

INSTITUT DES PARCS NATIONAUX  
DU CONGO BELGE

INSTITUUT DER NATIONALE PARKEN  
VAN BELGISCH CONGO

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# Exploration du Parc National Albert

MISSION G. F. DE WITTE (1933-1935)

FASCICULE 83

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# Exploratie van het Nationaal Albert Park

ZENDING G. F. DE WITTE (1933-1935)

AFLEVERING 83

**CHIRONOMIDÆ**

(DIPTERA NEMATOCERA)

BY

PAUL FREEMAN (London)



BRUXELLES  
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# CHIRONOMIDÆ

## (Diptera Nematocera)

BY

PAUL FREEMAN (London)

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There are about 7.000 specimens in the three collections included in this report. Out of the 58 species mentioned, 14 are described as new. I have taken the opportunity of commenting on the limits of some of the genera and of introducing some new synonymy.

The study of the African *Chironomidæ* is rendered difficult by the large number of species and genera described by KIEFFER, the types of which are lost. Out of 252 species described by him from the Ethiopian Region (excluding Seychelles) the types are available of only about 65. Many of the remainder were described from females and in those species in which there is no wing pattern may never be identifiable. Where he has figured the male hypopygium or described a wing pattern, identification is possible. In addition he described about 30 genera from African material and few of these have since been recognised.

GOETGHEBUER has described 82 African species, but his types are available for study in the Musée royal du Congo Belge (Tervueren).

It is only by study of large collections such as the present one that it is possible to elucidate the identity of KIEFFER's species and genera. I am therefore particularly grateful to the President of the « Institut des Parcs Nationaux du Congo Belge », for making this collection available to me.

All the localities between [ ] are outside the boundaries of the Park.

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(\*) With species of the Mission DAMAS (1935) and Collection L. LIPPENS (1936).

## TANYPODINÆ.

Genus **TANYPUS** MEIGEN.

KIEFFER has described two species from Africa belonging to this genus. GOETGHEBUER later described three species, but two of these are redescriptions of KIEFFER's species, so that the total number of species is three. Specimens of all are in the present collection. Most of the species placed by KIEFFER in *Tanypus* are now placed in *Pentaneura*; he used the genera *Protenthes* and *Trichotanypus* for his two species which are now put in *Tanypus*.

### **Tanypus brevipalpis** KIEFFER.

*Protenthes brevipalpis* KIEFFER, 1923, Ann. Soc. ent. Fr., **92** : 187.

*Tanypus dewulfi* GOETGHEBUER, 1935, Rev. Zool. Bot. Afr., **27** : 353, syn. nov.

Mission G. F. DE WITTE : Kamande (lac Édouard), 925 m, 9-15.XI.1933, 24 ♂, 31 ♀; Vitshumbi (lac Édouard), 925 m, 17.IX-1.XI.1933, 1 ♂, 31 ♀.

Mission H. DAMAS : Kamande, 925 m, 8.V.1935, 28 ♂, 47 ♀.

A series recently sent to me from the Anglo-Egyptian Sudan by Mr. E. T. M. REID has shown that GOETGHEBUER's name is to be regarded as a synonym of *brevipalpis*. This species is not unlike *guttatipennis* but can be distinguished from it and from *lacustris* by the broad pale margin to the mesonotum and by the extremely short mouthparts.

### **Tanypus guttatipennis** GOETGHEBUER.

*Tanypus guttatipennis* GOETGHEBUER, 1935, Rev. Zool. Bot. Afr., **27** : 354.

Mission G. F. DE WITTE : Kamande (lac Édouard), 925 m, 9-15.XI.1933, 2 ♂, 14 ♀.

Mission H. DAMAS : Kamande, 925 m, 8.V.1935, 2 ♂, 5 ♀; Kalondo (Kivu), 1.750 m, 6-9.VIII.1935, 2 ♂, 5 ♀; lac Mokoto, c. Kishale, 1.470 m, 23.IX.1935, 2 ♀.

This species can be distinguished from *brevipalpis* by the absence of the pale thoracic margin, both of them can be distinguished from *lacustris* by the absence of a well formed row of dark spots along the costal margin. The mouthparts are normal and the palpi are distinguishable.

### **Tanypus lacustris** KIEFFER.

*Trichotanypus lacustris* KIEFFER, 1913, Voy. ALLUAUD et JEANNEL Afr. Or., Ins. Dipt., **1** : 13.

*Tanypus maculosipennis* GOETGHEBUER, 1934, Rev. Zool. Bot. Afr., **25** : 194, syn. nov.

Mission H. DAMAS : Kalondo (Kivu), 1.750 m, 6-9.VIII.1935, 1 ♂, 10 ♀.

The new synonymy is based on my examination of the type series of KIEFFER's species in the Muséum national d'Histoire naturelle (Paris). This species differs from the other two by the much better developed wing pattern; the main difference lies in the presence of a row of strong dark spots along the costal margin.

There is material in the British Museum from Nigeria, Kenya, Uganda, Nyasaland and Natal.

Genus **PROCLADIUS** SKUSE.

*Procladius* has not been used before for African species; the six species already described by KIEFFER and GOETGHEBUER were placed by both authors in *Trichotanypus*. I am following EDWARDS' views on the naming of this genus.

**Procladius umbrosus** GOETGHEBUER.

*Trichotanypus umbrosus* GOETGHEBUER, 1935, Rev. Zool. Bot. Afr., **27** : 356.

Mission G. F. DE WITTE : Rutshuru, 1.285 m, 15-25.IX.1933, 1 ♀; Vitshumbi (lac Édouard), 925 m, 27.IX-8.X.1933, 1 ♂; Kamande, 925 m, 9-15.XI.1933, 1 ♂.

Mission H. DAMAS : Kamande, 925 m, 8.V.1935, 2 ♂; Ishango, 925 m, 1.VI.1935, 17 ♂, 12 ♀; lac Kibuga (Sud Rutshuru), 1.052 m, 27.VII.1935, 10 ♀; Kalondo (Kivu), 1.750 m, 6-9.VIII.1935, 61 ♂; Kimboho, 925 m, 28.XI.1935, 1 ♀.

Collection L. LIPPENS : Katakunda (lac Édouard), 925 m, 5.III.1936, 1 ♂; riv. Rwindi (lac Édouard), 925 m, 17.IV.1936, 2 ♂.

There is a good deal of material of this species in the British Museum from Kenya and it is probably a common E. African species. It can be distinguished from the other African species by the dark colouration and dark shaded wings especially in the female.

Genus **CLINOTANYPUS** KIEFFER.

I am synonymising the three previously described African species as stated below. Besides *C. niligenus* there is a single female of a second species which I do not wish to describe until more material is available because of the existence of four specimens in the British Museum which either indicate that the species is intensely variable or else that there is a species complex. This species is small and black with yellow markings on the legs.

**Glinotanypus niligenus** KIEFFER.

*Clinotanypus niligena* KIEFFER, 1923, Ann. Soc. ent. Fr., **92** : 186.

*Clinotanypus nigripalpis* GOETGHEBUER, 1935, Rev. Zool. Bot. Afr., **27** : 351, syn. nov.

*Clinotanypus nigrovittatus* GOETGHEBUER, 1935, Rev. Zool. Bot. Afr., **27** : 352, syn. nov.

Mission G. F. DE WITTE : Vitshumbi, 925 m, IX-X.1933, 1 ♀.

Mission H. DAMAS : Kamande, 925 m, 9.II.1935, 1 ♂; Ishango, 925 m, 3.VI.1935, 1 ♀; lacs Mokoto, c. Kishale, 1.750 m, 23.IX.1935, 1 ♂.

Collection L. LIPPENS : Katakunda (Sud lac Édouard), 925 m, 5.III.1936, 2 ♂; riv. Rwindi (Sud lac Édouard), 1.000 m, 17.IV.1936, 14 ♂; Vitshumbi, 925 m, 20.IV.1936, 10 ♂, 2 ♀.

The long series of this species taken both in this Park and in the « Parc National de l'Upemba » (dealt with in another Report), have shown that GOETGHEBUER's two species are really the two sexes of a single species as he suggested might prove to be the case. The females do not differ in any significant way from the description given by KIEFFER of his species *niligena*; I am therefore regarding GOETGHEBUER's species as synonyms of it.

The species is quite variable in colouration, in the male the important features appear to be the presence of a round black spot in front of and another beyond each lateral mesonotal stripe; the stripes themselves may vary from being completely black to reddish with two or three black spots.

There is material in the British Museum from Nigeria, Anglo-Egyptian Sudan, Kenya, Uganda, N. Rhodesia, Orange Free State and Natal. The type locality is A.-E. Sudan, Shambe.

#### Genus **PENTANEURA** PHILIPPI.

I am following EDWARDS' interpretation of this genus. KIEFFER and GOETGHEBUER have described 28 species which are referable here. KIEFFER's species were described in the genera *Nilotanypus*, *Isoplastus*, *Tanypus* and *Protenthes*. GOETGHEBUER did not recognise the name *Pentaneura*, but used *Ablabesmyia* instead. I have described a further three species from Cape Province. I have recognised three of GOETGHEBUER's species in the present collection. In addition there are a number of specimens belonging to other species but which are in too poor condition to identify.

#### **Pentaneura tricolor** GOETGHEBUER.

*Ablabesmyia tricolor* GOETGHEBUER, 1935, Rev. Zool. Bot. Afr., **27** : 363.

Mission H. DAMAS : Ishango, 925 m, 1.VI.1935, 3 ♀; Kalondo (Kivu), 1.750 m, 6-9.VIII.1935, 2 ♂, 1 ♀; lac Mokoto, c. Kishale, 1.750 m, 23.IX.1935, 1 ♀.

Easily distinguished from other African species except *P. trifascia* FREEMAN by the cross-banded appearance of the thorax; separated from this species by the banded legs, which in *trifascia* are unmarked. It is a widely distributed and not uncommon species; there are specimens in the British Museum from Anglo-Egyptian Sudan, Nigeria, and Tanganyika.

**Pentaneura dusoleili** GOETGHEBUER.

*Ablabesmyia dusoleili* GOETGHEBUER, 1935, Rev. Zool. Bot. Afr. **27** : 359.

*Pentaneura dusoleili* FREEMAN, 1953, Proc. R. ent. Soc. Lond., (B), **22** : 128.

Mission G. F. DE WITTE : lac Magera, 2.000 m, 3.III.1934, 2 ♀; Kalondo (lac Ndaraga, Mokoto), 1.750 m, 22-27.III.1934, 1 ♀.

Mission H. DAMAS : Kalondo (Kivu), 1.750 m, 6-9.VIII.1935, 1 ♀.

As explained in my 1953 paper my interpretation of this species is provisional only and must await examination of the type for confirmation. It can be recognised by the shape of the large spot in cell  $R_5$  and by the heavily banded legs. It is a common and widely distributed species.

**Pentaneura rutshuruensis** GOETGHEBUER.

*Ablabesmyia rutshuruensis* GOETGHEBUER, 1935, Rev. Zool. Bot. Afr., **27** : 362.

Mission G. F. DE WITTE : Rutshuru, 1.285 m, 23-28.XII.1933, 1 ♂, 3 ♀.

Separable from the other pale species so far described from Africa by the darkening over the cross-vein.

**ORTHOCLADIINÆ.**

Unlike the Palæartic Region, the Ethiopian Region has comparatively few species belonging to this subfamily. The genus *Cricotopus* is fairly well represented but the other genera have scattered species only and are mostly to be found in the mountainous parts of East Africa and in South Africa. It is possible that more intensive collecting would show that there are more species than appears from the existing collections. However, very large collections made at light in Anglo-Egyptian Sudan by MM. D. J. LEWIS and E. T. M. REID, which should contain a good sample of the fauna, include only an insignificant proportion of specimens belonging to the *Orthocladinæ*. This is in agreement with the findings of THIENEMANN and BRUNDIN for Northern Europe, where they found that the *Orthocladinæ* were predominant in the colder waters and in the spring and autumn.

Genus **METRIOGNEMUS** VAN DER WULP.

GOETGHEBUER has described one species, mentioned below, I have added a further three and in this report add two more. They are all very similar to Palæartic species and have been described from the mountains of E. Africa and from Cape Province.



**Metriocnemus dewulfi** GOETGHEBUER.

*Metriocnemus dewulfi* GOETGHEBUER, 1936, Rev. Zool. Bot. Afr., **28** : 491.

Mission G. F. DE WITTE : Rutshuru, 1.285 m, 23-28.XII.1933, 7 ♂, 3 ♀.

This is a small species with reduced macrotrichia on the wing membrane distinguishing it from *M. scotti* FREEMAN. It is known only from Rutshuru.

**Metriocnemus conicus** n. sp.

(Fig. 1 a.)

A large blackish species belonging to *Metriocnemus* in its strictest sense, but differing from the other species by the absence of anal point (possibly broken ?), pale shoulders and pale hairs on thorax and abdomen.

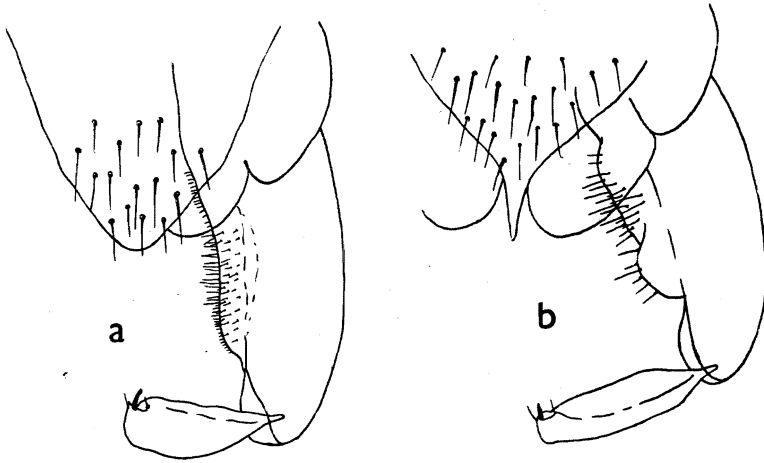


FIG. 1. — Hypopygia of *Metriocnemus* n. spp.

(a) *M. conicus*; (b) *M. wittei*.

Male. — Wing length 3 mm.

Head brownish black, palpi rather long, segment 2 one and a third times as long as segment 3 which is subequal to 4; eyes bare, without dorsal spur, vertex with tufts of golden brown scale-like hairs; antennal plumes dark, A.R. about 1.8. Thorax mainly black; mesonotal stripes dull, blackish and separated; shoulders, lines of bristles, lateral margins, apex of scutellum, pleural membrane, wing bases and prothorax, yellowish and pruinose. Acrostichal bristles golden brown, uniserial; dorso-centrals also golden brown, irregularly biserial and tending to disappear on shoulders.

Legs dark brown, L.R. of anterior legs about 0,75, posterior tarsi missing, pulvilli and empodium both absent. Wings with membrane thickly clothed with macrotrichia which are numerous in cell  $M_1$  right to the wing base and are present all over cell  $M_4$  and anal cell.  $R_{2+3}$  nearer to  $R_1$ , costa produced,  $R_{4+5}$  ending beyond  $M_4$ ,  $Cu_1$  not bent, anal vein passing fork; stem vein and squama abraded but both probably hairy. Halteres yellow, stem slightly brownish. Abdomen black with some pruinosity along the mid-dorsal line and at the incisures; hairs pale. Hypopygium (fig. 1 a) apparently lacking anal point, IXth tergite conical, inner lobe of coxite hardly developed, style fairly thick with a small spine at apex.

Holotype male, Mission G. F. DE WITTE : Ruanda : Sabinjo (volc.), vall. Rwebeya, 3.000 m, 22.IX.1934.

**Metriocnemus wittei** n. sp.

(Fig. 1 b.)

Easily distinguished from *M. conicus* and the other African species so far described by the all black thorax and halteres. It belongs to *Metriocnemus* sensu stricto.

Male. — Wing length 2,5 mm.

Head black, palpi broken; eyes normal, bare; vertex with a few whitish hairs but lacking scale tufts; antennal plumes black, A.R. about 2,5. Thorax completely black, slightly shining, somewhat pruinose along the hair lines; acrostichal bristles golden yellow and more or less uniserial, dorso-centrals golden yellow and irregularly triserial becoming more regular and numerous on the shoulders. Legs blackish with black hair; front L.R. 0,7, hind L.R. 0,45 or slightly less, pulvilli absent, empodium well developed. Wings densely and evenly clothed with macrotrichia as in *M. conicus*, stem vein and squama with well developed long hairs;  $R_{2+3}$  ending nearer  $R_1$ , costa produced,  $R_{4+5}$  ending before level of tip of  $M_4$ , posterior fork fairly narrow,  $Cu$  evenly curved, anal vein reaching fork. Halteres black. Abdomen black, very slightly paler at the incisures, hairs mostly blackish. Hypopygium (fig. 1 b) with well developed bare anal point, inner lobe of coxite better developed than in *M. conicus*, style long and narrow.

Holotype male and paratype, 1 ♂, Mission G. F. DE WITTE : lac Magera, 2.000 m, 1.III.1934.

Genus **CRICOTOPUS** VAN DER WULP.

I am following EDWARDS in his use of this genus for those species with bare wing membrane, hairy eyes and small thoracic bristles. Eighteen African species have been described falling in this genus including six placed by KIEFFER in *Trichocladus*.

**Cricotopus bicinctus** var. **plumbeus** GOETGHEBUER.

*Cricotopus bicinctus* var. *plumbeus* GOETGHEBUER, 1934, Rev. Zool. Bot. Afr., **25** : 201.

Mission G. F. DE WITTE : lac Bulero (Bitale), 1.862 m, 10-11.IX.1934, 2 ♂.

Mission H. DAMAS : Ishango, 925 m, 3.VI.1935, 1 ♀.

This variety is extremely similar to the Palæartic species *C. bicinctus* and has been considered by GOETGHEBUER to be worth only varietal status. I am not certain that he was right but it is convenient to leave it as a variety at present until more is known about the African species of *Cricotopus*.

The variety seems to be fairly widely spread and I have recorded it from Cape Province.

Genus **LIMNOPHYES** EATON.

EDWARDS regarded *Limnophyes* as only a subgenus of his large genus *Spaniotoma* (*Hydrobænus*). However, as it is fairly well defined I prefer to treat it as a full genus.

GOETGHEBUER has described one species from a mixed series and I have since described the other which is the species mentioned below.

**Limnophyes spinosa** FREEMAN.

*Limnophyes spinosa* FREEMAN, 1953, Proc. R. ent. Soc. Lond., (B), **22** : 206.

*Limnophyes brevis* GOETGHEBUER, 1934, Rev. Zool. Bot. Afr., **25** : 203 (*pro parte*).

Mission G. F. DE WITTE : riv. Bishakishaki (Kamatembe), 2.100 m, 11-22.IV.1934, 29 ♂, 3 ♀; Kanyabayongo (Kabasha), 1.760 m, 6.XII.1934, 1 ♂, 1 ♀; Nyarusambo (Kikere), 2.226 m, 28-29.VI.1934, 3 ♂; volc. Gahinga, 3.475 m, 19.IV.1934, 1 ♂, 1 ♀; Kundhuru-ya-Tshuve, 2.600 m, 15.IX.1934, 1 ♂; Kibati, 1.900 m, 18-19.I.1934, 2 ♂; Ruanda : Sabinyo (volc.), vall. Rwebeya, 3.000 m, 22.IX.1934, 1 ♂; lac N'Gando, 2.400 m; 8.III.1935, 6 ♂; Kitondo, 2.000 m, 7-23.I.1934, 25 ♂, 1 ♀; Kashwa, 2.000 m, 7-23.I.1935, 5 ♂; Mushumangabo, 2.075 m, 14.VI.1935, 1 ♂; Ruanda : volc. Visoke, 2.800-3.300 m, 13-14.II.1935, 13 ♂, 1 ♀; Ruanda : Nyabitsindi, 2.400 m, 18.II.1935, 1 ♂; Karisimbi, riv. Bikwi, 3.000 m, 27.II.1935, 5 ♂, 1 ♀.

This species has a wide distribution; the specimens misidentified by GOETGHEBUER in his description of *Limnophyes brevis* were captured at Kisantu (Léopoldville), the type series is from Western Cape Province and the present material is from Parc National Albert.

The dark colour and the male hypopygium lacking anal point make it easily separable from *L. brevis*.

Genus **PSEUDOSMITTIA** GOETGHEBUER.

I am following GOETGHEBUER in splitting up the large genus *Smittia* as used by EDWARDS. *Pseudosmittia* includes those species of EDWARDS' Groups D and E which have *Cu* bent. There are three African species described by me, two from Western Cape Province and the third from Kilimandjaro and the Aberdare Range.

***Pseudosmittia conigera*** FREEMAN.

*Pseudosmittia conigera* FREEMAN, 1954, Proc. R. ent. Soc. Lond., (B), **23** : 176.

Mission G. F. DE WITTE : Kanyabayongo (Kabasha), 1.760 m, 6.XII.1934, 11 ♂; Kivu : Luofu, 1.700 m, 6.XII.1934, 1 ♂, 1 ♀; Kitondo (près Gandjo), 2.000 m, 7-23.I.1935, 1 ♂, 1 ♀.

Readily distinguished from *P. capicola* by the high antennal ratio and from *P. salti* by the small lobe to the male coxite. The type series is from Western Cape Province.

**CHIRONOMINÆ.**

The *Chironominæ* is the dominant subfamily of the *Chironomidæ* in the African fauna. KIEFFER (1921, Ann. Soc. ent. Fr., **90** : 1-56) considered there to be 77 genera in the subfamily, and, in this and the ensuing two papers of the series, he described tropical African species belonging to 39 of them. GOETGHEBUER (1936, Rev. Zool. Bot. Afr., **28** : 453-492) describes a further three genera, making the total of genera 42.

Of the 39 genera of KIEFFER with African species, 25 are described as new in the key he gives in the 1921 paper. Most of them begin with one or other of the prefixes « *Kribi-* » and « *Nilo-* », depending on whether they were described from specimens from Kribi in the French Cameroons or from the Nile in the Southern Anglo-Egyptian Sudan.

GOETGHEBUER has described 82 species from the Belgian Congo but he recognised only 3 of the 25 new genera described by KIEFFER; these are *Kribiomimus*, *Nilodorum* and *Calochironomus*. I have examined more than 10.000 specimens from various parts of the Ethiopian Region, and also a collection containing hundreds of thousands of unmounted specimens taken at light at Khartoum by Mr. D. J. LEWIS. In all these I have only been able to recognise 10 of KIEFFER's new genera, 3 being the same as those found by GOETGHEBUER. These additional genera are : *Nilomyia*, *Kribiodorum*, *Kribiocosmus*, *Kribiocallis*, *Nilodosis*, *Kribiodoxa*, *Kribiocharis*.

It is hoped to report more fully on these elsewhere, but it can now be stated that *Kribiodorum* is a synonym of *Zavreliella*, the species being similar to the North American *Z. perpulcher* MITCHELL, and that *Kribiocallis* is a synonym of *Stictochironomus*.

I am fairly certain of the identity of these 10 genera, and my specimens agree quite well with KIEFFER's figures and descriptions. However, most of the material which I have examined seems to belong to species not described by him, only isolated specimens belonging to species of his; there are exceptions to this, *Nilodorum brevibucca* being one. This suggests that many species are rare, or at any rate rarely captured and that when even bigger collections are available, preferable taken at light over a long period, then all of his genera and many of his species may be identified.

It seems that much of KIEFFER's work was erratic, and that although some genera may be valid, others are synonyms either of previously described genera, or of other genera described in the same paper. The characters used in the separation of the genera are often quite small, rendering it difficult to visualise each genus without examination of included species, preferably the type species. One difficulty is that out of 131 species in this subfamily, 64 are described from females. It is possible that these will never be recognised, especially as his material was all preserved in spirit and was for this reason unreliable for colour.

Species placed by KIEFFER in certain well known genera, recently redefined by EDWARDS and GOETGHEBUER, such as *Microtendipes* and *Chironomus* sensu stricto, clearly do not belong to these genera. For instance, one of the characters of *Microtendipes*, as used now, is that the scale of the anterior tibia has no spur and is rounded. But in his 1921 paper KIEFFER states that the front spur is long and gradually drawn out to a point. Again, his species *Chironomus niloticus* has the pronotum reduced instead of being collar-like as in the typical *Chironomus* species.

Another feature of KIEFFER's 1921-3 papers which is very puzzling is the apparent absence of common species of *Chironomus* sensu stricto and the abundance of species of unknown genera such as *Kribiocharis*, many of them with patterned wings and banded legs. It will take years of study and collection of material before all his genera can be redefined.

GOETGHEBUER has placed two Palæartic species into two of KIEFFER's genera, namely *Kribioxenus brayi* GOETGHEBUER and *Kribiodosis* as a subgenus of *Paratendipes* for *P. nubilus* MEIGEN. The first of these two must be wrong because *Kribioxenus* was described to include a species with a single spur on the posterior tibia, whereas *brayi* has two; the second one may be correct but it is impossible to be certain without examining the type species *K. stictoptera* KIEFFER.

It has been the usual practice of authors to divide the subfamily into two tribes, the *Chironomini* and the *Tanytarsini*, based on the presence or absence of macrotrichia on the wing membrane. EDWARDS (1931, Dipt. Pat.

S. Chile, 2 : 310) pointed out that although *Pentapedilum* fell into the *Tanytarsini* on account of its hairy wings, on characters of wing venation and male hypopygium it fitted better into the Chironomini near *Polypedilum*. I am proposing to accept this, but it has not been adopted by GOETGHEBUER.

Apart from a few aberrant forms, the first main division of both tribes has been based on the conformation of the posterior tibial combs and spurs. KIEFFER then used characters of the pulvilli, empodium, anterior tibial spur, female antennæ, male hypopygium, wing colouration, etc. It was left to EDWARDS to point out that the degree of reduction of the prothorax offered good characters in the *Chironomini*.

At first sight, the degree of reduction of the pronotum appears to be a more fundamental character than the conformation of the tibial spurs and it can be argued that this should take precedence in the classification. However, it seems that this is not necessarily so. For example, the genera *Stenochironomus* and *Microtendipes* both show great reduction of the prothorax and the mesonotum is cone-shaped, projecting over the head. There is some resemblance in the wing venation but little else to show that the two genera are allied. It is most satisfactory at present to separate the two on the number of tibial spurs and to consider the reduction of prothorax an example of parallel evolution. Additional evidence for this is provided by the tendency throughout the subfamily for the reduction of the prothorax.

I am not adopting the course suggested by EDWARDS of recognising only a few large genera, each with subgenera, species groups and series. Instead I prefer to follow GOETGHEBUER and recognise more genera. It is hoped to discuss the relationships of the various genera in more detail in a later publication elsewhere.

#### Genus **CHIRONOMUS** MEIGEN.

I am using *Chironomus* only for the large species with two tibial spurs on the posterior tibia, broad pulvilli and a collar-like pronotum which is incompletely divided in the middle. Further information is given under the genera *Dicrotendipes* and *Cryptochironomus*. The genus as thus restricted includes the *Chironomus plumosus* group and two other small groups separable on male hypopygial characters, *Einfeldia* and *Xenochironomus*.

#### **Chironomus (Chironomus) nivalis** FREEMAN.

*Chironomus nivalis* FREEMAN, 1954, Proc. R. ent. Soc. Lond., (B), 23 : 17.

Mission G. F. DE WITTE : lac Magera, 2.000 m, 1-3.III.1934, 14 ♂, 28 ♀.

Mission H. DAMAS : Kalondo (Kivu), 1.750 m, 6-9.VIII.1935, 1 ♀.

This is a wide spread species which can be distinguished from other species from the Ethiopian Region by the longitudinal pruinose band in the lateral stripe of the mesonotum. It is recorded from Cape Province, Natal, S.W. Africa, Nyasaland, Elisabethville. The new records suggest that it will probably be found over most of the eastern and southern parts of Africa.

**Chironomus (Chironomus) brunneus** FREEMAN.

*Chironomus brunneus* FREEMAN, 1954, Proc. R. ent. Soc. Lond., (B), **23** : 18.

Mission G. F. DE WITTE : lac Magera, 2.000 m, 1-3.III.1934, 40 ♂, 47 ♀.

This is another wide spread species but not as common as the last one; it is only recorded from Western Cape Province. It is a dark species lacking the pruinosity on the thorax which is so characteristic of *nivalis*.

**Chironomus (Chironomus) nairobii** KIEFFER.

*Chironomus nairobii* KIEFFER, 1913, Voy. ALLUAUD et JEANNEL Afr. Or., Ins. Dipt., **1** : 19.

Mission G. F. DE WITTE : lac Magera, 2.000 m, 1-3.III.1934, 8 ♂, 2 ♀; lac Édouard Sud, Vitshumbi, 925 m, 10.XI.1935-16.I.1936, 12 ♂.

Mission H. DAMAS : Kalondo (Kivu), 1.750 m, 6-9.VIII.1935, 1 ♂.

This is a pale greenish species with dark markings on the abdominal segments. Apart from these new records it is known only from Kenya. I have examined the type in Muséum national d'Histoire naturelle (Paris).

**Chironomus (Chironomus) bellus** GOETGHEBUER.

*Chironomus bellus* GOETGHEBUER, 1936, Rev. Zool. Bot. Afr., **28** : 471.

Mission G. F. DE WITTE : Rutshuru, 1.285 m, 4-5.I.1934, 1 ♂; Rutshuru, 1.285 m, 22.V-4.VI.1934, 1 ♂; Rutshuru, 1.285 m, 18-23. VI.1934, 1 ♂.

I have not seen the type of this species, but the identification is almost certainly correct. It is a pale insect with the abdomen green and unmarked by black; the prothorax is wider than in most species. There are specimens in the British Museum from Gold Coast, Nigeria, Kenya, Nyasaland, giving it a wide distribution.

**Chironomus (Einfeldia) palustris** KIEFFER.

*Chironomus palustris* KIEFFER, 1913, Voy. ALLUAUD et JEANNEL Afr. Or., Ins. Dipt., **1** : 16; FREEMAN, 1954, Proc. R. ent. Soc. Lond., (B), **23** : 18.

*Chironomus iricolor* KIEFFER, 1914, Ann. S. Afr. Museum, **10** : 264.

*Calochironomus oxylabis* KIEFFER, 1922, Ann. Soc. ent. Fr., **91** : 67.

Mission G. F. DE WITTE : Vitshumbi (lac Édouard), 925 m, 9.X-1.XI.1933, 1 ♂; Kamande (lac Édouard), 925 m, 9-15.XI.1933, 1 ♂, 1 ♀.

Mission H. DAMAS : Ishango, 925 m, 3.VI.1935, 1 ♂; Kalondo (Kivu), 1.750 m, 6-9.VIII.1935, 4 ♂, 6 ♀; lac Mokoto, c. Kishale, 1.750 m, 23.IX.1935, 1 ♀; embouch. Rutshuru (Sud lac Édouard), 925 m, 18.I.1936, 2 ♂.

The latest papers of KIEFFER and GOETGHEBUER place this species in *Calochironomus* on account of the clouded wings. As explained under the genus *Dicrotendipes*, the type species of *Calochironomus* appears to be the female of *Dicrotendipes forficula* KIEFFER. *C. palustris*, of which I have seen the type, is not a species of *Dicrotendipes* but it fits well into *Einfeldia*. The pronotum is large, collar-like and not completely divided and appendage 1 of the male hypopygium has a long, bare, hooked extension. The species is readily recognised in both sexes by the clouding both in the cells and along the veins; the body is yellowish and the abdomen has a central row of elongated spots; the anterior tarsus is strongly bearded in the male.

It is a common and wide spread species. There is material in the British Museum from Cape Province, Natal, S.W. Africa, Transvaal, Kenya, Anglo-Egyptian Sudan, Nigeria, French Sudan.

#### ***Chironomus (Einfeldia) tetraleucus* KIEFFER.**

*Chironomus tetraleucus* KIEFFER, 1914, Ann. S. Afr. Mus., 10 : 263.

Mission G. F. DE WITTE : Kalondo (lac Ndalaga, Mokoto), 1.750 m, 22-27.III.1934, 1 ♂.

Mission H. DAMAS : Kalondo (Kivu), 1.750 m, 6-9.VIII.1935, 7 ♂, 2 ♀.

This is a large species with body length as much as 12 mm. The abdominal segments have pruinosity arranged more or less in four patches and the front tarsi of the male have a dense brown beard; appendage 1 of the male hypopygium has a short hook at the apex.

The type series came from Orange Free State. The specimens in the present collection agree closely with material in the British Museum from Orange Free State, Natal and Cape Province.

#### ***Chironomus (Einfeldia) rostrifer* FREEMAN.**

(Fig. 2 a.)

*Chironomus rostrifer* FREEMAN, 1955, Explor. Parc Nat. Upemba (in the press).

Mission H. DAMAS : lac Kibuga (Sud Rutshuru), 1.052 m, 27.VII.1935, 1 ♂; Kimboho, 925 m, 28.XI.1935, 1 ♂; lac Édouard, Est Rwindi, 925 m, 15.I.1936, 1 ♂.



**Chironomus (Xenochironomus) ? ugandæ** GOETGHEBUER.

*Chironomus (Xenochironomus) ugandæ* GOETGHEBUER, 1936, Rev. Zool. Bot. Afr., **28** : 468.

Mission G. F. DE WITTE : Nzulu (Sake), 1.500 m, 1-14.II.1945, 4 ♂, 1 ♀; Kalondo (lac Ndalaga, Mokoto), 1.750 m, 22-27.III.1934, 1 ♀.

Mission H. DAMAS : Ishango, 925 m, 3.VI.1935, 2 ♂.

These specimens are not in very good condition and they are paler than the type series according to GOETGHEBUER's description. It will be necessary to compare them with the type to confirm the identification. The anal point of the male hypopygium is squarely truncated and appendage 1 atrophied but appendage 2 is well developed and furnished with long hairs.

**Genus CRYPTOCHIRONOMUS** KIEFFER.

EDWARDS has used the genus *Chironomus* to include practically all the species of the subfamily with bare wings. *Endochironomus*, *Stenochironomus*, *Polypedilum* and others were used to break this large genus into subgenera. The subgenus *Chironomus* sensu stricto was large and unwieldy and was broken up into groups and series; both *Limnochironomus* and *Cryptochironomus* appeared as groups only. The important characters in the definition of this subgenus were the presence of two hind tibial spurs, large pulvilli and a collar-like pronotum which was not completely divided in the middle. This definition fits the *plumosus* group of *Chironomus* but in most species of *Limnochironomus* and *Cryptochironomus* the pronotum is not collar-like and is divided in the middle at least by a suture.

As stated above under *Chironomus*, I am not proposing to follow EDWARDS in his use of such wide limits in generic definition but to restrict *Chironomus*. *Limnochironomus* I have dealt with under *Dicrotendipes*. *Cryptochironomus* I am raising to generic status and I am including in it other groups with reduced coxite appendages of the male hypopygium. The genus can be recognised by the flattened fifth tarsal segment of all legs including the front pair and reduced pronotum in both sexes. Males, of course, are readily recognised by the reduction of the hypopygial coxite appendages.

**Cryptochironomus lindneri** FREEMAN.

*Cryptochironomus lindneri* FREEMAN, 1954, Arch. Hydrobiol., **48** : 443.

*Cladopelma pseudolabis* KIEFFER, 1921, Ann. Soc. ent. Fr., **91** : 53.

Mission G. F. DE WITTE : Tshegera (Kivu), 1.460 m, 10-12.II.1934, 2 ♂, 1 ♀.

Mission H. DAMAS : 42 specimens of both sexes with following data : Kamande, 925 m, 31.I.1935 and 8.V.1935; Ishango, 925 m, 3.VI.1935; Hangi, 912 m, 27.V.1935; Kamande, 925 m, 10.VI.1935; lac Édouard Sud, Vitshumbi, 925 m, 10-16.I.1936.

Collection L. LIPPENS : Sud lac Édouard : Kamande, 925 m, 8.IV.1936, 2 ♂, 2 ♀.

When this species was transferred from *Cladopelma* to *Cryptochironomus* it required a new name on account of the use of *pseudolabis* by KIEFFER for a Palæartic species of *Cryptochironomus*. It is a common East African species, recognisable by its pale colour, dark anterior legs, and typical hypopygium adequately figured by KIEFFER.

***Cryptochironomus dewulfianus* GOETGHEBUER.**

*Chironomus (Cryptochironomus) dewulfianus* GOETGHEBUER, 1934, Rev. Zool. Bot. Afr., **25** : 198.

Mission H. DAMAS : Ishango, 925 m, 3.VI.1935, 1 ♂.

A greenish species with black markings, most easily distinguished by the structure of the male hypopygium : anal point long and narrow, only one appendage developed, slightly swollen at apex, styles narrow and bent near the middle. It is known only from this part of the Belgian Congo.

***Cryptochironomus acutus* GOETGHEBUER.**

*Chironomus (Harnischia) acutus* GOETGHEBUER, 1936, Rev. Zool. Bot. Afr., **28** : 470.

Mission G. F. DE WITTE : Kalondo (lac Ndalaga, Mokoto), 1.750 m, 22-27.III.1934, 1 ♂.

Mission H. DAMAS : Kamande, 925 m, 31.I.1935, 3 ♂.

The Kamande specimens are rather small for the species; they are in poor condition but appear to be structurally indistinguishable from the Kalondo specimen. The male hypopygium is quite characteristic, the styles being pointed at the apex and enlarged at the base, both coxite appendages are absent. Apart from these specimens I have seen others from Western Cape Province.

***Cryptochironomus forcipatus* FREEMAN.**

*Chironomus (Cryptochironomus) forcipatus* FREEMAN, 1954, Proc. R. ent. Soc. Lond., (B), **23** : 20.

Mission G. F. DE WITTE : lac Bulero, Bitale, 1.862 m, 10-11.XI.1934, 1 ♂.

The thorax of this species is green with black markings, the anterior legs and abdomen are black. This coloration distinguishes it from *ægyptius* KIEFFER which is structurally a somewhat similar species. The type was described from Western Cape Province.

**Cryptochironomus camelus** KIEFFER.

*Cryptochironomus camelus* KIEFFER, 1925, Bull. Soc. R. ent. Égypte, 1924 : 285.

Mission H. DAMAS : Ishango, 925 m, 3.VI.1935, 4 ♂, 2 ♀.

KIEFFER described this species from Egypt (Maadi) and drew attention to the peculiar cone shaped prominence on the mesonotum of the male. He said the female did not possess this cone. I have a long series taken at light in the southern Anglo-Egyptian Sudan by Mr. E. T. M. REID and some others taken at Khartoum by Mr. D. J. LEWIS, which agree closely with KIEFFER's description and with his figure of the male hypopygium, but the female thorax shows a similar cone. It seems probable that KIEFFER associated the female of another species with the males of *camelus*.

The species is readily recognised by the thorax, the cone of which has a bilobed apex. In addition, the antennal plumes are white, the legs have black markings and the front tarsi are bearded.

**Cryptochironomus ? monilis** FREEMAN.

*Chironomus (Cryptochironomus) monilis* FREEMAN, 1954, Proc. R. ent. Soc. Lond., (B), 23 : 19.

Mission H. DAMAS : Kamande, 925 m, 10.VI.1935, 24 ♂, 7 ♀.

The hypopygium of these specimens is similar to that of *monilis* but they are in very poor condition and it is not possible to be completely certain of the identification. The type series of *monilis* came from Western Cape Province and in these the colour is green with reddish stripes; there are no hypopygial coxite appendages and the female antenna is short, segments 3-5 being without necks. The wing length is only about 1,5 mm.

**Cryptochironomus ? diceras** KIEFFER.

*Cryptochironomus diceras* KIEFFER, 1923, Ann. Soc. ent. Fr., 92 : 163.

Mission H. DAMAS : Hangi, 912 m, 27.V.1935, 5 ♂, 3 ♀; Ishango, 925 m, 3.VI.1935, 14 ♂, 7 ♀; Kamande, 925 m, V-VI.1935, 3 ♂.

These specimens again are in very poor condition. The male hypopygium agrees with the figure given by KIEFFER of this species, but it is not possible to be certain of the identification without better material. The type series was from the Southern Sudan.

Genus **NILODORUM** KIEFFER.

*Nilodorum* KIEFFER, 1922, Ann. Soc. ent. Fr., **91** : 45; GOETGHEBUER, 1934, in LINDNER, Flieg. Pal., **3** (13c) : 18 (as a subgenus of *Tendipes* MEIGEN), and 1936, Rev. Zool. Bot. Afr., **28** : 464.

KIEFFER separated *Nilodorum* from the other two-spurred genera by the reduction of the mouthparts, all four segments of the palpi being much the same size and the labium short. In addition the heavily pruinose, smooth, rounded appearance of the mesonotum makes the group easy to recognise. The prothorax shows a greater degree of reduction than it does in *Chironomus* sensu stricto, being more like that of *Dicrotendipes* and *Cryptochironomus*. For these reasons I am considering it to be a distinct genus and not a subgenus of *Chironomus*.

Six species have been described from Africa but only two are known in the male sex. It is not unlikely that some of the other four are redescriptions of the females of the first two, especially as one of them, *N. brevivucca* KIEFFER is a widespread and abundant species. I am describing a new species (mentioned below) in the Upemba Report.

***Nilodorum brevivucca* KIEFFER.**

*Nilodorum brevivucca* KIEFFER, 1922, Ann. Soc. ent. Fr., **91** : 45.

There are more than 1,300 specimens, the localities and collectors are as follows :

Mission G. F. DE WITTE : Nzulu (Sake), 1,500 m, 9.II.1934; ile Tshegera (Kivu), 1,560 m, 10-12.II.1934; Vitshumbi (lac Édouard), 925 m, 22.IX-1.XI.1933; Rutshuru, 1,285 m, 25.XI-20.XII.1933; lac Mugunga-Bulengo, 1,560 m, 24.I.1934; Kamande (lac Édouard), 925 m, 9-15.XI.1933.

Mission H. DAMAS : Ishango, 925 m, 3.VI.1935; Kamande, 925 m, 8.V.1935; Kimboho, 925 m, 29.XI.1935; Katana, rive Ouest lac Kivu, 1,460 m, 3.X.1935; lac Édouard Sud, Vitshumbi, 925 m, 17-18.I.1936; Hangi, 912 m, 27.V.1935; Nord lac Kivu, Ngoma, 1,500 m, 2-5.IV.1935; Kisenyi, 1,500 m, 15.IV.1935; Ngoma (Kivu), 1,500 m, 17-19.IX.1935; Kalondo (Kivu), 1,750 m, 6-9.VIII.1935; lac Édouard Ouest, Bugazia, 912 m, 17-21.V.1935; lac Mokoto, c. Kishale, 1,750 m, 23.IX.1935.

Collection L. LIPPENS : Sud lac Édouard, Vitshumbi, 925 m, 15.IV.1936; riv. Rwindi, 1,000 m, 17.IV.1936; Kamande, 925 m, 8.IV.1936.

This is one of the dominant and commonest African species of the family. I have seen specimens from Anglo-Egyptian Sudan, Gaboon, Gold Coast, French Sudan, Cameroons, Uganda, Tanganyika, Northern and Southern Rhodesia, Orange Free State. It is readily recognised by the rounded pruinose mesonotum, bearded male tarsi and the broad racket shaped lower coxite appendages of the male.

**Nilodorum dewulfi** GOETGHEBUER.

*Nilodorum dewulfi* GOETGHEBUER, 1934, Rev. Zool. Bot. Afr., **25** : 196.

There are more than 300 specimens from the following localities :

Mission G. F. DE WITTE : lac Magera, 2.000 m, 3.III.1934; Vitshumbi (lac Édouard), 925 m, 27.IX-8.X.1933; Rutshuru, 1.285 m, 27.IX-20.XII.1933; île Tshegera (Kivu), 1.560 m, 12.II.1934; Nzulu (Sake), 1.500 m, 9.II.1934; lac Mugunga-Bulengo, 1.560 m, 28.I.1934.

Mission H. DAMAS : Kamande, 925 m, 10.VI.1935; Kimboho, 925 m, 29.XI.1935; lac Édouard Sud, Vitshumbi, 925 m, 10-14.I.1936; Katana, rive Ouest lac Kivu, 1.460 m, 3.X.1935; Ngoma, 1.460 m, 19-23.IX.1935; lac Édouard, Est Rwindi, 925 m, 15.I.1936; lac Kibuga, Sud Rutshuru, 1.052 m, 27.VII.1935; Ngoma (lac Biuniu), 1.500 m, 10.IV.1935.

Collection L. LIPPENS : Sud lac Édouard, Katakunda, 925 m, 5.III.1936; Kamande, 925 m, 8.IV.1936.

On the whole this is a smaller and darker species than *N. brevibuca* but there is a good deal of overlap and the only reliable distinction between the two lies in the male hypopygium. Appendage 2 is not racket-shaped although it is broadened, the apical margin is deeply indented.

This is much more restricted in its distribution than *brevibuca*. Apart from the specimens listed above, I have seen some from lac Upemba (reported elsewhere); the type locality is Katana (Kivu).

**Nilodorum elongatum** FREEMAN.

(Fig. 2 b.)

*Nilodorum elongatum* FREEMAN, 1955, Explor. Parc Nat. Upemba, fasc. 35 (in the press).

Type and paratypes in the « Parc National de l'Upemba » collection.

The specimens from the « Parc National Albert » are also paratypes.

Mission G. F. DE WITTE : Vitshumbi (lac Édouard), 925 m, 27.IX-8.X.1933, 7 ♂.

Collection L. LIPPENS : Sud lac Édouard, Vitshumbi, 925 m, 15.IV.1936, 1 ♂.

Genus **DICROTENDIPES** KIEFFER.

*Dicrotendipes* KIEFFER, 1913, Voy. ALLUAUD et JEANNEL Afr. Or., Ins. Dipt., **1** : 23; KIEFFER, 1922, Ann. Soc. ent. Fr., **91** : 63; KIEFFER, 1924, Ann. Soc. Sci. Bruxelles, **43** (1) : 256-60; KIEFFER, 1925, Bull. Soc. R. ent. Égypte, **1924** : 297; GOETGHEBUER, 1937, in LINDNER, Flieg. Pal., **3** (13 c) : 31.

*Limnochironomus* KIEFFER, 1920, Ann. Soc. sci. Bruxelles, **39** (1) : 166; EDWARDS, 1929, Trans. ent. Soc. Lond., **77** : 386 (as *Chironomus* subgen. *Chironomus* Group C); GOETGHEBUER, 1937, in LINDNER, Flieg. Pal., **3** (13 c) : 19; syn. nov.

*Calochironomus* KIEFFER, 1922, Ann. Soc. ent. Fr., **91** : 66; KIEFFER, 1925, Bull. Soc. R. ent. Égypte, **1924**, 290; GOETGHEBUER, 1937, in LINDNER, Flieg. Pal., **3** (13 c) : 19 (as subg. of *Chironomus*); syn. nov.

When KIEFFER erected the genus *Dicotendipes* the only character he mentioned was that the lower appendages of the male hypopygium were forked. He included one species only, *D. pictipennis* KIEFFER from East Africa, which is automatically the type species of the genus. In *D. cordatus* KIEFFER, a later described species with a broad black band and spots on the wings, appendage 2 is only heart shaped at the extremity.

In his description of *Limnochironomus* was the statement that appendage 2 was long, narrow, strongly curved, with the extremity enlarged and either simple or imperfectly bi- or trifold. The other characters mentioned, of proportions of pulvilli and spurs apply equally to *Dicotendipes*. KIEFFER has himself described a species of *Dicotendipes* with plain wings and both genera include species with appendage 2 imperfectly divided at the apex. There is, therefore, nothing left to separate them and I am treating *Limnochironomus* as a synonym of the earlier described *Dicotendipes*.

KIEFFER described *Calochironomus* in his key to the African genera, separating it from the other genera because appendage 2 was neither forked nor narrow and because the wings were spotted. However, out of six included species only one was known in the male sex; the type species, *C. fusconotatum* KIEFFER, was described from the female. His key bifurcates at couplet 32 into « males » and « females »; all three genera, *Dicotendipes*, *Calochironomus* and *Limnochironomus* appear in the « male » section, but only *Calochironomus* appears in the « female » section. Therefore, females of *Dicotendipes* with spotted wings will only run down to *Calochironomus*. *Calochironomus fusconotatum* and three other species agree quite closely with species of *Dicotendipes* and I am therefore treating *Calochironomus* as a synonym of this genus. The single species of *Calochironomus* of which the male was known to KIEFFER, *C. oxylabis* KIEFFER, is quite unlike the other species and is a redescription of *Chironomus (Einfeldia) palustris* KIEFFER.

EDWARDS (1929) includes *Limnochironomus* as a group only of his subgenus *Chironomus* sensu stricto. One of the principal characters of this subgenus is the collar-like undivided structure of the pronotum. Actually, in the Palæarctic species formerly placed in *Limnochironomus* and in the tropical African species of *Dicotendipes*, the pronotum is more reduced and is divided, much as it is in *Cryptochironomus*. *Dicotendipes* can be separated from *Cryptochironomus* in both sexes by the fifth segment of the anterior tarsi being cylindrical and not dorso-ventrally flattened. For these reasons I am treating *Dicotendipes* as a separate genus.

**Dicrotendipes pictipennis** KIEFFER.

*Dicrotendipes pictipennis* KIEFFER, 1913, Voy. ALLUAUD et JEANNEL Afr. Or., Ins. Dipt., **1** : 23.

*Calochironomus griseonotatus* KIEFFER, 1922, Ann. Soc. ent. Fr., **91** : 69, syn. nov.

*Calochironomus nilicola* KIEFFER, 1922, Ann. Soc. ent. Fr., **91** : 70, syn. nov.

*Dicrotendipes speciosus* KIEFFER, 1924, Ann. Soc. sci. Bruxelles, **43** (1) : 256; KIEFFER, 1925, Ann. Soc. R. ent. Égypte, **1924** : 299; syn. nov.

Mission G. F. DE WITTE : lac Magera, 2.000 m, 3.III.1934, 20 ♂, 1 ♀.

Mission H. DAMAS : Ishango, 925 m, 3.VI.1935, numerous males and females.

I have examined cotypes of *D. pictipennis* in Museum national d'Histoire naturelle (Paris). It is a common East African species with spotted wings and forked appendage 2 of the male hypopygium. It is most easily separated from *D. fusconotatus* by the presence of dark tips to the anterior femora only. The descriptions of the three species I have given as synonyms agree closely with *pictipennis* and I can see no reason for keeping them separate. *C. griseonotatus* and *nilicola* were both described from females.

**Dicrotendipes fusconotatus** KIEFFER.

*Calochironomus fusconotatus* KIEFFER, 1922, Ann. Soc. ent. Fr., **91** : 68.

*Calochironomus griseosparsus* KIEFFER, 1922, Ann. Soc. ent. Fr., **91** : 69, syn. nov.

*Dicrotendipes forficula* KIEFFER, 1925, Bull. Soc. R. ent. Égypte, **1924** : 298, syn. nov.

Mission G. F. DE WITTE : Kamande (lac Édouard), 925 m, 9-15.XI.1933, 8 ♂.

Mission H. DAMAS : numerous specimens of both sexes from : Kamande, 925 m, 31.I.1935, 8.V.1935, 10.VI.1935, 20.XI.1935; Ishango, 925 m, 3.VI.1935.

This is a second common East African species with spotted wings and forked lower male hypopygial appendages. It is most satisfactorily separated from the previous species by the presence of black tips to all the femora.

The original description and that of *C. griseosparsus* were both based on females but there is nothing to separate them from each other and KIEFFER's description of *D. forficula*.

**Dicrotendipes cordatus** KIEFFER.

*Dicrotendipes cordatus* KIEFFER, 1922, Ann. Soc. ent. Fr., **91** : 64.

*Paratendipes pictus* GOETGHEBUER, 1934, Rev. Zool. Bot. Afr., **25** : 199, syn. nov.

Mission H. DAMAS : embouch. Rutshuru (Sud lac Édouard), 925 m, 18.I.1936, 1 ♀.

A black insect with whitish tarsi, thorax covered with a characteristic pruinose « bloom », wing with a broad black band and two black spots basal to it. The lower male hypopygial appendages are heart shaped at the apices and not deeply forked as in the two previous species. GOETGHEBUER gave no reasons for placing his species in *Paratendipes*, and as the lower hypopygial appendages were broken off he did not realise that it would be better placed in *Dicrotendipes*. His description of the colour pattern agrees exactly with that given by KIEFFER. I have more material at my disposal which enables me to show that specimens agreeing with GOETGHEBUER's in pattern have the hypopygial structure figured by KIEFFER.

**Dicrotendipes** sp. indet.

Mission H. DAMAS : Kalondo (Kivu), 1.750 m, 6-9.VIII.1935, 1 ♂, 10 ♀.

Appendage 2 of the male hypopygium of this species is simple so that it would formerly have been placed in *Limnochironomus*. The material is in too poor condition for description.

Genus **ENDOCHIRONOMUS** KIEFFER.

*Endochironomus* KIEFFER, 1918, Ann. Mus. Hung., **16** : 69; EDWARDS, 1929, Trans. ent. Soc. Lond., **77** : 393; GOETGHEBUER, 1937, in LINDNER, Flieg. Pal., **3** (13 c) : 9.

*Demeijerea* KRUSEMAN, 1933, Tijdschr. Ent., **76** : 154; GOETGHEBUER, 1937, in LINDNER, Flieg. Pal., **3** (13 c) : 11; syn. nov.

*Glyptotendipes* GOETGHEBUER, 1936, Rev. Zool. Bot. Afr., **28** : 462 (nec KIEFFER, 1913, Rec. Ind. Mus., **9** : 197).

The definition of this genus rests mainly on the structure of the prothorax which reaches up to the front of the mesonotum, but is divided in the middle and formed into two rounded lobes. The male antenna has normally 14 segments and that of the female seven; the species given below does not agree in this respect and was originally placed by GOETGHEBUER in ? *Glyptotendipes*. Apart from this species, GOETGHEBUER has described one other from Africa in *Endochironomus*, but I have material of several others which I hope to describe elsewhere.

KRUSEMAN erected a new genus, *Demeijerea*, for *E. rufipes* LINNÉ with the sole character for separating it from *Endochironomus* that the antenna of the male had 12 segments instead of 14. Presumably *Endochironomus disparilis* would also fall into this genus, but in my opinion the segmentation of the antenna of one sex is not sufficient for the definition of a genus and I am considering it to be a synonym of *Endochironomus*.



**Endochironomus disparilis** GOETGHEBUER.

? *Glyptotendipes disparilis* GOETGHEBUER, 1936, Rev. Zool. Bot. Afr., **28** : 462.

Mission G. F. DE WITTE : there are more than 400 specimens from the following localities : Rutshuru, 1.285 m, 25.XI-20.XII.1933; lac Mugunga (Nzulu), Sake, 1.500 m, 24.I.1934; lac Mugunga-Bulengo, 1.500 m, 24.I.1934.

Mission H. DAMAS : Ngoma (lac Biuniu), 1.500 m, 3-10.IV.1935, 1 ♂.

This is a distinctive species with polished thorax and separate black mesonotal stripes. Appendage 1 of the male hypopygium has a strong inner process so that the whole appendage appears to be transverse as figured by GOETGHEBUER.

The prothoracic structure is that of the genus *Endochironomus* but the male antenna has 12 segments only and that of the female six. GOETGHEBUER appears to have given greater weight to the segmentation of the male antenna than to the thoracic structure when he placed it in ? *Glyptotendipes*. I prefer to adopt the course followed by EDWARDS in dealing with the Palæartic species *E. rufipes* LINNÉ which similarly shows only 12 segments in the male antenna, that is, to consider the thoracic structure of more importance in defining genera.

The single male specimen from Ngoma has three spurs on the combs of each of the middle and posterior tibiæ.

**Genus STICTOCHIRONOMUS** KIEFFER.

*Stictochironomus* KIEFFER, 1919, Ent. Mitt., **8** : 44; KIEFFER, 1921, Ann. Soc. ent. Fr., **90** : 54; EDWARDS, 1929, Trans. ent. Soc. Lond., **77** : 400 (as subgenus of *Chironomus*); GOETGHEBUER, 1937, in LINDNER, Flieg. Pal., **3** (13 c) : 55.

*Kribiocharis* KIEFFER, 1921, Ann. Soc. ent. Fr., **90** : 29 (in part).

*Kribiocallis* KIEFFER, 1921, Ann. Soc. ent. Fr., **90** : 30, syn. nov.

In this genus the prothorax is considerably reduced but not as greatly as in *Microtendipes*, the mesonotum has a central tubercle which seems to be fairly characteristic. The posterior tibial combs have only one spur, and the combs themselves are fused unlike those of *Polypedilum* which are free. The legs are often ringed, and the pulvilli are small.

*Kribiocallis stictoptera* KIEFFER seems to be nothing more than a redescription of the female of *Stictochironomus festivus* KIEFFER, and as it is the type species of *Kribiocallis* the genus falls as a synonym of the earlier described *Stictochironomus*. The second species of *Kribiocallis* may be a species of *Microtendipes*.

**Stictochironomus cafferarius** KIEFFER.

*Polypedilum cafferarium* KIEFFER, 1921, Ann. Soc. Sci. Brux., **40** (1) : 97.

*Kribiocharis albipes* KIEFFER, 1922, Ann. Soc. ent. Fr., **91** : 4.

Mission G. F. DE WITTE : Vitshumbi (lac Édouard), 925 m, 27.IX-8.X.1933, 1 ♀.

Mission H. DAMAS : Kamande, 925 m, 8.V.1935, 1 ♂, 3 ♀.

I have examined the type of *cafferarium* which is in the South African Museum. *K. albipes* appears to be a synonym.

These specimens belong to a species which is extremely abundant in Anglo-Egyptian Sudan and occurs in all samples taken at light through all the months during which Chironomids are common. The hypopygium closely resembles that of *Kribiocharis albipes* as shown by his figure, and the wing pattern, though not identical, is very similar to his description. The leg colour is identical and so is the structure. Because KIEFFER prepared his description from spirit material there are certain to be some differences of opinion over colour and pattern, which may well account for the slight differences in wing markings.

The species is easily identified because the lateral thoracic stripes are heavily pruinose and form a strong contrast with the dark brown colour of the rest of the thorax.

**Genus POLYPEDILUM** KIEFFER.

KIEFFER separated this genus from the others with a single posterior tibial spur mainly because each pulvillus was split in two longitudinally, so that with the empodium there appear to be five narrow lobes between the claws. EDWARDS (1929, Trans. ent. Soc. Lond., **77** : 401) stated that he was unable to detect split pulvilli even in stained specimens examined with high power and he doubted whether such structures existed in nature. GOETGHEBUER, on the other hand, has figured them.

I have mounted stained and unstained legs of various species including the type of the genus (*P. nubeculosus* MEIGEN) and *P. alticola* KIEFFER and can confirm that the pulvilli of these species are indeed split. I do not understand how EDWARDS failed to see them as they are very easily seen in specimens mounted in Canada balsam.

However, this is not at all a convenient character for the definition of the genus and I find it preferable to use the definition given by EDWARDS which is probably equally accurate.

In addition to the species given below, the collection contains females of four or five species with plain wings and yellowish bodies. In the absence of males I am leaving these undescribed.

*Polypedilum* is an abundant genus in the Ethiopian Region, GOETGHEBUER and KIEFFER have described 50 species and I have added a further eight.

**Polypedilum alticola** KIEFFER.

*Polypedilum alticola* KIEFFER, 1913, Voy. ALLUAUD et JEANNEL Afr. Or., Ins. Dipt., **1** : 22.

Mission G. F. DE WITTE : riv. Bishakishaki (Kamatembe), 2.100 m, 11-22.IV.1934, 102 ♀.

This is a large species with heavily marked wings, it is easily recognised from others by the size of the black marking at the base of cell  $R_5$ ; this is large and completely fills the basal third or so of the cell.

It is a common species mainly in the more mountainous districts. Besides these specimens I have seen others from Abyssinia, Kenya, Angola, Natal, and Cape Province. I have seen the type series in Muséum national d'Histoire naturelle (Paris).

**Polypedilum scotti** FREEMAN.

*Polypedilum scotti* FREEMAN, 1954, Proc. R. ent. Soc. Lond., (B), **23** : 21.

Mission G. F. DE WITTE : riv. Bishakishaki (Kamatembe), 2.100 m, 11-22.IV.1934, 1 ♂.

Mission H. DAMAS : Ishango, 925 m, 3.VI.1935, 16 ♂, 97 ♀.

A common pale brown species without wing markings. It can be distinguished from other species with plain wings by the uniformity of the pale brown colour; the hypopygium has no remarkable features. The type series was described from Western Cape Province.

**Polypedilum niveiforceps** KIEFFER.

*Polypedilum niveiforceps* KIEFFER, 1922, Ann. Soc. ent. Fr., **91** : 41.

Mission H. DAMAS : Kamande, 925 m, 8.V.1935, 5 ♂, 6 ♀; Ishango, 925 m, 3.VI.1935, 18 ♂, 16 ♀.

These specimens agree very well with KIEFFER's description. The wings have nine spots the largest of which is nearly square and placed between  $R_5$  and  $M$ . The male hypopygium has both pairs of appendages rather broadened at their extremities.

The type series came from southern Anglo-Egyptian Sudan.

**Polypedilum trilobatum** KIEFFER.

*Polypedilum trilobatum* KIEFFER, 1922, Ann. Soc. ent. Fr., **91** : 34.

Mission G. F. DE WITTE : May-ya-Moto, 950 m, 10.XI.1934, 1 ♂.

A distinctive little species, the wing has four fairly large rounded spots and the anal point of the male hypopygium is trifid. It agrees closely with the original description. The type locality is southern Anglo-Egyptian Sudan.

**Polypedilum incoloripenne** GOETGHEBUER.

*Polypedilum incoloripenne* GOETGHEBUER, 1936, Rev. Zool. Bot. Afr., **28** : 486.

Mission G. F. DE WITTE : lac Magera, 2.000 m, 26.II-3.III.1934, 1 ♂, 9 ♀.

This species is not unlike *P. scotti* in hypopygial structure but is easily distinguished by the much darker, almost black, colouration.

**Polypedilum duodecimpustulatum** GOETGHEBUER.

*Polypedilum duodecimpustulatum* GOETGHEBUER, 1936, Rev. Zool. Bot. Afr., **28** : 486.

Mission H. DAMAS : Kamande, 925 m, 8.V.1935, 2 ♂.

It is not clear why this species bears this name as there are 14 spots, not 12, on the wings, seven each side. The spots are arranged with three large ones in a triangle, one at the base and one near the middle of cell  $R_5$ , the third across  $Cu$ , in addition there are four small ones grouped in the basal third of the wing. The hypopygium shows no especial features.

**Polypedilum obsoletum** GOETGHEBUER.

*Polypedilum obsoletum* GOETGHEBUER, 1936, Rev. Zool. Bot. Afr., **28** : 488.

Mission G. F. DE WITTE : Nzulu (lac Kivu), 1.500 m, 6-7.II.1934, 2 ♀.

Mission H. DAMAS : lac Mokoto, c. Kishale, 1.750 m, 23.IX.1935, 1 ♀.

These specimens agree with the figure given by GOETGHEBUER of the wing but as neither he nor I had males available it is not possible to be completely certain of the identification. The wing has two pale spots, one at the cross vein and the other in the middle of cell  $R_5$ ; in addition there are vague darkenings along some of the veins.

**Polypedilum tridens** n. sp.

(Fig. 2 c.)

A small dark species with plain wings, separable from similar species such as *P. incoloripenne* GOETGHEBUER by the smaller size and by the shape of the ninth tergite and of the coxite appendages of the male hypopygium.

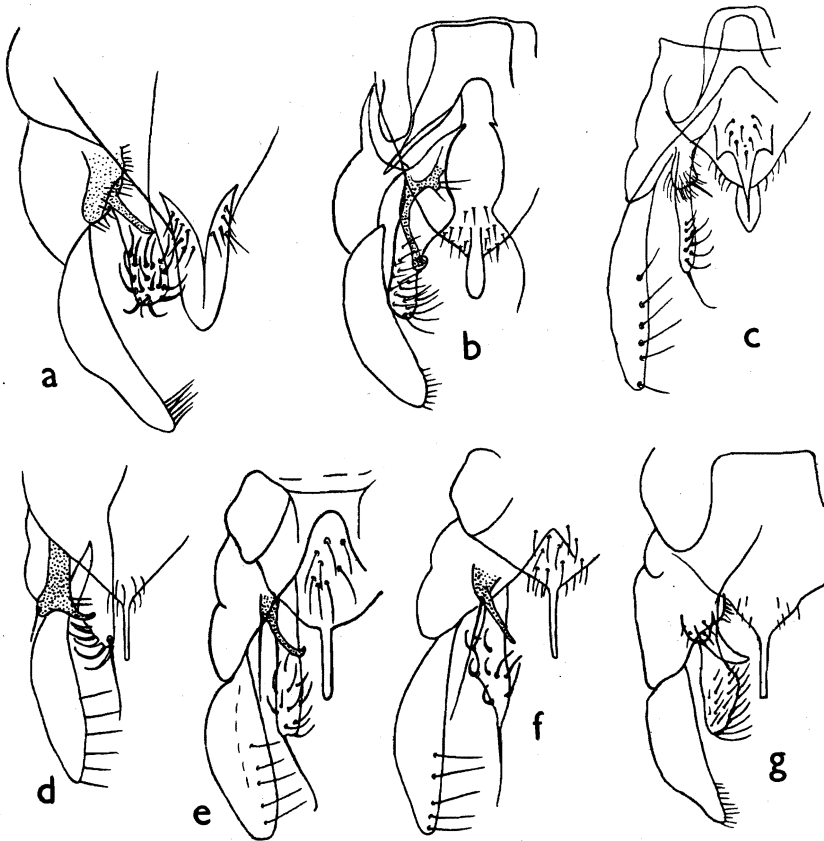


FIG. 2. — Hypopygia of Chironomini.

(a) *Chironomus (Einfeldia) rostrifer* n. sp.; (b) *Nilodorum elongatum* n. sp.; (c) *Polypedilum tridens* n. sp.; (d) *P. stilatum* n. sp.; (e) *Pentapedilum ruandæ* n. sp.; (f) *P. wittei* n. sp.; (g) *Microtendipes rutshuruensis* n. sp.

Male. — Wing length 1,5 mm.

Head, mouthparts and antennæ dark brown, A.R. about 1,5. Thorax dark brown, paler on the shoulders, pruinose there and between the stripes, acrostichal and dorso-central bristles well developed and pale, scutellum

may be paler. Legs yellowish, scale of anterior tibia triangular and with a well developed black spine at the apex, L.R. not known. Wings unmarked,  $R_{4+5}$  straight, ending before tip of wing and distal to level of  $M$ , posterior fork well distal to cross vein, squama fringed. Halteres with dark knobs. Abdomen dark, blackish. Hypopygium (fig. 2c) characteristic; ninth tergite with a short lateral pointed lobe on each side of the anal point which is itself short and broad; appendage 1 short, broad and pubescent with a larger spine projecting inwardly; appendage 2 fairly long and narrow with an apical longer bristle and 8-9 others in two rows; style narrow and straight with about 6 short inner bristles.

Female. — Resembles male; antennæ yellowish, segments 3 and 4 with well developed necks, 5 with no neck, 6 twice as long as 5.

Holotype male : Mission G. F. DE WITTE, Rutshuru, 15-25.IX.1933.

Paratypes : Mission G. F. DE WITTE : Vitshumbi (lac Édouard), 925 m, 27.IX-1.XI.1933, 1 ♂, 1 ♀; Kamande (lac Édouard), 925 m, 9-15.XI.1933, 26 ♂, 7 ♀; Rutshuru, 1.285 m, 23-25.XII.1933, 1 ♀.

Mission H. DAMAS : Ishango, 925 m, 3.VI.1935, 6 ♂, 38 ♀; Kamande, 925 m, 8.V.1935, 58 ♂, 21 ♀.

#### ***Polypedilum stilatum* n. sp.**

(Fig. 2 d.)

Belongs to the same group of species as *P. kibatiense* GOETGHEBUER and *P. annulatum* FREEMAN, distinguished from the former by the much longer anal point and narrower styles, from the latter by the pale, unbanded abdomen.

Male. — Wing length 1,6 mm.

Head, antennæ and mouthparts pale brown, A.R. 1,3. Thorax brown, stripes indistinguishable, shoulders whitish and pruinose. Legs uniformly pale, front tarsi broken, posterior tibial combs with a single spur. Wings unmarked;  $R_{4+5}$  reaching the wing tip and slightly curved, posterior fork well beyond cross vein. Halteres with black knobs. Abdomen uniformly pale brown; hypopygium (fig. 2d) with long narrow anal point, styles narrow, appendage 1 broad and with long inner process, appendage 2 large, with a long terminal bristle and about 6 others which are curved and arranged along the outer edge.

Holotype male and paratype 1 ♂, Mission G. F. DE WITTE : Kivu : Rutshuru, 1.285 m, 23-25.XII.1933.

Genus **PENTAPEDILUM** KIEFFER.

*Pentapedilum* differs from *Polypedilum* only in the presence of macrotrichia on the wing membrane. In all other respects the genera are very similar.

There have been two African species described in this genus, one by KIEFFER and one by myself. In addition I have examined the type of *Tanytarsus alticola* KIEFFER, 1913 in the Muséum national d'Histoire naturelle (Paris) and have found that this is also a *Pentapedilum*, distinguishable from the others by the trifid anal point.

**Pentapedilum ruandæ** n. sp.

(Fig. 2 e.)

Distinguished from *P. anale* FREEMAN by its slightly brown rather than black colour, by the less dense macrotrichia on the wings and by the male hypopygium.

Male. — Wing length 2,75 mm.

Head dark brown, palpi well developed, brown, A.R. about 1,75. Thorax blackish brown with some pruinosity between the stripes; prescutellar area and scutellum rather paler; acrostichal bristles long and well developed, scutellum with about 10 long bristles. Legs uniformly brown, anterior tibia with a well developed spur on a triangular scale, each of four posterior tibia with a single strong spur, L.R. 1,25. Wings unmarked, macrotrichia present on the membrane of the apical half only, largely confined to cells  $R_5$  and the apex of  $M$ , absent from posterior fork, venation similar to *P. anale*. Halteres dark. Abdomen blackish brown; hypopygium (fig. 2e) with long narrow anal point, styles oval in dorsal aspect, apex rather flattened in lateral aspect, appendage 1 narrow and curved, appendage 2 long and narrow with a long apical bristle.

Female. — Resembles male in colour and general structure; antennæ with 6 segments, 6 equal to 4 and 5 together, 5 without neck, 3 and 4 with well developed necks. Macrotrichia more numerous on wing membrane than in male, present in all cells, only absent from basal quarter of wing, but not as dense as in *P. anale*.

Holotype male and paratypes 281 ♂, 68 ♀, Mission G. F. DE WITTE : Ruanda : lac Ngando, pied volc. Karisimbi, 2.400 m, 6.III.1935.

**Pentapedilum wittei** n. sp.

(Fig. 2 f.)

Not unlike *P. ruandæ* sp. n., but macrotrichia denser, numerous in fork cell in both sexes, colour much paler, hypopygial proportions different.

Male. — Wing length 2,5 mm.

Head mouthparts and antennæ yellowish, A.R. about 2. Thorax yellowish brown, bristles long. Legs uniformly pale, front tarsi broken, tibial scale with well developed spur. Wings unmarked, macrotrichia numerous over whole wing surface except basal half of basal cell. Halteres dark. Abdomen yellowish, unmarked. Hypopygium (fig. 2f) quite similar to that of *ruandæ* but differing in proportions of styles and coxite appendages, style narrower and longer, appendage 1 straighter and its bristle longer, appendage 2 more pointed.

Female. — Similar to male, antennæ broken.

Holotype male and paratype 1 ♀, Mission G. F. DE WITTE : Kivu : Kalondo (lac Ndalaga, Mokoto), 1.750 m, 22-27.III.1934.

#### Genus **MICROTENDIPES** KIEFFER.

*Microtendipes* KIEFFER, 1915, Broteria, Sér. Zool., **13** : 70; ? KIEFFER, 1922, Ann. Soc. ent. Fr., **91** : 8; EDWARDS, 1929, Trans. ent. Soc. Lond., **77** : 396; GOETGHEBUER, 1937, in LINDNER, Flieg. Pal., **3** (13c) : 51.

*Kribiocharis* KIEFFER, 1921, Ann. Soc. ent. Fr., **90** : 29, syn. nov.

*Hulstaertiella* GOETGHEBUER, 1936, Rev. Zool. Bot. Afr., **28** : 456, syn. nov.

EDWARDS (1929) redefined this genus and used it as a subgenus of *Chironomus*. The species of *Microtendipes* resemble those of *Polypedilum* but can be separated by the much greater reduction of the prothorax, the smaller pulvilli which are not split, and the close approximation of  $R_{2+3}$  to  $R_1$  at the apex. EDWARDS gave additional characters such as the absence of the long hair at the apex of appendage 2 of the male hypopygium and the absence of a front tibial spur; he also mentioned that the female antennæ were seven segmented and that the wings were plain and unmarked. I am not proposing to give much weight to the condition of the female antennæ because the segmentation varies from species to species, and in some of the Palæarctic species they appear to be six segmented.

There are a number of African species which show the prothoracic and wing venational characters of *Microtendipes* but with only six segments in the female antenna and with markings on the wings. GOETGHEBUER described his genus *Hulstaertiella* (type *H. caloptera* GOETGHEBUER, 1936) to include one of these species. In my opinion the differences are not of generic significance and I am considering *Hulstaertiella* to be a synonym of *Microtendipes*.

*Kribiocharis* was described by KIEFFER in the key to genera given in his 1921 paper, in his 1922 paper he described five species. He did not fix a type species, but from his statement in the key that in the type species the legs were long and thin, it seems that he intended *K. filitarsis* KIEFFER to be the type. I now fix the type species of *Kribiocharis* as *K. filitarsis*



KIEFFER, 1922. Although I have no specimens of this species it must be very similar to *K. annulaticrus* KIEFFER which was later redescribed by GOETGHEBUER as *Hulstaertiella caloptera*. In the description of *K. luteipes* KIEFFER mentions that the thorax is produced over the head and it seems fairly certain that *Kribiocharis* is to be regarded as a synonym of *Microtendipes*. So far as I can see *K. albipes* KIEFFER is not congeneric with the other species but belongs to *Stictochironomus* (see above).

In his 1821 and 1922 paper on the African *Chironomida*, KIEFFER used *Microtendipes* for ten species with the « scale » of the anterior tibia pointed or apically setiform. I have not been able to recognise any of those species (seven were described from females only and the wings were plain) and this character does not conform with any of the known species of the genus except *M. caledonicus* EDWARDS from Britain. *M. caledonicus* does not seem to belong to *Microtendipes* on account of its thoracic structure and it may be a species of *Endochironomus* with only one clear spur on the posterior tibia.

A redefinition of *Microtendipes* is as follows :

« Palpi well developed and long, eyes strongly emarginate, female antenna with 6 or 7 segments; prothorax greatly reduced, much overhung by the mesonotum which is cone-shaped and projects beyond it, acrostichal bristles reduced to 2-3 at the apex of the cone (they are long and strong in *Polypedilum*); anterior tibia with broad rounded scale, unspurred, four posterior tibiæ with single spurs, combs not fused, pulvilli small and reduced; wings either plain or with markings,  $R_{2+3}$  ending in contact with  $R_1$ ; male hypopygium with oval styles, appendage 1 usually curved, bare apically, hairy basally, appendage 2 without long apical hair. »

Type species *M. abbreviatus* KIEFFER = *M. chloris* MEIGEN.

I have examined the type series of *Chironomus taitæ* KIEFFER in the Muséum national d'Histoire naturelle (Paris) and find that there is only a single spur on the posterior tibiæ. It belongs to *Microtendipes* as I have defined it. Another species to be placed here is *Chironomus lamprogaster* KIEFFER, described from Cape Town.

### ***Microtendipes umbrosus* n. sp.**

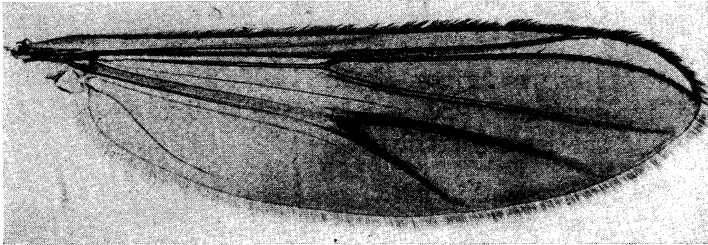
(Fig. 3 a.)

A medium sized yellowish brown species with darker brown markings on lateral mesonotal stripes, female antenna 7-segmented; base of abdomen yellowish, wings with apical half slightly darkened.

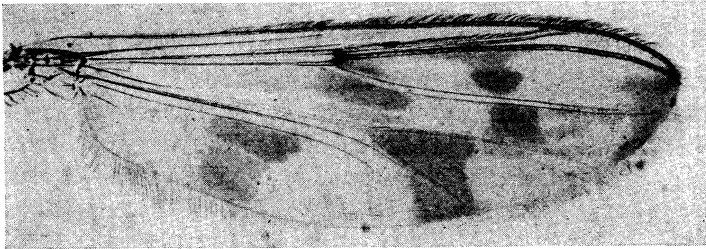
Male. — Wing length 3,75 mm.

Head and antennæ yellowish brown, mouthparts darker, antennæ 14-segmented, A.R. about 2,3. Thorax yellowish brown, shoulders pale,

lateral stripes and postnotum tinged with deeper brown; pronotum much reduced and divided, mesonotum projecting beyond pronotum. Legs pale, yellowish white with dark knees, tibiae slightly dark apically, all tarsi broken (see description of female), anterior tibiae without spur, posterior tibiae with a single spur. Wing with faint clouding distal to cross veins



a



b

FIG. 3. — Wings of *Microtendipes* n. spp. (females).  
(a) *M. umbrosus*; (b) *M. rutshuruensis*.

(fig. 3a), venation as in female. Halteres pale, whitish. Abdomen broken but segments 1 and 2 are yellowish, it is probable that the apical segments are dark.

Female. — Wing length 3,75 mm.

Essentially similar to male but brown colour of thoracic stripes deeper, wing shade deeper and knees with stronger markings; antennæ 7-segmented, segments 3-6 with well developed apical necks and long setæ, segment 7 darker and about one and a half times as long as 6; L.R. 1,2, pulvilli short. Segments 1 or 1 and 2 of abdomen yellowish, remainder dark brown with pale apical margins, cerci yellowish.

Holotype female and paratypes 1 ♂, 1 ♀ [Kenya : Nyanza, Lumbwa District, riv. Kisarli, 19.XII.1911 (C. M. DOTTS)], in the British Museum. Other paratypes : Mission G. F. DE WITTE, riv. Bishakishaki (Kamatembe), 2.100 m, 11-22.IV.1934, 7 ♀.

***Microtendipes rutshuruensis* n. sp.**

(Fig. 2 g, 3 b.)

Easily distinguished from other species by the arrangement of the four large blotches on the wings, by the black markings on the legs and by the male hypopygium. The female is paler than the male and it is possible that two species are involved.

Male. — Wing length 2,8 mm.

Head, antennæ and mouthparts brown, A.R. about 2, plumes whitish, palpi yellow, long and well developed. Thorax brown, shoulders and scutellum pale, stripes distinguishable, lateral ones, postnotum and sternopleuron dark brown; dorso-central bristles well developed, acrostichals reduced to 2-3 at apex of cone; mesonotum strongly produced and cone-like. Legs pale, whitish, blackened at the knees and the tips of the tibiæ, anterior femora with a central dark band, anterior knees blacker and with more darkening than in the other legs so that about one fifth of the tibia is included; tarsi all broken. Anterior tibia without spur, slightly shorter than femur, posterior tibia with a single spur. Wings with pattern more or less as shown in fig. 3 b of the female, but there is an additional darkening along the basal half of the costa, the spot across *M* is more diagonal and the darkened base of the posterior fork includes a small pale spot. *R*<sub>2+3</sub> ends almost in contact with *R*<sub>1</sub>; halteres yellow. Abdomen yellowish with long pale hairs. Hypopygium (fig. 2 g) with long narrow anal point, appendage 1 thick and curved, appendage 2 slightly clubbed, style narrowed at apex.

Female. — Wing length 3,5 mm.

Antennæ 6-segmented, segments 3-5 more or less elongate fusiform, segment 6 one and a half times as long as 5 and dark. Thorax much paler than in the male, almost yellow, shoulders and areas between the stripes pruinose. Legs with femora and tibiæ similar to the male, basitarsus of all legs with a median dark band which is largest and darkest on anterior legs, segments 1-4 broadly dark at apex; L.R. 1,5, posterior basitarsus as long as tibia. Wings with pattern as shown in fig. 3 b. Abdomen pale, darkened apically.

Holotype male and paratype 1 ♀, Mission G. F. DE WITTE : Rutshuru, 1.285 m, 28.XII.1933. Paratype 1 ♀, Rutshuru, 1.285 m, I.1937 (J. GHESQUIÈRE), in coll. Institut royal des Sciences naturelles de Belgique.

Genus **TANYTARSUS** VAN DER WULP.

EDWARDS used this genus to include all the hairy winged species with bare squama and more or less horizontal cross-vein. He then divided it into subgenera on the condition of the combs, eyes and wings. I prefer to use his subgenera as genera and to call his species groups of *Tanytarsus sensu stricto* subgenera. More than 20 species have been described by KIEFFER and GOETGHEBUER from Africa; a number of KIEFFER's were described from the female and will probably never be recognisable.

**Tanytarsus (Tanytarsus) pallidulus** FREEMAN.

*Tanytarsus (Tanytarsus) pallidulus* FREEMAN, 1954, Proc. R. ent. Soc. Lond., (B), 23 : 24.

Mission G. F. DE WITTE : Kalondo (lac Ndalaga, Mokoto), 1.750 m, 22-27.III.1934, 1 ♂.

Mission H. DAMAS : Kalondo (Kivu), 1.750 m, 6-9.VIII.1935, 3 ♀.

This species is fairly easily recognised from the structure of the male hypopygium, the styles being pointed and the appendage 1 of a characteristic shape; appendage 1a is absent and appendage 2a is short and with simple hairs. The type came from Western Cape Province.

**Tanytarsus (Tanytarsus) angustus** n. sp.

(Fig. 4 a.)

Greenish with yellow thorax; A.R. 1,2, frontal tubercles absent; pulvilli absent, anal point of male without row of dots, appendage 1 absent. Distinguished from *T. pallidulus* FREEMAN by longer appendage 2a and narrow anal point.

Male. — Wing length 1,8-2 mm.

Head yellow, antennæ and mouthparts brownish yellow; A.R. 1,3, frontal tubercles apparently absent. Thorax yellow, scutal stripes hardly darker. Legs yellow, pulvilli absent, L.R. 2,2, tibial combs separate, each with a spur, front tarsus not bearded. Wings clothed all over with macrotrichia,  $R_{4+5}$  ending beyond  $M_{3+4}$ , posterior fork well distal to cross-vein. Halteres pale. Abdomen pale green; hypopygium (fig. 4 a) with well developed narrow anal point, lacking row of dots; style pointed, appendage 1 broad, 1a absent, appendage 2a long and with simple hairs.

Female. — Resembles male, antennæ 5-segmented, 5 and 6 fused and one and a half times as long as 4.

Holotype male and paratypes 1 ♂, 18 ♀, Mission G. F. DE WITTE : riv. Bishakishaki (Kamatembe), 2.100 m, 11-22.IV.1934. Further paratypes, Mission G. F. DE WITTE : riv. Molindi, entre Kirumba-lac Kibuga, 1.000 m, 31.IV-2.V.1934, 1 ♂, 1 ♀.

***Tanytarsus (Tanytarsus) balteatus* n. sp.**

(Fig. 4 b.)

A distinctively coloured species not unlike *T. atrocinctus* GOETGHEBUER but readily distinguished by the pale legs with black tipped femora and tibiae, by the single tibial spur and by the large appendage 2a of the male hypopygium.

Male. — Wing length 1.75 mm.

Head yellowish brown, face, mouthparts, scape dark brown; A.R. about 1.2, flagellum and plumes pale brown, frontal tubercles appear to be

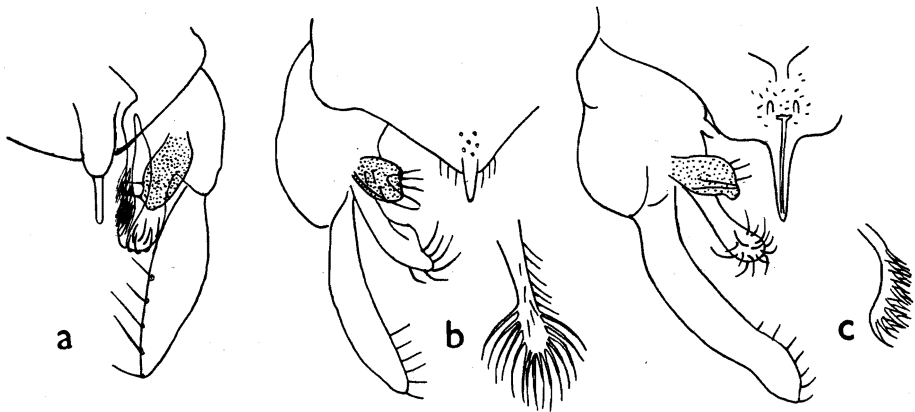


FIG. 4. — Hypopygia of *Tanytarsus* n. spp.

(a) *T. (Tanytarsus) angustus*; (b) *T. (Tanytarsus) balteatus*; (c) *T. (Calopsectra) subreflexens*. In (b) and (c) appendage 2a is shown separately, to the same scale as the main figure.

present but difficult to see. Thorax with pale yellow pruinose ground colour; scutal stripes short, fused and pale brown, darker brown at posterior end of middle stripe and anterior ends of lateral stripes giving a cross banded appearance; this cross band is continued down each pleuron and onto the sternopleuron; postnotum brown, darker at the apex. Legs yellow, apices of all femora and tibiae broadly black, apices of tarsal segments also dark; L.R. 2,2, pulvilli absent, posterior tibial combs well separated, only the outer one with a spur. Wings with macrotrichia on the apical half,  $R_{4+5}$  ending beyond  $M_{3+4}$ . Halteres whitish. Abdomen yellow with black markings on segments 1, 2, 3, 5, 6; segments 1-3 with a median longitudinal black band which expands laterally to form a transverse band near the posterior margin, margin itself pale; there is a short longitudinal pale line placed posteriorly in each black marking;

segment 5 with a similar black marking not so well developed, segment 6 all black. Hypopygium (fig. 4 b) with short anal point lacking row of dots, appendage 1 more or less square, 1a rather stout, 2 appears to have an extension on the outer side, 2a is very large and with a fan-like arrangement of strong setæ arising on both sides, styles narrow.

Female. — With markings as in male, macrotrichia more numerous on the membrane, antennæ broken on all specimens available.

Holotype male and paratypes 4 ♀ : [Anglo-Egyptian Sudan : Adok, at light, 21.XI.1953 (E. T. M. REID)]. Other paratypes : [Anglo-Egyptian Sudan : Melut, at light, 17.XI.1953 (E. T. M. REID), 1 ♂, 4 ♀; Anglo-Egyptian Sudan : Shambe, at light, 22.XI.1953 (E. T. M. REID), 1 ♀]; Parc National Albert, Mission H. DAMAS : Katana, rive Ouest lac Kivu, 1.500 m, 3.X.1935, 1 ♂.

***Tanytarsus (Calopsectra) subreflexens* n. sp.**

(Fig. 4 c.)

A pale yellowish species, structurally very similar to the Palæartic species *reflexens* and *richmondensis* EDWARDS. Short pulvilli present, anal point of male hypopygium with reflexed appendage, wings hairy all over, colouration similar to *richmondensis*.

Male. — Wing length 2,5 mm.

Head yellowish, brown in some specimens, mouthparts and antennæ may also be brown; frontal tubercles indistinguishable, A.R. 1,3. Thorax yellow, scutal stripes hardly darker. Legs yellow, tarsi broken on all specimens, one female has a middle tarsus present with short pulvilli; posterior tibial combs, occupying about a quartre of the circumference, outer one with long spur, inner one with short spur. Wings covered all over with macrotrichia,  $R_{4+5}$  ending beyond  $M_{3+4}$ , posterior fork distal to cross-vein; halteres yellow. Abdomen pale green; hypopygium (fig. 4 c) indistinguishable from *T. richmondensis*; anal point with the same curious appendage, appendage 1 similarly shaped, appendage 2 with broadened hairs.

Female. — Resembles male; antennæ 5-segmented, segments 5 and 6 being fused and nearly twice as long as 4.

Holotype male and paratypes 1 ♂, 4 ♀, Mission G. F. DE WITTE : lac Magera, 2.000 m, 1.III.1934. Further paratypes, Mission G. F. DE WITTE : Kamande (lac Édouard), 925 m, 9-15.XI.1933, 3 ♂, 1 ♀; Vitshumbi (lac Édouard), 925 m, 27.IX-8.X.1933, 1 ♂. Mission H. DAMAS, Kamande, 925 m, 8.V.1935, 3 ♂.

**Tanytarsus (Cladotanytarsus) pseudomancus** GOETGHEBUER.

*Tanytarsus pseudomancus* GOETGHEBUER, 1934, Rev. Zool. Bot. Afr., **25** : 200.

Mission G. F. DE WITTE : Vitshumbi (lac Édouard), 925 m, 27.IX-8.X.1933, 5 ♂.

Mission H. DAMAS : lac Mokoto, c. Kishale, 1.750 m, 23.IX.1935, 6 ♂; about 2.100 specimens from Kamande, 925 m, 31.I.1935, 8.V.1935, 3.VI.1935, 10.VI.1935.

This species has the male hypopygium very similar to the other species described in this subgenus both from Africa and from the Palæarctic Region. It is dark and the abdomen is green annulated with black.

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(The names indicated with \* are synonyms.)

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