East-African Calliphoridae

(*Diptera*)

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(With 4 Figures)

I wish to thank Prof. Dr. E. Lindner for entrusting to me the *Calliphoridae* he collected during the German zoological Expedition to the Tanganyika Territory in 1951/52. It comprises 50 species in 125 specimens of which 5 species are new to science. The greater part of this collection including all holotypes has been returned to the „Staatl. Museum für Naturkunde" in Stuttgart, Germany, only a few duplicates have been retained for the collection of the South African Institute for Medical Research, Johannesburg.

The localities listed below are all situated in the Tanganyika Territory, if not otherwise mentioned.

The abbreviations used in this paper are explained as follows:

Head Bristles

iv = inner verticals
ev = outer verticals
pvt = post verticals
oc = ocellars
paf = parafrontals and parafacials
f = frontals
fo = fronto orbitals
vi = vibrissae

Thoracic Bristles

ac = acrostichals
dc = dorsocentrals
ia = itraalars
ph = posthumerals
h = humerals
prs = presuturals
sa = supraalars
n = notopleurals
pa = postalars
sc = scutellars
st = sternopleurals
pp = propleurals
pst = prestigmatics

Leg Bristles

pv = posteroventral
pd = posterodorsal
av = anteroventral
ad = anterodorsal

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Subfamily: *Calliphorinae*

Tribe: *Calliphorini*

1. *Lucilia cuprina* (Wiedemann), Außereurop. Zweifl. Ins. **2**, 654, 1830.
   Ngaruka, 29. I. — 14. II. 1952, 1 ♀
   Msingi, I. — 19. V. 1952, 1 ♀

This fly is a well-known pest of sheep and other animals causing woundmyiasis, especially in S. Africa and Australia. Waterhouse & Paramanov (1950) in their paper of the status of *L. cuprina* (*Wd*). and *L. sericata* (*Meig.*) distinguish between two forms of *cuprina*, namely ssp. *cuprina* in the Far East, the Oriental region from Malaya eastwards to Hawaii and the Americas, and ssp. *dorsalis* (*R.-D.*) in Atrica, India and Australia. The separating features which they gave are, however, very slight and intergrading and lie mostly „in general coloration". The typical subspecies shall be „easily recognized by its dull olive-bronze body coloration" whereas ssp. *dorsalis* is „metallic coppery green, green or bluish green".

I have seen great number of specimens from all parts of its distribution area and have come to the conclusion that this feature does not hold throughout, and that there are all kinds of intermediate forms. *L. cuprina dorsalis* should, therefore, not be listed anymore as a distinct subspecies.

2. *Hemipyrellia fernandica* (Macquart), Dipt. Exot. Suppl., **5**, 112, 1855.
   Kware nr. Moshi, 27. XII. — 13. I. 1952, 1 ♂ 3 ♀.
   Kisangara, 31. XII. — 1. I. 1952, 1 ♀.
   Ngaruka, 29. I. — 14. II. 1952, 2 ♀.
   Torina, 4. — 18. III. 1952, 1 ♂, 1 ♀.

Common all over the Ethiopian region but apparently not introduced elsewhere. Life habits as in the genus *Lucilia*.

3. *Phumosia nana* Zumpt, Rev. Ecuat. Ent. Parasit., **1**, 74, 1953.
   Ngorongoro, 28. II. 1952, 1 ♀.

This species seems to be widely distributed over the Ethiopian region. I have seen specimens from Transvaal, S. Rhodesia, East and Central Africa, the Gold Coast, and Liberia.

4. *Phumosia stabulans*-group.
   Ngaruka, 29. I. — 14. II. 1952, 1 ♀.
   Not identifiable from the female sex alone.

5. *Calliphora croceipalpis* Jaennicke, Abh. Senckenb. Ges., **6**, 376, 1867.
   Kibo West, 2800 m. 17. — 22. IV. 1952, 2 ♀.

A common species in South and East Africa; in the tropical parts it probably prefers the higher altitudes. It has been confused with *C. vomitoria* (*L*). as e. g. by S. White-Aubertin-Smart in the „Fauna of British India", 1940.

6. *Adichosina* sp.
   Msingi, 9. VI. — 17. VI. 1952, 2 ♀.

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The genus *Adichosina* Villeneuve (Bull. Ann. Soc. ent. Belg., **74**, 186, 1934), is a typical Ethiopian genus but poorly known up to now. The female specimens are not yet identifiable with certainty.

7. *Pericallimyia bequaerti* Curran, Amer. Mus. Nov., 506, p. 4, 1931.
   Ngorongoro, 28. II. 1952, 1 ♀.
   Usangi, Pare Mts., 25. V. — 8. VI. 1952, 1 ♀.
   Curran described the species from Uganda and the Belgian Congo. No other records are known.
8. *Hemigymnochaeta unicolor* (Bigot), Bull. Soc. zool. France, **12**, 608, 1887.
   Usangi, Pare Mts., 25. V. — 8. VI. 1952, 1 ♀.
   Probably everywhere in the Ethiopian region; breeds in mushrooms.
9. *Hemigymnochaeta apicifera* Curran, Amer. Mus. Nov., 506, p. 12, 1931.
   Usangi, Pare Mts., 5. VI. 1952, 1 ♂.
   Described from Liberia, I have further records from the Gold Coast and Uganda.
10. *Tricyclea unipunctata* Curran, Ann. Mag. nat. Hist., (9) **19**, 518. 1927.
    Kware. 17. — 21. I. 1952, 1 ♂, 1 ♀.
    Probably distributed all over tropical Africa, but not a common species. I have seen it from Liberia, Gold Coast, Nigeria, Belgian Congo, and Nyasaland.
11. *Tricyclea bifrons* Malloch, Ann. Mag. nat. Hist. (10) **4**, 117, 1929.
    Maranga, 24. V. — 8. VI. 1952, 1 ♀.
    Described from Kenya; I received further specimens from Uganda, N. W. Rhodesia, Gold Coast, and Liberia.
12. *Tricyclea du* Curran, Amer. Mus. Nov., 506, p. 8, 1931.
    Msingi, 22.—28. I. 1952. 1 ♀.
    Described from Liberia, but I have also received this species from the Gold Coast and Nigeria.
13. *Bengalia spinifemorata* Villeneuve, Bull. Soc. ent. France, p. 153, 1913.
    Machame, 14. V. 1952, 1 ♀.
    Msingi, 9. VI.—17. VI. 1952, 1 ♂.
    A common species in Central, East and South Africa.
14. *Bengalia floccosa* (Wulp), Bull. Soc. ent. Belg., 1884, p. CCXCII, 1884.
    Kware, 27. XII.—13. I. 1952, 1 ♂.
    One of the rarer *Bengalia* species which has been recorded so far from Natal, Portuguese East Africa, Southern Rhodesia and the Tanganyika Territory.

Tribe: *Chrysomyiini*

15. *Chrysomyia vanemdeni* Zumpt, J. ent. Soc. S. Africa, **16**, 181, 1953.
    Kibo West, 2800 m. 17.—22. IV. 1952, 1 ♀.
    This striking species was only known previously from Mufindi in the Southern Highlands of the Tanganyika Terr.

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16. *Chrysomyia marginalis* (Wiedemann), Außereurop. Zweifl. Ins., **2**, 395, 830.
Ngaruka, 29. I.—14. II. 1952, 1 ♀.
Msingi, 1.—19. V. 1952, 1 ♀.
Chrysomyia marginalis is a common blow-fly of the Ethiopian region.
17. *Chrysomyia inclinata* Walker, Trans. ent. Soc. London, p. 311, 1860.
Msingi, 15.—21. III. 1952, 1 ♀.
Torina, 4.—18. III. 1952, 1 ♀.
Distributed over the whole Ethiopian region but nowhere common.
18. *Chrysomyia chloropyga* (Wiedemann), Zool. Mag., **2**, 44, 1818.
Kware nr. Moshi. 27. XII.—13. I. 1952, 4 ♀.
Kisangara, 31. XII.—1. I. 1952, 2 ♀.
Msingi, 15.—21. II. 1952, 3 ♂, 2 ♀.
Usangi, Pare Mts., 26. V.—8. VI. 1952, 1 ♂.
C. chloropyga is a common blow-fly of the Ethiopian region that shows a great variability in the body-colour probably depending on some as yet unknown ecological factors. This species, therefore, has been described several times of which, beside *chloropyga*, the most commonly used names are *putoria* (*Wd.*) and *taeniata* (*Bigot*). The typical form is dark blue and shows a black ⅃|⌊ shaped pattern on the mesonotum, the wings are infuscated at base only; *putoria* has a green, coppery or light bluish body which lacks the black pattern on the mesonotum; *taeniata* is coloured like *putoria*, but the costal area of the wings is infuscate. The hypopygium as well as other morphological features is alike in all three forms, but also in the colouring there are transitional forms not uncommon.

The specimens collected by Prof. Lindner represent those intermediate forms. They are predominantly dark blue and show traces of a black mesonotal pattern, the wings are, except for one from Msingi, hyaline so that they are intermediate between *chloropyga* and *putoria*. The above mentioned specimen from Msinga has a slightly infuscate wing-margin and could be determined as *taeniata*.
19. *Chrysomyia albiceps* (Wiedemann), Zool. Mag., **3**, 38, 1819.
Kware nr. Moshi, 27. XII.—13. I. 1952, 1 ♂.
Msingi, 1. V.—19. V. 1952, 1 ♂, 1 ♀.
Aden, Arabia, 3. XII. 1951, 1 ♂.
An extremely common blow-fly all over Africa including the Mediterranean, in the Madagascan, Oriental and Australian regions. The Eastern specimens have been separated as *rufifacies* Macquart (1842), but all features given by Holdaway (Bull. Ent. Res. 24, 1933, p. 549) overlap and may appear in the same population.

Tribe: *Rhiniini*

20. *Rhinia rugosa* Bigot, Bull. Soc. zool. France, **12**, 591, 1887.
Kware nr. Moshi. 27. XII.—13. I. 1952, 2 ♀.

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Msingi, 1.—19. V. 1952, 4 ♀.
Common all over the Ethiopian region.

21. *Rhinia apicalis* (Wiedemann), Aussereurop. Zweifl. Ins., **2**, 354, 1830.
Kisangara, 31. XII.—1. I. 1952, 1 ♀.
Usangi, Pare Mts. 25. V.—8. VI. 1952, 1 ♀.
Msingi. 9.—17. VI. 1952, 1 ♀.
As common and distributed as the foregoing species.

22. *Idiella albitarsis* (Macquart), Dipt. exot. Suppl., **1**, 193, 1846.
Usangi, Pare Mts., 25. V.—8. VI. 1952, 3 ♂.

Probably also distributed all over the Ethiopian region, but evidently less common than the two *Rhinia*-species mentioned above. *I. albitarsis* has been recorded from S. Leone, Kenya, Uganda, Nyasaland, S. Rhodesia, Natal and Cape Province.

23. *Stegosoma bowdeni* Peris, Eos, **27**, 239, 1951.
Msingi, 1.—19. V. 1952, 1 ♀.
This recently described species was not known before from the Tanganyika Terr. The types have been based on material from Nigeria, other records are from the Gold Coast and Transvaal.

24. *Rhyncomyia pictifacies* Bigot, Bull. Soc. zool. France, **12**, 595, 1887.
Msingi, 22.—28. I. and 1. V.—19. V. 1952, 2 ♂, 1 ♀.
Widely spread in Central, East and South Africa.

25. *Strongyloneura tristis* (Bigot), Bull. Soc. zool. France, **12**, 613, 1887.
Torina, 4.—18. III. 1952, 1 ♂.
Msingi, 9. VI.—17. VI. 1952, 3 ♂, 3 ♀.
Probably common everywhere in the Ethiopian Region.

Peris in his recent monograph of the *Rhiniini* (Ann. Estac. Exp. Aula Dei, **3**, 1—224, 1952) recognizes the two genera *Thelychaeta* B. B., 1891, and *Strongyloneura Bigot*, 1886, the latter only containing the two Oriental species *prolata* (*Walker*) and *prasina* (*Bigot*). Following *Malloch* (Ann. Mag. Nat. Hist., (9) **18**, 521, 1926) and other authors, I am of the opinion that the features given by Peris do not justify generic separation.

26. *Strongyloneura nitida* (Curran), Amer. Mus. Nov., 248, p. 6, 1927.
Usangi, Pare Mts., 25. V.—8. VI. 1952, 1 ♂, 2 ♀.

Peris in his recent monograph of the *Rhiniinae* suggests that this species may be a synonym of *S. calliphoroides* Malloch. In have seen type specimens of both species and must state that they are quite distinct. *S. nitida* has been described from the Belgian Congo and not yet been recorded from other parts of Africa. Apart from the locality mentioned above. I have also received from the Zoological Museum in Vienna 2 ♂, 1 ♀ from Mbamba Bay, Lake Nyasa, and 1 ♂. 4 ♀ from Ugano, Matengo Mts., both situated in the Tanganyika Terr.

27. *Strongyloneura dubiosa* (Villeneuva), Ann. Soc. Ent. France, 85, 1917, p. 350.

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Msingi, 22.—28. I., 1.—19. V. and 9.—21. VI. 1952, 3 ♂, 3 ♀.

The area of distribution extends from West Africa through the Belgian Congo to Kenya and the Tanganyika Terr.

28. *Strongyloneura* sp.

Usangi, Pare Mts., 25. V.—8. VI. 1952, 1 ♀.

Related to *S. pendula* Malloch, but a definite identification is not possible from the female sex alone.

Subfamily: *Miltogramminae*

Tribe: *Miltogrammini*

29. *Capnopteron munroi* (Curran), Amer. Mus. Nov., 836, p. 7, 1936.

Ngaruka, 29. I.—14. II. 1952, 2 ♂.

Msingi, 1. 19. V. 1952, 1 ♂.

Described from Southern Africa where it has been found in the Cape Province, Natal, Transvaal, S. W. Africa and S. Rhodesia. The Tanganyika Territory is the most northern record so far known to me.

30. *Senotainia grisea* (Villeneuve), Ann. S. Afr. Mus., **15**, 509, 1916.

Ngaruka, 29. I.—14. II. 1952, 1 ♀.

Only a few records have been published of this species. It is known to occur in the Cape Province, Transvaal and S. Rhodesia. Whether the male from the Belgian Congo mentioned by Villeneuve in his diagnosis really belongs to this species remains doubtful.

31. *Setulia* sp.

Ngaruka, 29. I.—11. II. 1952, 1 ♀.

This specimen, perhaps, represents a new species. For a description, however, the male sex is needed.

32. *Miltogrammini* g. n. sp. n. ?

Lake Jipe, 20.—23. V. 1952, 1 ♂, 1 ♀.

The male and female before me probably belong to the same species which may represent a new genus related to *Capnopteron Rohd.* and *Setulia R.-D.* because of the short and thick arista. A characteristic feature is that both have 4 fronto-orbital bristles, the armature of the mid-tibia, however, is different in both sexes so that they key out in different places in my key given for the *Miltogrammini* (Proc. R. ent. Soc. London, (B) **21**, 2, 1952.) The question, therefore, is whether the armature of the mid-tibia is a good taxonomic feature or whether it is due to an intraspecific variability.

The taxonomy of the Ethiopian *Miltogrammini* is still in a very unsatisfactory condition, and it is necessary to wait for more material until this problem can be touched again. The study of the specimens listed above must, therefore, be postponed.

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Subfamily: *Sarcophaginae*

Tribe: *Sarcophagini*

Females of the genus *Sarcophaga s. lat.* are mostly not identifiable, 11 specimens of the collection have therefore been returned without identification.

33. *Sarcophaga furcadorsalis* Rohdendorf, Ann. Mag. nat. Hist., (10) 8, 350, 1931.
Torina, 4.—18. III. 1952, 1 ♂.
Like most of the Ethiopian *Sarcophaga* spec., probably distributed all over the region. Originally described from S. Leone, I have also seen a few specimens from the Cameroons and the Belgian Congo.

34. *Sarcophaga destructor* Malloch, Ann. Mag. nat. Hist., (10) **4**, 235, 1929.
Ngaruka, 29. I.—14. II. 1952, 2 ♂.
Known from the Anglo-Egyptian Sudan and Somaliland.

35. ***Sarcophaga plutus*** n. sp.
Kware nr. Moshi, 27. XII.—13. I. 1952, 2 ♂.
(holotype returned, paratype in the collection of the S. A. I. M. R. Jhg.)

This species belongs to the *angelicae* group (cf. Zumpt, J. ent. Soc. S. Africa, **14**, 171ff., 1951) and is closely related to *S. guillarmodi Zpt.* with which it has in common long hairs on both edges of the hind tibia in the male sex and three postsutural dorsocentral bristles. However, it is easily separable by a pair of very long and thick median marginals on the second visibie tergite and, in the male, by well developed outer vertical head bristles and a quite differently shaped hypopygium with marginal bristles wanting on the first genital segment.

Male — Head silvery pollinose, frontal stripe black, slightly widened towards the antennal groove and here about $^1/_4$ broader than at the tip of the ocellar triangle; width of frons at the narrowest point almost half the eye-lenght; paf almost reach the hind margin of the second antennal joint, iv very long and thick, ev well-developed, about half as long as iv and distinctly longer and thicker than the connecting postocular bristles, a pair of pvt present, oc long and proclinate divaricated f reclinate, fo wanting, parafrontalia and parafaciala with an irregular, partly doubled row of black hairs which gradually increase in size towards the bucca. Outer part of occiput with black hairs, inner part with yellow hairs, buccae about half as high as the eye, densely beset with black hairs, vibrissa long and thick. Palpi black, slender, slightly curved and dilated terminally. Antennae black-brown, the 3rd joint not quite twice as long as the second.

Thorax cinereus pollinose, with three broad black stripes on the notum. Prescutellar pair of oc only weakly developed, dc = 2 + 3, very long, the postsutural ones subequal, ia = 1 + 2, the foremost weak, st = 1:1:1 in the holotype, 1:1 in the other specimen before me, the middle one wanting, scutellum in the holotype with two pairs of long lateral bristles, the apicals very short and weak and discals wanting, in the paratype the apicals are longer and a pair of weak discals is present. Prosternum and propleura with black hairs, one long pp and pst. Wings hyaline, veins brown, basicosta yellow, cs_{1-5} = 5 : 1.5 : 4.5 : 1,5 : 0,3 costal spine long, r_1 almost totally on the upper side and $r_{4.5}$ up to r-m with black bristles, squama white, halter brown. Legs black, front tibia with a submedian pv and two basal ad; mid-femur without ctenidium, mid-

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tibia on the inner side with short hairs only, 2 ad, 3 pd, and a submedian v; hind tibia on both inner edges with hairs surpassing the tibial diameter, 2 long pd, 2 long and several shorter ad, one submedian av.

Abdomen greyish pollinose, with chess-board pattern, 2nd tergite with a pair of long and thick median marginals. Fifth sternite deeply emarginate and beset with spines on the inner edges. Genital segments reddish, no marginal bristles on the first, parameres hook-shaped, phallosome with short tail-like processes (fig. 1).

Length: 6.5 and 10 mm.

Female: Not known.

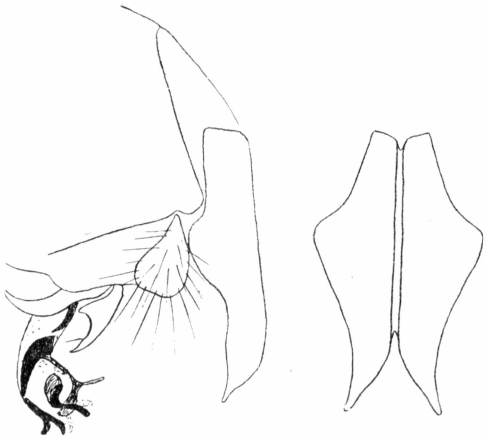

Fig. 1. *Sarcophaga plutus* n. sp. Lateral and frontal view of hypopygium

36. *Sarcophaga lindneriana* n. sp.

Usangi, Pare Mts., 25. V. —8. VI. 1952, 2 ♂, 1 ♀. (holotype and female returned, paratype ♂ in the collection of the S. A. I. M. R., Johannesburg).

Like *S. plutus* m., this species belongs to the *angelicae* group, but it has four postsutural dc which diminish in size towards the head. Within this subgroup, *S. lindneriana* is, judging from the hypopygium, more closely related to *S. furcadorsalis Robd.* having a long and thin anteriorly directed tail-like appendage and two shorter ones on the posterior side (fig. 2).

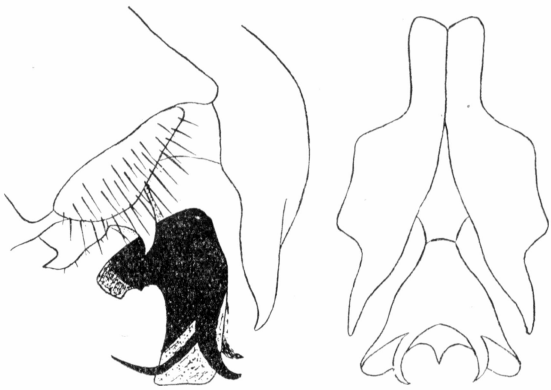

Fig. 2. *Sarcophaga lindneriana* n. sp. Lateral and frontal view of hypopygium

Male — Head silvery pollinose, frontal stripe black, slightly widened towards the antennal groove, width of frons at the narrowest part between one fourth and one third of the eye-length, parafrontalium at the tip of the ocellar triangle about as broad as the frontal stripe; iv long and strong, ev not separated from the postocular bristles, pvt present, oc forwardly divaricated, f long and reclinate, paf reach the posterior margin of the second antennal joint, parafrontalia and parafacialia with an external row of setae ending with three bristly hairs near the buccae; antennae black, third joint 2½ times as long as the second; palpi black, slightly curved and moderately widened to the tip; buccae about one-third of eye length, with black hairs; inner part of occiput yellow haired.

Thorax greyish and olive pollinose, with three broad dark stripes on the notum. Acrostichals totally wanting, dc = 3 + 4, n = 4, st = 1 : 1 : 1, scutellum with 2 pairs

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of marginal bristles and one pair slightly removed from the margin which can be taken for discals, apicals therefore wanting. Propleura and prosternum with black hairs, one strong and several hair-like pp and pst. Wings hyaline, with a slight brownish tinge veins dark brown, basicosta yellow, cs_{1-5} = 5 : 2 : 5 :1.5 : 0.5, costal spine not developed, r_1 dorsally with a row of setae in the basal half, r_{4-5} with setae more than half way to r—m, squama light brown, halter brown, darkened towards the tip. Legs black, fore-tibia with 3 short av and 1 long submedian pv; mid-femur without ctenidium, mid-tibia with one submedian ad, pd and av as well as several pd; hind-tibia on both inner edges with long hairs, one submedian av, 2 pd and 2 long and 3 shorter ad.

Abdomen grey pollinose, with chess-board pattern. No median marginals on the 2nd. visible tergite, fifth sternite shallowly emarginate, with dense bristles. Genital segments reddish.

Female — There is one specimen before me from the same localoty which I refer to this species. No features are detectable which would enable it to be separated from *S. furcadorsalis* or other species in this subgroup.

Length: 9—10 mm in the male, 8 mm in the female.

37. *Sarcophage momba* Curran, Amer. Mus. Nov., 727, p. 19, 1934.

Torina, 4.—18. III. 1952, 1 ♂.

Ubangi, Pare Mts., 5. VI. 1952, 2 ♂.

I have also seen specimens from Nigeria, the Cameroons and the Belgian Congo.

38. *Sarcophaga selene* (Curran), Amer. Mus. Nov. 727, p. 25, 1934.

Dar-es-salaam, 11.—20. XII. 1951, 1 ♂.

Known from the Cape, Natal, Transvaal, Port. E. Africa, and Togo.

39. ***Sarcophaga par*** n. sp.

Ngorongoro, 28. II. 1952, 1 ♂ (returned).

Judging by the tuft of long hairs on the inner side of the mid-tibia, this species belongs to the *S. braunsi Engel* group. The cerci have a slight undulating curve like that of *braunsi*, but the armature is more similar to that of *vanriebeecki Zpt.*, from which it is furthermore separable by the bristled first genital segment, a slightly narrower frons, distinct discal bristles on the scutellum and, possibly inconstant, differences in the chaetotaxy of the legs.

Male — Head silvery pollinose, sometimes with olive shine, frontal stripe black, almost parallel, frons at the narrowest point about $^2/_5$ of eye length, parafrontalium at the tip of the ocellar triangle half as wide as the frontal stripe; parafrontals reach the apical margin of the second antennal joint, iv long and strong, ev weakly developed, only slightly longer than the connecting postocular bristles; pvt not separated from the surrounding hairs, oc proclinate, of medium size, f strong, reclinate; parafrontalia beset with thin black hairs, parafacialia with an outer row of hairs which gradually increase in size towards the buccae. Antennae black, third joint twice as long as the second; palpi black, slightly curved and dilated terminally; buccae nearly half as high as the eye, the anterior part with black bristly hairs, the posterior with long whitish hairs.

Thorax greyish-olive pollinose, with three broad and dark stripes on the notum. Acrostichals totally wanting, presutural dc weak and hardly distinguishable from the hairs, of the postsutural ones, only the last two 2re long and easily recognisable, n = 4, st = 1 : 1 : 1, scutellum with three pairs of marginals and 1 pair of discals. Propleura rare, prosternum with a few hairs, one long and strong pp and pst each. Wings hyaline, b—m weakly clouded, veins dark brown, basicosta yellow, costal spine small, cs_{1-5} = 7 : 3 : 6 : 1.8 : 0.6, r_1 dorsally bare, r_{4-5} dorsally with setae half-way to r—m, squama

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white, halter brown. Legs black, fore-tibia with three short av and 1 long submedian pv; mid-femur without ctenidium, mid-tibia in the apical half on both inner edges with densely placed hairs which partly surpass the tibial diameter, 2 long ad and 1 submedian pd, av and pv; hind-tibia in the lower two-thirds, on both inner edges with a tuft of long hairs which surpass the tibial diameter 2—3 times, 2 pd, 2 long and one shorter ad, av wanting.

Abdomen grey pollinose, with a broad median longitudinal stripe and lateral dark spots on the second to fourth visible tergites. No median marginals on the 2nd tergite; 5th sternite with a deep and lyra-shaped emargination, with spinulose bristles on the apical inner margins. Genital segments reddish, the first with 4 long marginal bristles. Cerci slightly curved, phallosome as in fig. 3.

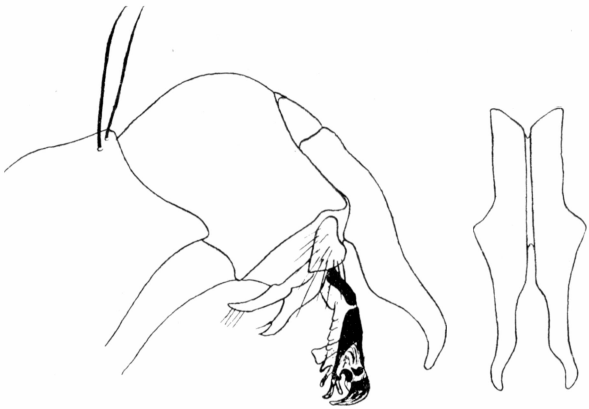

Fig. 3. *Sarcophaga par* n. sp.
Lateral and frontal view of hypopygium

Length: 13 mm.
Female: Not known.
Locality: 1 male from Ngorongoro, 28. 11. 1952.

40. ***Sarcophaga msingiensis*** n. sp.

Msingi, 1.—19. V. 1952, 1 ♂ (returned).

S. msingiensis shows some similarity to *S. langi Curran* which is also, with respect to the armature of the mid-tibia, intermediate between *S. vanriebeecki Zpt.* and the species *S. subdistinguendus Zpt.* and *S. theseus Zpt.* The inner side of this tibia is covered with a tuft of hairs, the longest of which just attain the tibial diameter. The deciding feature is again the hypopygium which, in general structure, is closely related to those of *S. vanriebeecki*, *S. langi* and *S. pra* described in this paper.

Fig. 4. *Sarcophaga msingiensis* n. sp.
Lateral and frontal view of hypopygium

Male — Head silvery pollinose, frontal stripe black, distinctly widened towards the antennal groove where it is twice as wide as near the tip of the ocellar triangle, frons at the narrowest point between $^1/_4$ and $^1/_3$ ($^7/_{25}$) of eye length, parafrontalium at the tip of the ocellar triangle measuring about $^2/_3$ of the frontal stripe; parafrontals reach the

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apical margin of the second antennal joint, iv long and strong, ev not distinctly separated from the postocular bristles, pvt well developed, oc relatively weak, proclinate, f strong and reclinate, parafrontalia beset with thin black hairs, parafacialia with an outer row of hairs which gradually increnase in size towards the buccae. Antennae black, third antennal joint a little more than 3 times as long as the second, palpi black, slender, slightly dilated and curved terminally; buccae almost half as high as the eye, densely beset with long whitish hairs, only the anterior upper part with short black hairs as well as the outer part of the occiput.

Thorax grey pollinose, with three broad black stripes on the notum. One pair of presutural acrostichals well developed, dc = 5 + 5, but only the last two long and thick, n = 4, st = 1 : 1 : 1, scutellum with three long marginal bristles and one pair of long discals. Propleura bare, prosternum with a few hairs, one long and strong pp and pst each. Wings hyaline, veins dark brown, basicosta yellow, costal spine wanting, cs_{1-5} = 8.5 : 4 : 6.5 : 2 : 0.8, r_1 dorsally bare, r_{4-5} dorsally with setae half way to r—m, squama white, halter yellow-brown. Legs black, fore-tibia with three short av and one long submedian pv; mid-femur without ctenidium; apical half of mid-tibia on both inner edges with dense hairs, the longest of which attain the tibial diameter, 1 submedian ad, a row of shorter and thinner pd as well as 1 long submedian pd, 4 pv and submedian av; hind-tibia ventrally with a brush of long hairs which clearly surpass the tibial diameter, 2 very long pd, 2 long and several shorter ad, 1 submedian av.

Abdomen with chess board pattern, grey pollinose. No median marginals on the second abdominal tergite, fifth sternite deeply emarginated and with a comb-like arrangement of spines on the inner edges. Genital segments reddish, the first with a few marginal bristles, cerci with a hook-like tip, phallosome as in figure.

Length: 15 mm.
Female: Not known.

41. *Sarcophaga natalensis* Zumpt, J. ent. Soc. S. Africa, **14**, 185, 1951.
Aden, Arabia, 3. XII. 1951, 1 ♂.

Up to know, only two males from the Natal coast were known. This record from the south-western corner of Arabia is therefore remarkable, although, not very surprising since most of the Ethiopian *Sarcophaga* species have a very wide distribution.

42. *Sarcophaha arno* Curran, Amer. Mus. Nov., 727, p. 14, 1934.
Machame, 14. V. 1952, 1 ♂.
Usangi, Pare Mts. 25. V.—8. VI. 1952, 1 ♂.
Probably everywhere in the Ethiopian region, but not common.

43. *Sarcophaga haemorrhoidalis* (Fallen). Vet. Acad. Handl., 1816 (2), p. 237, 1817.
Ngaruka, 29. I.—14. II. 1952, 2 ♂.
Msingi, 9. VI.—17. VI. 1952, 1 ♂.
A cosmopolitian species which has followed man all over the world.

44. *Sarcophaga inaequalis* Austen, Trans. Zool. Soc. London **19**, 99, 1909.
Usangi, Pare Mts., 25. V.—8. VI. 1952, 1 ♂.

In my key to the Ethiopian *Sarcophaga*-species (J. Ent. Soc. S. Africa, **14**, 171 ff., 1951), *S. inaequalis* m. nec Austen refers to *S. arno Curran*, whereas *S. falciforceps Vill.* 1929 is synonymous with *S. inaequalis Austen*, 1909, the latter having the priority (**syn. nov.**). I wish to thank Dr. F.

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van Emden of the Commonwealth Institute of Entomology, London, for his help in solving this question.

45. *Sarcophaga hirtipes* Wiedemann, Außereurop. Zweifl. Ins., **2**, 361, 1830.
Kware nr. Moshi, 27. XII.—13. I. 1952, 1 ♂.
Ngaruka, 29. I.—14. II. 1952, 3 ♂.
Probably everywhere in Africa, furthermore known from the Mediterranean and the Oriental Region. Perhaps to be regarded as a Southern subspecies of *S. albiceps* Meigen, 1826.

46. *Sarcophage mulaba* Curran, Amer. Mus. Nov., 727, p. 16, 1934.
Kware nr Moshi, 27. XII.—13. I. 1952, 1 ♂.
Probably everywhere in the Ethiopian region. *S. mulaba* is identical with *S. inzi* Curran, 1934, and *S. dux var. aegyptiaca* Salem, 1935 (syn. nov.).

47. *Sarcophaga tibialis* Macquart, Dipt. exot., Suppl. **4**, 232, 1850.
Dar-es-Salaam, 11.—20. XII. 1951, 1 ♂.
Kware nr. Moshi, 27. XII.—13. I. 1952, 1 ♂.
Ngaruka, 29. I.—14. II. 1952, 3 ♂.
Probably everywhere in Africa, also known from Madagascar and the Palaearctic region.

48. *Poecilometopa spilogaster* (Wiedemann), Außereurop. Zweifl. Ins., **2**, 362, 1830.
Msingi, 1.—19. V. 1952, 1 ♂, 1 ♀.
Usangi, Pare Mts., 25. V.—8. VI. 1952, 2 ♂.
This species had been recorded before only from the Southern Africa.

Tribe *Agriini*

49. ? *Wohlfahrtia pattoni* Salem, Publ. Fac. Med. Egypt. Univ., **13**, 801, 1938.
Ngaruka, 29. I. —14. II. 1952, 1 ♂.
This identification has to remain doubtful. Type locality of *W. pattoni* is Egypt where it has been found in the Kharga Oasis, Bir Kassaba, Silva Oasis and Wadi Assiout. I have not yet been able to obtain specimens from these places.

50. ? *Wohlfahrtia triquetra* Séguy, Mem. Acad, Sci. Inst. France, **62**, 4, 1935.
Massaua, Eritrea, 1. XII. 1951, 1 ♀.
This specimen, perhaps, belongs to *W. triquetra* described from Tibesti, Central Sahara.

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