

Description of a new species of water Boatman, genus *Sigara* Fab. 1775 (Hemiptera: Corixidae) in Baghdad and Mesan / Iraq.

وصف نوع جديد من حشرات زورق الماء، جنس *Sigara* Fab. 1775 من بغداد وميسان / العراق (Hemiptera: Corixidae)

* حسن سعيد الأسدي. قسم علوم الحياة، كلية التربية – ابن الهيثم \ جامعة بغداد. بغداد – العراق.
* نسرین نوري مزهر. قسم علوم الحياة، كلية العلوم – الجامعة المستنصرية.
بغداد – العراق.
* صباح فرج باصات. قسم علوم الحياة، كلية التربية – ابن الهيثم \ جامعة بغداد.
بغداد – العراق.

Abstract:

The present study introduces detailed description of a new species of water Bootman, genus *Sigara* Fab.1775 (Hemiptero: Corixidae) from Iraq. The external morphological characters of the three body regions and their appendages were studied supported by illustrations especially male genitalia.

Key word: Hemiptera , Corixidae , Description

الخلاصة:

تقدم الدراسة الحالية وصفا تفصيليا لنوع جديد من حشرات زورق الماء يعود للجنس *Sigara* Fab. 1775 درست صفات المظهر الخارجي لمناطق الجسم الثلاث ولواحقها مدعمة بالأشكال التوضيحية وخاصة السؤة الذكرية.
الكلمات المفتاحية : نصفية الاجنحة ، عائلة زورق الماء ، وصف .

Introduction:

The genus *Sigara* Fabricius, 1775 (Hemiptera: Corixidae: Corixindae) contains small to moderate cylindrical, dark brown to black species. The total length of males and females (4.5 – 6.2 mm) (1, 2). The head relatively large, its base cover the anterior margin of pronotum, the face covered by small few scattered hairs. The pronotum characterized by small lateral lobe with the presence of the Metaxyphus (Metasternal process) (3, 4, 5). The fore wing is divided into corium and clavus separated by Cario-claval suture. Usually the anterior tarsus is called Pala which in males like spatula provided with adhesive structures like suckers called page (6, 7, and 8). The aim of this study is to describe a new species of water bootman be longs to the genus *Sigara*, Fab. 1775. The description based on several morphological characters including male genitalia.

Materials and Methods

Specimens were collected from different regions from Baghdad (Al.Tarmyiah, Al.Jadryiah, and University of Al.Mustansyria) and from Hur Al.Hwaza from Maisan province, by using light trap and water net. The specimens were preserved in suitable vials contain 70% alcohol or were mounted by pinning and kept in insect boxes for farther study. In addition to the collected specimens, preserved and dry specimens were used.

Dissection and studying external morphological characters including male genitalia were done according to (9, 10).

Several keys for isolation and identification of spears were used (4, 11, 12, 13, 14, 15, 16, 17, and 18).

Results and Discussion

Sigara mesopotamicus sp. nov.

This species has been described for the first time to the world. Its name was derived from the name of our great Iraq. (Mesopotamia)

Head: Fig 1

The facial side relatively large, triangular, distinctly wasted behind the compound eyes toward the rostrum, vertex wide with protrude obtuse margin, compound eyes relatively large, dark brown, triangular, its external margin obtuse, its external lateral angle distinctly protrude, the internal lateral margin straight, distance between the eyes equal to length of each eye, frons yellow and so as the clypeus, epistomol suture absent, width of rostrum less than the width of vertex, rostrum with six transverse grooves equally separated from each other with one longitudinal groove dividing them, genal suture absent.

Thorax

Prothorax: Fig 2A

Pronotum consist of two portions asymmetrical in size and shape, the anterior part represented by the anterior margin which is convex in its middle and lateral margins as two concave identical lobes, the posterior part bigger and appear in shape of angle, the upper surface of pronotum covered by eight transverse dark brown strips teaching the lateral margins, those strips are intersected with small dark brown double lines (Fig 2B) is triangular with wide obtuse apex.

Mesothorax Fig 3, 5

The mesonotum is represented by black lancoelate plate, its apex obtuse with small middle depression called scutum (Sct) from which extend the median suture (Ms) which divide the prescutum (Prsc) and scutum (Sct) into two halves in shape of two plates each one called nataulix (No), such plates separated by reversed natal suture in addition to triangular black plate slightly protruded to the posterior end and called scutellum (Scl).

From ventral side, the prothorax (Fig 5) consist of two elongated plates called prescutum (Prsc) separated by the middle suture (Ms), on both sides of prescutum there is elongated white oval plate divided into three parts which are from above, notaulix (No), scutum (Sct) and mesepisternum, the remaining of mesothorax is enclosed by two elongated plates each one called epimeron (Epm).

Metathorax (Fig 4, 5)

The Metanotum is represented by two harves each one in shape of triangular and those halves are called scutum (Sct) and scutellum (Scl).

The metasternum is consist of large middle plate called basisternum (Bs), on both sides of this plate there are two plates each one called epimeron (Epm).

Forewing: Fig (6)

Large and elongate, yellow, clavus with short transverse, dark brown strips connected by each other especially in the middle to form net-work, corium with short longitudinal and cross dark brown strips connect to each other to form network decreasing in density toward apex, apical third of the wing with yellow pale strip parallel to the costal margin, the internal and apical margins are waving, the basal third of Cario-claval suture wide suddenly narrowing, wing apex wide and obtuse.

Legs

Fore leg: Fig 7A

Its parts short and flattened, bright yellow, width of femur (Fe) equal to half of its length, its end connected with the trochanter wide with truncate margin, its part near this margin contains seven wide rows of fine spines called stridulation area (Str), tibia (Ti) short, smooth, its length equal to half the length of femur, tarsus which also called pala (P) as long as the femur but narrower, its end connected with tibia has invaginated margin, its apical end obliquely truncate, the upper surface of the pala with central longitudinal two of suckers called pegs (Pg) especially founded in males.

Mid leg: Fig 7B

Totally bright yellow, coxa (Cx) oval and smooth, trochanter (Tr) small, triangular and smooth, femur (Fe) cylindrical elongated, its external lateral margin with 4 identical spines directed toward the tibia while its internal lateral margin with single row of long identical hairs, tibia (Ti) equal to the femur in shape and length and its length as half as the length of femur, its external lateral margin with longitudinal row of long hairs directed toward the tarsus (Ta) which like the tibia in shape, its external lateral margin with single row of long oblique hairs.

Hind leg: Fig 7C

Bright yellow, coxa (Cx) large kidney shape, trochanter (Tr) small triangular, femur (Fe) short and wide, its end connected to the tibia, its external lateral margin with four identical spines directed to the tibia, its internal lateral margin with six long hairs near its end connected to the tibia (Ti) and this narrower but the same length of the femur, the external lateral margin with longitudinal row of 9 identical spines and so as its internal lateral margin, tarsus (Ta) consist of two segments, the first long, its external lateral margin arched with longitudinal row of 12 spine, its internal lateral margin straight, the second segment called pretarsus (Ptar) small, stylate its length as third as the length of first and segment, the external lateral margin of both first and second tarsal segments have row of long hairs covering the upper surface.

Abdomen: Fig 8

Dorsally its end in the male is asymmetrical from right side and called dextral asymmetry, the strigils (St) on the right side consist of abdominal comb like teeth.

Genital capsule: Fig 9

1. Claspers

The left clasper (Lc) as a plate its base wide connected with the connective (Con) by cervical like end, its apex in shape of small narrow lobe with truncate margin, the right clasper (Rc) as waving plate, its apex slightly like a hummer and its totally narrowing toward the connective.

2. Aedeagus (Ae)

Small tubular part, narrow in its middle part, and become widely toward the connective, its apex wide consist of three non identical lobes.

3. Connective (Co)

Spherical, its margin which bear the claspers and aedeagus wide and truncate while its apex narrower but obtuse.

Comparison Notes:

This species is closely related to *Sigara lateralis* but differ by the followings:

1. Vertex strongly protrudes.
2. Clypeus with three distinct groups of hairs.
3. Wing apex obliquely truncate.
4. The anterior femoral margin connected to the trochanter has group of small scattered hairs.

The First Scientific Conference the Collage of Sciences 2013

Examined specimens:

Three males collected from Mesan province in 20-April-2007 and Baghdad province in 1-May-2007

References :

1. Borror, D. J. and DeLong, D. M. . (1954). An introduction to the study of insects. Holt. Rinehart and Winston, New York: 827 pp
2. Macan, T. T. and Leston, O.(1978). *Notonecta striata* Linnaeus, 1758 (insecta, Hemiptera): designation of an type under the plenary powers. Z. N. (S.) 640. Bull. Zool. Nom. 35 (2): 111-114
3. Hinton, H. E. (1979). Biology of insect eggs. Pergamon press. Ltd. Vol. II: 475-778.
4. Lauck, D. R. (1981).Family corixidae\ water Bootman. Univ. Cali press: 1-166
5. Visken, G.(2001).Chacklist of heteroptera:Nepomorpha. [http\ \ www.Geocities.com](http://www.Geocities.com/gobyviskens/heteropt/toxa/nepomorp.Htm)
6. Mc Gavin, G. C. and Preston. Mofhom, K. (1999). The bugs of the world. www.Ento.CSIRO.au
7. Triplehorn, C.A. and Johnson, N.F. (2005). Borror and DeLong's introduction to the study of insects. 7th edition, Thomson. United state of America. 864 pp
8. Chinery, M. (1973). A field guide to the insects of Britain and North Europe. William Collins and Sons Company Ltd: 128 pp
9. Al-Asady, H. S.(1990) Taxonomic studies on the leafhopper genus: *Eupteryx* Curtis (Homoptera: Cicadellidae) in Britain. Un published Ph. D. Thesis. University of Wales, college of Cardiff, 372 pp
10. AL- Asady.H.S.(1980).Taxonomic Study of Water Whirligig Beetles(Coleoptera: Gyridae) in Iraq 184 PP.
11. Jaczewski, T. (1924). Revision of polish Corixidae. Ann. Zool. Mus. Polo. Hist. Not. (3): 1-98.
12. Hutchinson, G. E. (1929). A revision of Notonectidae and Corixidae of South Africa. Ann. S. Afr. Museum. 25: 359-474.
13. Hungerford, H. B. (1948). The Corixidae of the western hemisphere (Hemiptera). Kan. Univ. Sci. Bull. 32: 1-827 .
14. South wood, T. R. E. and Leston, D. (1959). Land and water bugs of the British Isles. Frederick Warne and Co. Ltd: 436 pp
15. Maan, T. T.(1956).A revised key to the British water bugs (Hemiptera: Heteroptero). Fresh. Biol. Asso. No. 16: 6-73.
16. Poisson, R. (1957). Faune de France – Heteropte – rous Aquatiques. Office Central de faunistique. Paris: 263 pp.
17. Lansbury, I. . (1970). Revision of the Australian *Sigara* (Hemiptera – Heteroptera, Corixidae). J. Nat. Hist. 4: 39-54
18. Bright, E. (2006).Aquatic insects of Michigon Museum Zool. Ins. Div. Scool. Natural. Res. Environ. Univ. Michigan: 1-10.

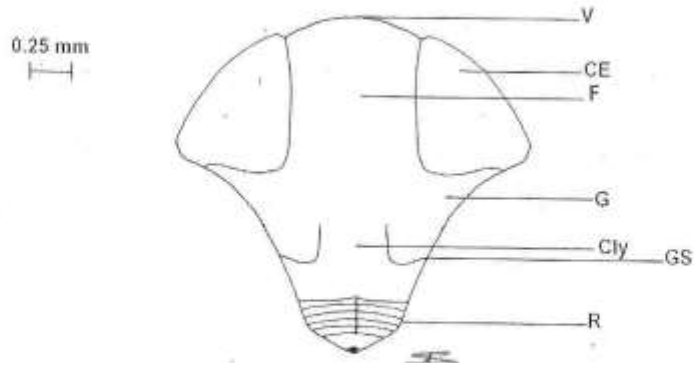


Fig. 1 Head capsule , Anterior view

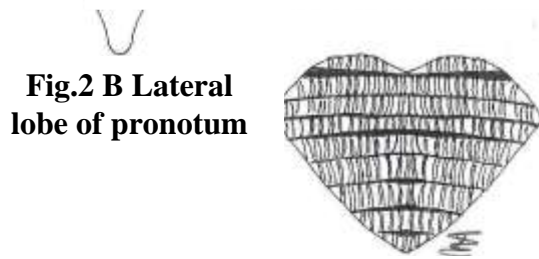


Fig.2 B Lateral lobe of pronotum

Fig. 2 A pronotum



Fig. 3 Mesonotum

Sigara mesopotamica 10V

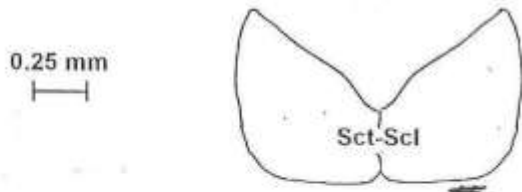


Fig. 4 Metanotum

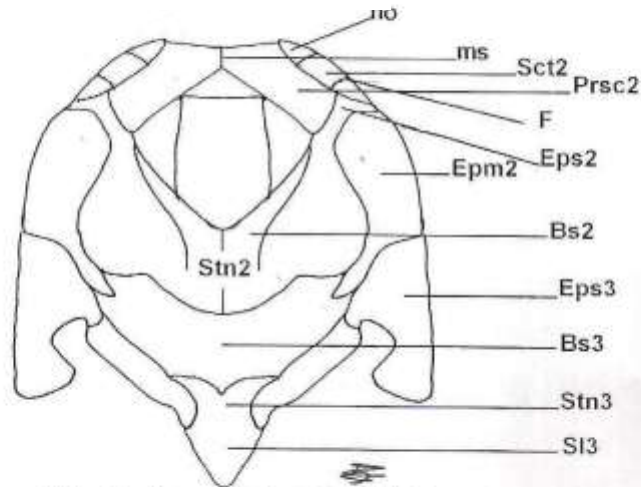


Fig. 5 Ventral view of pterothorax

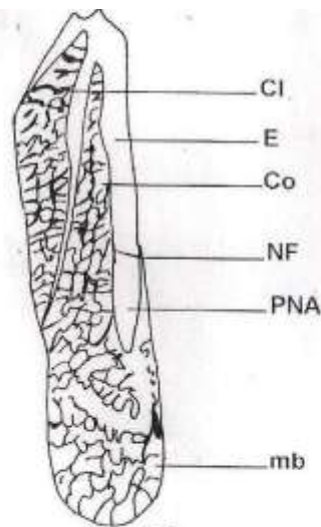


Fig. 6 Forewing

Sigara mesopotamica sp

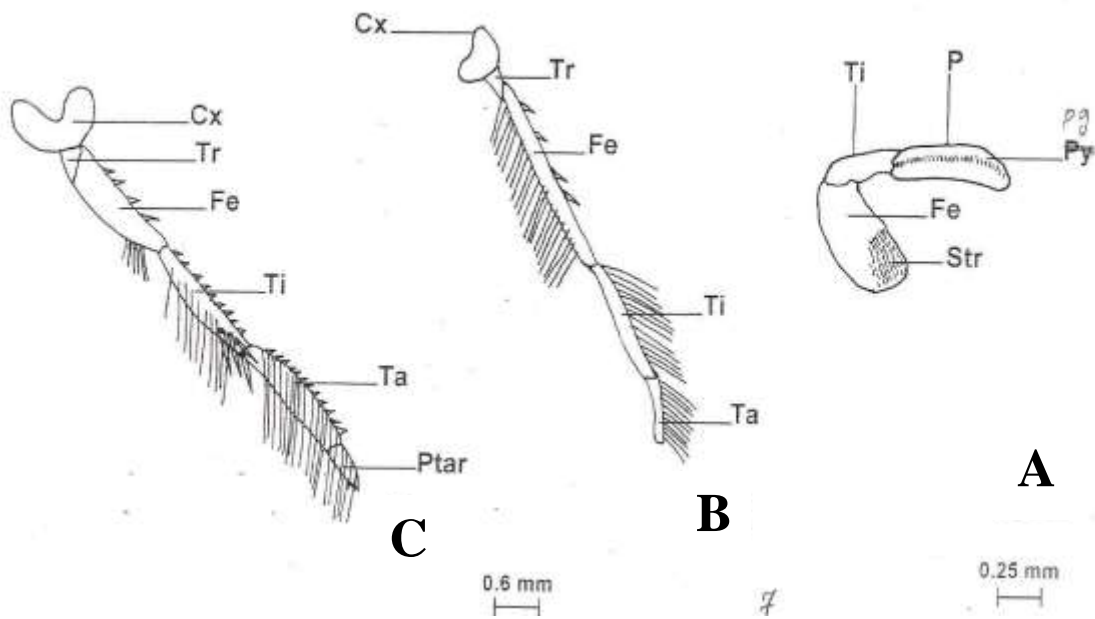


Fig. 7 Legs A. Fore leg B. Mid leg C. Hind leg
Sigara mesopotamica sp. Nov.



Fig. 8 End of Abdomen ventral view

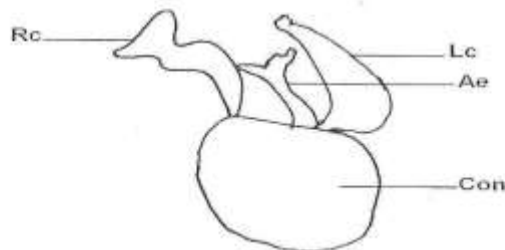


Fig. 9 Male genital capsule
Sigara mesopotamica sp. Nov.