5 flap and processes beside it. **43.** Pre- and postgonites. **44.** Right anepimeron. **45.** ST5 flap and processes beside it. **46.** Right fore leg, inside view. Scale bars: 0.25mm (Figs 39–41, 43); 0.5mm (Figs 37, 42). Abbreviations: *bsp* = bacilliform sclerite process; *dlp* = distal lip process; *sd* = semidomes.

Diagnosis. *Male*. Length: 13.0–15.5mm (n=4). Frons at vertex / head width ratio 0.28–0.32 (mean 0.30, n=4). Anepimeron with pale setulae only (in a few cases with a single dark setula) (Fig. 44). T3–T5 with hind marginal bands occupying about posterior third, sometimes with a middorsal stripe. Leg colour yellow. Fore femur with numerous long, fine *av* setae. ST5 flap longer than broad, with a small concavity at distal margin and with a long accessory projection beside it, almost as long as the flap itself (Fig. 42). Cerci with short prongs enclosing a wide empty space between them (Fig. 37). Cercus in profile with a pronounced convexity in middle (Fig. 38). Tip of surstylus blunt (Figs 37–38). Bacilliform sclerite process (*bsp*) long and narrowly pointed (Fig. 38). Distal lip process (*dlp*) large, like a half cylindrical tube open ventrally, directed apically, and with a small distal nick (Figs 39–41).

Female. Unknown.

Discussion. Lehrer (2005) separated *Bengalia concava* Malloch (as *Temaseka concava*) from his own *T. mallochi* based on the shape of the hind margin of the ST5 flap. It was described as being very shallowly concave ("la marge posterieure légèrement excavée") in *B. concava*, whereas *T. mallochi* had a much deeper concavity ("une excavation posterieure profonde"). The exact shape of the flap, including the concavity of the hind margin, varies among specimens and in my opinion cannot be used as a basis for erecting two different species.

Biology. Unknown.

Distribution. Malaysia (West Malaysia*, Sabah*), Singapore*.

Type material examined. *Bengalia concava* Malloch, 1927. HOLOTYPE ♂ (NHMUK), labelled (1) Perak 7 · 1 … [illegible] / Taiping Hill / 500' –1500' / Dec. 11th 1923 / M. R. Mander [handwritten]; (2) Bengalia / concava / Type / Det. / J R Malloch [handwritten by Malloch on label with black frame; the last two lines are printed] [The specimen, slightly teneral, is staged on a yellow celluloid plate; right mid leg missing; the last abdominal segments have been removed and the crudely dissected terminalia are glued to the right hand edge of the locality label; the ST5 flap (Fig. 45) is recognizable as such, but the fragments of the terminalia that served for figs 6a–e [fig. 6e is mislabelled as "6c"] in Malloch (1927) were impossible to interpret; the distal excavation in the flap is not very deep; anepimeron with only pale setulae].

Temaseka mallochi Lehrer, 2005. HOLOTYPE ♂ (NHMUK), labelled (1) HOLOTYPE [white label with red rim]; (2) HOLOTYPUS [black capitals on red label]; (3) B.N. BORNEO. / Mt. Kinabalu, Kenokok, / 3.300 ft. / 23d Apr. 1929; on reverse side: H. M. Pendlebury / coll. / F.M.S. Museums. [all printed on pinkish label]; (4) Ex F.M.S. / Museum. / B.M.1955-354 [printed on underside of white label]; (5) Bengalia / concava / Mall. / det. JRMalloch [handwritten by Malloch except last line, which is printed; light brownish-yellow label with black frame]; (6) *Bengalia* ♂ / *mallochi* Lehrer n. sp. / HOLOTYPUS / Det. Dr. A. Z. LEHRER / 2004 [printed] [The specimen is in good condition; it has been dissected by Lehrer by removal of the lower hind part of the abdomen; the terminalia were in glycerol in a big plastic vial, but I have transferred them to a glass microvial; they consisted of three units: (1) ST5 with ST5 flap, (2) hypandrial complex with gonites, phallus and ejaculatory sclerite, and (3) epandrial complex; I had an accident with the phallus: in an attempt at bending it backwards relative to the hypandrium, it broke between the basi- and distiphallus; the terminalia had, as usual, been embedded in a substance that made the genital parts quite stiff, also relative to each other, before being placed in glycerol by Lehrer; the substance was not easy to see but was evident at high magnification; the parts were not suitable for photography under a microscope, but were used by Lehrer (2005: 149) for his illustrations (his fig. 67)].

Other material examined. NHMUK. Malaysia (West Malaysia): 1 ♂, labelled (1) MALAY PENIN: / Selangor. / Bukit Kutu / 3.500 ft. / March 21st 1931 / H. M. Pendlebury [mostly printed]; (2) Ex F.M.S. / Museum / B.M.1955-354 [printed]; (3) *Bengalia* ♂ / *concava* Malloch / Det. Dr. A.Z. LEHRER / 2004 [printed label, with pin hole in centre] [Dissected by Lehrer; in the big plastic vial were only a broken ST5 and the ST5 flap in glycerol, and no terminalia; I moved parts to a glass microvial, in glycerol; anepimeron with yellow setulae only; ST5 flap with a strikingly constricted base]; • 1 ♂, labelled (1) MALAYA / Kuala Lumpur. / Nr: L. Gardens, / Coll. H. M. / Pendlebury. / 6.II.1937; (2) Ex F.M.S. / Museum / B.M.1955-354 [printed]; (3) *Bengalia* ♂ / *concava* Malloch / Det. Dr. A.Z. LEHRER / 2004 [printed label, with pin hole in centre] [Partly dissected by Lehrer; I continued Lehrer's dissection after KOH treatment; terminalia transferred to glass microvial, in glycerol; still some alien substance present; anepimeron with yellow setulae only]; • 1 ♂, labelled (1) MALAY PENIN: / Negri Sembilan / Bukit Pangga / Jan 17th 1936; (2) Ex F.M.S. / Museum / B.M.1955-354 [printed]; (3) *Bengalia* ♂ / *concava* Malloch / Det. Dr. A.Z. LEHRER / 2004 [printed label, with pin hole in centre] [Dissected by Lehrer; terminalia transferred to glass microvial, in glycerol; anepimeron with yellow setulae only; ST5 flap as in Kuala Lumpur specimen; pin

heavily corroded]; • 1 ♂ [staged on yellow piece of celluloid], labelled (1) Malay Free States: / nr. Petaling. 1919. / A. R. Sanderson. / C. A. Cheetham pres. / B.M. 1922—16 [Left fore and mid legs lost; dissected by me; abdominal T1+2–5 glued to card on pin below stage; terminalia in glycerol in microvial on pin]; Singapore: 1 ♂, labelled (1) Bukit Tima forest / SINGAPORE 12.6.77 / D.H. Murphy / West face [date and last line handwritten]; (2) Pres. by / D.H.Murphy / BM 1980-183 [printed]; (3) Bengalia / concava Mall. / D.H. Murphy det. [first two lines handwritten]; (4) *Bengalia* ♂ / *concava* Malloch / Det. Dr. A.Z. LEHRER / 2004 [printed label, with pin hole in centre]; (5) *Bengalia* ♂ / *concava* Malloch / Det. Dr. A.Z. LEHRER / 2004 [printed label, with pin hole near right hand margin] [Dissected by Lehrer; terminalia with some Canada balsam remains; I transferred the terminalia into glycerol in a glass microvial; anepimeron with yellow setulae, except for one black setula on each side; unsuited for microscope photography because of the Canada balsam].

Bengalia escheri **Bezzi, 1913**

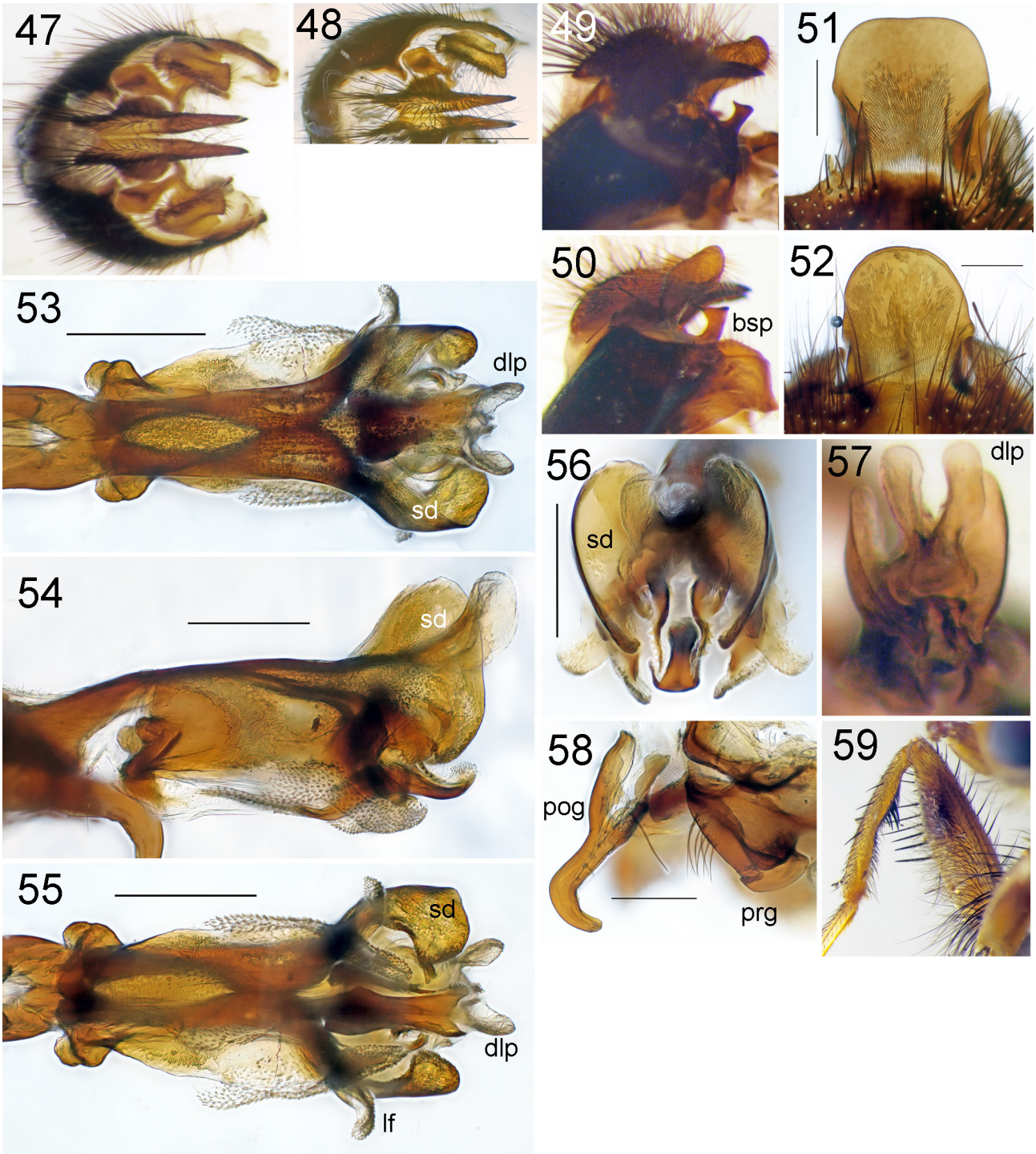
(Figs 47–76)

Bengalia escheri Bezzi, 1913: 76 (as "*Escheri*"). Correct original spelling (as required by ICZN Article 32.5.2.5). Lectotype ♂ (ETHZ; for details see "Type material examined"), here designated. Type locality: Taiwan [as "Formosa"], Tainan.
Bengalia escheri: Senior-White (1923b: 37) (India; male from Garo Hills, Assam).
Bengalia escheri: Senior-White (1924: 105) (India [doubtful (?) records of females from Khasia Hills], Taiwan).
Bengalia escheri: Senior-White *et al.* (1940: 97) (India ["Assam, Khasi and Garo Hills"], Taiwan [as "Formosa"]).
Bengalia (*Ochromyia*) *escheri*: Fan (1965: 194) (China).
Bengalia escheri: Fan (1992: 534; 1997: 454), Feng *et al*. (1998: 1378) (China [Anhui, Fujian, Guangdong, Hainan, Sichuan, Taiwan, Yunnan, Zhejiang]).
Bengalia escheri: Kurahashi & Thapa (1994: 218) (first record from Nepal).
Bengalia escheri: Kurahashi *et al*. (1997: 41) (Malaysia [West Malaysia]).
Bengalia escheri: Thinh (1988: 15) (Vietnam).
Bengalia escheri: Kurahashi & Chowanadisai (2001: 202) (Vietnam [citing Thinh (1988)]).
Bezzigalia rivanella Lehrer, 2005: 109. Holotype ♂ (MSNM; for details see "Type material examined"), by original designation. Type locality: India, Darjeeling, Kalimpong. **Syn. nov.**
Gangelomyia escheri: Lehrer (2005: 112) (Malaysia [N. Kedah, Changlun (as "Changloon"), West Malaysia], Taiwan).
Bengalia escheri: Verves (2005: 239; catalogue entry).
Gangelomyia escheri: Lehrer (2006a: 10) (India [Arunachal Pradesh (as "Birmanie")], Taiwan).
Bengalia escheri: Rognes (2009a: 98; a few remarks on morphology).
Bengalia escheri: Kurahashi & Bunchu (2011: 263) (Thailand).
Bengalia escheri: Yang *et al*. (2014: 88) (Taiwan; 5 males and 5 females examined in this study).

Diagnosis. *Male*. Length: 13.0–13.5mm (n=3). Frons at vertex / head width ratio 0.30–0.35 (mean 0.33, n=3). Dark species. Head with dark spot on upper part of parafacial, often strikingly large and black. Thorax and abdomen usually very dark (Figs 60–62); also pleuron dark (Fig. 60). Abdomen with broad dark marginal bands, T5 black (Fig. 62). Anepimeron with only black setulae or lower half with a few pale setulae (Fig. 70). Femora dark in distal half (Fig. 60). Fore femur with numerous densely set setulae on *a* and *av* side (Fig. 63). Fore tibia with a row of several (4–6) slender, spinous setae (Figs 59, 63–64, 73–74). Wing with pale area surrounding *r-m* crossvein (Fig. 61). ST5 flap half circular (Figs 51–52, 65, 68), and with a small, broad process on each side of the flap (Fig. 52). Cercus evenly narrowing to a point in posterior view (Fig. 47–48, 71). Surstylus blunt in posterior view (Figs 47–48, 71) but very wide in lateral view, with a pronounced nick in the distal ventral part (Fig. 47–48, 72, 76); except in one male (Kedah Changloo, NHMUK), where the nick is very small. [Lehrer (2005: 114, fig. 49B) did not illustrate the nick in the surstylus]. Bacilliform sclerite process with a retrograde projection only (Figs 49–50, 75–76). Its hind edge (i.e., edge opposite the retrograde projection) straight or almost straight (Figs 49–50, 75–76). Distiphallus as shown in Figs 53–57. Distal lip process (*dlp*) bifurcate in apical view (Fig. 57). Opening of ejaculatory duct surrounded by fine denticles (Fig. 56), also visible in lateral view (Fig. 54). Pre- and postgonite as in Fig. 58.

Female. Length: 12.5–14.5mm (n=2). Frons at vertex / head width ratio 0.33, n=1). External characters agree with those of the male.

Discussion. Usually a very dark species. *Bezzigalia rivanella* Lehrer is based on a pale, not fully sclerotized specimen. Lehrer's illustration of its distiphallus (Lehrer 2005: 110, fig. 48C) is based on artifacts, i.e., a destroyed apical part.



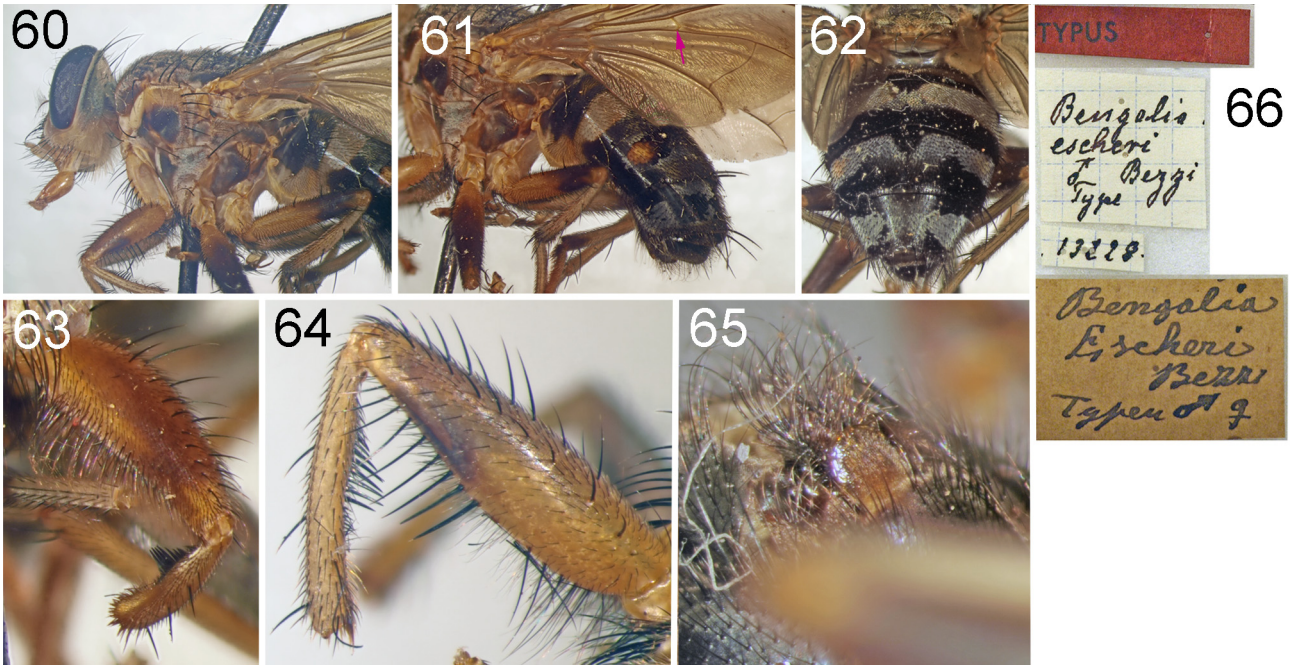
FIGURES 47–59. *Bengalia escheri* Bezzi (47–49, 51, 53–56, 58–59: male from Mishmi Hills, India [as "Burma"], NHMUK; 50, 52, 57: male from N. Kedah, Changloon, India, NHMUK). **47.** Epandrial complex, posterior view (under stereomicroscope). **48.** Epandrial complex, posterior view (under compound microscope, for better resolution). **49.** Epandrial complex, left lateral view. **50.** Epandrial complex, left lateral view. **51.** ST5 flap. **52.** ST5 flap. **53.** Distiphallus, dorsal view. **54.** Distiphallus, left lateral view. **55.** Distiphallus, ventral view. **56.** Distiphallus, apical view. **57.** Distiphallus, apical view. **58.** Pre- and postgonites. **59.** Right fore leg, inside view. Scale bars: 0.5mm (Fig. 48); 0.25mm (Figs 51–56, 58). Abbreviations: *bsp* = bacilliform sclerite process; *dlp* = distal lip process; *lf* = lateral finger; *pog* = postgonite; *prg* = pregonite; *sd* = semidomes.

Biology. Unknown.

Distribution. China, India*, Malaysia (West Malaysia*), Nepal, Taiwan*, Vietnam*, Thailand*.

Type material examined. *Bengalia escheri* Bezzi, 1913. LECTOTYPE ♂ (ETHZ), here designated, labelled (Fig. 66) (1) TYPUS [black print on red label]; (2) Bengalia / escheri / ♂ Bezzi / Type [handwritten by J. Escher-

Kündig on paper with pale blue crossed lines]; (3) 13228 [handwritten by Escher-Kündig on same type of paper as label 2]; (4) Bengalia / Escheri / Bezzi / Typen ♂ ♀ [handwritten by Bezzi on pale brown paper]; (5) LECTOTYPE (m) / *Bengalia escheri* / Bezzi, 1913: 76 / Esch.-Künd. no. 13228 / des. K. Rognes 2016. PARALECTOTYPE ♀ (ETHZ), here designated, labelled (1) TYPUS [black print on red label]; (2) Bengalia / escheri / ♀ Bezzi / Type [handwritten by J. Escher-Kündig on paper with pale blue crossed lines]; (3) 13229 [handwritten by Escher-Kündig on same type of paper as label 2]; (4) PARALECTOTYPE (f) / *Bengalia escheri* / Bezzi, 1913: 76 / Esch.-Künd. no. 13229 / des. K. Rognes 2016. [The lectotype and paralectotype labels were affixed to the specimens by Rod Eastwood and Michael Greeff (ETHZ), 28 June 2016, more than seven years after I had studied the specimens.]



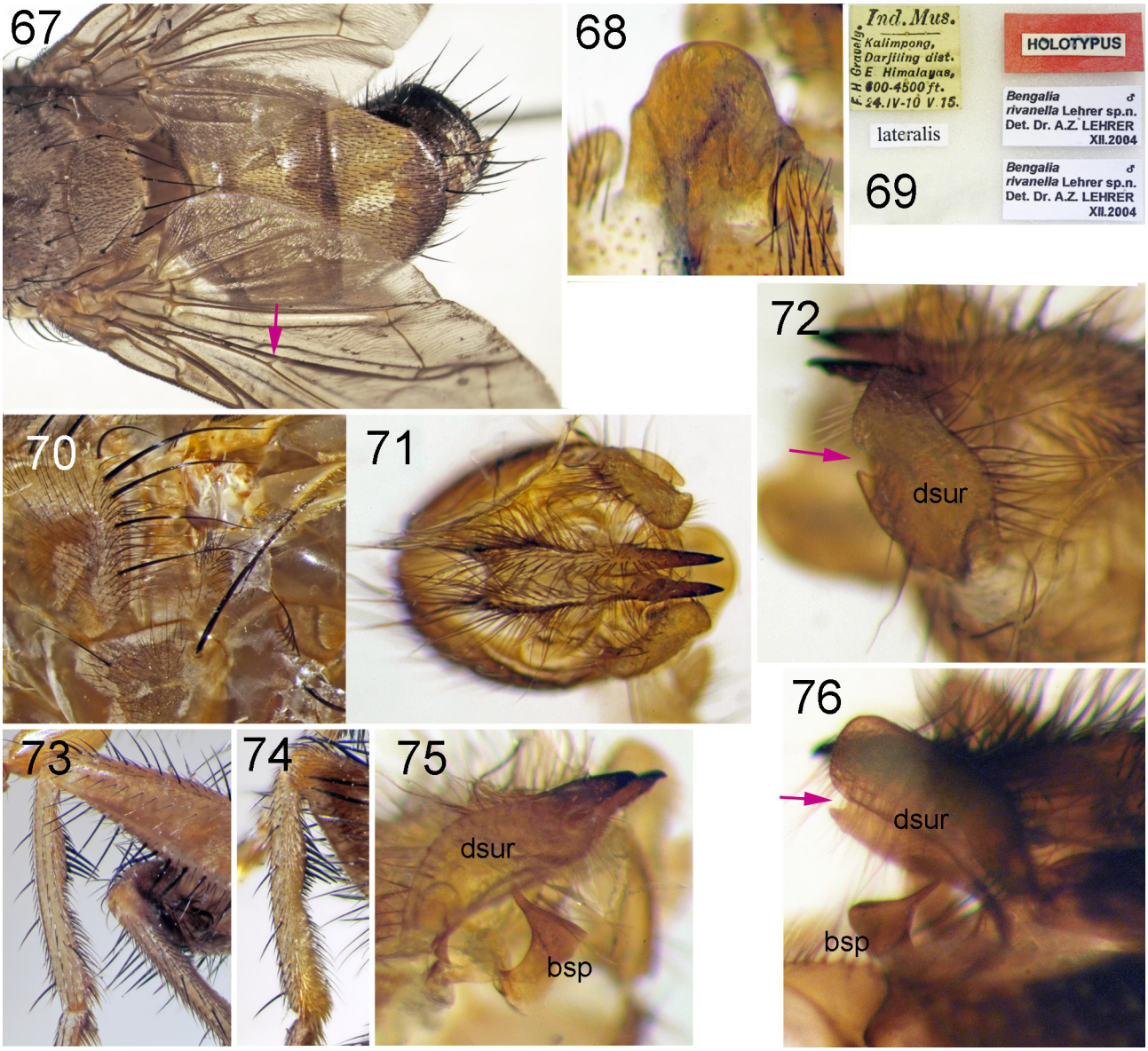
FIGURES 60–66. *Bengalia escheri* Bezzi (lectotype, ETHZ). **60.** Anterior part of body, left lateral view. **61.** Posterior part of body, left lateral view. Arrow points to *r-m* crossvein. **62.** Abdomen, posterodorsal view. **63.** Left fore leg, inside view. **64.** Right fore leg, outside view. **65.** ST5 *in situ* at tip of abdomen, oblique antero-ventrolateral view. **66.** Labels.

Additional remarks. Bezzi (1913) described *Bengalia escheri* on the basis of one male and one female in "der Sammlung des Herrn Dr. J. Escher-Kündig aus Zürich, welcher die Liebenswürdigkeit hatte, mir die Art für die Beschreibung zu überlassen, und zu dessen Ehren benannt ist. [the collection of Dr. J. Escher-Kündig in Zürich, who had the kindness to leave the description of the species to me and in whose honour it is named.]". The number "13228" on the third label of the lectotype (Fig. 66) refers to a handwritten entry in the ETHZ catalogue of the Escher-Kündig collection, which reads [slashes represent a line shift in the catalogue]: "13228 Bengalia ♂ escheri Bezzi Type ♂ / von Bezzi beschrieben und nach mir / benannt / Tainan (Formosa) gekauft von Rolle". The handwriting in the catalogue is obviously Escher-Kündig's and is the same as on labels 2 and 3. The entry in the catalogue for the number "13229" on the paralectotype female reads: "Bengalia ♀ escheri Bezzi Type ♀ / Tainan (Formosa) gekauft von Rolle".

Bezzigalia rivanella Lehrer, 2005. HOLOTYPE ♂ (MSNM), labelled (1) Ind.Mus. / Kalimpong, / Darjiling dist. / E. Himalayas, / 600-4500 ft. / 24.IV-10 V 15. / F.H.Gravely [vertically near left hand margin of label] [printed, there is a horizontal line printed below first line]; (2) lateralis [printed]; (3) HOLOTYPUS [black printed on white label glued to bigger red label]; (4) *Bengalia* ♂ / *rivanella* Lehrer sp.n. / Det. Dr. A.Z. LEHRER / XII.2004 [printed, pin hole at middle]; (5) *Bengalia* ♂ / *rivanella* Lehrer sp.n. / Det. Dr. A.Z. LEHRER / XII.2004 [printed, pin hole near right hand margin] (Fig. 69) [Dissected by Lehrer; terminalia in glycerol in big plastic vial and transferred by me to glass microvial; the holotype is rather teneral, as shown by its pale colouration compared to that of fully developed *B. escheri* specimens and the wrinkled and folded abdominal tergites (Fig. 67) and (some) legs; left hind leg missing].

Additional remarks. The following items were present in Lehrer's vial: (1) parts of ST5, including the ST5 flap, and (2) the epandrial complex, which included the epandrium, cerci, surstyli, and the left bacilliform sclerite.

The phallus, pre- and postgonites and hypandrium were absent. The ST5 parts were joined to the ventral surface of the epandrial complex by a greyish stiff substance, apparently Canada balsam. I did not try to separate the two pieces from each other at first but later succeeded in removing the ST5 parts from the epandrium. One of the surstyli is displaced, and both have a conspicuous nick in the lower distal margin (Fig. 72), inadequately figured by Lehrer (2005: 110, fig. 48B). The shape of the bacilliform sclerite process, with its single projection pointing towards the inside of the base of the cercus (Fig. 75), together with the shape of the ST5 flap (Fig. 68), show that the species is *B. escheri*. The chaetotaxy of the fore tibia (Figs 73–74) (not illustrated by Lehrer) and the vestiture of the anepimeron (Fig. 70) confirm this. Lehrer's figure of the distiphallus is very strange (Lehrer 2005: 110, fig. 48C): most of the semidomes appear to have been destroyed, like most of the hypandrial complex, which is possibly the reason for the absence of the phallus from the vial.



FIGURES 67–76. *Bengalia escheri* Bezzi (67–75: holotype of *Bezzigalia rivanella* Lehrer, MSNM; 76: dissected male from Taiwan, CNC). **67.** Hind part of body, dorsal view. Arrow points to *r-m* crossvein. **68.** ST5 flap. **69.** Labels. **70.** Left anepimeron, lateral view. **71.** Epandrial complex, posterior view. **72.** Distal surstylus, broadest aspect view. Arrow points to nick in distal surstylus **73.** Left fore tibia and femur, outside view. **74.** Right fore tibia, inside view. **75.** Left bacilliform sclerite process and distal surstylus, lateral view. **76.** Right bacilliform sclerite process and distal surstylus, lateral view. Arrow points to nick in latter. Abbreviations: *bsp* = bacilliform sclerite process; *dsur* = distal surstylus.

Other material examined. BPBM. Taiwan: 1 ♂, labelled (1) TAIWAN: Wulai / nr. Taipei, 300- / 500m, 12.IV.1960 [printed]; (2) T. C. Maa / Collector / BISHOP [printed]; (3) Bengalia / escheri ♂ / Bezzi / Det. H. Kurahashi, [handwritten; last line printed, black line above last line of text] (4) Sweeping [printed]; (5) *Gangelomyia* ♂ / *escheri* (Bezzi) / Det. Dr.A.Z.LEHRER / 2005 [printed; pin hole in middle]; (6) *Gangelomyia* ♂ / *escheri* (Bezzi) / Det. Dr.A.Z.LEHRER / 2005 [printed; pin hole near right hand margin] [Left mid leg and right fore and mid legs lost; abdomen very dark; dissected by Lehrer; terminalia in big plastic vial with glycerol, moved to glass microvial by me; phallus movable against the postgonites, but all dissected parts are infiltrated by Canada balsam; anepimeron predominantly with black setulae, with a few pale setulae in lower half; there is a prominent nick in the surstylus and the bacilliform sclerite process is as in other *escheri*, with tip directed inwards]. **CMNH.** Taiwan: 1 ♀, labelled (1) TAIWAN: Kaohsiung / Ten chih. 1550 m / 23-04-03N 120-45- / 13E, 23 Aug 1996 / Chen Wen Young; (2) Bengalia ♀ / escheri / Bezzi, 1913 / Det. H.Kurahashi [both printed labels]; • 1 ♀, labelled (1) TAIWAN: Kaohsiung / Shanping. 640 m. / 21–30 April 1988 / C.Young, R.Davidson / J.Rawlins; (2) Bengalia ♀ / escheri / Bezzi, 1913 / Det. H.Kurahashi [both printed labels]. **CNC.** Taiwan: 1 ♂, labelled (1) 1395 [printed on pale blue label]; (2) Sun Moon Lake / TAIWAN 13.VII.68 / J.W.Boyes [printed]; (3) Boyes Cytolog. / Coll. # 1395 / To remain / in CNC [printed on yellow-brown label; number handwritten]; (4) Bengalia / escheri / Bezzi / Det. Shewell. 1971 [handwritten label, except last line] [Terminalia extruded; I removed abdominal tip behind segment 4 for KOH treatment and dissection; terminalia in glycerol in glass microvial on same pin as specimen; specimen rather teneral, judging from the irregular depressions and bumps in the abdomen that give an impression of softness to the sclerites, and the thin epandrial complex sclerites and very short hypandrial plate; fore tibia with 4 not very long but regular *v* setae, preceded by 4 shorter and finer setae above them]. **MNHN.** Vietnam: 1 ♀, labelled (1) Ban Nam Coun / H: Tonkin / 28 - 3 - 17 [handwritten] [The specimen stood in the MNHN collection under "*Bengalia lateralis*"]. **NHMD.** Thailand: 1 ♀, labelled (1) THAILAND; Chiang Mai Province / Doi Suthep N. P. Konthathan / 6-700 m 26.ix.1981 / Zool. Museum Copenhagen leg. [printed]; (2) Bengalia ♀ / escheri / Bezzi, 1913 / Det. H. Kurahashi. [printed]; •1 ♀, labelled (1) Thailand, Doi Suthep-Pui / natn. Park Konthathan / waterfall area , 600 m / 20.–27.x.1979 / Zool. Mus. Copenhagen Exped. [printed]; (2) Bengalia ♀ / escheri / Bezzi, 1913 / Det. H. Kurahashi. [printed]. [Both are very dark specimens.] **NHMUK.** India: 1 ♂, labelled (1) BURMA: / Mishmi Hills. / Lohit River. [this is actually in India (Arunachal Pradesh)] / 1.iv.1935. / M. Steele.; (2) Brit. Mus. / 135-312.; (3) *Gangelomyia* ♂ / *escheri* (Bezzi) / Det. Dr.A.Z.LEHRER / 2005 [printed; pin hole in middle]; (4) *Gangelomyia* ♂ / *escheri* (Bezzi) / Det. Dr.A.Z.LEHRER / 2005 [printed; pin hole near right hand margin] [Dissected by Lehrer; left postgonite broken; terminalia in glycerol, transferred to glass microvial by me]; Malaysia (West Malaysia): 1 ♂, labelled (1) N. Kedah. U.F.M.S / Changloon [= Changlun]. / 2.iv.-2.vii. / A.S. Slatter. / B.M.1938–744. [handwritten in black ink]; (2) escheri [handwritten]; (3) *Bengalia* ♂ / *escheri* (Bezzi) / Det. Dr.A.Z. LEHRER / 2004 [printed; pin hole in middle]; (4) *Bengalia* ♂ / *escheri* (Bezzi) / Det. Dr.A.Z. LEHRER / 2004 [printed; pin hole near right hand margin] [Dissected by Lehrer; terminalia in glycerol in big plastic vial, transferred to glass microvial by me]. [Both NHMUK specimens have pale setulae in lower half of anepimeron.] **NMW.** Indonesia (?): 2 ♀, labelled (1) Ost. Indien / Alte Sammlung [upper line handwritten, lower printed] [Pleuron dark; anepimeron with black setulae dorsally and posteroventrally, and with a few pale setulae anteroventrally; mid and hind femora with darkened distal third; a very pronounced dark spot in upper half of parafacial; clypeus projecting below lower facial margin; placed in collection under "*Bengalia lateralis*"]. **ZMHB.** Taiwan: 1 ♂, labelled (1) Formosa / Taiwan [handwritten]; (2) Zool. Mus. / Berlin [printed] [The specimen was placed under *B. fuscipennis*; very dark, dark distal parts of femora; ST5 flap as in typical *B. escheri*].

***Bengalia fuscipennis* Bezzi, 1913**

(Figs 77–99)

Bengalia fuscipennis Bezzi, 1913: 75 (as "*Bengalia fuscipennis* (B. B.) n."). Lectotype ♂ (ETHZ; for details see "Type material examined"), by designation of Rognes (2009a: 96). Type locality: Taiwan [as "Formosa"], Tainan.

Pollenoides kuyanianus Matsumura, 1916: 405. Lectotype ♂ (HUS; for details see "Type material examined"), by designation of Rognes (2009a: 99), where the synonymy was established. Type locality: Taiwan, Kuyania.

Bengalia siamensis Senior-White, 1924: 106, figs 1–3. Holotype ♂ (NHMUK; for details see "Type material examined"), by original designation. Type locality: Thailand (Doi Chom Chang). **Syn. nov.** [NB: the bacilliform sclerite process is nicely figured by Senior-White, but the structure is not present among the holotype preparations.]

Bengalia siamensis: Senior-White *et al*. (1940: 93–94, fig. 45) (Thailand).

Bengalia (*Ochromyia*) *taiwanensis* Fan, 1965: 194. Holotype ♂ (SIBSCAS; not examined, but photographs seen), by monotypy ("a single male"). Type locality: Taiwan. [NB: the holotype is labelled "Rimogan F / June 21 1935". Rimogan is Japanese for the Mandarin name for Fushan (see Chiu *et al*. 1984: 54), located in the Wenshan District, Taipei, Taiwan (according to Weibing Zhu, Shanghai). The "F" refers to "Formosa". Synonymy first suggested by Fan (1997: 456) but formally established by Rognes (2009b: 25).]

Bengalia taiwanensis: Fan (1992: 534; 1997: 454) (Taiwan).

Bengalia taiwanensis: Feng *et al*. (1998: 1380) (China [Guangdong], Taiwan).

Bengalia fuscipennis: Verves (2005: 239; catalogue entry).

Bengalia siamensis: Verves (2005: 240; catalogue entry).

Bengalia taiwanensis: Verves (2005: 240; catalogue entry).

Gangelomyia kosungana Lehrer, 2007: 16. Holotype ♂ (SDEI; for details see "Type material examined"), by original designation. Type locality: Taiwan. **Syn. nov.**

Gangelomyia laoziella Lehrer, 2007: 18. Holotype ♂ (SDEI; for details see "Type material examined") by original designation. Type locality: Taiwan (Taihorinsho). **Syn. nov.**

Bengalia taiwanensis: Rognes (2009a).

Bengalia fuscipennis: Rognes (2009a).

Pollenoides kyanianus: Rognes (2009a: passim).

Bengalia fuscipennis: Rognes (2009b: 24–25) (discussion of a male and a female in MNHN, correctly identified (listed below), and a specimen of *B. emarginatoides* Rognes, 2009 (now paralectotype) from "Ceylan … Kandy" misidentified earlier by Séguy (1946) as *B. fuscipennis*; the misidentification is the origin of the erroneous citation by James (1977) and Verves (2005) of *B. fuscipennis* as occurring in Sri Lanka).

Bengalia fuscipennis: Yang *et al.* (2014: 89) (Taiwan).

?*Bengalia siamensis*: Sinha & Banerjee (2016: 5–10) (first record from India [Uttarakhand Province, Almora district, "Kumaun Hills, Ranikhet, 5000 ft"]).

Diagnosis. *Male*. Length: 12.0–14.0mm (n=3). Frons at vertex / head width ratio 0.31–0.32 (mean 0.31, n=4). A pale species (Fig. 99). Anepimeron with a bundle of black setulae in upper half and pale yellow setulae in more than lower half (Fig. 92). Dark spot on upper part of parafacial variable: small and not very dark or very dark, almost as in *B. escheri*. Very narrow hind marginal bands on abdominal tergites (Figs 94, 99). T5 pale. Fore femur darkened apically in some specimens. Fore femur with numerous densely set setulae on *a* and *av* surfaces (Figs 97–98). Fore tibia with 2–3 strong spinous setae more or less at a right angle with tibia, and with a few shorter spinous setae above them (Figs 90, 98). *r-m* crossvein of wing covered by a pale area (Fig. 95). ST5 flap slightly variable (Figs 80, 83, 91, 96), with pronounced posterolateral corners and very slightly concave distal margin, and with a small broad process on each side. Cercus narrow, evenly narrowing to a point in dorsal view (Fig. 77). Surstylus broad in its broadest aspect, with a pronounced excavation ventrodistally (Fig. 79). Bacilliform sclerite process apically with a narrow pointed projection directed towards base of cerci, and another projection directed in the opposite direction, broader and usually rounded at tip. The stalk of the process has a concave hind margin (Figs 78–79). Distiphallus as in Figs 81–82, 84–87. Distal lip process (*dlp*) bifurcate in apical view (Figs 82, 86). Opening of the ejaculatory duct flanked by conspicuous dentate projections (Figs 82, 85). Pre- and postgonite as in Fig. 88.

Female. Length: 12.0–13.0mm (n=5). Frons at vertex / head width ratio 0.33–0.35 (mean 0.34, n=5). Females are identifiable on the combination of pale area around *r-m* crossvein of wing and numerous pale setulae in at least lower half of anepimeron.

Discussion. The holotypes of *G. kosungana* and *G. laoziella* both have a bacilliform sclerite process as in Figs 78–79, and a prominent nick in the surstylus. The ST5 flap is also typical of *B. fuscipennis*. Lehrer (2007) did not explain why he considered these two nominal species to be different taxa, and did not illustrate their bacilliform sclerite processes.

Sinha & Banerjee (2016) discussed a male specimen from India (Uttarakhand province) collected by Hem Singh Pruthi and deposited in the collection of the Diptera Section of the Zoological Survey of India, Kolkata. The specimen was collected from "Kumaun Hills, Ranikhet, 5000 ft., Reserve forest, opposite Upat …" [in Uttarakhand Province] and identified by them as *B. siamensis* Senior-White (= B. *fuscipennis* Bezzi).

Sinha & Banerjee (2016) did not illustrate the bacilliform sclerite process, nor did they refer to Senior-White's excellent figure (Senior-White 1924: 107, fig. 2; reproduced in Senior-White *et al*. 1940: 94, fig. 45, annotated in main text "Anterior clasper [= bacilliform sclerite process] with a backwardly directed spur"). The shape of the ST5 flap (Sinha & Banerjee 2016, plates 2, 6) is less angulate laterally than is usual in *B. fuscipennis* and resembles that of *B. escheri* from "Burma" (Fig. 51). The anepimeron is described as having "many black setae", but no mention is made of the exclusively pale setulae in the lower half of the anepimeron present in all *B. fuscipennis*

(Fig. 92). The pale area around the *r-m* crossvein is not mentioned in the text, but it is visible in their plate 1. The legs, as well as the abdomen, are described as yellow, the abdomen with narrow dark margins, which agrees with *B. fuscipennis*. The fore tibial vestiture with 3 large setae (Sinha & Banerjee 2016, plate 1a) is intermediate between the condition found in *B. escheri*, with usually 4–6 or more large setae, and the typical condition found in *B. fuscipennis*: 2 large setae surrounded by a few irregularly-sized setae, mostly proximally (a paratype of *G. laoziella* Lehrer from Tappani, Taiwan, exceptionally has 3 strong setae on the right fore tibia, whereas the left one has 2).

There are a few errors in the legends to the figures of the distiphallus in Sinha & Banerjee (2016) that deserve mention. Their "ext.hy.l." (plates 11, 12, 14) is the lateral finger (*lf*, Fig. 86), not a part of the external hypophallic lobe. Their "int.hy.l" (plates 11, 12) is the external hypophallic lobe, whereas their "int.hy.l." in plate 10 is the true internal hypophallic lobe. The true internal hypophallic lobe is unlabelled in plate 12.The structure labelled "dl.wi" (plate 12) is one of the semidomes.

Due to all the above, I am not quite convinced by Sinha & Banerjee's (2016) identification, and therefore only tentatively list this specimen as *B. fuscipennis*.

Biology. Unknown.

Distribution. China (Guangdong), ?India, Taiwan*, Thailand*.

Type material examined. *Bengalia fuscipennis* Bezzi, 1913. LECTOTYPE ♂ (ETHZ), PARALECTOTYPE ♀ (ETHZ). [Details of specimens and labels are given by Rognes (2009a: 96) (Fig. 89); my lectotype and paralectotype labels were affixed to the specimens by Franziska Schmid (ETHZ) after they had been returned; they read, respectively: LECTOTYPE (m) / *Bengalia fuscipennis* / Bezzi, 1913: 75 / Esch.-Künd. no. 13232 / des. K. Rognes 2009; and PARALECTOTYPE (f) / *Bengalia fuscipennis* / Bezzi, 1913: 75 / Esch.-Künd. no. 13233 / des. K. Rognes 2009.]

Additional remarks. Bezzi (1913) described *Bengalia fuscipennis* on the basis of a male and female from Taiwan and characterized the male on the basis of femoral colour and fore tibial spinosity, referring to a figure (Bezzi 1913: 74 fig. B). He was in doubt about his use of the name. He cited an entry in Brauer & Bergenstamm (1889: 158) for "***Ochromyia*** Mcq. *fuscipennis* Mcq." from "Ostindien, Amboina". Bezzi cited various other Brauer & Bergenstamm publications and concluded that the citation was a misunderstanding and that they actually meant *Ochromyia ferruginea* Doleschall, 1857 (from Amboina in Malucu). This is a *nomen dubium* according to Thompson & Pape (2013).

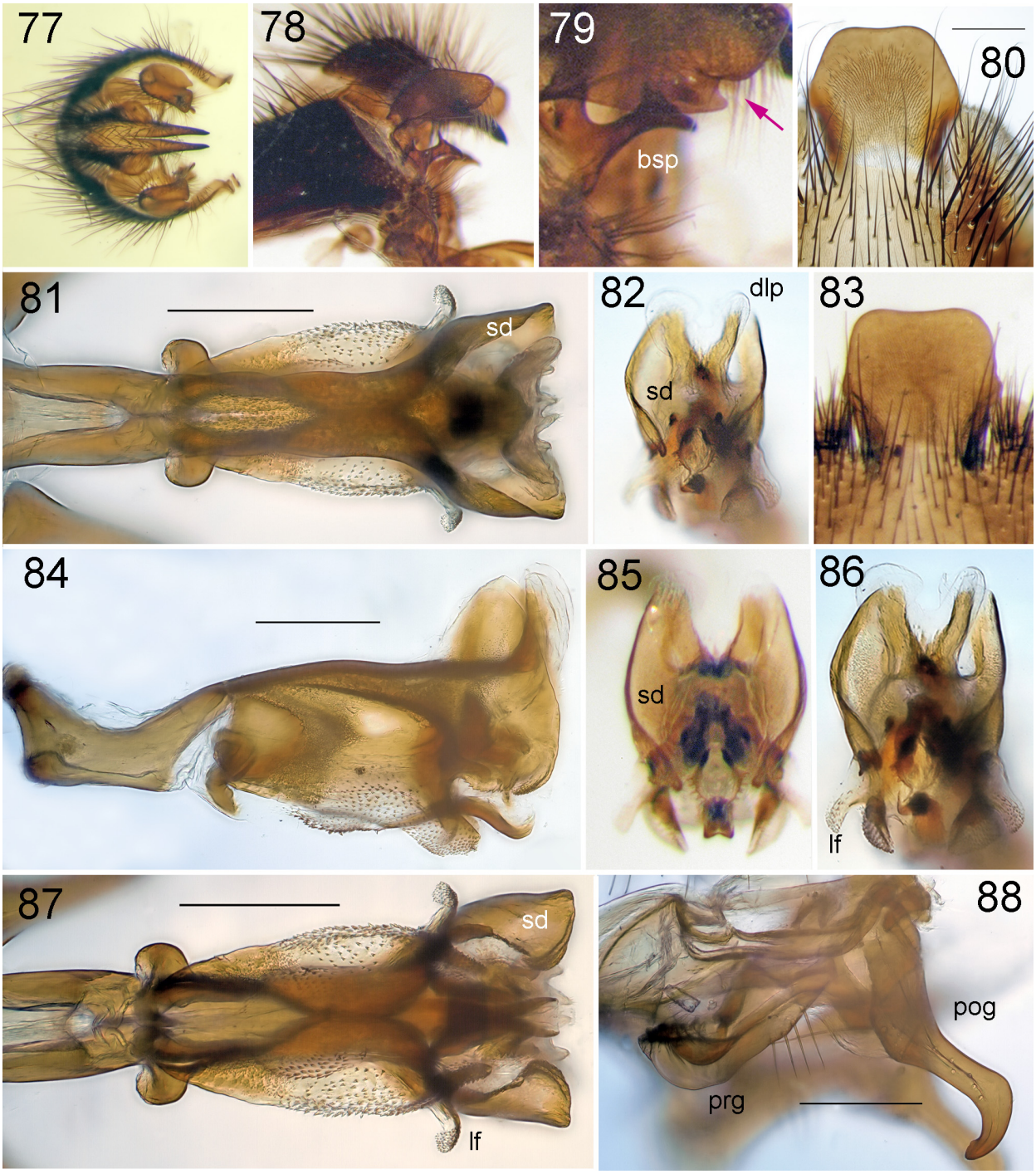
Pollenoides kuyanianus Matsumura, 1916. LECTOTYPE ♂ (HUS). [Details of specimens and labels were given by Rognes (2009a: 95–96).]

Bengalia siamensis Senior-White, 1924. HOLOTYPE ♂ (NHMUK), labelled (1) Holo / type [printed on white label with red rim]; (2) N. Siam: / Doi Chom Chang. / nr. Chiengmai. / 13.iv.1921. / Dr. M. E. Barnes. / 1921.393. [handwritten in pencil]; (3) Bengalia / siamensis / TYPE ♂. sp. nov. / R.S:W. 1923. [handwritten in black ink] [The terminalia are mounted in Canada balsam on a celluloid plate on the pin, with no cover slip; habitus and head photographs were provided by Sinha & Banerjee (2016: 8, plates 15–16)].

Gangelomyia kosungana Lehrer, 2007. HOLOTYPE ♂ (SDEI), labelled (1) FormosaI / (Rolle) San… (illegible) [handwritten]; (2) coll Oldenberg [printed]; (3) Bengalia / Escheri / Bezzi [handwritten]; (4) HOLOTYPUS [black print on red label]; (5) *Gangelomyia* ♂ / *kosungana* n. sp. / Det. Dr. A.Z.LEHRER / 2006 [Dissected by Lehrer; terminalia in glycerol, transferred to glass microvial by me].

Gangelomyia laoziella Lehrer, 2007. HOLOTYPE ♂ (SDEI), labelled (1) Taihorinsho / Formosa / H. Sauter XI.10 [printed, but date handwritten]; (2) Villeneuve det. [printed]; (3) HOLOTYPUS [black print on red label]; (4) *Gangelomyia* ♂ / *laoziella* n. sp. / Det. Dr. A.Z.LEHRER / 2006 [Dissected by Lehrer; terminalia in glycerol, transferred to glass microvial by me]. PARATYPES (all in SDEI; four seemingly originally identified by Villeneuve as *Bengalia fuscipennis* and placed under his single determination label); • 1 ♂, labelled (1) Fuhosho / Formosa / H. Sauter VII 09 [printed, but date handwritten]; (2) Villeneuve det. [printed]; (3) PARATYPUS [printed on red label]; (4) *Gangelomyia* ♂ / *laoziella* n. sp. / Det. Dr. A.Z.LEHRER / 2006 [Dissected by Lehrer; terminalia in glycerol, transferred to glass microvial by me]; • 1 ♂, labelled (1) Kosempo / Formosa / Sauter VII 09 [printed, but month handwritten]; (2) Bengalia / fuscipennis / Bezzi / Villeneuve det. [handwritten by Villeneuve, last line printed]; (3) Villeneuve det. [printed]; (4) PARATYPUS [printed on red label]; (5) *Gangelomyia* ♂ / *laoziella* n. sp. / Det. Dr. A.Z.LEHRER / 2006 [Dissected by Lehrer; terminalia in glycerol, transferred to glass microvial by me]; • 2 ♂, labelled (1) Taihorinsho / Formosa / H. Sauter XI.10.; (2) Villeneuve det. [printed]; (3) fuscipennis [handwritten in pencil]; (4) PARATYPUS [printed on red label]; (5) *Gangelomyia* ♂ / *laoziella* n. sp. / Det. Dr. A.Z.LEHRER / 2006 [Dissected by Lehrer; terminalia in glycerol, transferred to glass microvial by me]; • 1 ♂,

labelled (1) Tappani / Formosa / H. Sauter XI.09 [top line and date handwritten, the rest printed]; (2) Bengalia / Escheri / Bezzi [handwritten]; (3) det. Baranoff [printed]; (4) coll. Oldenberg [printed]; (5) PARATYPUS [printed on red label]; (5) *Gangelomyia* ♂ / *laoziella* n. sp. / Det. Dr. A.Z.LEHRER / 2006 [Dissected by Lehrer; terminalia in glycerol, transferred to glass microvial by me.



FIGURES 77-88. *Bengalia fuscipennis* Bezzi (77–79, 81–88: male paratype of *Gangelomyia laoziella* Lehrer from Tappani, Taiwan, SDEI; 80: male from Doi Inthanon N.P., Chiang Mai Province, Thailand, NHMD). **77.** Epandrial complex, posterior view. **78.** Epandrial complex, left lateral view. **79.** Left distal surstylus and bacilliform sclerite process, lateral view. Arrow points to nick in distal surstylus. **80.** ST5 flap. **81.** Distiphallus, dorsal view. **82.** Distiphallus, apical view. **83.** ST5 flap. **84.** Distiphallus, left lateral view. **85.** Distiphallus, apical view. **86.** Distiphallus, apical view. **87.** Distiphallus, ventral view. **88.** Pre- and postgonites. All scale bars = 0.25mm. Abbreviations: *bsp* = bacilliform sclerite process; *dlp* = distal lip process; *lf* = lateral finger; *pog* = postgonite; *prg* = pregonite *sd* = semidomes.

FIGURES 89–99. *Bengalia fuscipennis* Bezzi (89–91: lectotype, ETHZ; 92: female from Taitung Hsien, Taiwan, KR; 93–99: male from Kosempo, Taiwan, MNHN). **89.** Labels. **90.** Left fore tibia, outside view. **91.** ST5 flap, oblique view. **92.** Left anepimeron. **93.** Labels. **94.** Abdomen, dorsal view. **95.** Detail of wing; arrow showing pale area around *r-m* crossvein. **96.** ST5 flap. **97.** Fore femora, from front. **98.** Left fore leg, inside view. **99.** Habitus.

Other material examined. CMNH. Taiwan: 1 ♂, labelled (1) TAIWAN: Kaohsiung / Shanping. 640 m. / 21–30 April 1988 / C.Young, R.Davidson / J.Rawlins; (2) Bengalia ♂ / taiwanensis / Fan, 1965 / Det. H.Kurahashi [both printed labels]; 2 ♀, labelled (1) TAIWAN: Kaohsiung / Shanping. 640 m. / 21–30 April 1988 / C.Young, R.Davidson / J.Rawlins; (2) Bengalia ♀ / taiwanensis / Fan, 1965 / Det. H.Kurahashi [both printed labels]; • 1 ♀, labelled (1) TAIWAN: Kaohsiung / Shanping. 640 m. / 11–20 April 1988 / J.Rawlins C.Young / R.Davidson; (2) Bengalia ♀ / taiwanensis / Fan, 1965 / Det. H.Kurahashi [both printed labels]. **KR.** Taiwan: 1 ♀, labelled (1) TAIWAN, Taitung Hsien / Hsinkangshan above / Chengkang, 800m, 17-22. / IV.1998, A. Smetana / & Lise Robillard [T181] [printed]. **MNHN.** Taiwan: 1 ♂, labelled (1) Formosa / Sauter; (2) Kosempo / 908.III.21; (3) Bengalia / fuscipennis / Bezzi [handwritten by Villeneuve]; (4) J. VILLENEUVE det. [all labels printed, except third] (Fig. 93); • 1 ♀, labelled (1) Formosa / Sauter; (2) Kosempo / 908.III. [printed] [Specimen severely damaged by dermestid larvae, having lost its head; the abdomen had fallen off and is now glued, upside-down on a piece of card on the same pin, above the labels]. **NHMD.** Thailand: 1 ♂, labelled (1) THAILAND: Chieng Mai Province / Doi Inthanon N.P.: Huai Sai / Luang 10–1100 m 13.x.1981 / Zool. Museum Copenhagen leg. [printed]; (2)

Bengalia ♂ / siamensis / S.-White, 1924 / Det. H. Kurahashi [printed] [Dissected by me; abdominal tergites glued to card on pin, above labels; terminalia in glycerol in glass microvial]; • 1 ♂, 1 ♀, labelled (1) THAILAND: Chieng Mai Province / Doi Suthep N. P. Mahidol / Waterfall, 1250 m 27.ix.1981 / Zool. Museum Copenhagen leg.; (2) Bengalia ♂ [or ♀] / siamensis / S.-White, 1924 / Det. H. Kurahashi [printed]. **NMW.** Taiwan: 1 ♂, labelled (1) Tainan / Formosa [handwritten]; (2) Bengalia / fuscipennis / Bezzi / det. L. Czerny [handwritten except last line, which is printed in boldface]; • 1 ♂, 5 ♀ [all unlabelled but placed together with and conspecific with the previously-listed, labelled male; I dissected the unlabelled male: its terminalia are placed in glycerol in a glass microvial and T1+2–5 are glued to a piece of card; both pinned together with the source specimen]. [All seven specimens are covered with fungal hyphae to varying extents; all stood in the collection under *B. fuscipennis*.]. **ZMHB.** Taiwan: 1 ♂, labelled (1) Formosa I / Sauter Rlle [handwritten]; (2) … [illegible] Rolle / Oct . Dec [?] [handwritten]; (3) Bengalia / fuscipennis / Bezzi / Villeneuve det. [handwritten by Villeneuve except last line, which is printed]; (4) Bengalia / fuscipennis / Bzi [handwritten drawer label [?] with double black frame]; (5) Zool. Mus. / Berlin [printed] [Not dissected].

***Bengalia jejuna* (Fabricius, 1787)**

(Figs 100–130)

Musca ieiuna Fabricius, 1787: 342. Incorrect original spelling of *jejuna* Fabricius, 1787, in accordance with Article 33.3.1 of the Code (ICZN 1999). 3 female syntypes (NHMD, recently given the labels "**zmuc** / 00027291–93"; examined). Type locality: India (Tamil Nadu province, Tarangambadi [as "Habitat Tranquebariae Dom. Lund"]) (Fig. 126). [No index to species names in Fabricius (1787)]. Male to be proposed as **neotype** (NHMD), labelled "Madras / Galatea / Jejuna / F." [handwritten] (Figs 127–129) [see discussion under "Type material examined".]

Musca jeiuna: Fabricius (1794: 312). Incorrect subsequent spelling of *jejuna* Fabricius, 1787 [as *ieiuna*]. [No index to species names in Fabricius (1794)].

Musca jejuna: Fabricius (1805: 283). Correct original spelling of *ieiuna* Fabricius, in accordance with Article 33.3.1 of the Code (ICZN 1999) [in the index to species names in Fabricius (1805), only the spelling *jejuna* is listed, not *ieiuna* or *jeiuna*, cf. http://biodiversitylibrary.org/page/15663120].

Additional remarks. Thompson & Pont (1994) were the first to record the three spellings of the Fabrician name. But in all the relevant literature published after Fabricius's works only the spelling *jejuna* has been used. Surcouf (1920: 39) cited the year 1794 as the publication year for *jejuna*, but never used the spelling in that work (*jeiuna*). Townsend (1931b) saw the three syntypes in NHMD. He did not cite the year of Fabricius's work(s), but only used the spelling *jejuna*. Zimsen (1964), who reported on the collections of Fabricius in detail, used the spelling *jejuna* while referring both to "Mant. Ins. II p. 342 · 2" (= Fabricius 1787), where the spelling is *ieiuna*, and to "Syst. Ant. 1805 p. 283 · 1" (= Fabricius 1805), where the spelling is *jejuna*. To summarize, even though the spelling *jejuna* has been in prevailing usage, it has either been attributed to Fabricius (1787), where the spelling is *ieiuna* (James [1977: 529]; Rueda [1985: 349]; Kurahashi *et al.* [1997: 42]; Kurahashi & Magpayo [2000: 43]; Verves [2005: 239]), or to Fabricius (1794), where the spelling is *jeiuna* (Wiedemann [1830: 386; citing "Ent.syst IV.312.1" from 1794]; Surcouf [1920: 39]; James [1966: 471]; Senior-White [1930: 69]; Senior-White *et al*. [1940: 88]; Kurahashi [2001: 243]; Lehrer [2005: 143]). I have not found any author giving the source of the name *jejuna* as Fabricius (1805), where the spelling *jejuna* was first introduced in a published work.

On all labels I have seen, including old ones from 1809 (Westermann), only the spelling *jejuna* occurs. Even the original Fabricius label on the "**zmuc** / 00027291" specimen reads "Musca / jejuna" (Fig. 126).

Article 33.3.1 of the Code (ICZN 1999) sets two conditions for an incorrect subsequent spelling to be conserved. The first is that the "incorrect subsequent spelling is in prevailing usage". This condition is fully satisfied in the *jejuna* case. The second is that the "incorrect subsequent spelling … is attributed to the publication of the original spelling". This condition is only partly satisfied in the *jejuna* case, since the name is attributed to the publication of the original spelling (i.e., Fabricius 1787) only in about half of the investigated papers. One should keep in mind, however, that it is likely that many authors do not check the original publication when a species name is attributed to its author, but tend to follow the attribution given in some main reference works at hand, e.g., James (1977) and Senior-White *et al*. (1940). Therefore, I would not give too much weight to the fact that not all authors attribute the name *jejuna* (the subsequent spelling) to the publication of the original spelling (Fabricius 1787).

With this in mind, I will interpret the Code to the effect that the subsequent spelling (*jejuna*) and the attribution (to Fabricius's 1787 work) are to be preserved, and that this subsequent spelling is deemed to be the correct original spelling. This is also the spelling used by Fabricius in his own handwriting on the only preserved label (Fig. 126) on any of the three syntypes in NHMD.

Musca jejuna: Wiedemann (1830: 386).

Homodexia obscuripennis Bigot, 1885a: xxvi [1885b: xxvi]. Holotype ♂ [not female as stated in the original publication; apparently a lapsus, since the label gives the sex as "♂"; see also Senior-White (1924: 104, under "*lateralis* Macq.")] (NHMUK; examined), by monotypy. Type locality: Sri Lanka (as "Ceylan").

Musca jejuna: Surcouf (1920: 39).

Musca torosa: Surcouf (1920: 39). As synonym under *jejuna*.

Bengalia lateralis: Senior-White (1923a: 304; Plate I, fig. 7; Plate V). Misidentification, not *lateralis* Macquart, 1844: 277 (= *Musca torosa* Wiedemann) (India [various localities]; fore leg and terminalia figured).

Bengalia lateralis: Senior-White (1924: 104). Misidentification, not *lateralis* Macquart, 1844: 277 (= *Musca torosa* Wiedemann) (India [various localities]).

Bengalia lateralis: Senior-White (1926: 137). Misidentification, not *lateralis* Macquart, 1844: 277 (= *Musca torosa* Wiedemann) (India [various localities]).

Bengalia lateralis: Senior-White *et al.* (1940: 91, fig. 43). Misidentification, not *lateralis* Macquart, 1844: 277 (= *Musca torosa* Wiedemann) (terminalia figured).

[?*Bengalia jejuna*: James (1966: 471) (Philippines ["A male and female from Brooke's Point, Uring Uring, and a headless female … Manatlingajan Range, Pinigisan." (…) "The male genitalia are *not significantly different* [my emphasis] from those of specimens from South India which I have used for comparison"]). [Both females have been recovered in NHMD and examined, but are unidentifiable. The male has not been recovered, it is not present in NHMD, nor has it been found in WSU. There are four males under *B. jejuna* in WSU from South India ("Coimbatore") that James possibly used for comparison. Three of them are specimens of *Bengalia kanoi* Kurahashi & Magpayo, 2000, only the fourth is *B. jejuna*. This male (see Fig. 125) and one of the *B. kanoi* males had their terminalia exposed with the distiphallus clearly visible, but all four had the ST5 flap exposed. This casts doubt on James's ability to correctly distinguish a male *B. jejuna* from a male *B. kanoi* from the Philippines. Note that the second species was undescribed at James's time. This record is not accepted but is listed with a question mark for the sake of completeness.]

Bengalia jejuna: James (1977: 529; catalogue entry).

Musca ieiuna: Thompson & Pont (1994: 84).

Musca jeiuna: Thompson & Pont (1994: 86).

Musca jejuna: Thompson & Pont (1994: 87).

Bengalia jejuna: Kurahashi *et al.* (1997: 42) (no own material from Malaysia and Singapore, only a citation of the catalogue entry of James [1977]) for "Malaya").

Bengalia jejuna: Kurahashi & Magpayo (2000: 43) (no own material from the Philippines, only a citation of the dubious record of James [1966] from that country, see above).

Bengalia jejuna: Kurahashi (2001: 243) (Sri Lanka).

Gangelomyia evafoneae Lehrer, 2005: 115. Holotype ♂ (NHMUK; examined), by original designation. Type locality: India (Dhimbam, Biligirirangan Hills). **Syn. nov.**

Gangelomyia senausmarta Lehrer, 2005: 128. Holotype ♂ (NHMUK; not examined, but terminalia well illustrated), by original designation. Type locality: Peradeniya, Sri Lanka (as "Ceylan"). Unavailable name, published in synonymy, cf. Rognes (2005: 456, 468). **Syn. nov.**

Bengalia jejuna: Verves (2005: 239; catalogue entry).

*Gangelomyia evafonea*e: Lehrer (2006a: 10) (Sri Lanka [as "Ceylan"], Suduganga [a record repeated from Lehrer (2005)]; all material examined).

Diagnosis. *Male*. Length: 13.0–16.0mm (n=4). Frons at vertex / head width ratio 0.29–0.31 (mean 0.30, n=5). Head in profile (Fig. 106) without a concavity along the posterior eye margin. Anepimeron with a bundle of 9–12 black setulae in upper part, otherwise with only pale setulae (Fig. 108). Fore tibia with 3–4 spinous setae in proximal fourth (Fig. 113). T3 and T4 with dark marginal bands varying from 1/6 to almost 1/2 of tergite length. T5 varying from mostly pale to entirely dark (Fig. 127). ST5 flap (Figs 107, 116, 121) broad, with hind margin straight or very slightly concave, and with rounded lateral angles; dorsal side concave (Fig. 121). Cercus broad throughout in posterior view, narrowing abruptly near tip to form a short pointed process (Figs 100, 114). Surstylus narrow in posterior view (Figs 100, 114), broadly oval in its broadest aspect, broadest below middle (Fig. 102, 115). Bacilliform sclerite process simple, with an oblique distal margin (Figs 101, 115). Distiphallus with dorsal wall constricted at middle (Fig. 103). Distal lip process (*dlp*) of complex structure, broader than long and with broad wing-like projecting membranes in dorsal view (Figs 103–105, 109, 117, 123, 125). Both ventral and lateral wing-like membranes denticulate along margin (Fig. 123). Semidomes with characteristic outline in apical view (Figs 109, 123–124). Pre- and postgonites as in Figs 110, 122.

Female. Unknown.

Discussion. This is a rare species from the Indian subcontinent. Malloch (1927) saw four specimens of *B. jejuna* compared to 51 of *B. torosa* (as *lateralis*). In the present study I examined 11 specimens of *B. jejuna* and 97 of *B. torosa*. Lehrer's nominal species *Gangelomyia evafoneae* (Figs 114–124) is obviously the same as *B. jejuna*. See Rognes (2006) on Lehrer's (2005: 145) view of *Musca jejuna* Fabricius and *Musca torosa* Wiedemann as "**nomina dubia**, qui ne peuvent être utilisés dans la taxonomie moderne". Lehrer (2005) created his nominal species *Gangelomyia senausmarta* on the basis of a male, believing he could thus avoid the problem of deciding on

the identity of these old names based on alleged females. He keyed *G. evafoneae* as separate from *G. senausmarta* on the basis of the shape of the cerci in profile (Lehrer 2005: 112). The cerci of *G. evafoneae* were described in the first half of couplet 5 of the key, as: "Partie distale des cerques *large* [my emphasis], ayant la marge ventrale ondulée et un sommet mince [distal part of cerci *broad*, with the ventral margin undulating and tip pointed]". The second half of couplet 5, which reads "Partie distale des cerques *étroite* [my emphasis] [distal part of cerci *narrow*]", leads, via various choices, to *G. senausmarta* in the first part of key couplet 8, which reads "Partie distale des cerques *large* [my emphasis]", the exact opposite. In short, the key is useless as an explanation of why the two nominal species were considered different taxa.

Biology. Maschwitz & Schönegge (1980) observed *B. jejuna* (and other *Bengalia* species) to lurk in the territories of different ants, robbing prey and brood from moving workers by using their forelegs and sometimes also the proboscis (Sri Lanka). Of decisive importance was that the ant prey was of a pale colour (like insect larvae or termites) and that it was being carried along, thus moving. The identity of Maschwitz & Schönegge's *B. jejuna* was confirmed by B. Herting (SMNS) and myself (see list of records below). Bequaert (1922: 278–279) cites *B. jejuna* as capturing termites in India and Sri Lanka, but this was most likely based on misidentifications. I treat his account, below, under *B. torosa*.

Distribution. India*, Sri Lanka*.

Type material examined. *Musca jejuna* Fabricius, 1787. Three female SYNTYPES (NHMD) (Fig. 126). The first syntype is labelled (1) TYPE [black print on red label]; (2) Musca jejuna [old label in Fabricius's handwriting]; (3) **zmuc** / 00027291 [black print on white label]. The second syntype is labelled (1) TYPE [black print on red label]; (2) **zmuc** / 00027292 [black print on white label]. The third syntype is labelled (1) TYPE [black print on red label]; (2) **zmuc** / 00027293 [black print on white label].

Remarks on the syntypes of *Musca jejuna*. When I received the specimens, the second syntype (… 27292) was the rightmost specimen in the box, and it still is. This specimen is a female *Bengalia torosa* Wiedemann and it is also the smallest of the three syntypes. The other females are not identifiable at present. All specimens are from "Tranquebar" [= Tarangambadi] in the Tamil Nadu province of India. Surcouf (1920: 359) examined one of these syntypes. He wrote: "De plus le P[r] LUNDBECK a bien voulu nous communiquer le type en parfait état de FABRICIUS; … ". However, it is not known which of the three syntypes he examined, although Townsend (1931b: 371) was of the opinion that Surcouf saw one of the two larger specimens "as proved by his giving length of 14 mm.".

Zimsen (1964: 486) listed the syntypes as follows: "Musca jejuna Mant. Ins. II p. 342 · 2 [1787] »Tranquebariae Dom. Lund«. (Syst. Ant. 1805 p. 283 · 1) – Copenhagen 3 specimens sine loc.". The word "Tranquebariae" refers to the modern city of Tarangambadi, from 1620 to 1845 a small Danish colony on the South East coast of India. The expression "Dom. Lund" refers to the collection of Ove Sehested and Niels Tønder Lund (Zimsen 1964: 11).

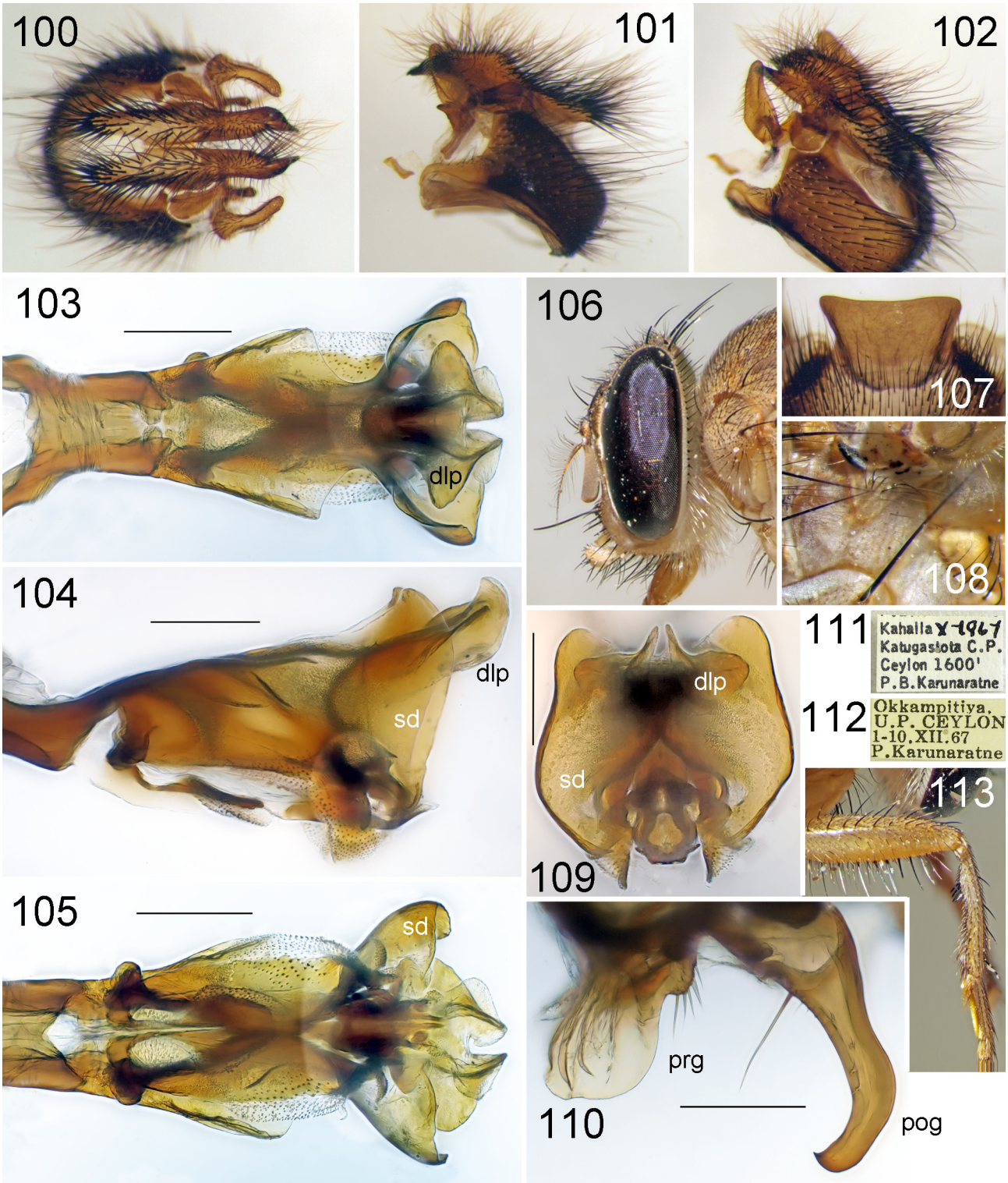
Townsend (1931b: 371) also examined the material in NHMD. He correctly stated that there were three specimens in "Copenhagen Fab. Coll.". He also said they were labelled "*Musca jejuna*", but failed to state that only one specimen had such a label. It is also of interest to note that he gave the spelling as "*jejuna*", as on the Fabricius label, and not as "*ieiuna*" as given by Fabricius (1787).

Further, Townsend (1931b: 371) stated that one of the three specimens was the "Female Ht." and that the others were "2 female Pts.". I do not think it is justified to treat the statement "Female Ht." as a valid (indirect) lectotype fixation since none of the specimens is (was) recognizable or labelled as such, or labelled in a manner making it distinguishable or recognizable from the others. Note that this conclusion is different from the one reached by Rognes *et al.* (2015) regarding the implicit lectotype fixation by Townsend (1931b: 375) of a male specimen of *Tachina westermanni* Wiedemann, 1819 in NHMD, because in that instance the specimen cited was clearly recognizable.

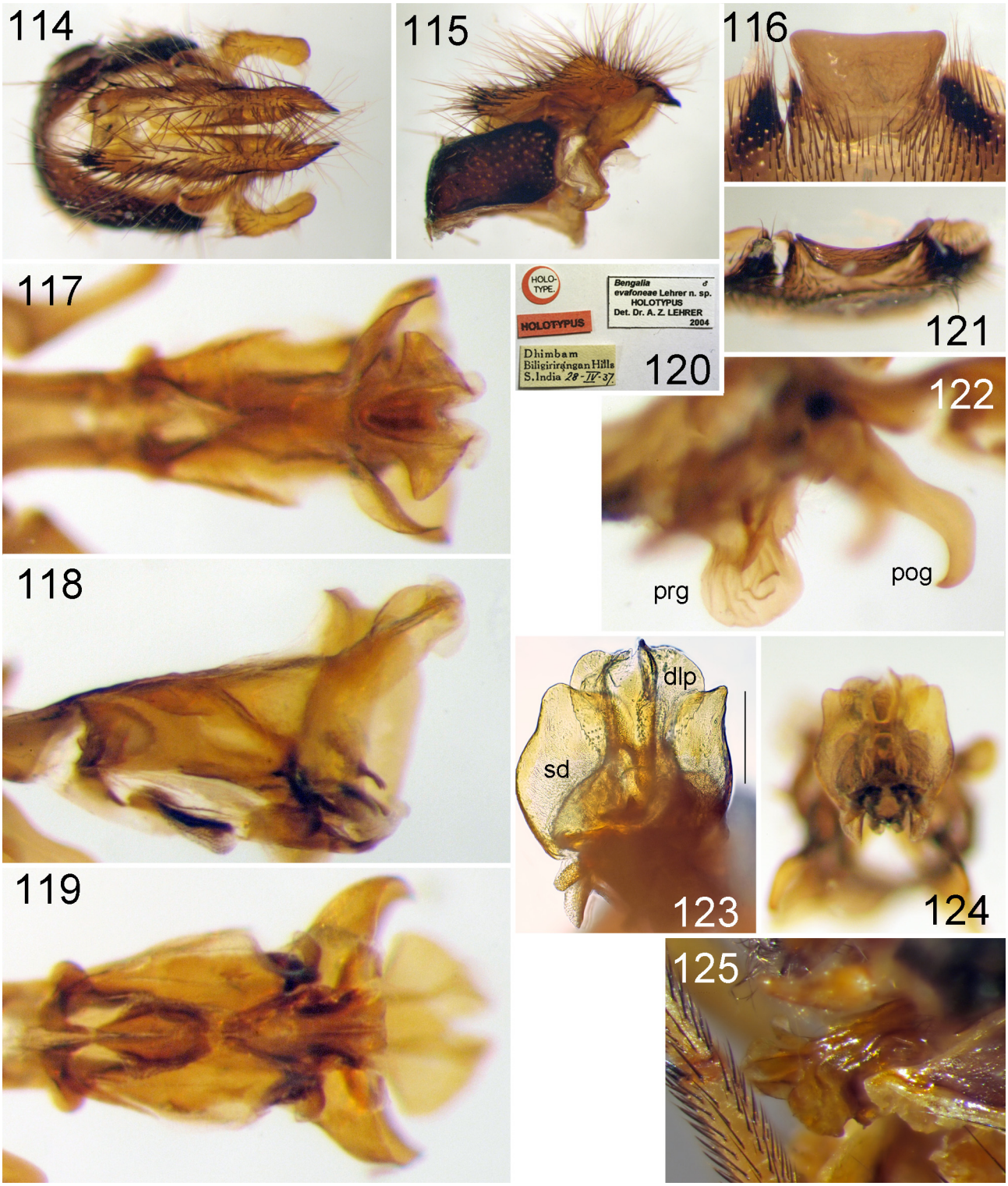
Townsend also noted that "… the smallest of these 3 females is *Bengalia lateralis* Macq., and is hereby excluded, the species being restricted to the other 2 which measure 14 mm and are *jejuna*, Fab., Wied., Macq., Surc.". I do not think that Townsend was justified in excluding a syntype from the type series.

Thompson & Pont (1994: 84, under *ieiuna*) accepted Townsend's (1931b) opinions and stated that a "HT ♀" is in "UZMC" (= NHMD). I do not accept this claim. There is no holotype in NHMD or elsewhere, only syntypes.

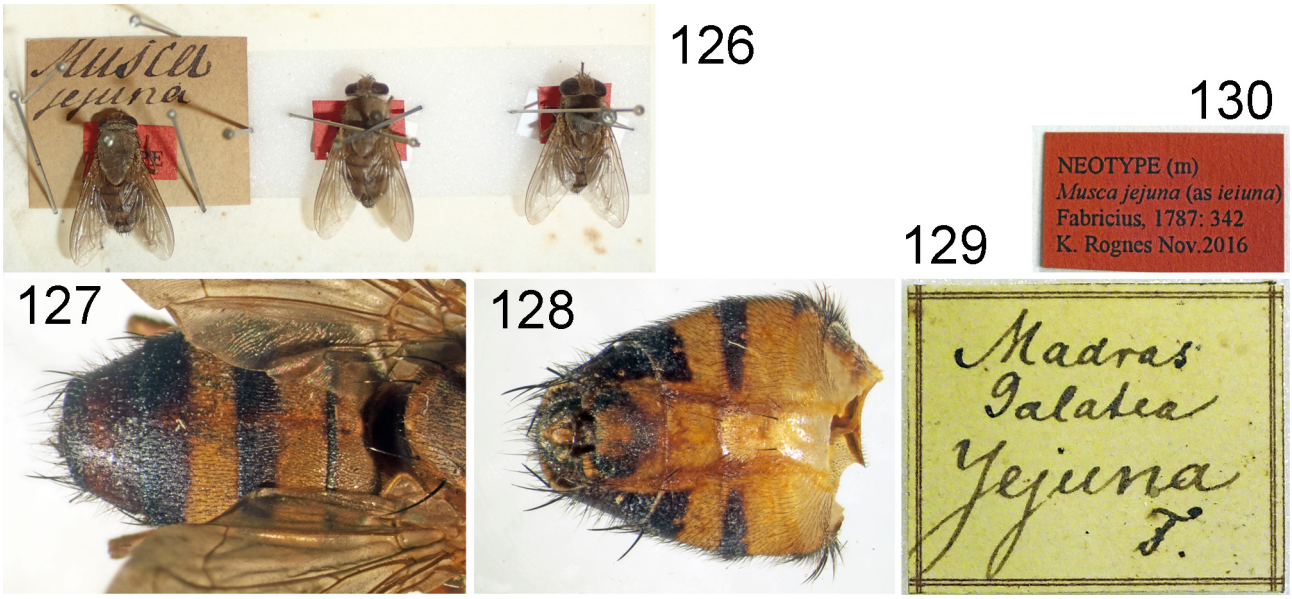
The smallest specimen [now labelled "**zmuc** / 00027292"] is in fact a female of *Bengalia lateralis* Macquart, as correctly judged by Townsend, thus = *Bengalia torosa* (Wiedemann). The two larger specimens, both females as well, are not identifiable at the present state of knowledge, but they are not *B. torosa*.



FIGURES 100–113. *Bengalia jejuna* (Fabricius) (100–111: male from Kahalla, Sri Lanka, CNC; 112–113: male from Okkampitiya, Sri Lanka, CNC). **100.** Epandrial complex, posterior view. **101.** Epandrial complex, right lateral view. **102.** Epandrial complex, oblique lateral view. **103.** Distiphallus, dorsal view. **104.** Distiphallus, left lateral view. **105.** Distiphallus, ventral view. **106.** Head, left lateral view. **107.** ST5 flap. **108.** Left anepimeron. **109.** Distiphallus, apical view. **110.** Pre- and postgonites. **111.** Label. **112.** Label. **113.** Right fore leg, outside view. All scale bars = 0.25mm. Abbreviations: *dlp* = distal lip process; *pog* = postgonite; *prg* = pregonite; *sd* = semidomes.



FIGURES 114–125. *Bengalia jejuna* (Fabricius) (114–124: holotype of *Gangelomyia evafoneae* Lehrer, NHMUK; 125: male from Coimbatore, India, WSU). **114.** Epandrial complex, posterior view. **115.** Epandrial complex, left lateral view. **116.** ST5 flap. **117.** Distiphallus, dorsal view. **118.** Distiphallus, lateral view. **119.** Distiphallus, ventral view. **120.** Labels. **121.** ST5 flap, hind edge view, inside up. **122.** Pre- and postgonites. **123.** Distiphallus, apical view, scale bar = 0.25mm. **124.** Distiphallus, apical view. **125.** Tip of distiphallus, oblique anterodorsal view. Abbreviations: *dlp* = distal lip process; *pog* = postgonite; *prg* = pregonite; *sd* = semidomes.



FIGURES 126–130. *Bengalia jejuna* (Fabricius) (126: syntypes of *Musca jejuna* Fabricius, "Habitat Tranquebariae Dom. Lund", NHMD; 127–130: male proposed as neotype for *Musca jejuna*, NHMD). **126.** The three specimens with their original Fabricius label. **127.** Abdomen *in situ*, dorsal view. **128.** Detached abdomen, ventral view. **129.** Label. **130.** Proposed neotype label.

In the past there have been differences of opinion over the interpretation of the name *Bengalia jejuna* (Fabricius). The confusion also involved the nominal species *Bengalia lateralis* Macquart (now *B. torosa* Wiedemann). This confusion led to the unfortunate situation in which the names *B. jejuna* and *B. lateralis* ended up being used to denote two different taxa by two different groups of authors. Bezzi (1913) illustrated the fore tibia of a species he called "*Beng. jejuna* Fabr." as having two groups of strong, short setae. In this interpretation of "*jejuna*" he was followed by Senior-White (1923a, 1923b, 1924, 1926, 1930) and Senior-White *et al.* (1940). Senior-White (1923a, Plate IV) also provided excellent illustrations of the terminalia of his "*jejuna*", reproduced by Senior-White *et al.* (1940: 89). Senior-White (1923a) named a related Indian species, with another arrangement of fore tibial setae, "*Bengalia lateralis* Macquart", and illustrated the male terminalia of this species as well (his Plate V). These figures were also reproduced in Senior-White *et al*. (1940: 92).

Surcouf (1920) and Malloch (1927) disagreed with Bezzi's interpretation. They were of the opinion that the species with the 5+2 arrangement (some variation was noted in the numbers of setae in each group) of the fore tibial spinous setae was the true *Bengalia lateralis* Macquart. Surcouf (1920: 37), having access to Macquart's type, explained that "le thorax et le scutellum ont aussi une marge claire [the thorax and the scutellum also have a pale margin]" and Malloch (1927: 401) noted the presence of a "conspicuous broad margin of pale dust on each side of mesonotum and also on scutellum, which is most evident when the thorax is seen from behind, and this is not present to any appreciable extent in *jejuna*. I opine that Macquart named his species from this character. ...". Malloch (1927: 402 fig. 4) illustrated the terminalia of his "*lateralis*", his illustrations corresponding exactly to Senior-White's figures of "*jejuna*", and also noted a number of other features, including the concave hind margin of the eye in profile, the position of the vibrissa high "above the mouth-margin" and the anepimeron with pale setulae only. The species interpreted by Senior-White to carry the name "*jejuna*" was the same species that Malloch named "*lateralis*".

James (1966) accepted Surcouf's and Malloch's views and in his Calliphoridae chapter in the Catalog of the Diptera of the Oriental Region (James 1977) also introduced *Bengalia torosa* (Wiedemann, 1819) as the valid name for *Bengalia lateralis* Macquart, 1844. The concepts of *Bengalia jejuna* and *Bengalia torosa* as established by James (1977) have since been universally accepted, except by Lehrer (2005) who introduced two brand new names: "*Gangelomyia senausmarta*" for *Bengalia jejuna* and "*Ochromyia jejutora*" for *Bengalia torosa.* Lehrer apparently did this in an effort to alleviate the confusion over the identity of the names, but also honestly believed the matter could be settled by such an approach. Lehrer's actions were discussed by Rognes (2006).

From the facts above, and the widespread use of the name *Musca jejuna* Fabricius in the literature on *Bengalia*,

there is obviously a need to fix the identity of the name in order to ensure stability and universality. There are three options for this:

(1) to do nothing and follow current usage regarding the interpretation of the name *Musca jejuna* Fabricius, 1787. This is a precarious situation, as exemplified by the actions of Lehrer (2005);

(2) to select the specimen labelled "**zmuc** / 00027292" (identity = *Musca torosa*) as a lectotype for *Musca jejuna* Fabricius, 1787. This would imply that the senior name *Bengalia jejuna* (Fabricius) is transferred to the nominal species currently known as *Bengalia torosa* (Wiedemann) (fore tibia with spinous setae in a 5+2 arrangement; posterior margin of eye with a concavity in profile, etc.). This would revert nomenclature back to that of Senior-White (1923a, 1924, 1926) and Senior-White *et al*. (1940: 88, 89 fig. 42), now long abandoned, and would result in tremendous confusion and instability. The next oldest synonym, *obscuripennis* Bigot, which has never been used as a senior name, would then take priority as the valid specific name for the taxon currently referred to as *Bengalia jejuna*; or

(3) to exploit the possibility offered by Articles 75.5 and 75.6 of the Code (ICZN 1999) to replace name-bearing types that are either unidentifiable or do not conform with prevailing usage by a neotype. This is the option I will follow. In a forthcoming paper I will request the Commission to set aside, under its plenary power, the name-bearing types (i.e., all three syntypes of *Musca jejuna* Fabricius, 1787) and replace them with a neotype. This will resolve the problem once and for all, create the basis for a stable nomenclature, and prevent any worker from designating the "**zmuc** / 00027292" specimen as lectotype for *Musca jejuna* and thereby creating nomenclatural chaos.

Proposed neotype of *Musca jejuna* Fabricius in NHMD. The specimen I will propose as neotype of *Musca jejuna* Fabricius, 1787 is specimen #3 in the unit-tray for *Bengalia jejuna* (Fabricius) (a tray separate from the one with the 3 syntypes) in NHMD (Figs 127–130). It carries a yellow label with a double-lined black frame, with handwritten (not by Westermann) text as follows: "Madras / Galatea / Jejuna / F.". It is a male and I have dissected it. The abdominal tergites are glued to a piece of card above the labels. T3 and T4 have broad, dark marginal bands and T5 is dark all over. The terminalia are in glycerol in a glass microvial pinned below the original label and conform to the current concept of *Bengalia jejuna* (Malloch 1927; James 1977). [The specimen is in fair condition, but the left wing was slightly broken along the costa because of the position of the specimen close to the top of the pin, and the left mid leg is lost. When packing the specimen for return, both wings were accidentally broken off and were glued to a card on a separate pin, with a copy of the locality label.] "Madras" is the old name for the city of Chennai, capital of the Tamil Nadu province of India. "Tranquebar" [now Tarangambadi] is located on the coast of the Tamil Nadu province, 150 km south of Chennai. "Galatea" on the label refers to the Danish corvette *Galathea* (sometimes also spelt *Galatea*), used during the first *Galathea* expedition (1845–1847) around the world (for more information on the expedition, see http://www.galathea3.dk/uk/Menu/Historical%2bperspective.html). The specimen was likely collected by the entomologist of the expedition, Carl Emil Kiellerup (1822–1908) (http://www.gravsted.dk/person.php?navn=carlemilkiellerup; https://sv.wikipedia.org/wiki/Carl_Emil_Kiellerup). The ship visited Tranquebar, Pondicherry, Madras and Calcutta in India. Tranquebar was reached in October 1845, whereas Madras was reached later in the same month for maintenance and resupply (http://www.navalhistory.dk/Danish/Historien/1814_1848/Galathea1845.htm). The purpose of the visit to Tranquebar was to transfer sovereignty of the Danish Colony to the British East India Company. In November 1845 the ship reached Calcutta and the Danish possession of Serampore ("Frederiksnagore"), where Westermann lived from 1801 to 1811 (Pont 1995).

Homodexia obscuripennis Bigot, 1885a, 1885b. HOLOTYPE ♂ (NHMUK), labelled (1) Holo- / type [circular white label with red rim]; (2) Ceylon. / Ex coll. Bigot. / Pres. By / G. H. Verrall, / Oct. 1904. / 1904–274. [printed except first line, which is handwritten]; (3) BMNH(E) # / 241225 [printed on underside of label]; (4) H. obscuripennis. ♂. / omodexia / Ceylan. / J. Bigot [white label with black frame and three thin lines, handwritten by Bigot; the letters in the second line are handwritten obliquely downwards from the capital H in the first line, and appear not to be written in Bigot's hand] [The wings are sooty, but the thoracic dorsum, pleuron and abdomen are yellow; abdomen with narrow black bands, about a sixth of the length of the tergites; all legs are present on both sides; the ST5 flap is visible].

Gangelomyia evafoneae Lehrer, 2005. Described based on the male holotype and two male paratypes. HOLOTYPE ♂ (NHMUK), labelled (1) HOLO / TYPE. [white circular label with red margin; printed]; (2) HOLOTYPUS [red label with black print]; (3) Dhimbam / Biligirirangan Hills / S. India 28-IV-37 [printed, except date]; (4) *Bengalia* ♂ / *evafoneae* Lehrer n. sp. / HOLOTYPUS / Det. Dr. A. Z. LEHRER / 2004 [printed] (Fig.

120) [On the left side of the holotype the mid and hind legs are in place but the foreleg is lost; the right foreleg is glued to a piece of card on the pin, above the labels, but the mid and hind right legs are lost; T1+2 with a narrow dark marginal band, T3 and T4 with broad bands, almost half the length of the tergites; T5 with a narrow dark marginal band; terminalia removed directly from under the abdominal tip, kept by Lehrer in glycerol in a big plastic vial; elements of the terminalia are infused with a substance partly blocking the penetration of light, thus making photography under a compound microscope futile; terminalia transferred to a glass microvial by me; the infused substance is most likely Canada balsam since the specimen was used for the preparation of Lehrer (2005: 116, fig. 50)]. PARATYPES (NHMUK): 1 ♂, labelled (1) Hot Wells, / Trincomali [=Trincomalee], / Ceylon. / 3.viii.1890. / Lt.col.Yerbury. / 92.192 [handwritten in pencil]; (2) O. obscuripennis ♂ Bigot / demandé en communication [handwritten by Surcouf?]; (3) *Bengalia* ♂ / *evafoneae* Lehrer n. sp. / Det. Dr. A. Z. LEHRER / 2004 [printed] [Dissected by Lehrer; terminalia moved from Lehrer's big plastic vial to a small glass microvial by me]; • 1 ♂, labelled (1) CEYLON: / Suduganga. / 17.ii.1925. / In lab. [printed, except last two lines]; (2) Bengalia / lateralis, Macq. / det. R.Senior White. [handwritten except last line, which is printed]; (3) Purchd. From / R. Senior White / B.M.1938-460. [printed] [Head lost; dissected by Lehrer; terminalia moved from Lehrer's big plastic vial to a small glass microvial by me; terminalia in a good state of preservation, apparently not infused with Canada balsam].

Other material examined. CNC. Sri Lanka: 1 ♂, labelled (1) Kahalla X-1967 / Katugastota C.P. / Ceylon 1600' / P.B. Karunaratne [printed, except date] (Fig. 111) [Dissected by me; abdominal tergites glued to a piece of card pinned above the label; terminalia in glycerol in glass microvial pinned below label]; • 1 ♂, labelled (1) Okkampitiya. / U.P. CEYLON / 1-10.XII.67 / P.Karunaratne [printed] (Fig. 112) [Not dissected, but ST5 flap visible]. **SMNS.** Sri Lanka: 2 ♂, labelled (1) Ceylon / Maschwitz leg. [handwritten by Herting]; (2) Bengalia / jejuna F. / B. Herting det. [handwritten by Herting except last line, which is printed]; (3) Bengalia (m) / jejuna / (Fabricius, 1787) / K. Rognes det. 09 [printed, except handwritten 09] [ST5 flap visible]. **WSU.** India: 1 ♂, labelled (1) Coimbatore / S. INDIA XI-63 / P.S. Nathan [handwritten]; (2) 4 [number handwritten in pencil on small yellow label] [Terminalia extruded and distiphallus well visible (Fig. 125)]. [See also below, under *B. kanoi*, for other specimens from India placed in WSU under *B. jejuna* but misidentified.]

Bengalia kanoi **Kurahashi & Magpayo, 2000**

(Figs 131–158)

Bengalia jejuna: Rueda (1985: 349). Misidentification, not *jejuna* Fabricius (teste Kurahashi & Magpayo 2000). [The shape of the ST5 flap illustrated (Rueda 1985: 349, fig. 18G) is similar to that observed in some of the nominal species illustrated by Lehrer (2005, figs 56A [*G. schiavoae*], 58A [*G. shivanella*], 59A [*G. tagaloga*]), all showing a slight depression along the distal margin.]

Bengalia kanoi Kurahashi & Magpayo, 2000: 43. Holotype ♂ (NIID; not examined), by original designation. Type locality: Philippines (Mindanao, Davao, Mt. Talomo).

Gangelomyia indipyga Lehrer, 2005: 119. Holotype ♂ (BPBM; examined), by original designation. Type locality: India (South India, Nilgiri Hills, Devala). **Syn. nov.** [The specimen in CNC labelled "Cinchona, S. India Anamalai Hills" fits exactly the description of *indipyga*.]

Gangelomyia kanoi: Lehrer (2005: 121) (Philippines).

Gangelomyia philipyga Lehrer, 2005: 125. Holotype ♂ (BPBM; examined), by original designation. Type locality: Philippines (Culion Is 6 km W Culion). **Syn. nov.** [Lehrer (2005: 21) wrote that this species has a series of discal setae ("macrochètes discaux") on the fifth abdominal tergite; this claim was not repeated on p. 111, where the genus is diagnosed.]

Gangelomyia schiavoae Lehrer, 2005: 126. Holotype ♂ (NHMUK; examined), by original designation. Type locality: Indonesia (West Jawa, Preanger. Djampang Tenggah). **Syn. nov.**

Gangelomyia shivanella Lehrer, 2005: 130. Holotype ♂ (NHMUK; examined), by original designation. Type locality: India (Naraikkadu, Tinnevelly). **Syn. nov.**

Gangelomyia tagaloga Lehrer, 2005: 132. Holotype ♂ (BPBM; examined), by original designation. Type locality: Philippines (Los Baños). **Syn. nov.**

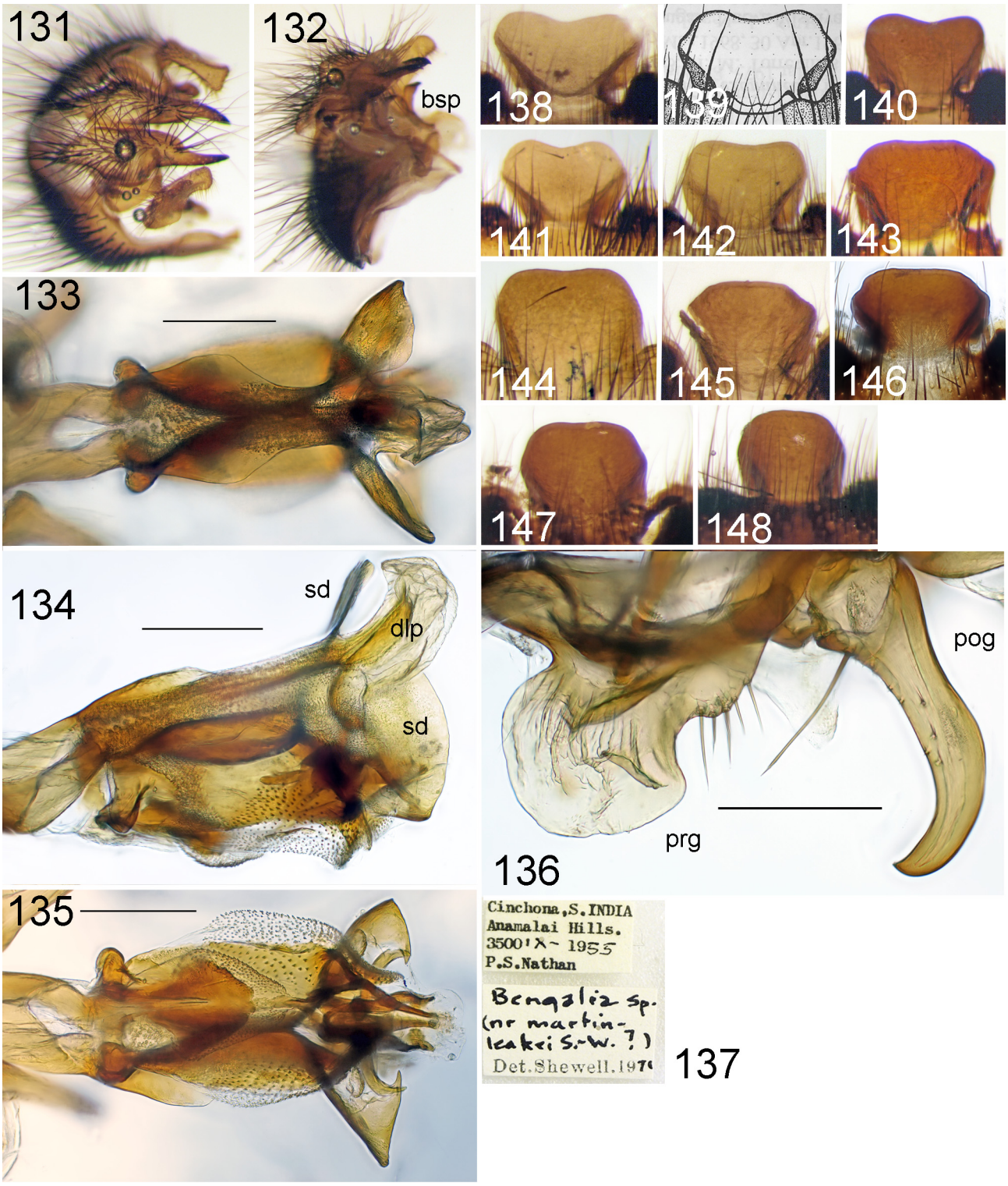
Bengalia kanoi: Verves (2005: 239; catalogue entry).

Gangelomyia philipyga: Lehrer (2006a: 10) (Indonesia [Jawa, Soekaboemi]; single cited specimen (NHMUK) examined).

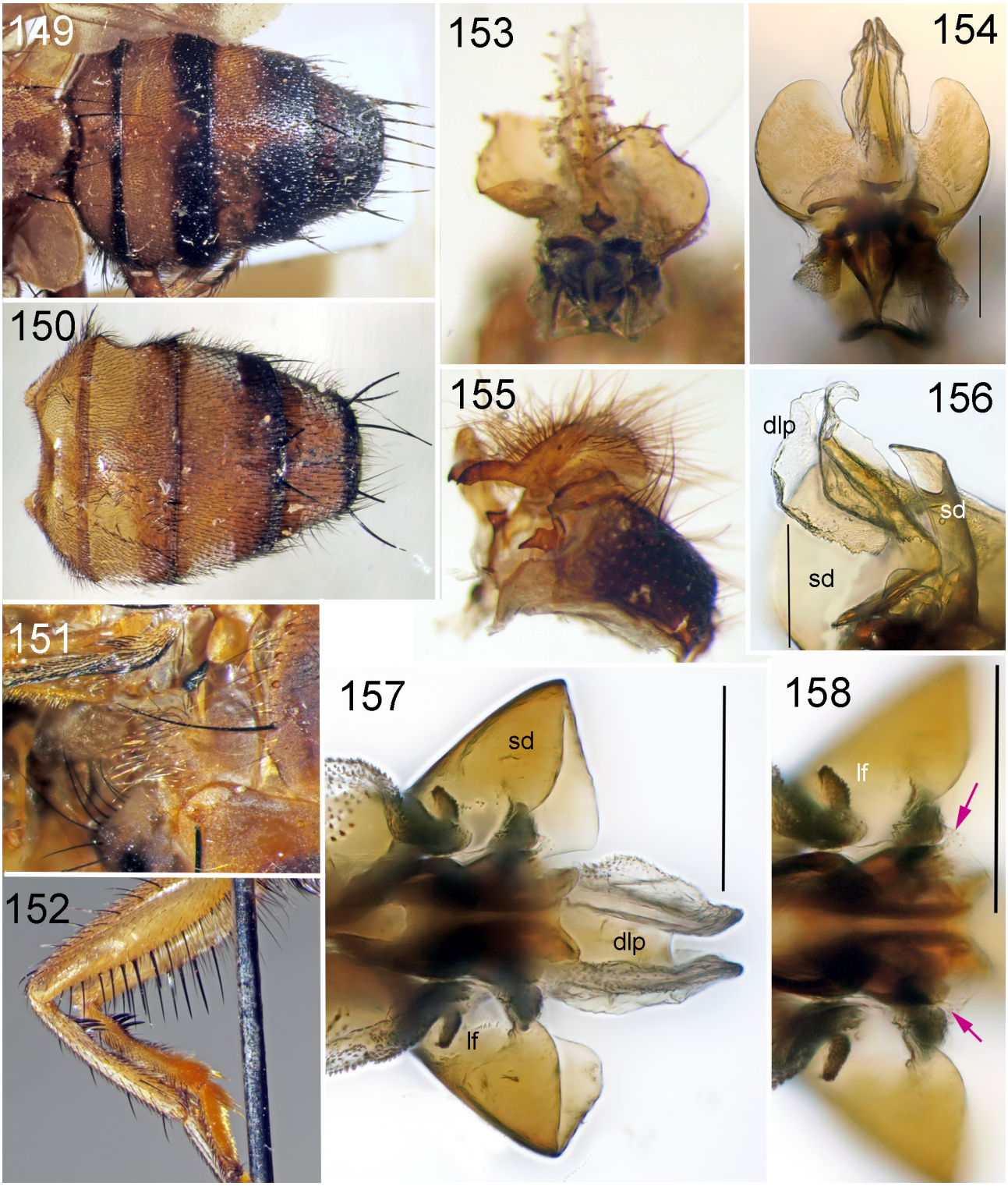
Gangelomyia kanoi: Lehrer (2006a: 10) (Philippines; both cited specimens (NHMUK, BPBM) examined).

Gangelomyia schiavoae: Lehrer (2006a: 10) (Malaysia [Kudat], Indonesia [Java, Djampang Mts]; both specimens (NHMUK) examined).

Gangelomyia phantastika Lehrer, 2007: 20. Holotype ♂ (SDEI; examined, teratological specimen), by original designation. Type locality: Indonesia (Sulawesi, Kandari). **Syn. nov.**



FIGURES 131–148. *Bengalia kanoi* Kurahashi & Magpayo (131–138: male from Cinchona, Anamalai Hills, India, CNC; 139: holotype [reproduced with permission from Kurahashi & Magpayo (2000: 45, fig. 11d)]; 140: male from Mt Isarog, Philippines, BPBM; 141: holotype of *Gangelomyia indipyga* Lehrer, BPBM; 142: holotype of *Gangelomyia shivanella* Lehrer, NHMUK; 143: holotype of *Gangelomyia schiavoae* Lehrer, NHMUK; 144: holotype of *Gangelomyia tagaloga* Lehrer, BPBM; 145: holotype of *Gangelomyia phantastika* Lehrer, SDEI; 146: holotype of *Gangelomyia philipyga*, BPBM; 147: male paratype of *Gangelomyia schiavoae* Lehrer from Kudat, Sabah, Malaysia, NHMUK; 148: male paratype of *Gangelomyia schiavoae* Lehrer from West Java, Indonesia, NHMUK). **131.** Epandrial complex, posterior view. **132.** Epandrial complex, left lateral view. **133.** Distiphallus, dorsal view. **134.** Distiphallus, left lateral view. **135.** Distiphallus, ventral view. **136.** Pre- and postgonites. **137.** Labels. **138–148.** ST5 flaps. All scale bars = 0.25mm. Abbreviations: *bsp* = bacilliform sclerite process; *dlp* = distal lip process; *pog* = postgonite; *prg* = pregonite; *sd* = semidomes.



FIGURES 149–158. *Bengalia kanoi* Kurahashi & Magpayo (149: male from Camarines Sur, Mt Isarog, Philippines, BPBM; 150: male from Anamalai Hills, India, CNC; 151: holotype of *Gangelomyia schiavoae*, NHMUK; 152: male paratype of *Bengalia kanoi* from Davao, Mt. Talomo, Philipines, NHMUK; 153: holotype of *Gangelomyia phantastika* Lehrer, SDEI; 154: male from Anamalai Hills, India, CNC; 155: holotype of *Gangelomyia phantastika* Lehrer, SDEI; 156: male paratype of *Bengalia kanoi* from Davao, Mt. Talomo, Philipines, NHMUK; 157–158: male from Camarines Sur, Mt Isarog, Philippines, BPBM). **149.** Abdomen, dorsal view. **150.** Abdomen, dorsal view. **151.** Right anepimeron. **152.** Detail of fore legs, lateral view. **153.** Distiphallus, apical view. **154.** Distiphallus, apical view. **155.** Epandrial complex, right lateral view (right surstylus lost). **156.** Apex of distiphallus, oblique apicolateral view. **157.** Detail of distiphallus, ventral view. **158.** Detail of distiphallus, ventral view; arrows showing weakly denticulate area. All scale bars = 0.25mm. Abbreviations: *dlp* = distal lip process; *lf* = lateral finger; *sd* = semidomes.

Diagnosis. *Male*. Length 13.0–15.5mm (n=7). Frons at vertex / head width ratio 0.31–0.33 (mean 0.32, n=7). Anepimeron usually with a bundle of many dark setulae in upper part (Fig. 151), though a male in NMW and a male in ZMHB have only a single dark setula. A short row of 3–4 spinous setae in upper fourth of fore tibia (Fig. 152). Abdomen variable, usually very dark but pale in some specimens from India and the Philippines (Fig. 150). Abdominal marginal bands very narrow to broad, T5 varying from yellow with narrow dark marginal band, to all black. Most material from the Philippines has T3 and T4 with broad dark bands, covering approximately the posterior half of these tergites, with T5 all black (Fig. 149). All abdominal tergites with shifting silvery microtrichosity. ST5 flap variable, about as broad as long or broader (Figs 138–148). ST5 flap strongly concave on dorsal (upper), seen apically. Hind margin of ST5 flap straight in broadest aspect (Figs 143, 145–147), slightly (Figs 142, 144) or distinctly concave (Figs 138–141); never with a projecting median process with concave margins on both sides. Cerci rather short in posterior view (Fig. 131), with a prominent empty space between the distal prongs, the latter being very narrow in lateral view (Figs 132, 155). Surstylus oval (Figs 132, 155). Bacilliform sclerite process as in Fig. 132. Distiphallus as in Figs 133–135, 153–154, 156–158. Distal lip process (*dlp*) long, with central sclerotisation and narrow lateral and ventral flanges on each side, denticulate basally (Figs 154, 156–157). Extreme ventral tip of distiphallus with a small area of denticles on each side (Fig. 158, arrows), much as in *B. martinleakei* but smaller and very difficult to observe in less sclerotized specimens. Pre-and postgonite as in Fig. 136.

Female. Length: 14.5–15.5mm (n=4). Frons at vertex / head width ratio 0.32–0.33 (mean 0.32, n=4).

Discussion. The starting point for my decision to put a number of Lehrer names in synonymy with *B. kanoi* Kurahashi & Magpayo was the dissection of a male from India (in CNC) whose ST5 flap (Fig. 138) is identical to that of the holotype of *B. kanoi* (Fig. 139) as illustrated by Kurahashi & Magpayo (2000: 45, fig. 11d). Lehrer (2005: 119, fig. 52A) created the nominal species *G. indipyga* for specimens with such an ST5 flap (Fig. 141). However, he never mentioned its similarity with the ST5 flap of the holotype of *B. kanoi*, even though Kurahashi & Magpayo's work was available to him. Rather, he illustrated the ST5 flap of a specimen he identified as *B. kanoi* (Lehrer 2005: 122, fig. 53A) (probably the paratype in NHMUK), but this ST5 flap was different from the one illustrated by Kurahashi & Magpayo (2000) for their holotype and is very similar to the one shown in Fig. 142 of the present work. This indicated that the ST5 flap in *B. kanoi* is variable, and the conclusion was drawn that many of Lehrer's nominal species were based on variations in the shape of the ST5 flap. This variation is shown in Figs 138–148 of the present work. In addition, it must be mentioned that the figures I have made do not always correspond exactly to illustrations by Lehrer for the same species. E.g., the ST5 flap of *G. schiavoae* is represented by Fig. 143 (from the holotype) and by Figs 147–148 (each from separate paratypes), which do not all fit the figure published by Lehrer (2005: 127, fig. 56A). Similarly, regarding the ST5 flap of *G. indipyga*, Fig. 141 is from the holotype, but it is not as broad as in the figure published by Lehrer (2005: 120, fig. 52A). Lehrer did not explain which of the two males available to him served as the basis for this figure. He cited a paratype male from "… Coimbatore …" in BPBM, which I have not seen, and it is possible that this was used, not the holotype. Some of the discrepancies may be due to different amounts of pressure applied to the concave ST5 flap when preparing slides from which to draw the figures. I also gave up on attempting to follow Lehrer's key to *Gangelomyia* (Lehrer 2005: 111–112), which is based to a very large extent on the shape of the ST5 flap. I examined the distal lip process of all Lehrer's *Gangelomyia* type specimens but could not find any significant differences supporting his species delimitations. I interpret *G. phantastika* (Fig. 153) as a specimen of *B. kanoi* with a teratological distiphallus. However, I have kept *B. martinleakei* (with its Lehrer synonyms *G. gandhiana* and *G. krishna*) as a species separate from *B. kanoi* because of its distinctive ST5 flap with a projection on the hind margin (Figs 168, 177–178). Its distal lip process is very similar to that of *B. kanoi*. *Bengalia kanoi* has a very wide distribution in the Oriental Region and coexists in India with *B. martinleakei*, which is known only from that country.

Biology. Unknown.

Distribution. Malaysia (Sabah*), Indonesia (Jawa*, Sulawesi*), India* , Philippines (Culion Is*, Davao*, Laguna*, Luzon*, Mindanao*, Misamis Or.*). Widespread and frequent.

Type material examined. *Bengalia kanoi* Kurahashi & Magpayo, 2000. PARATYPES (BPBM): 1 ♂, labelled (1) Paratype [black print on yellow label]; (2) B14 8–21–83 / Mt. Talomo, 100m / DAVAO CITY, Phil. / F.R.Magpayo [handwritten]; (3) Bengalia ♂ / kanoi / sp. nov. / Det. H. Kurahashi [printed] [Genitalia extruded and visible]; • 1 ♂, labelled (1) Paratype [black print on yellow label]; (2) P.I., MISAMIS OR. / Mt. Balatukan, 15km / SW of Gingoog, 1000 / - 2000m, 1–5.V.1960; (3) H. Torrevillas / Collector; (4) Bengalia ♂ / kanoi / sp. nov. / Det.

H.Kurahashi [all printed labels]; • 1 ♀, labelled (1) Paratype [black print on yellow label]; (2) B13 8–21–83 / MT. Talomo, 1000 m / DAVAO City, Phil. / F.R. MAGPAYO [handwritten]; (3) Bengalia ♀ / kanoi / sp. nov. / Det. H.Kurahashi [printed]; • 1 ♀, labelled (1) Paratype [black print on yellow label]; (2) P. I., MINDANAO / Z. DEL SUR, 11 km, / NW of Milbuk, 390m / 5.VIII.1958 [printed]; (3) In Rain Forest / H.E. Milliron; (4) Bengalia ♀ / kanoi / sp. nov. / Det. H.Kurahashi [both labels printed]; • 1 ♀, labelled (1) Paratype [black print on yellow label]; (2) P. I., MINDANAO / DAVAO / 690m, 17.VIII.'58; (3) In Jungle; (4) H.E. Milliron / Collector; (5) Bengalia ♀ / kanoi / sp. nov. / Det. H.Kurahashi [all labels printed]. PARATYPE (NHMUK): 1 ♂, labelled (1) PHILIPPINES / DAVAO: MT. Talomo. / 21 Aug. 1983 / Det. 3 July 1986 / F.R.Magpayo [first and last lines printed]; (2) Bengalia / sp. nov. 1 [handwritten]; (3) KANOI [blue ink on white label]; (4) Paratype [printed on yellow label]; (5) Pres. by / F.R.Magpayo / 1988–316 [pale print on white label]; (6) *Gangelomyia* ♂ / *kanoi* (Kurahashi & Magpayo) / PARATYPUS / Det. Dr. A.Z.Lehrer / 2005 [printed; pin hole near centre of label]; (7) *Gangelomyia* ♂ / *kanoi* (Kurahashi & Magpayo) / PARATYPUS / Det. Dr. A.Z.Lehrer / 2005 [printed; pin hole near right margin of label] [T5 all dark. ST5 flap not as wide as in Kurahashi & Magpayo's published figure (Fig. 139), cf. Lehrer's (2005) fig. 53A, possibly made from this specimen]. [NB: the locality and collector on the main label agree with data for the holotype. The date on the label is among the dates published for the 8 male and 8 female paratypes with the same locality and collector as the holotype listed by Kurahashi & Magpayo (2000: 43). However, NHMUK is not mentioned among the type depositories listed on p. 44 in the same work. Nevertheless, I assume that the specimen was one of the series of specimens before the authors when designating the holotype (dated 28 August 1983) and that it is a true paratype.]

Gangelomyia indipyga Lehrer, 2005. HOLOTYPE ♂ (BPBM), labelled (1) SOUTH INDIA / Nilgiri Hills / Devala, 960 m. / V.1961 [printed, except handwritten corrected dates]; (2) Collector / P. S. Nathan [printed]; (3) Bengalia ♂ / jejuna / (Fab., 1787) / Det. H.Kurahashi [printed]; (4) HOLOTYPUS [white label glued to a bigger red label with "17046" annotated on it in black ink]; (5) *Gangelomyia* ♂ / *indipyga* Lehrer n. sp. / Det. Dr. A. Z. LEHRER / 2004 [printed; pin hole in middle]; (6) *Gangelomyia* ♂ / *indipyga* Lehrer n. sp. / Det. Dr. A. Z. LEHRER / 2004 [printed; pin hole near right hand margin] [Dissected by Lehrer; terminalia in glycerol in a big plastic vial, transferred to glass microvial by me; T1+2–T5 of abdomen rather pale, last segments not black nor very dark; 4 spinous setae on fore tibia].

Gangelomyia philipyga Lehrer, 2005. HOLOTYPE ♂ (BPBM), labelled (1) PHILIPPINES / Culion Is. / 6km W. Culion / 14.VI.1962 [printed]; (2) H. Holtmann / Collector / BISHOP [printed]; (3) Lowland / vegetation [printed]; (4) HOLOTYPUS [black print on white label glued to bigger red label]; (5) *Gangelomyia* ♂ / *philipyga* n. sp. / Det. Dr. A. Z. LEHRER / 2004 [printed, pin hole near middle]; (6) *Gangelomyia* ♂ / *philipyga* n. sp. / Det. Dr. A. Z. LEHRER / 2004 [printed, pin hole near right hand margin] [Left fore leg and right hind leg lost; T5 very dark; dissected by Lehrer; terminalia in an almost dried-out, brownish fluid at the bottom of a big plastic vial; stopper impossible to remove without breaking it; vial cut open by scalpel below stopper; fluid very viscous; parts transferred to ethanol; parts appear embedded in a stiff, white, opaque substance reminiscent of Canada balsam; encrustations of the substance cover the surstyli and the inside of the epandrium; parts transferred to fresh glycerol in a glass microvial; ST5 flap (Fig. 146) as in Lehrer (2005: fig. 55A)]. PARATYPE ♂ (NHMUK), labelled (1) N. BORNEO / KUDAT, / 13th Sept. 1927 [mostly printed on brownish label]; (2) Ex F.M.S. / Museum. / B.M.1955-354.; (3) Bengalia (Ochromyia) / jejuna / Fab. / Det. J.R./ Malloch [handwritten in Malloch's hand except last two lines, which are printed]; (4) *Bengalia* ♂ / *philipyga* Lehrer n.sp. / Det. Dr. A.Z. LEHRER / 2004 [printed, pin hole in centre]; (5) *Bengalia* ♂ / *philipyga* Lehrer n.sp. / Det. Dr. A.Z. LEHRER / 2004 [printed, pin hole near right hand margin] [Dissected by Lehrer; terminalia in glycerol, transferred to glass microvial by me].

Additional remarks. This nominal species was claimed by Lehrer (2005: 21), in his key, to have a series of discal setae on T5. This was not repeated in the species description on p. 125, and was not confirmed by a study of the type material listed above or of a non-type specimen identified by Lehrer, listed below. This must have been a lapsus on Lehrer's part.

Gangelomyia schiavoae Lehrer, 2005. HOLOTYPE ♂ (NHMUK; glued by its left side to the point of a triangular piece of celluloid), labelled (1) HOLO / TYPE. [white circular label with red margin; printed]; (2) HOLOTYPUS [red label with black print]; (3) W. JAVA: / Preanger. / Djampang Tenggah. / iv.1936. [printed]; (4) Purch. from / E. le Moult. / B.M. 1937-32. [printed]; (5) Bengalia / xanthopyga SW / det. R.Senior White 1938. [handwritten in Senior-White's hand, except for printed last line]; (6) *Bengalia* ♂ / *schiavoae* Lehrer n.sp. / HOLOTYPUS / Det. Dr. A.Z.LEHRER / 2004 [printed] [Dissected by Lehrer; terminalia transferred to glycerol in

glass microvial by me; genital parts stiffened by a strange material (possibly Canada balsam)]. [NB: As Lehrer (2005: 128) notes, the specimen is in a bad state with its legs caught up in a large blob of Canada balsam, which also attaches the body to the plastic stage. Due to an accident during mail transport, the head is now lost. The pattern on the abdomen is clearly visible, and the hind half of T4 and all of T5 are very dark. For this reason it is puzzling that Senior-White identified it as *B. xanthopyga*, in which the posterior half of the abdomen is pale.]. PARATYPES (NHMUK): 1 ♂, labelled (1) N. Borneo / Kudat / 15th Sept. 1927. [mostly black print on pale brown label]; (2) Ex F.M.S. / Museum. / B.M.1955-354. [printed]; (3) *Gangelomyia* ♂ / *schiavoae* Lehrer n.sp. / Det. Dr. A.Z.LEHRER / 2005 [printed; pin hole near middle]; (4) *Gangelomyia* ♂ / *schiavoae* Lehrer n.sp. / Det. Dr. A.Z.LEHRER / 2005 [printed; pin hole near right hand margin] [The specimen has lost its head and both fore legs; dissected by Lehrer; terminalia transferred to glycerol in a glass microvial by me]; • 1 ♂, labelled (1) WEST JAVA: / Djampang Mts. / Tjiangsana. / xii.1937. / B.M. 1962-651. [printed]: (2) *Gangelomyia* ♂ / *schiavoae* Lehrer n.sp. / Det. Dr. A.Z.LEHRER / 2005 [printed; pin hole near middle] [The specimen lost its abdomen during transit but it was subsequently retrieved in the shipping box, glued to a piece of card on a separate pin and placed beside the specimen; dissected by Lehrer; tip of one cercus broken; terminalia transferred to a glass microvial with glycerol by me].

Gangelomyia shivanella Lehrer, 2005. HOLOTYPE ♂ (NHMUK), labelled (1) HOLO-TYPE. [circular label with red rim]; (2) HOLOTYPUS [black print on red label]; (3) Naraikkadu, 2500–3000' / Tinnevelly Dt / S. India. 11–13– III–36 [on reverse side of label:] B. M. - C. M. / Expedn to / S. India. 1936 [printed except dates and altitude, which are handwritten]; (4) Ochromyia / jejuna F. / John Smart det. 1937. [handwritten except last line, which is printed]; (5) *Bengalia* ♂ / *shivanella* Lehrer n. s. / HOLOTYPUS / Det. D. A. Z. LEHRER / 2004 [printed] [Specimen in good condition, all legs present, right mid and hind tarsi and left mid tarsus lost; fore tibia with 3 (left) or 4 (right) strong setae in basal third on a protuberance; abdomen pale, with narrow dark bands on tergites; dissected by Lehrer; terminalia in glycerol but parts infiltrated with Canada balsam or similar substance; epandrial complex stuck to inner wall of vial: I had to cut open the vial with a scalpel, and transferred the parts to a glass microvial with glycerol]. PARATYPE ♂ (NHMUK), labelled (1) Naraikkadu, 2500–3000' / Tinnevelly Dt / S. India. 9–III–36 [on reverse side of label:] B. M. - C. M. / Expedn to / S. India. 1936 [printed except dates and altitude, which are handwritten]; (2) *Bengalia* ♂ / *shivanella* Lehrer n. s. / PARATYPUS / Det. D. A. Z. LEHRER / 2004 [printed] [Both mid legs lost; left fore tibia with 3, right for tibia with 4 spinous setae; right wing torn; abdomen pale, with narrow dark bands on tergites; dissected by Lehrer; terminalia in glycerol but parts infiltrated with Canada balsam or similar substance; transferred to glycerol in glass microvial by me].

Gangelomyia tagaloga Lehrer, 2005. HOLOTYPE ♂ (BPBM), labelled (1) 350ft. / Los Banos / Philippine Ids. / VII – 10 - 21 [printed, except first and last line]; (2) F. X. Williams / Collector [printed]; (3) Bengalia / latro / deM. [handwritten; thin black frame]; (4) HOLOTYPUS [black print on red label]; (5) *Gangelomyia* ♂ / *tagaloga* Lehrer n. sp. / Det. Dr. A. Z. LEHRER / 2005 [printed label; pin hole in middle]; (6) *Gangelomyia* ♂ / *tagaloga* Lehrer n. sp. / Det. Dr. A. Z. LEHRER / 2005 [printed label; pin hole near right hand margin] [Abdomen pale (teneral specimen), T5 not black; dissected by Lehrer; terminalia in big plastic vial, gonites and hypandrium missing; the terminalia had contact with Canada balsam, which was insufficiently removed, as shown under a compound microscope; transferred to glass microvial with glycerol by me].

Gangelomyia phantastika Lehrer, 2007. HOLOTYPE ♂ (SDEI), labelled (1) Celebes / Kandari [Sulawesi Tenggara, Kendari] IV. 74 [1874] / O. Beccari [printed label with black frame, second line handwritten]; (2) Anisomyia / favillacea / WK. [handwritten]; (3) coll. Oldenberg [printed]; (4) Coll. / O.-S. [handwritten]; (5) Coll. Osten-Sacken [printed]; (6) HOLOTYPUS [red label with black print]; (7) *Gangelomyia* ♂ / *phantastika* n. sp. / Det. Dr. A.Z.LEHRER / 2006 [printed] [Dissected by Lehrer but terminalia kept in glycerol and embedded in a stiff substance impeding a thorough examination of details; terminalia transferred to glass microvial with glycerol by me]. [NB: I consider the numerous, peculiar and small tubular outgrowths on the apical part of the distiphallus (both semidomes, but mostly on distal lip projection) to be the result of some teratological development, or artifacts resulting from some kind of treatment, and therefore not of taxonomic importance. ST5 flap (Fig. 145) (cf. Lehrer (2007: 21, fig. 4) similar to that of the *G. philipyga* holotype (Lehrer 2005: 126 fig. 55A). Distal lip projection (Fig. 153) narrow, with parallel sides, and clearly bifid with the vertical flanges longer than the central part.]

Other material examined. BPBM. Philippines: 2 ♂, labelled (1) PHILIPPINES / Camarines Sur: Mt. / Isarog, 750–850 m. / 8–12.V.1963; (2) H.M. Torrevillas / Light Trap / BISHOP; (3) Bengalia ♂ / kanoi / sp. nov. / Det. H.Kurahashi [all labels printed] [One dissected by me 8 December 2016]; • 1 ♂, labelled (1) PHILIPPINES:

LUZON / Mt. Makiling 1000' / Laguna 30.IV.'68 [partly handwritten]; (2) ex / Mud Spring [handwritten]; (3) D. E. Hardy / Collector; (4) Bengalia ♂ / kanoi / sp. nov. / Det. H.Kurahashi]; • 1 ♂, labelled (1) PHILIPPINES: LUZON / Mt. Makiling 1000' / Laguna 30.III.'68 [partly handwritten]; (2) ex / Mud Spring [handwritten]; (3) M.D. Delfinado / Collector; (4) Bengalia ♂ / kanoi / sp. nov. / Det. H.Kurahashi; • 1 ♂, labelled (1) PHILIPPINES: LUZON / Mt. Makiling 1000' / Laguna 30.IV.'68 [partly handwritten label]; (2) ex / Mud Spring [handwritten]; (3) M.D. Delfinado / Collector; (4) Bengalia ♂ / kanoi / sp. nov. / Det. H.Kurahashi [partly handwritten label]; • 1 ♂, labelled (1) PHILIPPINE IS. / Mt. Makiling / 7.III.1960; (2) T.C. Maa / Collector / BISHOP; (3) Bengalia ♂ / kanoi / sp. nov. / Det. H.Kurahashi; • 1 ♀, labelled (1) PHILIPPINES: LUZON / Mt. Makiling 1000' / Laguna 30.IV.'68 [partly handwritten label]; (2) M.D. Delfinado / Collector; (3) Bengalia ♀ / kanoi / sp. nov. / Det. H.Kurahashi. [all printed]; • 1 ♀, labelled (1) PHILIPPINES: LUZON / 6 km W of Imugan, / Nueva Vizcaya / 11:IV.1968; (2) M.D. Delfinado / Collector; (3) Bengalia ♀ / kanoi / sp. nov. / Det. H.Kurahashi. [all printed]; • 1 ♀, labelled (1) Rice / Zitanga Cag. / May 27, 1972 / A.D. Pawar [handwritten, except last line]; (2) Accession No 57 / International Rice / Research Institute [printed, except number]; (3) Bengalia ♀ / kanoi / sp. nov. / Det. H.Kurahashi [printed]; • 1 ♀, labelled (1) PHILIPPINES / Kinakin, 1900m / Ifugao Prov., Luzon / June, 3, 1977 / M. Sato leg.; (2) Bengalia ♀ / kanoi / sp. nov. / Det. H.Kurahashi. [both printed]; • 1 ♀, labelled (1) PHILIPPINE IS. / LUZON, Los Banos / 19–20.IX.1959; (2) Night; (3) Light Trap / L.Quate & / C. Yoshimoto; (4) Bengalia ♀ / kanoi / sp. nov. / Det. H.Kurahashi. [all printed]. **CNC.** India: 1 ♂, labelled (1) Cinchona, S.INDIA / Anamalai Hills. / 3500' X – 1955 / P.S.Nathan [printed]; (2) Bengalia sp. / (nr. martin - / leakei S.-W. ?) / Det. Shewell 1971 [handwritten except most of last line, which is printed] (Fig. 137) [Dissected by me (Figs 131–138)]. **MNHN.** Indonesia: 1 ♂, labelled (1) circular yellow label; (2) Java / M. Maindron [recent handwritten label] [Teneral specimen; dissected by me; terminalia and ST2–5 in glycerol in a vial on same pin as specimen; dried T3–5 glued to a piece of card on the same pin; fore tibia with 3 strong ventral setae; anepimeron with many black setulae in upper part]. **NHMUK.** Indonesia: 1 ♂, labelled (1) Java: / Soekaboemi / v. 1926 / Purch E. Le Moult. / B.M.1933-189.; (2) *Gangelomyia* ♂ / *philipyga* Lehrer n.sp. / Det. Dr. A.Z. LEHRER / 2005 [printed, pin hole in centre]; (3) *Gangelomyia* ♂ / *philipyga* Lehrer n.sp. / Det. Dr. A.Z. LEHRER / 2005 [printed, pin hole near right hand margin] [Dissected by Lehrer; terminalia in glycerol, transferred to a glass microvial by me; abdominal tergites pale, also T5]. **NMW.** Indonesia: 1 ♂, labelled (1) S:Celebes / Patunuang [now Makassar City, at 5°7′49.4″S 119°24′27.99″E] / Jan. 1896 / H. Fruhstorfer [printed on yellow label, with a black frame just inside label edge] [Placed in collection under "*Bengalia lateralis*"; the specimen is teneral, as demonstrated by the collapsed abdomen and femora; the anepimeron has only yellow setulae, except one black setula on right side (and possibly a second, broken one); T4 and T5 removed and dissected by me; weakly sclerotized terminalia in glycerol in glass microvial on pin; dried T4 and T5 glued to a piece of card on pin]. **WSU.** India: [The three following males of *B. kanoi* (labelled "3", "2" and "1" in pencil on small yellow labels), were among seven specimens identified by James as "Bengalia jejuna"; only one male (labelled "4") from Coimbatore was a true *B. jejuna* (see above); there were also three females of doubtful identity from Anamalai Hills, South India, collected by P.S. Nathan (labelled "11", "12" and "13" in pencil), which are possibly females of *B. kanoi*]. 1 ♂, labelled (1) Anamalai Hills / Cinchona, S.INDIA / 4000' XI-1948 / P. S. Nathan [printed]; (2) Bengalia / jejuna / (F.) / det. James '65 [handwritten by James, label with black frame]; (3) 3 [handwritten in pencil on yellow label] [Dissected by me; dried abdominal tergites glued to a piece of card on pin, above labels; specimen somewhat teneral, as shown by the short hypandrial plate; ST1–5 and terminalia in glycerol in a glass microvial on pin]; • 1 ♂, labelled (1) Anamalai Hills / Cinchona, S.INDIA / 4000' XI-1948 / P. S. Nathan [printed]; (2) 2 [handwritten in pencil on small yellow label] [Dissected by me; dried abdominal tergites glued to a piece of card on pin, above labels; ST1–5 and terminalia in glycerol in a glass microvial on pin]; • 1 ♂, labelled (1) Anamalai Hills / Cinchona, S.INDIA / 4000' XI-1948 / P. S. Nathan [printed]; (2) 1 [handwritten in pencil on yellow label] [Terminalia extruded and distiphallus clearly visible]. **ZMHB.** Indonesia: 1 ♂, labelled (1) Celebes / Bantimoeroeng [now Sulawesi, Bantimurung] / 25.5. 30 G. Heinrich [printed on yellow label]; (2) Anisomyia / favillacea (Walk. 59) ♂ / Dr. Enderlein det 1935 [handwritten except for most of last line, which is printed]; (3) Zool. Mus. / Berlin [printed] [The specimen was rotating on the pin and at first I did not succeed in breaking the abdomen loose without destroying the dorsum of the thorax; I secured the thorax to the pin with arabic gum at the top and a synthetic resin at the bottom; I then succeeded in breaking the abdomen loose after the glue had dried for some hours; anepimeron with only 1 dark setula on each side, all other setulae pale; fore tibial vestiture with 3 strong ventral setae; hind tibia with a very weak fringe, setulae of fringe slightly shorter than tibial diameter; terminalia dissected by me; ST5 flap rounded, with a transverse distal margin, shiny and very dark].

***Bengalia martinleakei* Senior-White, 1930**
(Figs 159–182, 223)

Bengalia martinleakei Senior-White, 1930: 69 + plate II, figs 1, 2, 2a (as "*martin-leakei*"). Correct original spelling (as required by ICZN Article 32.5.2.5.). Holotype ♂ (NHMUK; examined), by original designation ("Unique type …"). Type locality: India (Odisha, Rayagada [as "Rayagada, Vizagapatam Agency Tracts"; handwritten locality label "INDIA: / Vizagatapam. / Rayagada. 1.x.1925."]).

Bengalia martinleakei: Senior-White *et al.* (1940: 95, as "*martin-leakei*"). Type locality stated to be "in the Jeypore Hills of Orissa".

Bengalia jejuna: Séguy (1946: 83) (male from "Dardjeeling, Himalaya (F. Caius, 1915)"; dissected by me; misidentification, not *jejuna* Fabricius).

Bengalia martinleakei: James (1977: 529; catalogue entry).

?*Bengalia martinleakei*: Kurahashi & Thapa (1994: 218) (Nepal; 3 females; the description in the key is adequate but may possibly apply to *B. kanoi* from India as well; hence, these records are not accepted as true *B. martinleakei*).

?*Bengalia martinleakei*: Kurahashi & Afzal (2002: 221) (Pakistan; 3 females from Islamabad; not accepted as true *B. martinleakei*; possibly misidentified, may belong to *B. kanoi*).

Gangelomyia gandhiana Lehrer, 2005: 117. Holotype ♂ (NHMUK; examined), by original designation. Type locality: India (Tenmalai, Travancore). **Syn. nov.**

Gangelomyia krishna Lehrer, 2005: 123. Holotype ♂ (BPBM; examined), by original designation. Type locality: "Orissa State, Jeypore" [very close to type locality of *B. martinleakei*]. **Syn. nov.**

Bengalia martinleakei: Verves (2005: 239; catalogue entry).

Gangelomyia gandhiana: Lehrer (2006a: 10) (India [Tenmalai,Travancore; a repetition of the holotype data]).

Gangelomyia krishna: Lehrer (2006a: 10) (India [ex collection of the Bombay Natural History Society]; [Siruvani, Muthikolam]); both cited specimens in NHMUK, examined).

Diagnosis. *Male*. Length: 14.5–15.5mm (n=3). Frons at vertex / head width ratio 0.29–0.33 (mean 0.31, n=9). Very similar to *B. kanoi*. Anepimeron with numerous black setulae in upper half (Fig. 172). Fore tibia with 3–5 short spinous setae on ventral side (Fig. 174). Abdomen with broad dark marginal bands on T3 and T4, T5 black (Figs 161, 171, 223). Distal margin of ST5 flap with a convex protrusion in middle, leaving a concave margin on both sides (Figs 168, 177–178). Cerci short, prongs encompassing an empty space in posterior view (Fig. 159); tip very narrow in lateral view (Fig. 160). Surstylus oval. Bacilliform sclerite process with an obliquely cut tip (Fig. 160). Distiphallus as in Figs 162–166, 180, 182. Apex of distiphallus ventrally with a considerable area of denticles on each side of ejaculatory opening (Figs 166, 180, 182), much as in *B. kanoi* but area larger. Pre- and postgonite as in Fig. 181.

Female. Unknown.

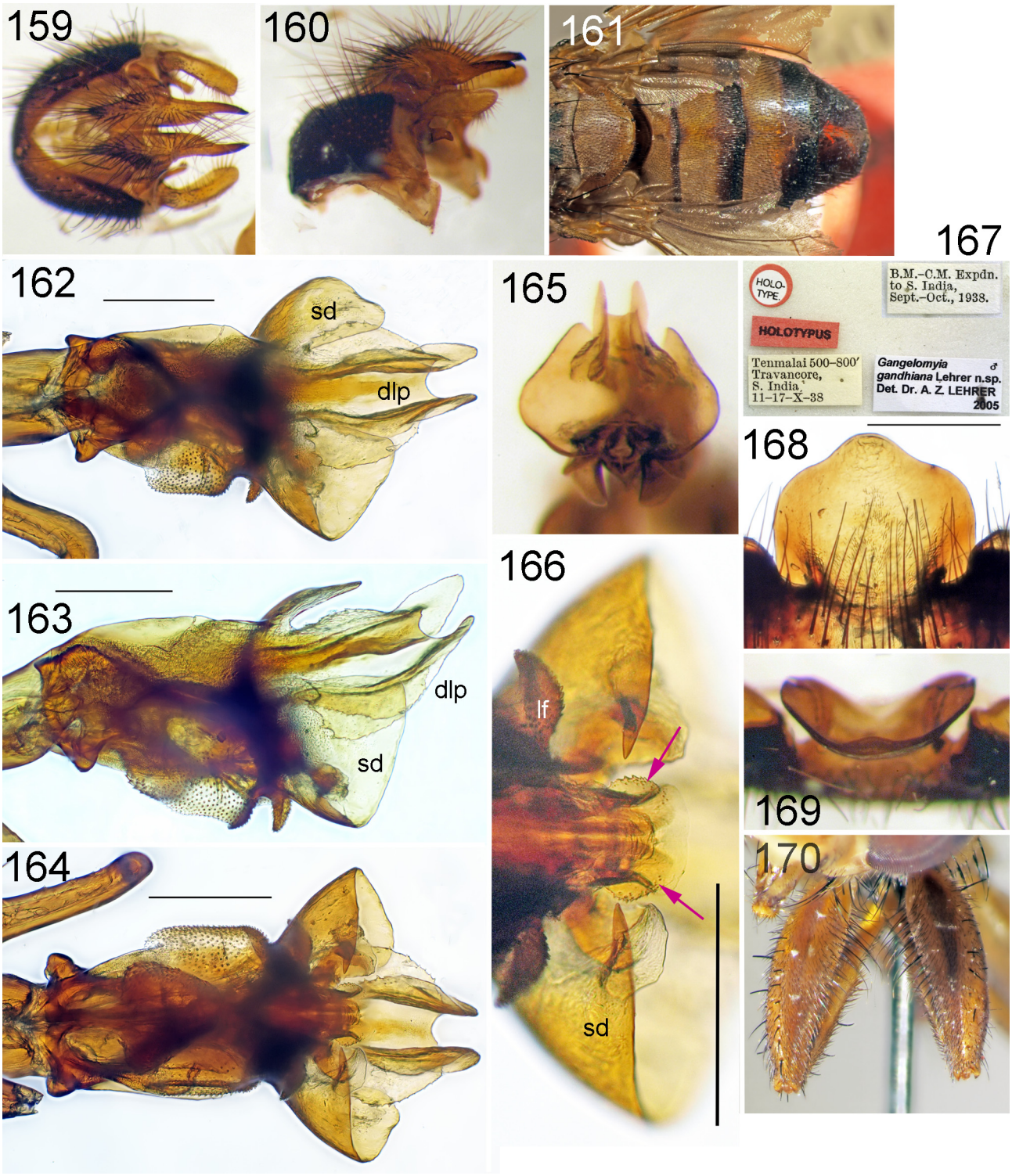
Discussion. Specimens of this species in MNHN and NHMD have been misidentified as *B. jejuna*.

Biology. One of the specimens in NHMUK carries a label reading "Ant fly", suggesting that it was observed hunting ant prey.

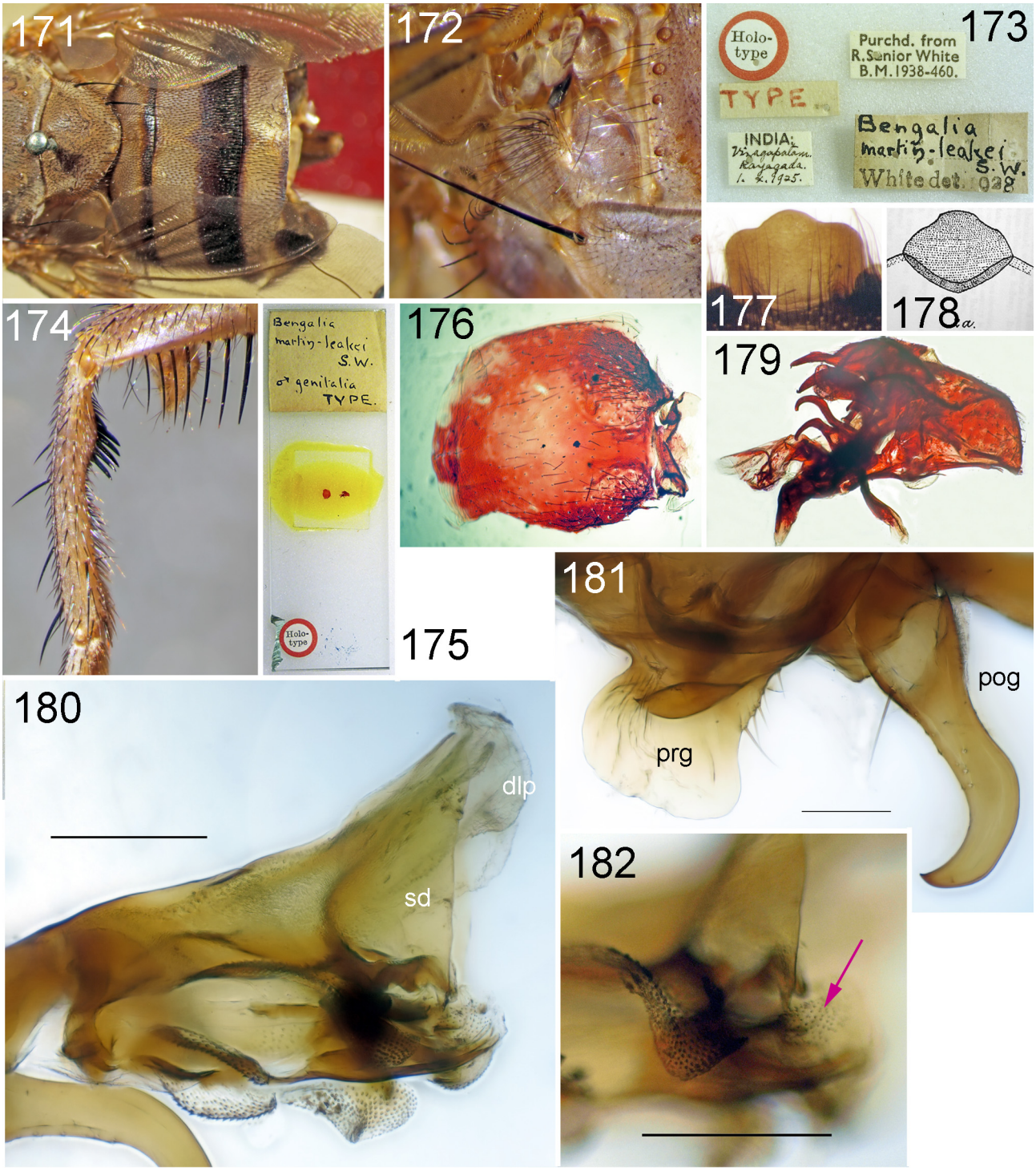
Distribution. India*.

Type material examined. *Bengalia martinleakei* Senior-White, 1930. HOLOTYPE ♂ (NHMUK; on rectangular, red celluloid stage), labelled (1) Holo-/ type [printed on white label with red rim]; (2) TYPE [red script on white label]; (3) INDIA: / Vizagapatam. / Rayagada. / 1. x. 1925. [handwritten, except first line]; (4) Purchd. From / R. Senior White / B.M. 1938-460. [printed]; (5) Bengalia / martin-leakei / S.W. / White det. 1928 [handwritten, except last line] (Fig.173) [Right fore and mid legs lost] [NB: there is a microscope slide accompanying the holotype (Fig. 175); it is labelled (1) Bengalia / martin-leakei / S.W. / ♂ genitalia / TYPE [black handwriting] at one end and (2) Holo- / type [printed on a white circular label with a red rim] at the other; slide with ST5 (including the crumpled remains of ST5 flap distally) (Fig. 176) and terminalia in profile (Fig. 179); both items stained with a red dye (Fig. 175).]

Gangelomyia gandhiana Lehrer, 2005. HOLOTYPE ♂ (NHMUK), labelled (1) HOLO- / TYPE [printed on white label with red rim]; (2) HOLOTYPUS [red script on white label]; (3) [upper side:] Tenmalai 500–800' / Travancore, / S. India, 11–17–X–38, [underside:] B.M.–C.M. Expdn. / to S. India, Sept.–Oct., 1938. [printed]; (4) *Gangelomyia* ♂ / *gandhiana* Lehrer n.sp. / Det. Dr. A. Z. LEHRER / 2005 [printed] [Left hind leg and right hind tibia missing; dissected by Lehrer; right pre- and postgonites destroyed, terminalia transferred by me from Lehrer's big plastic vial to glycerol in a glass microvial; terminalia in good condition, with no Canada balsam infiltration; also recorded by Lehrer (2006a: 10), without mention of its status as holotype].



FIGURES 159–170. *Bengalia martinleakei* Senior-White (holotype of *Gangelomyia gandhiana* Lehrer, NHMUK). **159.** Epandrial complex, posterior view. **160.** Epandrial complex, left lateral view. **161.** Abdomen, dorsal view. **162.** Distiphallus, dorsal view. **163.** Distiphallus, oblique dorsolateral view. **164.** Distiphallus, ventral view. **165.** Distiphallus, apical view. **166.** Detail of distiphallus, ventral view; arrows showing denticulate area. **167.** Labels. **168.** ST5 flap, broadest aspect. **169.** ST5 flap, hind edge view, inside up. **170.** Fore femora, dorsal view. Scale bars: 0.25mm (Figs 162–164, 166); 0.5mm (Fig. 168). Abbreviations: *dlp* = distal lip process; *lf* = lateral finger; *sd* = semidomes.



FIGURES 171–182. *Bengalia martinleakei* Senior-White (171–176, 178–179: holotype of *Bengalia martinleakei*, NHMUK; 177, 180–182: male from Darjeeling, India, MNHN). **171.** Abdomen, dorsal view. **172.** Right anepimeron. **173.** Labels. **174.** Left fore tibia. **175.** Microscope slide of genitalia. **176.** ST5 (crumpled remains of ST5 flap to the right). **177.** ST5 flap. **178.** ST5 flap (reproduced from Senior-White [1930 Plate II, fig. 2a]; copyright expired). **179.** Epandrial complex, right lateral view. **180.** Distiphallus, oblique ventrolateral view. **181.** Pre- and postgonites. **182.** Detail of extreme ventroapical part of distiphallus, ventrolateral view; arrows showing denticulate area on either side of ejaculatory opening. Scale bars: 0.25mm (Figs 180, 182); 0.5mm (Fig. 181). Abbreviations: *dlp* = distal lip process; *pog* = postgonite; *prg* = pregonite; *sd* = semidomes.

Gangelomyia krishna Lehrer, 2005. HOLOTYPE ♂ (BPBM), labelled (1) C.E. INDIA, Orissa State, Jeypore, 533m. IX-'58, Nathan; (2) Collector / P.S. Nathan; (3) Bengalia ♂ / martinleakei / S.White, 1930/ Det. H. Kurahashi; (4) HOLOTYPUS [printed on red label]; (5) *Gangelomyia* ♂ / *krishna* Lehrer n. sp. / Det. Dr.

A.Z.LEHRER / 2005 [printed, pin hole in middle]; (6) *Gangelomyia* ♂ / *krishna* Lehrer n. sp. / Det. Dr. A.Z.LEHRER / 2005 [printed, pin hole near right hand margin of label] [The holotype has lost its right fore leg; posterior half of T3 and T4 vey dark; T5 very dark; dissected by Lehrer; terminalia (ST5 flap and epandrial and hypandrial complexes) in glycerol in a big plastic vial; transferred to glass microvial by me]. PARATYPE ♂ (NHMUK), labelled (1) Dehra Dun. / U.P., / India. (Nov. 1907. / Lt.-Col.F.W.Thomson, / I.M.S. / 1908—21. [printed, left hind leg glued to label]; (2) Ochromyia sp. ♂ / probably jejuna typ. [handwritten]; (3) *Bengalia* ♂ / *krishna* Lehrer n.sp. / Det. Dr. A.Z.LEHRER / 2004 [printed, pin hole in centre]; (4) *Bengalia* ♂ / *krishna* Lehrer n.sp. / Det. Dr. A.Z.LEHRER / 2004 [printed, pin hole near right hand margin] [Dissected by Lehrer; terminalia transferred by me from Lehrer's big plastic vial to a glass microvial with glycerol].

Other material examined. MNHN. India: 1 ♂, labelled (1) Dardjeeling / Himalaya / F. Caius 1915 [handwritten] [Most of thorax, parts of mid femur and right eye heavily eaten by a pest/pests; fore tibia with 4 setae on right side and 3 on left; placed in general collection under *B. jejuna*; dissected by me; terminalia and ST1–5 in glycerol in microvial on pin; dried T1+2–5 glued to a piece of card on pin]. **NHMD.** India: 1 ♂ (Fig. 223), labelled (1) Mus. / Westerm. [printed]; (2) M: jejuna / Fab: / Bengal / May 1809. [handwritten by Westermann] [Placed as specimen #1 in NHMD collection in unit tray for *Bengalia jejuna* (see Fig. 222); dissected by me; terminalia and ST1–5 in glycerol in microvial on pin; dried T1+2–5 glued to piece of card on pin; this is one of two existing syntypes of *Musca torosa* Wiedemann; the other is in NMW]. **NHMUK.** India: 1 ♂, labelled (1) India / Ex coll. / Bombay / Nat.Hist.Socy. [handwritten in pencil]; (2) *Gangelomyia* ♂ / *krishna* Lehrer n.sp. / Det. Dr. A.Z.LEHRER / 2005 [printed, pin hole in centre]; (3) *Gangelomyia* ♂ / *krishna* Lehrer n.sp. / Det. Dr. A.Z.LEHRER / 2005 [printed, pin hole near right hand margin] [Dissected by Lehrer; phallus broken beyond basiphallus; distiphallus absent from original vial; terminalia transferred by me to glycerol in a glass microvial]; • 1 ♂, labelled (1) [upper side:] Siruvāni–Muthiko- / lam, 1,700–3,000' / Coimbatore Dt. / S. India, / 23 & 26–IX–38, [underside:] B.M.–C.M. Expdn. / to S. India, Sept.–Oct., 1938 [printed]; (2) *Gangelomyia* ♂ / *krishna* Lehrer n.sp. / Det. Dr. A.Z.LEHRER / 2004 [printed, pin hole in centre] [Dissected by Lehrer; terminalia transferred by me to glycerol in a glass microvial; head lost]; • 1 ♂, labelled (1) India. / Ex coll. / Bombay / Nat. Hist.Socy. [handwritten] [On very short pin; both fore legs lost, abdomen eaten from within by a pest; dissected by me; phallus partly eaten by a pest; T1+2–5 glued to a piece of card on a separate pin with a copy of original label; terminalia in glycerol in a glass microvial on the same pin]; • 1 ♂ [staged], labelled (1) INDIA. [printed]; (2) Mussorie 20.VI.05 [handwritten]; Pres. by / E. Brunetti / Brit.Mus. /1927-184. [printed] [Dissected by me; T1+2–5 glued to a piece of card on pin, below the stage and above the labels; terminalia in glycerol in glass microvial pinned below the labels]; • 1 ♂ [staged on a large piece of card], labelled (1) INDIA: / T.R.BELL. / B.M.1934–394 [handwritten in black ink]; (2) [text on underside of stage card:] Ant fly / Kant… benga … (?) / 7. 8. 24 [handwritten in pencil on line 2, difficult to decipher] [Dissected by me; T1+2–5 glued to stage card; terminalia in glycerol in a glass microvial pinned below the labels]; • 1 ♂ [staged on a celluloid plate], labelled (1) BOMBAY PRESID., / Mahableshwar / & Matheran. / J.Newton. [printed]; (2) Pres. by / Miss J.T.Newton. / B.M. 1939–206. [printed] [Dissected by me; T1+2–5 glued to stage plate; terminalia in glycerol in a glass microvial pinned below the labels].

***Bengalia recurva* Malloch, 1927**

(Figs 183–206)

Bengalia (*Ochromyia*) *recurva* Malloch, 1927: 404. Holotype ♂ (USNM, as "Type"; not examined), by original designation. Type locality: Philippines, Luzon, Mt Makiling.

?*Bengalia* (*Ochromyia*) *recurva*: Malloch (1927: 404) ("…one female paratype, Pahang, Federated Malay States, …"; not seen).

Bengalia recurva: Senior-White *et al.* (1940: 92).

Bengalia recurva: James (1966: 467) (Philippines).

Bengalia recurva: James (1977: 529; catalogue entry).

Bengalia recurva: Rueda (1985: 343) (Philippines; specimen illutrated [Rueda 1985: 344, fig. 15] with ST5 flap with a practically straight hind margin).

Bengalia recurva: Kurahashi *et al.* (1997: 42). [No material recorded from Malaysia and Singapore, which cast doubt on the female recorded by Malloch (1927), above.]

Bengalia recurva: Kurahashi & Magpayo (2000: 49) (Philippines).

Laoziana recurva: Lehrer (2005: 140) ("… inconnue pour nous").

Laoziana camerina Lehrer, 2005: 137. Holotype ♂ (BPBM; examined), by original designation. Type locality: Philippines (Camarines Sur, Mt. Iriga). **Syn. nov.**

Laoziana mandarina Lehrer, 2005: 138. Holotype ♂ (MSNM; examined), by original designation. Type locality: China ("Canton", now = Guangdong). **Syn. nov.**

Laoziana singhasaria Lehrer, 2005: 141. Holotype ♂ (NHMUK; examined), by original designation. Type locality: Indonesia ("Java, Salatri"). **Syn. nov.**

Bengalia recurva: Verves (2005: 240; catalogue entry).

Bengalia recurva: Kurahashi & Bunchu (2011: 245). [No records from Thailand.]

Diagnosis. *Male*. Length: 14.0–16.0mm (n=3). Frons at vertex / head width ratio 0.29–0.33 (mean 0.31, n=5). Anepisternum all yellow. Anepimeron with pale setulae only (Fig. 195). Fore tibia with 3–4 strong spinous setae in proximal third of ventral surface (Figs 200–201). Abdominal tergites, also T5, all yellow or with very narrow dark marginal bands (Fig. 196). ST5 flap much shorter than wide, with hind margin slightly concave (Figs 186, 197–198, 203), straight, or slightly convex (Figs 204, 206). Cercus with long, narrow prong in posterior view (Fig. 183). Surstylus broad, with sinuous upper and lower margins, in lateral view (Fig. 184), in posterior view broadened and blunt at tip (Fig. 183). Bacilliform sclerite process with backwardly pointing (retrograde) projection (Figs 184–185, 202, 205). Distiphallus as in Figs 187–191. Semidomes (*sd*) short (anteroposteriorly), forming a narrow band in apical view (Fig.191). Distal lip process (*dlp*) with two rounded sections connected at middle (Figs 187–188), appearing bifid in apical view (Fig. 191). Distiphallus with dorsal wall slightly curved in lateral view (Fig. 187). External hypophallic lobe with complex folds distally (Fig. 189). Apical part of distiphallus with a denticulate membrane surrounding the ejaculatory opening (Figs 187, 189–190). Pre- and postgonite as in Fig. 192.

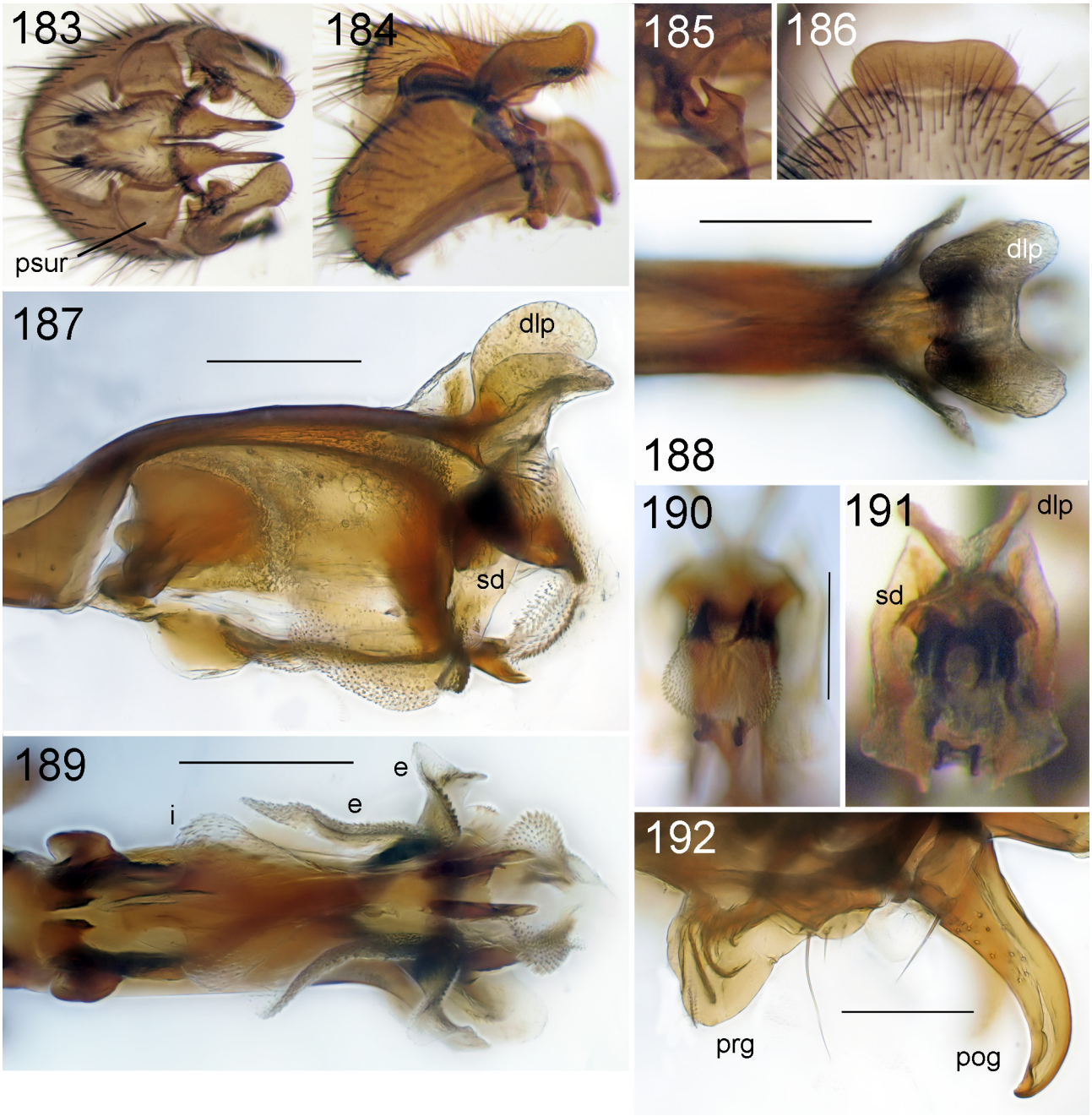
Female. Length: 12.5–14.5mm (n=2). Frons at vertex / head width ratio 0.30–0.32 (mean 0.21, n=2).

Discussion. Lehrer (2005: 136) based his key to the four nominal species in his "genus" *Laoziana* on the alleged shape of the distal lip process (his "apophyses apicales du distiphallus") in lateral view only. In *L. singhasaria* they are described as "longues, étroites et orientées en bas [long, straight and directed downwards]" (see his fig. 64C), whereas in the other three (also *B. recurva*, unknown to him by his own admission) they are described as "courtes, larges et orientées en arrière [short, broad and directed backwards]". No additional details are given for *L. recurva* ("espèce … restée inconnue pour nous"), whereas in *L. mandarina* they are described as "larges et arrondies dans leur partie terminale [broad and rounded distally]" (see his fig. 62C), and in *L. camerina* as having "une forme plus ou moins triangulaire et sont étroites au bout terminal [a more or less triangular shape and narrow distally]" (see his fig. 61C). These descriptions apply only to his lateral view figures, which seem to have served as a basis for the key text but have nothing to do with the actual shape of the distal lip process, which is quite uniform in all the specimens I have seen (including the ones examined by Lehrer) when examined from all angles of view. The key is therefore unfortunately based on artifacts resulting from Lehrer's slide preparation method, involving excessive heat (300°C, also open flame) and Canada balsam (Lehrer 2011: 7–8), which distorted the fragile membranes. There is no difference between the three nominal species in the shape of the distal lip process when observed from various angles of view. There are also dubious statements in the key regarding the shape of the cerci in profile. However, there is some noteworthy variation in the shape of the distal margin of the ST5 flap. Rueda's (1985: 343) figure shows a practically straight hind margin of the ST5 flap. The convex hind margin of the ST5 flap in the holotype of *L. singhasaria* (Fig. 204) and a male in ZMHB (Fig. 206) is puzzling, and suggests that it might represent a separate species. This resembles the situation observed for the ST5 flap in the species pair *B. kanoi* / *B. martinleakei*, but these species differ also in the apicoventral part of the distiphallus. No differences in the distiphallus were found in the above specimens with a convex ST5 flap compared to the other specimens, so I consider all of Lehrer's nominal species as synonyms of *B. recurva*.

Biology. A label reads "In house in privies at night". Nothing else is known.

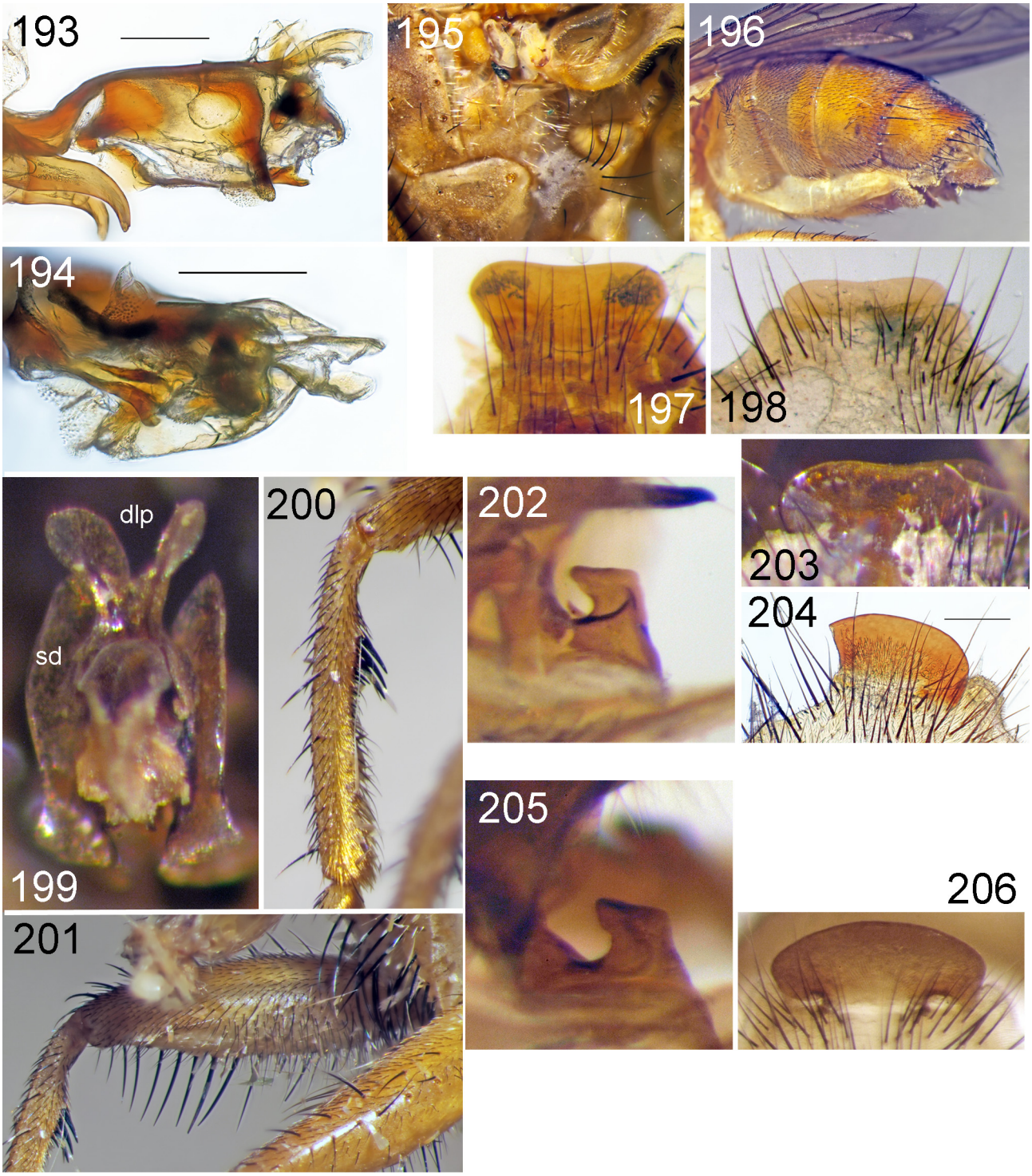
Distribution. China (Guangdong*), Indonesia (Jawa*, Sulawesi*), ?Malaysia (female from Pahang, West Malaysia [Malloch 1927: 404]), Philippines*.

Type material examined. *Bengalia recurva* Malloch, 1927. [Holotype ♂ from Mt. Maquiling, Philippines (USNM; see Malloch (1927: 404); not examined).]. PARATYPE ♂ (NHMUK), labelled (1) Para- / type [printed on white circular label with yellow rim]; (2) Camp Keithley / Mindanas P.I. [handwritten]; (3) June 1913 / E.L. Munson [handwritten]; (4) Bengalia / recurva / Mall. [handwritten]; (5) In exchange with / Prof. J.M.Aldrich / Brit.Mus.1929-366 [printed] [The specimen is staged on a big celluloid plate; above the stage plate is a handwritten label reading (6) In houses & / privies at / light; the dry genital capsule is glued to one corner of the label].



FIGURES 183–192. *Bengalia recurva* Malloch (male from Brookes Point, Uring Uring, Palawan, Philippines, NHMD). **183.** Epandrial complex, posterior view. **184.** Epandrial complex, left lateral view. **185.** Bacilliform sclerite process. **186.** ST5 flap. **187.** Distiphallus, left lateral view. **188.** Distiphallus, dorsal view. **189.** Distiphallus, ventral view. **190.** Distiphallus, apical view. **191.** Distiphallus, apical view. **192.** Pre- and postgonites. All scale bars = 0.25mm. Abbreviations: *dlp* = distal lip process; *e* = external hypophallic lobe; *i* = internal hypophallic lobe; *pog* = postgonite; *prg* = pregonite; *psur* = proximal surstylus; *sd* = semidomes.

Laoziana camerina Lehrer, 2005. HOLOTYPE ♂ (BPBM), labelled (1) P.I.,CAMARINES / SUR, Mt. Iriga / 500-600m, 28.IV.62 [printed]; (2) H.M. Torrevillas / Collector / BISHOP [printed]; (3) HOLOTYPUS [black print on red label]; (4) *Laoziana* ♂ / *camerina* Lehrer n. sp. / Det. Dr. A. Z. LEHRER / 2005 [printed, pin hole near middle]; (5) *Laoziana* ♂ / *camerina* Lehrer n. sp. / Det. Dr. A. Z. LEHRER / 2005 [printed, pin hole near right hand margin] [Left hind leg lost; abdomen, including T5, pale; dissected by Lehrer; terminalia infused with Canada balsam, in glycerol in big plastic vial; transferred to glass microvial with glycerol by me; one surstylus lost, allowing a good view of the bacilliform sclerite process; distiphallus with bifid distal lip process ("apophyses apicales"), not apparent in Lehrer's figure 61C].



FIGURES 193–206. *Bengalia recurva* Malloch (193–196, 202, 204: holotype of *Laoziella singhasaria* Lehrer, NHMUK; 197: holotype of *Laoziella camerina* Lehrer, BPBM; 198: holotype of *Laoziella mandarina* Lehrer, MSNM; 199–201, 203: male from Brookes Point, Uring Uring, Palawan, Philippines, WSU; 205–206: male from Bantaeng, Sulawesi, Indonesia, ZMHB). **193.** Distiphallus, left lateral view. **194.** Distiphallus, ventrolateral view. **195.** Left anepimeron. **196.** Abdomen, oblique postero-ventrolateral view. **197.** ST5 flap. **198.** ST5 flap. **199.** Distiphallus, apical view. **200.** Right fore tibia, inside view. **201.** Right fore femur and part of fore tibia, inside view. **202.** Bacilliform sclerite process. **203.** ST5 flap. **204.** ST5 flap (partly destroyed). **205.** Bacilliform sclerite process. **206.** ST5 flap. All scale bars = 0.25mm. Abbreviations: *dlp* = distal lip process; *sd* = semidomes.

Laoziana mandarina Lehrer, 2005. HOLOTYPE ♂ (MSNM), labelled (1) Canton 21 / Hsinsioe [?] [last line difficult to decipher; handwritten]; (2) Bengalia sp. nov. [handwritten on label with three printed lines and a fine black frame]; (3) Bezzi [handwritten]; (4) 714 [handwritten]; (5) latro [printed on white label]; (6) pallida / SYNTYPUS [printed on white label]; (7) HOLOTYPUS [printed on white label glued to larger red label]; (8) *Bengalia* ♂ / *mandarina* Lehrer sp.n. / Det. Dr. A. Z. LEHRER / XII.2004 [printed; two pin holes in middle]; (9) *Bengalia* ♂ / *mandarina* Lehrer sp.n. / Det. Dr. A. Z. LEHRER / XII.2004 [printed; one pin hole near right hand margin] [Dissected by Lehrer; terminalia transferred from the big plastic Lehrer vial to a small glass microvial by me; the specimen is teneral, as demonstrated by the weakly sclerotized terminalia; terminalia infiltrated by Canada balsam; first record for China].

Laoziana singhasaria Lehrer, 2005. HOLOTYPE ♂ (NHMUK) labelled (1) HOLO- / TYPE. [printed on white circular label with red rim]; (2) HOLOTYPUS [printed on white label glued to larger red label]; (3) WEST JAVA: / Sakatri, / i.1938. / B.M.1962-651; (4) *Bengalia* ♂ / *singhasaria* n. sp. / HOLOTYPUS / Det. Dr. A.Z.LEHRER / 2004 [printed] [Right fore leg lost, left fore tibia lost; both mid legs lost; dissected by Lehrer; terminalia transferred from the big plastic Lehrer vial to a glass microvial by me; right surstylus lost, right bacilliform sclerite process broken; left bacilliform sclerite process intact; cerci displaced in relation to each other; the phallus is infiltrated with a substance (possibly Canada balsam) that has collapsed the bifid distal lip process and created the artefactual, downwardly directed and apparently single process in Lehrer's fig. 64C, just beside the letter "C"; it is also very difficult to view the outline of the semidomes in lateral view; left anepimeron with one black setula (Fig. 195), right anepimeron with pale setulae only].

Other material examined. NHMD. Philippines: 1 ♀, labelled (1) Philippines, Palawan / Mantalingajan / Pinigisan 600 meter / 7 Sept 1961 / Noona Dan Exp. 61-62 [printed]; (2) Caught in / Malaise- / traps / inside forest [printed]; (3) Bengalia / recurva / Mall. / det James 65 [handwritten by James on label with black frame]; • 1 ♀, labelled (1) Philippines, Palawan / Brookes Point / Uring Uring / 18 August 1961 / Noona Dan Exp. 61-62 [printed]; (2) Caught by / Mercury light / 20.00–22.30 [printed]; (3) recurva [handwritten by James]; • 1 ♂, labelled (1) Philippines, Palawan / Brookes Point / Uring Uring / 18 August 1961 / Noona Dan Exp. 61-62 [printed]; (2) Caught by / light from / Petromax [printed]; (3) recurva [handwritten by James] [Dissected by me; dried abdominal tergites glued to a piece of card on pin; terminalia in glycerol in glass microvial pinned below labels]. **WSU.** Philippines: 1 ♂, labelled (1) Philippines, Palawan / Brookes Point / Uring Uring / 19 August 1961 / Noona Dan Exp. 61-62 [printed]; (2) Caught in / Malaise- / traps [printed]; (3) Bengalia / recurva / Mall. / det James '65 [handwritten by James on label with black frame] [Genitalia extruded and well visible]; • 1 ♀, labelled (1) Philippines, Tawi Tawi / Tarawakan / north of Batu Batu / 25. Oct 1961 / Noona Dan Exp. 61-62 [printed]; (2) Caught in / Malaise- / traps [printed]; (3) recurva [handwritten by James]; (4) 11 [handwritten in pencil on small yellow label]. **ZMHB.** Indonesia: 1 ♂, labelled (1) Celebes, Bonthain [= Sulawesi, Bantaeng] / Wawa Karaeng / 1100m Ende 8.31 / G. Heinreich [printed on yellow label]; (2) Anisomyia / favillacea / (Walk.) var. ♂ / Dr. Enderlein det 1935 [handwritten except most of last line, which is printed]; (3) Zool. Mus. / Berlin [printed] [Dissected by me; ST1–5 and terminalia in glycerol in a glass microvial on the same pin; dried abdominal tergites glued to a piece of card on pin; this specimen has ST5 flap with a convex hind margin (Fig. 206), a feature shared with Lehrer's *Laoziana singhasaria*; at present I accept a convex hind margin of the ST5 flap as being within the range of natural variation of *B. recurva*; I have found no differences in the phallus between this male, the dried WSU male and the dissected NHMD male, above].

***Bengalia torosa* (Wiedemann, 1819)**

(Figs 207–236)

Musca torosa Wiedemann, 1819: 21. 2 syntypes, ♂ and ♀ (NHMD, NMW; both as "♀"; for details see "Type material examined") (Figs 222–225). Type locality: India, West Bengal ("Bengalia. Maio."). Male to be proposed as **neotype** (NHMD), labelled "Bengala / Galatea / Lateralis / Macq." [handwritten] (Figs 226–228) [for details, see "Type material examined"].

Musca jejuna: Wiedemann (1830: 386) ("Aus Tranquebar und Bengalen"). [In this work, Wiedemann placed his own *Musca torosa* as a synonym under *Musca jejuna* of Fabricius, 1794 (as "Fabr. Ent. Syst IV. 312, 1"), and in a note ["Anmerk."] on the same page stated to have been misled earlier [i.e., in 1819] into believing "… specimens from Bengal, in Westermann's and my own collection, to be a separate species [i.e., *Musca torosa*]"; for more details and citations, see below.]

Bengalia testacea Robineau-Desvoidy, 1830: 426. [Sex and number of specimens not given. Type(s) assumed lost. Type

locality: "… rapportée de la Nouvelle-Hollande [Australia] et de Cayenne [French Guiana]"; "Undoubtedly in error" (James 1977: 530), "… as Cayenne is certainly an error, doubt must also attach to the Australian record" (Farrow & Dear 1978).]

Bengalia lateralis Macquart, 1844: 277 [120] [http://biodiversitylibrary.org/page/15977005], Tab. 14, fig. 7 [http://biodiversitylibrary.org/page/15977255]. Lectotype ♀, by indirect fixation by Townsend (1931b: 371) (MNHN; examined from photographs; discussed below under "Type material examined") [only one specimen under the name, but Macquart did not state he saw only one]. Type locality: India (Puducherry or Pondicherry, as "Pondichery"). [NB: This name is catalogued as *Anisomyia lateralis* in the Oriental Catalog (James 1977) and *Systema Dipterorum* (Thompson & Pape 2013), but this is an error.]

Ochromyia quadrinotata Bigot, 1888: 608. Holotype ♂ (OUMNH; as "♀", for details see "Typer material examined"), by monotypy ("1 spécimen"). Type locality: Sri Lanka (as "Ceylan").

Bengalia jejuna: Bezzi (1913: 74). [His fig. A on p. 74 ("*Beng. Jejuna* Fabr.") is clearly an illustration of the fore tibia of *B. torosa*, with two groups of spinous setae; misidentification, not *jejuna* Fabricius, 1787.]

Bengalia quadrinotata: Bezzi (1913: 75). ["Die Bewaffnung der Vorderschienen ist ganz ähnlich denen der vorigen Art (Fig.1, A)".]

Bengalia lateralis: Surcouf (1920: 37). [Surcouf associated the female type of *B. lateralis* Macquart with *Bengalia* males having a 5+2 pattern of fore tibial setosity.]

Bengalia jejuna: Senior-White (1923a: 302) (India, various localities). ["… male fore tibiæ armed 5 : 2"; misidentification, not *jejuna* Fabricius, 1787.]

Bengalia jejuna: Senior-White (1924: 104) (India, various localities). ["…front tibia spined 5:3 instead of 5:2 as usual"; misidentification, not *jejuna* Fabricius, 1787.]

Bengalia jejuna: Senior-White (1926: 137). ["Front tibia armed 5:2"; misidentification, not *jejuna* Fabricius, 1787.]

Bengalia jejuna var. *quadrinotata*: Senior-White (1924: 104). ["…front tibia armed 5:1".]

Bengalia jejuna: Senior-White *et al.* (1940: 88). [Misidentification, not *jejuna* Fabricius, 1787.]

Bengalia lateralis: Séguy (1946: 83). ["Laos (Ban Sen Sourane; Ban Nam Mo, 11-IV-18; Muong Hai, 2-IV-18) (Coll J. Hervé-Bazin)".]

Bengalia (*Anisomyia*) *lateralis*: Fan (1965: 193) (China).

Bengalia lateralis: James (1966: 466) (Philippines).

Bengalia torosa: James (1977: 530; catalogue entry).

Bengalia torosa: Farrow & Dear (1978: 234) (Australia; rare there, or a recent introduction).

Bengalia torosa: Rueda (1985: 345) (Philippines).

Bengalia torosa: Fan (1992: 534) (China).

Musca torosa: Thompson & Pont (1994: 127). [Type depository given erroneously as "UZMUC" (= NHMD) assuming single name-bearing type, instead of NHMD + NMW.]

Bengalia torosa: Kurahashi & Thapa (1994: 219) (new record from Nepal).

Bengalia torosa: Kurahashi (1997: 40; in key only) (no records from Malaysia and Singapore).

Bengalia torosa: Fan (1997: 453) (China, Laos, Thailand).

Bengalia torosa: Feng *et al*. (1998: 1377) (China).

Bengalia torosa: Kurahashi & Magpayo (2000: 49) (Philippines).

Bengalia torosa: Kurahashi & Chowanadisai (2001: 203) (Vietnam).

Bengalia torosa: Kurahashi & Afzal (2002: 221) (Pakistan).

Ochromyia jejutora Lehrer, 2005: 143. Holotype ♂ (BPBM; examined), by original designation. Type locality: India (Nilgiri [as "Niggiri"] Hills, Devala". [Unavailable name, proposed in synonymy (cf. Rognes 2006: 468); synonymy proposed by Rognes (2006).]

Ochromyia jejutora: Lehrer (2005: 144–145). [List of type material from India, Indochina, Philippines, Laos, Taiwan.]

Bengalia torosa: Verves (2005: 240; catalogue entry).

Ochromyia jejutora: Lehrer (2006a: 10) (India, Myanmar [as "Burma"]).

Sindhigalia jejutora: Lehrer (2006b: 13).

Bengalia torosa: Kurahashi (2010: 74) (Japan).

Bengalia torosa: Kurahashi & Bunchu (2011: 264) (Thailand).

Bengalia torosa: Yang *et al.* (2014: 89) (Taiwan).

Bengalia torosa: Kurahashi (2014: 807) (Japan).

Ochromyia jejutoria: Evenhuis *et al.* (2016: 90). [Incorrect subsequent spelling of *Ochromyia jejutora* Lehrer.]

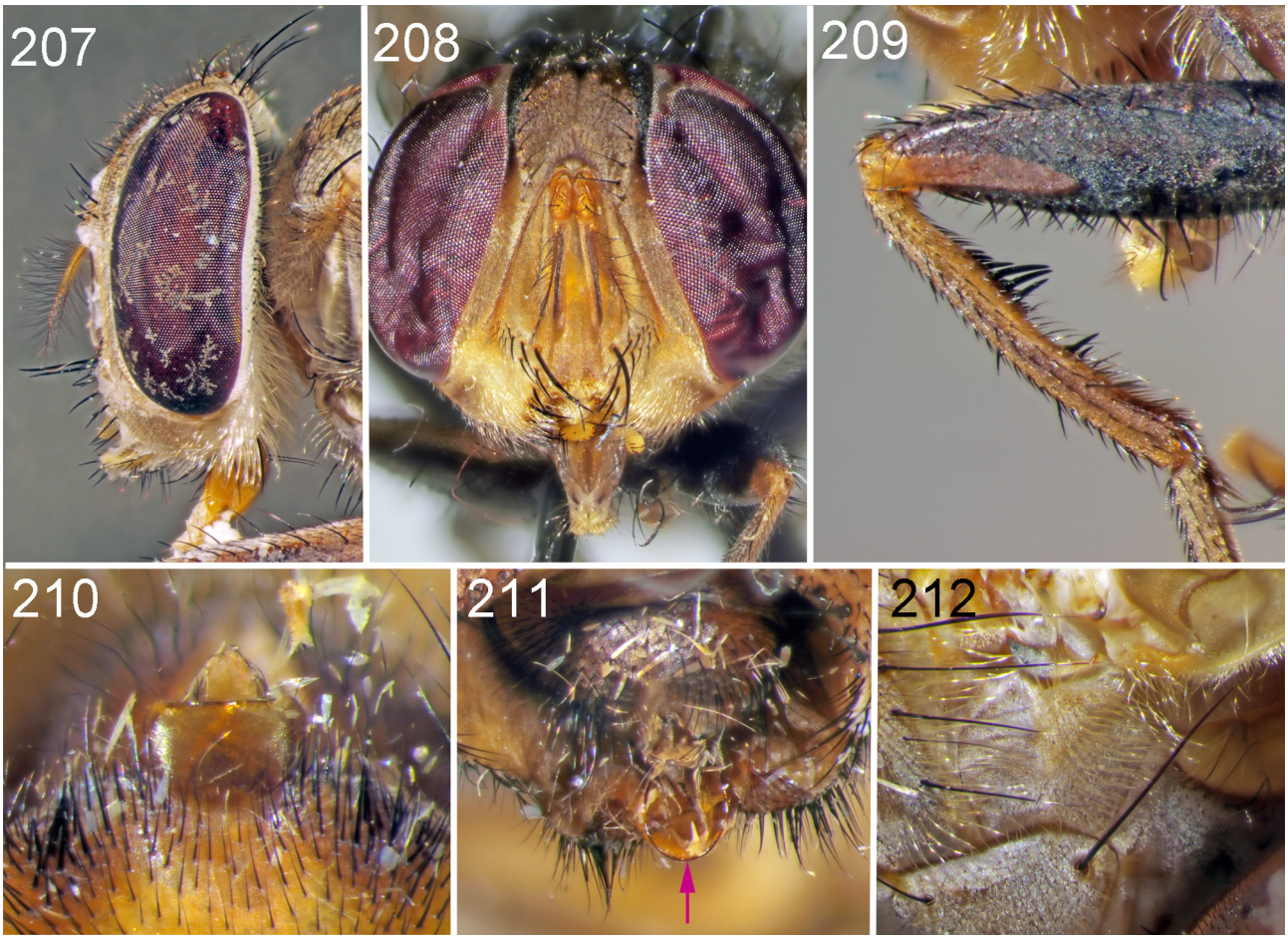
Bengalia torosa: Szpila *et al.* (2016). [Description of eggs and first instar larva.]

Diagnosis. *Male*. Length: 9.0–14.5mm (n=6). Frons at vertex / head width ratio 0.28–0.32 (mean 0.30, n=6). Posterior margin of eye with a distinct concavity in profile (Fig. 207). Distance between vibrissae equal to or less than distance of either from eye (both distances measured in their longest aspect). Vibrissa separated from lower facial margin by a distance greater than width of first flagellomere (Fig. 208). Clypeus strongly projecting below lower facial margin (Fig. 208). Thorax with broad greyish bands laterally, also on scutellum (Figs 228, 230).

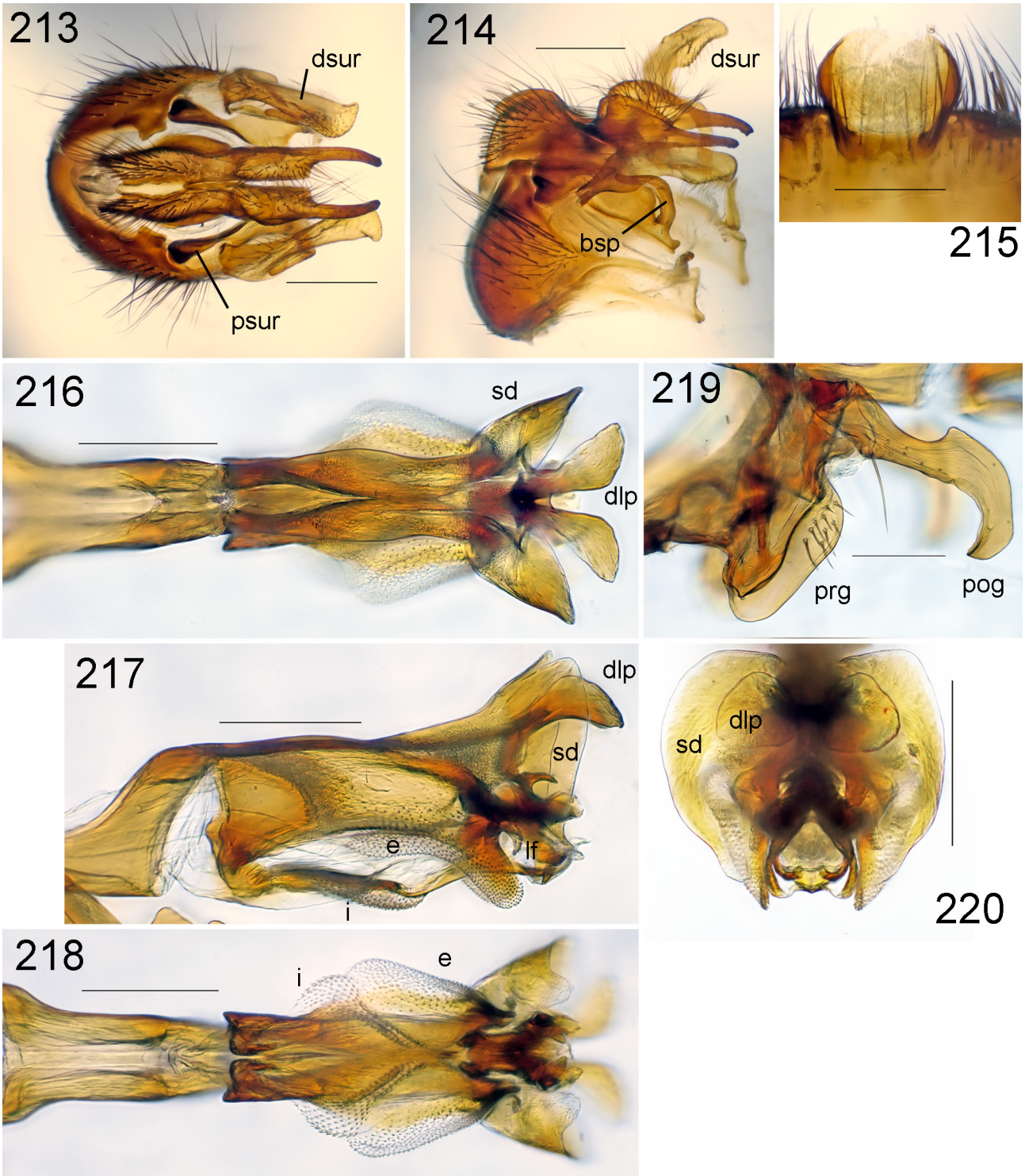
Anepimeron with pale setulae only (Fig. 212). Legs usually all yellow. Fore tibia with two ventral groups of spinous setae in a 5+2 pattern (Figs 209, 234). No strong erect marginal setae on T4. Abdomen usually with narrow dark bands on tergites (Fig. 228, 230, 233). T3 and T4 often with a median dark stripe. ST5 flap almost circular (Figs 210, 215), deeply concave on upper side (Figs 211, 235). Cerci with long, slightly converging prongs in posterior view, distally denticulate (Figs 213–214). Cercus with a deep incision in upper margin in lateral view (Fig. 214). Proximal surstylus appearing as a narrow sclerite in posterior view (Fig. 213). Distal surstylus rather long, bent and with a shallow excavation on lower margin basally (Fig. 214). Bacilliform sclerite process very long, narrow, backward curved, originating from the lower end of the upper bacilliform sclerite (Fig. 214). The latter with a long, low, rounded process above the origin of the bacilliform sclerite process (Fig. 214). Distiphallus as in Figs 216–218, 220. Semidomes prominent. Distal lip process bifurcate in dorsal view (Fig. 216), with wings that bend downwards in lateral view (Fig. 217), appearing almost circular in apical view (Fig. 220). Pre- and postgonite as in Fig. 219. No rugose area on the pregonite. Distal half of postgonite broader than proximal part, the posterior margin of the distal part forming a kind of step at the junction with the proximal part (Fig. 219).

Female. Length: 12–14.5 (n=6). Frons at vertex / head width ratio 0.29–0.31 (mean 0.30, n=6). Posterior margin of eye with a distinct concavity in profile, as in the male (Fig. 207), which makes the female of this species easy to identify.

Discussion. Sometimes the femora are darkened. I have also seen specimens from Laos (in BPBM) with a very dark abdomen, especially posteriorly. Likewise, 9 males collected while hunting termites in Cambodia (KR, ZMUM) also have a very dark abdomen, with yellow colour only showing through on T3. Sometimes there is a dark longitudinal stripe middorsally on T3 and T4.



FIGURES 207–212. *Bengalia torosa* (Wiedemann) (207, 212: male from Uring Uring, Brookes Point, Palawan, Philippines, KR; 208–209: male from Cambodia, KR; 210–211: male from Wapikhamthong, Laos, BPBM). **207.** Head, left lateral view. **208.** Detail of head, frontal view. **209.** Left fore leg, outside view. **210.** ST5 flap. **211.** ST5 flap (arrow), apical view. **212.** Left anepimeron.



FIGURES 213–220. *Bengalia torosa* (Wiedemann) (male from Uring Uring, Brookes Point, Palawan, Philippines, KR). **213.** Epandrial complex, posterior view. **214.** Epandrial complex, left lateral view (slightly skewed dorsally). **215.** ST5 flap (from inside, slightly ruptured distally). **216.** Distiphallus, dorsal view. **217.** Distiphallus, left lateral view. **218.** Distiphallus, ventral view. **219.** Pre- and postgonites. **220.** Distiphallus, apical view. Scale bars: 0.5mm (Figs 213–215); 0.25mm (Figs 216–220). Abbreviations: *bsp* = bacilliform sclerite process; *dlp* = distal lip process; *dsur* = distal surstylus (surstylus); *e* = external hypophallic lobe; *i* = internal hypophallic lobe; *lf* = lateral finger; *pog* = postgonite; *prg* = pregonite; *psur* = proximal surstylus; *sd* = semidomes.

FIGURES 221–229. *Bengalia torosa* (Wiedemann) (222–223: male syntype of *Musca torosa* Wiedemann, NHMD; 224–225: female syntype of *Musca torosa* in NMW; 226–229: proposed neotype of *Musca torosa* Wiedemann, NHMD). **221.** Label similar to the one added to the two syntypes of *Musca torosa*. **222.** Labels . **223.** Abdomen, dorsal view (before dissection). **224.** Labels. **225.** Abdomen, dorsal view. **226.** Label. **227.** Proposed neotype label. **228.** Head, thorax and parts of abdomen, dorsal view. **229.** Label.

FIGURES 230–236. *Bengalia torosa* (Wiedemann) (230–232: lectotype of *Bengalia lateralis* Macquart, MNHN; 233–236: holotype of *Ochromyia quadrinotata* Bigot, OUMNH). **230.** Habitus, dorsal view. **231.** Head, frontal view. **232.** Labels. **233.** Specimen with labels. **234.** Left fore leg, inside view. **235.** Tip of abdomen with ST5 flap. Arrow pointing towards hind edge. **236.** Drawer label.

Biology. Bequaert (1922: 278–279) cited observations of "*B. jejuna*" (also as "*B. obscuripennis*") hunting winged termites flying at night in India (by K. E. Nangle) and Sri Lanka (by E. E. Green); of the same species "trying to take her burden from a large ant (*Lobopelta* species)" (by J. W. Yerbury); and similar reports of this species seen to "swoop down on any ant carrying an 'egg' or larva, take it from the ant, carry it away a short distance and proceed to suck it" (by F. W. Thomson). Bequaert was citing from papers by Poulton (1907: 394–396; 1914: cxxviii–cxxix). According to Poulton's informant E. E. Green, "*Ochromyia jejuna*" was "abundant" in Sri Lanka, but he collected only a single female on an occasion when these flies were "pouncing upon the termites" that were crawling upon a screen lit by a powerful acetylene lamp for the capture of moths. According to Poulton, his informant K. E. Nangle had captured four females of "*Ochromyia jejuna*" among several flies "hunting …

flying ants, regularly hawking them in the air". Thus, only females had been collected. Poulton's (1907) work was also cited by Bezzi (1913: 74–75), whose "*B. jejuna*" is the modern-day *B. torosa*. The identity of species named "*B. jejuna*" [or "*B. obscuripennis*"] by the sources cited by Bequaert (1922) is now impossible to check. The specimens were identified by J. W. Yerbury. Most likely they refer to *B. torosa*, which is much more frequent, but we cannot know for sure.

Oleg Kosterin (Novosibirsk, Russia) observed *B. torosa* swarming during rainfall and capturing termites also swarming during rainfall. Here is Oleg Kosterin's own account, modified by both of us from the version published in http://www.diptera.info/forum/viewthread.php?forum_id=5&thread_id=59771:

> "In the town of Ban Lung, Ratanakiri Province, Cambodia, on June 1, 2013 there was a strong downpour at about 17.00-17.30 hrs, during which several large flies were observed flying very fast in a very loose aggregate by a tree crown touching the roof of a two-floor building. They flew in different directions but within several metres of the roof. They disappeared when the downpour stopped. In the twilight, at about 18.00 hrs, I observed many large flies resting on leaves of a certain small bush in a garden. The rain resumed and numerous winged termites flew into the air from under that bush, for the termites fly during rain. The flies started flying under the rain as well. To my surprise, they flew to hunt for termites: a fly captured a flying termite, returned to the bush and started to suck it with its proboscis. The termites were smaller than the flies and very soft. Most probably they were damaged while being grasped by the flies, offering them an opportunity to suck their interiors. The flies collected on that occasion appeared to be exclusively males. It is noteworthy that there were some smaller flies on that bush, perhaps of other genera, which probably had the same predatory behaviour. It is difficult to say if the large flies flying by the tree and roof during the earlier strong downpours were just swarming males or if they expected to catch termites (absent at that moment) as well."

The nine specimens collected on that occasion were sent to me for identification. Seven specimens are deposited in ZMUM and two are in KR.

The morphology of the eggs and first instar larvae of *Bengalia torosa* and *Bengalia varicolor* (Fabricius) was described by Szpila *et al*. (2016).

Distribution. Australia, Cambodia*, China, India*, Indonesia (Jawa*), Japan, Laos*, Myanmar*, Pakistan*, Philippines*, Sri Lanka*, Taiwan*, Thailand*, Vietnam*.

Type material examined. *Musca torosa* Wiedemann, 1819. Wiedemann (1819: 21) described *Musca torosa* on the basis of an unstated number of "♀" from "Bengalia. Maio". "Bengalia" includes the area around Calcutta (India, West Bengal) where the Danish merchant Bernt Wilhelm Westermann lived and collected insects from 1801 to 1811 (see Pont 1995: 151). All the species described by Wiedemann in his 1819 paper were based on Westermann's material. Wiedemann (1830: 386) synonymized *M. torosa* under *M. jejuna* Fabricius, 1794 [as "Fabr. Ent.syst. 312.1."]. By way of explanation for this act, he added this note on the bottom of p. 386:

> "Anmerk. Ein Stück in der Fabricischen Sammlung ist aus Tranquebar und sehr abgeblichen; es zeigt die weisslichen Brustschildseiten viel deutlicher und verleitete mich früher, die besser erhaltenen Stücke aus Bengalen, in Westermann's und meiner Sammlung, für eigene Art zu halten.". [*Note. A specimen in the collection of Fabricius is from Tranquebar and very bleached; it shows the whitish thoracic lateral areas much more clearly and misled me earlier* [Wiedemann (1819)] *into considering the better preserved specimens from Bengal, in Westermann's and my own collection, to be a separate species* [*i.e.,* Musca torosa].]

This remark provides evidence that *Musca torosa* was based on more than one specimen, thus syntypes, all from "Bengalen". Surcouf (1920: 36) gave a French translation of this note, but a comparison of the original with Surcouf's version reveals that he made several mistakes in the translation and missed some of the points conveyed by Wiedemann in the note. Westermann's collection is in NHMD, whereas Wiedemann's own collection was sold to Wilhelm von Winthem a few years before his death in 1840, and ultimately ended up in NMW (Pont 1995). Zimsen (1954) was unable to trace any type specimens in NHMD for *Musca torosa* Wiedemann, so there is no entry in her work on the Wiedemann types in Copenhagen.

Syntype of *Musca torosa* Wiedemann in NHMD. After examination of all the unit trays of *Bengalia jejuna* and *Bengalia torosa* in NHMD, I believe I have located one syntype of *Musca torosa* Wiedemann there.

There are 16 specimens in the *Bengalia torosa* unit tray in NHMD, 15 of which are modern acquisitions. One male specimen (the first) carries an old handwritten (not by Westermann) label with a black double-lined frame reading "Bengala / Galatea / Lateralis / Macq." (Fig. 226). It is not a syntype of *Bengalia torosa* but has been identified as this species by Kurahashi (Figs 226, 228–229). "Galatea" refers to the ship of that name that took part

in the first Danish *Galathea* expedition 1845–47. For more details on the expedition, see above under *B. jejuna*. [This specimen has been selected by me to be proposed as neotype of *Musca torosa* Wiedemann, see below.]

There are seven specimens in the *Bengalia jejuna* unit tray in NHMD. Four are old specimens from the Westermann collection. A fifth specimen has an old handwritten (not by Westermann) label with a black double-lined frame reading "Madras / Galatea / Jejuna / F.". (Fig. 129). [The label and handwriting are similar to the "Bengala / Galatea / Lateralis / Macq." label cited above.] This is the specimen I will propose as neotype of *Musca jejuna*, see above under *jejuna*. The last two are modern acquisitions from the *Noona Dan* Expedition to the Philippines in 1962–63. Of the four Westermann specimens, only two carry combined identity and locality labels in Westermann's elaborate handwriting in addition to a printed "Mus. / Westerm." label. The other two carry only the second label.

Only one Westermann specimen in the *B. jejuna* unit tray in NHMD has a label with words corresponding to those employed by Wiedemann (1819) when describing *M. torosa*, i.e., "Bengalia. Maio", thus providing a link from the specimen to Wiedemann's description. The specimen is a male and is the first specimen in the *Bengalia jejuna* unit tray in NHMD. The labels read (1) Mus. / Westerm. [printed]; (2) M: jejuna / Fab: / Bengal / May 1809. (Figs 222–223). I conclude that this is a syntype, i.e., one of the specimens Wiedemann had before him when describing *Musca torosa*. Even though the sex is wrong I accept it as a syntype. It was not unusual for old authors to treat male *Bengalia* specimens as females because of the wide frons (cf. Rognes 2009a: 96) and without a close examination of genital features. I have dissected this male. The terminalia, including the ST5 flap, reveal that it is a specimen of *Bengalia martinleakei* Senior-White, 1924. I have labelled it as such and have added a red syntype label (as in Fig. 221).

Syntype of *Musca torosa* Wiedemann in NMW. As reported above, Wiedemann (1830) claimed that *M. torosa* was also present in his own collection ("meiner Sammlung"), now in NMW (Pont 1995). Eight specimens are placed under *Bengalia lateralis* in NMW. An old female, labelled (1) Bengalia [handwritten]; (2) jejuna F. [a very long and thin letter] Wd. [handwritten] / Coll. Winthem [printed], is placed as the first specimen in the series and is the only candidate for a second syntype of *Musca torosa* (Figs 224–225). The labels are curatorial labels, the handwriting is not by Wiedemann or Westermann, and there is no direct evidence of who identified the specimen. However, the word "Bengalia" on the uppermost label most likely refers to the same word used by Wiedemann (1819: 21) for the geographical provenance of the species and not to the name of the genus, in which the species was placed subsequently. The "jejuna F. Wd" label suggests that the specimen was identified by Wiedemann in accordance with his 1830 view. The specimen belongs to Winthem's collection, as demonstrated by the words "Coll. Winthem" printed on the label. This is the only specimen with a "Coll. Winthem" label in the series. Since Winthem purchased Wiedemann's Diptera and other insects (Pont 1995), it is likely that the specimen stems from Wiedemann's own collection and, if this is so, that any original label with Wiedemann's handwriting, if it ever existed, is now lost. According to Pont (1995), Wiedemann studied material from both Westermann's and Winthem's collections during his work as a dipterist. However, Winthem never collected in the Far East, and Wiedemann did not mention Winthem's name in connection with his treatments of *Musca torosa* or *Musca jejuna* (Wiedemann 1819, 1830). Thus, it is almost certain that this is the specimen mentioned by Wiedemann as being in his own collection.

The NMW specimen has broad dark bands across the posterior half of T3–4, a black tergite 5 (Fig. 225), and seems to be conspecific with the NHMD male (similar anepimeron vestiture, colour of the abdomen, etc.; Fig. 223). However, being a female, one cannot be sure of its identity, although it certainly does not belong in *Bengalia torosa* (Wiedemann) as currently understood, since it lacks the concavity in the hind margin of the eye as seen in profile. The specimen is on the same type of pin (pin head, thickness, length, colour) and was possibly given to Wiedemann as a duplicate from Westermann's collection, a favour of usual occurrence (Pont 1995). It is placed in the NMW collection under "*Bengalia lateralis*" and not under *Bengalia jejuna* Fabricius, in spite of the text on the label. I accept it as the second syntype of *Musca torosa* Wiedemann, and I have labelled it as such.

Additional remarks. Since the male syntype of *Musca torosa* Wiedemann (in NHMD) belongs to the taxon *Bengalia martinleakei* and not to the taxon currently denoted by the name *Bengalia torosa*, application of ICZN priority rules (Article 23.1.) would upset a stable nomenclature and create confusion. The name *Bengalia martinleakei* would have to be replaced by the senior name *Bengalia torosa* and the name *Bengalia torosa* of authors would have to be replaced by *Bengalia lateralis* Macquart, 1842, the next oldest in the synonymy of the current concept of *Bengalia torosa*.

The transfer of the senior name *Bengalia torosa* to the taxon currently known as *Bengalia martinleakei* would result in tremendous confusion. The last taxon is relatively rare, has hardly been understood correctly, occurs only in India, and is connected to a small body of literature. On the other hand, the taxon currently known as *B. torosa* is common, widely distributed in the Oriental Region, and connected to a large body of literature. However, a change of its valid name to *B. lateralis*, which it has carried in the past for a long time, would likely not cause much confusion.

Similarly, since the female syntype *of Musca torosa* in NMW also does not belong to the taxon currently denoted by the name *Bengalia torosa*, the threats to nomenclatural stability remains.

Proposed neotype of *Musca torosa* Wiedemann in NHMD. In order for nomenclatural stability to be preserved, I will, in a forthcoming paper and in accordance with Article 75.6 of the Code, "Conservation of prevailing usage by a neotype" (ICZN 1999), ask the ICZN Commission to maintain prevailing usage of the name *Musca torosa*, in the combination *Bengalia torosa*, by setting aside the known male and female syntypes and designating a neotype in conformity with the current concept of *Musca torosa* Wiedemann, 1819 (James 1977, in *Bengalia*) as a senior synonym of *Bengalia lateralis* Macquart, 1844. The specimen I will propose as neotype for *Musca torosa* Wiedemann is the old male specimen in NHMD (Fig. 228) that carries an old handwritten (not by Westermann) label with a black double-lined frame reading "Bengala / Galatea / Lateralis / Macq." (Fig. 226). It has been identified as *Bengalia torosa* by Kurahashi (Fig. 229). I have given it a neotype label (Fig. 227). ["Galatea" refers to the ship of that name that took part in the first Danish *Galathea* expedition in 1845–47; for more details about this expedition, see above under *B. jejuna*.] The head shows the concavity on the hind margin of the eye in profile, the high position of the vibrissa above the lower facial margin, and a strongly projecting clypeus below the lower facial margin. The thorax shows the typical pale lateral margins of the mesonotum and scutellum (Fig. 228), and the pale-only setulae of the anepimeron. The fore tibia shows the two groups of short ventral spinous setae. The abdomen is pale brown with narrow, dark posterior bands (Fig. 228) and the ST5 flap is visible. It was collected in November 1845 in "Bengala" (now represented by the West Bengal province of India and Bangladesh), i.e., during the visit of the ship *Galathea* to Calcutta, the purpose of which was to transfer sovereignty of the Danish colony "Frederiksnagore" to the British East India Company. This locality is precisely where Westermann, who lived there from 1801–1811, collected the male syntype of *Musca torosa* Wiedemann, 1819 (Pont 1995) in May 1809. Thus, the selection of the "Bengala / Galatea / Lateralis / Mcq" specimen as neotype ensures conformity with Article 75.3.6 of the Code by satisfying the provision that the "neotype came as nearly as practicable from the original type locality …".

Bengalia lateralis Macquart, 1844 ("1843"): 277 (120), Tab. 14, figs 7 [habitus from above], 7a [head in profile]) [links given in synonymy above]. LECTOTYPE ♀ (MNHN), labelled (1) TYPE [light red print on white label]; (2) … Pondichery [handwritten by Macquart]; (3) No. 12. / Bengalia / lateralis. [handwritten by Macquart]. (4) MNHN, Paris / ED6435 [printed label with a thin black frame]; (5) HOLOTYPE [black print on red label] (Figs 230–232). [NB: Macquart described *Bengalia lateralis* on the basis of an unknown number of females ("♀") in the "Muséum" from "Pondichery" (a French colony at the time, now Puducherry or Pondicherry in India); "Thorace fusco, lateribus albidis. … Thorax d'un brun grisâtres; côtés blanchâtres; écusson testacé, egalement bordé de blanchâtre … [… Thorax brownish grey; sides whitish; scutellum testaceous, likewise with whitish border …]"; he did not state that the specimen in MNHN was the only one; I have examined photographs from MNHN, of which some are shown (Figs 230–232); Macquart's illustration of the fly in dorsal view shows very clearly the pale bands on the mesonotum and scutellum, but the illustration of the head in profile is peculiar in showing, as noted by James (1966: 467), a vibrissa "set low [obviously with respect to the lower facial margain]"; this was interpreted as an "inaccuracy on the part of Macquart" by James (1966: 467); Surcouf (1920: 37, 32 fig. 2, Plate II fig. 1) saw and illustrated the Macquart type and associated the female type with males having the strong setae on the fore tibia arranged in two groups, one near the base (with 5 setae) and another near the middle (with 2 setae); Townsend (1931b: 371) examined the type in Paris during his travels in Europe in 1928 (cf. Townsend 1931a), writing under the entry for *Musca favillacea*: "*Musca favillacea*, Wlk.—Female Ht in London, from Macassar, is *Bengalia lateralis*, Macq., female Ht in Paris, from Pondicherry."; I interpret the phrase "*Bengalia lateralis*, Macq., female Ht in Paris from Pondicherry" as an indirect lectotype fixation (cf. Rognes *et al*. 2015), "Ht" referring unambiguously to the single specimen of *Bengalia lateralis* Macquart in MNHN; Townsend's identification of *Musca favillacea* Walker was, however, wrong (see below).]

Ochromyia quadrinotata Bigot, 1888: 608. HOLOTYPE ♂ (as "♀", "Ceylan. 1 spécimen.") (OUMNH),

labelled (1) Holo- / type [circular label with a red rim]; (2) O. quadrinotata / EX. COLL. BIGOT [first line handwritten by A.C. Pont, second line printed] [The drawer label reads: "O. quadrinotata ♀ [the symbol is unusual] / Ceylan J. Bigot" [Bigot's handwriting; label with 3 printed lines and a black frame] (Fig. 236); a label beside the specimen reads: "Described from /a single ♀ specimen / from Ceylon. This is a male / B. torosa Wied. / Almost certainly the holotype [handwritten by Dear] / det. J.P. Dear 1977 [printed]"; I follow Dear and accept the specimen as the holotype; the specimen is somewhat dirty, the head is lost, the pin is corroded, partly expanding the thorax (Fig. 233); the ST5 flap is clearly visible (Fig. 235, arrow); the chaetotaxy of the fore tibiae is also visible and conforms to the *B. torosa* pattern of 5+2 strong setae on the ventral side (Fig. 234)].

Ochromyia jejutora Lehrer, 2005: 143. HOLOTYPE ♂ (BPBM), labelled (1) SOUTH INDIA: / Nilgiri Hills / Devala, 960 m / V.1962 [printed, except parts of date]; (2) Collector / P. S. Nathan [printed]; (3) Bengalia ♂ / torosa / (Wied.. 1819) / Det. H.Kurahashi [printed]; (4) HOLOTYPUS [black print on red label]; *Ochromyia* ♂ / *jejutora* Lehrer n. sp. / Det. Dr. A.Z.LEHRER / 2005 [printed, pin hole near middle]; (5) *Ochromyia* ♂ / *jejutora* Lehrer n. sp. / Det. Dr. A.Z.LEHRER / 2005 [printed, pin hole near right hand margin] [Specimen in fair condition, with genitalia exposed]. PARATYPES (BPBM): India: 2 ♂, labelled (1) SOUTH INDIA / Madras State / Coimbatore / 420m, XI-1958; (2) Collector / P.S. Nathan; (3) Bengalia ♂ / torosa / Wied. 1819) / Det. H. Kurahashi [all labels printed, except date on uppermost label] [One of the males has a transparent gelatine capsule pinned below it, containing a female *Bengalia* sp. with a pair of discal setae on T5 and thus not conspecific with the male, possibly a prey]; Laos: 1 ♂, labelled (1) LAOS: / Vientiane Prov. / Ban Van Eue / 31.VII, 1965; (2) Native Collector / RONDON-BISHOP MUS. / COLLECTION / Malaise Trap; (3) Bengalia ♂ / torosa / Wied. 1819) / Det. H. Kurahashi [all labels printed]; • 1 ♂, labelled (1) LAOS: / Sedone Province / Pakse / 31.V.1967; (2) Native Collector / RONDON-BISHOP MUS. / COLLECTION / Light Trap; (3) Bengalia ♂ / torosa / Wied. 1819) / Det. H. Kurahashi [all labels printed]. PARATYPES (MSNM): India: 1 ♂, labelled (1) INDE MÉRIDIONALE / TRICHINOPOLY / F. CAIUS 1911; (2) lateralis / Macq. [old handwritten label, possibly by Bezzi]; (3) Bengalia lateralis / Macquart / nec B. jejuna Fabricius [handwritten by Surcouf on label with three black lines and a black frame]; (4) lateralis [modern, printed label]; (5) *Bengalia* ♂ / *jejuna* (Fabricius) / Det. Dr.A.Z.LEHRER / XII.2004 [pin hole in middle]; (6) *Bengalia* ♂ / *jejuna* (Fabricius) / Det. Dr.A.Z.LEHRER / XII.2004 [pin hole near right margin] [A big plastic vial with dried out terminalia was placed between the two last labels; the contents, still dry, have been moved by me to a smaller glass microvial with glycerol]. [NB: This is the specimen "in meiner Sammlung" referred to by Bezzi (1913: 74), and found to be identical with *B. lateralis* Macquart ("ein Männchen aus Trichinopoly … welches die Beschreibung der aus Pondichery stammenden *B. lateralis* Macquart vollständig entspricht").]; • 1 ♂, labelled (1) *Ind. Mus.* / Shillong, / Khasi Hills, / Assam, / 500-6400 ft. / 29.VIII-5.IX.15. / S.W.Kemp [printed; collector's name written vertically along left side of label]; (2) lateralis [printed]; (3) *Bengalia* ♂ / *jejuna* (Fabricius) / Det. Dr.A.Z.LEHRER / XII.2004 [printed; pin hole near middle] [Terminalia exposed]; Indochina (modern country unknown): 1 ♂, labelled (1) Indocina [sic] / Vitaki [old handwritten label]; (2) jejuna [modern printed label]; (3) *Bengalia* ♂ / *jejuna* (Fabricius) / Det. Dr.A.Z.LEHRER / XII.2004 [pin hole in middle] [Terminalia exposed and *in situ*]; Philippines: 1 ♂, labelled (1) Alabang / Rizal / Filipp … [illegible] [handwritten]; (2) jejuna [modern printed label]; (3) *Bengalia* ♂ / *jejuna* (Fabricius) / Det. Dr.A.Z.LEHRER / XII.2004 [pin hole in middle] [Dried terminalia in big plastic vial transferred to glass microvial in glycerol by me]. [NB: Lehrer did not use his own name *jejutora* for the MSNM material, but *jejuna*.] PARATYPES (NHMUK): India: 1 ♂, labelled (1) UNITED PROVINCES. [= Uttar Pradesh + Uttarakhand] / Jhansi. / 2.viii.1905. / ex coll. Brunetti. / Brit.Mus.1927—184 [handwritten except last two lines, which are printed]; (2) Bengalia / jejuna Fb. / det. R. Senior White 1938. [handwritten, except last line]; (3) *Ochromyia* ♂ / *jejutora* Lehrer n.nom. / Det. Dr. A. Z. LEHRER / 2005 [printed] [Both hind legs lost; dissected by Lehrer; terminalia in glycerol, transferred to glass microvial by me]; • 1 ♂, labelled (1) Siruvāni–Muthiko- / lam, 1,700–3,000' / Coimbatore Dt. / S. India, / 23 & 26–IX–38 [printed], [underside:] B.M.–C.M. Expdn. / to S. India, / Sept.–Oct., 1938. [printed]; (2) *Ochromyia* ♂ / *jejutora* Lehrer n.nom. / Det. Dr. A. Z. LEHRER / 2005 [printed] [Dissected rather crudely by Lehrer; I re-treated the dissected parts in hot KOH and finished the dissection; terminalia in glycerol, transferred to a glass microvial by me]; • 2 ♂, labelled (1) Dohnavur, 350' / Tinnevelly Dt. / S. India 10 – X – 38 [printed, except date], [underside:] B.M.–C.M. Expdn. / to S. India, / Sept.–Oct., 1938. [printed]; (2) *Ochromyia* ♂ / *jejutora* Lehrer n. nom. / Det. Dr. A. Z. LEHRER / 2005 [printed] [Dissected by Lehrer; terminalia in glycerol, transferred to glass microvial by me]; Pakistan: 1 ♂, labelled (1) Cherat / Veradalu / 23·5 1921 / ♂ / Casling coll. [handwritten, except last line]; (2) Bengalia jejuna, Fabr. / det. R.Senior White [handwritten, except last line]; (3) Purchd. From / R. Senior White /

B.M.1938-460. / (4) *Ochromyia* ♂ / *jejutora* Lehrer n.nom. / Det. Dr. A. Z. LEHRER / 2005 [printed] [Dissected by Lehrer; terminalia in glycerol, transferred to glass microvial by me].

Other material examined. BPBM. Laos: 1 ♀, labelled (1) LAOS: / Vientiane Prov. / Ban Van Eue / 30.VI.1966; (2) Native Collector / RONDON-BISHOP MUS. / COLLECTION; (3) Bengalia ♀ / torosa / (Wied. 1819) / Det. H. Kurahashi [all labels printed]; • 1 ♀, labelled (1) LAOS: / Vientiane Prov. / Ban Van Eue / 30.IX.1967; (2) Native Collector / RONDON-BISHOP MUS. / COLLECTION; (3) Bengalia ♀ / torosa / (Wied. 1819) / Det. H. Kurahashi [all labels printed]; • 1 ♂, labelled (1) LAOS: / Vientiane Prov. / Ban Na Pheng / 19.v.1965; (2) Native Collector / BISHOP MUS; (3) Bengalia ♂ / torosa / (Wied. 1819) / Det. H. Kurahashi [all labels printed, except parts of date and locality name on uppermost label]; • 4 ♂ [one without its abdomen], 4 ♀, labelled (1) LAOS: / Vientiane Prov. / Ban Na Pheng / 19.v.1968; (2) Native Collector / BISHOP MUS; (3) Bengalia ♂ [or ♀] / torosa / (Wied. 1819) / Det. H. Kurahashi [all labels printed, except parts of date and locality name on upper label]; • 1 ♂, labelled (1) LAOS: / Wapikhamthong / Prov., / Wapi / 31.V.1967, (2) Native Collector / RONDON-BISHOP MUS. / COLLECTION / Light Trap; (3) Bengalia (m) / torosa / (Wied., 1819 / K. Rognes det. 2016 [all labels printed; lacked a Kurahashi label, undoubtedly an oversight]; Philippines: 1 ♂, labelled (1) Los Banos / Philippine Ids [printed]; (2) Coll. F. Muir / IX.15 [printed except last line, which is handwritten]; (3) Bengalia ♂ / torosa / (Wied. 1819) / Det. H. Kurahashi [printed]; • 1 ♂, labelled (1) P.I., MINDANAO / Z. DEL SUR, 3.2 km / NW of Nilbuk, 150m / 4.VIII.1958; (2) Light Trap / in Jungle; (3) H.E. Milliron / Collector; (4) Bengalia ♂ / torosa / (Wied. 1819) / Det. H. Kurahashi [all labels printed]; • 1 ♀, labelled (1) P.I. , PALAWAN / Tarumpitao Pt. / 1.VI.1958; (2) Light Trap / H. E. Milliron; (3) Bengalia ♀ / torosa / (Wied. 1819) / Det. H. Kurahashi [all labels printed]; • 1 ♀, labelled (1) P.I., MINDANAO / COTABATO, Kalaong / 12.VIII.1958; (3) H.E. Milliron / Collector; (3) Bengalia ♀ / torosa / (Wied. 1819) / Det. H. Kurahashi [all labels printed]; • 1 ♀, labelled (1) P.I. MINDANAO / Agusan, S. Fransisco / 10 km. SE, 14-XI-1959; (2) C.M. Yashimoto / Collector; (3) Bengalia ♀ / torosa / (Wied. 1819) / Det. H. Kurahashi [all labels printed]; Vietnam: 1 ♀, labelled (1) VIET NAM: Chute de / Bourg, 37km SE of / Dalat, 780 m / 25.IV.1960; (2) R.E. Leech / Collector / BISHOP; (3) Bengalia ♀ / torosa / (Wied. 1819) / Det. H. Kurahashi [all labels printed]; • 1 ♀, labelled (1) VIET NAM: Fyan / 900–1000m m / 11.VII. - 9.VIII.'61; (2) N. R. Spencer / Collector, (3) Bengalia ♀ / torosa / (Wied. 1819) / Det. H. Kurahashi [all labels printed]. **CMNH.** Taiwan: 1 ♂, labelled (1) TAIWAN: Kaohsiung / Shanping. 640 m. / 21–30 April 1988 / C.Young, R.Davidson / J.Rawlins; (2) Bengalia ♂ / torosa / (Wied., 1819) / Det. H.Kurahashi [both labels printed]; • 2 ♀, labelled (1) TAIWAN: Kaohsiung / Shanping. 640 m. / 1–10 April 1988 / R.Davidson, J.Rawlins / C.Young; (2) Bengalia ♂ / torosa / (Wied., 1819) / Det. H.Kurahashi [both labels printed]. **CNC.** India: 1 ♂, labelled (1) Coimbatore / S. INDIA / X 1951 / PS.Nathan [printed except month, which is partly handwritten]; (2) Bengalia / jejuna (F.) / Det. / G. E.Shewell '53 [handwritten, except determiner's name]; • 1 ♂, labelled (1) Kurumbagaram / Karikal Terr. / S. INDIA XI 1951 / P. S. Nathan [printed, except parts of date]; • 1 ♂, labelled (1) Barrmer, INDIA / Thar Desert. / ix 1955 / P.S.Nathan [printed, except parts of date]. [All the CNC males have a longitudinal dark stripe on T3 and T4]. **KR.** Cambodia: 1 ♂, labelled (1) CAMBODIA, Ratanakiri pr. / Ban Lung, 13.74N 106.98E / 29-31.V. 2013, O. Kosterin [printed]; (2) Bengalia (m) / torosa Wied., 1819 / K. Rognes det. 2014; (3) KR0000000489 [printed]; • 1 ♂, labelled (1) CAMBODIA, Ratanakiri pr. / Ban Lung, 13.74N 106.98E / 29-31.V. 2013, O. Kosterin [printed]; (2) Bengalia (m) / torosa Wied., 1819 / K. Rognes det. 2014; (3) KR0000000490 [printed] [The date on the uppermost label is wrong: it should be 29.V.–2.VI.2013; O. Kosterin in litt.]; Philippines: 1 ♂, labelled (1) Philippines, Palawan / Brookes Point / Uring Uring / 8 August 1961 / Noona Dan Exp. 61-62. [printed]; (2) Caught by / light from / Petromax [printed]; (3) lateralis [handwritten by James]; (4) Bengalia / lateralis Macq / K. Rognes det. 92 [handwritten, except name and "det." in third line] [Dissected by me; dried T1+2–5 glued to card above labels on pin; terminalia in glycerol in glass microvial on pin]. **MNHN.** India: 1 ♂, labelled (1) MUSEUM PARIS / INDE (BELLARY) / CHAPER 1883 [printed]; (2) 1178/ 83 [circular label, handwritten]; (3) Bengalia / lateralis / Macq. [Villeneuve's handwriting] [ST5 flap visible]; • 2 ♀, labelled (1) INDE MÉRIDIONAL / TRICHINOPOLY / F (or P) CAIUS 1911 [printed]; • 1 ♀, labelled (1) Kuttapuli.18.13 / Cap Comorin / P. Caius [handwritten by Caius] [I interpreted the place name and handwriting erroneously in my *Caiusa* paper (Rognes 2015: 36, paralectotype female of *Caiusa indica* Surcouf), where I assumed the handwriting was Séguy's and the spelling was "Kattapuli"; Kuttapuli = Kootapuli, 8°9′0″N, 77°36′0″E]; • 1 ♂, labelled (1) Inde Anglaise / Madras (Guindy) [The specimen is staged on a piece of cork and the pin is heavily corroded]; Laos: 1 ♂, labelled (1) LAOS / Muong Hai / le 2-IV 191... / R. Vitalis de Salvaza [dark paper label with black frame; second line and day and month on third line handwritten; year given as 1918 in Séguy (1946: 83), but the number 8 is not

on the label] [Very corroded pin, which has forced thorax to split; all legs intact; ST5 flap visible]; • 1 ♂, labelled (1) LAOS / Ban Nam Mo / le 4-IV 1918 / R. Vitalis de Salvaza [dark paper label with black frame; second line and day and month on third line handwritten] [Very corroded pin, which has forced thorax to split; all legs intact; ST5 flap visible]; Vietnam: 1 ♂, labelled (1) MUSEUM PARIS / TONKIN / LAO-KAY / Dr. CHEVALIER 1902 [printed] [Very mouldy, but ST5 flap visible]. **NHMD.** India: 1 ♀, labelled (1) Mus. / Westerm. [printed]; (2) M. jejuna var. / Tranquebar [handwritten by Westermann] [specimen #2 in NHMD unit tray for *Bengalia jejuna*]; • 1 ♂, labelled (1) Bengala / Galatea / Lateralis / Macq. [handwritten, not by Westermann] [Fig. 226]; (2) Bengalia ♂ / torosa / (Wied. 1819) / Det. H. Kurahashi [printed]. [NB: This specimen will be proposed as neotype for *Musca torosa* Wiedemann, see above.]; Philippines: 1 ♂, labelled (1) Philippines, Palawan / Mantalingajan / Tagembung 1150 meter / 17. Sept. 1961 / Noona Dan Exp. 61-62 [printed]; (2) Caught in / Malaise- / traps [printed]; (3) Sensu Surcouf / nec. S.W. et al. / Bengalia / lateralis Macq. / det James 65. [handwritten by James] [Dried terminalia glued to corner of uppermost label]; • 1 ♂, labelled (1) Philippines, Palawan / Brookes Point / Uring Uring / 18 August 1961 / Noona Dan Exp. 61-62. [printed]; (2) Caught by / Mercury-light / 20.00-23.30 [printed]; (3) lateralis [handwritten by James]; • 1 ♂, labelled (1) Philippines, Palawan / Brookes Point / Uring Uring / 18 August 1961 / Noona Dan Exp. 61-62. [printed]; (2) Caught by / Mercury-light / 20.00-23.30 [printed]; (3) lateralis [handwritten by James]; • 1 ♂, labelled (1) Philippines, Palawan / Brookes Point / Uring Uring / 25 August 1961 / Noona Dan Exp. 61-62. [printed]; (2) Caught in / Malaise- / traps [printed]; (3) lateralis [handwritten by James]; • 1 ♀, labelled (1) Philippines, Palawan / Brookes Point / Uring Uring / 18 August 1961 / Noona Dan Exp. 61-62. [printed]; (2) Caught in / Malaise- / traps [printed]; (3) lateralis [handwritten by James]; • 1 ♀, labelled (1) Philippines, Palawan / Brookes Point / Uring Uring / 18 August 1961 / Noona Dan Exp. 61-62. [printed]; (2) Caught by / Mercury-light / 20.00-23.30 [printed]; (3) Caught by / Mercury-light / 20.00-23.30 [printed]; (4) lateralis [handwritten by James]; • 1 ♀, labelled (1) Philippines, Palawan / Brookes Point / Uring Uring / 18 August 1961 / Noona Dan Exp. 61-62. [printed]; (2) Caught by / Mercury-light / 20.00-23.30 [printed]; (3) lateralis [handwritten by James]; • 1 ♀, labelled (1) Philippines, Palawan / Brookes Point / Uring Uring / 19 August 1961 / Noona Dan Exp. 61-62. [printed]; (2) Caught in / Malaise- / traps [printed]; (3) Bengalia / lateralis / Macq. / det James 65 [handwritten by James]; • 1 ♀, labelled (1) Philippines, Palawan / Brookes Point / Uring Uring / 21 August 1961 / Noona Dan Exp. 61-62. [printed]; (2) Caught by / Mercury-light / 20.00-21.00 [printed]; (3) lateralis [handwritten by James]; • 1 ♀, labelled (1) Philippines, Balabac / Dalawan Bay / 5 Oct. 1961 / Noona Dan Exp. 61-62. [printed]; (2) Caught by / Mercury-light / 19.30-04.00 [printed]; (3) lateralis [handwritten by James]. Thailand: 2 ♂, labelled (1) Thailand, Doi Suthep-Pui / natn. Park, Konthathan / waterfall area, 600 m / 20.- 27. X. 1979 / Zool. Mus. Copenhagen Exped. [printed]; (2) Bengalia ♂ / torosa / (Wied. 1819) / Det. H. Kurahashi [printed]; • 3 ♀, labelled (1) Thailand, Doi Suthep-Pui / natn. Park, Konthathan / waterfall area, 600 m / 20.- 27. X. 1979 / Zool. Mus. Copenhagen Exped. [printed; one of the specimens with a yellow label]; (2) Bengalia ♀ / torosa / (Wied. 1819) / Det. H. Kurahashi [printed]. **NHMUK.** India: 1 ♂, labelled (1) Dohnavur, 350' / Tinnevelly Dt. / S. India 4- X-38 [printed, except date] [Dissected by me in 1985; beside the specimen is a pin with a piece of card on which the abdomen (now lost) had been glued, and the terminalia are in a glass microvial below it; this second pin is labelled (1) Bengalia ♂ / torosa Wied. / K. Rognes prep. 85 [handwritten]; (2) S. India / 4.x.38 [handwritten]]; • 1 ♂, labelled (1) Deesa, / Bombay / Presidency. India. / Aug. 1897. / Capt. C. G. Nurse [handwritten]; (2) *Ochromyia* ♂ / *jejutora* Lehrer n. sp. / Det. Dr. A. Z. LEHRER / 2004. [printed] [Both forelegs and both antennae lost; terminalia exposed]; • 1 ♂, labelled (1) INDIA: / Bihar. / Banhar. / 24.vi.1920 [handwritten, except first line]; (2) Bengalia / jejuna, Fabr. / var. quadrinotata, Big. / det. R.Senior White. [handwritten, except last line]; (3) Purchd. from / R. Senior White / B.M. 1938-460. [printed]; (4) *Ochromyia* ♂ / *jejutora* Lehrer n. sp. / Det. Dr. A. Z. LEHRER / 2004 [printed, pin hole in middle] [Mouldy, femora dark, terminalia visible]; • 1 ♂, labelled (1) N.W.INDIA: / Deesa. / August 1897. / C.G.Nurse. / B.M.1934-8 [printed, except third line]; (2) TOROSA [handwritten in blue ink]; (3) Deesa / 8.97. [type-writer print]; (4) *Ochromyia* ♂ / *jejutora* Lehrer / Det. Dr. A. Z. LEHRER / 2005 [printed, pin hole in middle]; (5) *Ochromyia* ♂ / *jejutora* Lehrer / Det. Dr. A. Z. LEHRER / 2005 [printed, pin hole near right hand margin] [Left fore leg and both mid legs lost; terminalia exposed]; • 1 ♂ [staged on rectangular celluloid plate], labelled (1) ♂ [handwritten]; (2) N.W. INDIA: / Deesa. / July 1897. / C.G.Nurse / B.M.1934-8. [printed, except third line]; (3) Deesa / 7.97. [typewritten] [Good condition, all legs preserved]; Myanmar: 1 ♂, labelled (1) Burma / Mt. Victoria / Chinhills 1400 - / m IV.38 / leg. G. Heinrich [mostly printed, label yellow]; (2) *Ochromyia* ♂ / *jejutora* Lehrer n. sp. / Det. Dr. A. Z. LEHRER / 2004 [printed, pin hole in middle]; (3) *Ochromyia* ♂ / *jejutora* Lehrer n. sp. / Det. Dr. A. Z. LEHRER / 2004 [printed, pin hole near right hand margin] [Right fore and mid legs

lost; terminalia exposed]. **NMW.** Indonesia (Java): 1 ♀, labelled (1) Schiner / 1869 [printed]; (2) Java / Alte Sammlung [first line handwritten, second line printed]; (3) quadri- / notata / det. B.B. [handwritten, last line printed]; (4) Bengalia / (Ochromyia) / lateralis / Mcq. / Det. / JRMalloch [handwritten label with black frame, last two lines printed]; • 1 ♀, labelled (1) Java / Alte Sammlung [first line handwritten, second line printed]; (2) quadri- / notata / det. B.B. [handwritten, last line printed]. **WSU.** India: 1 ♂, labelled (1) S. Malibar. S. / India / PSNathan [printed]; (2) Walayar Forest / 1600ft. 12.viii.46 [printed, except date]; (3) LOAN / MTJ [pink label]; (4) Bengalia / quadrinotata / (Big.) / det James '50 [handwritten on label with black frame]; • 1 ♂, labelled (1) Walayar Forest / 1600ft. 13.viii.46 [printed, except date]; (2) S. Malibar S. / India PSNathan [printed]; (3) LOAN / MTJ [print on pink label]; (4) Bengalia / lateralis / Macq. / det. James 65 [handwritten on label with black frame]; • 1 ♀, labelled (1) Coimbatore. S. / India PS Nathan / MazuKarui / 1500' 28-x-39 [first two lines printed]; (2) 16 [written in pencil on yellow label]; • 1 ♀, labelled (1) Coimbatore. S. / India PS Nathan / IX-46 [printed, except date]; (2) LOAN / MTJ [printed on pink label]; (3) 12 [written in pencil on yellow label]; • 1 ♂, 1 ♀, labelled (1) SOUTH INDIA / Coimbatore / VII 1948 / P.S.Nathan [printed, except most of date]; (2) LOAN / MTJ [printed on pink label] [The male has its terminalia extruded and clearly visible; the female has an additional yellow label with "15" handwritten in pencil]; • 5 ♂, 2 ♀, labelled (1) MADRAS, S. INDIA / Coimbatore / 1400' XI-63 / P. S. Nathan [printed, except date] [The five males have their terminalia extruded and clearly visible; they each have an additional yellow label, respectively with "3", "4", "7", "9" and "10" handwritten in pencil; the females have similar labels reading "14" and "17", respectively; the male with the "7" label has its head glued to a piece of card on the same pin, below the labels]; • 3 ♂, labelled (1) Coimbatore / MADRAS S. / INDIA 1400' [handwritten]; (2) XI 1963 / P.S. Nathan [handwritten] [All have their terminalia extruded and clearly visible; two of them have an additional yellow label, respectively with "6" and "10" handwritten in pencil]; • 1 male ♂, 2 ♀, labelled (1) Coimbatore / MADRAS S. / INDIA 1400' [handwritten]; (2) XI 1964 / P.S. Nathan [handwritten] [The male has its terminalia extruded and clearly visible, and carries an additional yellow label with "19" handwritten in pencil; the two females have similar additional labels reading "18" and "20", respectively]; Philippines: 1 ♂, 1 ♀, labelled (1) Philippines, Palawan / Brookes Point / Uring Uring / 17 August 1961 / Noona Dan Exp. 61–62 [printed]; (2) Caught in / Malaise traps [printed]; (3) lateralis [handwritten by James] [Both have an additional yellow label, respectively with "1" and "13" handwritten in pencil]. **ZMHB.** Sri Lanka: 1 ♀, labelled (1) Ceylon / Nietner S. [printed on yellow label]; (2) 6347 [printed]; (3) jejuna / Fab.Wied. [handwritten, old style, on yellow label]; (4) Zool. Mus. / Berlin [printed]. **ZMUM.** Cambodia: 7 ♂, labelled (1) CAMBODIA, Ratanakiri pr. / Ban Lung, 13.74N 106.98E / 29-31.V. 2013, O. Kosterin [printed]; (2) Bengalia (m) / torosa Wied., 1819 / K. Rognes det. 2014 [the date on the uppermost label is wrong: it should be 29.V.–2.VI.2013; O. Kosterin in litt.].

Bengalia xanthopyga **Senior-White, 1924**

(Figs 237–250)

Bengalia xanthopyga Senior-White, 1924: 107. Holotype ♂ (NHMUK; examined), by monotypy ("[d]escribed from a unique ♂ in good condition"). Type locality: Singapore.

Bengalia xanthopyga: Malloch (1927: 398, 399 [key], 406 [figs 9a, 9b]).

Bengalia xanthopyga: Senior-White *et al.* (1940: 97). ["India; … Singapore; Java …; Philippine Islands …".]

Bengalia xanthopyga: James (1977: 530; catalogue entry).

Bengalia asymmetria Kurahashi & Tumrasvin, 1979: 297. Holotype ♂ (BPBM; not examined), by original designation. Type locality: Thailand (N.W.Chiangmai, Fang).

Bengalia xanthopyga: Kurahashi *et al.* (1997: 43) (Malaysia [West Malaysia]).

Bengalia xanthopyga: Kurahashi &Magpayo (2000: 51). [No records from the Philippines.]

Bengalia sp. nr. *xanthopyga*: Kurahashi (2001: 244) (Sri Lanka).

Bengalia xanthopyga: Kurahashi & Chowanadisai (2001: 204) (Laos; examined).

Gangelomyia xanthopyga: Lehrer (2005: 134) (Laos).

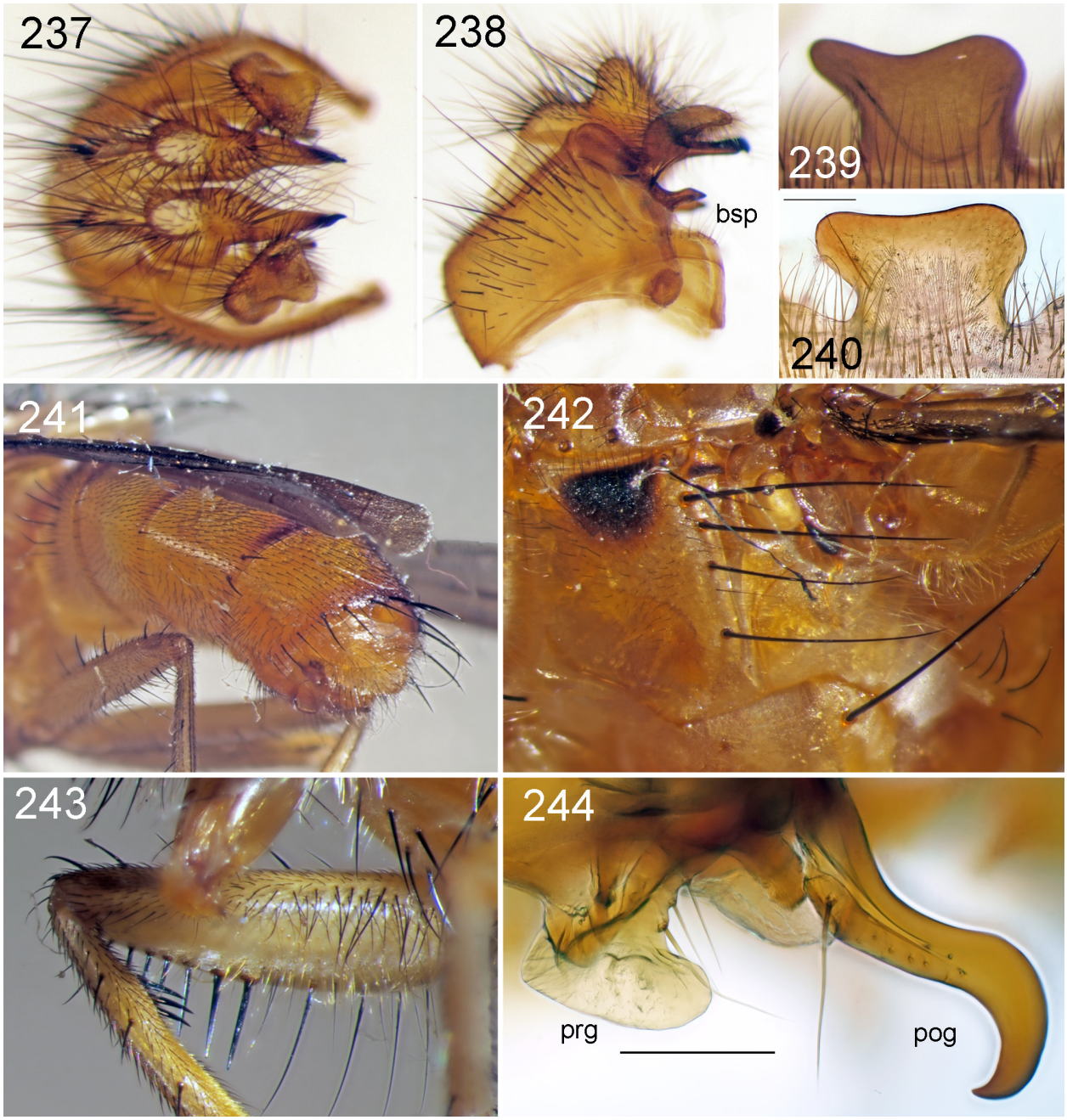
Bengalia xanthopyga: Verves (2005: 240; catalogue entry).

Bengalia xanthopyga: Rognes (2006: 469). [Dissection of a male from Thailand.]

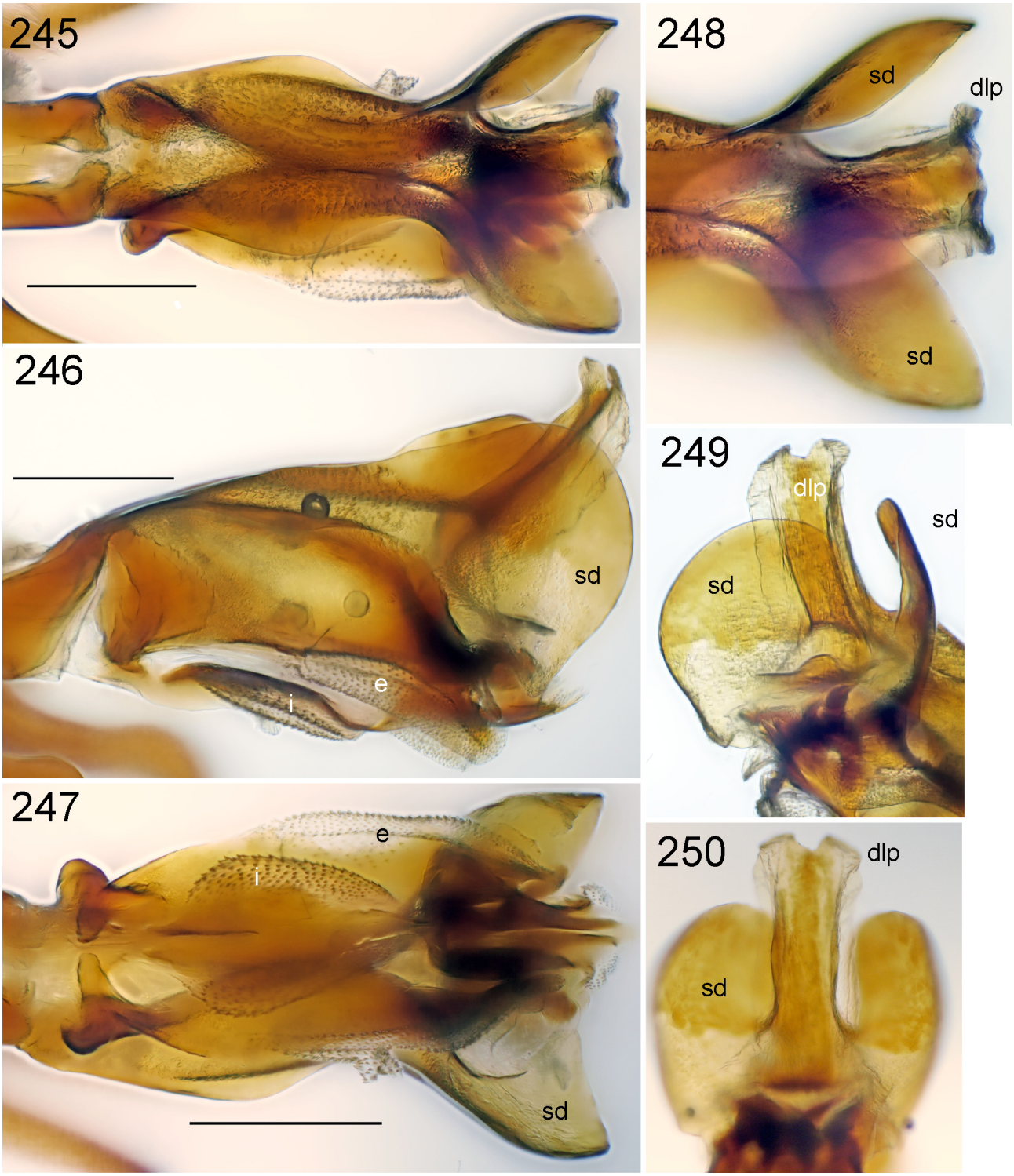
Gangelomyia xanthopyga: Lehrer (2006a: 10) (Singapore, Laos). [Lehrer does not mention that the specimen (in NHMUK) from Singapore he has dissected and examined is the holotype of *B. xanthopyga*, even though he labelled it as such (twice); he assigned Singapore to India.]

Bengalia xanthopyga: Kurahashi & Bunchu (2011: 265) (Thailand).

Diagnosis. *Male*. Length: 12.5–15.0mm (n=4). Frons at vertex / head width ratio 0.30–0.33 (mean 0.31, n=5). Anepisternum usually with a dark spot in upper half (Fig. 242), sometimes rather pale or even absent. Anepimeron with pale setulae only (Fig. 242). Abdominal tergites T1+2–5 at most with very narrow dark marginal bands (Fig. 241). Epandrium yellow (Fig. 241). ST5 flap asymmetric, usually quite pronouncedly so (Figs 239–240). Cercus in lateral view with a very narrow distal prong, and with a pair of very large projections at base (like the humps of a camel) (Fig. 238), visible as small "pale buttons" in posterior view (dried or in glycerol) (Fig. 237). Distal surstylus broad apically in posterior view (Fig. 237), curved in lateral view (Fig. 238). Bacilliform sclerite process pointed, dagger-like (Fig. 238). Distiphallus as shown in Figs 245–250. Semidomes large, encompassing an obliquely dorsally projecting distal lip process which is apically slightly emarginate and with low vertical flanges on either side of the median sclerotized part (Figs 249–250).



FIGURES 237–244. *Bengalia xanthopyga* Senior-White (237–239, 244: male from Doi Suthep N.P.: Konthathan, Thailand, NHMD; 240: holotype, NHMUK; 241–243: male from Chiang Mai, Thailand, ZMUM). **237.** Epandrial complex, posterior view. **238.** Epandrial complex, left lateral view. **239.** ST5 flap. **240.** ST5 flap. **241.** Abdomen, posterolateral view. **242.** Left anepisternum and anepimeron. **243.** Right fore leg, inside view. **244.** Pre- and postgionites. All scale bars = 0.25mm. Abbreviations: *bsp* = bacilliform sclerite process; *pog* = postgonite; *prg* = pregonite.



FIGURES 245–250. *Bengalia xanthopyga* Senior-White (male from Doi Suthep N.P.: Konthathan, Thailand, NHMD). **245.** Distiphallus, dorsal view. **246.** Distiphallus, left lateral view. **247.** Distiphallus, ventral view. **248.** Apical part of distiphallus, showing dorsal origin of semidomes. **249.** Apex of distiphallus, oblique anteroventral view. **250.** Apex of distiphallus, anteroventral view. All scale bars = 0.25mm. Abbreviations: *dlp* = distal lip process; *e* = external hypophallic lobe; *i* = internal hypophallic lobe; *sd* = semidomes.

Female. Length: 12.0–15.5mm (n=3). Frons at vertex / head width ratio 0.32–0.33 (mean 0.33, n=3).

Discussion. Senior-White (1924: 108) and Senior-White *et al*. (1940: 98) illustrated the ST5 flap of the Singapore holotype as symmetrical, but this is not confirmed by my own examination of the actual specimen (Fig. 240).

Biology. "This fly carrying a winged termite in flight" (text on label of female from Laos in BPBM, see below).

Distribution. Singapore*, Thailand*, Malaysia (West Malaysia*), Laos*, ?Sri Lanka. Reported by Senior-White *et al*. (1940: 98) also from India, Indonesia (Java) and Philippines.

Type material examined. *Bengalia xanthopyga* Senior-White, 1924. HOLOTYPE ♂ (NHMUK; staged on rectangular celluloid plate), labelled (1) Holo- / type [printed on white circular label with red rim, glued to stage]; (2) Singapore / H. N. Ridley / 96.48 [handwritten]; (3) Bengalia xanthopyga / TYPE ♂ sp. nov. / R.S.W. 1923 [handwritten]; (4) *Gangelomyia* ♂ / *xanthopyga* (Senior White) / HOLOTYPUS / Det. Dr. A. Z. LEHRER / 2005 [printed, pin hole in middle]; (5) *Gangelomyia* ♂ / *xanthopyga* (Senior White) / HOLOTYPUS / Det. Dr. A. Z. LEHRER / 2005 [printed label, much bigger than the previous label, pin hole in middle] [The holotype lacks its right mid leg, left fore and mid legs, and much of its left wing; dissected by Lehrer; terminalia in glycerol, transferred to a glass microvial by me; genital parts very pale, hypandrium very short; specimen immature].

Other material examined. BPBM. Laos: 1 ♂, labelled (1) LAOS: / Sayabouri Prov. / Sayaboury / 25.VIII.1966 (printed); (2) Native Collector / BISHOP MUSEUM (printed); (3) *Gangelomyia* ♂ / *xanthopyga* (Senior White) / Det. Dr. A. Z. LEHRER / 2005 [printed, pin hole in middle]; (4) *Gangelomyia* ♂ / *xanthopyga* (Senior White) / Det. Dr. A. Z. LEHRER / 2005 [printed label, pin hole near right hand margin] [The specimen lacks its left mid tibia and tarsus; dissected by Lehrer by excavating the terminalia from the underside of the tip of the dried abdomen; terminalia in a big plastic vial, transferred to a small glass microvial with fresh glycerol by me]; • 1 ♂, labelled (1) LAOS: / Vientiane Prov. / Ban Van Eue, 750m / forest streambed / 10-11.IV.1965; (2) J.L. Gressitt / Malaise Trap / BISHOP MUSEUM; (3) Bengalia ♂ / xanthopyga / Se.-White, 1924 / Det. H. Kurahashi [all labels printed] [Dissected by Kurahashi; terminalia in glycerol in a glass microvial; I replaced the old, fragile cork stopper with a soft plastic stopper]; • 1 ♂, labelled (1) LAOS: / Vientiane Prov. / Ban Van Eue / 15–31.V.1965; (2) Native / Collector / BISHOP; (3) Bengalia ♂ / xanthopyga / Se.-White, 1924 / Det. H. Kurahashi [all labels printed]; • 1 ♂, labelled (1) LAOS: / Vientiane Prov. / Ban Van Eue / 30.VI.1967; (2) Native / Collector / BISHOP; (3) Bengalia ♂ / xanthopyga / Se.-White, 1924 / Det. H. Kurahashi. [all labels printed] [Dissected by Kurahashi; terminalia in glycerol in a glass microvial; I replaced the old, fragile cork stopper with a soft plastic stopper and added some glycerol]; • 1 ♂, labelled (1) LAOS: / Vientiane Prov. / Ban Na Pheng / 19.V.1968 [parts of label handwritten]; (2) Native Collector / BISHOP MUS. [printed]; (3) Bengalia ♂ / xanthopyga / Se.-White, 1924 / Det. H. Kurahashi [printed]; • 1 ♀, labelled (1) LAOS: / Vientiane Prov. / Ban Van Eue, 750m / forest streambed / 10-11.IV.1965; (2) J.L. Gressitt / Malaise Trap / BISHOP MUSEUM; (3) Bengalia ♀ / xanthopyga / Se.-White, 1924 / Det. H. Kurahashi [all labels printed]; • 1 ♀, labelled (1) LAOS: / Vientiane Prov. / Ban Van Eue / 800m, 11.IV.1965; (2) J.L. Gressitt / Collector / BISHOP MUSEUM; (3) This fly / carrying a / winged termite / in flight. [handwritten on torn off piece of paper]; (4) Bengalia ♀ / xanthopyga / Se.-White, 1924 / Det. H. Kurahashi. [all labels printed, except label 3]; • 1 ♀, labelled (1) LAOS: / Vientiane Prov. / Ban Van Eue / 20.VI.1966; (2) Native Collector / RONDON-BISHOP MUS. / Light Trap; (3) Bengalia ♀ / xanthopyga / Se.-White, 1924 / Det. H. Kurahashi. [all labels printed]. **NHMD.** Thailand: 4 ♂, labelled (1) Thailand, Doi Suthep-Pui / natn. Park, Konthathan / waterfall area, 600 m / 20.- 27. X. 1979 / Zool. Mus. Copenhagen Exped. [printed]; (2) Bengalia ♂ / xanthopyga / Se-White, 1924 / Det. H. Kurahashi [printed]; • 1 ♂, labelled (1) THAILAND: Chieng Mai Province / Doi Suthep N.P.: Konthathan / 6-700 m 26.ix.1981 / Zool. Museum Copenhagen leg.; (2) Bengalia ♂ / xanthopyga /Se.-White, 1924 / Det. H. Kurahashi; (3) Dissected / January 2006 / By Knut Rognes [all labels printed] [Dried T1+2–5 glued to a piece of card pinned above the labels; terminalia in glycerol in a glass microvial pinned below label 2]. **NHMUK.** Malaysia (West Malaysia): 1 ♂, labelled (1) MALAYA / Penang: Penang Hills / Viaduct Road West / 2000' / 23 Jly 1958 / H.T. Pagden [printed, but lines 3–5 handwritten]; (2) C.I.E. COLL / NO. 16217 [printed, except number]; (3) 43 [handwritten]; (4) Pres by / Com Inst Ent / B.M. 1959-130 [printed, except last number]; (5) recurva [handwritten]; (6) Bengalia / concava Mall. / Det. R.G.Fennah [handwritten, except last line]; (7) *Bengalia* ♂ / *xanthopyga* Senior White / Det. Dr. A. Z. LEHRER / 2004 [printed, pin hole in middle]; (8) *Bengalia* ♂ / *xanthopyga* Senior White / Det. Dr. A. Z. LEHRER / 2004 [printed, pin hole near right hand margin] [Dissected by Lehrer; terminalia in glycerol, transferred to a glass microvial by me]. **NMW.** Unknown country: 1 ♀, labelled (1) Ost. Indien / Alte Sammlung [first line handwritten, second printed]; (2) Bengalia (f) / xanthopyga / Senior-White, 1924 / K. Rognes det. 2016 [printed; with a question mark in pencil] [Under "*Bengalia lateralis*" in NMW collection]. **ZMUM.** Thailand: 1 ♂, labelled (1) Thailand, ChiangMai, 19.25N 98.64E, 1300m / 15.XI.2010 N. Vikhrev [printed]; (2) Bengalia (m) / recurva Malloch, 1927 / K. Rognes det. 2013 [printed; misidentification];

(3) KR0000000229 [printed]; (4) Bengalia (m) / xanthopyga / Senior-White, 1924 / K. Rognes det. 2016 [printed] [ST5 flap asymmetrical].

Unplaced species in the *Bengalia torosa* Wiedemann species-group

Bengalia favillacea (Walker, 1859), stat. rev.

(Figs 251–256)

Musca favillacea Walker, 1859: 135. Described from an unstated number of females, but at least two [as "Fœm." including a "Var. β" (text in Latin) / "Female" including a "Var.β" (text in English)], from "Makessar" [Indonesia, Sulawesi, Makassar, at 5°7′49.4″S 119°24′27.99″E]; only one syntype now in NHMUK. Lectotype ♀ (NHMUK; see below for details), here designated.

Anisomyia favillacea: Senior-White (1924: 104; 1926: 138); Senior-White *et al*. (1940: 91) [as synonym under their "*Bengalia lateralis*" (= *Bengalia jejuna*)].

Musca favillacea: Townsend (1931b: 371). Townsend (1) examined the "Female Ht in London, from Macassar [Sulawesi]" and (2) claimed that it belonged to the same taxon as "*Bengalia lateralis*, Macq, female Ht in Paris, from Pondicherry" [= *Musca torosa* Wiedemann, 1819]. I do not consider the first statement as a valid indirect lectotype designation for *Musca favillacea* Walker in the sense of Article 74.5 of the Code (ICZN 1999) (see also Rognes *et al*. 2015). It is not clear whether Townsend was aware of the fact that there once existed at least two syntypes. Further, when using the term holotype [as "Ht"], Townsend did not explicitly indicate that he was selecting from the type series a particular specimen to serve as name-bearing type. The second statement, i.e., that the specimen belongs to the same taxon as *Bengalia lateralis* Macquart, cannot be accepted either (see discussion below). I accept the phrase "*Bengalia lateralis*, Macq, female Ht in Paris, from Pondicherry" as an indirect lectotype designation for *Bengalia lateralis* Macquart (cf. Rognes *et al*. 2015) [see above under *Bengalia torosa* (Wiedemann)].

Musca favillacea: James (1977: 529; catalogue entry under *Bengalia jejuna*, erroneously citing the publication date as "1860" and the type material as "♂♀").

Musca favillacea: Thompson & Pont (1994: 74). These authors assigned the name as a synonym of *Musca ieiuna* Fabricius, even though they referred to Townsend (1931b: 371), who misidentified the lectotype of *Musca favillacea* as *Bengalia lateralis* Macquart [= *Musca torosa* Wiedemann]. They cited the specimen in NHMUK as "HT ♀", following Townsend (1931b).

Discussion. Even though *Musca favillacea* was described from at least two females, there is now only a single specimen in NHMUK. It is staged on a narrow strip of cardboard and labelled (1) LECTO / TYPE [circular label with a purple frame]; (2) favillacea [handwritten by Walker]; (3) Macassar, / Celebes. / A.R.Wallace. [handwritten]; (4) SYNTYPE ♀ / Musca / (Anisomyia) / favillacea / Walker, 1859, J. Proc. / Linn. Soc., 4: 135 [handwritten by Pont on white square label with a red frame]; (5) LECTOTYPE ♀ / Musca / favillacea / Walker / Designated by / Dear and Pont. [handwritten by Pont on white square label with red frame except first word and last two lines, which are printed] (Fig. 254).

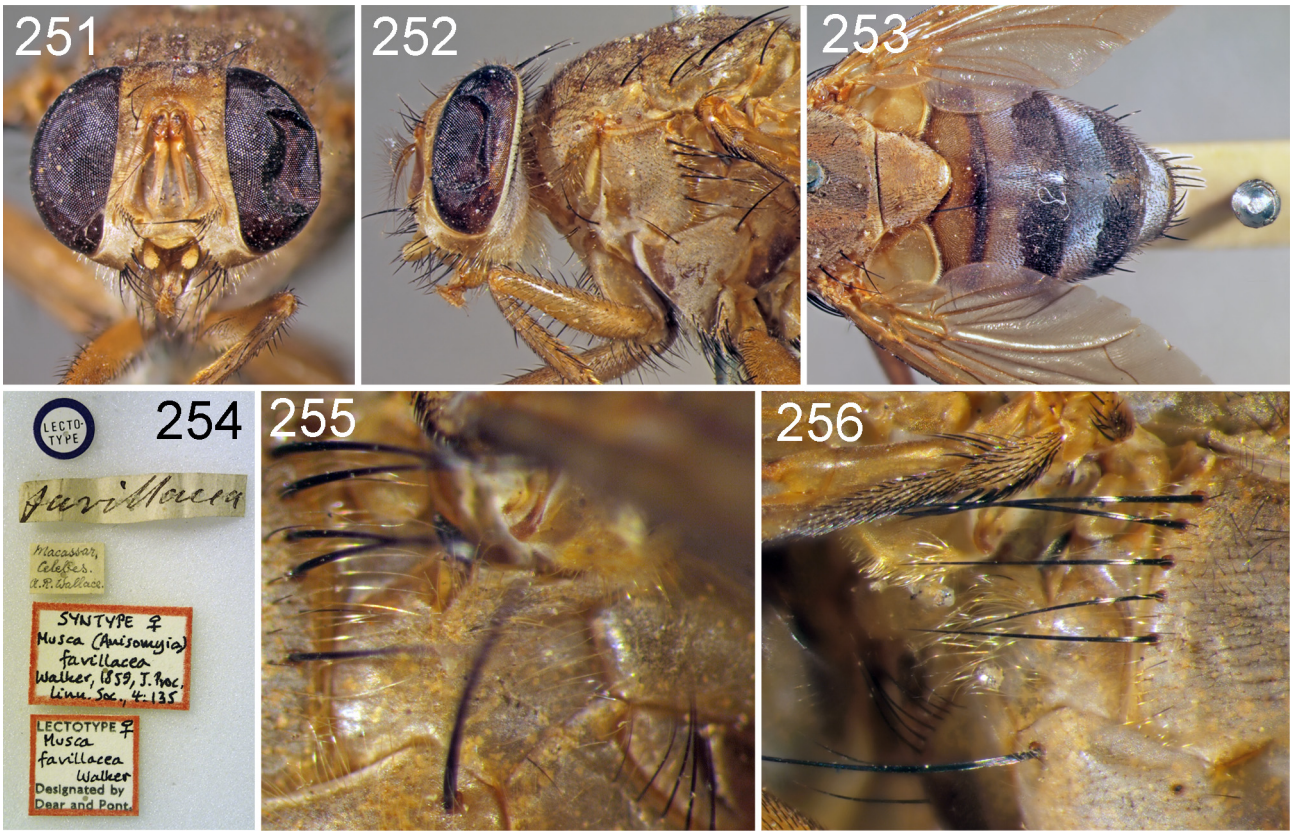
There is no date indicating when the syntype and lectotype labels were affixed to the specimen, but an unpublished manuscript in my possession since 1982, authored by J. P. Dear and A. C. Pont and entitled "A list of types and other material of Calliphoridae (Diptera) in the British Museum (Natural History), London", gives a clue. It is dated December 1977 and in it the name *favillacea* Walker, placed as a synonym under *B. jejuna* Fabricius, is annotated with a "LT♀". According to the list "[m]ost of the lectotypes are based on our as yet unpublished designations".

Since the lectotype "designation" by Dear and Pont was never published, I hereby designate the single female in NHMUK as lectotype of *Musca favillacea* Walker in accordance with the labels on the specimen.

The lectotype does not belong to the taxon *Bengalia torosa* (Wiedemann) as surmised by Townsend. The vibrissa is not high above the mouth edge (Fig. 251) and there is no concavity present in the hind margin of the eye in profile (Fig. 252). The anepimeron agrees with *B. torosa* in having only pale setulae on the left side (Fig. 255), whereas there is one black setula among the pale ones in the upper part on the right side (Fig. 256). The abdomen is very dark, with broad dark bands on T3 and T4, and T5 black (Fig. 253). These features suggest that the *Musca favillacea* lectotype possibly belongs to *B. kanoi*. This species is known to occasionally have very few black setulae on the anepimeron, e.g., in the *B. kanoi* specimen from Bantimurung, Sulawesi (ZMHB), not very far from Makassar. Such an assignment is also compatible with the geographical distribution of *B. kanoi*. *Bengalia recurva* Malloch also has all pale setulae on the anepimeron and has been collected in Sulawesi (ZMHB), but it has much narrower dark bands on the abdomen and at most only the posterior half of T5 dark.

Should *Musca favillacea* Walker be accepted as being synonymous with *B. kanoi*, this taxon would have to be renamed *Bengalia favillacea* based on seniority, with *Bengalia kanoi* as a junior synonym. Since females of the *Bengalia torosa* species-group are not very well known, I choose not to make this name change.

The current position of *Musca favillacea* as a junior synonym of *Bengalia jejuna* (James 1977) is, however, untenable in view of the fact that *Bengalia jejuna* is not known from outside the Indian subcontinent (India and Sri Lanka). Since the lectotype is not reliably identifiable at present, I remove the name from synonymy under *B. jejuna* but keep it as an unplaced species in the *Bengalia torosa* species-group.



FIGURES 251–256. *Bengalia favillacea* (Walker) (lectotype of *Musca favillacea* Walker, NHMUK). **251.** Head, frontal view. **252.** Head and most of thorax, left lateral view. **253.** Abdomen, dorsal view. **254.** Labels. **255.** Left anepimeron. **256.** Right anepimeron.

Species transferred to the *Bengalia labiata* Robineau-Desvoidy species-group

Bengalia robertsi Kurahashi, 1987

(Figs 257–262)

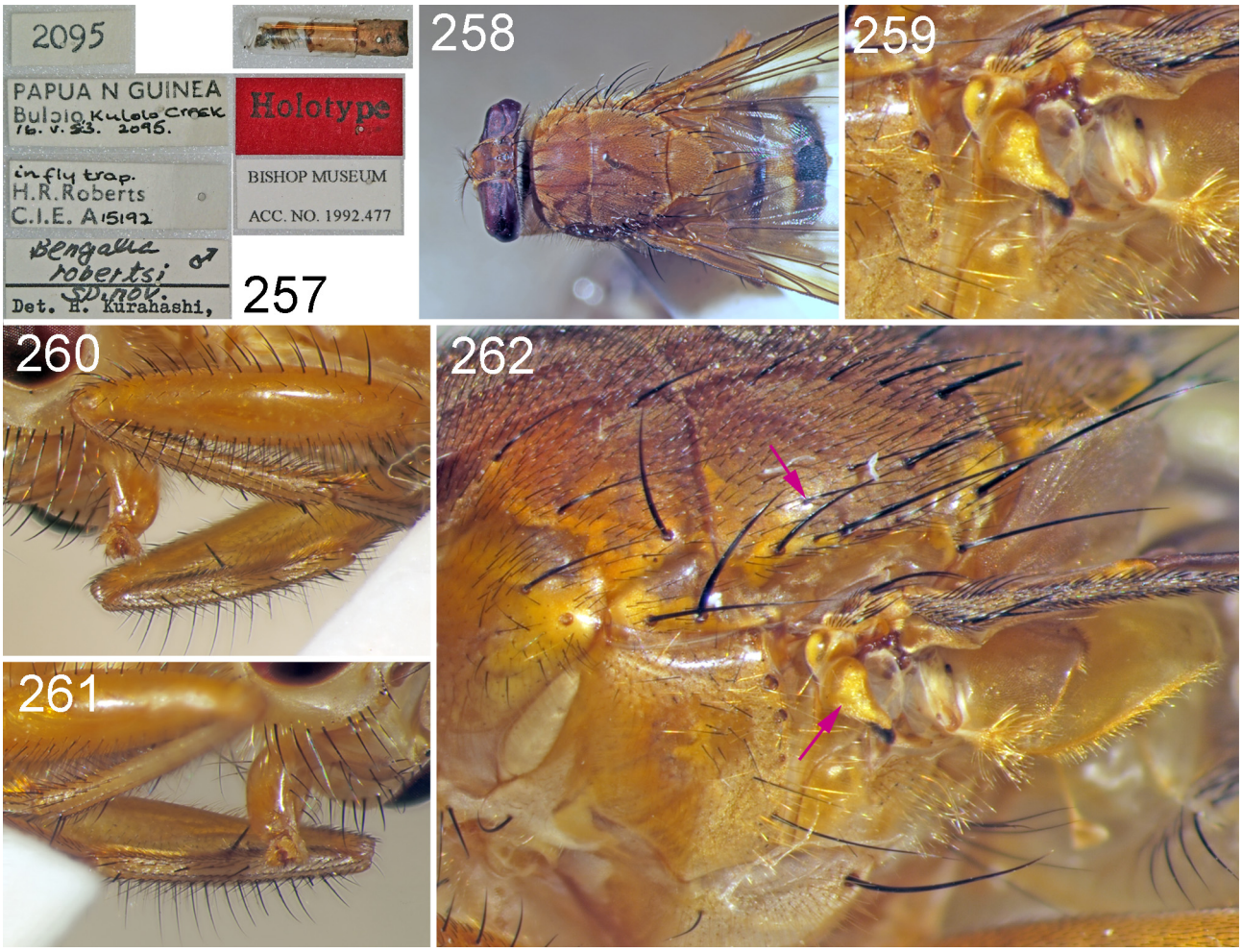
Bengalia robertsi Kurahashi, 1987: 70. Holotype ♂ (BPBM; examined), by original designation. Type locality: Papua New Guinea (Morobe Province, Kulolo Creek, Bulolo).

Temaseka robertsi: Lehrer (2005: 150). [Lehrer copied the original description, including the figures, and remarked "[n]ous ne connaissons pas cette espèce, …".]

Type material examined. HOLOTYPE ♂ (BPBM), labelled as shown in Fig. 257. The dried out terminalia (not examined) are situated in a glass microvial, with a cork stopper, pinned together with the specimen (Fig. 257).

Discussion. This species lacks discal setae on T5 and was included in the *Bengalia torosa* species-group (Gangelomyiinae) by Lehrer (2005). Lehrer (2005), copying Kurahashi's description *in toto*, placed *B. robertsi* in his newly created nominal genus *Temaseka* together with *B. concava* Malloch and *T. mallochi* Lehrer, on the basis of alleged similarities in the distiphallus. By his own admission, he had not seen any material himself ("[n]ous ne connaissons pas cette espèce"). The greater ampulla is gourd-shaped (i.e., pointed at its lower end) (Figs 259, 262),

which places it in the *Bengalia labiata* Robineau-Desvoidy species-group. Note also the position of a particular seta (the Hough seta) inside of the row of two *sa* setae (Fig. 262). This seta is mentioned by Kurahashi under another name (… "first postsutural *ia* is located laterad of longitudinal intraalar line, …"). This seta is also present in *Bengalia labiata* Robineau-Desvoidy (KR) but it is usually absent in the genus *Bengalia*. Rognes (2011b: 19) discussed the occurrence of the Hough seta in the Bengaliinae. The fore tibia has a single strong *v* seta (Figs 260–261). I cannot locate the single *p* seta mentioned by Kurahashi. I have not examined the terminalia, but I find no evidence of semidomes or a distal lip process on the distiphallus in the figures published by Kurahashi (1987). I leave a more detailed description of the distiphallus to revisers of the *Bengalia labiata* species-group.



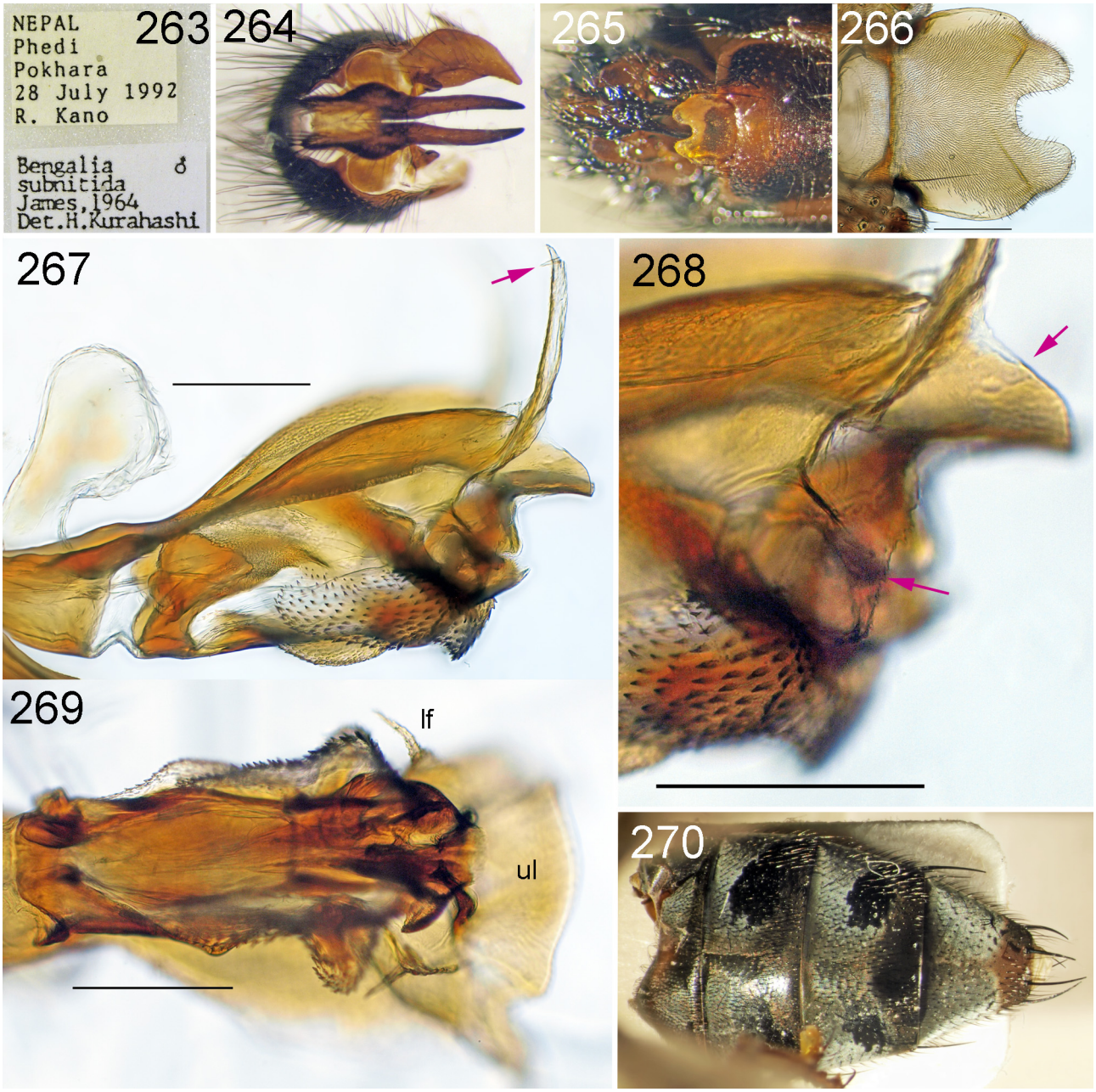
FIGURES 257–262. *Bengalia robertsi* Kurahashi (holotype, BPBM). **257.** Labels and genitalia vial. **258.** Detail of body, dorsal view. **259.** Left greater ampulla, lateral view. **260.** Detail of fore legs, left lateral view. **261.** Detail of fore legs, right lateral view. **262.** Most of thorax, left dorsolateral view; upper arrow showing Hough seta, lower arrow showing greater ampulla.

Species transferred to the *Bengalia peuhi* Villeneuve species-group

Bengalia subnitida James, 1964

(Figs 263–270)

Bengalia subnitida James, 1964: 172. Holotype ♂ (NHMUK; examined), by original designation. Type locality: Nepal (Taplejung Distr, below Sangu).
Bengalia subnitida: James (1977: 530; catalogue entry).
Bengalia subnitida: Kurahashi & Thapa (1994: 218) (Nepal; several males and females).



FIGURES 263–270. *Bengalia subnitida* James (male from Phedi, Pokhara, Nepal, NSMT). **263.** Labels. **264.** Epandrial complex, posterior view (left surstylus lost). **265.** Tip of degreased abdomen with ST5 flap *in situ*, ventral view. **266.** ST5 flap. **267.** Phallus, left lateral view; arrow showing tip of antler. **268.** Detail of apical part of distiphallus, left lateral view. Arrows pointing to important details. **269.** Distiphallus, ventral view. **270.** Degreased abdomen on card pinned with dissected specimen, dorsal view. All scale bars = 0.25mm. Abbreviations: *lf* = lateral finger; *ul* = upper lip.

Type material examined. HOLOTYPE ♂ (NHMUK), labelled (1) Holo- / type [printed on circular white label with a red rim]; (2) TAPLEJUNG DISTR., / below Sangu. / By stream in / shady ravine. / c 6000' 30.x.1961. [printed]; (3) BRIT. MUS. / East Nepal Exp. / 1961-62. / R.L.Coe Coll. / B.M.1962-177 [printed]; (4) Bengalia / subnitida / ♂ / James / HOLOTYPE [handwritten by James on red label except two last lines, which are printed] [Right mid leg lost; right hind leg glued to stage; right wing broken at base and detached, glued to a card on a separate pin with copy of original labels; lower half of anepimeron with pale and black setulae; upper half with setulae black; abdomen black; ST5 flap roughly as in the NSMT males, but see Descriptive notes, below]. PARATYPE ♀ (NHMUK), labelled (1) Allo / Type [first line handwritten, second line printed, on white circular label with a red rim]; (2) [text as in holotype]; (3) [text as in holotype]; (4) Bengalia / subnitida / ♀ James / ALLOTYPE [handwritten by James on red label] [Sternites all yellow, with a pair of marginal setae; right wing and

both mid legs lost]. [Both specimens staged on long polyporus strips; no discal setae on T5 in either of the two specimens.]

Other material examined. NSMT. Nepal: 2 ♂, labelled (1) NEPAL / Phedi / Pokhara / 28 July 1992 / R. Kano [printed]; (2) Bengalia ♂ / subnitida / James, 1964 / Det. H. Kurahashi [printed] (Fig. 263) [One "greased" male dissected by me, the other male not "greased"]; • 2 ♂, labelled (1) NEPAL: Gandaki / Kaski, Chandrakot / - Phedi, 1640 - / 1215m, 16.X.1990 / Col. H. Kurahashi [printed]; (2) Bengalia ♂ / subnitida / James, 1964 / Det. H. Kurahashi [printed] [Both "greased"].

Descriptive notes. *Length*. 13.0mm (n=3). Frons at vertex / head width ratio 0.33–0.35 (mean 0.34, n=4). *Thorax*. Greater ampulla oval. Anepimeron with black setulae in upper half and with many pale and a few black setulae in lower half, the black ones hardly reaching katepisternum. *Legs*. All tibiae fringed posteroventrally, the hind tibia also anteroventrally, ventrally and posteroventrally. *Abdomen*. Very dark, black and white microtrichose in shifting pattern, with yellow background colour showing through only at base of T1+2 (Fig. 270). T5 lacking discal setae, though one of the males from Gandaki has a single discal seta on T5. *ST5 flap*. Distal bay rather deep and narrow (Figs 265–266), deeper and much narrower than in *B. emarginata* Malloch (Rognes 2009b, figs 12, 15, 19, 23). Small lateral bays (Fig. 266) similar to those of *B. emarginata*. James's (1964, fig. 39) figure of the ST5 flap in the holotype is a little different. The distal bay in the holotype is somewhat deeper in the actual specimen (ST5 flap *in situ*) than in James's drawing, but not as deep as in the dissected NSMT male. Distal bay also more V-shaped and not as evenly curved as in *B. emarginata*. The ST5 flap is very different from the one in *B. emarginatoides* Rognes (Rognes 2009, figs 35, 37–38, 40, 42). *Distiphallus*. In the dissected NSMT specimen the left surstylus was absent (Fig. 264). The distiphallus (Figs 267–269) is very similar to that of *B. emarginatoides*, viz. (1) distal edge of upper lip (*ul*) slightly convex (Fig. 269); (2) anterior serrate edge of lateral wall straight (Fig. 268, lower arrow); (3) antler with two small processes distally (Fig. 267, arrow); (4) lateral wall between lateral end of upper lip and base of antler oblique and almost straight in lateral view, different from *B. emarginata* Malloch (Fig. 268, upper arrow); (5) lateral finger (*lf*) reaching beyond outer edge of lateral hypophallic lobes in ventral view (Fig. 269); (6) cercus similar to but not as narrow as in *emarginatoides*; also with a relatively abrupt narrowing towards long prongs in dorsal view (Fig. 264) (for comparisons, see Rognes 2009b, figs 26–28, 33).

Discussion. This species, like *Bengalia robertsi*, lacks discal setae on T5 (though one of the four NSMT males has a single discal seta on T5). Even though described by James (1964), it was not placed to species-group by him.

The structure of the distiphallus shows beyond doubt that *B. subnitida* belongs in the *Bengalia peuhi* Villeneuve species-group (see Rognes 2009b). *Bengalia emarginata*, *B. emarginatoides* and *B. subnitida* form a group of closely related species within that species-group. The dark colour and lack of discal setae on T5 are diagnostic for *B. subnitida*. The ST5 flap of *B. emarginatoides* is different from those of *B. marginata* and *B. subnitida*. *Bengalia emarginata* (with discal setae on T5) occurs in Nepal together with *B. subnitida*. *Bengalia emarginatoides* (also with discal setae on T5) occurs only in South India and Sri Lanka (Rognes 2009b). The frons measurements in *B. subnitida* agree with those in *B. emarginata* (see Rognes 2009b).

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