BITING MIDGES (DIPTERA: CERATOPOGONIDAE) FROM KINMEN (QUEMOY)*

by

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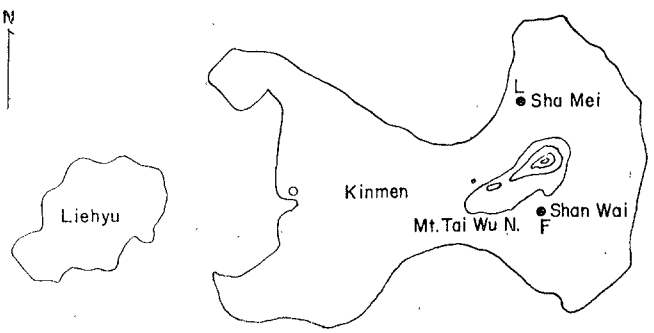
Abstraet: Two biting midges, Forcipomyia (Lasiohclea) taiwana (Shiraki) and Leptoconops (Leptoconops) chinensis *sp. nov. were collected from Kinmen (Quemoy) by human baits. This is the first report of ceratopogonids from this island and one of them is new to science. The morphology as well as the anatomy of* L. (L.) chinensis *are described.*

Kinmen (Quemoy) is a county of Fukien Province, the Republic of China. It consists of two islands lying at Long. 118°4′ E. Lat. 24°3′ N. along the east coast of Fukien Mainland. The main island, Ta Kin Men, is dumbbellshaped, long from west to east and narrow from south to north. Collections of two species of biting midges on this island were made in 1962 and 1965. The locality of these two midges are shown in Fig. 1.



Locality of Kinmen Biting Midges
F=*Forcipomyia (Lasiohelea) taiwana* Shiraki
L=*Leptoconops (Leptoconops) chinensis* sp nov

Fig. 1. Locality of Kinmen biting midges

* Presented before the 59th Ann. Meeting of the Formosan Med. Assoc. Nov. 12-13, 1966, Taipei, Taiwan, the Republic of China.

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Forcipomyia (*Lasiohelea*) *taiwana* (Shiraki) (Figs. 2,A-D; 3,A-B)

Female: Body length 1.0mm (0.9—1.2mm, n=10)

Head, dark brown; eyes contiguous, with numerous dot-like pubescence. Antennae, brown, with flagellar segments from II to XIV in proportion of 13×10:6×9:6×8:6×7:6×6:7×7:7×6:8×6:16×8:17×6:18×6:18×5:23×6. (1=3.3 microns). Palpus, five-segmented with proportion of 11×4:6×5:19×7:12×5:7×4, a group of sensillae situated in a round sensory pit (about 17 microns in diameter) on III palpal segment.

Thorax, dark brown and setagerous.

Wing, yellowish brown about 0.87×0.26mm; surface clothed with heavy macrotrichia; costa extending to 0.61 of distance to wing tip; radial cells narrow, apical one very long about 3×basal one (14:5, 1=13.7 microns).

Halteres, yellowish brown.

Legs, uniformly yellowish brown, tarsi clothed with numerous bristles but no spines, hind tibial comb with 8 apical long bristles; claws simple.

Abdomen, dark brown; spermatheca 1, subspherical (82×79 microns); cercus brown, round (46×43 microns).

Kinmen record: Shan Wai, August 5, 1965, 27우우 collected by C. C. Chen when biting.

Distribution: Taiwan, Fukien, Se-chwan, Kwang-si, Peng-hu (unpublished data), China.

Leptoconops (*Leptoconops*) *chinensis* sp. nov. (Figs. 2,E-I;3, C-F)

Female: Body length 1.90 mm (1.86—2.00 mm., n=6)

Head, dark brown; eyes bare, separated as wide as 6 facets about 1/6 of head width. Antennae, yellowish with flagellar segments from II to XIII in proportion of 15×10:7×9:7×9:7×9:7×9:7×9:8×9:9×8:9×8:9×7:10×6:28×10. Palpus, 4 segmented in proportion of 10×5:10×5:22×10:20×4 with a white ring between III and IV, segment III highly incrassate with a large sensory pore area along entire ventral side. Vertex with a pair of bristles between compoundeyes and another three pairs beyond laterally. Clypeus with 4 bristles of which 2 median ones larger and 2 lateral ones smaller. Proboscis less than as long as head height; mandible with 15-17 teeth; laccina with about 20 teeth#.

Thorax, dark brown; scutellum with I pair of strong median bristles and 2 pairs short ones. Legs, coxae and trochanters brown, femora and tibia pale brown, tarsi yellow with claws brown; fore femora shorter than others, somewhat inflated (length: width 27:6; mid-femora 30:4; hind 30:4.5); tibia of all legs with apical spur; hind tibial comb with 5 long bristles, 3 rd and 4 th from spur longest; metatarsi setigerous with tarsal spines 6 on fore (4-12, n=10), 8 on mid (5—9, n=10), 6 on hind (4-9, n=10); metatarsal spurs, 1 on fore, 2 on mid, and 1 on hind; second tarsi with 1 apical spur on fore, 1 on mid, and 2 on hind legs; third tarsi without apical spur.

#Regarding of the single lobe of the maxilla, it was generally interpreted by some Dipterists as the "galea". However, Imms (1944) from the study of the muscles of the maxilla in some Nematocera, found evidence that the maxillary lobe is in all probability, the laccina are not the galea. Gad's work (1951) on the head-capsule and moth-parts of *Culicoides*, *Atrichopogon* and *Dicrobezzia* has confirmed Imms's suggestion. Therefore in this paper, we take laccina in interpretation of this maxillar lobe.

Claws of all legs equal, each with a strong tooth arising from base, little longer than 1/2 of claw (40:23).

Wing, white, oval, about 1.13×0.55 mm; surface entirely covered with microthichia with longest ones along fringe of anal lobe; costa ending beyond Cu_1 extending to 0.53 of distance to wing tip; basal radial cell long, splitlike, nearly obsoleted, R_1 and R_s fused distally, apical radial cell wanting. Halteres, pale yellow with basal part yellowish brown.

Abdomen and cerci, yellow and setigerous; cerci long, about 0.24 length of wing approximately 3×as long as basal width (20:7); genital plate semilunar, hairy, with 6 strong marginal bristles; spermathecae 2, brown, well chitinized, equal, subspherical (12×10, 10-14×8-11, n=10).

Distribution: Kinmen (Quemoy), Fukien Province, China.

Holotype: ♀, Sha Mei, Ta Kin Men, September 20, 1962, 0500-0600 hrs., collected by W.T. Lu when biting.

Paratypes: 10 ♀♀ with type.

This midge is very abundnat and very troublesome along the sea shore at dawn in the morning from 0500-0600 hrs. during low tide. It bites severely and usually causes edematous swellings which are badly itch and last for from serveral days up to 3-4 weeks according to the personal susceptibility. Spotted scars on the skin remain for a long time after healed.

This species is closely allied to *Leptoconops siamensis* Carter (1921) but is distinctly different from the Siamese species by the equal, subspherical spermathecae and by the presence of 2 apical spurs on each metatarsus of midlegs. Also the 8-bristled vertex and 4-bristled clypeus are charcteristics of this species. Since this new species is the first *Leptoconops* found in China the author uses *chinensis* as its species name.

For ready reference of public health workers the diagnostic characters for differentiation of these two daily blood sucking midges of Kinmen are listed in the following table (Table I).

CHARACTERS DISTINGUISHING TWO KINMEN BITING MIDGES

	Forcipomyia (Lasiohelea) taiwana	*Leptoconops (Leptoconops) chinensis*
Size	body length 1.00 mm. wing 0.87 X 0.26 mm	body length 1.00 mm wing 1.13 X 0.55 mm.
Antenna	14-segmented, last 5 segments long	13-segmented, ultimate segment long
Pulpus	5-segmented, sensory pit round	4-segmented, sensory pore area large
Wing	yellowish brown, clothed with heavy microtrichia; radio-medial crossvein present, apical radial cell long	White, transparent, covered with microtrichia; radio-medial crossvein lacking, apical radial cell obsolete
Cercus	brown, small, round	yellow, long, protruding caudally
Spermatheca		2
Habitat	in land, abundant in afternoon	along sea-shore, abundant at dawn

Table 1. Characters distinguishing 2 Kinmen biting midges

Acknowledgement: The author is much indebted to Dr. Willis W. Wirth of U. S. National Museum for his kindness in loaning the type specimen of *Lcptoconops siamensis*, to Mr. W. T. Lu, Mr. C. C. Chen, and Mr, S. K. Liao for their assistance in collecting specimens.

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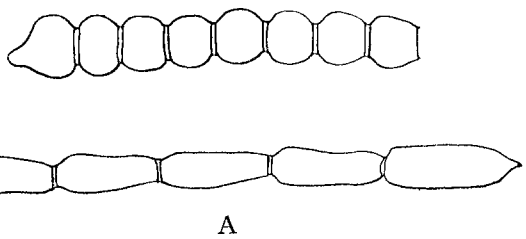
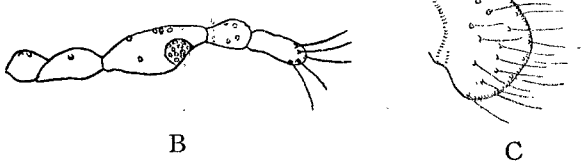
* from Rev. App. Ent. B. London.

金門之蠓類

本文作者於民國五一年及五四年得盧文俊、陳啓靜二先生及助教廖順奎君之協助，在大金門島之沙美、山外二地採得刺吸人血之蠓類二種，共 38 本，其中一種爲蠛蠓屬之臺灣蠛蠓 *Forcipomyia* (*Lasiohelea*) *taiwana* (Shiraki)，另一種則爲厲蠓屬 (*Leptoconops*) 之一新種。此爲該屬首次在我國發現，故定名爲中華厲蠓 *Leptoconops* (*Leptoocnops*) *chinensis*.

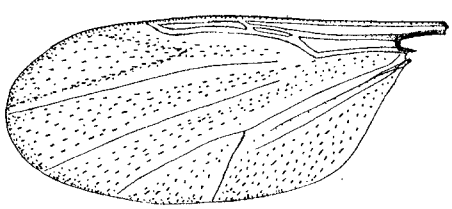


A



B C

Fig. 2. *A-D Forcipomyia (Lasiohelea) taiwana*
A Antenna, II-XIV segments
B. Pulpus
C. Cercus
D. Wing



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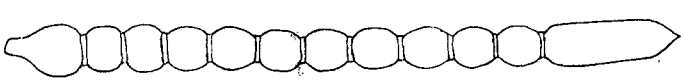

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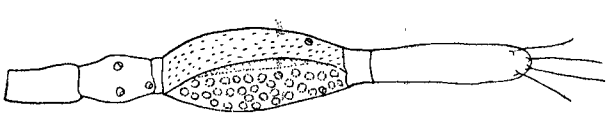

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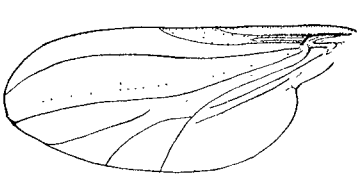
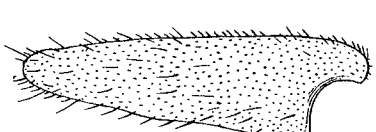


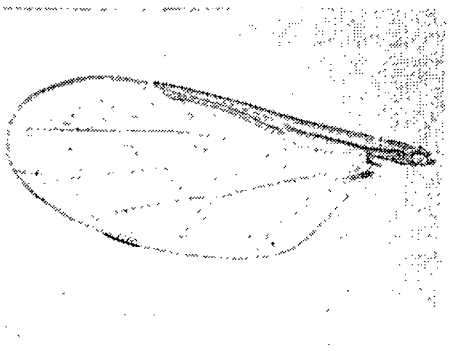
G

H



I

Fig. 2. *E-I, Leptoconops (Leptoconops) chinesis*
E. Antenna II-XIII Segments
F. Pulpus
G. Wing
H. Spermathecae
I. Cercus



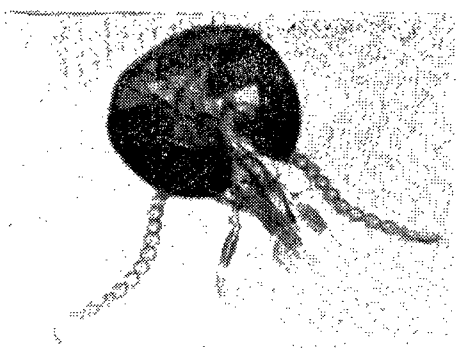
A

B

Fig. 3, *A-B, Forcipomyia (Lasiohelea) taiwana*

A. Wing

B. Head to show mouth parts, pulpi and antennae



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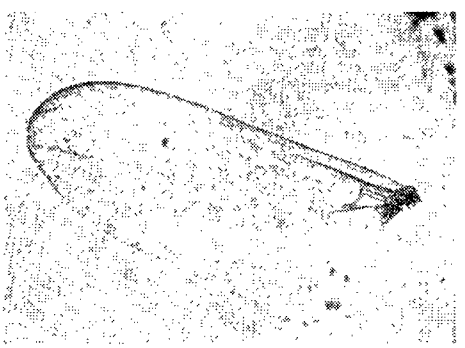


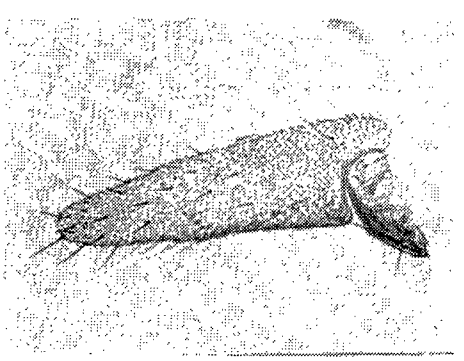
D

Fig. 3, C-F, *Leptoconops (Leptoconops) chinesis*

C. Head to show mouth parts, pulpi and antennae

D. Wing

E



F

E. Abdomen to show equal, subspherical spermathecae and cerci

F. Cercus