PARASITOIDS COMPLEX IN SUMMER POPULATIONS OF *ASPHONDYLIA PUNICA* MARCHAL, 1897 (DIPTERA: CECIDOMYIIDAE) ON THE MEDITERRANEAN SALTBUSH, *ATRIPLEX HALIMUS* L. (CHENOPODIACEAE) IN EGYPT, WITH DESCRIPTIONS OF NEW SPECIES FROM EUPELMIDAE AND EULOPHIDAE (HYMENOPTERA: CHALCIDOIDEA)

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ABSTRACT: Parasitoids complex in summer populations of *Asphondylia punica* Marchal, (Diptera: Cecidomyiidae) on the Mediterranean Saltbush, *Atriplex halimus* L. (Chenopodiaceae) in Egypt was studied. The hymenopterous parasitoids are: Eupelmidae: *Neanastatus misirensis* n. sp.; Eulophidae: *Kolopterna aymani* Doğanlar, 2013, *Aprostocetus alexandrianensis* n. sp., *Neochrysocharis formosa* (Westwood, 1833); Eurytomidae: *Eurytoma dentata* Mayr, 1878; Ormyridae: *Ormyrus monegricus* Askew, 1994; Torymidae: *Microtontomerus annulatus* (Spinola, 1808) and Platygasteridae (Proctotripoidea): *Platygaster* sp. The descriptions and biological data of each species were given.

KEY WORDS: Parasitoids, *Asphondylia punica, Atriplex halimus*, Egypt.

The larvae of *Asphondylia punica* Marchal, 1897 (Diptera: Cecidomyiidae) cause large galls up 40 mm long on the stems and flower buds Mediterranean Saltbush, *Atriplex halimus* L. (Chenopodiaceae) in the Mediterranean region (Tavares, 1931; Skuhrava et al., 1993; Skuhravy & Skuhrava, 1999; Skuhrava et al., 2006; Elsayed et al., 2014, in preparation).

Doğanlar & Elsayed (2013) studied on the parasitic complex of *A. punica* on the *A. halimus* in Egypt in winter population and found 5 parasitoids species of Chalcidoidea.

Besides of those works, Dixon et al. (1998) studied on gall morphology and community composition in *Asphondylia flocossa* (Cecidomyiidae) galls on *Atriplex polycarpa* (Chenopodiaceae) in Arizona, USA and it was found that "The community of natural enemies also varied significantly among populations and more markedly between seasons. Both *A. fiocossa* and its parasitoid, *Rileya tegularis* Gahan (Hym.: Eurytomidae) were much more abundant in spring samples than in autumn samples. In contrast, *Torymus cappilacetus* (Hüber) (Hym.: Torymidae) and an undescribed species of *Galeopsomyia* (Hym.: Eulophidae) were abundant in the autumn samples but almost non-existent in the spring samples. The first 2 species tended to emerge from relatively large galls while the latter 2 species tended to emerge from small galls. *Torymus umbilicatus* (Gahan) (Hym.: Torymidae) was the only parasitoid abundant in samples from both seasons."

Gibson (2009) stated that most species of *Neanastatus* Girault, 1913 are

primary or hyperparasitoids of the gall midges (Cecidomyiidae: Diptera), and gave diagnostic characters of *Neanastatus* and compared it with the morphological characters of closely related genera of Neanastatinae (Hymenoptera: Eupelmidae). Ferriere (1938) revised the 34 species of *Neanastatus* all over the world, eight of them were from Africa, and designed an identification key and gave their diagnostic characters. Narendran et al. (2006) make a revision of *Neanastatus* species of India and provided an identification key for 13 species of Oriental Region.

Systematic and taxonomy of *Aprostocetus* spp. (Hymenoptera: Eulophidae) was studied by Graham (1987), of *Neochrysocharis* spp. (Hymenoptera: Eulophidae) by Hanson (1990), of *Eurytoma* spp. (Hymenoptera: Eurytomidae) by Zerova (2010), of *Ormyrus* spp. (Hymenoptera: Ormyridae) by Doğanlar (1991a,b); Askew (1994), of *Microdontomerus* spp. (Hymenoptera: Torymidae) by Zerova & Seregina (1999) and of *Platygaster* spp. (Hymenoptera: Platygasteridae) by Buhl (2007). Distributions, synonyms and hosts of chalcidoid species were recorded by Noyes (2013).

By this work the parasitoids of the gall midge, *A. punica* on the stems and flower buds of the Mediterranean Saltbush, *A. halimus* was collected in Summer, 2013 were studied, the new species were described, and the effectiveness of the parasitoids in Summer and Winter generations in Alameria District, Egypt were discussed.

MATERIALS AND METHOD

The study was conducted in the period from May to October, 2013 in Alameria District, 30°59'54"N, 29°49'70"E, Alexandria, Egypt by the second author. The methods for rearing parasitoids and mounting slides were followed the methods as given by Doğanlar & Elsayed (2013). To differentiate between the primary and hyper parasitoids, the galls were dissected after emergence of the adult parasitoids. The contains of the empty galls were temporary mounted on slides in glycerin medium, then examined under microscope. If it contained only one pair of larval mandibles, it will be considered as primary parasitoid, while if it contained more than one pair of larval mandibles, it will be considered as hyperparasitoid.

Morphological terminology follows Graham (1987). The study is based on the specimens reared from the host. The new taxa were identified by following the keys of Graham (1987), and compared with the species of the genera from the Palearctic Region. The examined specimens were deposited in the collection of the Insect Museum of Research Station of Biological Control Yüreğir, Adana, Turkey (IMRSBC). Photographs of diagnostic characters of the species were taken by using a stereo-microscope (LEIKA GM 500, Germany) with a digital camera (LEIKA ICC50 HD) attached to it.

Abbreviations used: C1-C3: claval segments 1 to 3; EL: Eye length; EW: Eye width; F1-F5: Funicular segments 1 to 5; MV: Marginal vein; MS: Malar space; OAL: Minimum distance between the posterior ocellus and anterior ocellus; OCL: Minimum distance between the posterior ocellus and occipital margin; OOL: Ocellocular distance; PMV: Postmarginal vein; POL: Postocellar distance; SMV: Submarginal vein; STV: Stigmal vein.

RESULTS AND DISCUSSION

By the work conducted in the Summer of 2013 showed that the parasitic complex of *A. punica* in the newly developed galls are mostly differs from the ones developed in winter populations which were published by Doğanlar & Elsayed (2013). The hymenopterous parasitoids are: Eupelmidae: *Neanastatus misirensis* n. sp., Eulophidae: *Kolopterna aymani* Doğanlar, *Aprostocetus alexadrianensis* n. sp., *Neochrysocharis formosa* (Westwood, 1833); Eurytomidae: *Eurytoma dentata* Mayr, 1878; Ormyridae: *Ormyrus monegricus* Askew, 1994; Torymidae: *Microtontomerus annulatus* (Spinola, 1808) and Platygasteridae (Proctotripoidea): *Platygaster* sp. The descriptions and biological data of the studied species were given as follows:

Neanastatus misirensis Doğanlar n. sp.

(Figs. 1a-h, 2a,b)

Diagnosis: Body yellow, except as follows: mandible pale yellow with teeth brown; antennae apically pale brown; along the sutures between pronotum and propleuron with pale brown band, acropleuron anteriorly pale brown, towards posterior become darker with metallic blue reflection, other pleura and sterna pale brown, metanotum and propodeum brown, forewing hyaline with veins and setae black, fore and mid leg yellow, the latter with tibial spurs and one row of mesotarsal pegs along each ventrolateral margin of the mesotarsus brown; hind leg black, except apical 2/3 of hind coxa and first three segments of tarsus white, gaster black with metallic blue reflection, except dorsal 2/3 of 1st tergum yellow to brown; POL= 15; OOL= 4; OCL= 5; OAL= 10 ; Antenna with funicular segments in both sexes at most 2.5 times as long as width; pronotum shorter than mesoscutum. Forewing with PMV about 3.6x length of STV; mid tibial spur as long as combined length of 3 basal tarsal segments; hind basitarsus 1.5x as long as combined length of 2 following tarsal segments together. Gaster about 3.3x as long as width, 1.75x longer than mesosoma.

Description:

Female: Body (Fig. 1a). Length 2.2-3.2 mm. Color patterns as given diagnosis.

Head (Fig. 1b)**:** Width in anterior view subequal to its length, distinctly punctate-reticulate on frons and vertex; mandibles bidentate; toruli oval; interantennal projection slightly convex, not narrow; MS=12, 0.52x EL; EW: EL= 14: 23; antennae inserted a little below lower ocular line; POL= 15; OOL= 4; OCL=5; OAL= 10; vertex sharply margined posteriorly; occiput steeply declined; antenna (Fig. 1 d) with 11153; scape 0.33x of rest of antenna, a little expanded towards apex. Relative length: width of antennal segments: scape= 45: 11; pedicel= 15:11; anellus= 3: 7; F1= 17: 10; F2= 15: 11; F3= 13: 11; F4= 13: 12; F5= 12: 15 ; clava= 43: 20.

Mesosoma (Fig. 1c)**:** twice as long as width ; with pronotum large, subtriangle, 1.75x as wide as long, half length of mesoscutum, posterior margin broadly concave; mesoscutum slightly wider than pronotum, almost quadrate; scutellum half length of mesoscutum (18: 40); its maximum width at base a little less than 2x its length (15: 18), narrower towards apex, medially divided by a longitudinal sulcus; the axillar carina, which separates the dorsal and lateral axillar surfaces, developed more distinctly into a flange; mesopleura with finely lineolate-reticulate sculpture anteriorly, posterior half finely longitudinally striate, propodeum with plical region linear in the form of vertical strip, concealed by scutellar apex. Macropterous, forewing (Fig. 1e) 3x as long as wide, 0.87x as long as gaster, strongly pilose, except for a long hairless streak curved from anal area

towards anterior edge of wing at about middle of MV; Hind wing (Fig. 1f) 3.67x as long as width. Relative lengths of veins: SMV= 93; MV=70; PMV=50; STV=14. Mid tibial spur (Fig. 1g) as long as combined length of basal 3 tarsal segments; hind basitarsus (Fig. 1h) 1.5x as long as combined length of 2 following tarsal segments together.

Gaster (Fig. 1a)**:** about 3.3x as long as width, 1.75x longer than mesosoma; posterior margin of T1 deeply incised medially; last tergite narrow conical, slightly wider than length, ovipositor sheath hardly extended.

Male (Fig. 2a)**:** Length 1.4-2.5 mm. Similar to female except as follows: head with occiput, behind eyes black, antenna pale brown, eyes white, ocelli dark brown, pronotum with narrow black band laterally, mesosonotum with anterior margin, side lobes, and lateral margins black, scutellum with sutures brown, gaster with terga having apical margin yellow; Antenna (Fig. 2b) with relative length: width of antennal segments: scape= 35: 11; pedicel= 10:11; anellus= 2: 7; F1= 22: 14; F2= 18: 16; F3= 18: 16; F4= 17: 17; F5= 17: 17 ; clava= 43: 17. Mesosoma about twice as long as width, and as long as metasoma, the latter 3x as long as width.

Material examined: Holotype: Female**,** EGYPT: Alameria District, Alexandria, 30°59'54"N, 29°49'70"E, 23rd June, 2013, reared from galls of *A. punica* on the stems and flower buds of the Mediterranean Saltbush, *A. halimus*, leg. Elsayed, deposited in the collection of the Insect Museum of Research Station of Biological Control Yüreğir, Adana, Turkey (IMRSBC).

Paratypes: 86 females, 84 males, same data as holotype, except collected in June to September, 2013and 10 females and 10 males paratypes were deposited in the collection of Department of Applied Entomology, Faculty of Agriculture, Alexandria University, Egypt.

Comments: *Neanastatus misirensis* n. sp. is similar to *Neanastatus reksonus* Narendran, 1996 and *Neanastatus turneri* Ferriere, 1938 in having pale colored body, but it differs from *N. reksonus* in having POL 3x OCL (in *N. reksonus* POL equal to OCL); apical 2 segments of hind tarsus black (in *N. reksonus* only apical segment black); mandible two-teethed (in *N. reksonus* mandible tridentate); POL 3x OOL (in *N. reksonus* POL 0.6 OOL); from *N. turneri* in having forewing hyaline (in *N. turneri* forewing with a discal cloud); funicular segments short, F1 1.7x, F2 1.4x as long as width, clava about as long as 3 preceding segments together (in *N. turneri* funicular segments long, F1 3.6x, F2 2.7x as long as width, clava distinctly shorter than 3 preceding segments together); POL 3x OCL (in *N. turneri* POL 2x OCL); PMV 3.6x STV (in *N. turneri* PMV more than 4x STV); mid tibial spur as long as combined length of basal 3 tarsal segments; hind basitarsus 1.5x as long as combined length of 2 following tarsal segments together (in *N. turneri* mid tibial spur shorter than combined length of basal 3 tarsal segments; hind basitarsus longer than combined length of 3 following tarsal segments together).

Kolopterna aymani Doğanlar, 2013

Kolopterna aymani Doğanlar, 2013: 1800-1804, in Doğanlar & Elsayed, 2013, Holotype female and some paratypes in IMRSBC, some female and males paratypes in the collection of Department of Applied Entomology, Faculty of Agriculture, Alexandria University, Egypt.

Material examined: EGYPT: 36 Females**,** 83 males, Alameria District, Alexandria, 30°59'54"N, 29°49'70"E, June to September, 2013, reared from galls of *A. punica* on the stems and flower buds of the Mediterranean Saltbush, *A. halimus*, leg. El Sayed, deposited in the collection of the Insect Museum of

Research Station of Biological Control Yüreğir, Adana, Turkey (IMRSBC) and (10 females and 10 males were deposited in the collection of Department of Applied Entomology, Faculty of Agriculture, Alexandria University, Egypt).

Aprostocetus alexandrianensis Doğanlar n. sp.

(Figs. 3a-f)

Diagnosis: Very small squat body black, including tegulae and legs, body lenbth 0.8-1.5 mm; head nearly 1.13x as wide as long, OOL about 1.3 OD; antenna of female with F1 1.62x, F2 1.33x, F3 1.2x and clava 2.0x as long as width; mid lobe of mesoscutum without median line, or only slightly indicated; scutellum about 1.6x as wide as long, anterior setae of scutellum 3.33x far from front edge of scutellum as from posterior setae, and propodeum medially 0.6 length of dorsellum; spur of mid tibia at least 1.3x as long as basitarsus; forth segment of mid and hind tarsi about 1.5x basitarsus; forewing with marginal vein having its front edge with 7 setae; gaster long, 1.3x as long as width. In male antenna F1 1.54x and clava 3.75x as long as width.

Female: Body (Fig. 3a). Length 0.8-1.5 mm. Head nearly 1.13x as wide as long; POL about 1.8 OOL, OOL about 1.3 OAL. Eyes 1.7x as long as width, separated by 1.25 their length. Malar space about 0.5 length of eye. Mouth equal to malar space. Antenna (Fig. 3c) with scape 0.88x eye length, reaching lower edge of median ocellus; pedicellus plus flagellum almost as long as breadth of mesoscutum; pedicellus slightly longer than F1 (15:13); 1.87x as long as width; funicle proximally slightly stouter than pedicellus, thickening a little distad, its segment decreasing slightly in length, F1 1.62x, F2 1.33x, F3 1.2x as long as width; clava distinctly wider than F3, 2.0x as long as width, rather obtuse, with C1 about as long as width, C2 and C3 progressively shorter, spine about 0.3 length of C3; sensilla 3-4 on each funicular segments, 5-6 on claval segments in one row.

Thorax (Fig. 3a) about 1.25x as long as width, strongly arched dorsally. Mid lobe of mesoscutum 1.4x wider than long, shiny, reticulation fine, and superficial, with most areoles about 2.5-3.0x as long as width, median line absent or slightly indicated, 3 adnotaular setae on each side. Scutellum about 1.6x as wide as long, strongly convex, more finely reticulate than mesoscutum; submedian lines not, or only slightly, nearer to sublateral lines than to each other, enclosed space 2.10x as long as width; anterior setae behind the middle and about 3.33x as far from front edge of scutellum as from posterior setae. Propodeum rather strongly transverse, rather broadly emarginated posteriorly, medially 0.6 length of dorsellum; median carina sharp, thin and weakly foveate in front but rapidly expanding caudad. Legs of medium length and thickness; hind coxae oblique, about 1.4x as long as width; hind femora 3.8x as long a width; spur of mid tibia 1.27x length of basitarsus; forth segment of mid and hind tarsi about 1.5x basitarsus.

Forewing (Fig. 3e) 2.33x as long as width, with costal cell shorter than MV, 10x as long as width; SMV with 3 dorsal setae; MV 3.86x length of STV, its front edge with 7 setae; PMV a short stub; STV at about 60° slightly curved, , rather thin proximally but expanding beyond half its length to form a small stigma which is longer than high; speculum broad, open at base, extending below MV, wing just beyond it rather sparsely pilose, more thickly distad; cilia almost as length of STV. Hind wing obtuse; cilia 0.51 breadth of wing.

Gaster (Fig. 3a) lanceolate, 1.55x as long as thorax, 1.3x as long as width, about 1.2x as wide as thorax; last tergite 1.9x as long as broad; longest seta of each cercus 1.5-1.6x length of next longest; ovipositor sheaths projecting very slightly.

Color. Body black with bluish metallic tint; antenna fuscous to black with scape beneath, pedicellus beneath and apex, testaceous. Coxae coloured like body;

trochanters partly pale; femora black with tips rather narrowly testaceous; fore tibia pale or partly infuscate, mid and hind tibiae broadly infuscate medially or mainly black, their bases and tips testaceous; fore tarsi fuscous, mid and hind tarsi pale with fourth segment fuscous. Tegulae black with metallic tint. Wings hyaline, venation yellowish.

Male: Body (Fig. 3b). Length 0.7- 1.2 mm. Antenna (Fig. 3d) with scape 0.83x length of eye, reaching level of vertex, 3.2x as long as width, with ventral plaque 0.23 length of scape; pedicellus plus flagellum 1.26x breadth of mesoscutum; pedicellus 1.8x as long as width, slightly longer than F1; funicle proximally only slightly stouter than pedicellus, hardly tapering distad; F1 slightly shorter than F2 (17: 20), 1.54x as long as width; F2 twice, F3 2.5x, F4 2.3x as long as width. Clava slightly broader than F4, slightly shorter than F3 plus F4, 3.75x as long as width, with C1 1.5x as long as width, C2 almost equal to C1, 1.36x as long as width, C3 short, as long width; whorled setae long, those of F1 reaching about to half of F3. Gaster oblong, as long, and wide as thorax, with ventral plica. Genitalia (Fig. 3f) 3.8x as long as width, with one digitus.

Color: Body black, except as follows: eye red, ellipsoidal area around ocelli, circular area around toruli, trochanters, apical 1/4 of femora, tibia, 1-3 tarsal segments, 1st tergum and basal segments of sterna yellow; antenna pale brown, except scape dorsally and plaque black.

Material examined: Holotype: Female, EGYPT: Alameria District, Alexandria, 30°59'54"N, 29°49'70"E, June, 2013, reared from galls of *A. punica* on the stems and flower buds of the Mediterranean Saltbush, *A. halimus*, leg. Elsayed, deposited in the collection of the Insect Museum of Research Station of Biological Control Yüreğir, Adana, Turkey (IMRSBC).

Paratypes: 9 females, 17 males, same data as holotype, except collected in June to September, 2013 (3 females and 7 males paratypes were deposited in the collection of Department of Applied Entomology, Faculty of Agriculture, Alexandria University, Egypt).

Comments: *Aprostocetus alexandrianensis* n. sp. by following the key of Graham (1987) for females of species of *Aprostocetus* it goes to the couplet 145 in having small black body, including tegulae and legs; anterior setae of scutellum at least twice far from front edge of scutellum as from posterior setae, and propodeum almost as long as dorsellum. In this group there are 3 species, *A. artemisicola, A. brachycerus and A. epilobii*, as associated with galls of Cecidomyiidae species. *Aprostocetus alexandrianensis* n. sp. is close to *A. artemisicola* in having very small squat body, 0.8-1.5 mm, and long gaster 1.3x as long as width, but it differs in having anterior setae about 3.33x as far from front edge of scutellum as from posterior setae (in *A. artemisicola* anterior setae about less than twice as far from front edge of scutellum as from posterior setae); propodeum medially 0.6 length of dorsellum (in *A. artemisicola* propodeum a little shorter than dorsellum). *Aprostocetus alexandrianensis* n. sp. is similar to *A. brachycerus and A. epilobii* in having gaster 1.3x as long as width, anterior setae at least twice far from front edge of scutellum as from posterior setae and antenna with, F1 1.62x, F2 1.33x, F3 1.2x as long as width; clava 2.0x as long as width but it differs from both of them in having spur of mid tibia at least 1.3x as long as basitarsus (in the both species spur of mid tibia as long as basitarsus), head nearly 1.13x as wide as long, OOL about 1.3 OD (in the both species head 2.3-2.4x as wide as long, OOL 1.8-2.0x OD), mid lobe of mesoscutum without median line, or only slightly indicated (in the both species median line of mesoscutum distinct), scutellum about 1.6x as wide as long, (in the both species scutellum about 1.35-1.40x as wide as long), forth segment of mid and hind tarsi about 1.5x

basitarsus (in the both species forth segment of mid and hind tarsi slightly shorter than basitarsus), forewing with marginal vein having its front edge with 7 setae (in the both species forewing with marginal vein having its front edge with 10-14 setae. In male antenna with F1 1.54x as long as width (in the both species F1 quadrate), clava 3.75x as long as width (in the both species clava at least 4.3x as long as width).

Neochrysocharis formossus (Westwood, 1833)

Closterocerus formosus Westwood, 1833: 420.

Material examined: EGYPT: 3 Females, Alameria District, Alexandria, 30°59'54"N, 29°49'70"E, June to September, 2013, reared from galls of *A. punica* on the stems and flower buds of the Mediterranean Saltbush, *A. halimus*, leg. Elsayed, deposited in the collection of the Insect Museum of Research Station of Biological Control Yüreğir, Adana, Turkey (IMRSBC) and (2 females were deposited in the collection of Department of Applied Entomology, Faculty of Agriculture, Alexandria University, Egypt).

Comments: *Neochrysocharis formossus* was recorded for the first time from Egypt and Africa, and *A. punica* was recorded as new host of *N. formossus*. Up to now it has been recorded many species of insects including leaf miner Diptera, Lepidoptera and some Hymenoptera (Noyes, 2013), but only one species of gall midges, *Cystiphora schmidti* (Rubsaamen) (Diptera, Cecidomyiidae) in the eastern Mediterranean region (Caresche & Wapshere, 1975).

Eurytoma dentata Mayr, 1878

Material examined: EGYPT: 115 Females, 181 males, Alameria District, Alexandria, 30°59'54"N, 29°49'70"E, June to September, 2013, reared from galls of *A. punica* on the stems and flower buds of the Mediterranean Saltbush, *A. halimus*, leg. Elsayed; 10 females, 12 males, same data, except, March 2013. All of the specimens were deposited in the collection of the Insect Museum of Research Station of Biological Control Yüreğir, Adana, Turkey (IMRSBC) and (10 females and 10 males were deposited in the collection of Department of Applied Entomology, Faculty of Agriculture, Alexandria University, Egypt).

Comments: *Eurytoma dentata* was recorded for the first time from Egypt and Africa, and *A. punica* was recorded as new host of *E. dentata*. Doğanlar & Elsayed (2013) recorded it as *Eurytoma* sp. nr. *coleophorae* Zerova as a parasitoid of *A. punica*. *Eurytoma dentata* has been recorded as a parasitoid of several species of *Asphondylia* (Diptera: Cecidomyiidae) from several countries of Europe and Asia (Noyes, 2013).

Ormyrus monegricus Askew, 1994

Material examined: EGYPT: 2 Females, 3 males, Alameria District, Alexandria, 30°59'54"N, 29°49'70"E, June, 2013, reared from galls of *A. punica* on the stems and flower buds of the Mediterranean Saltbush, *A. halimus*, leg. Elsayed; 10 females, 12 males, same data, except, March 2013. One specimen was deposited in the collection of the Insect Museum of Research Station of Biological Control Yüreğir, Adana, Turkey (IMRSBC) and (one female and one male were deposited in the collection of Department of Applied Entomology, Faculty of Agriculture, Alexandria University, Egypt).

Comments: *Ormyrus monegricus* was recorded for the first time from Egypt and Africa, and *A. punica* was recorded as new host of *O. monegricus*. It was recorded as a parasitoid of *Stefaniola salsolae (Diptera: Cecidomyiidae)* on *Salsolaermiculata* (Chenopodiaceae) in Spain by Askew (1994).

***Microtontomerus annulatus* (Spinola, 1808)**

Diplolepis annulata Spinola, 1808: 215.

Material examined: EGYPT: 6 Females, 5 males, Alameria District, Alexandria, 30°59'54"N, 29°49'70"E, June, 2013, reared from galls of *A. punica* on the stems and flower buds of the Mediterranean Saltbush, *A. halimus*, leg. Elsayed; 10 females, 12 males, same data, except, March 2013. Some of the specimens were deposited in the collection of the Insect Museum of Research Station of Biological Control Yüreğir, Adana, Turkey (IMRSBC) and (3 females and 2 males were deposited in the collection of Department of Applied Entomology, Faculty of Agriculture, Alexandria University, Egypt).

Comments: *Microtontomerus annulatus* was recorded for the first time from *A. punica* as parasitoid. Up to now only the genus, *Microtontomerus*, has been recorded as parasitoid of Cecidomyiidae such as: blossom midge, *Contarinia* sp. (Diptera: Cecidomyiidae) on *Jasminum sambac* in Tamil Nadu, India (David et al., 1990), and *Psectrosema reticulatum* (Diptera: Cecidomyiidae) reared from galls on *Tamarix* spp. in Pakistan (Habib, 1983). *Microtontomerus annulatus* has been recorded from Egypt as a parasitoid of *Acanthiophilus helianthi* (Rossi) (Diptera: Tephritidae) (Hegazi & Moursi, 1983), and several countries of Africa (Masi, 1921; Steffan, 1952; Noyes, 2013).

***Platygaster* sp.**

Material examined: EGYPT: 5 Females, 10 males, Alameria District, Alexandria, 30°59'54"N, 29°49'70"E, June, 2013, reared from galls of *A. punica* on the stems and flower buds of the Mediterranean Saltbush, *A. halimus*, leg. Elsayed; 10 females, 12 males, same data, except, March 2013. Some of the specimens were deposited in the collection of the Insect Museum of Research Station of Biological Control Yüreğir, Adana, Turkey (IMRSBC) and (3 females and 5 males were deposited in the collection of Department of Applied Entomology, Faculty of Agriculture, Alexandria University, Egypt).

Comments: Several species of *Platygaster* were recorded as parasitoid of Cecidomyiidae species (Buhl, 2007).

CONCLUSION

Elsayed et al. (2014, in preparation) stated that *Asphondylia punica* has two generations per year on *Atriplex halimus* in Egypt, the first generation (winter generation) from November to April while the second generation (summer generation) from May to October. As shown in table (1), the precentage of parasitism at the begining of the first generation was lower than the summer generation, while both generations reached high levels of parasitism at their ends.

The parsitoid complex of the winter generation of *A. punica* was previously studied by the authors (Doğanlar & Elsayed, 2013), and consists of five species, viz., *Kolopterna aymani* Doğanlar, 2013, *Neochrysocharis conglomeratae* Doğanlar, 2013, *Torymus egypticus* Doğanlar, 2013, *Torymus phillyreae* Ruschka, 1921, *Eurytoma dentata* Mayer, 1878. They mentioned that *T. egypticus* and *T. phillyreae* were rare during the period from January to April, while *N. conglomeratae* was dominant at the period of mid March to the end of April.

Regarding to the summer generation that the present study indicates, it conists of 8 species. The hyper parasitoid *N. misirensis* was present with high level of parasitism during June and July, while the primary parasitoid *M. annulatus* and the hyperparasitoid *A. alexadrianensis* were present from June to September with low level of parasitism. The rest of parasitoids, except *E. dentata*

and *K. aymani*, were not identified to be primary or hyper parasitoid and they had low percentage of parasitism during the season of study.

The primary parasitoids were common in both generations, *K. aymani* and *E. dentata*. *K. aymani* had high level of parasitism in February and March, and modorate level in the period from June to September. *E. dentata* had a modarate level of parasitism from January to April, while it had very high level of parasitism during the period from June to September.

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Table 1. The precentage of parasitism in the first generation and second generation of *A. punica* on *A. halimus* in Egypt in 2013.

The 1st generation				The 2nd generation			
Date of inspection	Dissected galls No.	No. of parasitised larvae/pupae	% parasitism	Date of inspection	Dissected galls No.	No. of parasitised larvae/pupae	% parasitism
18-2-2013	23	5	21.7%	8-7-2013	32	14	43.75%
6-3-2013	35	18	51.4%	24-7-2013	55	48	87.3%
13-3-2013	30	18	60%	13-8-2013	20	17	85%
3-4-2013	20	20	100%	28-8-2013	20	16	80%
15-4-2013	30	30	100%	17-9-2013	22	18	82%

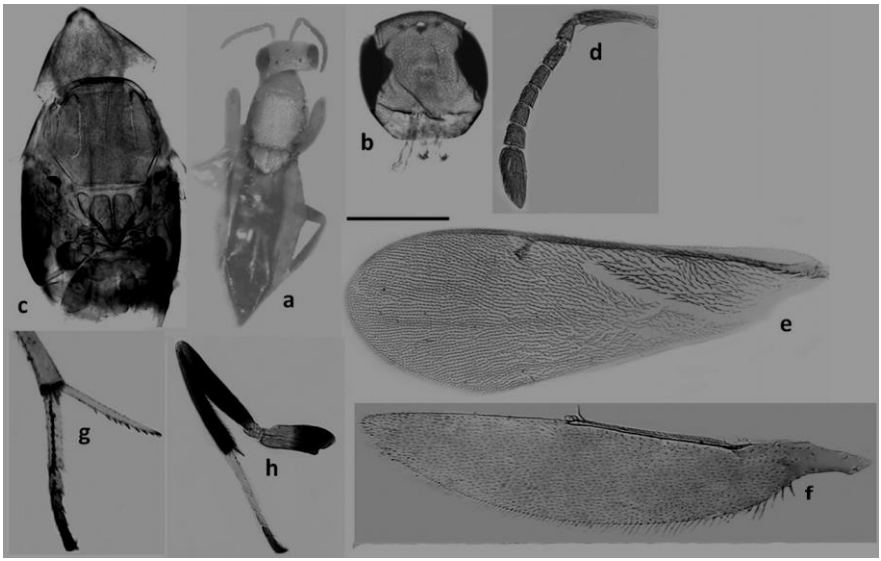

Figure 1. *Neanastatus misirensis* n. sp. Female. a. body, in dorsal view; b. head, in frontal view; c. mesosoma, in dorsal view; d. antenna; e. forewing; f. hind wing; g. apical part of mid tibia and tarsal segments; h. hind leg. Scale bar for a= 1mm; for b and c= 0.5 mm; for d= 0.35 mm; for e and h= 0.30 mm.

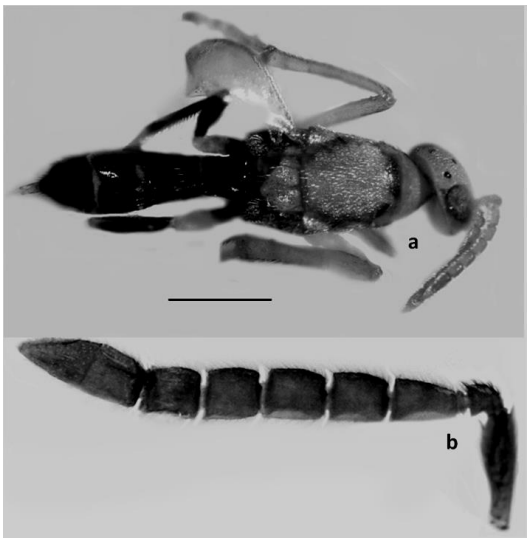

Figure 2. *Neanastatus misirensis* n. sp. Male. a. body, in dorsal view; b. antenna. Scale bar for a= 0.5 mm; for b = 0.25 mm.

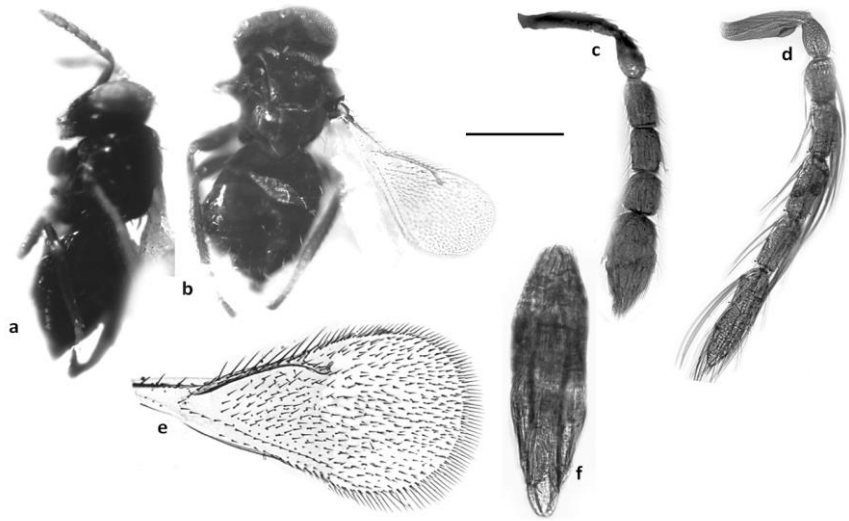

Figure 3. *Aprostocetus alexandrianensis* n.sp. a, b. body, a. female, in lateral view, b. male, in dorsal view; c, d. antennae, c. female, d. male; e. forewing; f. male genitalia. Scale bar for a= 0.50 mm; for b= 0.35 mm; for c and d= 0.16 mm; for e= 0.25 mm; for f= 0.08 mm.