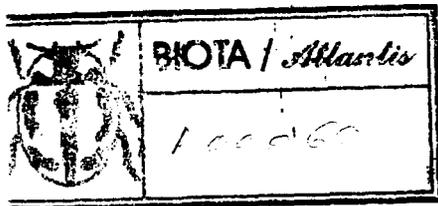


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STUDIES ON A COLLECTION OF MICROCORYPHIA  
(APTERYGOTA) FROM THE WORLD PRESENT IN THE  
BRITISH MUSEUM (NATURAL HISTORY)



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**ABSTRACT.** A collection of Microcoryphia (Apterygota) has been examined in the British Museum (Natural History) from various parts of the world. Twenty-one taxa are dealt with, of which 9 genera and 9 species belong to Machilidae and 4 genera and 3 species to Meinertellidae. Several taxa are left at generic level as the specimens were inadequate. The new species described are: *Graphitarsus surindicus* from S. India, and *Machilontus lawrencei* from Khasi Hills, Meghalaya.

INTRODUCTION

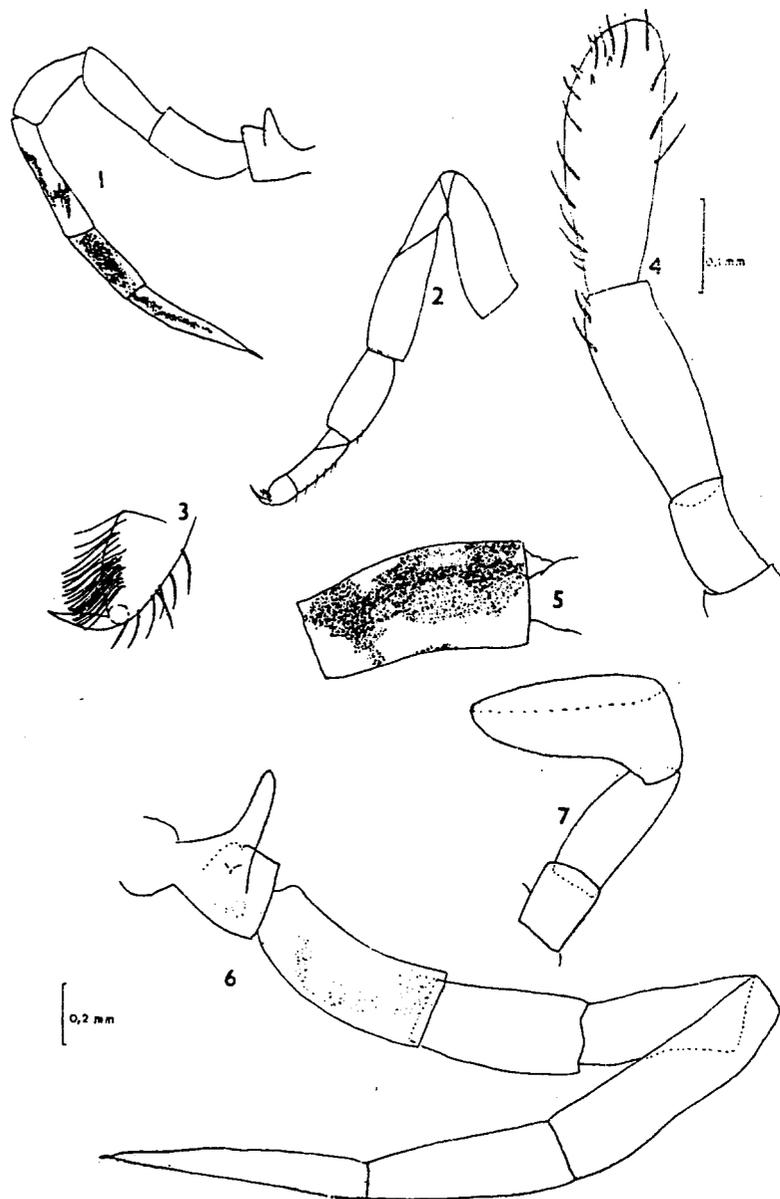
This paper is the result of a study carried out on a collection of Microcoryphia, which we have received from the British Museum (N.H.) This collection comprises an immense variety of material collected in various parts of the world, the majority of which was gathered at the beginning of the century. It is undoubtedly an interesting collection, but a study of it involves a series of difficulties. In-effect, the greater part of the material is dry, a state due not so much to the time which has elapsed since collection, but rather to the fact that when it was collected and later mounted, the basic precautions were not taken. Many specimens were first of all mounted on pins—an unsuitable procedure with this class of insects—and as a result the majority has either one or several appendages missing, which are essential for classification. On the other hand, in the majority of cases, there is only one specimen.

In order to reduce the rigidity of the material and to prevent the specimens, and particularly the appendages, from breaking up even further while under dissection, they have been treated with 100% Calcium triphosphate and distilled water. Those which were found to be in a very bad condition were treated with glycerine.

Of the dissected specimens, only a part of the appendages, the genitalia and a urosternite, has been mounted in preparation, while the rest has been preserved in alcohol, so as to carry out macro- and microscopic observation at the same time.

Because of all the previously mentioned circumstances (the state of the material, and the existence of a sole specimen in many cases), and with regard to the scientific precision which should guide any research work, we have left

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Figs. 1-7. *Graphitarsus* sp. female : 1, Maxillary palp; 2, Foreleg, outline; 3, Portion of apical segment of foreleg; 4, Labial palp. *Graphitarsus surindicus*, sp. nov. ♂ : 5, Antennae, scapus; 6, Maxillary palp; 7, Labial palp. The drawings 3 and 4 are to same scale, and 1, 2, 5, 6 and 7 are also to the same scale.

the description of a great part of the material at the generic level, overcoming the first temptation to describe new species. In spite of the restrictions imposed by the material, we believe that the study in itself is interesting.

#### Famiily MACHILIDAE

##### 1. *Allopsontus* sp. (Silvestri, 1911 sensu Wygodzinsky, 1914)

*Specimens examined* : A tube containing three females and marked with the number 123 and no mention of locality. One of the females has been dissected, the rest being preserved in alcohol. The description corresponds to the generic one provided by Wygodzinsky, 1944, since it shows no hypodermic pigment, the legs show stili on the second and third pair, the abdominal sternites from an acute angle between the coxites and the ovipositor is of the primary type, reaching, in these specimens, just to the end of coxite IX.

##### 2. *Diita* sp. (Strand, 1911)

*Specimens examined* : ENGLAND : Surrey, 8.xi.1975, Nr. Caterham, D.E. Kimmins coll., 550, 1♀. Hants, 10.ix.1960, Deerleap, On heath, Totton, **GRSU** 353094, C.R. Vardy, 1♀. Hants, New Forest, Denny Wood, 5.vi.1963, J.C. Deeming, 1♀. New Forest, nr. Lyndhurst, 6.ix.1967, R.B. Benson, by Suction trap from grass, 2♀♀ one juvenile. FRANCE, 12.viii.1967. Le Huga Forest. Le ca nau Ocean Forest floor, moss lichens, etc., 1972, 1♀; locality not mentioned, 1♀.

##### 3. *Dilta littoralis* (Womersley, 1930)

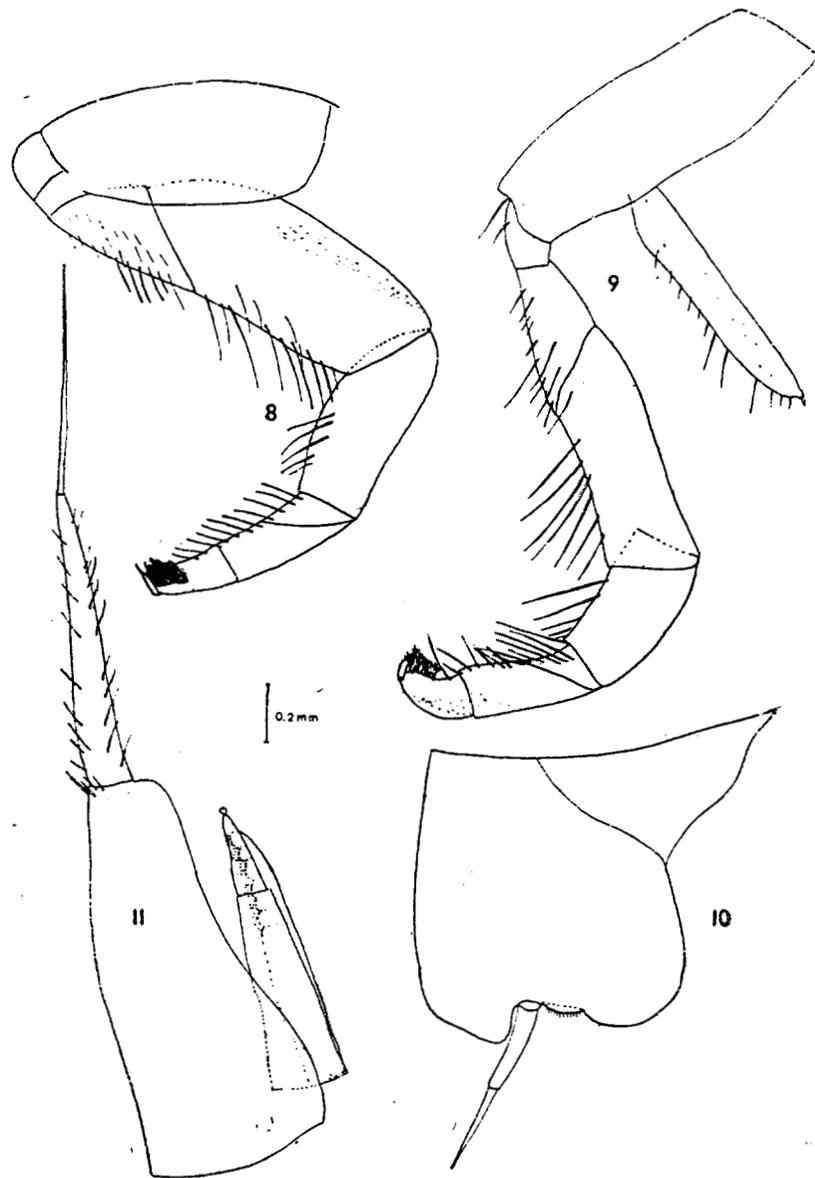
*Specimens examined* : ENGLAND : Kent, Iml. S. Grove Ferry, 9.vii.1954, mixed vegetation banking road, P.N. Lawrence, Id. Hampshire : New Forest, Brook, 10.vii.1962, P.H. Ward, 1♂.

##### 4. *Graphitarsus* sp. (Silvestri, 1908 sensu Paclt, 1969)

*Specimens examined* : INDIA : Naraikadu, 2500-3000 ft. Tinnevely Dt. S. India, 3-8.x.1938, B.M. C.M. Expdn. to S. India Sept.-Oct. 1938, Leaf litter 1♂+1♀. W. MALAYSIA : Trengganu, 140 ft., S. Kelembang, 120° 40' E, 5° 28' N., Gn. Lawit Exp. B.M. 1974-2, 2.iii.1974, C. Moreby, C.M. 68 1 ♀, The head of this specimen shows erect hairs on the clypeus. Its body length is 7 mm. The diagrams of the maxillary palp, the labial palp and leg, are to be found in figures 1,2,3 and 4. *Vegetation* : W. MALAYSIA : Trengganu, 2600 ft. Gn. Lawit east ridge 120° 37'E 5° 25'N., Gn. Lawit Exp. B.M. 1974, 2-9.iii.1974, C. Moreby C.M. 103, 1 juvenile.

##### 5. *Graphitarsus surindicus*, sp. nov.

*Specimens examined* : INDIA : Tenmalai, Travancore (Kerala) 500-500', 11-17.x.1938, B.M.-C.M. Expdn. to S. India, Sept.-Oct. 1935, 1♂ holotype, one female allotype, 2♂♂ paratypes.



Figs. 8-11. *Graphitarsus surindicus*, sp. nov. ♂ : 8, Foreleg, outline; 9, Second leg; 10, Sternum Vi; 11, Portion of genital region. All drawings are to same scale.

*Length* ♂, 10 mm; ♀, 9.5-10 mm. Design of scales unknown. Hypodermic pigment present.

Cephalic pigmentation with a very smooth elongated spot on the frons, the latter being slightly convex. Another pigmentary spot above the middle ocellus. Rest without pigment. Ocular ratios :  $Lc/1=0.4$ ;  $1/a=0.8$ . Dark-brown ocelli, transversely elongated in front of the eyes and extraordinarily narrow towards the middle. Antennae broken on all specimens. The pedicel has a strong hypodermic pigment (fig. 5). Maxillary palp shows no peculiarities, with diffused pigment only on the basal articles. Its shape is shown in figure 6. The labial palp shows a very wide third article in the male (fig. 7); in the female, the fornix is normal. Legs with no special setae. Coxal styli on the second and third pair of legs; a pair of scopulae on the third tarsus (fig. 8 and 9). Urosternites II-VII with two pairs of coxal vesicles, the remainder with a single pair. The terminal spine of the styli is longer than the mid-way point of the same. Ratio stylus/coxite V=0.33. Ratio stylus/coxite IX=0.78 (fig 10). Parameres on VIII and IX. Paraineres VIII with 1f6—7 articles. Parameres IX with 1f7—8 articles. Penis projecting from the parameres and showing a slight apical projection (fig. 11). Basal part penis/terminal part=0.92.

*Female* : with primary gonapophysis, extending further than the length of the styles IX. Distribution of setae is the same as in *G. phillipsi*.

Four species of *Graphitarsus* have been described so far : *G. maindronii* Silv., 1907 (Sumatra); *G. javanicus* Wygod., 1939 (Java) and one more is mentioned by PACLT, 1963. from the same locality; *G. phillipsi* Wygod., 1957 (Ceylon) and *G. schmidi* Wygod., 1957 (Ceylon). The new species from Southern India differs from the described species in having little cephalic pigmentation and in the pigmentation on the two basal articles of the maxillary palp. It is similar to *G. phillipsi* in the shape of the penis and also in the rest of the description, but the geographical remoteness leads us to regard it, for the present, as a new species. As regards *G. doriae* Silv., 1908 from the island of Fernando Poo, Wigodzinsky (1953) considers it a doubtful species. Paclt (1969) places it in *Metagraphitarsus*, thus making a new combination : *M. doriae*.

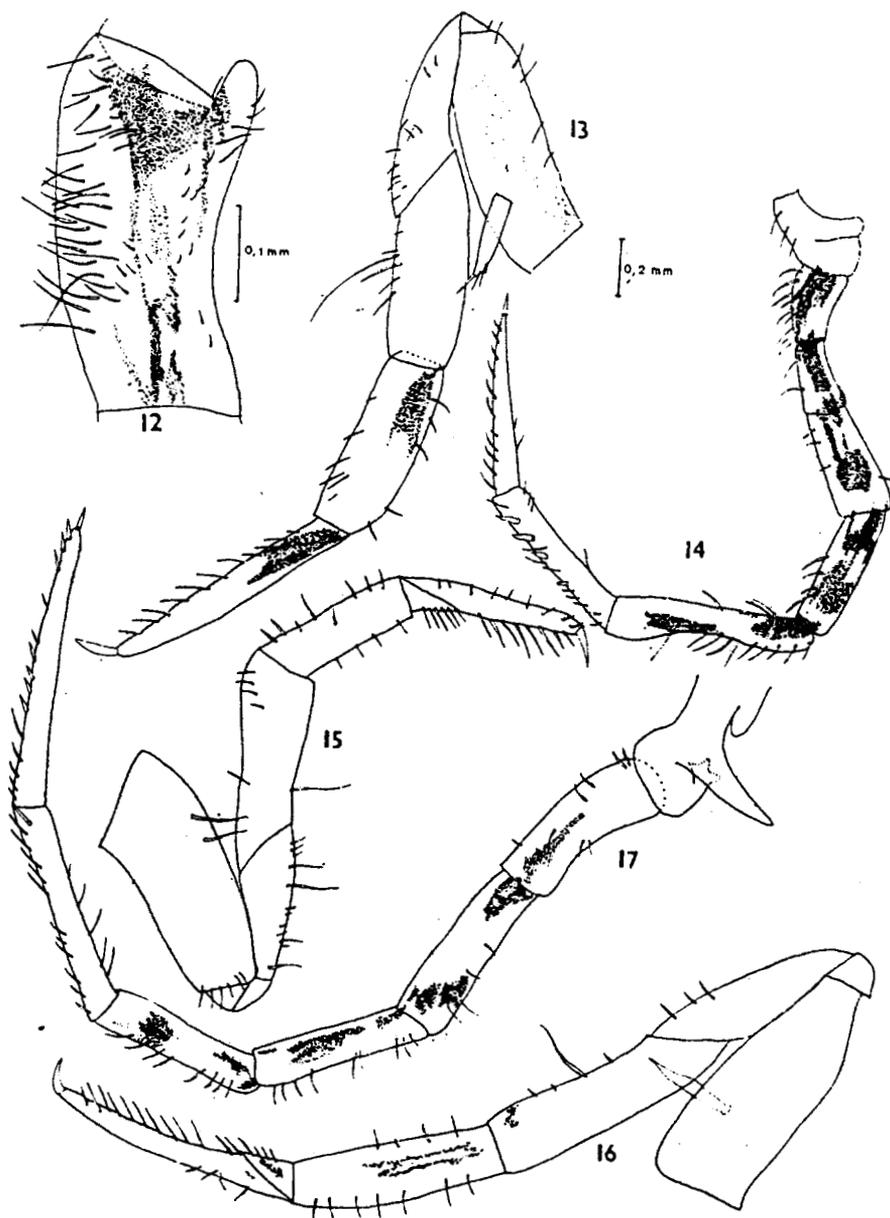
This is the first record of this genus from India and the first species described from this locality, whence it takes its name.

#### 6. *Lepismachilis* sp. (Verhoeff, 1910)

*Specimens examined* : KOREA : S. Tchikaura, Quelpart I, On stone, 24.viii. 1905, 1♀ badly damaged. HTES ALPES LAUTERET : Fletcher Coll., 9.ix.1932. Presented by R.L.E. Ford, B.M., 1949-487, 1♂ dried and juveniles; 1 unlabelled ?.

#### 7. *Lepismachilis* (*Berlesilis*) *targionii* (Grassi, 1887)

*Specimens examined* : RHODES PETALOUDES, 23-24.ix.1963, T. Clay Coll. B.M. 1963-559, 1♀. CORSICA : Georges du Restonica. 15 km. S.W. of Corte;



Figs. 12-17. *Machilinus rupestris* ♂ : 12, Second segment of maxillary palp; *Machilontus* sp. Gn. Lawit (Lichen on tree trunk); 13, Hind leg of female; 14, Pigment pattern of maxillary palp; *Machilontus* sp. Gn. Lawit (Tree bark); 15, Foreleg; 16, Hind leg; 17, Pigment pattern of maxillary palp. Only the drawing 12 are to different scale.

under rocks, by stream, in predominantly conifer forest, Brit. Mus., 1970-505, **id**, 1♀, 5 juveniles.

**8. Machilanus schmidi** Wygod., 1974

*Specimens examined* : INDIA : KASHMIR : Gulmarg, vi. 31, Fletcher coll., 1♂, 2♀♀.

One male and one female have been dissected, their respective body lengths being 7-8 mm and 10 mm. The compound eyes show a dark colour with a white slanting line. The pigmentation of the specimens is dark and as a result bears a resemblance to *M. lapidicola*, but the sensory field is the same as in *M. schmidi*. Females with primary gonapophyses.

**9. Machilis engiadina** Wygod., 1941

*Specimens examined* : AUSTRIA : Fiss-Reid, 9.vi.1905, D.J. Ciark, 2093, 2♀♀.

*Length* : 11-11.5 mm. One of them has been dissected.

**10. Kesomachilis sarasini** (Siiv., 1915).

*Specimens examined* : NEW CALEDONIA : Mt. Panie, viii. 1914, P.D. Montague, 1918-87, 316. Dried material transferred to spirit, T. Clay 1953, 1♂.

Paclt (1960) described the ♀ from the Molucca Islands. Silvestri described only the male.

**11. Petrobius brevistylis** Carpenter, 1913

*Specimens examined* : ENGLAND : Lancs, 15.v.1965, Silverdale, Arnside Tower, D.E. Kimmins, 1♂ dissected and mounted in Canada Balsam. Length, 9.5 mm. Cumberland, 1.ix.1966, Wasdale wall, Lewis Davies coll., Brit. Mus., 1968-362, A B. 1852. Length : ♂, 10.5 mm, ♀, 9.5 mm. TRELAKD : On shore, under stones, Ig Sligo : Templeboy, 1.vii.1971, 27.vi-10.vii. 1971, B.M. 1971-113.

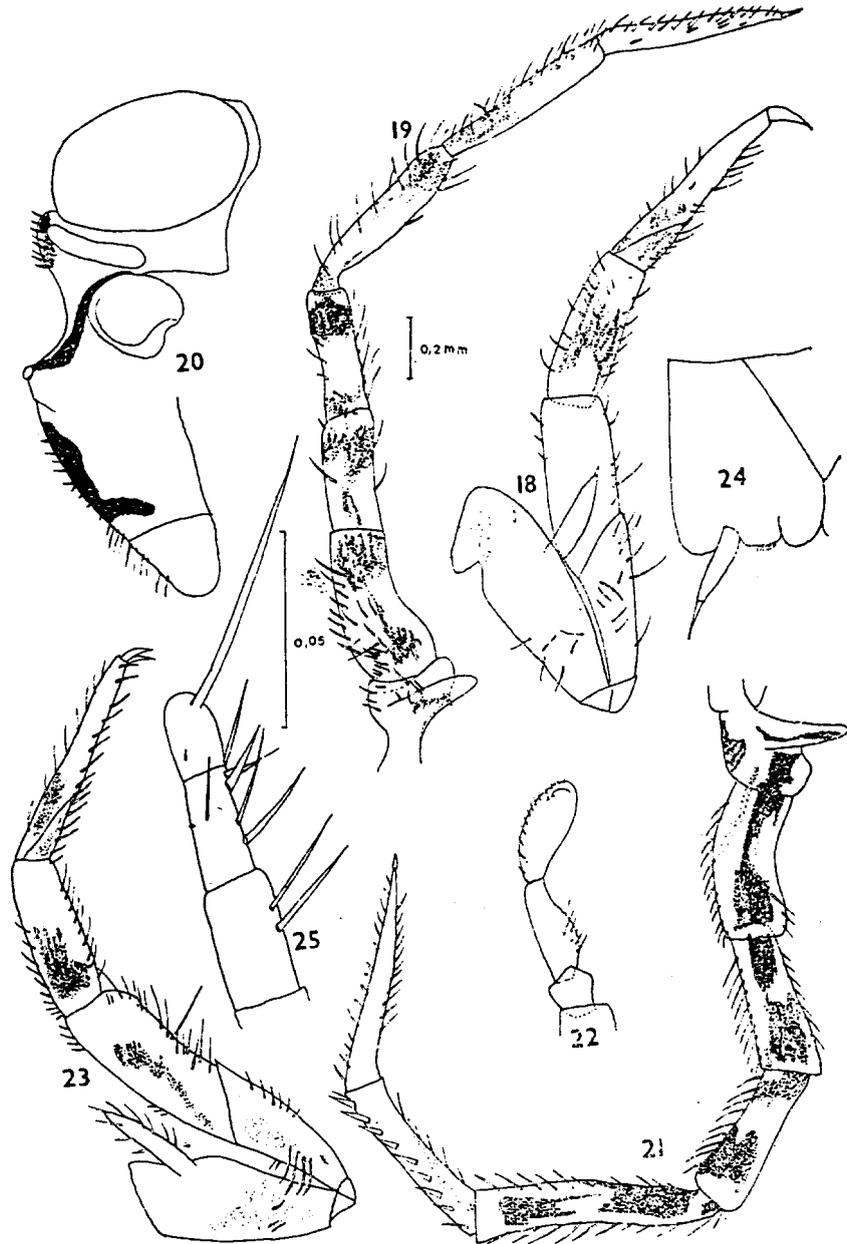
*Length* : **id**, 9.5 mm; 1♀, 12 inm.

**12. Trigoniphthalmus sp.** (Verhoeff. 1910)

*Specimens examined* : SWITZERLAND : Evolène, 31.vii.1925, T.B. Fletcher, B.M. 1926-147, 2 dried specimens, almost unrecognisable. Valais Arolla, 6500 ft., 5.viii.1925, Fletcher Coll., Brit. Mus., 1925-481, 1♀. Valais Arolla, 6500 ft., 10.viii. 1925, Fletcher Coll., Brit. Mus., 1925-481, only the abdomen of a broken ♂. Valais Arolla, 6500 ft., 7.viii. 1925, Fletcher Coll., 1♂ in pieces. Donns, Lewis. Sussex. August 1960, A.C. Reynolds. Van Somerssen, Kazzi Hill, Garissa Rd., 13-18, 1♀ in bad condition, broken. Plymouth A. (Dry), 1♀.

**13. Trigoniphthalmus alternatus** (Sivestri, 1904)

*Specimens examined* : ~~CFF~~ wall, many seen. ENGLAND : Devonii, Buckfast



Figs. 18-25. *Machilontus* sp. Gn. Lawit (Forest Floor) : 18, Hind leg; 19, Maxillary palp, pigment pattern. *Machilontus* sp. Celebes : 20, Head, lateral view; 21, Pigment pattern of maxillary palp; 22, Labial palp; 23, Hind leg, pigmentation; 24, Sternum V; 25, Apical articles of anterior gonapophysis of female. Only the drawing 25 are to different scale.

leigh, Spiderhole, 20/743-644-1912, Brit. Cave Res. Assocn. Brit. Mus., 1974-40-H.L. 2244, 2 ♀♀. Length : 9.5 mm.

Garden in Horrabridge (P.T. 0.5) S. Devon full 11 miles inland [from Plymouth. **Also** occurs in one Plymouth garden, G.M. Spooner, Horrabridge, Sept.-Oct. 1958, P.G.C., 3 ♀♀. Length : 11.5 mm, 801 N. Italy, C 2000, above Pontebba, 7.viii.58, **A.H.M.** ayes, 2 ♀♀, 1 ♂, 1 ♀ juvenile *Machilis*. S. DEVON : Kitley; Yealmpton, S.i.1965, The Barbour P.C.G., 6, Cave Research Group, 1565, 1 ♀.

#### 14. *Trigoniophthalmus remyi* Stach, 1939

*Specimens examined* : AUSTRIA : Tyrol, Kufstein, 20-22.vi.1964, 1654, J. Abraham & J.C. Deeming, 1 ♀. Length : 9.5-10 mm.

#### Family MEINERTELLIDAE

#### 15. *Machilellus?* (Silvestri, 1911)

*Specimens examined* : St. Vincent WI, HH Smith, ST. Vincent, W I, 1000 ft, 95.206, 1 ♀.

It is doubtful whether it is in fact this genus. The only female has primary gonopophyses which reach the apex of styles IX; Only one antenna has been preserved which is much longer than the body. The legs do not show coxal styli and the urosternites 1-VII show a pair of exertile vesicles.

#### 16. *Machilinus* sp. (Silv., 1911)

*Specimens examined* : Running on bare rock and under moss on rock. ITALY : Tuscany, Garfagnana, nr. Fornaci de Barga, 2.vi.1970, T. Clay, Brit. Mus. 1970-283. 17 ♀♀ : Four specimens whose sex have been unable to determine. All specimens dried.

#### 17. *Machilinus helicopalpus* Janets., 1954

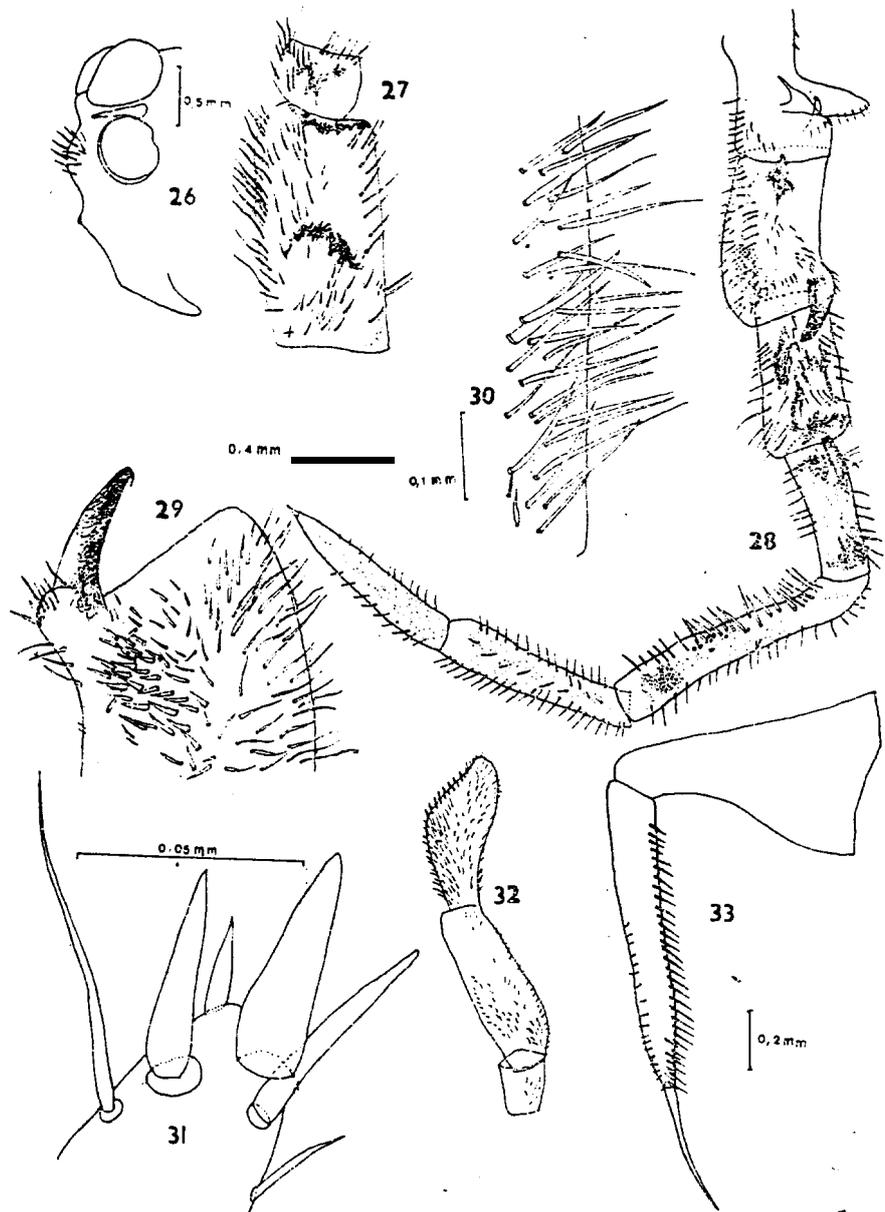
*Specimens examined* : SPAIN : Cordoba, C. Llerena road, 20 km. N. of Cordoba, 3-400 m, 12.v.1967, M.E. Bacchus & B. Levey, B.M. 1968-20, RF. AB 1924, 2 ♂♂, 7 ♀♀.

We have been out on the same dates to try and locate the species again, but the places where it had been collected are now under cultivation and the edges of the fields did not harbour any specimens.

#### 18. *Machilinus rupestris* (Lucas, 1846)

*Specimens examined* : Las Mercedes (Tenerife), 28.v.1907, Lord Vahingham. Three dried specimens in bnd condition, 1 ♂, 2 ♀♀. The three specimens have been dissected.

If we compare the specimens from the Canary Islands with the subspecies which *M. rupestris* presents, it bears a greater resemblance to *M. r. gallicus* Bitsch, 1965, a species which is widespread over the entire Mediterranean



Figs. 26-33. *Machilontus lawrencei*, sp. nov. ♂ : 26, Head lateral view; 27, Antennae, scapus and pedicellus; 28, Pigment pattern of maxillary palp; 29, Portion proximal of second article of maxillary palp : Chaetotaxy; 30, Portion proximal of 5th article of maxillary palp; 31, Portion of apical segment of maxillary palp; 32, Labial palp; 33, Sternum IX. The drawings 27, 28, 33 and 33 tire to same scale.

Region. It is possible, however, that these specimens may belong to a new subspecies, since in some details they do not correspond to the description of the subspecies given by Bitsch (1968), mainly with regard to the pigment of the maxillary palp of the male (Fig. 12), which is stronger and more spread in the specimens from the Canaries. The head too shows dark pigment on frons and clypeus. As the material under study is in bad condition, we shall leave it as *M. rupestris* and await further collections.

**19. Machilontus sp. (Silv., 1912)**

*Specimens examined* : Lichen on tree trunk. W. MALAYSIA : Trengganu, 4200 ft., Gn. Lawit summit ridge, 120°36'E, 5°25' N Gn. Lawit Exp. B.M. 1974-2, 18.iii.1974, T.C. 215, 1♀.

*Length* : 10.5-11 mm. Frons pigmented, leaving a light line in the centre; ocelli in the shape of the sole of a shoe with pigment in the central part only. Appendices with strong pigment. Only the third pair of legs with styli (fig. 13). The pigmentation of the maxillary palp is depicted in fig. 14. The primary gonapophyses slightly exceed styles IX in length.

W. MALAYSIA : Trengganu, Tree bark, 2600 ft., Gn. Lawit east ridge, 102°37'E, 5°25'N, Gn. Lawit Exp. B.M. 1974-2, 10.iii. 1974, C. Moreby C.M. III, 1♀. Antennae longer than body. Head with the frons pigmented with two oblique lines going towards the base of the antennae which then form an angle and converge towards the unpaired ocellus. Clypeus and labrum with no pigment. Hyaline legs, hardly any pigment. Macrochaetae on coxa and femur (Fig. 15 and 16). Pigmentation of the maxillary palp in Fig. 17.

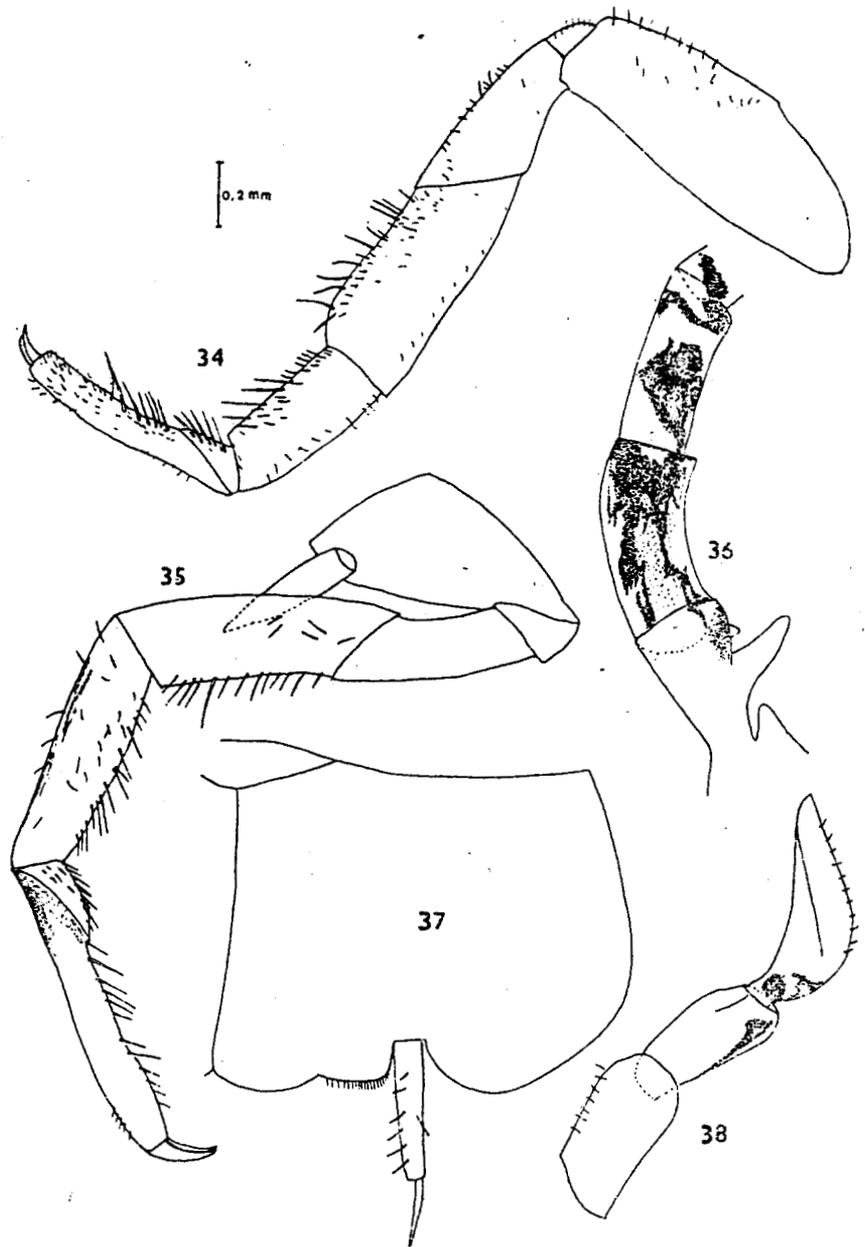
W. MALAYSIA : Forest Floor, Trengganu 140 ft., S. Kelembang, 102°40' E, 5°28'N, Gn. Lawit Exp. B.M. 1974-2, 1.iii.1974, C. Moreby, C.M. 53. One ♀. The head with only a little pigment around the antenna base, two small patches between the compound eyes and one above the unpaired ocellus. The femur of the first pair of legs shows ventrally a field of dense setae as in *M. sutteri* (figs. 18 and 19).

INDIA : ASSAM : Mishmi Hills, Delai Valley, Taphlogam, 2.xi.1936, 4000 ft., M. Steele, B.M. 1937-324, 1♀.

INDONESIA : CELEBES : N. Slope of Klabat, 24.vii.1954, A.H.G. Alston Coll. Brit. Mus. 1954-414.

It is doubtful whether it does in fact belong to the genus *Machilontus* since the abdominal sternites form an *acute angle* between the coxites. The description follows :

Body length 8 mm. Pattern of scales unknown. Hypodermic pigment present. Head strongly pigmented between the ocelli and stretching to the unpaired ocellus. Clypeus with a very strongly pigmented spot which forms an inverted Y. Labrum with no pigment (Fig. 20). The appendices and antennae do not show scales. The antennae are broken, the scapus and pedicel are strongly pigmented along the entire length of the inside face and a spot



Figs. 34-38. *Machilontus lawrencel*, sp. nov. ♂ : 34, Second leg, outline; 35, Outline and pigment pattern of hind leg. *Machilontus* sp. : 36, Pigment pattern of maxillary palp; 37, Labial palp; 38, Sternum V. All drawings are to same scale.

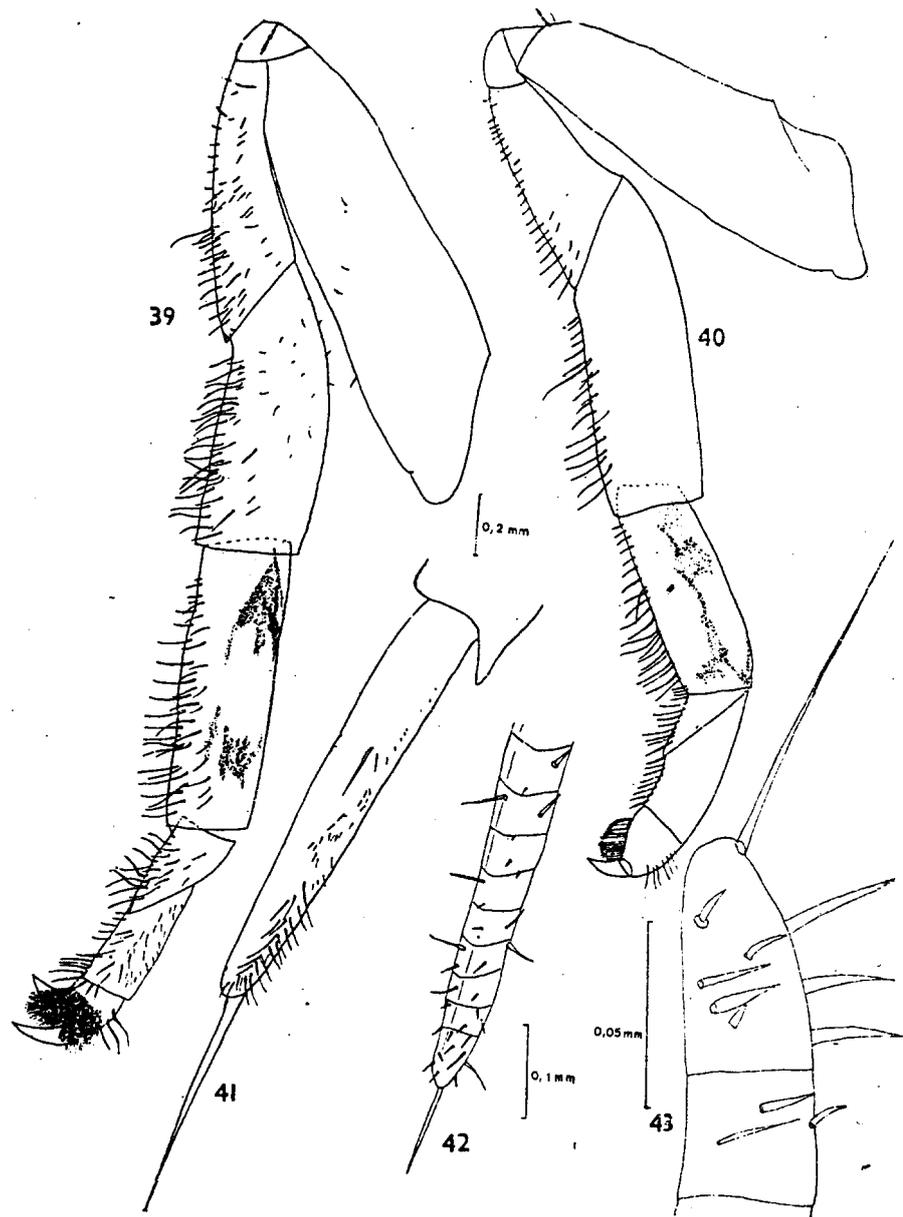
on the outside face. Mandible with four teeth and no pigment. Maxillary palp strongly pigmented and with normal setae on all articles. The last article has a long hyaline spine. (Fig. 21). hñentum with hyaline. setae in its mid-part. The shape of the labial palp is shown in fig. 22. Legs (only those of one side have been preserved) with coxal stylus only on the third pair. Pígnent only on the terminal parts and hardly present on coxa and trochanter. Tarsus with two tarsomeres (Fig. 23). Urosternites I-VII with a pair of coxal vesicles. Sternites with an *acute angle* between the coxites; styli with the hyaline terminal spine longer than mid-point of the stylus (Fig. 24). Primary type ovipositor reaching mid-way along styli IX. Gonapophysis with 50-56 articles. Terminal part as is shown in Fig. 25. The details concerning eyes, styli, legs, lack of scabies etc., are the same as in the genus *Machilontus* but the acute-angled sternites would make us place it in different family from that of the genus.

**20. Machilontus lawrencei**, sp. nov.

*Specimens examined* : INDIA : Khasi Hills (Meghalaya), Mc. Lachlan Coll., B.M. 1938-674. Only 1 specimen ♂ holotype, dried and transferred to spirit.

*Length of body* : 11 mm. Pattern of scales unknown, but showing hypodermic pigment.

Head with two triangular spots of pigment between the ocelli. On the frons, a projection with dark setae; clypeus with diffused pigment; labrum with no pigment. Fig. 26. Ocular ratios :  $Lc/l=0.5$ ;  $l/a=0.8$ . Ocelli elongated, dark; with a patch of pigment on inside face. The single remaining antenna is broken. Scapus with pigment on its mid and apical part. Distal chains with 16 subarticles dark in colour, separated from each other by a light line (Fig. 27). Maxillary palp with hypodermic pigment as shown in Fig. 28. The first article shows a dorsal apophysis longer than the internal projection; the second article with an apophysis directed dorsally which then curves downwards, ending in a very dark sharp point. This article, on the outer face, and before the apophysis, shows a series of small rigid setae, arranged in a group of 18-20; third article with strong pigment on ventral face and showing a series of dark spiny setae; the fourth has strong pigment dorsally which forms an incomplete ring on the distal part; the fifth article with a distal spot, and showing, ventrally, a group of spiny setae, as well as the shorter ciliary setae; sixth with diffused pigment, the same as the seventh. The last two articles have hyaline setae (Figs. 29, 30 and 31). Labium with a small group of setae on the mentum on its submedian part. Shape and chaetotaxy of the labial palp are shown in Fig. 32. Legs with coxal stylus only on the third pair and only a few spots of pigment. The first pair has, on the ventral distal part of the tibia a field of numerous dark setae which are not in existence on the other two pairs. Tarsi with only two tarsomeres, the latter having numerous dark setae (Figs. 34, 35). Urosternites I-VII with a single pair of coxal vesicles. Since the specimen is greatly damaged, the stylus/coxite ratios have proved impossible to measure. Urosternite IX



Figs. 39-43. *Machilontus* sp. : 39, Pigment and setae of hind leg; 40, Idem fore-leg; 41, Stylus IX; 42, Apical articles of anterior gonopophysis; 43, Apical portion of posterior gonopophysis. The drawings 39, 40 and 41 are to same scale.

(Fig. 33) with a hyaline terminal spine. Ratios stylus/cox.=1.14–1.15. The penis (very small according to the description of the genus) has not been observed. It has possibly been lost since the specimen is greatly damaged, or has gone astray while the dissection was being carried out.

So far only four species of *Machilontus* have been described : *M. gravelyi* Silv., 1913 from Burma and Siam; *M. javanicus* Silv., 1912 from Java and later mentioned in the Kva. Guinea by Womersley (1937); *M. lerang* Wygod., 1953 from the island of Flores and *M. sutteri* Wygod., 1953, from the island of Sumba and later mentioned in the Philippines by Paclt (1971). Paclt (1969) described a new subspecies : *M. sutteri borneensis* from Borneo (Kalimantan).

*M. lawrencei* bears a fair resemblance to *M. sutteri* since it has an uncinat apophysis on the second article of the maxillary palp and numerous setae on the fifth article of the same palp. However, it differs in the distribution of pigment on the said palp and in the greater number of setae on other articles. It differs from *M. gravelyi* in the fact that the latter lacks the setae on the fifth article of the maxillary palp. This same characteristic brings it nearer to *M. javanicus* by reason of the field of setae on the tibia of the first pair of legs, it resembles *M. sutteri* and also on account of the setae of the mentum, which in turn differentiates it from the remaining known species.

Its geographical remoteness from the remainder of the species leads us to regard it as a new species. This is the first record of this genus from India. The new species is dedicated to Dr. P.N. Lawrence for his kindness in sending the material for study.

## 20. *Meinertellus* sp. (Silvestri, 1904)

*Specimen examined* : Demerara, 9-90-124. A single female specimen 13 mm in length.

The body shows pigment which forms a design on the dorsal part. From the prothorax to the last abdominal tergite, it shows in the centre of the terga an area of light pigment trapezoidal in form. Later, more laterally, lighter spots. The design of the hypodermic pigment is similar to the scale pattern of *M. bogotensis* (See Sturm, 1973, p. 183, fig. 39-ab). Where the tergites bend towards the sides, it also shows on each one of them some slanting lines which form white spots.

Head with pigment on the frons only. Ocelli in the shape of the sole of a shoe, dark. Antennae broken, only the scapus and pedicel remain, and they are strongly pigmented. The single maxillary palp that has been preserved has only three articles, strongly pigmented (Fig. 36). Labial palp with pigment on second and third articles (Fig. 37). Legs with pigment on the tibia and the tarsus, with no coxal styli and showing two pulvilli with black hairs on the third tarsomere (Figs. 39 and 40).

*Length* : Tibia II : III = 6.9 : 5.1

Small abdominal sternites (Fig. 38). For urosternite V ratios stylus/coxite = 0.28. Terminal seta/length stylus = 0.62. Width coxite/width sternite = 3.91.

Terminal seta IX/length stylus IX=0.51 (Fig. 41).

Primary gonapophyses, extending further than styli IX. Figure 42 shows the terminal part of the gonapophysis VIII, and figure 43 shows the terminal ones of the gonapophysis IX.

*Incerta sedis*

*Specimen examined* - VALAIS AROLLA, 6000 ft., 18.viii.1925, Fletcher Coll., Brit. Mus., 1925-481.

A female specimen broken into three parts and with the head missing, Brit. Mus. 1925-481. A dried and pierced specimen impossible to identify. One female with no locality data and in bad condition.

**ACKNOWLEDGMENTS.** I would like to thank Dr. P.N. Lawrence for his confidence in me by entrusting this interesting collection to me for study and for his critically going through the manuscript and correcting my English.

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