

Survey to the species of Family Sepsidae (Insecta: Diptera) in Iraq

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Abstract: *The aim of this study is to survey species of Sepsidae family, The investigation showed three genera , date and locality of collecting specimens were recorded.*

Keywords: Acalyptarae, Black scavenger fly, Brachycera Diptera, Iraq, Sepsidae

1. Introduction

The black scavenger flies is common name known on family Sepsidae (Diptera: Acalptrata) . The members of this family are worldwide distribution in all zoogeographical regions. The family is represented about 339 species belonging to 38 genera [1]

The sepsid flies are small –medium in size (2-12mm length). Most species are ant-like flies, with a narrow "waist"[1] and morphologically and ecologically uniform family of the super family Sciomyzoidea [2],[3]

The adults and larvae abundance in several dung of horses ,cows and other animals , and they associated with animal vertebrates carrion and human , decaying vegetations and other organic matter. [4], [5],[6] .

Some sepsid flies as pollinator of flowers [7], in India recorded four species of this family belonging to two genera as follow: *Sepsis rufa* Macquart, *Sepsis nitens* Wiedemann, *Australosepsis frontalis* (Walker) and *Australosepsis niveipennis* (Becker) on *Cosmostigma racemosum* (Asclepiadaceae) [8].

This family is participate important role in forensic entomology, [9], [10],[11] ,[12].

The diagnostic characters of Sepsidae according to some authors such as [13], [14], [15], [16], [17], [18],[19], [20] as below :

Small flies in size , with slender body , ant –likes., shining black color sometimes shining dull black, brownish or yellowish. The head rounded or globular with larg compound eyes ; antennal aristate is bare . The thorax has silvery tomentum , on at least part of pleuro . Metathoracic spiracle with at least one or more fine long hairs on the lower margin . Legs are slender but in male fore femora and sometimes fore tibiae have characteristic bristles, tuberculs or emarginations which using for crispering female base wing during matting . Sometimes the middle tarsus of males has enlarge or different color segment and hind tibia has a slit or elongated region . Wings are narrow and hyaline which usually have a black spot at the tip of radial vein (R2 +3) ; sometimes the basal of wings are blackish, and costal vein without subcostal break. The abdomen elongate and sometime contrastst at the base then to be like ants .

2. Materials and Methods

The adult specimens were collected by sweeping net from several region of Iraq , Baghdad, Najaf , Basra from field near animal houses , and from carions of rabbit . After collecting flies they killed by freezing for several hours , then mounted with small label recorded the locality and date of collections and insect pins , they were keptq in insect box until diagnosis. For identification to genra and species using taxonomic keys such as [2], [10], [21], [22]. The plates were pictured by Dino Light microscope

3. Results and Discussion

Family SEPSIDAE Walker, 1883

Sepsidae Walker, 1833: 245. Type-genus: *Sepsis* Fallén, 1810,

In this study showed three genera :

1) *Sepsis* Fallen ,1810

- *Sepsis lateralis* (Wiedemann)

Material examined : 10 specemens were collected from Baghdad by sweeping net at May 2016

This species was recorded previously to Iraq as *Sepsis* sp. by[23] and *Sepsis lateralis* by[24] Which collected from Baghdad on December 1972.

- *Sepsis* sp.

Material examined : 4 males were collected from Nejjaf Provenca near caracase of dog at October 2016

- *Sepsis thoracica* (Robineau –Desvoidy)

This species was previously recorded to Iraq by [3]

Genus *Austraosepsis* Malloch, 1925

Australopsis niveipennis (Becker)

This species was previously recorded to Iraq by [3]

Dicranosepsis Duda,1926

Dicranosepsis sp.

As new record to Iraq

Material examined : 4 samples were collected from Basra on March 2016 by sweeping net near Rabbit dead at decaying

stage , and 3 sample from black rat carcasse during decay stage on April, 2016.

Diagnistic characters

Small flies in size 2-8 mm. , shining black , the head globular in shaped with larg compound eyes ., the arista bear and long, orbital bristles lacking , (plate ,1)

Wing with darck costa but without black spot at tip of R4+5, legs are long and dark brown (plate 2)

Abdomen black and with fine hairs on the end.



Plate 1: head with Arisrta

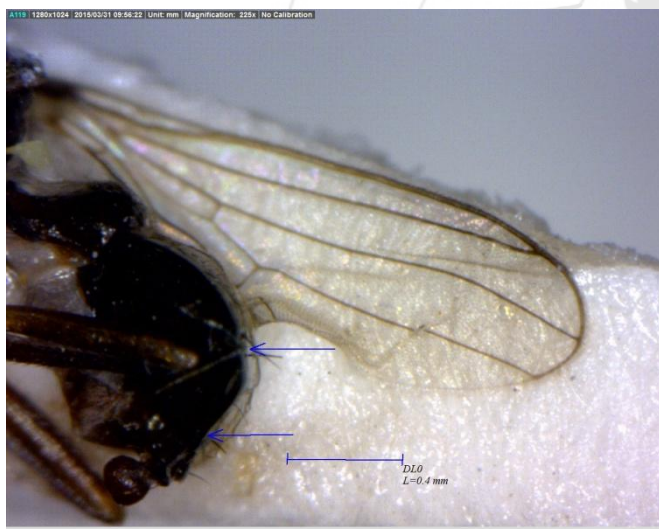


Plate 2: Abdomen and wing

4. Conclusion

Because of surveying throughout some governorates of Iraq, in this survey I found the little species , and I shall made another survey to all regions of Iraq in Different Period . The poor checklist of this family for Iraq lead to find these species.

References

[1] A. Chakraborty, A. Naskar, S. Hazra, A. Maity, D. Banerjee, Indian black scavenger flies (Insecta: Diptera: Sepsidae) . Zoological Survey of India

[2] A. C. Pont, R. Meier, The Sepsidae (Diptera) of Europe. Fauna Entomologica Scandinavica ,Vol. 37 : 195pp, 2002

[3] A. L. Ozerov, World catalogue of the family Sepsidae (Insecta: Diotera) .Zoologicheskiee issledovania, No. 2,74pp, 2005

[4] H.C.Chin, N. W. Ahmed, C. W. Kian, H. Kuradhi, J. Jeffery, H. S.Kiang, B. Omar. A Study of Cow Dung Diptera in Sentul Timur, Kuala Lumpur, Malaysia. *J. Trop. Med. Parasitol.*, 33:53-6 , 2010

[5] H. C. chin, H. Kurahashi, M. A. Marwi, J. Heffry , B. Omar. Opportunistic Insects Associated with Pig Carrions in Malaysia. *Sains Malaysia* , 40 (9): 601-604, . 2011.

[6] T. Oleksakova, V. Klimesova, M. bartak, H. Sulakova.Sepsidae (Diptera) associated with animal and human decomposition in the Czech Republic . *Mendel net*, 23: 794-800, 2016

[7] B. Mitra. Diversity of flower- visiting flies (Insecta :Diptera) in India and their role in Pollination . *Rec. zool. Surv. India*, 110 (Part-2) 95-107, 2010

[8] S. Bhatnagar. On insect adaptaions for pollination in some asclepiads of Central India. Pp. 37-57 *InKapil, R.P. (ed.) Pollination biology-an analysis*. Inter-India Publications, New Delhi. 1986

[9] D. E. Gennard. Forensic Enbtomology An Introduction . University of Lincoln,UK., 232pp, 2007

[10] C. JB. Carvalho, C. A. de Mello-Patiu. Key to the adults of the most common forensic species of Diptera in South America. *Revista Brasileira de Entomologia* 52(3): 390-406, setembro 2008

[11] F. Lefebvre, E. Gaudry, Forensic entomology: a new hypothesis for the chronological succession pattern of necrophagous insect on human corpses. *Ann. soc. entomol. Fr. (n.s.)*, 45 (3) : 377-392, 2009.

[12] J. Amendt, M. L. Goff, C. P. Campobosso, M. Grassberger. *Current Concepts in Forensic Entomology*. Springer Dordrecht Heidelberg London New York, 377pp., 2010

[13] C. T. Brues, A. L. Melander . Classification of Insects. A key to the Known families of insects and other terrestrial arthropods. *Bull. Mus.Comp. Zool. at Harvard College.Vol. 73. Third printing Cambridge, Massachusetts Published for the Museum of Comparative Zoology at Harvard University Press, 672 pp. (Diptera : 264 – 404)* 1932.

[14] C. T. Brues. A. L. Melander, F. M. Carpenter. Classification of Insects. Keys to the living and extinct families of insects, and to the living families of other terrestrial arthropods. *Bull. Mus. Comp. Zool. at Harvard College.Vol. 108,Cambridge, Mass. U. S. A., printed for the museum, 917 Pp. (Diptera : 305 – 538)*. 1954

[15] A. D. Imms . A general text book of Entomology. 9th Edition revised by Richards, O. W. and Davis, R. G., London, Methuen & Co. LTD. New York, E. P. Dutton & Co. INC. 886 pp.(Order : Diptera, 25 : 586 – 666.), 1964.

[16] C.H. Curran. The families and genera of North American Diptera. 2nd rev. ed. Henry Trip, 515 pp., 1965.

- [17] H. H. Ross. A text book of Entomology. 3rd Ed. John Wiley & Sons, Inc. New York , 539 pp. (Diptera : 361 – 391), 1965.
- [18] H. Oldroyd . Diptera, Introduction and key to the families. *Handbk. Identif. Br. Insects. R. Entomol. Soc. Lond., Vol. 9 Part 1, 104 pp.*, 1970.
- [19] D. M. Unwin. A key to the families of British Diptera. *Field studies, 5 : 513 – 553. AIDGAP Tested*, 1981.
- [20] G. G. E. Scudder, R. A. Cannings . The Diptera families of British Columbia. *The Diptera families of British Columbia. 1 – 158*, 2006.
- [21] S. Khaghaninia, E. Zarghani, Y. Gharajedaghi. .A recent contribution to the black scavenger flies (Diptera: Sepsidae) in Iran. *BIHAREAN BIOLOGIST*, 8 (1): 21-23. 2014.
- [22] S. D. Letana. Taxonomy of black scavenger flies (Diptera: Sepsidae) from Luzon, Philippines. *Philippine Science Letters*, Vol.7:No. 1, 2014.
- [23] A. I. Derwesh.. A preliminary list of identified insects and arachnids of Iraq. *Direct. Gen. Agric. Res. Proj. Baghdad, Bull. No. 121 :123Pp*. 1965.
- [24] A. N. Khalaf, M. A. Al – Omar. A second list of insects from Iraq. *Biol. Res. Cent., Publ. No. 2, 41pp*1974..

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