

# *Ophyra capensis* (Wiedemann, 1818) (Diptera: Muscidae) a Muscid Species New for Saudi Arabia

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**Abstract.** *Ophyra* (= *Hydrotaea*) *capensis* (Wiedemann) (Diptera: Muscidae) is reported as new for Saudi Arabia. A total 3 males were collected from Abha area, Asir Province, South- Western of Saudi Arabia in August 2000. Data on the medical and veterinary importance and geographical distribution are presented. Muscid flies list up to 37 taxa known from the country. A summary of the Zoogeographical check up to the 37 species is presented with the widespread distribution for each species.

**Key words:** Saudi Arabia, Muscidae, *Ophyra capensis*, widespread distribution.

## INTRODUCTION

*Ophyra capensis* (Wiedemann) is a part of the fauna of manure accumulations in poultry houses (Olckers and Hulley, 1984). Also Conway (1970) found that this fly was very common in the wetter areas of the manure. Larvae have been found above all in excrement and carrion, where the third instar larva is carnivorous (Skidmore, 1985). Pont (1991) reported that the species was also reared from bird and mammal nests and from fung.

The second and third instar larvae of *O. capensis* are facultative predators of house fly *Musca domestica* larvae, mainly those weighing less than it (Olckers and Hulley, 1984), reported that the third instars are more voracious, killing average of 4.1 second instar prey daily. Tsankova and Luvchiev (1993) in the laboratory studies, reported that larvae of *O. capensis* can kill up to 17 prey per larva depending on the larval instar and the culture density.

*O. capensis* is a good potential agent for biological control of house flies by inundative release (Adams, 1984; Olckers and Hulley, 1984; Tsankova and Luvchiev, 1993).

Thirty seven Muscid flies have hitherto been reported in Saudi Arabia (Van Emden, 1948; Beccari, 1971; Deeming, 1971; Zumpt, 1973; Buttiker *et al.*, 1979; Pont, 1986, 1991; The present study). Out of 37 species, 13 are suspected to be of the Palaetropical origin, 4 are of the Afrotropical

origin, 9 are of the Afrotropical species, extending into the Mediterranean sub-region, 5 are cosmopolitan, 3 are of the Palearctic extending into Arabia and also the Horn of Africa, 2 are restricted to Arabia, the Horn of Africa, and Egypt, 1 is of the Oriental origin (Pont, 1991).

A summary of the Zoogeographical check up to the 37 species is presented with the widespread distribution for each species. This paper aimed to provide the total numbers of all known muscid flies in Saudi Arabia.

## MATERIALS AND METHODS

### Study area

The study site is located at Abha area, Asir Province, South- Western of Saudi Arabia. The area is about 2190 m above sea level with a mean precipitation of 432.6 mm, which falls in winter. The climate is mild in winter, hot and dry in summer. The mean daily air temperature ranges from 8.3 to 17°C in winter and 11.4 to 29.2°C in summer and the mean daily relative humidity ranges from 74 to 84% in winter and 52- 64% in summer (Data obtained from Hydrology Division, Ministry of Agriculture and Water, Riyadh). The escarpment is mostly wooded with a relatively rich growth of *Acacia* trees and scattered large bushes and perennial shrubs including *Delonix* spp., *Tamarindus* spp., *Anagyris* spp., and *Ziziphus* spp. A full list of the natural vegetation of the study area is given by Migahid (1978).

### Specimens collection

A total 3 males of Muscid flies *Ophyra capensis* were collected from Abha area in August 2000, using an aerial net. Flies were mounted and identified. Identifications of specimens were determined by Dr. Azza abd El-Halim of Egypt. The area covered and the site of the collection are shown in the Figure 1.

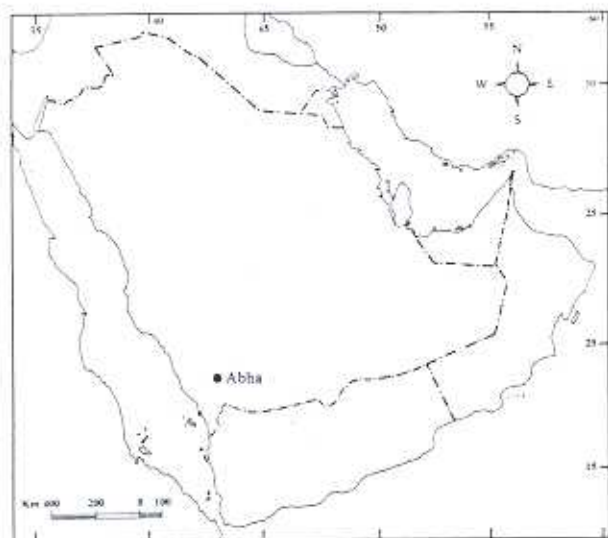


Fig. 1. Map of Saudi Arabia with inset of Asir Province showing sampling localities.

### CHECKLIST OF CALLIPHORIDAE FROM SAUDI ARABIA

1. *Atherigona (Aeritochaeta) orientalis* (Schiner, 1968).  
*Distribution:* Borneo, Burma, Ceylon, China, Christmas Island (India Ocean), Cocos (Keeling) Islands, Flores Island, Hawaii, India, Java, Krakatau, Malaya, Malloch, Nicobar Islands, Oman, Pakistan, Saudi Arabia, Simeulue Island, Sumatra, Taiwan, Thailand, Tropical and subtropical (including Sudan), U. S. A., Yemen (Beccari, 1971; Delfinado and Hardy, 1977; Pont, 1980, 1991).
2. *Atherigona (Atherigona) humeralis* (Wiedemann, 1830).  
*Distribution:* Afrotropical region (including Ethiopia, Sudan) Canary Islands, Egypt, Jordan, Libya, Oman, Palestine, Saudi Arabia (Pont, 1991).
3. *Atherigona (Atherigona) laevigata* (Loew, 1852).  
*Distribution:* Afrotropical region (including Ethiopia, Mozambique), Burma, Caroline Islands, Ceylon, China, Egypt, Fiji, India, Java, Jordan, Malaya, Nepal, Palestine, Saudi Arabia, Sumatra, Sumbawa, Taiwan, Yemen (Van Emden, 1948; Deeming, 1971; Delfinado and Hardy, 1977; Pont, 1991).
4. *Atherigona (Atherigona) naqvii* Steyskal, 1966.  
*Distribution:* Afrotropical region (including Ethiopia), Australia, Canary Islands, Ceylon, India, Oman, Pakistan, Saudi Arabia, Yemen (Deeming, 1971; Delfinado and Hardy, 1977; Pont, 1986b, 1991).
5. *Atherigona (Atherigona) soccata* Rondani, 1871.  
*Distribution:* Afrotropical region (including Sudan, Ethiopia), Burma, India, Italy, Oman, Pakistan, Saudi Arabia, Southern Palaearctic region, Thailand (Deeming, 1971; Delfinado and Hardy, 1977; Pont, 1973, 1991).
6. *Atherigona (Atherigona) theodori* Hennig, 1963.  
*Distribution:* Afrotropical region (including Sudan), Egypt, Oman, Palestine, Saudi Arabia (Pont, 1986a, 1991).
7. *Brontaea tonitruai* (Wiedemann, 1824).  
*Distribution:* Afrotropical region (including Ethiopia), Kuwait, Mediterranean and Middle East, Oman, Oriental region, Saudi Arabia (Pont, 1991).
8. *Coenosia attenuata* Stein in Becker, 1903.  
*Distribution:* Afrotropical region (from Cape verde Islands and Sokotra), Australia, Burma, Ceylon, Egypt, Flores Island, India, Kuwait, Lombok, Oman, Oriental region, Saudi Arabia, Southern Palaearctic region, Taiwan (Delfinado and Hardy, 1977; Al-Houty, 1989; Pont, 1986a, 1991).
9. *Coenosia humilis* Meigen, 1826.  
*Distribution:* Afrotropical region (including Sudan, Ethiopia), Ceylon, Flores Island, Germany, India, Java, Lombok, Nearctic, Nepal, Palaearctic,

Saudi Arabia, Sumbawa, Sweden, Yemen, Zimbabwe (Van Emden, 1948; Delfinado and Hardy, 1977; Stone *et al.*, 1983; Pont, 1991).

10. *Haematobia minuta* (Bezzi, 1892)

*Distribution:* Afrotropical region (including Ethiopia, Sokotra, Somalia and Sudan), Ceylon, India, Iran, Middle East, Oman, Pakistan, Palaearctic, Saudi Arabia, Thailand, Yemen (Van Emden, 1948; Zumpt, 1973; Delfinado and Hardy, 1977; Mellor, 1978; Pont, 1986a).

11. *Helina conformis* (Stein in Becker, 1903)

*Distribution:* Afrotropical region (including Ethiopia and Sudan), Egypt, Oman, Saudi Arabia, Yemen (Van Emden, 1948; Pont, 1991).

12. *Helina lucida* (Stein, 1913)

*Distribution:* Afrotropical region (including Ethiopia, South Africa), Saudi Arabia (Skidmore, 1985; Pont, 1991).

13. *Hydrotaea polita* Emden, 1943

*Distribution:* Afrotropical region (including Sudan, South Africa, Tanzania and Uganda), Saudi Arabia (Van Emden, 1943; Pont, 1991).

14. *Limnophora aculeipes aculeips* Stein, 1913

*Distribution:* Afrotropical region (Ethiopia, Kenya and Tanzania), Saudi Arabia (Van Emden, 1951; Pont, 1991).

15. *Limnophora quaterna* (Loew, 1852)

*Distribution:* Afrotropical region (including Ethiopia, Sokotra, Sudan and Mozambique), Mediterranean subregion (including Egypt), Kuwait, Oman, Saudi Arabia, Yemen (Emden, 1948; Pont, 1986a, 1991).

16. *Lispe bivittata* Stein, 1909

*Distribution:* Buru Island, Ceylon, Egypt, Ethiopia, India, Java, Malaya, Moluccas, Oman, Ryukyu Islands, Saudi Arabia, Sokotra, Sudan, Sumatra, Taiwan (Delfinado and Hardy, 1977; Pont, 1991).

17. *Lispe ciliatarsis* Loew, 1856

*Distribution:* Egypt, Oman, Palestine, Saudi

Arabia, South Africa, Uganda (Pont, 1991).

18. *Lispe modesta* Stein, 1913

*Distribution:* Ethiopia, Oman, Saudi Arabia (Pont, 1991).

19. *Lispe nana* Macquart, 1835

*Distribution:* Cape Verde Islands, France, India, Oman, Palaearctic region, Saudi Arabia, South Africa, Sudan, Yemen (Delfinado and Hardy, 1977; Pont, 1986a, 1991).

20. *Lispe nivalis* Wiedemann, 1830

*Distribution:* Afrotropical region (including Sokotra and Sudan), Canary Islands, Egypt, Morocco, Oman, Portugal, Saudi Arabia, South Africa, Spain, Yemen (Van Emden, 1948; Pont, 1991).

21. *Lispe pectinipes* Becker, 1903

*Distribution:* Egypt, Hawaii, India, Kenya, Oman, Saudi Arabia, Yemen (Van Emden, 1948; Pont, 1991).

22. *Lispe pygmaea* Fallen, 1825

*Distribution:* Cape Verde Islands, China, Kuwait, Oman, Pakistan, palaearctic region, Saudi Arabia, Sudan, Sweden, Taiwan (Delfinado and Hardy, 1977; Al-Houty, 1989; Pont, 1986a, 1991).

23. *Lispe rigida* Becker, 1903

*Distribution:* Egypt, Iran, Morocco, Saudi Arabia (Pont, 1991).

24. *Musca albina* Wiedemann, 1830

*Distribution:* Ceylon, India, Middle East, North Africa, Oman, Pakistan, Saudi Arabia, Southern Africa, Sudan, USSR (Van Emden, 1948; Delfinado and Hardy, 1977; Buttiker, *et al.*, 1979; Pont, 1991).

25. *Musca confiscata* Speiser, 1924

*Distribution:* Afghanistan, Afrotropical region (including Sudan and Sokotra), Burma, Ceylon, China, Egypt, India, Malaya, Oman, Philippines, Ryukyu Island, Saudi Arabia, Taiwan, Yemen (Van Emden, 1948; Delfinado and Hardy, 1977; Pont, 1991).

26. *Musca crassirostris* Stein in Becker, 1903  
*Distribution:* Afrotropical region (including Sudan and Sokotra), Borneo, Burma, Ceylon, China, Egypt, India, Java, Lombok, Malaya, Mediterranean and Middle East, Nepal, Oman, Philippines, S. Palaeartic, Saudi Arabia, Sumatra, Taiwan, Thailand, United Arab Emirates (Delfinado and Hardy, 1977; Mellor, 1978; Pont, 1991).
27. *Musca domestica* Linnaeus, 1758  
*Distribution:* Afrotropical region, Borneo, Burma, Celebes, Ceylon, China, Christmas Island (India Ocean), Cocos Islands, Endeh, Flores Island, India, Java, Krakatau, Malaya, Maldive Islands, N. America, Nepal, Pakistan, Philippines, Ryukyu Islands, Saudi Arabia, Scandinavia, Simeulue Island, Sumatra, Sumbawa, Taiwan, Talaor Islands, Thailand (Delfinado and Hardy, 1977; Buttiker *et al.*, 1979; Stone *et al.*, 1983).
28. *Musca domestica domestica* Linnaeus, 1758  
*Distribution:* Afrotropical region, India, Kuwait, Oman, Saudi Arabia, United Arab Emirates, Yemen (Van Emden, 1948; Beccari, 1971; Buttiker *et al.*, 1979; Al-Houty, 1989; Pont, 1991).
29. *Musca domestica calleva* Walker, 1849  
*Distribution:* Afrotropical region (including Sudan, Somalia and Sokotra), Macaronesian Islands, North Africa, Oman, Saudi Arabia, South Africa, United Arab Emirates, Yemen, Zimbabwe (Buttiker *et al.*, 1979; Pont, 1991).
30. *Musca lucidula* (Loew, 1856)  
*Distribution:* Egypt, Ethiopia, India, Kuwait, Oman, Saudi Arabia, Somalia, Sudan, United Arab Emirates, USSR (Delfinado and Hardy, 1977; Buttiker *et al.*, 1979; Al-Houty, 1989; Pont, 1991).
31. *Musca sorbens* Wiedemann, 1830  
*Distribution:* Afrotropical region, Burma, Ceylon, China, Christmas Island, Cocos Island, Egypt, Ethiopian region, Flores Island, Hawaii, India, Java, Kuwait, Lombok, Malaya, Maldive Islands, Micronesia, Nepal, Oman, Pakistan, Peloe Endeh, Philippines, Ryukyu Islands, S. Palaeartic, Saudi Arabia, Sierra Leone, Simeulu Islands, Sumatra, Sumbawa, Syria, Taiwan, Talaor Islands, Thailand, United Arab Emirates, Yemen (Van Emden, 1948; Delfinado and Hardy, 1977; Buttiker *et al.*, 1979; Al-Houty, 1989; Pont, 1986a, 1991).
32. *Musca biseta* Hough, 1898  
*Distribution:* Afrotropical region, Macaronesian Islands, Middle Asia, Middle East, North Africa, Oman, Saudi Arabia, Somalia, Yemen (Pont, 1986b, 1991).
33. *Muscina stabulans* (Fallen, 1817)  
*Distribution:* China, Europe, India, Kuwait, N. America, North and North East Africa (including Ethiopia), Pakistan, Saudi Arabia, Sweden, Taiwan, USSR, Yemen (Van Emden, 1948; Delfinado and Hardy, 1977; Buttiker *et al.*, 1979; Stone *et al.*, 1983; Al-Houty, 1989; Pont, 1986a, 1991).
34. *Neomyia nudissima* (Loew, 1852)  
*Distribution:* Afrotropical region (including Sudan, Ethiopia, Somalia and Sokotra), Mozambique, Saudi Arabia, Yemen (Van Emden, 1948; Pont, 1991).
35. *Ophyra capensis* (Wiedemann, 1818)  
 New record to Saudi Arabia  
*Distribution:* Afrotropical region (including Ethiopia, Sokotra and Sudan), Ceylon, Chile, China, Germany, Holarctic, India, Neotropical, North America, Oman, Pakistan, Saudi Arabia, South Africa, Southern Palaeartic region, Yemen (Van Emden, 1948; Delfinado and Hardy, 1977; Stone *et al.*, 1983; Pont, 1986a, 1991).
36. *Stomoxys calcitrans* (Linnaeus, 1758)  
*Distribution:* Afrotropical region (including Ethiopia and Sudan), Argentina, Bali, Borneo, Burma, Celebes, Ceylon, Chile, China, Flores Island, India, Java, Kuwait, Malaya, Nepal, North America, Oman, Pakistan, Philippines, Saudi Arabia, Simeulu Island, Sumatra, Sumbawa, Sweden, Taiwan, Thailand, Viet Nam, Yemen (Emden, 1948b; Delfinado and Hardy, 1977; Buttiker *et al.*, 1979; Ston *et al.*, 1983; Pont, 1986a, 1991).
37. *Stygeromyia maculosa* Austen, 1907  
*Distribution:* Ethiopia, India, Iran, Oman,

Saudi Arabia, Sokotra, Somalia, Sudan, Yemen, Zimbabwe (Van Emden, 1948; Delfinado and Hardy, 1977; Pont, 1986a, 1991).

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