

HYMENOPTEROUS PARASITES OF COCKROACHES IN IRAQ WITH DESCRIPTION OF NEW SPECIES

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ABSTRACT

An attempt was made to determine the insect parasites of cockroaches in Iraq . As a result of this survey three species of Hymenoptera representing two separate families , which have been reared from ootheca of cockroaches were recovered . These were : *Evania dimidiata* Fabricius , *Evania appendigaster* (Linnaeus) (Evaniidae) and *Anastatus longicornis* sp . n . (Eupelmidae) which described here as a new species from Iraq .

INTRODUCTION

Studies of cockroaches parasites from Iraq have been neglected . The only information available was that of Al - Ali (1977) , who reported *Evania dimidiata* Fabricius as a parasite on eggs of cockroaches . This insufficiency of knowledge on parasites encouraged the authors to investigate this matter . Most of the species dealt with in this work were reared by the authors during feild trips in different parts of Iraq . All specimens mentioned here were deposited in Iraq Natural History Museum . Further information is needed on the biology and ecology of these parasites before attempting to use them as a biological control agents against the cockroaches .

EVANIIDAE

Evania dimidiata Fabricius

This wasp is one of the most commonest and most frequently seen species in old houses in Iraq , where cockroaches are present . It has been previously recorded from Iraq by Hedicke (1939) , Derwesh (1965) , Khalaf and Al - Omar (1974) and Al - Ali (1977) .

Specimens studied : Iraq , Baghdad , 1 ♀ em . May 1984 , 1 ♀ em . June 1990 , 1 ♂ em . 7 . vii . 1990 , 1 ♂ em 5 . viii . 1990 ; Karbala , 1 ♀ em . April 1977 ; Nasiriya , 1 ♂ em . 20 . ix . 1990 ; Said Sadiq (Sulaimaniya) , 1 ♂ em . 10 . x . 1968 , all ex . *Periplaneta americana* L .

Distribution : Trans - Caucasia , Turkmenia , Egypt , Iraq , Iran .

Biology : This species has been reported as a parasite of oothecae of *Blatta orientalis* (L .) in Egypt (Alfieri , 1914) and *P. americana* in Iran (Tirgaris , 1975) . In Iraq this species is a common parasite of ootheca of *P. americana* .

Evania appendigaster (Linnaeus)

This is rather less common than the previous species in this country . It has been reported for the first time in Iraq by Khalaf (1963) .

Specimens studied : Iraq , Baghdad , 1 ♀ em . 15 . v . 1991 , 2 ♂♂ em . 5 . vii . 1991 , 1 ♀ em . 23 . iv . 1992 , all ex . *P. americana* .

Distribution : Reported from Europe (Hungary , Britain) except the northern part , Middle East (Palestine , Saudi Arabia , Iraq) , Pacific (Hawaii , Fiji) , West Indies (Jamaica) , North America .

Biology : It is well - known as a parasite of the oothecae of cockroaches particularly *P. americana* , *P. australasiae* (Fabricius) and *Blatta orientalis* in different parts of the world (Cameron , 1956 and 1958 ; Roth and Willis , 1960) . We have reared this species from ootheca of *P. americana* .

EUELMIDAE

Anastatus longicornis sp . n . (Figs . 1 , 2)

Vertex , face and occiput metallic green with coppery reflection ; frons with violet reflection ; clypeus and scape brownish yellow , pedicel and flagellum dark brown ; mandibles brownish yellow , with distal part metallic green . Thorax brownish yellow , with metallic bluish green and purplish reflection ; propodeum dark brown . Legs brownish yellow with dark marking , claws dark brown . fore wings iridescent , strongly infuscate in its apical , central and basal parts ; in between hyaline bands present . Gaster with broad dull white band on tow basal segments , following segments dark brown with purplish reflection ; tip of hypopygium brownish yellow ; ovipositor sheath pale yellow .

Female . - Length 2.30 - 3.10 mm . Head in frontal view transverse , wider than mesoscutum , almost 1.1 times as broad as long ; vertex with faint reticulation ; frons roughened and finely granular ; genae with fine longitudinal striae ; median ocellus situated above antennal scrobes . Antennae inserted slightly down to level of lower margins of eyes ; antennal scrobes deep and widening downwards , strongly surrounded by carina laterally and dorsally ; lateral margins of antennal scrobes subparallel to eye margin ; interantennal area

wide , flat but basally elevated . Malar space usually as long as eyes , with narrow longitudinal furrow between eye and mandible . Antenna with scape elongat and slender , extending to median ocellus , longer than annullus and the first funicular segments combined ; pedicel as board as scape , more than twice as long as wide ; annullus small nearly quadrate . First funicular segment slightly longer than pedicel , and about three times as long as wide ; second segments more than three times as long as wide and usually as long as first segment ; third segment nearly three times as long as wide and distinctly longer than second ; fourth segment more than twice as long as wide , and distinctly shorter than third ; fifth segment about 2.2 times as long as wide and nearly as long as fourth ; sixth segment more than 1.5 times as long as wide and distinctly shorter than fifth ; seventh segment subquadrate . Club wider than funicle and as long as three preceding segments combined . Thorax long , about twice as long as broad , almost entirely smoth and shining except meddian lobe of mesonotum , axillae and scutellum deeply and fainely reticulate punctate . Pronotum triangular in shape , boarder than long , its anterior angle greatly invaginated . Mesothorax depressed , side lobe in posterior half with sharp ridge , anteriorly with fine reticulation ; axillae separated ; mesopleuron large , finely lineolate , sparsely pubescent at anterior part . Propodeum transverse , extremely short in the middle , twice as broad as long with almost smooth surface sculpture . Legs long and slender spasely clothed with setae ; femora and tibiae little thickened near tip ; fore leg with femur curved , slightly longer than tibia ; mid and hind femora and tibiae distinctly longer than fore femora and tibiae ; inner side of mid tarsi with small black dents on metatarsus , and at proxemal end of second and third segments ; mid tibial spur distinctly shorter than metatarsus . Fore wings with marginal vein almost more than twice as long as postmarginal vein ; stigmal vein shorter than half length of postmarginal vein . Gaster smooth , finely reticulate , slightly longer than thorax , narrow at base , widening to fifth tergite , then strongly narrowed to the tip ; ovipositor sheath protruding and as long as the transperant tip of hypopygium .

Male . - Length 1.50 - 1.90 mm. Predominantly metallic bluish green with purplish reflection . Antennae dark brown except scape brownish yellow ; legs with coxae and femora dark brown with bluish green reflection ; fore and mid tibia and all tarsi yellowish white , hind tibiae and claws brownish yellow . Gaster dark brown with bluish green luster in its basal segments . Wings subhyaline , iridescent with surface hairs and vein brownish yellow . Head in frontal view slightly transverse , wider than mesoscutum , roughened and finely granular ; antennae inserted slightly above to level of lower margins of eyes ; antennal scrobes shallow and widening downwards as female , surrounded by indistinct carina ; scape short and broad , not extending to median ocellus , and as long as first two funicular segments combined ; pedicel very small , nearly quadrate ; first funicular segment about twice as long as pedicel and twice as long as wide ; second funicular segment nearly as long as first segment ; third segment slightly shorter than second ; fourth segment nearly as long as third ; fifth slightly shorter than fourth ; sixth subquadrate shorter than fifth ; seventh subequal with sixth ; club distinctly wider than funicle , and slightly longer than three preceding segments combined . Thorax long , about 1.7 times as long as wide , convex , finely reticulate puctate ; parapsidal furrows distinc and complete . Propodeum short and small , transverse , with distinct longitudinal carina . Wings nearly twice as long as wide ; marginal vein about 1.5 times as long as postmarginal vein , and about three times as long as stigmal vein ; post marginal vein nearly 1.6 times as long as stigmal vein . Legs coarsely furnished with seatae ; femora of fore and hind legs slightly swollen . Gaster slightly longer and much narrower than thorax . Host : All the specimens have been reared by us from oothecae of *Supella supellectilium*

, 7 ♂♂ paratypes) em. 16. vi. 1990, 21 ♀♀, 9 ♂♂ (paratypes) em. vi. 1990, 24 ♀♀, 10 ♂♂ (paratypes) em. 23. vi. 1990.

The female holotype, the male allotype and 57 ♀♀, 16 ♂♂ paratypes are deposited in Iraq Natural History Museum, Baghdad, Iraq. Ten paratypes (5 ♀♀, 5 ♂♂) are deposited in Hungarian Natural History Museum, Budapest, and ten paratypes (5 ♀♀, 5 ♂♂) are in the British Museum (Natural History), London.

Anstatus longicorins sp. n. resembling *A. tenuipes* Bolivar, 1925, (= *A. blattidarum* Ferriere, 1930). Therefore, we have compared our new species with the original description of *A. tenuipes* and found it differs as follows: Head metallic green with coppery reflection; female antenna with scape elongate, longer than annellus and the first three funicular segments combined; second funicular segment usually as long as first segment; third segment is the longest; club as long as three preceding segments combined. Fore wing with marginal vein almost more than twice as long as postmarginal vein, and with infuscate band near its extreme base.

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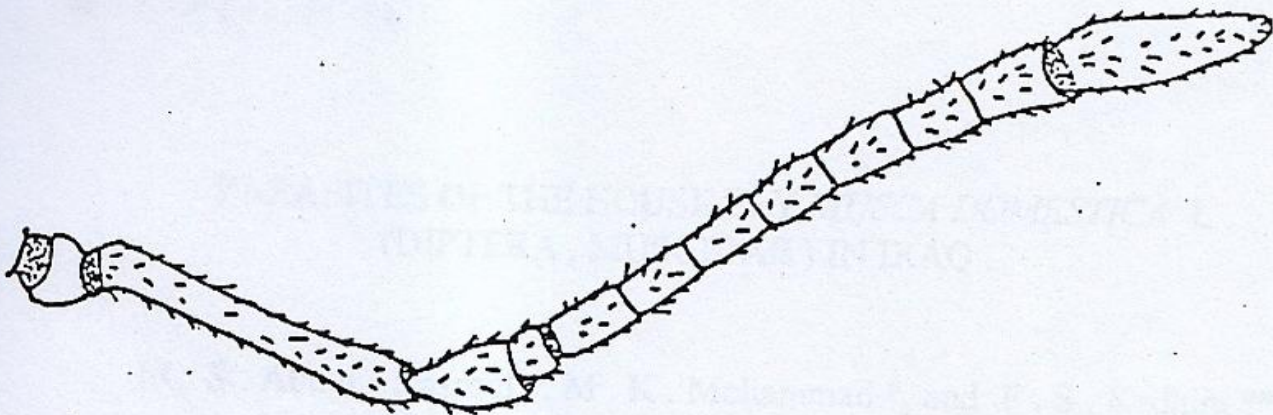


Fig. 1. Antenna in lateral view of Anastatus longicornis sp. n.

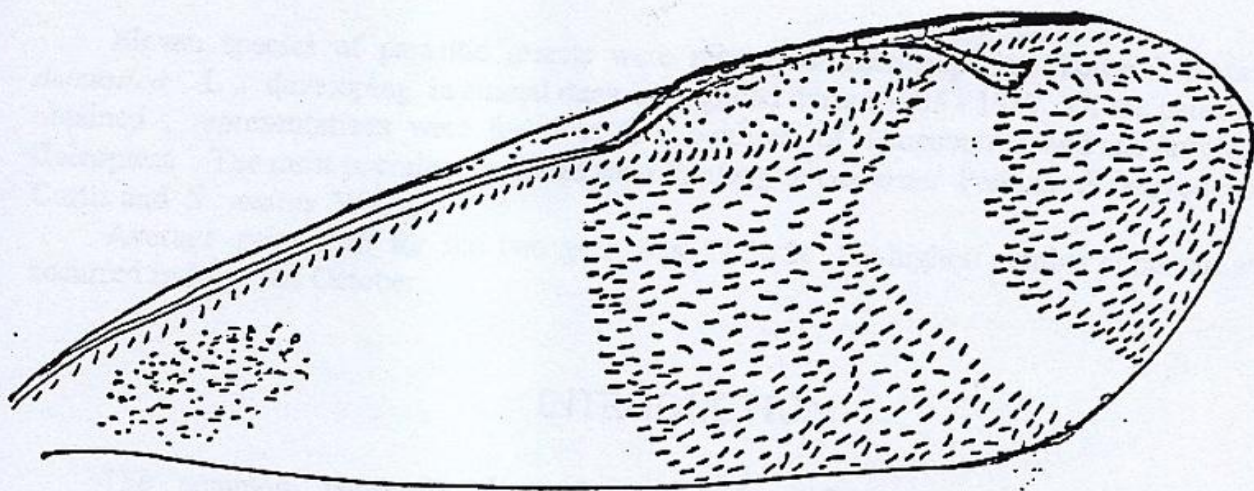


Fig. 2. Fore wing of Anastatus longicornis sp. n.