

NEW RECORD OF SIX SPECIES OF GENUS, *AGROTIS* OCHSENHEIMER 1816 (LEPIDOPTERA : NOCTUIDAE : NOCTUINAE) IN BAGHDAD, IRAQ

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ABSTRACT : Taxonomic study was conducted on genus *Agrotis* Ochseneheimer 1816, belongs to subfamily Noctuinae and to the Family Noctuidae and to suborder of Heterocera (moths) of the Order Lepidoptera in middle of Iraq during 2017-2018, six species were recorded, including two new species recorded for the first time in Iraq, that is *Agrotis biconica* and *Agrotis bigramma*, which is collected seven insects (males and females) belongs to first species and two insects to second species. In the province of Baghdad, Al-Ameriya, the insects indented by used taxonomic keys depended on morphological characters. Used camera Lucida to draw bodies' part and picture by digital camera.

Key words : *Agrotis* spp., Noctuinae, Noctuidae, Lepidoptera, *Onychagrotis*.

INTRODUCTION

The insects belong to family Noctuidae and of subfamily Noctuinae includes more than 24,801 species, are widespread in all regions of the world. This family includes species of economic importance, most of these cause damage to plants as a result of feeding compodeiform larvae, it is borer inside the stem. And pass winter as obctet pupa (Kononenko and Pinratana, 2005). Species Large – middle in size (Heppner, 1991), the insects attracted many economically plants, affects many herb and plant (Holloway *et al*, 1992; Teston *et al*, 2001). They attack plants causing damage (Zahiri *et al*, 2011), such as *Agrotis biconica* is a widespread pest in many countries of the world, *Agrotis bigramma* is an important pest on many plants belonging to the plant family gramineae (Hacker, 2001).

MATERIALS AND METHODS

The adult insects were collected using light traps (220 volts, 20 watt Black light UVB tubes (Ayberk *et al*, 2010) in Baghdad province, Al-Ameriya. Bring up to the laboratory, killed the moth by freezing and moating on pin by use binuclear microscope. Insects indented by used taxonomic keys depending on morphological characters and described it as in Dugdale (1988), Jagbir Mudasir (2013), Eichlin Cunningham (1978), Jason (2011), Michael and Lafontain (2005), Lafontaine and Poole (1991), Whittle (1986), Barbut (2008). Picture by use a digital camera and drawing by the camera Lucida. The

measurements of the body were taken role, as well as in the digital image analysis program (ImageJ) (Al-Saad and Al-Bahadli, 2018), to compared it in both method. The location and date was written.

RESULTS AND DISCUSSION

Taxonomic state

Superfamily : Noctuoidea Latreille, 1809

Family: Noctuidae

Subfamily : Noctuinae

Tribe : Noctuini

Genus : *Agrotis* Ochseneheimer, 1816

Genus : *Agrotis* Ochseneheimer, 1816

Synonyms

Onychagrotis Hampson, 1903

The main characters distinguished by the presence of spines on the hind leg. The right forewingmeeting the left whenat rest state, the male hindwing pure white in color in, pale gray in females, adult insects active in spring and autumn. The insects activity is night and is attracted to rich nectar flowers. Commonly prevalent, attracted to light especially in open areas. This genus included largest number of cut worms. with one generations per year

Head : Short, ocelli present, Chaetosemata absent on compound eye. The head is covered with rough scales and is sometimes smooth, proboscis naked. The labial palps short and upward, antenna filiformand their basal

seems as serrated with long sensory filaments with two rows of sensory seta per segment, longer than half the front wing.

Thorax : Tympanum on Metathorax, wings are heterogeneous, forewings usually rectangular with a square top and there is a kidney and other round spot. The hindwing a square in shape, the hind leg with short spurs and the spines are rarely absent, the spine of hind leg are present. hind tarsal spines present.

Abdomen : Smooth, prominent dorsal scale tuft rarely present.

Noctuid species can be separated easily from other species by having spines on the hind leg (Jason, 2011).

Key isolation of species of Genus : *Agrotis* Ochseneimer, 1816

- 1- valva with two parts (Fig. 3- J).....2
 - valve with one part (Fig. 1-N).....5
- 2- Uncus smaller than valva, last antennal segment pointed and with five sensory seta or more (Fig. 2-G)...3
 - uncus at same length as valva or smaller, last antennal segment is pointed and Less than five sensory seta (Fig. 5-I).....4
- 3- Scape smaller than pedical, antenna with 92-96, segments. The forewing has three distinguish marks, a kidney spot, a circular spot and a shape resembling a sword blade inside two black striped lines (Fig. 2-A) *Agrotisba gramma*
 - Scape Larger than pedical,, antenna with 102 segments. The forewing has three distinguish marks,, once of a black triangle, the second circular spot, and the third kidney spot (Fig. 6-A). *Agrotis trux*
- 4- Scape Larger than pedical, last antennal segment flat and carried three sensory seta, antenna with 122 segments, forewing is distinguished by three distinctive marks: kidney spots with black margin, dark inside and circular, with black spots inside the male and a shape similar to the end of the sword blade (Fig. 3A). *Agrotis segetum*
 - Scape smaller than pedical, last antennal segment pointed and has four sensory seta, antenna with 108 segments. The forewing has two distinguish marks, the first resembling the blade of the sword with black margin, and the second kidney shaped on its oval side (Fig. 5-A)..... *Agrotis spinifera*
- 5- Scape smaller than pedical, forewing distinguish by shape resembling the blade of the sword enters the kidney spot from its concave side and out of its convex side. The valva features by chitin shape at middle of a

dark brown curved into the capsule. (Fig. 1-A) *Agrotis biconica*

- Scape Larger than pedical. The forewing distinguish by a circular spot and kidney spot come out of its concave side from its concave side what looks like a sword blade, Valva features dark brown bristles on the upper part of it that go into the capsule of male organs (Fig. 4-A) *Agrotisipsilon*

1. Species *Agrotis biconica* Kollar, 1844

Synonyms

Agrotis spinifera (Hubner, 1808); *Agrotis exigua* Kollar 1844; *Agrotis ferina* Felder & Rogenhofer 1874; *Agrotis aristifera* Guenee 1852; *Agrotis hodnae* Oberthur 1878; *Agrotis spiculifera* Guenee 1852; *Agrotis spinifera* (Hubner, 1808); *Agrotis spinula* (Hubner, 1821).

Adult : (Fig. 1-A) Female and (Fig. 1-D) Male, medium moth, 13.4-14.6 mm in length.

Head : 1.2-1.4 mm in length and 2.4-2.7 mm in width, Covered with yellow scales on the frons and vertex of the head extending forward in male and female, antenna content of 108 segments and 8.8 mm in length. Each segment is 0.22 mm in width, bipectinate in the male and its protrusions are surrounded by sensory hairs that are denser at top, forming a tree-like image (Fig. 1-G). The scape is undiminished and smaller than the pedical and the segment of the last antenna pointed with four bristles (Fig. 1-J, K). Antenna in female filiform is surrounded by structural scales and a few yellow scales with two rows of sensory filaments on either side of the antenna (Fig. 1-c). The sensory hairs at the end of each segments is longer and it is similar to antenna in *Agrotis spinifera*, the composed eyes in male and female large gray in color contains small black spots. The labial palp with three segment and the last one is small and bare (Fig. 1-H, L).

Thorax : 3-3.3 mm in length, segment of scales in between Head and Thorax. It is divided into two parts the scales yellow color in male, while the segment is connected to the female and brown in color, yellow and black, the thorax is covered with yellow scales - long brown in both sexes.

Legs : Fore femur for the male is surrounded by black scales from the dorsal side and white from the ventral side, with long yellow hair. While in the female is surrounded by brown and gray scales from the dorsal side and yellow from the ventral side (Fig. 1-I, M) no long hairs yellow, fore tibia for the male and female covered with yellow scales with two rows of brown

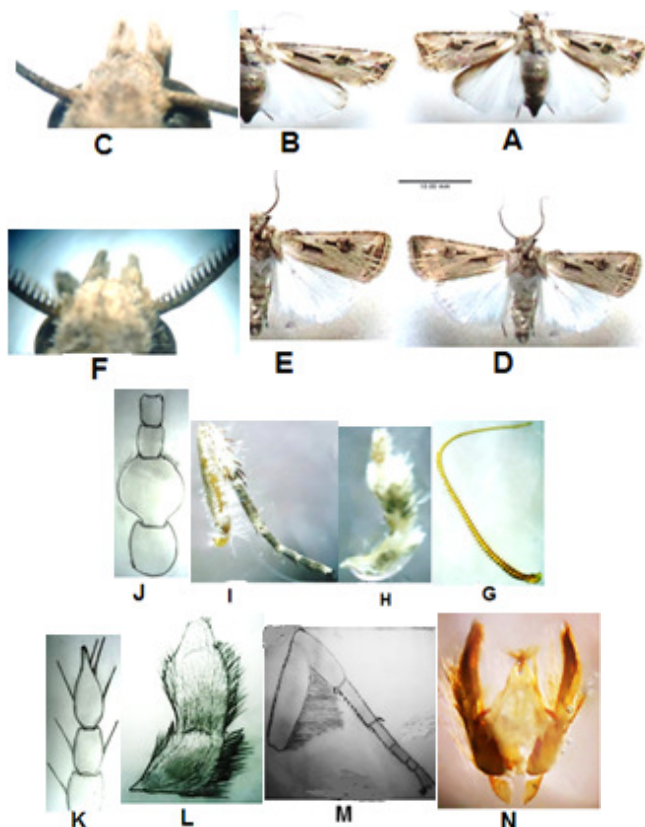


Fig. 1 : A- Female adult B - Female front wing C- Female composite eyes D - Male adult E- Front wing of male F - Compound eyes of the male G- Antenna H- labial palp I- Foreleg J- scape and pedicel with first, second segment K- The last three segment L- labial palp M - Foreleg N - male genitalia.

spines. The tarsi with five segments covered with scales black and yellow and the last segment are covered with black scales only and carried two claws.

Wings : Forewing 12.5-12.8 mm, the distance between the wings when separated 29.2-31.5 mm, forewing. It is covered with brown scales that have two distinguishing marks, the first resembling the blade of the sword. Its margin are black and the interior is brown. The second kidney spot that connects to its convex side by brown scales oval black margin are incomplete on its concave side, it is composed of distinctive shape structure entry the kidney spot from the concave side and graduated from its convex side. The hind wing white 9-9.2 mm in length interspersed with veins become darker color at the end of the female while yellow in the male. The outer margin of the both sex has a row of white filaments (Fig. 1-B,D).

Abdomen : 9-10.2 mm in length, widest area of the abdominal at segment 4 and 5 about 3.3 - 4 mm in width. The abdominal segments are covered with hairs white and gray and the last segment covered with brown hairs with a tuft of white hair on the dorsal side of some

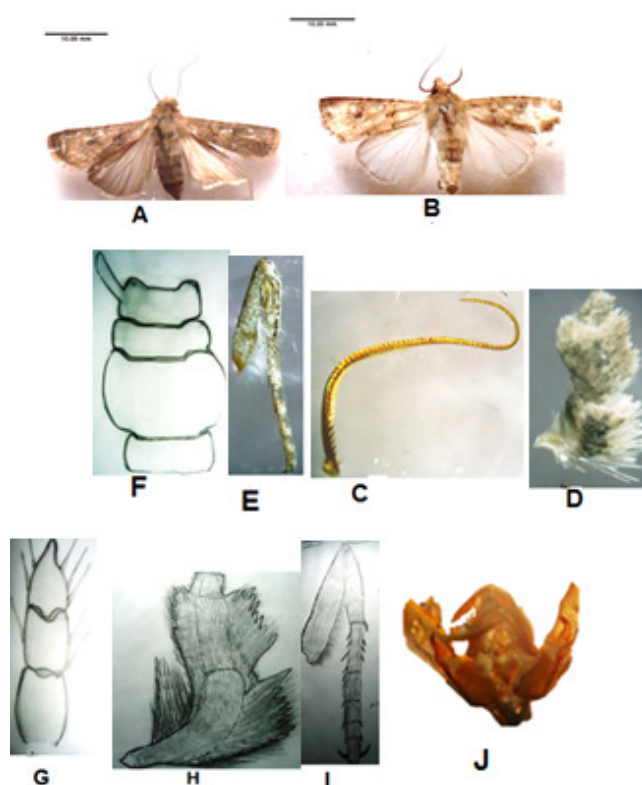


Fig. 2 : A- Female adult B-Male adult C-Antenna D-labial palp E- Foreleg F- scape and pedicel with first, second segment G- The last three segment H- labial palp I- Foreleg J-Mail genitalia.

abdominal segments in the male, the abdominal segments in the female are covered with brown and other yellow scales with a few hair. Intensity increases near the base of the abdomen.

Male genitalia : The uncus shorter than valve in length with a bristling structure extending from it to top and being elongated and curved inside. A transparent white tegument of the inside of the capsule and built from the outside, valve brown and curved into the capsule with a dark brown curved reach inside the capsule (Fig. 1-N).

The Damage : The larvae feed on roots and stems of many grasses and other plants such as *Ziziphus mauritiana* (Nizamani *et al*, 2015).

Distribution : The insect was recorded in Africa / Madagascar, Asia / Kingdom Saudi Arabia, Turkey, Iran, Afghanistan, Pakistan, India, Burma and Sri Lanka (Gurule, 2013).

Material exam: collected sex insects (6) at 2018 in Baghdad, Al-Ameryia. The insects due on 26/4/ 2018 by using light traps. This is the first record in Iraq at this study.

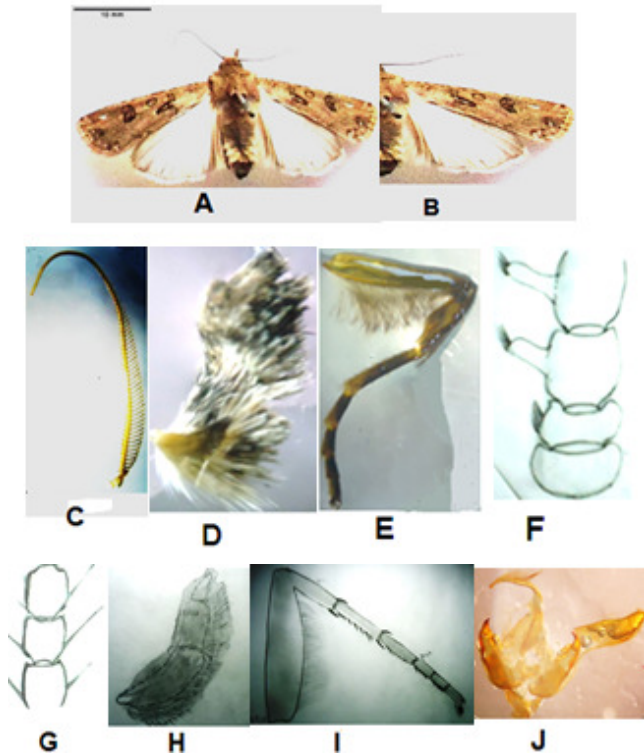


Fig. 3 : A- male adult B- Front wing of male C-Antenna D-labial palp E- Foreleg F- scape and pedicel with first, second segment G- The last three segment H- labial palp I- Foreleg J-Mail genitalia.

2. Species *Agrotis bigramma* Esper, 1790

Synonyms

Agrotis crassa Hübner, 1803; *Euxoa crassa*; *Euxoa golickei*; *Euxoa lata*; *Noctua crassa* Hübner, 1803

Adult : (Fig. 2 A, B), 16.6-17.1 mm in length medium size gray in color.

Head : 1.6 - 2.2 mm in length, 3.1-3.8 in width. The frons and vertex in both sexes covered with brown scales extending to the top, antenna and 10.2 in the male (Fig. 2-C). The width of the segments and 0.29 in the male and 0.28 in the female, pectinate in shape dark brown in color, in the male has prominent surrounded by a row of sensory setae, the size of the prominent become less towards the end of the antenna until it seems as a thread, with two rows of sensory setae. The hairs on top longer. The scape is simple and smaller than the pedicel, last segment pointed with six setae (Fig. 2-F,G). Antenna in the female 9.9 mm in length and 0.28 mm in width filiform, covered with black and yellow scales. The number of segments antenna 96 in the female, the compound eye gray-yellow large containing many black spots, Labial palp three segments covered with brown and black scales from the dorsal side of the insect and long brown scales extending

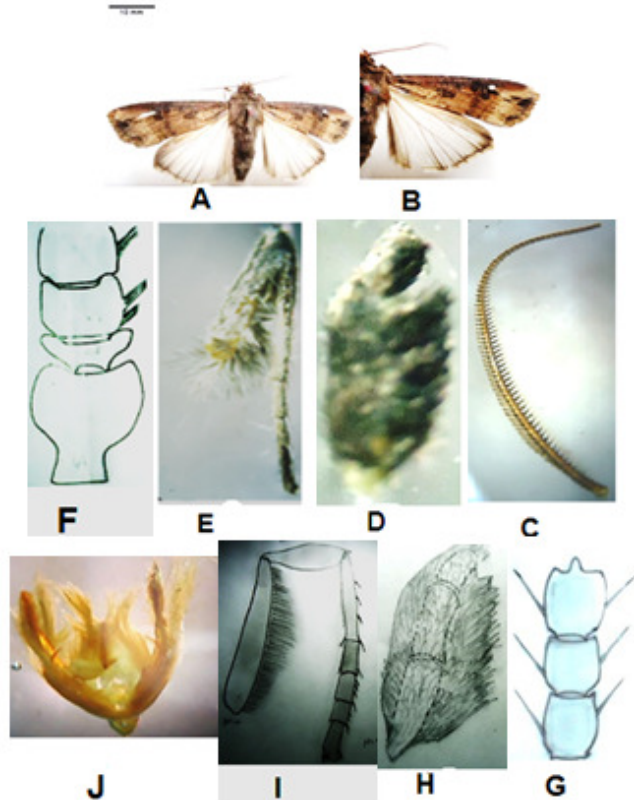


Fig. 4 : A- male adult B- Front wing of male C-Antenna D- labial palp E- foreleg F-scape and pedicel with first, second segment G- The last three segment H- labial palp I- foreleg J- mail genitalia.

to cover part of the last segments of the ventral area of the insect in both sexes (Fig. 2-D, H).

Thorax : 4.3-4.9 mm in length, scales between Head and Thorax is unobvious consists of brown scales in the male and is obvious in the female covered.

Legs : Fore femur and fore tibia covered with brown-colored scale at outside, while a yellow hair covers at inner femur. The presence of two rows of spines dark brown on both sides of the tibia increases in size at end of tibia. The tarsi five segments scales. The first, second and third segments are surrounded by black scales and yellow on each end segment, the fourth and fifth segments are black with rows of brown spines on both sides of it and the tarsi carried two claws (Fig. 2-E,I).

Wings : Fore wing 16.3-16.4 mm in length, the distance between the wings when separated 37.8-38.2 mm, covered with brown scales and three observed marks, a kidney spot, a circular spot and a shape resembling a sword blade with black margin brown inside, this insect can be distinguished from the other species of the *Agrotis* species by these three markers within two black stripes at the outer margin of the forewing are almost triangular black spots. The hind wing 11.2-13.1 mm in

length. The color of the male white and is brownish in the female with clear veins darker at the end. The outer margin of the hind wing to both sex has a row of white seta.

Abdomen : 10.3-10.6 mm in length, widest area of the abdominal at segment 4 and 5 about 3.2-3.6 mm, The first four abdominal segments in the male are covered with long white-gray hairs and the fifth, sixth and seventh segments are covered with density short gray hairs increasing on sides and the last segment covered with long brown scales on end of abdomen, in the female the abdominal segments are covered with yellow hairs and another dark brown.

Male genitalia : The uncus shorter than valve, elongated and curved to inside of the capsule with brown hairs surrounding it, tegument white, transparent inside and brown outside and dark brown of the interior margin. The valve consists to two parts at a base part with a square base in outside and pointed at the upper (Fig. 2-J).

The Damage : Larvae feed on some species of plants that belong to the family gramineae (Hacker, 2001).

Distribution : The insect was recorded in Europe (Fibiger, 1990), Cyprus (Fibiger *et al.*, 1999), Africa / Egypt, West Algeria and Morocco (Hacker, 2001), Asia / Turkey, Afghanistan, Caucasus, Lebanon (Hacker, 1990) And Palestine (Kravchenko *et al.*, 2007).

Material exam : Collected two insects from Baghdad, Al- Ameriya, using light traps. The date of the insects' appearance was 10/5/2018. It's a new record recording in Iraq at this study.

3. Species *Agrotis segetum* Denis & Schiffermüller, 1775

Synonyms

Noctua segetum Denis & Schiffermüller 1775,
Euxoa segetis

Adult : Medium-sized moth (Fig. 3-A), Dark brown-black-brown, 15.2-16.8 mm in length, female darker than male in color. Known as the turnip moth.

Head : 1.4-1.6 mm in length, 2.5-2.9 in width, antenna 9.3 mm in length and the width segment is 0.19 mm, with 122. Antenna in the male pectinate content of a project swell at end with two rows of sensory seta on both sides of project, these projected are reduced to disappear toward at end (Fig. 3-C). The scape simple and larger than pedicel with three bristles on last antenna (Fig. 3 -F,G). In the female filiform. The Antenna segments are covered with black-brown scales, Large compound eye gray in color with small black spots, Labial palps three segments

covered with brown and other black scales that are longer than the ventral side (Fig. 3-D,H), while pointing out (Hampson, 1892) the antenna are in males bi-pectinate.

Thorax : 3-3.7 mm in length, area of scales between Head and Thorax. In male carried brown-colored scales that's important to distinguish form of black scales, the scales thorax same in color with scales area, While in the female the area is less clear and the Thorax is covered with white brown scales.

Legs : Fore femur and fore tibia of the male covered with white and brown scales and spines on both sides of the tibia that's spines at end of tibia large. The fore femur of the female covered with long yellowish scales at the ventral side. The fore leg covered with white yellowish scales and two lines of spines on both sides of the tibia, the spines at the end of the tibia are long and large (Fig. 3-E, I). Tarsi with five segments covered with several rows of spines. The last segments carried two claws.

Wings : Fore wing 17.8-18.1 mm in length, the distance between the wings when separated 39.1-40.1 mm, presence of three distinctive marks are kidney spot with black-dark edges inside and circular with black spots inside the male. The shape resembles the blade end of the sword but no black spot in the female. The hind wing is white in color length 13.1-13.6 mm, the veins be clear and the outer margin of the hind wing has a row of white seta (Fig. 3-B).

Abdomen : 10.8-11.5 mm in length, widest area of the abdominal at segment 4 and 5 about 4.7-5.1 mm and the abdomen covered with long brown - gray to yellow hair.

Male Genitalia : The uncus as same length with valve and contains a tuft of bristles toward to rear, valve appears to be contend of two chitin parts, a tegument of the abdominal side of the capsule being transparent (Fig. 3-J).

The Damage : This insects as important pest for many crops (Zethner, 1980) attacking roots and stems of celery, beans, sesame, potatoes, peanuts, beets, chrysanthemums, coffee, pumpkins, strawberries, soybeans, sunflower, sugarcane, spinach, clover, wheat, hibiscus, lettuce, tomatoes, tobacco, pine, corn, grapes and corn (Annecke, 1982). A particularly serious pest can be on vegetables and grain. Attacking the lower stems often leads to cutting off the plant.

Distribution : common pest throughout Europe, Asia and parts of Africa (Jakubowska *et al.*, 2005) and have spread through the international trade of many countries of the world. Mentioned by Darwish (1965)

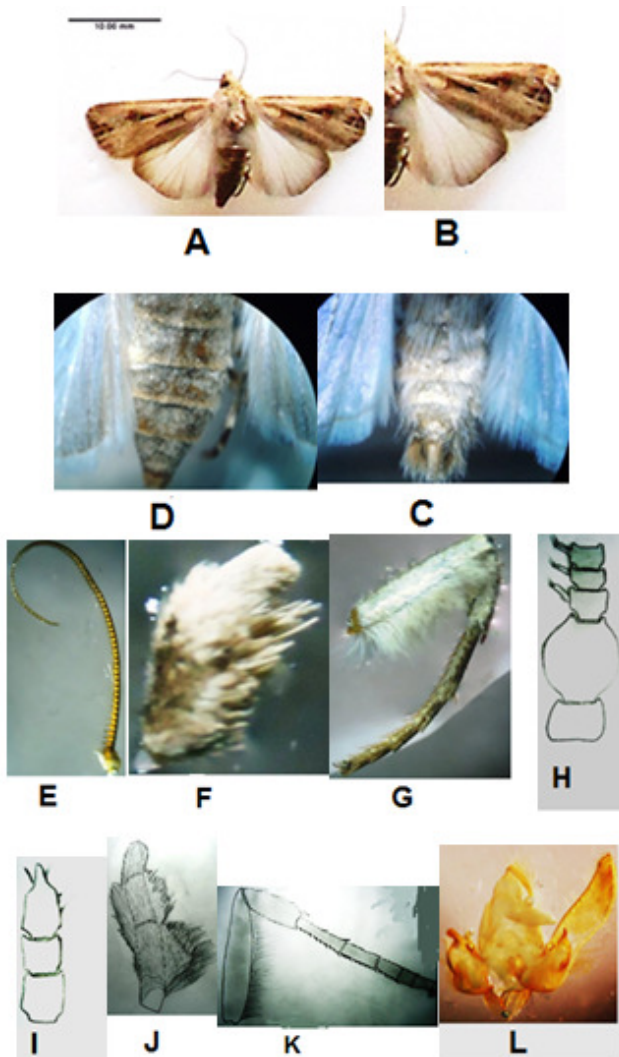


Fig. 5 : A- male adult B- Forewing of male C-male abdomen D- female abdomen E-Antenna F- labial palp G-foreleg H-scape and pedicel with first, second segment I- the last three segment J-labial palp K-foreleg L-male genitalia.

and Aziz Al-Ali (1977) name *Agrotis (Euxoa) segetum*.

Material studied : Eighteen (18) insects were collected in 2018 study at the Al-Ameriya, Baghdad province and in Diyala Khan Bani-Saad, the date of appearance 7/4/2018. This is a new taxonomic study for insects at this study.

4. Species *Agrotis ipsilon* Hufnagel, 1766

Synonyms

Agrotis aneituna Walker, 1865, *Agrotis aureolum* Schaus, 1898; *Agrotis bipars* Walker, 1857, *Agrotis frivola* Wallengren, 1860; *Agrotis pepoli* Bertolini, 1874, *Agrotis telifera* Harris, 1841; *Bombyx spinula* Esper, 1786, *Noctua suffusa* Denis & Schiffermüller, 1775; *Noctua ypsilon* Rottemburg, 1777, *Phalaena idonea* Cramer, 1780; *Phalaena ipsilon* Hufnagel, 1766, *Phalaena spinifera* Villers, 1789; *Phalaena spinula*

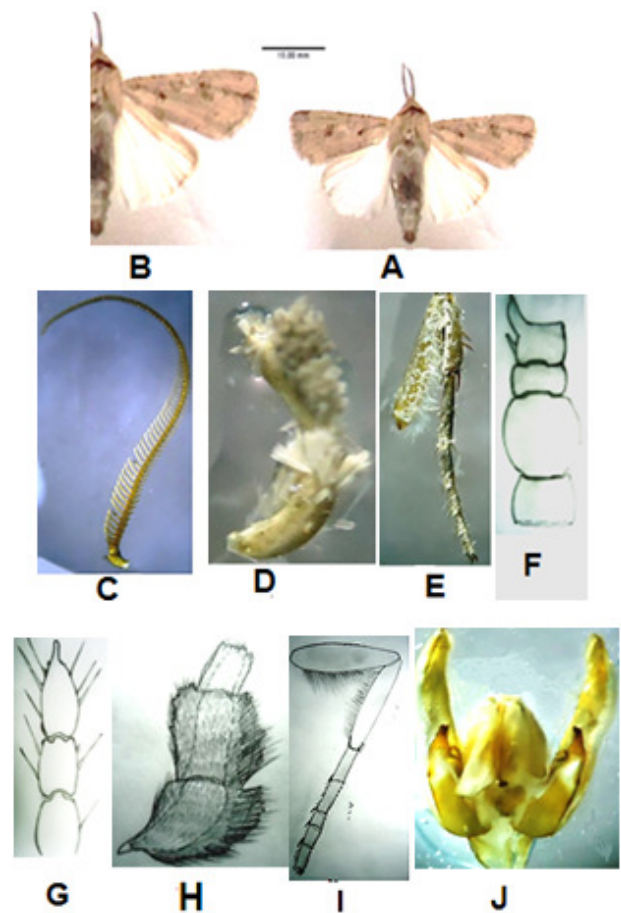


Fig. 6 : A-male adult B- Forewing of male C-Antenna of male D- labial palp E-foreleg F-scape and pedicel with first, second segment G-the last three segment H-labial palp I-foreleg J- male genitalia.

Donovan, 1801.

Adult : Medium-sized moth (Fig. 4-A), Length 15.2-21.3 mm. They called a common names as dark sword-grass, black cutworm, greasy cutworm, and floodplain cutworm.

Head : Length 1.4-2 mm, width 2.8-3.6 mm, Descending down. The front and vertex covered with scales forward to front, antenna with 108 segment, the length of the antenna is 9.8 mm and the width of the segment is 0.23 mm. It is pectinate in the male and the protrusion of the antenna have dense sensory filaments (Fig. 4-C). The scape corset and larger size of the pedicel and segment-antenna last have a small protrusion in the middle (Fig. F,G). Antenna filiform in female. compound eye gray large with spots in the male and female large, yellow with small circular spots. labial palp three segments covered with gray and black scales longer than the ventral side the insect and the latter pointed, without scales or hair (Fig. D,H).

Thorax : 3.5-6.1 mm in length, area between head

and thorax covered with black and gray scales and the other end of the brown extended over the scales covered the thorax and its covered with long gray scales yellow scales at the end in male, and in female the area is more distinguish in gray color covered with long black-gray scales.

Legs : The forefemur in the male covered with black and brown scales. The scales are longer than the ventral side, fore tibia covered with black scales and a few yellow-colored scales from the dorsal side, while the scales yellow and a few of it black scales are from the ventral side with two rows of long brown spines and two larger brownish spines at leg tip (Fig. 4-E, I). The fore femur of the female is covered with brown and yellow scales long from the ventral side of fore femur and the foreleg covered with yellow scales with two rows of prominent brown spines, tarsi five segments covered with yellow scales and brown in which the spines are thin and long and the last segment carried two claws.

Wings : Fore wing 26.1-27.2 mm in length (Fig. 4-B). The distance between the wings when separated 40.2-53.1 mm. Covered with brown and black scales that are concentrated in specific area showing a distinctive shape, this can identify by a spot in an incomplete circle of black scales and a kidney spot coming out of its concave side what looks like a black sword blade and near the outer margin of the inner wing a spot of black scales. Then ends with a row of brownish scales, hind wing white 16.1-16.5 mm in length clear veins become dark at end. The outer margin of the hind wing covered with a row of white scales and the base part of the scales brown.

Abdomen : 10.3-13.2 mm in length, widest area of the abdominal at segment 4 and 5 about 5.2-5.4 mm. The abdomen covered with long gray-yellowish hairs in male and a yellow-brown in female.

Male Genitalia : The uncus less than the length of valve and curved into the capsule with thick hairs that surround it and extend on both sides of the tegument. valve is identified by dark brown hairs on the top with a chitin-like projected brown in colored spurs (Fig. 4-J).

The Damage : Larvae feed on weeds such as bluegrass (belong to genus *Poa*), Curled Dock is a plant segment of the genus of acidosis), yellow rocket (Lambs quarters), before moving to field crops and include most vegetable plants, clover, cotton, rice, maize, strawberries, sugar, tobacco and grains. While adults feed on nectar and are also attracted to falling trees and trees Linden and wild plum, crabapple (Capinera, 2006).

Distribution : The insect is widespread of the world. The insect has been recorded in southern Canada, 48

city in United States (in addition to Hawaii), Mexico in Central and South America, Australia, New Zealand, the Pacific, North Africa, Europe and Asia. Some tropical and cold areas are more prevalent in the northern hemisphere than the southern hemisphere (Showers, 1997). Mentioned by Darwish (1965) and Al-Ali (1977).

Material sexam : Nineteen (19) insects were collected at 2018 study in the locations of Baghdad, Al-Ameiriya and Baghdad, Abu Ghraib and Karbala, Aoun district and in Karbala, Twreij and Babylon, Tourist Road, the date of appearance of adults 6/3/2018.

5. Species *Agrotis spinifera* Hübner, 1808

Synonyms

Agrotis biconica Kolar, 1844; *Agrotis biconicus* Kolar, 1844; *Noctua spinifera* Hübner, 1808, *Agrotis spiculifera* (Hübner, 1808); *Euxoa spinifera*

Adult : medium-size moth (Fig. 5-A), 14.2-16.2 mm in length.

Head : Length 1-1.6 mm, width 1.7-1.8 mm, covered with brown scales in male and white-yellowish in female, antennae pectinate in shape with 108 segments, 8.2 mm in length and the width of segment 0.23 mm in male and there is projection carried hairs like tree on each side of antenna (Fig. 5-E). The scape simple and smaller size of the pedicel, tip of antenna pointed and with four (4) bristles (Fig. 5-H, J). Filiform in female covered with black-brown scales with two rows of hair on each side of all segment. The compound eye large in the female gray in color have irregular black spots, and in the male brown with black spots (Fig. 5-F, J).

Thorax : 3.5-4.4 mm in length, area of scales between head and thorax obvious in male and unobvious in female, with the thorax is covered with long brown-yellow scales.

Legs : The fore femur in the male covered with black-yellowish scales longer from ventral side and the fore tibia covered with yellow scales with a tuft of yellow hair Long of the inner side of tibia and two rows of prominent spines (Fig. 5-G). In the female the fore femur is covered with gray scales from the outside and yellow inside with long yellow hairs, the fore tibia is covered with yellow scales with two rows of prominent brown spines, tarsi. Five segment covered with yellow and other black scales make it striped with rows of spines, the last one carried two claws.

Wings : Fore wing 13.8-14.1 mm in length (Fig. 5-B), the distance between the wings when separated 33.6-35.1 mm covered with brown scales with two distinguishing marks. The first is similar to the blade of

the sword, its margin are black and brown from inside, and the second not complete kidney shaped on its convex side, hind wing 10.4-10.7 mm in length, white, clear veins become dark at the end in female.

Abdomen : 9.7-10.2 mm in length, widest area of the abdominal at segment 4 and 5 about 3.7-4.2 mm, all abdominal segments covered with gray and brown hairs and yellow hair at end of abdomen in male (Fig. 5-C). In female do not cover the abdominal segments hair or tuft (Fig. 5-D).

Male genitalia : Uncus shorter than valve surrounded by medium length bristles dark in color is heading up and appears consist to two parts with a dark brown chitin appearance in the middle valve. Tegument yellow in color of the external capsule and white of the internal bodies of the capsule and the base part with margins provide dark bristles (Fig. 5-L).

The Damage : This Insect is an important pest for tomato but the larva digs fruit and feed inside it so reduces the economic importance, also attack barley, palms and willow, reported (Houti, 2008; Feizpoor *et al.*, 2014) that the larvae feeding on roots and stems of some weed belonging to family Gramineae.

Distribution : The insect is widespread in southern Europe, South Africa, Turkey, Iraq, Iran, Afghanistan, Pakistan, Kashmir, India, Burma and Sri Lanka (Kravchenko *et al.*, 2006). Mentioned by Darwish (1965) and Ali (1977).

Material studied : Elven (11) insects were collected at 2018 study at the Baghdad, Al-Ameriya on 19/3/2018. This is the first taxonomic study in Iraq.

6. Species *Agrotis trux* Hübner, 1824

Synonyms

Noctua trux Hübner, [1824]; *Agrotis lenticulosa* Duponchel, 1826; *Agrotis lunigera* Stephens, 1829, *Agrotis terranea* Freyer, 1831; *Agrotis amasina* Staudinger, 1901, *Agrotis subalba* Corti & Draudt, 1933 (preocc.); *Agrotis adolfi* Corti & Draudt, 1933

Adult : Medium-sized moth (Fig. 6-A), 16.4-16.9 mm in length.

Head : Length 1.4-1.5 mm, width 2.3-2.7 mm, frons covered with gray, short scales. The vertex covered by gray and heading forward scales. Antenna with 102 segments, is a pectinate in male and its component projects are surrounded by a row of sensory seta (Fig. 6-C) and a filiform in female, length 9.7-9.9 mm and the width of one segment 0.28 mm. The scape is simple and is smaller than pedicel (Fig. 6 F,G), last antennal segment pointed and carried six bristles (Fig. 6-G) compound eye

in male and female large gray with small patches and large black ones. The labial palps three segment and the last without any seta and elongated (Fig. 6-D-H).

Thorax : Length 4.5-4.6 mm, segment of scales between head and thorax be obvious consists of long hair structure, Thorax covered with long hairs structure.

Legs : Fore femur with density brown and gray scales from the dorsal side. It covers the abdominal area with long yellow hairs, fore tibia with yellow brownish scales and two rows of dark brown spines increasing in size at the end of leg (Fig. 6- E,I). Tarsi five segment covered with black-yellow scales giving it a planned appearance the inside is a yellow color with two claws. The first tarsi segment is shorter than the second tibia.

Wings : Forewing length 16.6 mm (Fig. 6-B), the distance between the wings of the insect is separate 36.5-38.8 mm brown in color, with three distinguish marks. The first a black-colored triangle, the second A circular spot and the third a kidney spot be dark from the inside. The outer margin of the forewing almost triangular black spots ending with brown scales to black, length of the hindwing 12.3-12.8 mm white color with clear veins, the outer margin of the hindwing ends with a row of white scales.

Abdomen : Length 10.3-11 mm, the width abdominal area in the 4 and 5 abdominal segments is 3.8-4 mm long. The first three abdominal segments are covered with long white hairs and the last segments are covered by short brown hairs Under it appear bright white scales and cover the last abdominal segment in male with brown hairs.

Male Genitalia : The uncus longer than valve It is curved into the capsule and surrounded by thick brown hairs, white tegument inside the capsule and brown outside. The valve appears to be two parts. In the middle is a chitin structure with a black finish (Fig. 6-J).

The Damage : Larvae feed on many plants roots as dandelion and knotgrass (Kravchenko *et al.*, 2006).

Distribution : The insect is widespread in the Mediterranean coast and along the coasts of France, Ireland, England, southern Europe, Africa / Algeria and South Africa (Robinson *et al.*, 2010). In Asia, Syria, Iran, southern Russia and the Arabian Peninsula (Darwish, 1965).

Material exam : Collect (2) insects on 2018 season from Baghdad, Al- Ameriya. The date of the emergence of the insect was 6/5/2018 using light traps. This new record in Iraq at this study.

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