



## NEW RECORD FOR TWO SPECIES OF GENUS *AUTOGRAPHA* HÜBNER 1821 (LEPIDOPTERA: NOCTUIDAE : PLUSIINAE) IN BAGHDAD, IRAQ

Hussein Kattan Mohammed and Awatif Abdul-fatah Hamodi

Department of Plant Protection, College of Agricultural Engineering Sciences, University of Baghdad, Baghdad, Iraq  
Email: hussainadm96@gmail.com; Email:Awatif.hamodi@gmail.com

### Abstract

New record of two species of genus *Autographa* Hübner 1821 belongs to Subfamily Plusiinae and to the Family Noctuidae and to the suborder of Heterocera (moths) of order Lepidoptera, these species as *Autographa pseudogamma*, and *Autographa rubida*, which collected 6 six insects from Baghdad / Ameriya and the other collected 5 five insects from Baghdad / Ameria and Diyala Khan Bani Saad, this species are a new record in Iraq during the study at 2017 – 2018. The insects identified by used taxonomic keys depended on morphological characters and male genitalia. Used camera Lucida to draw bodies' part and picture by digital camera.

**Key word:** *Autographa* spp., Plusiinae, Noctuidae, lepidoptera

### Introduction

Insects belonging to a family Noctuidae It is a widespread in whole world and can be found in Palearctic region and tropic region (Eichlin and Cunningham, 1978), larvae caused damage when feeding on plants and wintering as pupa an obtect (Kononenko and Pinratana, 2005), So it become key pest for some plants in the world (Kononenko and Pinratana, 2005; Zahiri *et al.*, 2011). *Autographa pseudogamma* is a widespread pest and feeds larvae on a variety of small plants, preferably clover. *Autographa rubida* is a widespread pest with unknown plants.

**Description of Subfamily:** Large and prominent eyes, thorax and the base of the abdomen (protrusions), forewing rises with the extension of a straight line on longitudinal axis of the body with signs or silver spots on the wings, hindwing veins M2, M3, CuA1 and CuA2 show clear, and M2 arises closer to M3 than M1 (Dugdale, 1988). It is attracted to light and nectar as in all moths.

### Materials and Methods

Adult insects were collected by 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, moating on pin by use binuclear microscope. Insects identified by used taxonomic keys, depending on morphological characters and described as in (Dugdale, 1988; Jagbir; Mudasir, 2013; Eichlin, Cunningham 1978; Jason, 2011; Michael and Lafontain 2005; Lafontaine and Poole 1991; Whittle 1986 and Barbut, 2008). Use a digital camera to photograph insects drawing the body parts by camera Lucida, and pictured by digital camera, the measurements of the body were taken by role, as well as

in the digital image analysis program (Image J.) ( Al-saad & Albahidly, 2018) to compared it in both method. The location and date was written.

### Results and Discussion

#### Taxonomic State:

Family : Noctuidae Latreille, 1802  
Subfamily : Plusiinae Boisduval, 1828  
Tribe : Plusiini  
Subtribe : Plusiina  
Genus : *Autographa* Hübner, 1821

#### Genus : *Autographa* Hübner, 1821

Dark brown - light brown in color, medium in size, projected on thorax and abdomen, middle of the forewing is a distinguish a silver marker, attracted to light and some species attracted to nectar and flowers.

**Head:** Antenna filiform with a long hair sometimes arranged on two rows each segment (Dugdale, 1988). ocelli present, Chaetosemata absent, The head carried scales, moth parts naked, labial palp with three segments long-up, often with a hair.

**Thorax:** tympanum on Metathoracic, wings are heterogeneous color and pattern, the silver markings in the middle of the forewing, the hind wing yellow and brown in color, the spurs on hindleg short and the spines are rarely present, spines on hindtarsus are present.

**Abdomen:** smooth, prominent dorsal scale tuft usually present (Jason, 2011).

#### 1 – Species *Autographa pseudogamma* Grote, 1875

#### Synomes:

*Plusia pseudogamm* Grote, 1875; *Autographa pseudogamma* Dyar, 1902; *Phytometra pseudogamma* Hampson, 1913; *Autographa pseudogamma* McDunnough, 1916.

**Adult:** medium moth, length 15.9-17.6 mm (Fig.1-A). The species is usually attract to Pheromonetraps with *Autographagamma* (Brambila and Passoa, 2009) and is very similar in color wing with *Autographa gamma* and *Autographa californica* (Lafontaine and Poole, 1991).

**Head:** 1.1 – 1.3 mm in length and 3-3.3 mm in width, fronts and vertex covered with brown scale sextended forward, antenna with 117 segment 8.7 mm in length and 0.24 mm in width, filiform covered with yellow and other black scales with two rows of sensory seta on either side (Fig. 1-B). A simple scap and a smaller size than the pedicle, the last segment of antenna pointed and carried 3 seta (Fig. 1-E, F), compound eyes Large yellowish in color with many black spots, labial palp with three segments covered with brown scales that is longer to the observer than the ventral side (Fig. C, G).

**Thorax:** 3.4-4 mm in length, ring of scales between Head and Thorax. It brown in color and ending with yellowish color which extend over the Thorax scales and are higher than the top, and it's the same color as ring scales.

**Legs:** fore femur and fore tibia covered with brown and other black scales that increase taller from the ventral side. tarsi with five segments covered with yellow and black scales with rows of dark brown spine carried two claws (Fig. D, H)

**Wings:** Forewing 16.2-16.9 mm in length, the distance between the wings when separated 36-39.2 mm, forewing is covered with brown scales and a dark brown in color, characterized by a distinguish by silver y-like in English, enlarge from the bottom and towards to the outer margin of the forewing, The outer margin of forewing ends with a row of light and dark brown scales, The hind wing 11.2-11.6 mm in length and yellowish brown in color with a wide stripe dark color near the outer margin, veins are clear. The outer margin of the hind wing ends with a row of white scale and brown.

**Abdomen:** 11.3-12.3 mm in length, widest area of the abdominal at segment 4 and 5 about 4.1-4.5 mm in width. A tuft of hair on the dorsal side of the abdominal segments with dark brown and other black in color and other pale hair, covering the abdomen with hair increase in length at the end of abdomen.

**Male genitalia:** The male capsule is characterized by being short uncus than the valva and is curved down with a pointed end, Tegumen is thin with black margin, pale valva with one part, there is a finger-like shape at middle (Fig. 1-I).

**The Damage:** Plant families are unknown (Eichlin and Cunningham, 1978). The larvae feed on a variety of

small plants (Neil and Rose, 2008) and clover is a favorite plant.

**Distribution:** The insect is widespread in whole world (Forbes, 1954) and record in the northern region of North America, California, and New Mexico (LaFontaine and Poole, 1991). In British Columbia, northern Alaska, South Dakota, Arizona (Eichlin and Cunningham, 1978), this insect is few and rare (Jeffrey *et al.*, 2003).

**Material exam:** Collected six adult insects during the study at 2017-2018 from Al-ameriya / Baghdad province using light traps and the date of appearance of the insect on 4/4/2018.

## 2. Species *Autographa rubida* Ottolengui, 1902

### Synonyme:

*Phytopetra rubida* Hampson, 1913; *Autographa rubida* McDunnough, 1916.

**Adult:** medium moth, length 16.2-16.9 mm (Fig. 2-A).

**Head:** 1.1-1.9 mm in length and 2.4-2.6 mm in width, front and vertex covered with brown and black scales extended forward, antenna with 129 segment, 8.6 mm in length and 0.21 in mm width, Antenna filiform covered with yellow and black scales with two rows of sensory seta on both sides of antenna, that at end of each segment is longer (Fig.2-B) scape narrow in base then enlarge at top and larger than pedicle and last segment of antenna oval in shape carried 3 seta with a black project at base (Fig. 2-E, F), compound eyes yellow with many black spots, Labial palp with three segments covered with black and yellow scales that is longer than the abdominal side of (Fig. 2-C, G).

**Thorax:** 3.5-3.9 mm in length, area between Head and Thorax with clearing scale, carried of brown black and gray scales extend over the scales that cover thorax and it's the same color as ring scales.

**Legs:** fore femur and fore tibia covered with brown and black scales longer from that in abdominal side. Tarsi with five segment covered by black and yellow scales that appear to be striped with two rows of brown spine and carried two claws (Fig. 2 D, H).

**Wings:** forewing 16.5-17.1 mm in length, the distance between the wings when separated 38.1-38.9 mm, forewing dark red-dark brown color with a short black line up to the top of the wing ,a curved silver mark towards the outer margin of the forewing, the outer margin of the forewing zigzag line of dark brown scales that ends in a row of white scales, basal part and top part of some the scales at dark brown. Hind wing 13.1-13.3 mm in length, color yellowish brown, veins clear with a line near the outer margin in a dark color, and the outer margin of the hind wing ends with a row of white scales dark brown color at base.

**Abdomen:** 11.2-11.5 mm in length, widest area of the abdominal at segment at 4 and 5 about 4.1-4.3 mm in width. Covered with gray and black scale with long brown hairs.

**Male genitalia:** Uncus male capsule longer than valva and is elongated, curved down and pointed at end, tegumen thin, valva with an oval at tip, brown bristles in the middle of valva and shape like finger (Fig. 2-I).

**The Damage:** Plant families are unknown (Eichlin and 1978, Cunningham). but larvae have been reared on *Taraxacum officinale* the common dandelion.

**Distribution :** The insect is widespread. This insect was recorded in southern Canada and in the northern forests of Lala Biche in Alberta Canada and southern Maine and Minnesota.

**Material exam:** Five insects were collected during the 2017- 2018 study from Al-ameriya / Baghdad province and Diyala / Khan Bani Saad, using light traps, date of emergence of insects 19/3/2018.

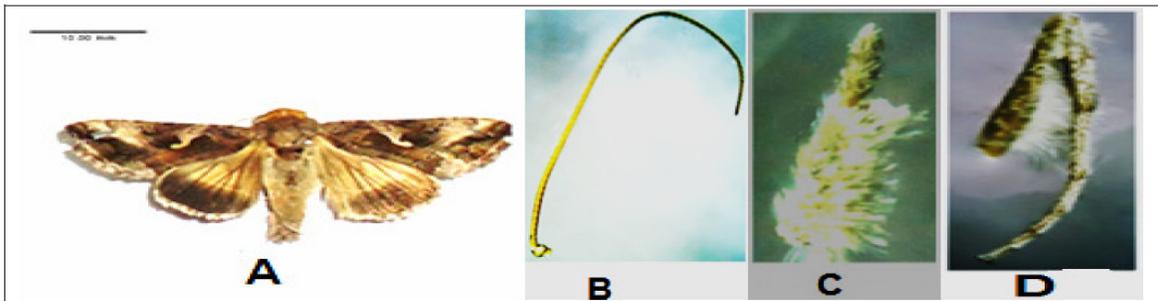


Fig. 1 : A - adult insect; B-antenna; C-labial palp; D-Foreleg

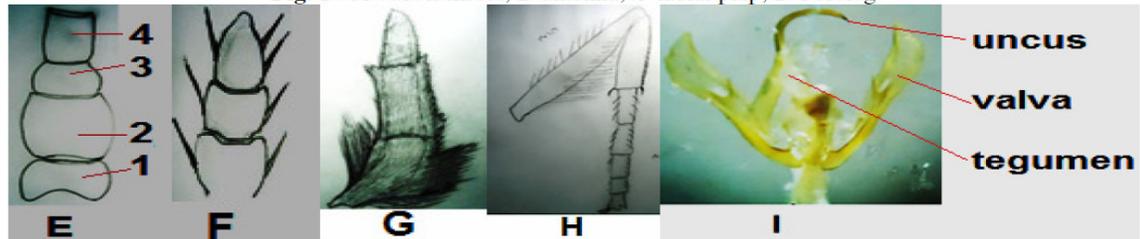


Fig. 1 : E-(1-scape 2-pedical 3,4-first, second segment); F-The last three segment; G-labial palp; H-Foreleg; I-male genitalia.

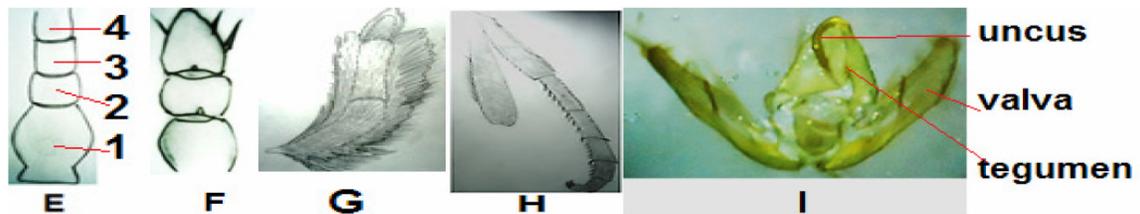
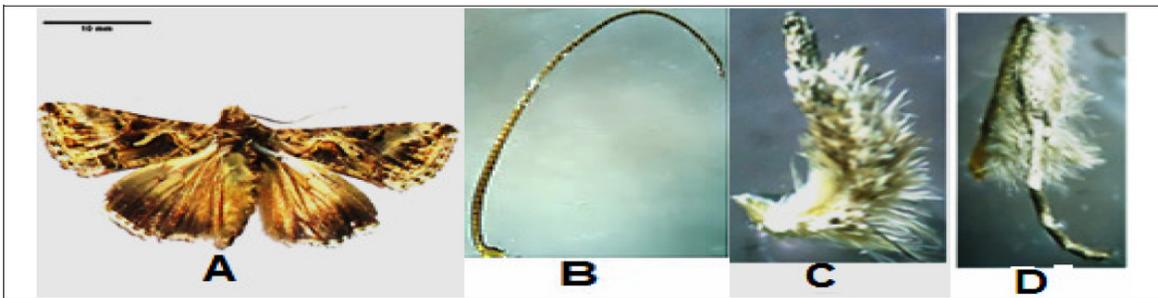


Fig. 2 : A- Adult insect; B-antenna; C-labial palp; D-Foreleg; E-(1-scape 2-pedical 3,4-first, second segment); F-The last three segment; G-labial palp; H-Foreleg; I-male genitalia

## References

- Al-said L.A. and Al-Bahadli H.H. (2018). The basics of image processing with Image J, Deposit number 862 years 2018 in the Library and Documents Library/National Library/Baghdad, 70 p.
- Ayberk, H.; Hakyemez, A. and Cebeci, H. (2010). Light trap surveys formoths in Sile region of Istanbul, Turkey. *African Journal of Biotechnology*, 9(29): 4625-4630.
- Barbut, J. (2008). "Révision du genre *Rachiplusia* Hampson, 1913 (Lepidoptera, Noctuidae, Plusiinae)." *Bulletin de la Société entomologique de France* 113(4): 445-452.
- Brambila, J. and S. Passoa. (2009). Autographa gamma Field Screening and Diagnostic Aid.
- Dugdale, J.S. (1988). Fauna of New Zealand, number 14, Lepidoptera annotated catalogue and keys to family-group taxa. Genitalic and Larval Morphology. 122p.
- Eichlin, T.D. and Cunningham, H.B. (1978). The Plusiinae (Lepidoptera: Noctuidae) of America North of Mexico, Emphasizing genitalic and larval morphology. United States Department of Agriculture Technical Bulletin. 1567: 1-121.
- Forbes, W.T.M. (1954). The Lepidoptera Of New York And Neighboring States, Part III, Noctuidae. Cornell University Agricultural Experiment Station, Memoir, 329: 1-433.
- Jagbir, S.K. and Mudasir, A.D. (2013). Keys for the identification and segregation of Noctuid subfamilies, Division of Entomology S.K. University of Agricultural Sciences and Technology Kashmir, Shalimar Srinagar-191121, India, *Insect Environment*, Vol. 19 (3):176-179.
- Jason, J.D. (2011). A Matrix Key to Families, Subfamilies and Tribes of Lepidoptera of Canada, Department of Biological Sciences, University of Alberta, Edmonton, Alberta. T6G 2E9, Canada, *Canadian Journal of Arthropod Identification* No. 17.
- Jeffrey, C.M.; Paul, C.H. and Dana N.R.R. (2003). Distribution and Functional Roles of Rare and Uncommon Moths (Lepidoptera: Noctuidae: Plusiinae) Across a Coniferous Forest Landscape. *Ann. Entomol. Soc. Am.* 96(6): 847-855
- Kononenko, V.S. and Pinratana, A. (2005). Moths of Thailand, Vol.3: Noctuidae. Illustrated catalogue of the Noctuidae (Insecta: Lepidoptera) (in Thai): Part 1 Subfamilies Herminiinae, Rivulinae, Hypeninae, Catocalinae, Aganainae, Euteliinae, Stictopterinae, Plusiinae, Pantheinae, Acronictinae and Agaristinae Brothers of St Gabriel in Thailand. 1-261.
- Lafontaine, J.D. and Poole, R.W. (1991). The moths of America north of Mexico (MONA), Noctuoidea Noctuidae (Part), Plusiinae. Fascicle 25(1): 182.
- Lafontaine, J.D. and Robert, W.P. (1995). The Moths of America north of Mexico, including Greenland, Noctuoidea : Noctuidae (Part) : Plusiinae, 182p.
- Michael F. and Lafontaine, D.J. (2005). A review of the higher classification of the Noctuoidea (Lepidoptera) (with special reference to the Holarctic fauna. *Buchreihe zur Entomologie* Bd. 11: 7-92 .
- Neil, D. and Rose, K. (2008). A Biophysical Inventory and Evaluation of the Lulu Island Bog Richmond, British Columbia. A project of the Richmond Nature Park Society Ecology Committee, 384.
- Whittle, K. (1986). Pests not known to occur in the United States or of limited distribution (PNKTO), number : 75 Silver Y Moth. 16 p
- Zahiri, R.; Kitching, I.J.; Lafontaine, J.D.; Mutanen, M.L.; Holloway, J.D. and Wahlberg, N. (2011). A new molecular phylogeny offers hope for a stable family level classification of the Noctuoidea (Lepidoptera). *Zoologica Scripta*, 40(2): 158-173.