

## New Records of Chloropidae (Diptera) from Southwest Saudi Arabia with some Biological Information, World-wide Geographical Distribution and Taxonomic Features

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**Abstract.** Thirty one species of Chloropidae are identified and recorded from southwest Saudi Arabia of which thirty species are recorded for the first time. Biological information, together with world-wide geographical distribution and taxonomic remarks are included. A further two species which could not be identified safely to species level because of inadequate material for taxonomic treatment.

**Key words:** new records, chloropidae, southwest Saudi Arabia, taxonomic remarks.

### Introduction

Members of the Chloropidae "Grass Flies" are classified in 177 genera and 2456 species having diverse larval biology (Oosterbroek, 1998). These are minute or very small, dark in colour, and with brilliantly coloured eyes. The taxonomy of Chloropidae is still in a state of confusion especially as regards to generic boundaries. Some species of Chloropidae are: (a) plant feeders including some important agricultural pests and in the larval stages attack Poaceae, cereal crops and pasture grasses; (b) secondary invaders of shoots already attacked by *Atherigona* (Muscidae) larvae and those of lepidopterous stem-borers; (c) predators of Hemiptera including Aphids, scale insects, eggs of grasshoppers and nuisance spiders such as *Nephila*, feeding on cocoons masses of sawflies; oothecae of mantids, eggs of some Hemiptera; (d) parasitoids or hyperparasitoids within the burrows of fossorial Hymenoptera, some species reared from stranded fish and marine molluscs; (e) vectors of various eye diseases (the adults of some species of Chloropidae feed on lacrimal and sebaceous fluids at the eyes of man and have been found to be the vectors of the

pathogens of conjunctivitis and Brazilian purpuric fever (Tondella *et al.*, 1991: 157), which disease is a notorious killer of children and *Siphunculina funicola* (de Meijere) are attracted to feed at mammalian eyes, including human. Very little has been published on the Chloropidae of the Middle East. Al-Ali (1977) recorded one species of Chloropidae from Iraq. Al-Houty (1989) recorded two species of Chloropidae from Kuwait. Al-Ahmadi and Salem (1999) listed only three species of Chloropidae in Saudi Arabia. The present paper contains the result of our investigation on Chloropidae in southwest Saudi Arabia.

### Material and methods

A Malaise trap was erected from 3<sup>rd</sup> March to 1<sup>st</sup> June 2001 in Abha farm centre; (18° 50' N 42° 30' E, 2150m); from 25<sup>th</sup> February to 25<sup>th</sup> May 2002 in a farm located in a village in Madenat Al-Ameer Sultan (15 km. East of Abha; 18° 50' N 42° 30' E, 2150m), from 1<sup>st</sup> to 17<sup>th</sup> June 2003 and from 1<sup>st</sup>-31<sup>st</sup> May 2004 in a fruit farm in Asir, Maraba (60 km. South of Abha: 17° 54' N-42° 23' E, 80m) and from 8<sup>th</sup> May to 17<sup>th</sup> June 2003 in a fruit farm in Jizan, Sabya (17° 07' N 42° 39' E, 60m). (The

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farms were visited weekly to collect the insects and add more alcohol in the collecting containers. Some specimens were also collected by sweeping grasses in Tahama Tanoma Al-bekra village (42° 08' N 18° 40' E, 1300m) Tanoma Al-kerya village (42° 15' N 18° 50' E, 2600 m) and Wadi Halli (18° 36' N 41° 18' E, 800 m) in 2003. Insects were either kept in petri dishes or in 70% alcohol. Insects were identified at the National Museum and Galleries of Wales, Cardiff (NMGWC), in which collection voucher specimens of all species encountered has been deposited. As there is no single work which can be used for identification of Arabian Chloropidae, various papers covering Palaearctic, Oriental and Afrotropical region were used. Also comparisons were made with reliably identified specimens of Chloropidae in NMGWC. Keys to species are more scattered, but for many genera those given in Sabrosky's (1951) review of the Ruwenzori fauna cover the afrotropical Region. Genitalia dissection were also made and these preparation were stored with individual specimens. The distribution sections and nomenclature of the species are based on Catalogue of the Diptera of the Afrotropical region (Sabrosky, 1980). When the species are not present in Sabrosky (1980), Catalogue of Palaearctic Diptera (Nartshuk, 1984) was used, or other references which are given. Biological information was obtained from Ferrar (1987), Deeming (1972; 1981; 2003). As the dissection of genitalia is frequently a prerequisite to identification instruments are given below.

#### Preparation of male genitalia

Gently break off the abdomen of the insect put it in 10% KOH or NaOH at room temperature for 34-hours or at blood heat for 15 minutes. Once the abdomen is macerated it can be transferred to a slide using two pins one can pry open the genital capsule (without detaching it from the rest of the abdomen). This will expose the diagnostic parts which previously had been within the abdomen. Neutralise in 5% acetic acid until penetration is complete and no further bubbles are formed. Wash in water to extract the salt. Then either take it through alcohol into glycerine and store in a micro-vial pinned under the specimen or take up through alcohol to absolute, before transferring into ethyl-acetate for 24 hours and subsequent drying. When the specimen has been macerated it is liable

upon drying to shrivel up. The action of ethyle acetate on cuticle is to render it more rigid (but brittle) and this will prevent this crinkling up. To prepare mounts of small pieces of insects on glass microscope slides risks having the insect and its dissected parts separated and one or the other lost. By getting into the habit of keeping dissected parts with the specimen from which they came this danger is averted.

#### Preparation of female genitalia

Prepared as for the male until macerated then remove with pins. Remove eggs that are filling the abdomen but do not remove the spermathecae. Place a pin point just in front of the anal plate (which segment bears the cerci) and pull the ovipositor out to full extension, which is usually about as long as the rest of the abdomen. Flatten the abdomen, neutralise as for the male and extract bubbles by pressing on the surrounding cuticle. Take up through alcohol grades to absolute and then transfer into Euparal and mount under the specimen. Make sure the Euparal covers the specimen completely. A cover slip may be needed to keep the abdomen flat.

#### Species encountered in the present study

*Anacamptoneurum obliquum* Becker 1903: 155.

Distribution: New to Saudi Arabia, described from Egypt and further recorded from Botswana, Nigeria, Sudan, Tanzania and Palestine (Sabrosky, 1980). There are also some specimens in NMGWC collected from Senegal, Niger, Yemen, Gambia, Mali, Oman and Turkey.

Further material examined: 1f, Saudi Arabia: Asir, Abha, Madenat Al-Ameer Sultan, 25.ii.-25.v.2002, Malaise trap.

*Biology:* Species of *Anacamptoneurum* have been reared from wheat shoots and other grasses, maize and Sorghum.

**Strobiola Czeerny, 1909 has recently been placed as a senior synonym of the better known *Aprometopsis flavofacies* (Becker) 1910: 438.**

Distribution: New to Saudi Arabia, described from Tanzania and are further recorded from Nigeria, Zimbabwe, Rwanda, South Africa and Uganda (Sabrosky, 1980).

Further material examined: 1f, Saudi Arabia: Asir, Abha, Madenat Al-Ameer Sultan, 25.ii.-25.v.2002,

Malaise trap; 1f, Asir, Maraba, 1<sup>st</sup>-31<sup>st</sup>.v.2004, Malaise trap.

Biology: Species of *Strabiola* have been reared from millets shoots.

***Elachiptera simplicipes*** Becker 1910: 425

Distribution: New to Saudi Arabia, described from Kenya and further recorded from Ethiopia, Liberia, Zimbabwe, Rwanda, Tanzania, Uganda, Zaire, Zambia and Oman (Sabrosky, 1980; NMGWC collection)

Further material examined: 2f, Saudi Arabia, Asir, Abha, Madenate Al-Ameer Sultan, 25.ii.-25.v.2002, Malaise trap; 1m Asir, Tanoma, Al-Kerya, sweeping grasses, 20.iii.2003, H.A. Dawah.

Biology: Species of *Elachiptera* are secondary shoots attackers of Poaceae, gymnosperm cones, and decaying vegetable matter.

***Epimadiza rugosa*** (de Meijere), 1906: 334.

Distribution: New to Saudi Arabia, described (1906: 334) into the genus *Oscinis* from Cameroun. Further record of this species from Ghana; Sierra Leone (Sabrosky, 1980). However, there is much material of *E. rugosa* in NMGWC from Nigeria, Ghana, Mali and Kenya.

Further material examined: 1m, Saudi Arabia: Asir, Abha Farm Centre, iii.vi.2001, Malaise trap.

Biology: Sabrosky (1946: 840) cites two rearing records from Sierra Leone, being from cassava stem and "ex *Ceroplastes* on coffee". Dr Deeming (pers. comm.) has reared it from the mines of *Alcidodes* and *Sitotroga* (Coleoptera: Curculionidae) in the fibre crop rama (*Hibiscus* sp.) in Northern Nigeria: Zaria Province, Jemma'a, Pawadina, Tudun Guadi, 29.viii.1966.

Remarks: This species was placed in correct generic combination by Becker (1910: 439) in *Epimadiza*. The specimens of this species shows considerable variation in the development of fore femoral armature.

***Epimadiza nigrescens*** Duda 1933: 112

*anthracias* Seguy, 1949: 158 (*Oscinosoma*). Morocco

*inquilinum* Seguy, 1957: 276 (*Oscinosoma*). Ivory Coast.

Distribution: New to Saudi Arabia, described from Palestine and further recorded from Botswana, Cape Verde Island, Ivory Coast, Niger, Nigeria,

Senegal, Sudan and Morocco (Sabrosky, 1980). Some specimens in the NMGWC were recorded from Yemen and Oman.

Further material examined: 1f, Saudi Arabia, Asir, Abha, Madenate Al-Ameer Sultan, 25.ii.-25.v.2002, Malaise trap.

Biology: This species was reared from decaying lettuce, Millets head, sorghum stem from Nigeria (Dr Deeming: pers. comm.).

***Oscinella (Oscinella) nitidigenis*** Becker, 1908: 150 (*Oscinis*).

Distribution: New to Saudi Arabia, described in the genus *Oscinis* from Teneriffe, and further recorded from Canary Islands; Cape Verde Island, Hungary, Sicily, Spain, "Ussuri region", Cyprus, India, Kenya, Madagascar, Mali, Malta, Nigeria, South Africa, Tunisia, Yemen and Zimbabwe (Sabrosky, 1980; Deeming, 2003).

Further material examined: 1f, Saudi Arabia, Asir, Abha farm centre, sweeping grasses, 3.v.2001, H.A. Dawah

Biology: this species is a primary attackers of shoots of Poaceae e.g. *Andropogon gayanus*, *Andropogon fastigiatus*, *Hyparrhenia dissoluta*, *Hyparrhenia*, *Hyparrhenia cyanescens*, *Rhytachne rottboellioides*, *Cymbopogon giganteus* and was found on flowering *Saccharum griffithii* (Deeming, 2003).

***Oscinella nitidissima*** (Meigen, 1838).

Distribution: New to Saudi Arabia and further recorded from Bulgaria, France, Greece, Palestine, Madeira, Romania, Sicily, Spain, and Yugoslavia. Europe: Sweden, Finland, Great Britain, Ireland, Belgium, Germany, Denmark, Austria, Czechoslovakia, Hungary, Poland, Albania, Yugoslavia, Bulgaria, Russia, Israel, Mongolia, Canary Islands, Azores and North America (Nartshuk, 1984).

Further material examined: 3f, 4m, Saudi Arabia, Asir, Abha Farm Centre, sweeping grasses, 10.v.2001.

Biology: Unknown

***Oscinella (Cyclocercula) nartshukiana*** Beschovski, 1978: 25.

Distribution: New to Saudi Arabia, described (1978; 25) from Bulgaria and further recorded from

Turkey, Madeira, Bangladesh, Palestine, Oman, Egypt, Tunisia, Libya, Ethiopia, Kenya, Gambia, Nigeria, Namibia, Zambia, Cameroon, Malaysia, Mauritius (Deeming, 2003).

Further material examined: 2f, Saudi Arabia, Asir, Maraba, 131-.v.2004

Biology: This species attacks crops of economic importance to man (e.g., sorghum seedlings and millet), wild plants (e.g. *Hyparrhenia rufa*) and developing in shoots already attacked by the sorghum shoot fly, *Atherigona soccata* Rondani (Muscidae) (Deeming, 2003).

***Oscinella (Paroscinella) acuticornis*** Becker, 1912: 249.

*acuticornis* Lamb, 1912: 340 (*Oscinis*). Seychelles.

Distribution: New to Saudi Arabia, described from Ethiopia and since recorded from Seychelles, Gambia, Namibia, Nigeria, Kenya, Oman and Yemen (Sabrosky, 1980; Deeming, 2003).

Further material examined: 5m, 20f, Saudi Arabia, Asir, Maraba, 131-.v.2004, Malaise trap.

Biology: Deeming (2003) recorded that this species attacks some economically important crops (e.g. *Eragrostis tef*)

Remarks: some species of *Oscinella* are primary invaders of grasses and others of lesser but still significant pest status. Some species are monophagous but others are polyphagous. Some species are secondary invaders of grasses and variety of other plants following attack by a variety of other insects. In some *Oscinella* species the generation which develop on seeds at the "milky dough" stage as do the the larva of the flies of the genus *Dicraeus* Loew (Chloropidae) (Deeming, 2003).

***Sabroskyina aharonii*** (Duda), 1933: 95.

*pallipes* Lamb in Cottam, 1923: 101 (*Oscinis*). Sudan. (Junior homonym, preocc. *pallipes* Loew, 1863).

*antorides* Seguy, 1950: 277 (*Siphonella*). Niger. Distribution: New to Saudi Arabia, described (1933: 95) as a variety of *Oscinella sziladyi* Duda from Palestine and further recorded from Cape Verde Island, Chad, Niger, Sudan, Egypt, Iraq, Pakistan and Afghanistan (Sabrosky, 1980). There are some specimens of this species in NMGWC collected from Mali, Oman, Yemen and Bahrain. There is a single

female of this species in Naturhistorisches Museum, Basel collected from Riyadh, Saudi Arabia (Dr Deeming, unpublished data).

Further material examined: 1f, Saudi Arabia, Asser, Maraba, 117-.vi.2003, Malaise trap.

Biology: this species is known to feed on lacrimal and sebaceous fluids at the eyes of man (Dr. J. Deeming, pers. comm.)

Remarks: This species is closely related to *S. sziladyi*. It differs from *S. sziladyi* by the frontal triangle which is larger in *S. aharonii* and the mesonotal pubescence pointed above is more dense in *S. aharonii* (Beschovski, 1987).

***Polyodaspis robusta*** (Lamb), 1918: 343 (*Siphonella*)

Distribution: New to Saudi Arabia; described (1918: 343) as a species of *Siphonella* Macquart from Zimbabwe, and since recorded from Kenya, South Africa and Tanzania (Sabrosky, 1980). Material with individual puparia in NMGWC was reared from the tunnels of *Parthenodes* in bracken in April 1985 from the Katberg, South Africa.

Further material examined: 2f, Saudi Arabia: Asir, Abha Farm Centre, iii-v. 2001, sweeping grasses, H.A. Dawah.

Biology: Species of *Polyodaspis* are feeding on animal matter, parasitoids or predacious on caterpillars and other insects. Some species are predators in mantids egg cases.

***Pselaphia cornifera*** Becker 1912: 250.

Distribution: New to Saudi Arabia, described from Ethiopia and further recorded from Yemen, Kenya, Tanzania, Rwanda, South Africa and Uganda (Sabrosky, 1980; NMGWC collection).

Further material examined: long series of males and females from Saudi Arabia, Asir, Madenate Al-Ameer Sultan, 25.ii.-25.v.2002, Malaise trap.

Biology: Unknown

***Rhodesiella (Rhodesiella) rugosa*** (Lamb) 1912: 333.

Distribution: New to Saudi Arabia, described from Seychelles and further recorded from South Africa. Further material examined: 1f, Asir, Maraba, 1-17.vi.2003, Malaise trap.

Biology: unknown

***Scoliophthalmus trapezoides*** Becker, 1903: 147

Distribution: New to Saudi Arabia, described (1903: 147) from Egypt and further recorded from Kenya, Uganda, Tanzania, Zambia, Mozambique, Senegal, Burkina Faso, Nigeria, Cameroun, and South Africa (Sabrosky, 1980; Dr Deeming pers. comm.).

Further material examined: 1f, Saudi Arabia: Asir, Abha Farm Centre, 14, iv.2001, sweeping grasses, H.A. Dawah.

Biology: This species is a primary attacker of shoots of Poaceae. It has been reared in Africa from cultivated sorghum, bullrush millet and maize. Other host plants listed by Deeming (1972: 20) are *Sorghum verticilliflorum*, *Pennisetum purpureum*, *Hyparrhenia cyanescens*, *Sporobolus pyramidalis*, *Oryza barthii*, *Echinochloa* sp., *Eleusine coracana* and *Setaria sphacelata*.

*Siphunculina ornatifrons* (Loew), 1858: 65.

*maculifrons* Becker, 1903: 153 (*Microneurum*). Egypt.

Distribution: New to Saudi Arabia, described (1858: 65) into the genus *Oscinis* from Italy (Sicily) and further recorded from Aldabra, Cameroun, Cape Verde Island, Ethiopia, Ghana, Ivory Coast, Kenya, Liberia, Nigeria, Rhodesia, South Africa, Tanzania, Uganda, Canary Island, widespread Mediterranean, sub-region to Oriental Region and Pacific Island (including Hawaii) (Sabrosky, 1980).

Further material examined: 1m, Saudi Arabia, Asir, Abha Farm Centre, 3. vi.2001, Malaise trap.

Biology: Species of *Siphunculina* breeds in dung birds' nests

*Tricimba humeralis* (Loew), 1858: 59.

Distribution: New to Saudi Arabia, described from Italy (Sicily) and further recorded from Sudan, North Africa, Canary Islands, widespread Europe (Sabrosky, 1980).

Further material examined: 2f, Saudi Arabia, Asir, Abha, Madenat Al-Ameer Sultan, 25.ii.25.v.2002, Malaise trap.

Biology: Species of the genus *Tricimba* were bred from decaying vegetable matter. Some species are predators of Hemiptera and fungi.

*Tricimba bimarginata* Sabrosky, 1979: 323

Distribution: New to Saudi Arabia, described from a single specimen from Grand Comore. There are some specimens in NMGWC collected from Yemen.

Further material examined: 1m, Saudi Arabia, Asir, Maraba, 1st-31st.v.2004, Malaise trap.

Biology: Unknown

Remarks: The listing of Sabrosky's 1979 paper appears in the appendix of Crosskey (1980), it being a paper that was only discovered by the compilers after the manuscript had gone to press. The information mentioned above is the only knowledge of the distribution of *Tricimba bimarginata*.

*Elachiptereicus abessynicus* Becker 1913: 152.

Distribution: New to Saudi Arabia, described from Ethiopia and further recorded from Cameroun, Mozambique, Nigeria, Rwanda, Senegal, South Africa and Uganda (Sabrosky, 1980).

Further material examined: 1m, Saudi Arabia: Asir, Abha, Madenat Al-Ameer Sultan, 25.ii.-25.v.2002, Malaise trap

Biology: Species of *Elachiptereicus* are primary attackers of shoots of grasses.

*Elachiptereicus bistriatus* Becker 1909: 120  
*bistriatus* Seguy, 1946: 12 (*Opsiceras*). Senegal. (Junior homonym. Preocc. *bistriatus* Becker, 1909.)

Distribution: New to Saudi Arabia, described from Ethiopia and further recorded from Cameroun, and South Africa (Sabrosky, 1980).

Further material examined: 1f, Saudi Arabia: Asir, Abha, Madenat Al-Ameer Sultan, 25.ii.-25.v.2002, Malaise trap

*Homops madagascariensis* (Enderlein) 1911: 125 (Ops).

Distribution: New to Saudi Arabia, described into genus *Ops* Becker from Madagascar and since recorded from Mozambique and South Africa. There are some specimens in NMGWC collected from Nigeria, Ghana, Kenya and Yemen, and also South Africa (material from a male swarm).

Further material examined: 1f, Saudi Arabia, Asir, Maraba, 1<sup>st</sup>-31<sup>st</sup>.v.2004, Malaise trap.

Biology: Unknown

*Lagaroceras distinctum* Deeming, 1981: 816

Distribution: New to Saudi Arabia, described from Nigeria and further recorded from Mozambique. There are some specimens of in NMGWC collected from Kenya and Yemen.

Further material examined: 2f, 1m, Saudi Arabia: Asir, Abha, Madenate Al-Ameer Sultan, 25.ii.-25.v.2002, Malaise trap,

Biology: Species of *Lagaroceras* are primary attackers of shoots of Poaceae.

***Lagaroceras sequens*** Becker, 1910: 418.

Distribution: New to Saudi Arabia, described from Tanzania and further recorded from Ethiopia, Kenya and Zambia (Sabrosky, 1980)

Further material examined: 1m, 4f, Saudi Arabia, Asir, Madenate Al-Ameer Sultan, 25.ii.-25.v.2002, Malaise trap. There is a single female in NMGWC collected from Yemen.

Biology: unknown.

Remarks: the specimens of *L. sequens* which were collected from Saudi Arabia and Yemen represent a paler Arabian form of *L. sequens* (Dr Deeming, pers. comm.).

***Lasiosina apicata*** (Becker) 1913: 148 (*Chlorops*)  
Distribution: New to Saudi Arabia, described from Ethiopia (Sabrosky, 1980).

Further material examined: 1f, Saudi Arabia: Asir, Abha, Madenate Al-Ameer Sultan, 25.ii.-25.v.2002, Malaise trap.

Biology: Unknown

***Mepachymerus lentus*** (Curran) 1928: 347 (*Steleocerus*)

Distribution: New to Saudi Arabia, described from Zaire and further recorded from Burundi, Chad, Kenya, Nigeria, Rwanda, South Africa and Uganda (Sabrosky, 1980).

Further material examined: 1m, Saudi Arabia, Asir, Madenate Al-Ameer Sultan, 25.ii.-25.v.2002, Malaise trap.

Biology: Species of *Mepachymerus* are primary attackers of shoots in grasses.

***Metopostigma sabulona*** Becker, 1910: *Archvm zol. Bpest*, 1: 64 (Metopostigma). Type-locality: "Port Said" (Egypt).

Distribution: New to Saudi Arabia, described from Egypt and further recorded from Palestine and Pakistan (Nartshuk, 1984). There are some specimens of this species in NMGWC collected from India, Oman, Yemen, Tunisia and Saudi Arabia.

Further material examined: 2f, Saudi Arabia: Asir, Abha Farm Centre, iii.-v.2001, Malaise

trap, 2f, Asir, Maraba, 117-.vi.2003, Malaise trap.

Biology: No biological knowledge exists. Dr Deeming (pers. comm.) informed us that in his experience the species of this genus are truly desert adapted.

***Pachylophus proximus*** Adams, 1905

Distribution: Previously recorded from Saudi Arabia by Dabbour and El-Dawy (1981), described from Zimbabwe and further recorded from Chad, East Africa, Ethiopia, Lesotho, Mozambique, Namibia, Nigeria, South Africa, Sudan, Zaire and Zambia (Sabrosky, 1980).

Further material examined: Saudi Arabia, Asir, Tanoma, Al-Kerya, sweeping grasses, 20.iii.2003, H.A. Dawah.

Biology: Unknown.

***Paretecephala trimaculata*** Adam 1905: 196 (*Chlorops*)

Distribution: New to Saudi Arabia, described from Zimbabwe and further recorded from Uganda (Sabrosky, 1980). There is a single female in NMGWC collected from Yemen.

Further material examined: 1m, Saudi Arabia, Asir, Wadi Hali, 9.1.2003; 1m, Asir, Tahama Tanoma, Albekra village 20.1.2003, sweeping grasses in both localities.

Biology: unknown

***Stenophthalmus ocellatus*** Becker 1903

Distribution: New to Saudi Arabia, described from Egypt and further recorded from Sudan and India.

Further material examined: 1f, 1m, Saudi Arabia: Asir, Abha, Madenate Al-Ameer Sultan, 25.ii.-25.v.2002, Malaise trap; 1f, Asir, Maraba, 1-17.vi.2003, Malaise trap.

Biology: it was reared from sugarcane in Egypt (Dr J. Deeming, pers. comm.).

***Thaumatomyia notata*** Meigen, 1830: 144 (*Chlorops*).

***Punctipleuris*** Becker, 1913; 151 (*Chloropisca*). Ethiopia

Distribution: New to Saudi Arabia, and further recorded from Europe, Ethiopia, Somalia, Uganda, N. Africa, widespread Palearctic Region.

Further material examined: 2f, Saudi Arabia, Asir, Abha Farm Centre, 3.iii.2001-3.vi.2001 Malaise trap.

Biology: species of *Thaumatomyia* are predaceous on root aphids and represent an important factor in the control of the sugarbeet root aphid and scale insects (Nartshuk, 1984)

***Thaumatomyia sulcifrons*** (Becker, 1907); 394.

Distribution: New to Saudi Arabia and further recorded from Europe: Spain, southern France, Hungary, Yugoslavia, Bulgaria, USSR: Southern Europe Territory, Transcaucasus, Kazakh SSR, Soviet Middle Asia, southern East Siberia, Asia: Palestine, Iran, Afghanistan, Mongolia, China; North Africa: Algeria, Tunisia, Morocco and Canary Islands (Nartshuk, 1984).

Further material examined: 1f, Saudi Arabia, Asir, Abha Farm Centre, 3.iii-3.vi.2001, Malaise trap.

Biology: unknown

***Arcuator opacus*** (Becker) 1912: 249

*H. bipustulatus* Bezzi in Bezzi & Lamb 1926. *Trans. Ent. Soc. London* 1925: 557 (Rodriguez).

Distributions: New to Saudi Arabia, described in the genus *Hippelates* from Ethiopia and further recorded from Mozambique, South Africa, Zaire, Gambia, Nigeria, Rodriguez island (Sabrosky, 1985)

Further material examined: 1m, Saudi Arabia: Asir, Abha, Madenat Al-Ameer Sultan, 25.ii.-25.v.2002, Malaise trap.

Biology: Unknown, some species of *Arcuator* were recorded to feed on honey dew of psyllid colony on *Piliostigma thonningii*.

***Caviceps* sp.n.**

This is an Australian genus of which an undescribed species has been found not only in Saudi Arabia but also in Nigeria (Dr J.C. Deeming, pers. comm.).

Further material examined: 1m, 2f, Saudi Arabia: Asir, Abha, Madenat Al-Ameer Sultan, 25.ii.-25.v.2002, Malaise trap.

***Assuania* sp.**

Further material examined: 1f, Saudi Arabia: Asir, Madenat Al-Ameer Sultan, 25.ii.-25.v.2002, Malaise trap; 1m, Asir, Abha, Abha farm centre, sweeping grasses, 25.v.2001. Also this species have been found in Yemen (NMGWC collection).

Remarks: The specimens represent a new species but the material available is insufficient for the description of a new species.

## Discussion

The biogeographical position of Saudi Arabia is quite peculiar as crossroad of various realms, touching the Palaearctic Region in the North (at the border with Jordan), the Afrotropical Region in the Southwest (separated from Eritrea by the narrow Red Sea), and to a lesser extent the Oriental Region in the Southeast. The present study is interesting from a biogeographical point of view as the fauna of Chloropidae found in this study is much more of Afrotropical than Palaearctic origin.

Very little information is available up to now concerning the Chloropidae of Saudi Arabia although most species of this family are economically important, which is attributed to the lack of research on this important group of insects. In the course of a survey of the Chloropidae of the Southwest of Saudi Arabia 31 species were found of which 30 species are recorded for the first time, 2 species could not identified safely to species level. In total, 35 species of Chloropidae are currently known to occur in Saudi Arabia (Table 1). Local fauna studies are important in order to get most reliable information which enable researchers to discover and protect the natural environment. We believe that this work considered as an important effort in this direction and add a new record which enrich the natural history of Saudi Arabia. In the case of Chloropidae of Saudi Arabia, however there is a need for extensive taxonomic research. This should embrace not only those species which appear to have some economic importance, but also those species which are difficult to identify but only by specialist. In this study great efforts were made to review all available references on the species listed above in order to make it worthwhile. The number of species of Chloropidae listed in this study expected to increase if further intensive and careful collections is made. Studies on distribution, taxonomy, ecology and biology of Chloropidae will reveal a great deal of knowledge and will provide the necessary guidelines for management of these flies.

**Table 1.** List of Chloropidae species recorded from Saudi Arabia

Species	References
Anatrichus erinaceus Loew	Dabbour, 1979; Dabbour and El-Dawy, 1981
Anacamptoneurum obliquum Becker	This study
Aprometopis flavofacies Becker	This study
Elachiptera simplicipes Becker	This study
Epimadiza rugosa (de Meijere)	This study
Epimadiza nigrescens Duda	This study
Oscinella nitidigenis Becker	This study
Oscinella nitidissima (Meigen)	This study
Oscinella ( Cyclocercula) nartshukiana Beschovski	This study
Oscinella (Paroscinella) acuticornis Becker	This study
Sabroskyina aharonii (Duda)	This study
Polyodaspis robusta (Lamb)	This study
Pselaphia cornifera Becker	This study
Rhodesiella (Rhodesiella) rugosa Lamb	This study
Scoliophthalmus trapezoides Becker	This study
Siphunculina ornatifrons (Loew))	This study
Tricimba humeralis (Loew)	This study
Tricimba bimarginata Sabrosky	This study
Elachiptereicus abessynicus Becker	This study
Elachiptereicus bistriatus Becker	This study
Homops madagascariensis (Enderlein)	This study
Lagaroceras distinctum Deeming	This study
Lagaroceras sequens Becker	This study
Lasiosina apicata (Becker)	This study
Mepachymerus lentus (Curran)	This study
Metopostigma sabulona Becker	This study
Metopostigma tenuiseta (Loew)	Abu-Thuraya,1982; Martin, 1972
Pachylophus proximus Adams	Dabbour and El-Dawy, 1981
Paretecephala trimaculata Adam	This study
Stenophthalmus ocellatus Becker	This study
Thaumatomyia notata Meigen	This study
Thaumatomyia sulcifrons (Becker, 1907)	This study
Arcuator opacus (Becker)	This study
Caviceps sp.n.	
Assuania sp.n.	

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تسجيل أنواع لأول مرة من ذبابة الأعشاب ( Chloropidae ) من جنوب غرب المملكة العربية السعودية مع بعض المعلومات البيولوجية وتوزيعها الجغرافي في العالم

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**الملخص :** تم جمع وتصنيف واحد وثلاثين نوعاً من ذبابة الأعشاب Chloropidae ثلاثون منها تسجل لأول مرة من جنوب غرب المملكة العربية السعودية وقد تم إدراجها مع بعض المعلومات البيولوجية وتوزيعها الجغرافي في العالم . بالاضافة الى نوعين اخرين لم تكن هناك عينات مناسبة وكافية لتصنيفها الى مستوى النوع.