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Victor Joly Dzokou
University of Dschang, Faculty of Agronomy and Agricultural Sciences, Research Unit Phytopathology and Agricultural Zoology, P. O. Box 222 Dschang, Cameroon

Wenceslas Yana
University of Bamenda, Faculty of Sciences, Laboratory of Biological Sciences, P. O. Box 39 Bambili, Cameroon

Laurentine Soufo
University of Maroua, Faculty of Sciences, Department of Biological Sciences, P. O. Box 814 Maroua, Cameroon

Joseph Lebel Tamesse
University of Yaounde I, Higher Teacher's Training College, Laboratory of Zoology, P. O. Box 47 Yaounde, Cameroon

Corresponding Author:
Victor Joly Dzokou
University of Dschang, Faculty of Agronomy and Agricultural Sciences, Research Unit Phytopathology and Agricultural Zoology, P. O. Box 222 Dschang, Cameroon

Biodiversity of psyllids genus *Homotoma* (Hemiptera: Psylloidea: Homotomidae) with the description of four new species associated to Moraceae in Cameroon

Victor Joly Dzokou, Wenceslas Yana, Laurentine Soufo and Joseph Lebel Tamesse

Abstract
In Cameroon, Homotomidae family is composed of three sub-families: Dynopsyllinae, Macrohomotominae and Homotominae. *Triozamia lamborni* is the only species recorded in Dynopsyllinae sub-family while in Macrohomotominae sub-family two genera are recorded *Phytolyma* and *Pseudoeriopsylla* with five described species. In the afrotropical region, literature signals four species in Homotominae sub-family with three species from Cameroon. Surveys carried out since 2005 permitted to record eight species in *Homotoma* genus in the Western highlands of Cameroon. Those species are described morphologically and their host plants are identified in this work. *Homotoma mukami* sp. n., *Homotoma dschangi* sp. n., *Homotoma nzem* sp. n. and *Homotoma kentsopi* sp. n. are named. The identification key of Cameroonian species is given.

Keywords: Biodiversity, taxonomy, Homotominae, *Homotoma*, pests, Cameroon

1. Introduction
Hemiptera-Psylloidea are pest insects which visible damages slow down the host plant deveopment and induce important economic lost. Homotomidae family is composed of three sub-families: Dynopsyllinae Bekker-Migdisova forming of Diceraopsyllini tribe with *Diceraopsylla* genus and Dynopsyllini tribe with two sub-tribes, Dynopsyllina Bekker-Migdisova (genus *Dynopsylla* Crawford and genus *Austrodynopsylla* Hollis and Broomfield) and *Triozamina* Bekker-Migdisova (genus *Triozamia* Vondrácek and genus *Afrodynopsylla* Hollis and Broomfield) (Hollis and Broomfield, 1989) [1]; Macrohomotominae White and Hodkinson forming of two tribes, Edinini Bhanotar, Ghosh and Ghosh (genus *Mycopsylla* Froggatt) and Macrohomotomini White and Hodkinson (genus *Macrohomotoma* Kuwayama, genus *Phytolyma* Scott, genus *Pseudoeriopsylla* Newstead and genus *Moriphila* Burckhardt *et al.*); Homotominae Heslop-Harrison forming of two tribes, Synozini Bekker-Migdisova (genus *Synoza* Enderlein) and Homotomini Heslop-Harrison (genus *Homotoma* Guerin-Méneville) (Hollis and Broomfield, 1989; Burckhardt *et al.*, 2018) [1, 2]. Psyllids of Homotomidae family differ from psyllids of other families mostly on the forewing veins without the cross-vein rs-m; the dorso-lateral process of the male sub-genital plate is absent and male proctiger bisegmentd. Homotominae sub-family is characterized by presence of $M+Cu_1$ vein, radular spinule on m_2 cell; metatibia with a ring of spurs; apical lobes of aedeagus simples.
According to Hollis and Broomfield (1989) [1] and Li and Yang (1991) [3], 32 species of *Homotoma* genus were described throughout the world: 4 species in Australo-orientale region (*H. bakeri* Crawford, *H. bilineata* Crawford, *H. gressitti* Miyatake and *H. pacifica* Crawford); 22 species in oriental region: *H. altissimae* (Yang and Li), *H. annesleae* (Yang and Li), *H. bambusae* (Yang and Li), *H. benjaminae* (Yang and Li), *H. boheae* Yu, *H. chuanana* (Yang and Li), *H. distincta* Crawford, *H. galbvittata* (Yang and Li), *H. indica* (Marthur), *H. lahui* (Yang and Li), *H. maculate* Yang, *H. mangiferae* (Yang and Li), *H. pyriformiscola* (Yang and Li), *H. radiate* Kuwayama, *H. ruiliana* (Yang and Li), *H. shuana* (Yang and Li), *H. spiraea* (Yang and Li), *H. unifasciata* Yu, *H. wulinenensis* (Yang), *H. xishuangana* (Yang and Li), *H. yunnanica* (Yang and Li), *H. microphyllae* (Li and Yang); 2 species in Palaearctic region (*H. ficus* Linnaeus) and *H. viridis* Klimaszewski); 4 species in Afrotropical region (*H. angolensis* Hollis and Broomfield, *H. bamendae* Hollis and Broomfield, *H. chlamydodora* Hollis and Broomfield and *H. eastopi* Hollis and Broomfield) (Hollis and Broomfield, 1989) [1].

Among the 8 species collected, 3 known as *Homotoma chamydodora*, *H. eastopi*, *H. bamendae*. Four of the 5 other species are described and named in this work but the fifth species is not described because of the lack of material.

2. Material and methods

2.1 Study area

Data collection took place in the Menoua Department (10°04'N, 5°26'E, 1385 m) Western Cameroon region. The West region of Cameroon covered a surface of 13 892 km^2 and bordered in the East by Centre region, in the north by Adamawa region and North-West, in West by South-West region and part of North-West, in South by Littoral region and part of Centre region.

2.2 Data collection on the field

The collection of specimens has been unseeing since 2005 and continues on the field in Cameroon. Adult psyllids were captured with entomological sweep net of 0.5 mm mesh size and mouth aspirator. Larvae were sampled directly from buds and leaves of the host plant with soft brush. The host plants were identified at National herbarium of Yaounde by Dr Tadjouteu and Professor Bonaventure Sonké of the University of Yaounde I.

2.3 Lab work, deposit and conservation of specimens

The specimens are preserved dry and slide-mounted or in 70% ethanol and are deposited in Laboratory of Zoology, Higher Teacher's Training College, University of Yaounde I (LZUY), Laboratory of Agricultural Zoology University of Dschang (LAZUDs), Royal Museum of Central Africa (RMCA), and Naturhistorisches Museum Basel, Switzerland (NHMB). The measurements of adults and fifth instar larvae were done with the use of a stereomicroscope (mark LEICA L2) having an ocular micrometer graduated from 0 to 10 micrometric units. Measurements done on the 5th instar larvae, constituted body length; body width; antenna length; forewing-pad length; metatibia length. While for adults measurement constituted body length; body width; head width; antenna length; first flagellomere length; genal process length; forewing length; forewing width; hindwing length; hindwing width; metatibia length; metafemur length; male proctiger length; paramere length; distal segment of aedeagus length; female proctiger length; female subgenital plate length. Adults and 5th stage larvae were kept in a 10% KOH solution for 4 hours for the dissolution of the internal organs and softening of the chitinic cuticle. The different organs to describe in adults were detached with the help of two fine needles mounted on wooden handles. The mounting was done under the stereomicroscope. The dissected organs were mounted on an objective slide in polyvinyl drop and covered with an objective slide cover. The mounted slides are dried using light bulb. The drawings (diagrams) were realized under a microscope equipped with a drawing tube mark LEICA DM. 1000.

3. Results and Discussion

Taxonomy

Synonymy and references

Family: Homotomidae Heslop-Harrison

Homotomini Heslop-Harrison, 1958 [4]: 578; Loginova, 1964 [5]:54, genus type: *Homotoma* Guérin-Meneville.

Homotominae Heslop-Harrison; Klimaszewski, 1964 [6]: 91; Bekker-Migdisova, 1973 [7]: 101.

Homotomidae Heslop-Harrison; White and Hodkinson, 1985 [8]: 272; Hollis, 1987 [9]: 90. Brown and Hodkinson, 1988 [10]: 179. Carsidarinae Crawford; Yang, 1984 [11]: 168, part.

Homotomidae Heslop-Harrison; Hollis and Broomfield, 1989 [1]:135. Homotomidae Heslop-Harrison Tamesse 2005 [12].

Genus *Homotoma* Guérin-Méneville

Homotoma Guérin-Méneville, Hollis and Broomfield, 1989[1]: 157.

3.1 Key of identification *Homotoma* genus species of Cameroun

1- Forewing carrying a dark band covering part of cu_1, m_1 and m_2 cells ……..……...2

- Forewing carrying a dark band covering entirely cu_1 cell and part of cu_2 cell……5

- Lacking of dark band covering cu1, cu_2, and *m* cells……..6

2- Presence of a dark patch on the costal margin between *r* and m_1 cells…….……3

-Presence of a dark patch only on r_s cell……4

3-Male proctiger bisegmented, proximal segment with straight posterior margin and broad base ……...*H. chlamydodora*

- Male proctiger bisegmented, proximal segment with rounded posterior margin and narrow basis ……..……*Homotoma kentsopi* sp. n.

4-Paramere with apical tubercle, ventral margin of proximal segment of male proctiger with two grooves and rounded posterior margin …….…. *Homotoma mukami* sp. n.

-Paramere with two internal tubercles, proximal segment of male proctiger carrying internal tubercle……*Homotoma dschangi* sp. n.

-Paramere lacking apical tubercle, ventral margin of proximal segment of male proctiger with weak groove and a bit rounded posterior margin …….……*Homotoma nzem* sp. n.

-Presence of furrow dark band along anal vein behind Cu_{1b} vein up to wing apex …….……...……*Homotoma* sp.

5- Forewing carrying a dark band covering M_{1+2} vein and distal part of *r* and *m* cells, base of R_1 and Rs veins, and part of M and Cu veins; paramere lacking tubercle, proximal segment of male proctiger less developed with distal end slightly bloated on external side, antenna more flattened……...…….*H. eastopi*

6-Forewing bearing veins with dark spots on R_2, Cu_{1b}, Cu_{1a}, M_{1+2}, M_{3+4} veins; presence of dark patch following the base of r_1, r_2, m_2 cells; paramere with two internal tubercles, antenna more flattened…….....*Homotoma* cf. *bamendae*

- Forewing without veins with dark spots on R_2, Cu_{1b}, Cu_{1a}, M_{1+2}, M_{3+4} veins; presence of dark patch following the base of r_1, r_2, m_2 cells; paramere with two internal tubercles one internal and the other apical, antenna more flattened…….……...….. *H. bamendae*

3.2 *Homotoma chlamydodora* Hollis and Broomfield

(Figures 1A, 2A, 3A, 4A, 5A, 6A, 7A, 8A, 9A, 10A)

Adults

Coloration: overall adult body colour brownish, the base of proepisternum and pronotum dark in profile view.

Structure: head (Fig.1A) with two prominent compound

eyes; medial epicranian suture dividing vertex in two blocs. Lateral occeli located at the base of antennae, antennal cavities not visible; medial occelus located on the middle of vertex. Frontal margin of vertex with a groove covered by some setae; ventrally, the vertex also carrying setae. Thorax slightly arched, pronotum visible dorsally. Mesoscutellum attached to mesoscutum leaving two outgrowths on the dorsal side of mesoscutum. Metapostnotum carrying dorsally two processes limited by small medial suture.

All the antennal segments (Fig. 2A) with setae; first flagellomere the longest antennal segment; eighth flagellomere the shorter with long pointed subapical seta and short truncate apical seta. Forewing (Fig. 3A) elongate and oval. All the veins of forewing with satae, except the anal portion before the anal break and the distal portion of costal and sub-costal veins (C+Sc); the anal vein before the anal break is splitting in two branches, thus isolating the cell. The begining of veins R_1 and Rs firstly; M and Cu_1 secondly are very closer. The length of R+M+Cu_1 vein two times R vein; R_1 vein and M+Cu_1 vein with equal length, and pterostigma is lacking, M vein long.

Procoxa (Fig. 4A) dark with well-developed meracanthus. Metatibia with 5 apical spurs with a ring of internal spines; metabasitarsus with a single apical spur.

Male genitalia as Figure 5A. Proctiger bisegmented, proximal segment bulky than apical segment; external margin with a tuff of setae; proximal segment basal sparse by some setae while apical segment with dense pelosity. Internal view of paramere (Fig. 6A), paramere is straight with incurved distal part; its internal surface with single in the apical third and another tubercle apical part. Distal segment of aedeagus (Fig. 7A) short with rounded apex. Female genitalia (Fig. 8A) short; protiger longer than sub-genital plate and the circumanal with two ring of pores; proctiger and sub-genital plate with setae on externaf side. Ventral valve longer than internal valve; and the dorsal shorter than ventral and internal valves; apex of the dorsal valve incurved; dorsal valve dorsal bilobed. Measurements found in table 1.

Fifth instar larva

Coloration: Fifth instar larva slight brown.

Structure: the body (Fig. 9A) divided in head, thorax and abdomen. Antenna with three segments; the flagellum with short setae. External margin of pad wings and abdomen with setae. Dorsally sclerites not visible. Ventrally, 4 sclerites visible as well as cells which are stigmas. The caudal plate (Fig. 10A) well visible on ventral side; abdomen ending by slight incursion which is the opening of the caudal plate. Metahoracic leg with 6 segments; arolium characteristic of the species. Measurements found in table 4.

Host plant and biology: *Ficus vallis* (Moraceae)

Homotoma chlamydodora is living together with a Triozidae of *Pauropsylla* genus on *Ficus vallis* in Lingang-Foto locality. Larvae of this Homotomidae are mostly located in the buds of the host plant, especially young larvae. Sometimes the fourth and fifth instar larvae moving freely on the surface of leaves. The larvae bearing whitish flocculent waxy filament on their abdomen end. During high infestation, the buds hosting the larvae droped prematurely and often before the molt of some larvae.

Distribution: Lingang and Fongo-Tongo (Cameroon), Tanzania, Kenya, Uganda, Angola, Burundi, Nigeria.

Material examined: Holotype: ♂, Cameroon, West region, Lingang, 10°04'N, 5°26'E, 1385 m, 15/02/2006, *Ficus vallis* (Dzokou & Tamesse). Slides mounted (LZUY). Paratypes: Cameroon, 39♂, 35♀, 8 larvae, same collection as holotype, in ethanol at 70%; 2♂, 2♀, 2 larvae; or dry mounted on slides (MHNB); 1♂, 1♀, in ethanol at 70% (MRAC); 7♂, 11♀, 17 larvae, 14/10/2018, Fongo-Tongo (Dzokou), in ethanol at 70% (LAZUDs).

Comment: R1 and Rs veins are born at the same position in *H. chlamydodora* and the Tanzanian specimen, close to the birth points of the M and Cu1 items. The distance between these points is greater in the Burundi specimen. Paramere of *H. chlamydodora* bearing an internal tubercle 2/3 on the superior part and apical tubercle; female genitalia with bilobed dorsal valve.

3.3 *Homotoma mukami* sp. n.

(Figures 1B, 2B, 3B, 4B, 5B, 6B, 7B, 8B, 9B, 10B)

Description

Adult

Coloration: adult body colour black and compound eyes yellowish as well as lateral occeli. The rest part of the head brown. Tergites and sternites brown. I profile view, pronotum and proepisternum also brown. A brown band covered cu_1, m_2 and m_1 cells of forewing. **Structure:** head (Fig. 1B) with two prominent compound eyes; medial epicranian suture slightly deep and dividing vertex in two blocs. Medial occelus located on the middle of vertex. Lateral sutures present and the two vertex blocs taking globally the square form; vertex sparse of setae. Antennal cavities large and visible dorsally. Metapostnotum with two dorsal processes spines like structures.

First antennal flagellomere (Fig. 2B) the longest while the eighth flagellomere the shorter; antennal segments with several setae except the last segment with long pointed subapical seta and short truncate apical seta. Flagellomeres 2, 3, 4 and 5 with the same length; fourth flagellomere with a single sub-apical rhinarium.

Forewing (Fig. 3B) elongate and oval; internal veins without setae while costal sub-costal and anal veins with setae. M+Cu_1 vein branch same length with Cu_1 vein; R+M+Cu_1 vein two times long than Cu_1 vein. Claval suture well defined; anal portion before anal break splitting in several cells. Splitting point of R_1+Rs branch and M+Cu_1 shifted. Hindwing with R+M+Cu_1 vein when the veins are absent. Basal portion of anal vein splitting in two branches. Hindwing with single seta before the costal break and 2 setae plus 5 setae plus hamelus after the costal break.

Coxa of metathoracic leg (Fig. 4B) with well-developed meracanthus; trochanter with two spines; femur with a furrow on internal margin carrying 6 spines. Metatibia with 5 internal and 1 external apical spurs; metabasitarsus with a single apical spur.

Male genitalia (Fig. 5B) with bisegmented proctiger; proximal segment bulky rounded on internal margin and bearing 4 setae. Distal segment elongates with a slight groove on internal margin and sparse of setae. Paramere (Fig. 6B) elongate and incurved on external margin sparse of short setae. Paramere ending by apical tubercle. Distal segment of aedeagus (Fig. 7B) with broad and rounded apex.

Female genitalia (Fig. 8B) short; subgenital plate triangular with incomplete furrow carrying setae on the inferior portion.

Proctiger longer than subgenital plate with two furrows and distal portion with more setae than proximal portion; circumanal formed of two rings of pores. Internal valve slightly longer than ventral valve while they are longer than dorsal valve. Measurements found in table 2.

Fifth instar larva
Coloration: Overall body of fifth instar larva darkish, compound eyes dark; hindwing pad dark on apical portion and bearing a dark band on internal margin; arolium with dark colour.

Structure: body of the fifth instar larva (Fig. 9B) clearly divided into head, thorax and abdomen. Antenna with three segments; scape, pedicel and flagelum which is not segmented. Two abdominal sclerites visible; pad wings less developed with setae on external margin; 5 abdominal sclerites visible. Metathoracic leg with 6 segments; arolium (Fig. 10B), with two lobes. External margin of abdomen with short setae. Circumanal cylindrical with internal margin incurved and composed of single ring of pores; caudal margin truncate. Measurements found in table 4.

Host plant: *Ficus ovata* (Moraceae)
Distribution: Menoua (Cameroon)
Material examined: Holotype: ♂, Cameroon, West region, Fongo-Tongo, 10°04'N, 5°26'E, 1385 m, 28/03/2006, *Ficus* sp. (Dzokou & Tamesse). Slides mounted (LZUY). Paratypes: Cameroon, 34♂, 34♀, 7 larvae, same as holotype, conserved in ethanol 70%; 1♂, 1♀, 2 larvae, in ethanol 70% (MHNB); 1♂, 28/03/2006, Fongo-Tongo, in ethanol 70% (MRAC); 11♂, 10♀, 15 larvae, 13/10/2017, Dschang (Dzokou), in ethanol 70% (LAZUDs).

Etymology: name derives from the memory of the late chemistry lecturer of the University of Yaounde I Cameroon, Dr. Mukam Lucien.

3.4 *Homotoma dschangi* sp.n.
(Figures 1C, 2C, 3C, 4C, 5C, 6C, 7C, 8C, 9C, 10C)

Description
Adult
Coloration: Overall body of adult black; male tergites and sternites darker separated by slight band; internal veins of the forewing with small dark spots; a brown band covered cu_1, m_2 and m_1 cells and another r_2 cell.

Structure: head illustrated as Figure 1C. Medial epicranian suture deeper and dividing vertex in two blocs. Medial occellus and lateral occeli located on the same line. Lateral sutures dividing vertex in several blocs behind the occelli; vertex sparse of setae. Antennal cavities less large visible dorsally. Metapostnotum with two dorsal processes spines like structures; in the female the lateral slight band facilitate to localize stigma opening and 5 stigma openings are clearly visible.
Antenna (Fig. 2C) with short setae on each antennal except segment, the last segment with long pointed subapical seta and short truncate apical seta. The last antennal segment carrying two rhinaria; flagellomeres 2 and 7 with single apical rhinarium. First flagellomere is the longest antennal segment; flagellomeres 2, 3, 4, 5 and 6 with same length; while the seventh is the shorter.
Forewing (Fig. 3C) elongate and oval; C+Sc vein with setae; other veins with scattered setae except the portion of anal vein after anal break. R+M+Cu_1 vein branch and Cu_{1b} vein same length; Cu_1 slightly longer than R vein and R_1 shorter than R vein. The anal vein before the anal break splitting in two branches, thus isolating two cells. Splitting point of R_1+Rs branch and M+Cu_1 shifted. Hindwing longer than width; hindwing with 4 setae before the costal break and 6 setae plus 2 setae after the costal break. Only R+M+Cu_1 vein branch and R, M veins are visible.
Coxa of posterior leg (Fig. 4C) with well-developed meracanthus; femur with a furrow on internal margin toward tibia base; tibia with 5 spurs (3 internal and 2 external); metabasitarsus with a single apical spur.
Male genitalia (Fig. 5C) with bisegmented proctiger; proximal segment bulky but basal part which is fixed to subgenital plate narrower than portion carrying distal segment; distal segment short and cylindrical with truncate apex; only ending part of the proximal segment and distal segment bearing setae. Paramere (Fig. 6C), elongate with incurved external margin, presence of a furrow on distal portion, rounded apex. Distal segment of aedeagus (Fig. 7C) slightly broad at ending part with rounded apex. Subgenital plate rounded sparse of setae.
Female genitalia (Fig. 8C) short; subgenital plate triangular with a half furrow on distal portion sparse of setae; proctiger with long furrow, rounded apex; circumanal elongate with two rings of pores. Proctiger slightly longer than subgenital plate. Internal and ventral valves with equal length but less long than dorsal valve which is bilobed. Measurements found in table 2.

Fifth instar larva
Coloration: advanced instar larva blackish.
Structure: the larval body (Fig. 9C) learly divided into head, thorax and abdomen. Antenna composed of three segments and the flagellum with setae. Dorsally pad wings well visible and developed bearing short setae on external margin. Thoracic sclerites visible; abdomen with 4 sclerites and caudal plate well visible dorsally. Ventrally some abdominal sternites visible separated by slight intersegment membranes. Posterior leg with 5 segments ending by less well developed arolium with two lobes (Fig. 10C). External margin of abdomen with short setae. Circumanal cylindrical with internal margin incurved and composed of single ring of pores; caudal margin truncate. Measurements found in table 4.

Host plant: *Ficus* sp. (Moraceae)
Distribution: Menoua (Cameroon)
Materials examined: Holotype: ♂, Cameroon, West region, Dschang, 10°04'N, 5°26'E, 1385 m,15/02/2006, *Ficus* sp. (Dzokou & Tamesse); mounted slides (LZUY). Paratypes: Cameroon, 23♂, 24♀, 33 larvae, same collection with holotype, conserved in ethanol 70%; 2♂, 2♀, 2 larvae, in ethanol 70% (MHNB); 2♂, 1♀, 9 larvae, 13/10/2017, Dschang (Dzokou), ethanol 70% (LAZUDs).

Etymology: the species is named after its provenance, Dschang town of Menoua Division, West region of Cameroon.

Comment: *Homotoma mukami* sp. n. and *Homotoma dschangi* sp. n. are closer and share the fact that splitting point of R_1+Rs branch and M+Cu_1 shifted. In *Homotoma mukami* sp. n., paramere with apical tubercle not pigmented, male

proctiger proximal segment with ventral margin carrying two grooves and rounded posterior margin; distal segment elongate with a slight groove on internal margin. While in *Homotoma dschangi* sp. n., paramere without apical tubercle, male proctiger proximal segment with ventral margin carrying single groove, distal segment of proctiger short and cylindrical with truncate apex.

3.5 *Homotoma eastopi* Hollis and Broomfield
(Figures 1D, 2D, 3D, 4D, 5D, 6D, 7D, 8D, 9D, 10D)

Description
Adult
Coloration: overall of adult black; a dark band covered M_{1+2}; legs dark accept the end of tibias and tarsi.

Structure: medial epicranian suture deeper and dividing vertex in two blocs. La suture épicrânienne médiane de la tête (Fig. 1D) est visible et profonde en vue dorsale; elle divise le vertex en deux blocs. Frontal cones slightly developed; vertex blocks globally rectangular. Localisation of lateral occelli and medial occellus for a triangle. Compound eyes dorsally prominent. Antennal cavities large. Pronotum and mesopraescutum are strong bearing setae; mesoscutum trust out toward external margins; metapostnotum carrying dorsal processes dorsal spines like structure. First abdominal sternite incurved toward the margin of tergite giving a narrowing aspect between thorax and abdomen. Sternites are clear allowing the location of 5 stigma openings.
Scape and pedicel of antenna (Fig. 2D) rounded; flagellomeres flattened. All the antennal segments with short setae accept the last segment which carrying long pointed subapical seta and short truncate apical seta. First flagellomere the longest; flagellomeres 2, 3, 4 and 5 with same length.
Forewing (Fig. 3D) elongate and trapezoidal; veins with setae. The length of $R+M+Cu_1$ vein equal to R vein plus $M+Cu_1$ vein; R vein two times longer than R_1 vein; Rs vein and M vein equal length; splitting point of R_1+Rs branch and $M+Cu_1$ not shifted. M_{1+2} vein three times shorter than M_{3+4} vein. Hindwing M vein unbranched, Cu branching distally.
Coxa of posterior leg (Fig. 4D) with less developed meracanthus and internal spine; also, trochanter with internal spine. Femur with spines and internal furrow with a ring of setae. Metatibia with 5 to 6 apical spurs while metabasitarsus with 2 spurs.
Male genitalia (Fig. 5D) with bisegmented proctiger; proximal segment slightly narrow in the base but broad at ending portion also there is a medial furrow; distal segment elongate and cylindrical with a truncate apex; distal segment with more setae than proximal segment. Paramere (Fig. 6D) elongate with incurved external margin and furrow of the distal part, rounded apex; parmere sparse of simple short setae. Distal segment of aedeagus (Fig. 7D) with subapical external and internal margins incurved; strongly dilated forming irregular sphere, rounded apex and short ejaculatory tube. Subgenital plate triangular.
Female genitalia as (Fig. 8D) proctiger with elongate circumanal formed of two rings of pores; furrow on the distal portion, rounded apex, setae only on distal portion. Ventral plate triangular without a furrow, pointed apex setae only on the third portion of distal part. Proctiger and ventral plate with equal length. Internal valve slightly short than ventral valve but the two valves longer than dorsal valve which is bilobed. Measurements found in table 1.

Fifth instar larva
Coloration: advanced instar larva blackish.
Structure. Larval body (Fig. 9D) not clearly defined (head and thorax), because part of the head is located between the forewing pads. Dorsally, 3 thoracic sclerites are visible; wing pads well developed and covered part of the head; their external margins with setae. Abdominal sclerites also visible and clearly separated; sclerites bearing setae and intersegment membrane lacking setae. Antenna with three segments. Rostrum well defined. Metathoracic leg with 6 segment 6 articles ending by pedonculate bilobed arolium (Fig. 10D). Circumanal cylindrical with internal margin incurved and composed of two pore rings; caudal margin rounded. Measurements found in table 4.

Host plant: *Ficus* sp. (Moraceae)
Distribution: Menoua (Cameroon)
Material examined: Holotype: ♂, Cameroon, West region, Nkop, 10°04'N, 5°26'E, 1385 m, 15/02/2006, *Ficus* sp. (Dzokou & Tamesse) mounted slide (LZUY). Paratypes:Cameroon, 15♂, 18♀, 15 larvae, same collection with holotype, in 70% ethanol; 2♂, 2♀, 2 larvae, mounted slide or in 70% ethanol (MHNB); 1♂, 1♀, 1 larva, 20/11/2011, Nkop, in 70% ethanol (MRAC); 5♂, 7♀, 9 larvae, 13/10/2017, Dschang (Dzokou), in 70% ethanol (LAZUDs).

Comment: *Homotoma nzem* sp. n. is very closer to *Homotoma eastopi* (Hollis & Broomfield, 1989); but splitting point of R_1+Rs branch and $M+Cu_1$ shifted like on *Homotoma nzem* sp. n. Distal part of aedeagus of *Homotoma nzem* sp. n. with dilated and rounded apex; subapical internal margin incurved and external subapical margin convexed while in *Homotoma eastopi*, subapical external and internal margins incurved (Hollis and Broomfield, 1989) [1].

3.6 *Homotoma* sp. cf. *bamendae*
(Figures 1E, 2E, 3E, 4E, 5E, 6E, 7E, 8E, 9E, 10E)

Adult
Coloration: Overall body of male blackish while female brownish; lateral occelli reddish. Forewing clears with brown veins, internal veins of the forewing with small dark spots, strongly pigmented zone located on the base of R_1 branch, Cu_{1a} branch and following internal margin of Cu1a and Cu_{1b} veins; it is also observed on the apex of the wing before the maegin of M_{3+4} vein; r_1 and r_2 cells also bearing brown zones.

Structure: *Homotoma* sp. cf. *bamendae* marked by many setae on the different organs (dense pilosity). On the head (Fig. 1E)), medial epicranian suture deeper and dividing vertex in two blocs on the dorsal view; medial occelus located near the frontal margin; lateral sutures giving specific form to the vertex which is sparse of setae. Frontal cones not well developed with setae but observable on profile. Antennal cavities broad and dark structure like links the base of the scape to the vertex. Pronotum, mesopraescutum, mesoscutum, axillary cord of mesoscutellum, metascutum and metascutellum with long lanceolate setae. In the profile, pleurites are clear and permit to localize 7 stigmate openings. Metapostnotum carrying a dorsal process dorsal structure like

spines.
Antenna (Fig. 2E) flattened laterally and broad; all the antennal segments with short setae except the last segment which carrying long pointed subapical seta and short truncate apical seta. The first flagellomere longest, flagellomeres 2, 3, 4, 5, 6 and 7 with equal lenght. Flagellomeres 2, 4, 6 and 8 with a single sub-apical rhinarium.
Forewing (Fig. 3E) longer than width, oval with narrow apex; veins with long straight setae. The lenght of R+M+Cu_1 vein is equal of R, R_1, and M+Cu_1 veins united; M vein is the longest while the M+Cu_1 and Cu_1 are the shortest; Cu_{1a} branch is two times longer than Cu_{1b} branch. *c+sc* cell with small radular zone. The anal vein before anal break is subdivided forming several cells, claval suture well defined; m_1 cell large because of the incurvation of M_{3+4} vein. Splitting point of Rs and C+Sc veins firstly, Cu_{1b} and anal veins secondly shifted. The contact points between Rs vein firstly and Cu1 and anal veins secondly are located on the same vertical. The begining ponit of M and Cu_1 veins located the beginning point of R_1 and Rs veins, same with Cu_{1b} and Cu_{1a} veins. Hindwing, elongate, with only R+M+Cu_1 veins; other veins not visible; hindwing with 4 setae before the costal break single seta after costal break plus a group of 6 setae (4+1+6). Coxa of metathoracic leg (Fig. 4E) with well-developed meracanthus. Metatibia with 5 spurs; metabasitarsus with 2 spurs.
Male genitalia (Fig. 5E) with spherical sub-genital plate; proctiger with two segments; proximal broad with lateral lobe and anal tube moderately developed; distal segement short and cylindrical with truncate apex. Internal margin of paramere (Fig. 6E) with two juxtaposed tubercles. Distal segment of aedeagus (Fig. 7E) with incurved subapical internal margin while the subapical external margin convexed, rounded apex.
Female genitalia (Fig. 8E) short and conical; triangular ventral plate sparse with setae on the ventral face. Proctiger longer than ventral plate with many setae; circumanal with two rings of pores. Internal valve short than ventral valve and the two valves longer than the dorsal valve which is bilobed. Measurements found in table 1.

Larva
Coloration. Fifth instar larva yellowish to brownish.
Structure. Body of the fifth larva (Fig. 9E) clearly divided in head, thorax and abdomen and sparse of setae. Antenna with three segments; flagellum carrying setae. Dorsally, two thoracic sclerites visible; wing pads well developed with the begining of veins formation on forewing pad; hindwing pad with many short setae. Wing pad margins and abdominal margins with setae. Four abdominal tergites visible. Posterior leg with 6 segments ending by pedonculate triangular arolium with two lobes (Fig. 10E). Two abdominal sternites clearly defined and two other are observable on the external margins. Circumanal is cylindrical with internal margin incurved and composed of single pore ring; caudal margin rounded. Measurements found in table 4.

Host plant and biology: *Ficus chlamydocarpa* (Moraceae)
Distribution: Bamenda and Menoua (Cameroon)
Material examined: Holotype: ♂, Cameroon, West region, Menoua, 10°04'N, 5°26'E, 1385 m, 07/12/2006, *Ficus chlamydocarpa* (Dzokou & Tamesse); slides mounted (LZUY). Paratypes: Cameroon, 6♂, 7♀, 12 larvae, same collection as holotype, in 70% ethanol; 2♂, 2♀, 2 larvae, slides mounted or 70% ethanol (MHNB); 1♂, 1♀, 1 larva, Bansoa head quarter, in 70% ethanol (MRAC); 10♂, 14♀, 21 larvae, 13/10/2017, Lefang (Dzokou), in 70% ethanol (LAZUDs).

Comment: *Homotoma* cf. *bamendae* share with *H. angolensis* (Hollis and Broomfield, 1989) [1] the stucture of antenna; forewing stucture of the former is similar to forewing stucture of the later; but the central black zone between r_1, r_2, and m_2 cells is lacking *H. bamendae*; same to the beginning point of R_1, Rs veins and M, Cu_1 veins firstly and the contact point between Rs, C+Sc veins and Cu_{1a}, anal veins secondly is approximately on the same vertical in *H. bamendae.* Paramere of *H. chlamydodora* Hollis and Broomfield (1989) [1] also bears in internal margin two tubercles as in *Homotoma* cf. *bamendae*, but different location; the first tubercle on the third of apical part and the second on the third of proximal part. Male proctiger of the two species carrying anal tube each but in *H. chlamydodora*, anal tube is internal and not in contact with lateral lobe margins; the structures of apical segment of male proctiger and distal segment of aedeagus are completely different.

3.7 *Homotoma nzem* sp. n.
(Figures 1F, 2F, 3F, 4F, 5F, 6F, 7F, 8F, 9F, 10F)

Description
Adult
Coloration: Overall body of adult is reddish; a brown zone following cu_1, m_2 and m_1 cells; another brown zone is located on r_2 cell; internal veins of the forewing with small dark spots.

Structure: head (Fig. 1F) with rounded form, medial epicranian suture deeper and dividing vertex in two blocs. Several medial sutures médianes are present making limits of vertex and compound eyes to be materialized. Antennal cavities slightly broad; lateral ocelli located at the base of those cavities and are horizontally located at the same level with medial ocellus. Head lacking setae on dorsal and ventral faces. Metapostnotum with a dorsal process spine like structures. In profile view, between abdominal tergites and sternites, 6 stigmate openings are observable.
Antenna (Fig. 2F) with 10 segments covered by short setae except the last segment which is short and carrying long pointed subapical seta and short truncate apical seta. First flagellomere is the longest; flagellomeres 2, 3, 4, 5 and 6 have same lenght. Flagellomeres 2 and 7 with two apical rhinaria; flagellomeres 4, 6 and 8 with single rhinarium.
Forewing (Fig. 3F) longer than width and all the veins with short setae. R+M+Cu_1 vein two times longer than R and R_1 veins; the two later with same length as M+Cu_1, Cu_1 and Cu_{1b} veins. Also, M_{1+2} and M_{3+4} branches same lenght; Rs branch is the longest. Claval suture clearly defined; anal vein before the anal break splitting in two forming a supplementary cell. r_1 cell with a small radular spinule. Hindwing longer than width with at least 7 setae before the costal break and 4 setae plus hamelus (7+4). R+M+Cu_1, R, M and Cu_2 veins clearly identified.
Coxa of metathoracic leg (Fig. 4F) with well-developed meracanthus; trochanter bearing single spine; the two third length of femur with inferior opening. Metatibia with 6 spurs, 3 external and 3 internal; metabasitarsus with a single basal spur. Male genitalia (Fig. 5F) bisegmented with proximal segment broad and trapezoidal distal segment cylindrical

slightly same length as proximal segment. Paramere (Fig. 6F) with internal margin incurved while the external margin convexed; apical half with longitudinal furrow, rounded apex.

Sub-genital plate trapezoidal. Distal segment of aedeagus (Fig. 7F) with incurved subapical internal margin while the external margin is incurved on the medial portion and subapical portion; it is ending by rounded apex and ejaculatory duct.
Female genitalia (Fig. 8F) short; subgenital plate triangular with pointed apex and distal furrow, shorter than proctiger; it is sparse of setae. Dorsal plate or proctiger with a circumanal formed of two rings of pores; proximal portion broad and distal portion tapering with rounded apex. Internal valve slightly shorter than ventral valve; the two valves longer than the bilobed dorsal valve. Measurements found in table 2.

Fifth instar larva
Coloration: Fifth instar larva yellowish.
Structure: larval body (Fig. 9F) divided in head, thorax and abdomen. In the dorsal view, antenna composed of three segments and the flagellum bearing setae. Two thoracic sclerites well visible; wing pads well developed with setae on external margins. Posterior leg with 6 segments ending by arolium (Fig. 10F) which is adhesive structure. Abdomen with 4 tergites and 4 sternites visibles; caudal plate with a cylindrical circumanal with internal margin incurved and composed of two pore rings; caudal margin truncate. Measurements found in table 4.

Host plant: *Ficus* sp. (Moraceae)
Distribution: Nzem (Cameroon)
Material examined: Holotype: ♂, Cameroon, West region, Nzem, 10°04'N, 5°26'E, 1385 m, 10/01/2007, *Ficus* sp. (Dzokou &Tamesse); slides mounted (LZUY) Paratypes: Cameroon, 3♂, 2♀, 12 larvae, same collection as holotype, in 70% ethanol; 1♂, 1♀, 2 larvae, slides monted or 70% ethanol (MHNB); 1♂, 1 larva, 10/01/2007, Nzem, in 70% ethanol (MRAC); 3♂, 2♀, 2 larvae, 14/10/2018, Nzem (Dzokou), in 70% ethanol (LAZUDs).

Etymology: the species name derived from the name of the locality where it was collected for the first time, Nzem in Foto village.

Comment: forewing of *Homotoma nzem* sp. n. structure is similar to *H. chlamydodora* collected in Tanzania in that the beginning point of R_1 and Rs veins firstly, and M, Cu_1 veins secondly are located on the same vertical.

3.8 *Homotoma kentsopi* sp. n.
(Figures 1G, 2G, 3G, 4G, 5G, 6G, 7G, 8G, 9G, 10G)

Description
Adult
Coloration: adult body blackish; mesepimerum and mesepisternum darker also head and pronotum than the other part of the body; the 5 last antennal segment slightly dark, the other segments are clear; on the forewing a dark band is located from the base of anal break to the apex of the wing, another dark band is located at the end of M_{1+2} vein and Rs vein on C+Sc vein.

Structure: medial epicranian suture deeper and dividing vertex in two blocs (Fig. 1G); the vertex is limited by transversal sutures; vertex is not reaching on the inferior margin of the head; it is sparse of short setae. Medial occellus and lateral occelli are located on the same line. Antennal cavity width and scape width are identical. Part of compound eyes is visible dorsally. Metapostnotum bearing dorsally a process spine like structure. In profile view, 6 stigmate openings are visible on the limit between tergites and sternites. In dorsal view the rostrum is less developed.
Antenna (Fig. 2G) with 10 segments; scape largest and shortest antennal segment; first flagellomere the longest; flagellomeres 2-5 with same lenght; flagellomere 8, is the shortest flagellomere and carrying a single rhinaria and long pointed subapical seta and short truncate apical seta. Except the last antennal segment all the other segments carry setae.
Forewing (Fig. 3G) elongate and oval; C+Sc and anal veins with sparse setae; internal branches with less setae since $R+M+Cu_1$ vein carrying only two setae while Cu_1, Rs and M_{3+4} branches each with single seta. Radular spinule on *c+sc* cell. There is no costal break. R vein slightly longer than $M+Cu_1$ vein; the R_1, Rs veins firstly and Cu_1, M veins secondly, started at the same level; Cu_1 and Cu_{1b} veins equal length, same to R and R_1 veins. Claval suture well defined. Hindwing elongate and the claval suture also is well defined; the base of $R+M+Cu_1$ vein well visible, while the other internal veins are not visible. There are 4 setae before costal break and 3 setae plus 4 setae plus hamelus after costal break.
Hindleg (Fig. 4G) with well-developed meracanthus; metatibia with 6 apical spurs where one spur is isolated from the others; metabasitarsus with 2 spurs.
Male genitalia (Fig. 5G) composed of bisegmented proctiger; proximal segment broader than the distal segment, the internal margin convexed; but the base of proximal segment linked to subgenital plate slightly narrow; the proximal segment is sparse of setae. The distal segment rectangular and smaller than proximal segment; its distal portion with dense setae. Paramere (Fig. 6G) with incurved external margin and bearing two tubercles on the distal half and longitudinal furrow, rounded apex; setae more concentrated on the apical portion. Distal portion of aedeagus (Fig. 7G) with incurved subapical internal margin which is sinusoidal rounded apex ending by a short ejaculatory duct.
Female genitalia (Fig. 8G) short; proctiger longer than subgenital plate. The circumanal is oval with two rings of pores surrounding by short setae, the apex of the proctiger is rounded; subgenital plate triangular with pointed apex; it also carrying a longitudinal furrow on the distal portion; internal valve and ventral valve equal length but longer than dorsal valve. Measurements found in table 3.

Fifth instar larva
Coloration. Overall body of fifth instar larva blackish. Dorsally compound eyes dark.

Structure. Larval body (Fig. 9G) clearly divided on head, thorax and abdomen. The medial suture visible and separate vertex in two blocs; the antenna with three segment and the flagellum carrying few setae. Three thoracic sclerites are visible; the wing pads well developed. Abdomen external margin carrying setae with truncate apex. Dorsally, abdominal sclerites not well visible but ventrally, three sclerites are visible as well as caudal plate. Hindleg composed of 6 segments ending by a complex arolium with two lobes (Fig. 10G). Measurements found in table 4.

Host plant: *Ficus ovata* (Moraceae)

Distribution: Kentsop (Cameroon)
Material examined: Holotype: ♂, Cameroon, West Region, Kentsop, 10°04'N, 5°26'E, 1385 m, 15/02/2006, *Ficus ovata* (Dzokou &Tamesse). Slide mounted (LZUY). Paratypes: Cameroon, 15♂, 18♀, 15 larvae, same collection with holotype, in ethanol 70%; 2♂, 2♀, 3 larvae, dry, slide mounted or ethanol 70% (MHNB); 5♂, 7♀, 9 larvae, 14/10/2018, Dschang (Dzokou), in ethanol 70% (LAZUDs).
Etymology: the species name derived from the name of the locality where it was collected for the first time, Kentsop in Foto village.

Comment: *Homotoma kentsopi* sp. n. is similar to *H. chlamydodora* by the presence of dark band on r_1, r_2 and m_1; 5 apical spurs on metatibia. But the two species differ from the fact that, the paramere of the latter carrying internal tubercle on 2/3 proximal part and apical tubercle; female genitalia with bilobed dorsal valve; while on the former, paramere carrying two internal tubercles; female genitalia with unilobed dorsal valve.
Host plant: *Ficus* sp. (Moraceae)
Distribution: Meteu (Cameroon)
Material examined: Cameroon, West Region, Meteu, 1♀, 10°04'N, 5°26'E, 1385 m, 10/01/2007, *Ficus* sp. (Dzokou & Tamesse). In ethanol 70% (LZUY).

Comment: forewing of *Homotoma* sp. with a dark band from the internal margin of anal vein after Cu_{1b} branch to the apex; another band less large located on the margins of M_{1+2} and M veins in r_2 cell; but it not touching Rs branch in forewing is the main character which can permits us to distinguish this species with the other species of *Homotoma* genus.

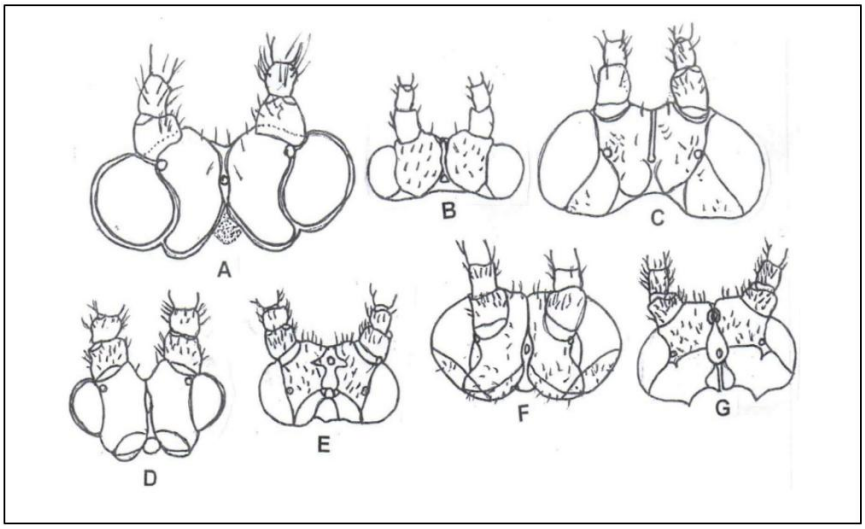

Fig 1: *Homotoma* spp. Heads: *H. chlamydodora* (A), *Homotoma mukami* sp. n. (B), *Homotoma dschangi* sp. n. (C), *H. eastopi* (D), *Homotoma* sp. cf. *bamendae* (E), *Homotoma nzem* sp. n. (F), *Homotoma kentsopi* sp. n. (G). Scale bars: a=4 mm (C), b=1.6 mm (A, B, D, E, F, G)

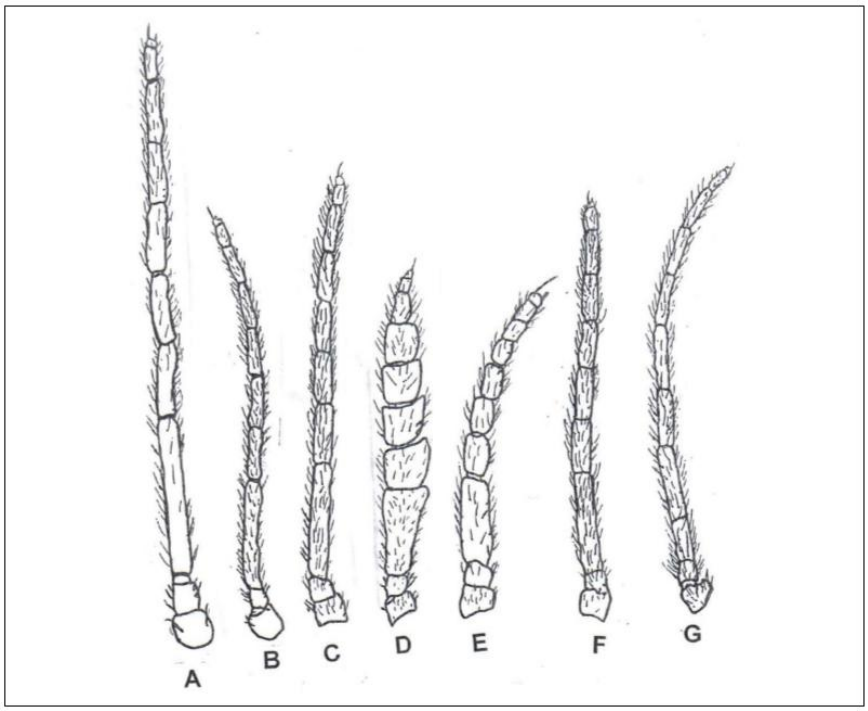

Fig 2: *Homotoma* spp. Antennae: *H. chlamydodora* (A), *Homotoma mukami* sp. n. (B), *Homotoma dschangi* sp. n. (C), *H. eastopi* (D), *Homotoma* sp. cf. *bamendae* (E), *Homotoma nzem* sp. n. (F), *Homotoma kentsopi* sp. n. (G). Scale bars: b=1.6 mm (A, B, C, D, E, F, G).

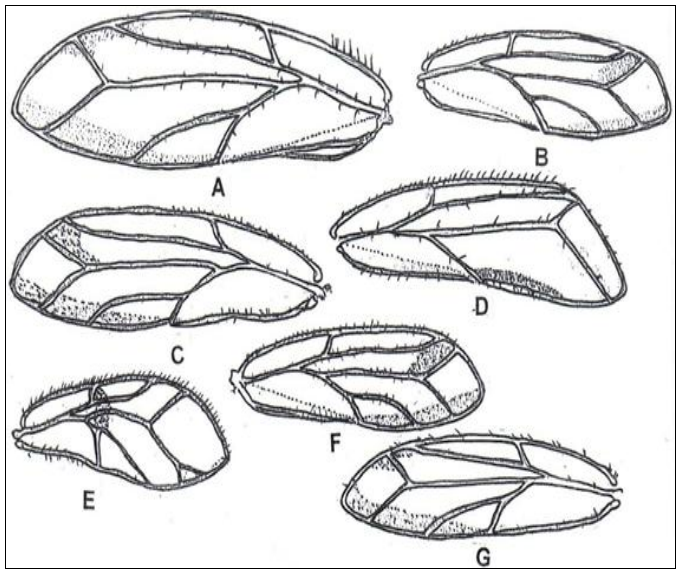

Fig 3: *Homotoma* spp. Forewings: *H. chlamydodora* (A), *Homotoma mukami* sp. n. (B), *Homotoma dschangi* sp. n. (C), *H. eastopi* (D), *Homotoma* sp. cf. *bamendae* (E), *Homotoma nzem* sp. n. (F), *Homotoma kentsopi* sp. n. (G). Scale bars: a=4 mm (A, B, C, D, E, F, G).

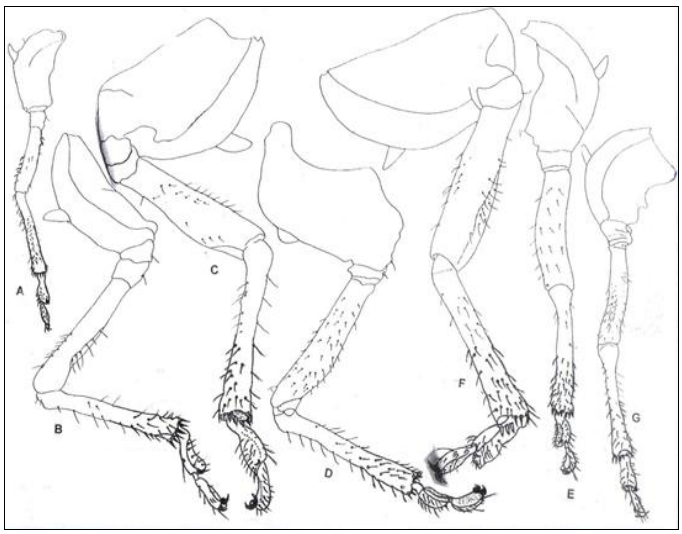

Fig 4: *Homotoma* spp. Metathoracic legs: *H. chlamydodora* (A), *Homotoma mukami* sp. n. (B), *Homotoma dschangi* sp. n. (C), *H. eastopi* (D), *Homotoma* sp. cf. *bamendae* (E), *Homotoma nzem* sp. n. (F), *Homotoma kentsopi* sp. n. (G). Scale bars: b=1.6 mm (A, B, C, D, E, F, G).

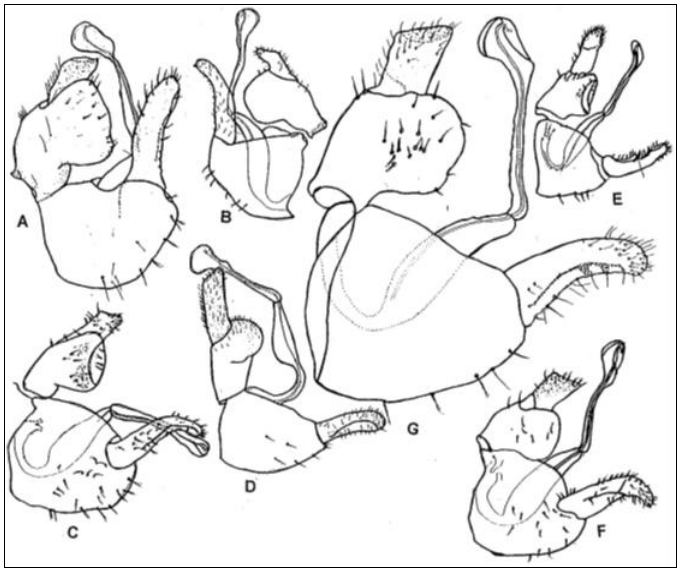

Fig 5: *Homotoma* spp. Males genitalia: *H. chlamydodora* (A), *Homotoma mukami* sp. n. (B), *Homotoma dschangi* sp. n. (C), *H. eastopi* (D), *Homotoma* sp. cf. *bamendae* (E), *Homotoma nzem* sp. n. (F), *Homotoma kentsopi* sp. n. (G). Scale bars: c=0.8 mm (A, B, C, D, E, F, G).

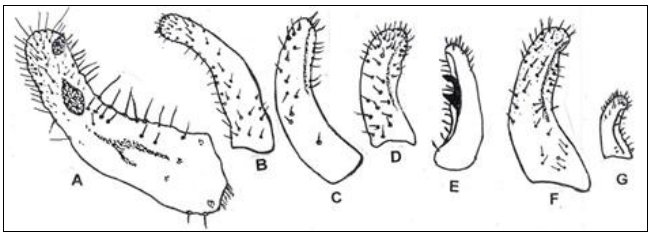

Fig 6: *Homotoma* spp. Parameres: *H. chlamydodora* (A), *Homotoma mukami* sp. n. (B), *Homotoma dschangi* sp. n. (C), *H. eastopi* (D), *Homotoma* sp. cf. *bamendae* (E), *Homotoma nzem* sp. n. (F), *Homotoma kentsopi* sp. n. (G). Scale bars: c=0.8 mm (A, B, C, D, E, F, G).

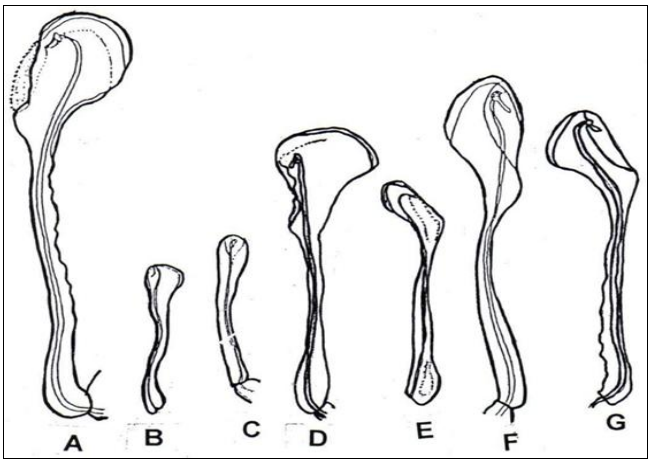

Fig 7: *Homotoma* spp. Aedeagus apical segment: *H. chlamydodora* (A), *Homotoma mukami* sp. n. (B), *Homotoma dschangi* sp. n. (C), *H. eastopi* (D), *Homotoma* sp. cf. *bamendae* (E), *Homotoma nzem* sp. n. (F), *Homotoma kentsopi* sp. n. (G). Scale bars: c=0.8 mm (A, B, C, D, F, G), d=0.4 mm (E).

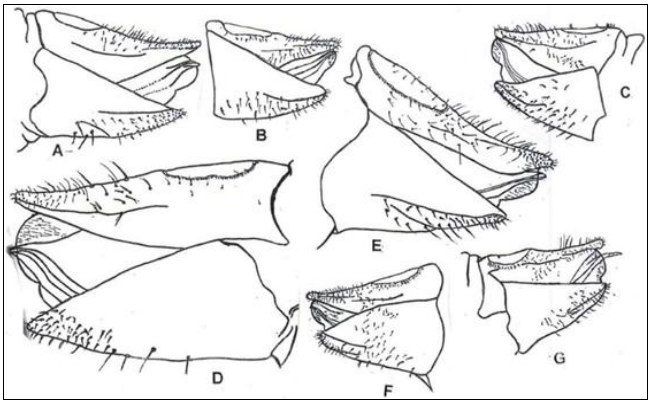

Fig 8: *Homotoma* spp. Females genitalia: *H. chlamydodora* (A), *Homotoma mukami* sp. n. (B), *Homotoma dschangi* sp. n. (C), *H. eastopi* (D), *Homotoma* sp. cf. *bamendae* (E), *Homotoma nzem* sp. n. (F), *Homotoma kentsopi* sp. n. (G). Scale bars: a=4 mm (C), b=1.6 mm (A, E, F, G), c=0.8 mm (B, D).

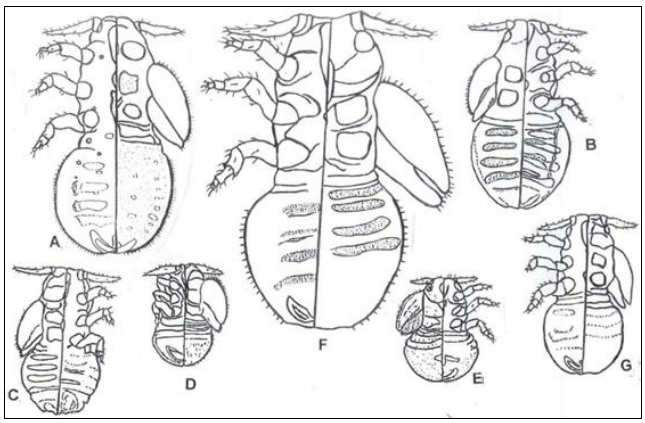

Fig 9: *Homotoma* spp. Fifth instar larvae: *H. chlamydodora* (A), *Homotoma mukami* sp. n. (B), *Homotoma dschangi* sp. n. (C), *H. eastopi* (D), *Homotoma* sp. cf. *bamendae* (E), *Homotoma nzem* sp. n. (F), *Homotoma kentsopi* sp. n. (G). Scale bars: a=4 mm (A, B, C, D, E, F, G).

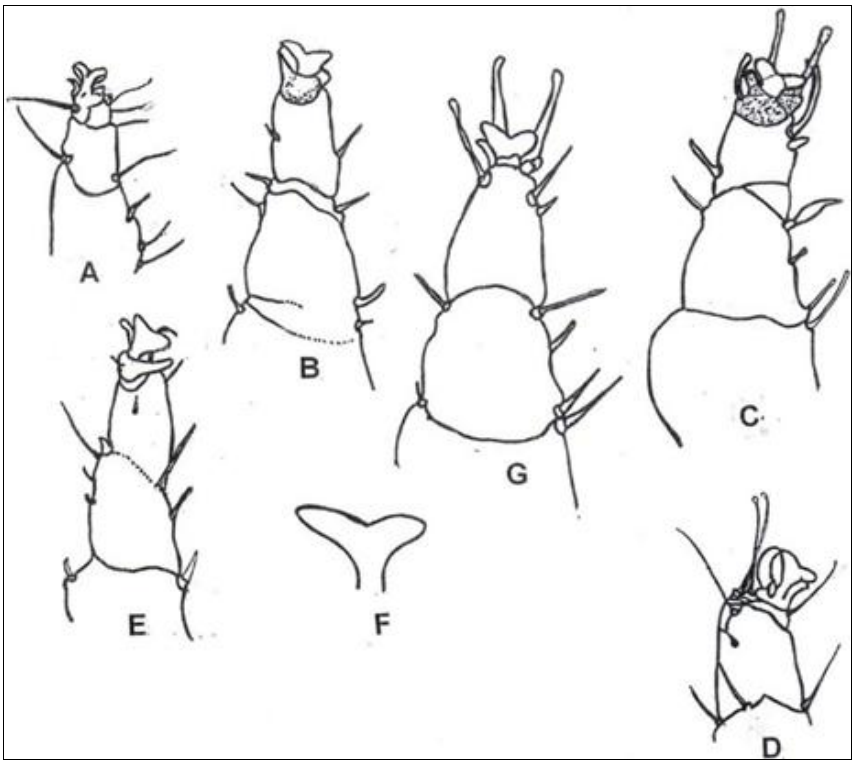

Fig 10: *Homotoma* spp. Metatarsi Aroliums of the fifth instar larvae: *H. chlamydodora* (A), *Homotoma mukami* sp. n. (B), *Homotoma dschangi* sp. n. (C), *H. eastopi* (D), *Homotoma* sp. cf. *bamendae* (E), *Homotoma nzem* sp. n. (F), *Homotoma kentsopi* sp. n. (G). Scale bars: c=0.8 mm (A), d=0.4 mm (B, C, D, E, F, G).

3.9 *Homotoma* sp. (Figure 11)

Description of female adult

In this species we recorded a single specimen for this reason the species was not illustrated as the other species. We did only a macroscopic description for this survey and detail description will be done later when sufficient material will be available.

Fig 11: Homotoma sp. (♀)

Coloration: Female is reddish to dark. Axilar cord of mesoscutellum darker. The first visible abdominal segment is clear; abdominal tergites and sternites dark and separate by intersegmented clear membrane in the profile; in the forewing there is a dark band from the internal margin of anal vein after Cu_{1b} branch to the apex; another band less large located on the margins of M_{1+2} and M veins in r_2 cell; but it not touching Rs branch (Fig. 11).

Structure: The medial epicranian suture in dorsal view is deep and divide the vertex in two rounded blocs. The labium is visible on the profile. Mesoscutellum is rounded on the base which is in contact with metascutum; anterior margin of metascutum is sagging on the two sides to maintain the mesoscutellum. Metascutellum is reduced; metapostnotum carrying a dorsal process spine like structur. Antenna with same structure as the other species of Homotomidae family in *Homotoma* genus with setae on the 9 first antennal segments; the last flagellomere, the shorter, carrying a long-pointed terminal seta and a short truncate subapical seta and two rhinaria. The seventh flagellomere carrying a single subapical rhinarium. The veins of forewing with several setae; $R+M+Cu_1$ branch equal length with R and R_1 branches joined. $M+Cu_1$, Cu_1, Cu_{1b} and R_1 veins considerably equal length, same situation to M_{1+2} and M_{3+4} veins; Rs vein is the longest vein.

Table 1: Measurements (mm) adults genus *Homotoma* Guérin-Méneville

Parameters	*Homotoma chlamydodora*								*Homotoma* cf. *bamendae*								*Homotoma eastopi*							
	Male				Female				Male				Female				Male				Female			
	N	Min	Max	Mean	N	Min	Max	Mean	N	Min	Max	Mean	N	Min	Max	Mean	N	Min	Max	Mean	N	Min	Max	Mean
BL	40	3,62	4,37	4,15	35	3,75	4,75	4,32	7	4,9	5,6	5,15	7	5,65	6,3	6,05	16	2,8	3,8	3,39	18	3,6	4,5	3,99
BW	40	1	1,25	1,14	35	1,12	1,25	1,18	7	1	1,2	1,13	7	1,2	1,4	1,32	16	0,7	1,3	0,91	18	1	1	1,03
HW	40	1	1	0,99	35	1	1	0,95	7	1	1	1,07	7	1	1,2	1,11	16	0,7	0,9	0,76	18	0,8	1	0,87
AL	40	3	3,25	3,17	35	2,5	3	2,82	7	2,4	3,5	3,05	7	3,1	3,6	3,27	16	2	2	1,79	18	1,7	2,1	1,91
F1L	40	1	1	0,84	35	0,62	1,25	0,82	7	0,7	0,9	0,76	7	0,8	0,9	0,85	16	0,4	0,5	0,42	18	0,35	0,5	0,43
WL	40	4,12	4,56	4,31	35	4,19	5	4,68	7	3,9	4,2	4,1	7	4,3	5,1	4,69	16	3,2	3,5	3,39	18	3,8	4,4	4,08
WW	40	1,4	1,6	1,45	35	1,5	1,75	1,58	7	1,2	1,8	1,4	7	1,5	1,6	1,56	16	1,3	1,5	1,39	18	1,5	1,8	1,68
wL	40	2,87	3,5	3,1	35	2,81	3,62	3,29	7	2,9	3,1	3,02	7	3,3	3,9	3,54	16	2	2,4	2,32	18	2,7	3	2,83
wW	40	0,75	1	0,85	35	1	1	0,96	7	1	1	0,83	7	0,85	1,1	0,96	16	0,6	0,8	0,71	18	0,7	1	0,83
DAL	40	0,12	0,37	0,18					7	0,35	0,6	0,42					16	0,3	0,6	0,37				
PL	40	0,25	0,25	0,25					7	0,25	0,4	0,31					16	0,19	0,2	0,19				
MPL	40	0,25	0,44	0,33					7	0,4	0,55	0,47					16	0,3	0,4	0,37				
MFL	40	0,75	0,85	0,81	35	0,62	0,87	0,78	7	0,35	0,6	0,42	7	0,9	1	0,94	16	0,5	0,8	0,63	18	0,6	0,9	0,69
MTL	40	0,81	1	0,87	35	0,75	1	0,79	7	0,25	0,4	0,31	7	0,8	1	0,91	16	0,6	0,7	0,65	18	0,7	0,9	0,75
WL/WW	40	2,94	2,85	2,97	35	2,79	2,86	2,96	7	0,4	0,55	0,47	7	2,87	3,19	3,01	16	2,46	2,33	2,44	18	2,53	2,44	2,43
WL/wL	40	1,43	1,3	1,39	35	1,49	1,38	1,42	7	0,35	0,6	0,42	7	1,3	1,31	1,32	16	1,6	1,46	1,46	18	1,41	1,47	1,44
wL/wW	40	3,83	3,5	3,6	35	2,81	3,62	3,43	7	0,25	0,4	0,31	7	2,2	2,44	2,27	16	3,33	3	3,27	18	3,86	3	3,37
AL/F1L	40	3	3,25	3,77	35	4,03	2,4	3,39	7	0,4	0,55	0,47	7	3,87	4	3,8	16	5	4	4,26	18	4,86	4,2	4,36
PML/HW	40	0,25	0,44	0,33					6	0,35	0,51	7					16	0,43	0,44	0,48				
MTL/HW	40	0,81	1	0,89	35	0,75	1	0,83	7	0,25	0,4	0,31	7	0,8	0,83	0,82	16	0,86	0,78	0,84	18	0,87	0,9	0,86
AL/HW	40	3	3,25	3,2	35	2,5	3	2,97	7	0,4	0,55	0,47	7	3,1	3	2,94	16	2,86	2,22	2,32	18	2,12	2,1	2,18
F1L/HW	40	1	1	0,85	35	0,62	1,25	0,87	7	0,35	0,6	0,42	7	0,8	0,75	0,77	16	0,57	0,55	0,54	18	0,44	0,5	0,5
FPL					35	0,87	1,12	0,98					7	1	1	1,02					18	0,7	1	0,81
FSPL					35	0,62	0,87	0,73					7	0,9	1,1	0,98					18	0,5	0,7	0,58
FPL/FSPL					35	0,49	0,56	0,51					7	1,11	0,9	1,04					18	1,4	1,42	1,39
PT	40	1,62	2	1,79	35	1,75	2	1,92	7	2	2	1,91	7	2,1	2,7	2,32	16	0,9	1,2	0,99	18	1,2	1,4	1,26
a	40	0,5	0,7	0,53	35	0,5	0,62	0,57	7	0,6	0,8	0,64	7	0,7	0,9	0,77	16	0,5	0,7	0,56	18	0,7	0,9	0,83
b	40	0,5	0,94	0,79	35	0,81	1,12	0,93	7	0,6	0,8	0,7	7	0,7	0,9	0,78	16	0,8	1,2	1,01	18	1,1	1,5	1,35
c	40	0,87	1	0,88	35	0,75	1,12	0,99	7	0,8	1	0,85	7	1	1	0,99	16	1	1	1,06	18	1,1	1,5	1,26
d	40	1	1	1,22	35	1,5	1,6	1,54	7	1	1	0,96	7	1	1,5	1,19	16	0,9	1,2	1,02	18	1,1	1,5	1,3
e	40	0,37	0,5	0,42	35	0,37	0,5	0,44	7	0,3	0,4	0,35	7	0,4	0,5	0,4	16	0,5	0,6	0,54	18	0,5	0,7	0,62

Table 2: Measurements (in mm) adults genrus *Homotoma* Guérin-Méneville

Parameters	*Homotoma mukami* sp. n.								*Homotoma dschangi* sp. n.								*Homotoma nzem* sp. n.							
	male				Female				male				Female				male				Female			
	N	Min	Max	Mean	N	Min	Max	Mean	N	Min	Max	Mean	N	Min	Max	Mean	N	Min	Max	Mean	N	Min	Max	Mean
BL	24	4	5	4,25	24	4,56	5,12	4,86	16	2,8	3,8	3,39	18	3,6	4,5	3,99	4	4,35	5,25	4,87	2	5,3	5,5	5,4
BW	24	1	1	0,88	24	1	1	1,05	16	0,7	1,3	0,91	18	1	1	1,03	4	1	1,3	1,18	2	1,3	1,4	1,35
HW	24	0,62	0,87	0,75	24	0,75	0,87	0,84	16	0,7	0,9	0,76	18	0,8	1	0,87	4	0,9	1,1	0,98	2	1,1	1,2	1,15
AL	24	2,3	2,6	2,43	24	2,4	2,8	2,57	16	2	2	1,79	18	1,7	2,1	1,91	4	3,2	3,4	3,3	2	3,4	3,5	3,45
F1L	24	0,5	0,62	0,54	24	0,5	0,6	0,56	16	0,4	0,5	0,42	18	0,35	0,5	0,43	4	0,8	0,85	0,82	2	0,9	0,9	0,9
WL	24	3,37	4,75	3,84	24	4,37	4,87	4,56	16	3,2	3,5	3,39	18	3,8	4,4	4,08	4	4	4	3,94	2	4,6	4,7	4,65
WW	24	1	1,25	1,15	24	1,37	1,5	1,4	16	1,3	1,5	1,39	18	1,5	1,8	1,68	4	1,25	1,35	1,31	2	1,5	1,5	1,47
wL	24	2,37	3,12	2,73	24	3,12	3,5	3,38	16	2	2,4	2,32	18	2,7	3	2,83	4	2,8	2,9	2,86	2	3,4	3,45	3,42
wW	24	0,75	0,87	0,78	24	0,62	0,87	0,83	16	0,6	0,8	0,71	18	0,7	1	0,83	4	0,8	0,9	0,8	2	0,8	0,8	0,8
DAL	24	0,25	0,44	0,38					16	0,3	0,6	0,37					7	0,35	0,6	0,42				
PL	24	0,19	0,31	0,25					16	0,19	0,2	0,19					7	0,25	0,4	0,31				
MPL	24	0,4	0,5	0,47					16	0,3	0,4	0,37					7	0,4	0,55	0,47				
MFL	24	0,62	0,87	0,73	24	0,62	0,87	0,81	16	0,5	0,8	0,63	18	0,6	0,9	0,69	4	0,75	0,85	0,8	2	1	1	1
MTL	24	0,75	1	0,8	24	0,75	1	0,84	16	0,6	0,7	0,65	18	0,7	0,9	0,75	4	1	1	0,93	2	1	1	1
WL/WW	24	3,37	3,8	3,34	24	3,19	3,25	3,23	16	2,46	2,33	2,44	18	2,53	2,44	2,43	4	3,2	2,96	3,01	2	3,07	3,13	3,16
WL/wL	24	1,42	1,52	1,41	24	1,4	1,39	1,35	16	1,6	1,46	1,46	18	1,41	1,47	1,44	4	1,43	1,38	1,38	2	1,35	1,36	1,36
wL/wW	24	3,16	3,58	3,5	24	5,03	4,02	4,07	16	3,33	3	3,27	18	3,86	3	3,37	4	3,5	3,22	3,57	2	4,25	4,31	4,27
AL/F1L	24	4,6	4,19	4,5	24	4,8	4,67	4,59	16	5	4	4,26	18	4,86	4,2	4,36	4	4	4	4,02	2	4	4	4,02
MPL/HW	24	0,64	0,57	0,64					16	0,43	0,44	0,48					7	0,4	0,55	0,44				
MTL/HW	24	1,21	1,15	1,08	24	1	1,15	1	16	0,86	0,78	0,84	18	0,87	0,9	0,86	4	1,11	0,91	0,95	2	1,11	0,91	0,95
AL/HW	24	3,71	2,99	3,24	24	3,2	3,22	3,02	16	2,86	2,22	2,32	18	2,12	2,1	2,18	4	4,44	3,09	3,36	2	4,44	3,09	3,36
F1L/HW	24	0,81	0,71	0,72	24	0,67	0,69	0,67	16	0,57	0,55	0,54	18	0,44	0,5	0,5	4	0,89	0,77	0,84	2	0,89	0,77	0,84
FPL					24	1	1	1,02					18	0,7	1	0,81	7	1	1	1,02				
FSPL					24	0,75	1,12	0,9					18	0,5	0,7	0,58	7	0,9	1,1	0,98				
FPL/FSPL					24	1,33	0,89	1,13					18	1,4	1,42	1,39	7	1,11	0,9	1,04				
PT	24	1,37	1,75	1,58	24	2	2	2,05	16	0,9	1,2	0,99	18	1,2	1,4	1,26	4	2	2	2	2	2,2	2,3	2,25
a	24	0,3	0,5	0,33	24	0,3	0,5	0,39	16	0,5	0,7	0,56	18	0,7	0,9	0,83	4	0,65	0,75	0,68	2	0,7	0,7	0,7
b	24	0,75	1	0,9	24	0,87	1,25	1,02	16	0,8	1,2	1,01	18	1,1	1,5	1,35	4	0,7	0,8	0,72	2	0,9	1	0,92
c	24	0,81	1,12	0,99	24	1	1	1,09	16	1	1	1,06	18	1,1	1,5	1,26	4	0,8	0,95	0,87	2	1	1	0,95
d	24	1,12	1,56	1,32	24	1	1,9	1,54	16	0,9	1,2	1,02	18	1,1	1,5	1,3					7	1	1,5	2
e	24	0,12	0,25	0,14	24	0,12	0,25	0,2	16	0,5	0,6	0,54	18	0,5	0,7	0,62	4	0,4	0,5	0,42	2	0,4	0,4	0,37

Table 3: Measurements (in mm) adults genus *Homotoma* Guérin-Méneville

Parameters	***Homotoma kentsopi* sp. n.**							
	male				**Female**			
	N	**Min**	**Max**	**Mean**	**N**	**Min**	**Max**	**Mean**
BL	6	4,1	5,1	4,66	11	4,8	5,4	5,27
BW	6	1	1	1,07	11	1,2	1,5	1,37
HW	6	1	1	0,97	11	1	1	1,12
AL	6	3	3	3,02	11	2,65	2,82	2,74
F1L	6	0,7	0,85	0,78	11	0,7	0,9	0,8
WL	6	3,85	4,35	4,1	11	4,65	5,2	5
WW	6	1,3	1,5	1,41	11	1,5	1,7	1,57
wL	6	3	3	2,95	11	3,3	3,8	3,51
wM	6	0,95	1,05	1	11	1	1,2	1,1
DAL	6	0,4	0,5	0,46				
PL	6	0,3	0,4	0,31				
MPL	6	0,35	0,51	0,4				
MFL	6	0,8	0,9	0,8	11	0,7	0,9	0,86
MTL	6	0,8	0,8	0,78	11	0,8	1	0,91
WL/WW	6	2,96	2,9	2,91	11	3,1	3,06	3,18
WL/wL	6	1,28	1,45	1,39	11	1,41	1,37	1,42
wL/wW	6	3,16	2,86	2,95	11	3,3	3,17	3,2
AL/F1L	6	4,28	3,53	3,87	11	3,78	3,13	3,42
MPL/HW	6	0,35	0,51	0,41	11			
MTL/HW	6	0,8	0,8	0,8	11	0,8	1	0,82
AL/HW	6	3	3	3,11	11	2,65	2,82	2,45
F1L/HW	6	0,7	0,85	0,8	11	0,7	0,9	0,71
FPL					11	0,6	1	0,86
FSPL					11	0,8	1	0,82
FPL/FSPL					11	0,75	1	1,04
PT	6	1,55	2,2	1,8	11	2	2,2	2,14
a	6	0,4	0,6	0,47	11	0,63	0,9	0,79
b	6	0,8	0,9	0,83	11	0,8	1,1	0,9
c	6	0,9	0,9	0,9	11	1	1,2	1,11
d	6	0,9	1,4	1,06	11	1,1	1,2	1,16
e	6	0,5	0,5	0,48	11	0,5	0,5	0,48

Table 4: Measurements (in mm) fifth instar larvae genus *Homotoma* Guérin-Méneville

Parameters	***H. chlamydodora***				***Homotoma* cf. *bamendae***				***H. eastopi***				***Homotoma mukami* sp. n.**				***Homotoma dschangi* sp. n.**				***Homotoma nzem* sp. n.**			
	N	Min	Max	Mean	N	Min	Max	Mean	N	Min	Max	Mean	N	Min	Max	Mean	N	Min	Max	Mean	N	Min	Max	Mean
AL	8	0,62	0,75	0,7	21	0,75	0,94	0,85	12	0,8	0,95	0,87	7	0,8	1	0,63	12	0,8	0,95	0,87	12	0,7	1,1	0,88
WL	8	1,06	1,25	1,17	21	1	1,37	1,19	12	1,2	1,4	1,23	7	1,15	1,4	1,06	12	1,2	1,4	1,23	12	1,1	1,4	1,23
BL	8	2,81	3,5	3,04	21	3	3,62	3,3	12	3,1	3,8	3,29	7	2,9	3,7	2,28	12	3,1	3,8	3,29	12	2,85	3,8	3,37
BW	8	1,87	2,37	2,09	21	1,75	2,25	2,04	12	1,9	2,2	2,03	7	1,9	2,4	1,86	12	1,9	2,2	2,03	12	1,8	2,4	2,07
CPL	8	0,4	0,6	0,5	21	0,4	0,6	0,51	12	0,5	0,75	0,59	7	0,5	0,8	0,53	12	0,5	0,75	0,59	12	0,5	0,7	0,59
CPW	8	0,75	0,87	0,81	21	0,56	1,25	0,84	12	1,1	1,3	1,21	7	0,75	1,6	0,13	12	1,1	1,3	1,21	12	0,7	1,5	1,27

Parameters	***Homotoma kentsopi* sp. n.**			
	N	**Min**	**Max**	**Mean**
AL	21	0,75	0,94	0,85
WL	21	1	1,37	1,19
BL	21	3	3,62	3,3
BW	21	1,75	2,25	2,04
CPL	21	0,4	0,6	0,51
CPW	21	0,56	1,25	0,84

Legend tables: BL: body length; BW: body width; HW: head width; MTL: metatibia length; MFL: metafemur length; AL: antenna length; FSPL: female soubgenital plate; DAL: distal segment aedeagus length; WL: forewing length; WW: forewing width; wL: hindwing length; wW: hindwing width; Max: maxima; Min: minima; N: number; RsL: secondary radial length; a: principal medial vein (M_{1+2}) length; b: secondary medial vein (M_{3+4}) length; c: m_1 cell margin length; d: cu_1 cell length; e: cu_1 cell thickness; PTL: pterostigma length; CPL: larval caudal plate length; CPW: larval caudal plate width; AL/HW: ratio antenna length to head width; AL/F1L: ratio antenna length to first flagellomere length; MPL/HW: ratio male proctiger length to head width; WL/WW: ratio forewing length to forewing width; WL/wL ratio forewing length to hindwing length; wL/wW: ratio hindwing length to hindwing width; MTL/HW: metatibia length to head width; FPL/FSPL: ratio female proctiger length to female subgenital plate length.

4. Conclusion

32 species of the genus *Homotama* are described worldwide, of which 4 are Afrotropical. This work formally describes 4 other species, bringing to 8 the number of species in the Afrotropical region and 7 the species described from Cameroon.

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