A new species of the genus *Syritta* Le Peletier & Serville, 1828 (Diptera, Syrphidae), with new distributional records of other *Syritta* species

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Steenis, J. v. 2010. A new species of the genus *Syritta* Le Peletier & Serville, 1828 (Diptera, Syrphidae), with new distributional records of other *Syritta* species. *Norwegian Journal of Entomology* 57, 111–119

Syritta lyneborgi sp. n. is described based on one male collected in Gabon. The new species is provisionally placed in the *Syritta bulbus*-group and compared with species from this group and from the *Syritta tomentosa*-group. Additional records of other species are provided. Drawings of critical characteristics for the species are included.

Keywords: Diptera, Syrphidae, *Syritta*, new species, distribution.

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Introduction

The genus *Syritta* Le Peletier & Serville, 1828 has recently been revised by Lyneborg & Barkemeyer (2005). This revision was based on material from extensive collecting activity in the Afro tropics by the second author and additional material from numerous museums and private collections. While checking my own collection with this revision at hand I met some problems in identifying *Syritta indica* (Wiedemann, 1824). To solve these problems material in the collection of the Zoological Museum of Amsterdam (ZMA) was checked. It turned out that some of the problems were caused by unclear drawings, besides that an apparently undescribed species was found. Among unidentified material from other collections additional material with new distributional records was found. The new species is described in tribute of Leif Lyneborg. Distributional data and additional figures are presented in this paper too.

The monophyletic genus *Syritta* is easily recognized by the unique arrangement of setae on the ventroapical section of the hind femur (Lyneborg & Barkemeyer 2005). This part of the hind femur consists of three separate rows of setae: in the middle a row of about 18 to 28 short black, moderately blunt-tipped setula, this row is also called ctenidium; anterior to this ctenidium with a row of 3 to 7 longer, black setae originating from small tubercles; posterior to the ctenidium is a row of 3 to 6 longer, black or white setae, these setae are not visible in anterior view.

Although the genus is well defined, the placement of *Syritta* is not fully resolved. Hippa (1978) placed *Syritta* in the *Tropidia* group of genera (Tropidiini) which showed affinities with Xylotini, *Blera* Billberg, 1820, *Eumerus* Meigen, 1822 and even to the Eristalini. Rotheray & Gilbert (1999) placed *Syritta* as sister group of *Tropidia* Meigen, 1822 and close to *Ceriana* Rafinesque, 1815, Chrysogastrini and Xylotini, but far from *Eumerus*. Based on adult characteristics Ståhls et al. (2003) show a close affinity of *Syritta* with *Eumerus* and *Merodon* Meigen, 1803, however, the combined analysis give more or less the same relationship as proposed by Rotheray & Gilbert (1999). Based on morphological characteristics of the adults Hippa & Ståhls (2005) associate *Syritta*

with *Ceriana* and the *Eumerus* group. Ståhls et al. (2003) and Hippa & Ståhls (2005) included only few genera but it is clear that *Syritta* is related with Tropidiini and Cerioidini or Eumerini.

Material and methods

The material studied originated from: ANSP – Academy of Natural Sciences, Philadelphia; BMNH – British Museum of Natural History, London; CAS – California Academy of Sciences Department of Entomology, San Francisco; CUMZ – University Museum of Zoology, Cambridge, UK; JSA – Jeroen van Steenis, Amersfoort; RMNH – National Museum of Natural History ("Naturalis"), Leiden; SEMC – Snow Entomological Museum, University of Kansas, Lawrence; UZMC – Zoological Museum, University of Copenhagen, Copenhagen; ZMA – Instituut voor Taxonomische Zoölogie, Zoölogisch Museum, Amsterdam; ZRC – Raffles Museum of Biodiversity Research, National University of Singapore.

The illustrations were made from digital photo's made through a phototube connected to a Wild M10 microscope. The terminology follows that of Lyneborg & Barkemeyer (2005).

***Syritta lyneborgi* sp.n.**
(FIGS 1–6)

Type material. Holotype male, **Gabon** Ogooué-Ivindo rd. Mékambo-Makokou 4 km W Mbela-Baya leg. J.J. Wieringa coll. ZMA.

Etymology: This species is dedicated to the late Leif Lyneborg (Copenhagen) in honour of his major contribution to the knowledge of Syrphidae, especially for the revision of the genus *Syritta*.

Description. **Male**. *Head* (Fig. 1). Face slightly concave, with grey-yellow pollinosity. Oral margin level with frontal prominence. Eye contiguity relatively short, as in *S. bulbus*. Vertical triangle narrow, widening gradually towards non-pollinose part and from there on widening more sharply, with relatively short pollinose part; ratio between pollinose anterior part and blackish, non-pollinose posterior part 2.0/1.0 (2.0). Colour of pollinosity not visible due to moistening of this part. Distance between eye-margin and anterior ocellus shorter than width of ocellus, as in *S. bulbus*. Antennae yellow with nearly round basoflagellomere and with yellow-brown arista.

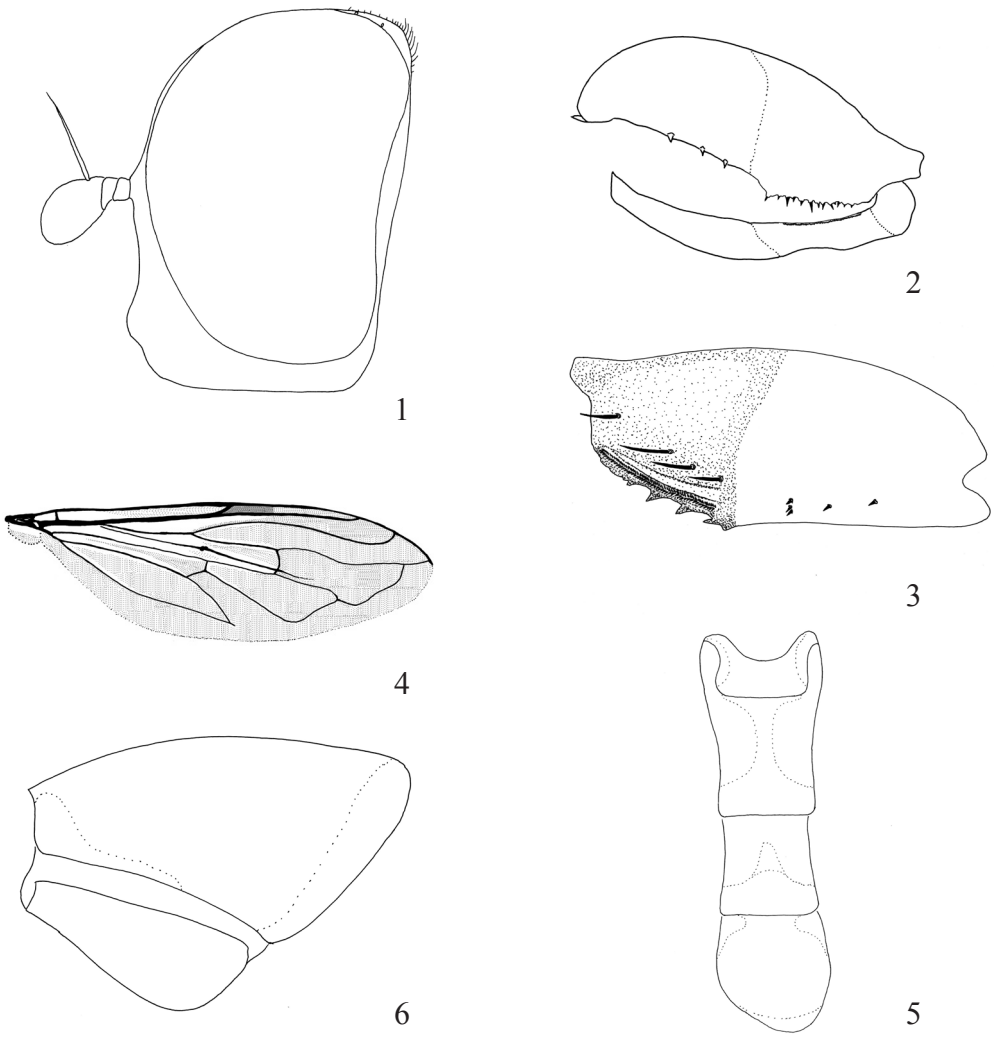
Thorax. Pollinosity on pleurae dark-yellow, ventral part of katepisternum sub shiny. Scutum along anterolateral margin, postpronotum, and postalar callus with dark-yellow pollinosity. Pile predominantly yellow, with a patch of black setae near wing base. Scutellum black with weak and black marginal setae.

Wing (Figs 4 & 6). With strong black veins and a well sclerotised spurious vein, covered by microtrichia.

Legs (Figs 2–3). Front and mid legs yellow, without any modifications. Hind femur yellow in basal part and brown-black in apical part. Hind tarsus yellow, hind tibia brownish with yellow at base and on apical half; with the usual anteroventral carina. Hind femur incrassate, ventrobasal margin straight. Ventrobasal part of hind femur straight without sub basal tubercle, with only five black setula. The last three setula placed close together in one transverse row. Ventroapical part with the usual armature including 4 black posteroventral setae.

Abdomen (Fig. 5). Tergum 1 dark-brown with grey-yellow anterolateral margin. Tergum 2 yellow with black posterior and anterior fascia, anterior fascia not reaching lateral margins. Anterior and posterior fascia connected by a black median vitta. Anterolateral margin yellow pollinose. Tergum 3 yellow with black posterior fascia and dark-brown median vitta from posterior fascia to anterior ⅓ of the tergum. Tergum 4 black with posterior margin dark-yellow. anterolateral margin with rather broad grey pollinose fascia. Sternum 4 with hardly visible V-shaped incision.

Genitalia. Hypandrium (sternite 9) similar to all other *Syritta* species, with a characteristic apical ctenidion. Epandrium (tergite 9) symetric, broad triangular shaped (in lateral view). Cercus triangular shaped, concave ventrally, with a narrow root. Surstylus divided into a dorsal and aventral lobe, which are clearly separated from each other. Ventral lobe with a long and narrow



FIGURES 1–6. *Syritta lyneborgi* sp. n. **1**. ♂ Holotype. Head lateral view. **2**. ♂ Holotype. hind femur and tibia lateral view. **3**. ♂ Holotype. hind femur ventrolateral view. **4**. ♂ Holotype. Wing, with microtrichia. **5**. ♂ Holotype. Abdomen. **6**. ♂ Holotype. Tergum IV, lateral view.

posterior process, anteroventral margin concave, slightly convex at the beginning of the posterior process. Dorsal lobe of surstylus with a basal shaft and a triangular drooping apical part with pilosity on ventromedial and apical part.

Diagnostic characteristics (species group affinity): Wing with a well sclerotised spurious vein, alula microtrichose on posterior half (*S. minuta* Lyneborg & Barkemeyer, 2005 entirely microtrichose). Hind tibia simple, with only short pilosity. Scutum with a pollinose vitta only reaching the suture (in the *S. tomentosa* species-group this vitta reaching the scutellum). Hind femur bicolorous (as in *S. rufa* Lyneborg & Barkemeyer, 2005 and *S. bulbus* Walker, 1849), without a sub basal bump or tuberculated spina (as in *S. minuta* and *S. breva* Lyneborg & Barkemeyer, 2005). Tergum 2 with a blackish median vitta (as in *S. congoensis* Lyneborg & Barkemeyer, 2005, *S. senegalensis* Lyneborg & Barkemeyer, 2005

TABLE 1. Adjustment in the key of Lyneborg & Barkemeyer, 2005, to include *Syritta lyneborgi* sp.n.

31	Armature of ventrobasal part of hind femur does not include a subbasal ventral structure of substantial size, if such a structure is present it does not differ in size or shape from other structures of the ventrobasal surface. Katepisternum uniformly greyish tomentose..... **37**
-	Armature of ventrobasal part of hind femur with a subbasal ventral structure of substantial size (Figs 7–9, 11). [notice absence of such structure in *Syritta lyneborgi* sp. n., then katepisternum with dense grey-yellow pollinosity on dorsal half, and scattered dark-grey pollinosity on ventral half]..... **32**
32	Subbasal spina of hind femur cone-shaped, arranged in a posteroventral position. Katepisternum uniformly greyish tomentose..... ***Syritta orientalis* Macquart, 1842**
-	Subbasal structure less well developed, arranged in a true ventral position, or absent..... **33**
33	Hind femur bicolorous, yellow-brown in basal part, and brownish-black in apical part..... **36a**
-	Hind femur unicolorous, dark-brown to black..... **34**
36a	All terga orange-yellow, with very restricted blackish pattern. Apical marginal vein and vein R4+5 nearly straight..... ***Syritta rufa* Lyneborg & Barkemeyer, 2005**
-	Terga with the usual pattern of yellow and black. Apical marginal vein and vein R4+5 undulated as usual in the genus..... **36b**
36b	Armature of ventrobasal part of hind femur does not include a subbasal ventral structure of substantial size (Figures 2–3). Vertical triangle narrow, widening gradually towards non-pollinose part and from there on widening more sharply, with relatively short pollinose part; ratio between pollinose anterior part and blackish, non-pollinose posterior part 2.0/1.0. Katepisternum with dense grey-yellow pollinosity on dorsal half, and scattered dark-grey pollinosity on ventral half..... ***Syritta lyneborgi* sp.n.**
-	Armature of ventrobasal part of hind femur with a subbasal ventral structure of substantial size (Figure 11). Vertical triangle narrow, widening gradually towards ocellar triangle, with relatively long pollinose part; ratio between pollinose anterior part and blackish, non-pollinose posterior part 4.0-5.0/1.0-2.0. Katepisternum uniformly greyish tomentose..... ***Syritta bulbus* Walker, 1849**

and *S. bulbus*). Vertical triangle narrow, with grey-yellow pollinosity on ventral ⅔. katepisternum with dense grey-yellow pollinosity on dorsal half, and scattered dark-grey pollinosity on ventral half (as in *S. vitripennis* species-group, and *S. hova* Lyneborg & Barkemeyer, 2005).

The placement as based on the above mentioned characteristics is problematic because of the lack of a sub basal bump or tuberculated spina (not *S. bulbus* group), and the katepisternum which is partly covered with pollinosity. However the genitalia are similar to those of *S. bulbus*. On the basis of this similarity *S. lyneborgi* is placed in the *S. bulbus* species-group.

Syritta aenigmatopatria Hardy, 1964
(FIG. 10)

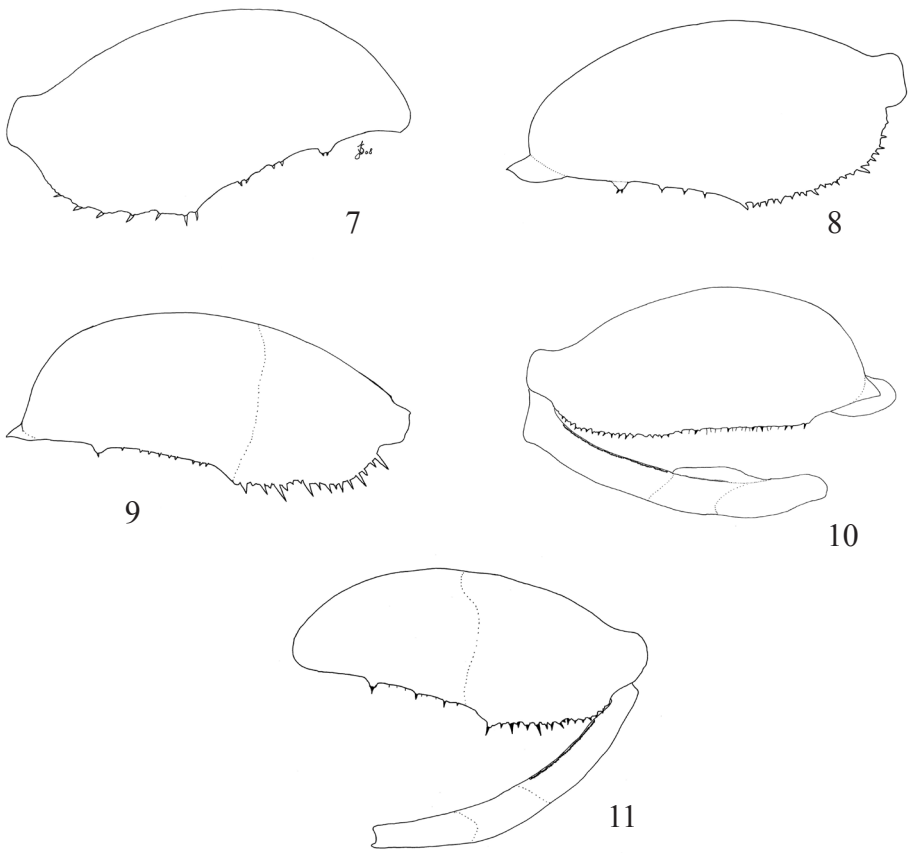
This species from the *S. nigrifemorata* group (characterized by the modified hind tibia) is widely distributed in the Oriental and Pacific region. The colour of the scutellum is variable and can be black or leather-brown. Also the colour of the fore and mid femora is variable from basal 1/3–1/5 dark brownish to black to entirely yellow-brown. The main differences with *S. hackeri* Klöcker, 1924 are: the lamina on hind tibia longer, terga 2 and 3 without complete black median fascia and genitalia as figured by Lyneborg & Barkemeyer (2005).

Material studied. **Indonesia** (Maluku) S. Moluku Ambon near airport ca 20 m a.s.l. 6.XI.1993 C v Achterberg RMNH 93, coll. RMNH, 1♂.

Remarks. New to Maluku.

Syritta bulbus Walker, 1849
(FIG. 11)

Diagnostic characteristic. Differing from *S.*



FIGURES 7–11. Hind femur. **7**. *Syritta congoensis* ♂ Paratype DR Congo. Hind femur, lateral view. **8**. *Syritta rufa* ♂ Paratype South Africa. Hind femur, lateral view. **9**. *Syritta tomentosa* ♀ Paratype Cameroon. Hind femur, lateral view. **10**. *Syritta aenigmatopatria* ♂ Indonesia. Hind femur and tibia, lateral view. **11**. *Syritta bulbus* ♂ Ghana. Hind femur and tibia, lateral view.

lyneborgi: Hind femur with a broad ventral spina. Pollinose part of vertical triangle somewhat longer, ratio 4.0–5.0/1.0–2.0 (2.5–4.0). Vertical triangle uniformly broadening.

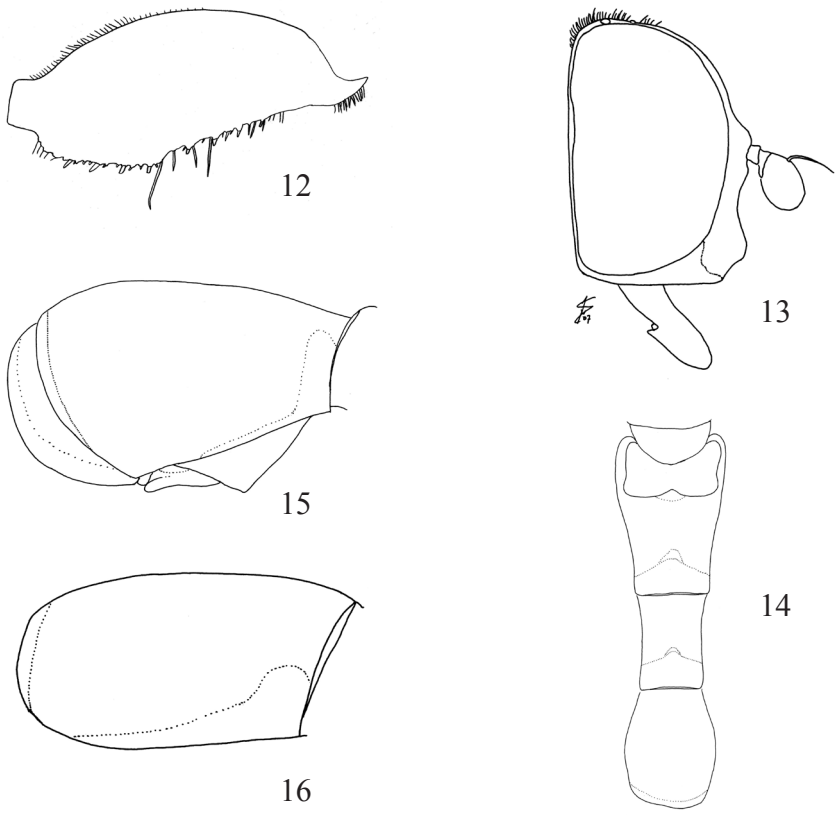
Material studied. **Ghana** Nkawkaw 80 air km NW Koforidua 7.II.1991 W.J. Pulawski clir 1♂ coll CAS.

Remarks. New to Ghana.

***Syritta indica* (Wiedemann, 1824)**
(FIGS 12–16.)

This species belongs to the *S. indica*-group. It is not clearly distinguished from the other species in this group by Lyneborg & Barkemeyer (2005) due to unclear drawings. As several new species can be expected from Papua New Guinea more drawings of this species are provided here.

Material studied. **China**, Guangdong Guangzou 16.VII.1990 leg. J. Silber 1♀ det. Lyneborg & Barkemeyer 2003 coll. ZMA; **India**, South India Kerala State Trivandrum district Poonmudi Range 914 m a.s.l. V.1971 leg. T.R. Susai Nathan 1♂det. Lyneborg & Barkemeyer 2003 coll. ZMA; **Thailand**, Chan Buri province Sattahip 24.I.1993 leg. S. Boongird and C.D. Michener 1♂ coll. SEMC; **Singapore**, Namley Garden 2, 1019'30" N 103047'50" E, 15.X.2006 3♂♂1♀ leg. and coll. JSA.



FIGURES 12–16. *Syritta indica* (Wiedemann, 1824). **12**. ♂ Singapore. Hind femur, lateral view. **13**. ♀ Singapore. Head, lateral view. **14**. ♂ Singapore. Abdomen. **15**. ♂ Singapore. Tergum IV, lateral view. **16**. ♀ Singapore. Tergum IV, lateral view.

***Syritta lanipes* Bezzi, 1921**
(FIGS 17–18)

One of the three species from the *S. lanipes* group distributed in eastern Congo and Uganda. According to Lyneborg & Barkemeyer expected to occur in Tanzania. One remarkable record from South Africa made me study *Syritta longiseta* Lyneborg & Barkemeyer 2005 (Figure 20) and *Syritta pilosa* Lyneborg & Barkemeyer 2005 (Figures 21–23) and conclude that the specimen from South Africa is *S. lanipes*.

Material studied. (**South Africa**) Durban leg. F. Muir 1♂ coll. CUMZ.

Remarks. New to South Africa.

***Syritta latitarsata* Macquart, 1842**

This easily recognized species belong to the *S. latitarsata* group. It is widely distributed in Africa and eastwards to Pakistan.

Material studied. **Tanzania**, Nat. Park 960 m a.s.l. 22.I.1970 leg. M.E. Erwin and E.S. Ross 1♀ coll. CAS.

Remarks. New to Tanzania.

***Syritta leucopleura* Bigot, 1859**
(FIG. 19)

Another Afro-tropical species of the *S. nigrifemorata* group, also widely distributed in Africa.

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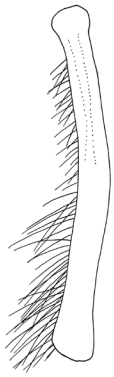

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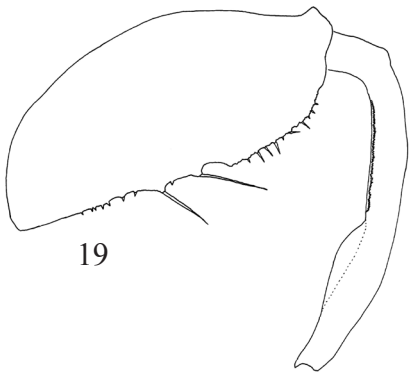
FIGURES 17–18. *Syritta lanipes* Bezzi, 1921. **17**. ♂ South Africa. Hind femur, ventrolateral view. **18**. ♂ South Africa. Hind tibia, lateral view.



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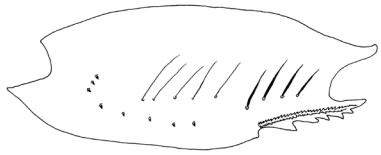

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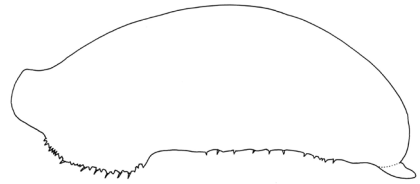
FIGURES 19-20. Hind femur. **19**. *Syritta leucopleura* ♂ South Africa. Hind femur and tibia, lateral view. **20**. *Syritta longiseta* ♂ Paratype. Swaziland. Hind femur, ventrolateral view



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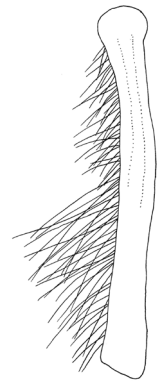

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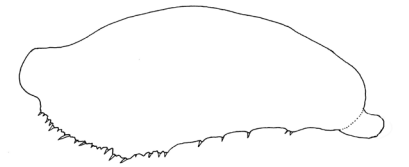
FIGURES 21–23. Syritta pilosa. **21**. ♂ Holotype. Uganda. Hind femur, lateral view. **22**. ♂ Holotype. Uganda. Hind femur, ventrolateral view. **23**. ♂ Holotype. Uganda. Hind tibia, lateral view.

FIGURE 24. *Syritta luteinervis* ♀ Sumatra. Hind femur, lateral view.



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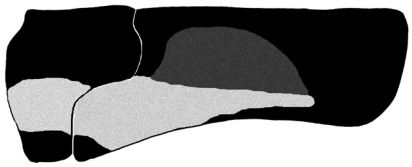

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FIGURES 25-26. Syritta papua. **25**. ♀ Singapore. Hind femur, lateral view. **26**. ♀ Singapore. Abdominal terga 1 and 2, lateral view.

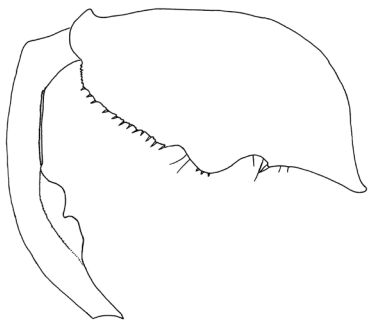

FIGURE 27. *Syritta thompsoni* ♂ Missool Island. Hind femur and tibia, lateral view.

Material studied. **Dahomey** [=**Benin**] Kandi 27.–28.XI.1948 leg. B. Malkin 1♀ coll. CAS det. Lyneborg & Barkemeyer 2006; **Gabon**, Pointe Noir 16.VII.1957 leg. E.S. Ross and R.E. Leech 1♀ coll. CAS.

Remarks. New to Benin and Gabon.

***Syritta luteinervis* de Meijere, 1908**
(FIG. 24)

Another species of the *S. oceanica* group. Similar to *S. oceanica* and *S. papua* Lyneborg & Barkemeyer, 2005. These three species (in the female sex) can easily be recognized by the tomentose lateral vitta stretching from abdominal base to anterior corner of posterior fascia on tergum 2. The female of *S. oceanica* Macquart, 1855 is separated from the other two species by the frons as stated by Lyneborg & Barkemeyer (2005), and *S. luteinervis* and *S. papua* by the differences in the hind femur.

Material studied. **Indonesia**, Sinabang Simalur Sumatra III.1913. leg. E. Jacobson, *Syritta orientalis* det. de Meijere, *Syritta* in det. 1♀ coll. RMNH.

Remark. New to Sumatra.

***Syritta papua* Lyneborg & Barkemeyer, 2005**
(FIGS 25–26)

See under *S. luteinervis*. One new record of this rare species.

Material studied. **Singapore**, Tyersall Avenue Secondary forest 27.V.1976, leg. D.H. Murphy, 1 ♀, coll. RMNH

Remark. New to Singapore.

***Syritta stigmatica* Loew, 1858**

This is the only species in its group and closely related with the *S. bulbus* and *S. tomentosa* group.

Material studied. **Kenya**, Chania falls nr Thika 1341 m a.s.l. 4.XII.1969 leg. M.E. Erwin & E.S. Ross 1♂ coll. CAS; Kenya Marsabi Nat. Res. Lake paradise 1372 m a.s.l. 10.XII.1969 leg.

M.E. Erwin and & E.S. Ross 1♂ coll. CAS; Kenya Rift Valley Province Marich pass field studies centre 1032.2'N 35027.4'E 25–29.VII.1999 leg. W.J. Pulawski and J.S. Schweikert 1♀ coll. CAS; Madagascar Oriental Forest Fanovana district Fianarantsoa 1.V.1937 leg. G Lamberton, 1♀, coll. ANSP.

Remarks. New records for Kenya and Madagascar.

***Syritta thompsoni* Lyneborg & Barkemeyer, 2005**
(FIG. 27)

This species is easily recognized by the large bulge on the ventral side of the hind femur. Based on the modification of the hind tibia it is placed in the *S. nigrifemorata* group, and it is only known from Taiwan and the Trouwars island near Java. The specimen mentioned here is compared with a paratype male in RMNH.

Material studied. Missool Id. (W.) 0–75 m a.s.l. Waigama 8.IX–20.X.1948 leg. M.A. Lieftinck 1♂ coll. RMNH.

Remark. New to Missool island.

***Syritta vitripennis* Bigot, 1885**

This very rare Afrotropical species of the *S. vitripennis* group (ventral part of katepisternum without pollinosity, sub shiny) is recorded from Zimbabwe for the first time.

Material studied. **Zimbabwe**, Chirinda forest X.1905 leg. G.A.K. Marshall 1♂ coll. CUMZ

Remarks. New to Zimbabwe

Acknowledgements. I wish to thank the following colleagues for additional material or valuable information: B. Brugge (Amsterdam), Z. Falin (Lawrence), W.A. Foster and R. Stebbings (Cambridge), C.E. Griswold (San Francisco), H. K. Lua (Singapore), T. Pape and J. Pedersen (Copenhagen), W. van Steenis (Breukelen), R. de Vries (Leiden), N.P. Wyatt (London), J.D. Weintraub (Philadelphia).

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Received:15 March 2010
Accepted: 28 April 2010