

Ministry of Higher Education and Scientific Research

UNIVERSITY OF BAGHDAD

(August 1977)

# Natural History Research Center

Publication No. 33

## PHYTOPHAGOUS AND ENTOMOPHAGOUS INSECTS AND MITES OF IRAQ

by

AZIZ S. AL-ALI, M.S.



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# **PHYTOPHAGOUS AND ENTOMOPHAGOUS INSECTS AND MITES OF IRAQ**

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Al-Zahra Press-Baghdad

دیکشنری ادبیات عرب نویسنده و مترجم ایرانی

دستورالعمل در تحریر

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(۱۹۴۷)

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The "Iraq Natural History Museum Publication" was instituted in 1950. This series of numbered publication is issued now, under the name "The Natural History Research Center Publication". The publication serves as a medium for original papers based principally upon the collection of the museum, and other papers dealing with field and museum techniques, monographic studies, and, also suitable contribution not within the scope of the *Nat. Hist. Res. Center Publ.*

In 1961, a separate supplementary series "The Bulletin of the Iraq Natural History Museum" was instituted. In 1974, this Bulletin was re-issued under a new name, "The Bulletin of the Natural History Research Center" and is devoted to unpublished original papers, short scientific notes and theses-abstracts in the fields of Biology and Geology of Iraq and neighbouring countries. Volumes of the Bulletin are issued in parts, numerically numbered 1 through 4, and are published as materials become available.

The Publication and Bulletin are published at irregular intervals. Both series are offered in exchange to institutions for their serial publication, and, are widely distributed to principal biological libraries of the world.

## PREFACE

The total number of species included in this publication is 1084. This figure includes 844 phytophagous species and 240 predators and parasites.

The systematic taxa are alphabetically arranged and numbered serially. The basic data on each species include its scientific name, economic importance, feeding habits and effect on host, distribution and seasonal activity of its adults. The economic importance of each species is indicated directly after its scientific name by 4, 3, 2, and 1 which stand for major, medium, minor and little economic importance respectively; while species of undetermined importance are left unmarked.

As for distribution, a reference is made to the administrative provinces of Iraq in a north-south and east-west sequence. Where distribution is unknown, certain reference on physical or vegetational regions of the country is made. Few years ago, names of some of these provinces had been changed to new ones. In the present work, however, the old names are retained; I did so because in the majority of papers dealing with the entomology of Iraq, reference is always made to the administrative provinces by their old names. The new names are unknown to the non-Iraqis.

Host plants such as field crops, vegetables and fruit trees are indicated by their common names. In case, one common name includes more than one species, it is indicated in plural such as "oaks" and "poplars". The species covered by such plurals are stated by their scientific names in the Host-Plant Index. Weeds and other wild plants of different genera are, sometimes, known by a single common name. In order to avoid confusion, reference is made to them by their scientific names.

This publication reveals a number of gaps in our knowledge concerning the distribution, seasonal activity and economic importance of many species. It is hoped that future work will fill these gaps and give a more complete picture.

I wish to express my thanks to the members of the Editorial Board for *Publication* and *Bulletin* of the *Nat. Hist. Res. Center*, University of Baghdad for their continuous help in publishing this work; to Dr. Jalil Abul-Hab, Professor of Entomology, College of Agriculture, University of Baghdad who gave critical remarks and constructive suggestions; and to Dr. Awad H. Sa'ad of Mosul Plant protection Station, for reviewing the Homoptera and entomophagous insects. I am grateful to my colleagues at the Entomology Division, and, the College of Agriculture, University of Baghdad, who allowed me to consult their unpublished works; to Mrs. Janan Al-Mukhtar of the National Herbarium of Iraq, for supplying the common and scientific names of many host plants; and to Miss Nur Al-Huda Al-Juburi for typing the manuscript.

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December, 1976

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GEOGRAPHICAL AND ECOLOGICAL NOTES

In order to clarify the picture of the country it is found necessary to give a brief account on the geography of Iraq (Fig. 1). The geographical information is based mainly on Al-Rawi's Wild Plants of Iraq (1964), Guest and Al-Rawi's Flora of Iraq (Vol. 1, 1966) and the Annual Abstracts of Statistics (1972).

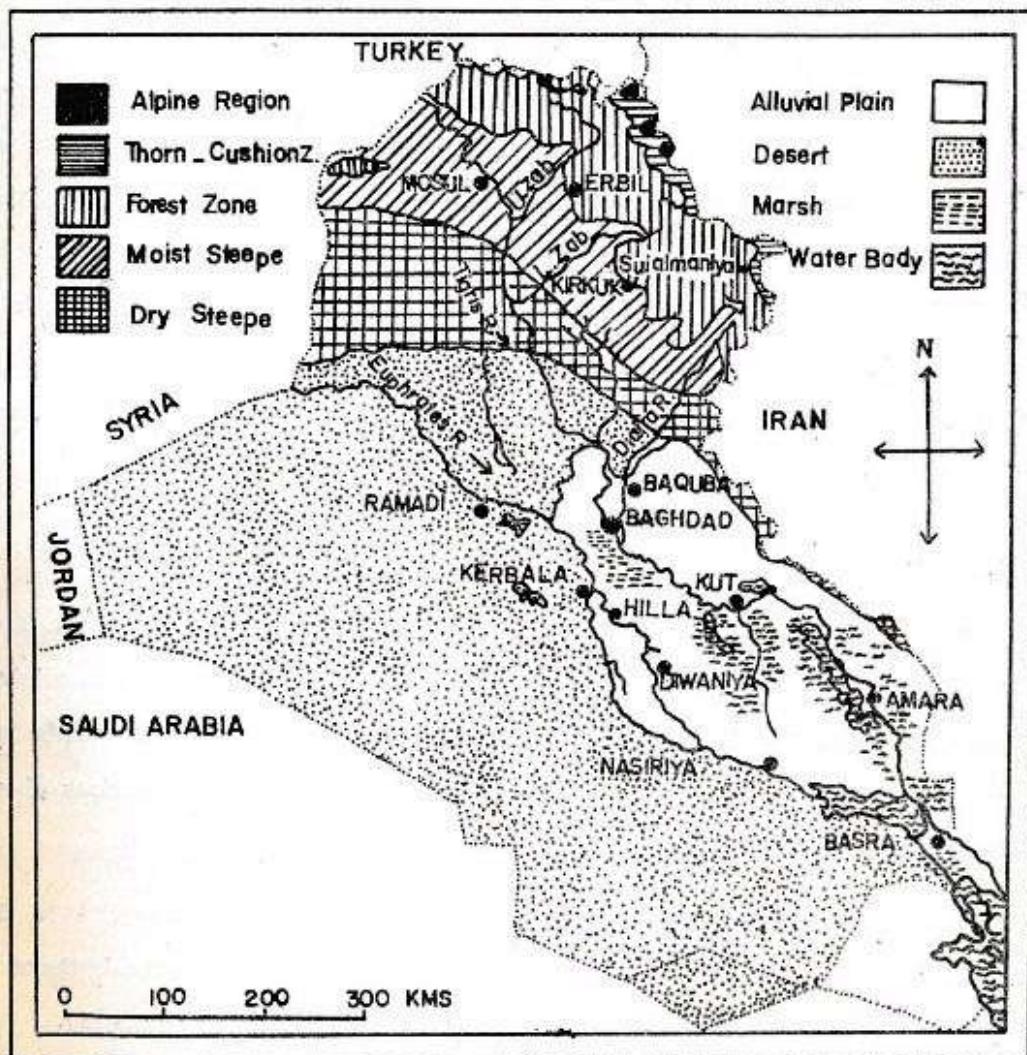


Fig. 1. Map of the vegetation and physiographic regions of Iraq.

Compiled from maps 1 and 15 in Guest and Al-Rawi (1966).

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LOCATION:

The Republic of Iraq occupies the land of old Mesopotamia. It lies between longitudes  $38^{\circ}42'$  and  $48^{\circ}42'$  E, and latitudes  $37^{\circ}23'$  N, and  $29^{\circ}27'$  and covers an area of  $438446\text{ Km}^2$ . It is bounded on the north by the mountains of Turkey, on the west by the Syrian Desert, on the south by the Saudi Arabian Plateau, on the south-east by the Arabian Gulf, and on the east and north-east by the mountains of Iran.

The Twin Rivers of Iraq, the Tigris and the Euphrates, arise from the mountains of Turkey and flow in a south-east direction. In the lower basin of Iraq they flow through flooded areas, constituting the permanent marshes; then, they, meet north of Basra to form the Shatt Al-Arab (The Arab River) which flows to the Arabian Gulf. Four tributaries run through the east of the Tigris and empty their water in it. These are the Upper Zab, south of Mosul, the Lower Zab, the Adhaim, and Diyala just south of Baghdad. The Euphrates, on the other hand, has no tributaries except the wadis (temporary watersheds) of the Western Desert.

CLIMATE:

In general, Iraq is an arid dry country with a continental climate, i.e., extremely hot in summer (except in the mountains) and very cold in winter, with great fluctuation in daily temperature and relative humidity. This has to be expected if we know that the area of the desert alone comprises about 40% ( $167000\text{ Km}^2$ ) of the total area of the country.

Rainfall is seasonal, commencing from Nov to the end of April. In the mountains it is much greater than it is in the plains. In general, there is an increase in the amount of rainfall as one goes northward (Table 1).

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Table 1. Annual Rainfall

Station	Mean (mm)
Basra (southern plains)	141
Baghdad (central plains)	144
Rutba (Western Desert)	117
Mosul (steppe)	363
Rawanduz (northern mountains)	940

NATURAL VEGETATION:

The natural vegetation of Iraq may be classified under five categories: desert, steppe, alluvial, forest and alpine vegetation (Fig. 1).

1. Desert Vegetation. The Western and Southern Deserts lie west of the Euphrates and extend to the Syrian, Jordanian and Saudi Arabian borders. Desert plants are annual herbs and herbaceous or woody perennials and biennials.

2. Steppe Vegetation. The steppe lies north of the Western Desert. It extends from the Syrian borders across the Tigris to cover the foothills. The Upper Jezira lies in the moist steppe, while the Lower Jezira lies in the dry steppe; both lie west of the Tigris. The vegetation is practically continuous with that of the desert, but is favoured by better climatic conditions, having: a. more rainfall and higher humidity, b. higher altitude and lower temperature. Consequently, the steppe has a higher density of plant population.

3. Alluvial and Marsh Vegetation. Many species of alluvial plants are characterised by having succulent or spinose organs. *Phragmites communis*

and *Typha angustata* may be mentioned as examples of marsh plants. In general, the alluvial land is utilized for the cultivation of date-palms and seed crops.

4. Forest Vegetation. The plants are confined to altitudes between 700 and 1800 meters. *Quercus* species are dominant, while *Pinus*, *Pistacia* and *Juniperus* come second to *Quercus*. Many other species of trees such as *Platanus*, *Juglans*, *Crataegus* and *Tamarix* grow by water streams along with fruit trees. Annual and perennial plants grow on the slopes among these trees.

5. Alpine Vegetation. The plants thrive at altitudes above 1800 meters, beyond the timber line. Plants like *Medicago sativa* and *Taraxacum leavigatum* grow in a belt lying between 1800 and 2000 meters high. On tops of mountains perennials like *Astragalus*, *Carduchorum* and *Acantholimon calverti* grow. Their stems and branches are modified into cushion-like structures, and are almost dome-shaped. Such plants occupy the thorn-cushion zone.

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PART I. PHYTOPHAGOUS SPECIES, 1—844

ACARINA

ERIOPHYIDAE

1. *Aceria ficus* (Cotte). Attacks fig leaves; Mosul: undated; Diyala: Dec; Baghdad & Hilla: undated.
2. *A. granati* (Can. & Mass.). Attacks leaves of pomegranate causing leaf-margin curl; Mosul & Sulaimaniya: undated.
3. *A. makiei* Keif. Attacks oak leaves; Mosul: Oct; Sulaimaniya: Sept.
4. *A. olea* (Nal.). Attacks olive leaves, causing leaf & fruit malformation; Baghdad: Nov.
5. *A. (Eriophyes) stephanii* (Nal.). Attacks buds of terpentine tree; Mosul: Oct & Nov.
6. *A. (Eriophyes) tristriatus* (Nal.). Attacks willow leaves, producing leaf-galls and brownish blisters on upperside and, sometimes, on underside; Erbil: undated.
7. *Calepitrimerus baileyi* Keif. Attacks apple leaves.
8. *Diptacus gigantorhynchus* (Nal.) Attacks peach leaves turning them brown.
9. *Eriophyes ilicis* Cau. Attacks oak leaves, producing blisters on leaf underside; Mosul: Oct.
10. *E. pyri* (Pigst.) (= *E. piri* Nal.). Attacks pear leaves, producing brownish blisters on underside; Mosul: Oct; Baghdad: March.
11. *E. similis* Nal. Same on apricot; Mosul: Oct.

12. *E. vitis* (Pigst.). Attacks grape leaves, producing reddish blisters on both sides; Mosul, Diyala & Baghdad: Oct.
13. *Mackiella phoenicis* K. Attacks date-palm leaves; Baghdad: Jan.
14. *Oxypleurites maxwelli* K. Attacks olive leaves and twigs, producing leaf galls and curls, and growth retardation of both leaves and fruits; Baghdad: Dec; Basra: Jan.
15. *Rhizoglyphus echinopus* (F. & R.). Feeds on *Carum*, *sesbania* and onion bulbs, resulting in bulb rot and the host failure to produce growth; Baghdad: Dec.
16. *Rhyncaphytoptus ficifoliae* (Nal.) Attacks fig leaves, producing russet effect; Mosul, Sulaimaniya & Baghdad: undated; Diyala: Oct.
17. *Tumescoptes trachycarpi* K. Attacks date-palm leaves; Baghdad: June.
18. *Vasates lycopersici* (M) (= *V. destructor* (Keif.)).<sup>4</sup> Attacks leaves of tomato and eggplant which may curl and show discoloration; brownish or silvery russetting on fruit ring is also produced; Baghdad: May.
19. *V. schlectendali* (Nal.) Attacks apple leaves and turn them rusty; Baghdad: May.

#### TENUIPALPIDAE

20. *Aegyptobia* sp. Attacks poplar leaves; Baghdad: March.
21. *A. pseudoleptooides* (Baker & Pritchard). Attacks poplar and willow; Baghdad: Aug.
22. *Brevipalpus californicus* (Banks). Same on apple, oak, date-palm and rose.
23. *Cenopalpus (Brevipalpus) lanceolatisetae* (Attiah). Attacks apple leaves and buds.

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24. *C. pulcher* (C. & P.) (= *B. oudemansi*). Attacks leaves and buds of apple, quince and peach; Baghdad: undated.
25. *Raoiella indica* Hirst. Feeds on leaves of date-palm, producing yellow patches; Diyala: Nov.
26. *Tenuipalpus* spp. Attack leaves of poplar, willow, pistachio, myrtle and *Sylibium marianum*, causing leaf discoloration; Mosul: Sept; Baghdad: Feb, June, Sept & Oct.
27. *T. baeri* Reck. Attacks poplar and willow leaves; Baghdad: July.
28. *T. eriophyoides* Baker. Feeds on unripe fruits of date-palms, leaving light spots on sites of feeding; Baghdad & Basra: year-round.
29. *T. granati* Sayed. Attacks leaves of pomegranate and grape, producing discoloration; leaves and flowers might fall later; Diyala, Baghdad, Ramadi & Kerbala: undated.
30. *T. haidari* Mohammed. Attacks pistachio leaves; Mosul: April.
31. *T. pacificus* Baker. Same on myrtle; Baghdad: May.
32. *T. punicae* (P. & B.).<sup>3</sup> Attacks leaves and buds of pomegranate; infested leaves turn silvery, then brown and finally fall; severe infestation results in defoliation; Diyala, Baghdad, Ramadi & Basra: March—Dec.

TETRANYCHIDAE

33. *Bryobia arborea* M. & A. Attacks apple leaves; Baghdad: March.
34. *B. praetiosa* Koch. Attacks leaves of apple, cucumber, hairy cress and verbena, producing pale dusty appearance of foliage; young buds and twigs are also attacked; Baghdad: April.
35. *Eotetranychus* sp. Attacks apple leaves; Diyala & Baghdad: Oct.

36. *E. (Tetranychus) sexmaculatus* (R.). <sup>2</sup> Same on apple, peach and fig; Kut: June.
37. *Eutetranychus orientalis* (Klein). Attacks leaves, young twigs and fruits of citrus and bitter orange, causing their discoloration; Basra: Oct.
38. *Neotetranychus* sp. Attacks leaves of apple and fig; Baghdad: Feb.
39. *Oligonychus (Paratetranychus) afrasiaticus* McG. <sup>4</sup> Attacks unripe fruits of date-palms producing web around them; dust accumulates on web and fruits which results in reduction of fruit quality and leaf discoloration; Diyala, Baghdad, Ramadi, Hillia & Basra: Feb, July—Sept.
40. *O. pratensis* (Banks). <sup>4</sup> Same; Basra: undated.
41. *Tetranychus atlanticus* McG. <sup>4</sup> Attacks leaves of most fruit trees, vegetables and crops; dust accumulates on web and leaves and interferes with photosynthesis; leaves become weak and dry, and finally fall; Mosul, Diyala, Kut, Kerbala & Basra: Feb.
42. *T. telarius* (L) (= *urticae* Koch, *bimaculatus* Harvey, *Epitetranychus* Zacher). <sup>3</sup> Attacks leaves of peach, citrus, cowpea and castor, producing silvery effect on them and fruit discoloration.

TYDEIDAE

43. *Pronematus* sp. Attacks apple and citrus leaves; Baghdad: undated.

COLEOPTERA

ALLECULIDAE (CISTELIDAE)

44. *Mycetocharina* sp. <sup>5</sup> Adults feed on leaves of sugar-beet; larvae probably on rotten wood and humus; Mosul: April.

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ANOBIIDAE

45. *Lasioderma serricorne* F.<sup>4</sup> Feeds on stored tobacco and other stored plant and animal products; country-wide: year-round.

BOSTRYCHIDAE

46. *Enneadesmis obtusedentatus* L.<sup>2</sup> Larvae bore through stems and twigs of pomegranate and fig, and weaken the infested parts; Baghdad & Basra: April, May & Nov.
47. *Octodesmus* sp.<sup>2</sup> Larvae bore through felled trees of pistachio, *Eucalyptus* and *Robinia*; Mosul & Diyala: March & April.
48. *Phonapate frontalis* Fahr.<sup>3</sup> Adults and larvae bore through fronds and twigs of date-palms and tamarisk, causing weakness and death of infested parts; Baghdad to Basra: May & June.
49. *Prostephanus truncatus* (Horn).<sup>1</sup> Adults and larvae feed on stored corn; Baghdad: July.
50. *Rhizopertha dominica* F.<sup>4</sup> Adults and larvae feed on stored cereals; country-wide: year-round.
51. *Scobicia chevrieri* Villa.<sup>4</sup> Larvae bore through stems of apricot, pear, pomegranate and fig; Mosul: March—May & Sept.
52. *Sinoxylon anale* Lesne.<sup>4</sup> Adults bore in growing buds of the same hosts as above; larvae in twigs which break easily and affect tree death; Mosul & Baghdad: March, July & Oct.
53. *S. ceratoniae* Lesne.<sup>2</sup> Larvae on sapwood of dead trees of *Dalbergia* and *Prosopis juliflora*; Erbil: Sept; Ramadi: July.
54. *Xylobiops basilaris* Mull. Larvae bore through wood of mulberry, *Albizia* and *Robinia*; Ramadi: June.

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55. *Xylonites praestus* Gar. \* Same on pistachio, poplar and fig; Mosul & Baghdad: April, May, Sept & Oct.

BRUCHIDAE

56. *Acanthoscelides obtectus* Say. Larvae feed inside stored beans; country wide: warm seasons.
57. *Bruchidius sericeus* Geof. Larvae feed on seeds of Malta jute; Baghdad: Aug; Nasiriya: April.
58. *Bruchus incarnatus* Boh. \* Same on broad bean; country wide: March-Nov.
59. *B. pisorum* L. \* Adults feed on young leaves and pollen of legumes; larvae inside fresh and stored seeds of the same; heavily-infested seeds are rendered worthless; Baghdad & Kerbala: Feb, March & Nov.
60. *B. rufimanus* Boh. \* Same on broad bean; country-wide: March—Nov.
61. *Callosobruchus chinensis* (L). \* Larvae feed inside fresh and stored seeds of chick pea; heavily-infested seeds are rendered worthless; Baghdad: Oct.
62. *C. maculatus* (Fabr.). \* Same on chick pea and green gram; Baghdad: March & Aug.
63. *Caryedon serratus* Ol. \* Larvae feed inside tamarind seeds; Basra: Aug & Sept.
64. *Pachymerus fuscus* Gze. \* Same on *Acacia farnesiana* and *Prosopis* spp.; Erbil: June—Sept; Ramadi: June & July; South: May—Aug.

BUPRESTIDAE

65. *Acmaeodera densisquamis* Ob. \* Larvae bore through fig stems; Mosul: July.

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66. *A. despects* Baudi. Larvae bore through phloem of twigs and young stems of fig and pistachio; Mosul: March.
67. *A. flavolineata* C. & G. Same on oak; Erbil: April.
68. *A. longissima* Ob. \* Larvae are stem borers of weak pistachio and turpentine trees; Mosul: May & June.
69. *A. spilophora* Mars. Larvae bore in phloem wood of pear stems; Erbil: April.
70. *Agrilus hastulifer* Ratz. Larvae are wood borers of oak, chestnut and *Carpinus betulus*; Mosul: June.
71. *A. lineola* Redt. Adults feed on flowers of *Casuarina* and *Achillea* sp.; larvae wood borers; Mosul: June.
72. *Anthaxia* sp. \* Larvae bore superficial hibernation tunnels beneath bark of dying or newly-dead branches of pistachio, turpentine tree and *Robinia*; infested branches become dry; Mosul: April & May.
73. *A. brevis* C. & G. Larvae are phloem wood borers of turpentine tree; Erbil: March & April.
74. *A. schah* Ob. \* Larvae are stem borers of weak fig trees; Amara: March.
75. *A. sepulchralis* F. Larvae are wood borers of pine; Mosul: April.
76. *A. xinkleri* Ob. \* Larvae are stem borers of almond, plum and greengage; Mosul & Sulaimaniya: May & June.
77. *Euprestis cupressi* Germ. \* Same on *Cupressus* and *Thuja orientalis*; Erbil: May & July.
78. *Capnodis carbonaria* Klug. \* Adults feed on growing shoots and newly-formed seeds of almond and apple; larvae in roots and collars; Mosul & Sulaimaniya: May & June.
79. *C. cariosa* Pall. \* Adults feed on green bark and leaves of young shoots

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of pistachio and turpentine tree; larvae bore near bases of major stems; infested trees gradually die; Mosul & Erbil: April—July.

80. *C. miliaris* Klug. <sup>4</sup> Adults feed on young shoots of poplars; larvae attack roots just beneath soil surface; Mosul & Erbil: May—July; Baghdad: April—Sept; Ramadi: Oct; Amara: March.
81. *C. porosa* Klug. <sup>3</sup> Adults feed on new growths of almond, apricot and sumac which break and die later; larvae are borers of major stems; Mosul, Erbil & Sulaimaniya: May & June.
82. *C. tenebricosa* Oliv. Adults feed on fructifications of *Rumex crispus*; larvae are probably wood borers of *Quercus* sp.; Mosul: May & June.
83. *C. tenebrionis* L. <sup>4</sup> Adults feed on new growths of almond, apricot, plum, peach and greengage; larvae dig in stems, crowns and upper roots; Mosul, Erbil & Sulaimaniya: May—Sept.
84. *Chalcophorella bagdadensis* C. & G. <sup>1</sup> Adults feed on young shoots of apricot, fig, mulberry and *Fraxinus*; larvae dig beneath bark and inside wood near dead regions of stem; Mosul, Baghdad & Kut: March—July.
85. *C. quadrioculata* Redt. <sup>3</sup> Larvae are stem borers of apple, mulberry, apricot, pomegranate, willow and turpentine tree; Mosul: April-June.
86. *C. stigmatica* Schon. <sup>3</sup> Adults feed on growing shoots of apple and almond which break later; larvae are wood borers; Mosul & Sulaimaniya: May & June.
87. *Chrysobothris affinis* L. Larvae are borers of dying and dead woody regions of fig and *Acacia* sp.; Mosul: June & July.
88. *C. beesoni* Cobos. <sup>2</sup> <sup>3</sup> <sup>4</sup> Larvae are stem borers of pome and stone-fruit trees, mulberry, pistachio, pomegranate and *Zizyphus*; infested trees become weak and die later; country-wide: April—July & Sept.

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89. *C. parvipunctata* Oben. Larvae are phloem wood borers of *Acacia* sp.; Mosul: June.
90. *Corebus rubi* (L.). Adults feed on leaves of *Rosa* sp.; Mosul: June.
91. *Julodis armeniaca* Mars. Same on oak; Up. Jezira: May & June.
92. *J. audouini* C. & G. Same on cereals; Mosul: April & May.
93. *J. pieditzchmanni* Kerr. Adults feed on leaves of *Tamarix* spp. and Euphrates poplar; Mosul: June & July.
94. *Lampetis argentata* Mannh. ♂ Adults feed on growing shoots of stone fruit trees, *Tamarix*, wheat and barley and kill them; larvae inside crown of *Tamarix*; country-wide except mountains: Feb, May & June.
95. *L. mimosa* Klug. Same on *Robinia* and *Casuarina*; Up. Jezira: May—July.
96. *Melanophila (Buprestis) picta* Pall. ♀ Adults feed on young shoots of poplars and willow; larvae are borers of trunk phloem and wood; associated with transmission of the fungus *Cytospora chrysosperma* (Pers.); country-wide: May—Aug.
97. *Perotis (Buprestis) lugubris* (F.). ♀ Adults feed on young shoots of oak, peach, cherry rose and *Rosa canina*; larvae are borers of new shoots and leaf peduncles; Mosul, Arbil & Sulaimaniya: April—June.
98. *Pseudocastalia aegyptiaca* Gmel. ♂ Larvae bore through dead wood of fig and felled poplars; Mosul & Kirkuk: June; Baghdad: July.
99. *Ptosima undecimmaculata* Herbst. Larvae are wood borers of trunks and branches of old and weak *Prunus* trees; Up. Jezira: May.
100. *Sphenoptera* sp. Larvae are stem borers of Chenopodiaceae; Amara: March.
101. *S. coracina* Stev. Larvae are wood borers of *Astragalus*; Up. Jezira: May.

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102. *S. dhia-ahmedi* Cobos. \* Larvae dig beneath bark of stone-fruit trees and kill cambium; upper parts become dry and die; gum accumulates on infested parts; country-wide: April—June.
103. *S. tappesi* Mars. \* Same; Mosul, Erbil & Sulaimaniya: May & June.

CANTHARIDAE

104. *Cantharis lividas* L. ? Adults feed on leaves and flowers of carrot, sugar-beet, radish, broad bean, alfalfa, wheat and poplar; larvae on decayed plant matter in soil; Mosul & Erbil: March & April; Diyala & Nasiriyah: April; Baghdad: Feb—May.
105. *C. tarsalis* Muls. Same; North: April & May; Middle & South: March.

CARABIDAE

106. *Amara aenea* Dejean. Adults occasionally feed on soft grains of wheat and other cereals; Erbil: May; Diyala: April; Baghdad: March.
107. *Scarites eurytus* Fisch. Larvae feed on roots and newly germinating seeds of cotton, castor bean and sugarcane; Mosul: April—June.
108. *Zabrus morio* Menetries. Adults feed on flowers and soft grains of wheat and other cereals; larvae skeletonize young leaves; Mosul: Dec & Jan.
109. *Z. tenebrioides* Goeze, Same; Mosul: April—Sept.

CASSIDIDAE

110. *Cassida brevis* Wse. Larvae feed on leaves of unidentified weeds; Mosul: June.

CERAMBYCIDAE

111. *Arhopalus ferus* (Muls.). ? Larvae are wood borers of dead and, probably, live pine trees; Mosul: May—Aug.

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112. *Aromia moschata* (L.). Larvae are stem and branch borers of willow and oak, causing permanent physiological damage; unlocated: June.
113. *Cartallum ebulinum* (L.). Undetermined feeding habits on barley, flax and broad bean; North: April & May; South: March.
114. *Cerambyx cerdo* L. \* Larvae are stem and branch borers of willow, oak and elm; their attack facilitates entry of wood-rotting fungi; Sulaimaniya: March—May & Aug.
115. *C. dux* Fald. Larvae are wood borers of oaks; Mosul: June & July.
116. *Chlorophorus varius* Mull. \* Larvae bore through inner bark and woody parts of major stems and shoots of dead and dying pome and stone fruit trees, mulberry, grape and fig; country-wide: May—July.
117. *Clytus* sp. Larvae are wood borers of live pistachio, mulberry, fig and locust-tree; Mosul: May & June.
118. *Hesperophanes griseus* (F). \* Larvae are wood borers of fig, causing weakness and death of infested trees; Up. Jezira: June & July.
119. *H. preissi* Heyd. \* Same; Mosul: May & June.
120. *H. sericeus* (F). Larvae attack woody parts of weak and dead oak, wild pistachio and wild almond trees; Erbil: July & Aug.
121. *Jebusaea hammerschmidti* Reich (= *Pseudophilus testaceus* Gahan). \* Larvae dig through leaf bases of date-palms first, then through stem; causing weakness of tree and low yield; Middle & South: April—July.
122. *Osphranteria coerulescens* Redt. \* Larvae dig through major stems and young shoots of pome and stone fruit trees, leaving the outer bark only; infestation results in desiccation and death of distal parts; Mosul: May & June.
123. *Plagionotus arcuatus* L. Larvae are wood borers of oak; Mosul: June.

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124. *P. bobelauei* Brulle. Adults feed on flowers of *Althea* sp.; larvae are wood borers; Mosul: June.
125. *Pseudaalbana lameeri* Pic. Larvae are stem borers of melon and water melon; causing weakness and death of plant.
126. *Purpuricenus (Cerambyx) budensis* Gotz. Adults feed on flowers of *Onopordon* and *Echinops*; larvae bore through branches, causing their desiccation; Mosul: June.
127. *P. dalmatinus* Strum. \* Larvae are stem borers of oak and walnut; infested trees become weak; Mosul: June.
128. *Saperda populnea* L. Adults feed on leaves of poplar; larvae bore through twigs of young plants, causing gall formation.

CETONIIDAE

129. *Cetonia aurata* L. Adults attack young leaves, flowers and fruits of wild safflower and milk thistle; Mosul: May—July.
130. *Oxythyrea cinctella* (Schaum). Adults feed on flowers and buttons of apple, rose and wild safflower, and, occasionally, on grape leaves; Mosul & Sulaimaniya: April & May; Diyala: May; Baghdad: Feb—July & Nov; Hilla: April.
131. *Potosia funberis* (G. & P.). Adults feed on flowers of wild safflower; Mosul, Erbil & Sulaimaniya: April & May.
132. *Tropinota (Epicometis) squalida* Scop. Same on legumes, crucifers and rose; Mosul: Feb; Baghdad: Feb—June & Nov; Ramadi: Sept; Basra: April.

CHRYSOMELIDAE

133. *Chalcoides faureus* Geof. \* Adults feed on leaves of poplars; Mosul: Sept.

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134. *Chrysolina chalcites* (Germ.). Adults and larvae feed on pine leaves; Erbil: undated.
135. *C. grata* (Fald). Same on unidentified weeds; Erbil: May.
136. *Chrysomela coerulans* Scriba. Adults feed on leaves of mint and unidentified weeds; Mosul: Feb; Erbil & Diyala: April & May; Baghdad: April—Nov.
137. *C. menthastris* Suff. Same; Mosul: June, July & Sept; Erbil: April.
138. *C. orientalis* Ol. Same on unidentified weeds; Sulaimaniya: May; Baghdad: March & April.
139. *Colaphellus apicalis* Men. Adults and larvae feed on leaves of turnip, cress, radish, eggplant and barley; Baghdad: March & Nov; Hilla: Oct; Kerbala: Nov; Basra: March.
140. *C. sophiae* (Schall). Same; Middle & South: Feb—April, Oct & Nov.
141. *Cryptocephalus* sp. <sup>1</sup>. Adults feed on *Tamarix* leaves; Ramadi: April.
142. *Diapromorpha* sp. Same on oak; Sulaimaniya: May.
143. *Diorhabda persica* Fald. Adults and larvae feed on leaves of *Prosopis farcta*; South: May—Aug.
144. *Entomoscelis berytensis* Reich. Same on wheat, barley and weeds; Mosul: April; Sulaimaniya: May.
145. *Lema melanopa* (L). Same on wheat, barley and other cereals; Baghdad: April.
146. *Melasoma (Chrysomela) populi* (L). Adults and larvae feed on leaves of poplar and willow; young larvae are leaf skeletonizers of young plants; Mosul: Aug; Erbil: April & July.
147. *Monolepta* sp. <sup>2</sup>. Same on willow; Sulaimaniya: Aug.

148. *Phyllotreta* sp. Adults secured from injured bark of poplar and *Eucalyptus*; Mosul: March—Nov.
149. *P. cruciferae* (Goeze). Adults feed on foliage of broad bean, turnip and beets, leaving circular or irregular holes; larvae feed on roots and cause weakness or death of plant; Sulaimaniya: July & Aug.

#### CLYTRIDAE

150. *Clytra nigrocincta* Lac. Adults feed on leaves of *Tamarix* and *Prosopis*; Mosul, Diyala & Baghdad: March & April; Amara: April; Nasiriyah: April—Sept; Basra: March.
151. *Coptocephala unifasciata* (Scop.). Same on Euphrates poplar; Mosul: July.
152. *Gynandrophthalma unipunctata* Ol. \* Adults feed on leaves of *Tamarix*, pistachio and weeds; larvae inside terminal buds; Mosul & Baghdad: March—May; Ramadi, Kut & Basra: April.
153. *G. viridana* Lac. Same on wheat; Mosul: April.
154. *Labidostomis longimana* L. Adults feed on leaves of wheat and barley; Mosul & Nasiriyah: April; Sulaimaniya: May.
155. *L. propinqua* (Fald.). Same on willow; Mosul: June.

#### COCCINELLIDAE

156. *Epilachna chrysomelina* (F.). Adults and larvae feed on leaves of cucurbits, causing death of young plants; Mosul: June, Aug—Oct; Diyala: Dec; Baghdad: Jan, Feb, April—June, Aug, Oct & Dec; Ramadi: May; Kerbala: April & Nov.

#### COPRIDAE

157. *Onthophagus oberthuri* d. Orb. Adults and larvae feed on dung, barley

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fields and weeds; Diyala & Amara: March; Baghdad: Feb—July; Hilla: Sept.

158. *O. ruficapillus* Brulle. Same in soil of wheat, barley and flax fields; Sulaimaniya: May.
159. *Scarabaeus sacer* L. Same in soil of weeds; Mosul & Hilla: June; Baghdad: March—Aug & Nov; Diyala & Basra: April; Ramadi: May, July; Diwaniya: July.

CRYPTOPHAGIDAE

160. *Cryptophagus affinis* Sturm. (= *C. laticollis* Lucas). Probably feed on fungi in soil of turnip fields; Baghdad; Jan.

CUCUJIDAE

161. *Cryptolestes (Laemophloeus) pusillus* (Schon.). Adults and larvae feed on stored dates and grains; Baghdad: May—Nov.
162. *Laemophloeus ferrugineus* Stephens. Same.
163. *Oryzaephilus (Silvanus) surinamensis* (L.). Same; infested fruits or seeds become unfit for human consumption; country-wide: year-round.
164. *O. mercator* (Fauv.). Same; country-wide: year-round.

CURCULIONIDAE

165. *Acythopeus curvirostris* (Tournier) (= *Baris granulipennis* Tourn.). Larvae feed inside fruits of water-melon, causing lignification of flesh; Baghdad: June.
166. *Bagous* sp. Adults and larvae probably feed on stems and flower stalks of rice; Erbil: June; Baghdad: May.
167. *Brachytemnus porcatus* (Germ.). Larvae feed beneath bark and outer sapwood of felled pine trees; Mosul: May—Aug.

168. *Cleonus (Conorrhynchus) brevirostris* (Gyll.). Adults feed on buds and buttons of beet; larvae on roots and germinating seeds; Baghdad: May & June; Kut: May.
169. *Curculio* sp. <sup>2</sup> Larvae feed inside acorns of oaks which turn black and fall early; Sulaimaniya: Sept.
170. *C. glandium* Marsh. <sup>2</sup> Same; Sulaimaniya: Sept & Oct.
171. *C. longipennis* (Reitt.). <sup>2</sup> Same; Sulaimaniya: Oct.
172. *Echinocnemus* sp. Larvae feed on rice roots; Erbil: June.
173. *Esamus mniszechi* Hochhut. Adults feed on *Tamarix* leaves; Mosul & Baghdad: March & April.
174. *Hydronomus* sp. Larvae feed on rice roots; Kerbala & Diwaniya: summer.
175. *Hypera variabilis* (Hbst.) (= *H. postica* Gell.). Adults feed on leaves and stems of alfalfa; larvae on young leaves; Mosul & Kut: April; Baghdad: Jan, March—May; Ramadi, Kerbala & Diwaniya: March; Nasiriya: Feb.
176. *Hypolixus nubilosus* Boh. (= *H. pulvisculosus* Boh.). <sup>1</sup> Adults feed on leaves of *Acacia*, *Tamarix* and turnip; Baghdad: July, Aug, Nov & Dec.
177. *Larinus griseescens* Gyll. Larvae feed on and destroy young developing seeds of safflower; Baghdad: March—June.
178. *L. onopordi* (F). Larvae bore through flower heads of unidentified composite weeds; Mosul: April—June; Up. Jezira: Oct; Sulaimaniya: May.
179. *L. ovaliformis* Cap. Same on wheat, barley and composite weeds; Mosul & Kerbala: April; Sulaimaniya: May.
180. *L. syriacus* Gell. Larvae feed on and destroy young developing seeds of safflower; Baghdad: March—June.
181. *Lixus incanescens* Boh. <sup>1</sup> Larvae feed on leaf petioles of unidentified weeds; Mosul: March & Sept; Baghdad: April; Hilla: Oct.

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182. *Megamecus confinis* Gyll. Adults feed on leaves of Euphrates poplar; Baghdad: March.
183. *Mesistes cunipes* Boh. <sup>2</sup> Larvae feed on heartwood of white willow, and may facilitate the entry of fungi; Sulaimaniya: Aug.
184. *Myllocerus damascenus* Mill. Adults feed on leaves of alfalfa, cotton, water-melon, poplar, citrus, peanut; and *Robinia*; Mosul: May—Sept; Baghdad: Aug & Sept.
185. *Picia alvierii* Pic. Larvae feed on rice roots; unlocated: July.
186. *Polydrusus* sp. (= *Eustolus*). Adults attack green twigs and buds of oak; larvae are leaf-miners; Sulaimaniya: May.
187. *Rhyncaenus erythropus* (Germ.). <sup>2</sup> Larvae make blotch mines on upper surfaces of oak leaves; Sulaimaniya: Oct.
188. *Sitona* spp. Adults feed on leaves of legumes; larvae on roots; Mosul: March; Diyala: undated.
189. *Sitophilus granarius* (L.). <sup>4</sup> Larvae feed on endosperm of stored cereal grains; Baghdad: Jan & Aug; Ramadi: May & July.
190. *S. linearis* (Hbst.). Same on peanut and tamarind; Basra: March & Sept.
191. *S. oryzae* (L.). <sup>4</sup> Same on rice and other cereals; country-wide: year-round.
192. *Tanymecus dilaticollis* Gyll. <sup>3</sup> Larvae feed on leaves of barley and beet; Baghdad: Jan & July; Nasiriya: March.

DERMESTIDAE

193. *Anthrenus* sp. <sup>4</sup> Adults feed on pollen; larvae on dead insects; Baghdad: March, April, Sept & Dec.
194. *A. vorax* Waterh. Same on animal and plant material; Baghdad: June.

195. *Attagenus gloriosae* Feb. (= *A. fasciatus* (OL.)). Adults feed on pollen; larvae on stored tobacco; Baghdad: Sept.
196. *A. piceus* (OL).<sup>2</sup> Larvae feed on stored wheat and rice; Baghdad; undated.
197. *Dermestes maculatus* De Geer (= *D. vulipinus* F.). Adults and larvae feed on animal and plant products; Baghdad: June.
198. *Phradonma nobile* Rtt. Larvae feed on stored silk cocoons; Baghdad & Basra: Sept.
199. *Trogoderma granarium* Everts. Larvae feed on stored cereals and legumes; country-wide: year-round.
200. *T. inclusum* Le Cont. Larvae feed on cereal products; Baghdad: Sept.
201. *T. versicolor* Crentz. Same; Baghdad: Sept & Oct.

#### DYNASTIDAE

202. *Oryctes elegans* Prell. Adults and larvae bore through crown, leaf petioles, and peduncles of fruit clusters of date-palms causing dwarf fruits; Kirkuk, Diyala, Baghdad & Basra: April—Aug.
203. *O. sinaicus* Walk.<sup>3</sup> Same; Basra: April, May & Aug.
204. *Pentodon bispinosus* Kust. Adults feed on green bark of cereals and weeds at soil level; larvae on roots; Mosul, Diyala, Amara and Basra: April; Baghdad: Oct—June; Ramadi: May & Nov; Hilla: June; Nasiriya: March & Sept.

#### ELATERIDAE

205. *Agriotes* sp. Larvae attack germinating seeds of cotton, carrot, potato, lettuce and cereals; Mosul: April & May; Baghdad: March, April & July—Sept.

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206. *Drasterius bimaculatus* R. • Same on sugar-beet and sesame; Baghdad: Feb—May.
207. *D. figuratus* G. • Same; Baghdad: March—May.

GALERUCIDAE

208. *Galeruca orientalis* Oscul. Adults and larvae feed on leaves and fruits of composite plants; Erbil: June.
209. *Galerucella tenella* L. Adults and larvae feed on leaves of melon, water-melon, pepper and *Eucalyptus*; Baghdad: Feb & July—Sept.
210. *Raphidopalpa (Aulacophora) foveicollis* (Lucas). Adults feed on leaves, flowers and young shoots of cucurbits; larvae on roots and lower parts of stems; Middle & South: spring & summer.

GLAPHYRIDAE

211. *Amphicoma fastuosa* R. H. Adults feed on petals, stamens and pollens of wild poppy; larvae on roots; Mosul: undated.
212. *A. papaveris* Sturm. Same on wheat, flax and poppy; Mosul, Sulaimaniya & Kirkuk: April & May.
213. *A. vittata* F. Same on wild safflower; Mosul & Sulaimaniya: May & June.
214. *A. vulpes* (F.). Same on wild poppy; Mosul, Erbil & Baghdad: March & April.

HALTICIDAE

215. *Altica (Haltica) deserticola* Wse. Adults and larvae feed on leaves of willow and liquorice; Mosul: March—Oct; Sulaimaniya: May, June & Nov; Baghdad: April—June.
216. *A. tamaricis* Schr. Same on *Tamarix*.

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217. *Aphthona flaviceps* Allard. Adults feed on pistachio leaves; Mosul: March.
218. *A. fuentei* Reit. Same on pistachio and poplar; Mosul: March & Sept.
219. *Chaetocnema conducta* (Motsch.). Adults feed on vegetable leaves; larvae on roots and subterranean growths; Baghdad: March.
220. *Hermaeophaga ruficollis* Luc. Adults feed on poplar leaves; Mosul & Baghdad: Aug & Sept.
221. *Podagrion malvae* (Ill.). Same on cotton, okra and orange; Kerbala: March.
222. *P. puncticollis* Wse. Same on pear; Erbil: April.

LAMIIDAE

223. *Agapanthia cardui* (L). Adults feed on leaves and flowers of broad bean; early larvae are stem miners; late larvae show cannibalism (cf. 884); Mosul & Sulaimaniya: May & June; Baghdad & Amara: March.
224. *Phytoecia humeralis* Walt. Larvae are stem borers of barley and flax; Mosul: April & May; Sulaimaniya: May; Baghdad & Amara: March & April.
225. *P. molybdaena* Dalm. Same on wheat and sugar-beet; Erbil: June; Sulaimaniya: May.

LYCTIDAE

226. *Trogoxylon impressum* (Comolli). Larvae attack dead wood of *Tamarix*, and *Robinia pseudoacacia* and cause damage; Mosul: May—July.

MELOIDAE

227. *Cerocoma scovitzii* Fald. Adults feed on leaves of unidentified weeds; Mosul: June; Sulaimaniya: May.

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228. *Epicauta textilis* Haag. <sup>♂</sup> Same on sugar-beet, potato, eggplant, myrtle, alfalfa; Sulaimaniya & Kut: May; Baghdad: April, May & Sept.
229. *Lydus preustus* Mars. Adults feed on pollen of composite weeds; larvae probably on eggs of grasshoppers (cf. 886); Mosul: May & June.
230. *Micromerus (Lydus) collaris* (F.). Adults feed on leaves of wheat, garden-beet and oak; Mosul & Erbil: June; Sulaimaniya: May; Diyala: April.
231. *Mylabris bipunctata* Oliv. Adults feed on stamens of *Prosopis* and okra; Baghdad: July; Hilla: June.
232. *M. cincta* Oliv. Same on broad bean, Bermuda grass and weeds; Mosul: July; Sulaimaniya & Diyala: April & May; Baghdad & Amara: April.
233. *M. quadripunctata* L. Adults feed on leaves and stamens of unidentified weeds; larvae probably on eggs of migratory locusts (cf. 889); Mosul: May & June; Sulaimaniya: May.
234. *M. syriaca* Klug. Same; Mosul: May & Aug; Sulaimaniya: May.

NITIDULIDAE

235. *Carpophilus dimidiatus* F. <sup>♂</sup> Adults and larvae feed on flesh and seeds of harvested and fallen dates; Baghdad & Basra: June & Aug—Oct.
236. *C. hemipterus* (L). <sup>♂</sup> Same; Baghdad: June; Basra: Feb, May & June.
237. *C. ligneus* Murr. <sup>♂</sup> Same; Baghdad & Basra: Aug.
238. *C. obsoletus* Er. Adults feed on pollen of date-palms; Baghdad: March.

ORSODACNIDAE

239. *Orsodacne variabilis* Baly. <sup>♂</sup> Adults feed on oak flowers; Up. Jezira: March.
240. *Zeugophora* sp. Larvae leaf miners of poplars; Erbil: Feb.
241. *Z. scutellaris* Suffr. Same; Erbil: Feb.

OSTOMIDAE

242. *Tenebrioides mauritanicus* L. ♂ Larvae feed on stored grain and cereal products; occasionally on other insects in the same medium; middle & South: warm seasons.

PTINIDAE

243. *Gybbium psylloides* (Czemp.). Adults and larvae feed on stored seeds, wool, plant and animal collections; Baghdad: April.

RUTELIDAE

244. *Adoretus* sp. ♂ Adults are leaf skeletonizers of poplars and willow; they weaken the infested trees and encourage attack by *Melanophila picta*; larvae feed on roots (cf. 96); Mosul: July.
245. *A. comptus* Men. Adults feed on leaves of stone fruit trees and grape; larvae on roots; Baghdad: March & Nov.
246. *A. discolor* Fald. Same on peach; Erbil: Oct.
247. *A. irakanus* Ohs. ♂ Same on poplar, willow and *Pyrus* spp.; Mosul: May—July; Baghdad: June.
248. *A. pruinosus* Ball. Same on poplars; Mosul: June & July.
249. *Anisoplia leucaspis* Cast. Adults feed on leaves and soft seeds of willow, Euphrates poplar, *Tamarix*, sugar-beet and cereals; larvae on roots and seedlings; Mosul & Erbil: April & June; Sulaimaniya: May; Baghdad: March.
250. *Anomala dubia* Scop. ♂ Adults feed on leaves of sycamore, pistachio, poplar, grape and pear; Mosul: June & July.
251. *A. vitis* (F). Adults feed on leaves and blossom of poplar; larvae on roots; Mosul: June.

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252. *Cteniopus pallidus* (Kust.). Adults feed on *Tamarix* flowers; Mosul: May & June.

253. *Omophlus* sp. Adults feed on leaves and flowers of unidentified weeds; larvae on humus and rotten wood first, then on roots and germinating seedlings of cereals; Mosul: Oct & Nov.

SCARABAEIDAE

254. *Rhizotrogus deserticola* Blauch. Adults feed on leaves of oak and pine; larvae on roots; North: undated.

SCOLYTIDAE

255. *Aricerus (Chaetoptelius) vestitus* (Muls. & Rey.).<sup>1</sup> Adults feed on buds and leaf axiles of maple, elm, pistachio, white ash, olive and junipers, causing leaf wilting; larvae dig tunnels beneath bark of weakened trees; Mosul: March—Dec.

256. *Carphoborus (Estenoborus) perrisi* Chap. Larvae are bark borers of pistachio; Mosul: undated.

257. *Hypoborus ficus* Er.<sup>2</sup> Larvae feed on fig bark, causing its separation from tree; North & Middle: Feb—April & Oct.

258. *Onthotomicus proximus* (Eich).<sup>3</sup> Larvae dig tunnels beneath bark of pine; Mosul: May—Sept.

259. *Phloeotribus scarabaeoides* Bernard (= *P. olea* F. and *P. delphilus* Del G.).<sup>3</sup> Adults attack and destroy healthy twigs of olive; larvae attack inner bark of twigs and cause leaf wilting; Mosul: April & May.

260. *Scolytus amygdali* Rtt. Larvae dig tunnels through bark of pome and stone-fruit trees; Mosul: Oct & Nov; Baghdad: April.

261. *S. koenigi* Schew. Larvae dig through bark of maple; Sulaimaniya: May.

262. *S. rugulosus* Ratz.<sup>4</sup> Adults feed on buds of pome and stone-fruit trees;

larvae dig through bark, causing wilt and death of infested parts; country-wide: March—Sept.

263. *Xyleborus dryographus* Retz. Larvae feed on sapwood and heartwood of oak trunk and branches; Sulaimaniya: Sept & Oct.
264. *X. monographus* (F).<sup>2</sup> Same; Sulaimaniya: May & Aug.

#### TENEBRIONIDAE

265. *Alphitobius diaperinus* (Panz.). Adults and larvae feed on stored wet seeds of wheat; Erbil & Diyala: April; Baghdad: Jan—May, Aug & Dec ; Ramadi: May.
266. *Gonocephalum pusillum* (F). Larvae attack germinating seeds of barley, sorghum and weeds; Sulaimaniya: May; Baghdad: April—June; Hilla: June; Amara & Basra: March.
267. *G. rusticum* Oliv. Same on wheat, barley, tomato and weeds; Mosul: April; Sulaimaniya: May & Oct; Baghdad: April—July; Hilla: June; Amara: March; Basra: Jan & March.
268. *G. setulosum* Fald. Same on cucumber; Baghdad: March; Ramadi: Aug; Hilla: Sept.
269. *Latheticus oryzae* Waterh.<sup>3</sup> Larvae feed on stored cereal products; Middle & South: warm seasons.
270. *Mesostena angustata* (F). Adults feed on buds of unidentified weeds; Amara: March.
271. *M. puncticollis* Sol. Same on barley; Mosul: April; Diwaniya: March & April.
272. *Opatroides punctulatus* Bruelle. Adults feed on leaves of poplar, *Eucalyptus*, apricot, tobacco and weeds; larvae on seedlings and mine through

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- Eucalyptus* leaves; Mosul: March—July; Diyala: Dec; Baghdad: Feb—April, June, Nov & Dec.
273. *Palorus ratzeburgi* (Wiss.). Adults and larvae feed on stored flour; Mosul & Erbil: April; Sulaimaniya: May.
274. *Scleron fossulatum* Mols. Larvae feed on young seedlings of unidentified weeds; Mosul: April.
275. *S. sulcatum* Baudi. Same; Ramadi: May.
276. *Strongylium* sp. ♀ Larvae are stem borers of fig; Mosul: May & June.
277. *Tribolium castaneum* Hbst. ♀ Adults and larvae feed on stored grains and cereal products; country-wide: year-round.
278. *T. confusum* Duval (= *T. ferrugineum* Feb.). ♀ Same; country-wide: year-round.

DIPTERA

**AGROMYZIDAE**

279. *Agromyza megalopsis* Hg. ♀ Larvae mine through wheat and barley leaves; Baghdad: March.
280. *A. nana* Meig. Same on alfalfa and other legumes; Baghdad: March & April.
281. *Liriomyza* sp. ♀ Same on legumes and crucifers; Basra: March & April.
282. *L. brassicae* (Ril.). ♀ Same; Basra: March & April.
283. *L. bryoniae* Kitb. Same on cucumber, melon and other cucurbits; Baghdad: May.
284. *L. congesta* (Beck.). ♀ Same on legumes and crucifers; Baghdad, Kut, Amara & Basra: March & April.

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285. *L. strigata* (Mg.). <sup>2</sup> Same; Basra: March & April.
286. *Melanagromyza* sp. <sup>2</sup> Larvae dig through sesame stems, causing wilting of growing tips; Baghdad: July.
287. *Phytomyza atricornis* Mg. <sup>2'3</sup> Larvae mine through leaves of alfalfa, sweet pea, potato, flax, turnip, sunflower; Baghdad: March—May; Kut, Hilla, Kerbala, Diwaniya, Amara & Basra: March & April.
288. *P. horticola* Goureau. <sup>2</sup> Same on lettuce; Baghdad: March.

BIBIONIDAE (SCATOPSIDAE)

289. *Bibio* sp. Larvae attack germinating seeds and seedlings of unidentified weeds; Mosul: April.
290. *B. hortulanus* (L). Same on cereals, beet, tobacco and potato; Baghdad: March.
291. *Scatopse* sp. Larvae feed on decayed material of citrus; Baghdad: April.
292. *S. notata* (L). Same; Mosul: Feb.
293. *Braula* sp. <sup>2</sup> Adults cling to queens and workers of honey bees; larvae dig through wax and share food with larvae; North & Middle: spring.

CECIDOMYIIDAE

294. *Ambladariella tamaricum* Kief. Larvae feed on *Tamarix* leaves which form cone-shaped galls; Mosul: April.
295. *Phytophaga destructor* Say. <sup>4</sup> Larvae dig through stems of wheat seedlings; infested spots bulge, and the whole plant becomes dwarf and chlorotic; Kut: Feb & March.

CHLOROPIDAE

296. *Meromyza nigriventris* Macq. Larvae attack flowers, soft grains and terminal parts of young cereals and weeds; Baghdad: March.

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297. *Oscinella frit* (L.). Larvae attack terminal parts of young cereals.

DROSOPHILIDAE

298. *Drosophila melanogaster* Meig. Adults and larvae feed on fermented and decayed fruits; Baghdad: Feb—Nov.

LAUXANIIDAE (SAPROMYZIDAE)

299. *Sapromyza* sp. Larvae feed on dead leaves of beet; Mosul: Sept.

MUSCIDAE (including ANTHOMYIIDAE, LONCHAEIDAE and SCATOPHAGIDAE)

300. *Antherigona orientalis* Schin. Larvae attack and destroy young onion seedlings; Kerbala: Nov.

301. *A. varia* Mgn. Same on alfalfa and sorghum; Kut: Sept.

302. *Hylemya antiqua* Mgn. ♀ Larvae dig through onion and garlic bulbs causing leaf chlorosis and bulb rot; Baghdad: March & April.

303. *H. (Delia) arambourgi* Seguy. Larvae attack and destroy young seedlings of cereals and weeds; Baghdad: May.

304. *H. coarctata* Fall. Larvae feed inside stems of cereals and weeds, causing dead heart; undated.

305. *H. platura* (Meig.) (= *Delia cilicrura* (Rond.)). Larvae feed on germinating seeds of corn, beans and cucurbits (cf. 914); Baghdad: March.

306. *Lonchaea (Silba) aristella* Beck. ♀ Larvae feed inside fig fruits; infested fruits become sour, then fall down; Mosul, Erbil & Baghdad: May—July.

307. *Pegomyia* sp. *betae* complex. Larvae mine through leaves of beet, *Chenopodium* and *Polygonum* which die later; Baghdad: Nov & April.

308. *P. hyoscyami* (Panz.). ♀ Same on sugar-beet and spinach; seedlings are damaged too; Mosul: April & May.

**PHORIDAE**

309. *Megaselia* sp. Larvae are scavengers on stored potato, and dead plant and animal material; Nasiriyah: May.

**SCIOMYZIDAE**

310. *Sepedon* sp. Larvae are stem borers of rice; Kut: Feb.

**SYRPHIDAE**

311. *Eumerus* sp. Larvae attack onion bulbs in field and store, causing their rot; Hillah & Kerbala: Jan, Feb & June.

312. *Syritta* sp. Adults probably feed on carrot nectar; Baghdad: March.

**TRYPETIDAE (TEPHRITIDAE)**

313. *Acanthophilus helianthi* Rossi. <sup>2</sup> Larvae feed inside flower heads of safflower and damage seeds; Baghdad: March—Nov.

314. *Carpomyia incompleta* Beck. <sup>4</sup> Larvae feed inside *Zizyphus* fruits; Baghdad: May, June & Oct.

315. *Ceratitis* sp. Same on melon, *Zizyphus* and weeds; Mosul: May; Baghdad: July—Sept.

316. *Dacus zonatus* (Saund.). Same on alfalfa, melon, mango and peach; Baghdad: Aug—Oct.

317. *Myiopardalis pardalina* Bigot. <sup>4</sup> Same on melon and water-melon; Baghdad: July.

**HEMIPTERA**

**BERYTIDAE (NEIDIDAE)**

318. *Metacanthus elegans* Curt. Adults and nymphs feed on gourd leaves.

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COREIDAE

319. *Corizus (Therepha) hyosciami* L. Adults and nymphs attack leaves and stems of alfalfa; Mosul: March; Erbil: June—Aug; Diyala: April.
320. *Homoeocerus (Omanocoris) variabilis* Dall. Same on cotton and thistle; Baghdad: year-round.
321. *Liorhyssus hyalinus* (F.). Adults and nymphs attack cotton bolls, tobacco seed heads, cereals and legumes; Mosul: Sept; Baghdad: Feb & May—Aug; Ramadi: May; Kerbala: Nov.
322. *Piocoris luridus* Fleb. \* Adults and nymphs feed on poplar and pine cones damaged by *Dioryctria* (cf. 726—727); Mosul: May; Erbil: Feb.

LYGAEIDAE

323. *Nysius cymoides* (Spin.). \* Adults and nymphs damage seeds of tobacco, water-melon and grape, and seed pods of crucifers; Baghdad: May-Dec.
324. *Oxycarenus hyalinipennis* Costa. \* Adults and nymphs feed on cotton and okra seeds; infested seeds become dwarf, semi-empty and unable to germinate; Baghdad: July, Nov & Dec; Basra: Oct.
325. *Spilostethus (Lygaeus) pandurus* (Scop.). Adults and nymphs feed on cotton, corn, sesame, and ripe grapes and stone-fruits; Mosul: April; Erbil: May & Aug; Baghdad: Feb, April-Aug & Dec; Ramadi: March-May.

MIRIDAE (CAPSIDAE)

326. *Campylomma diversicornis* Reut. \* Adults and nymphs attack flowers and terminal buds of cotton, castor bean and cucurbits (cf. 937); Baghdad: Aug—Dec; Diwaniya: Aug.
327. *Creontiades pallidus* (Ramb.). Adults and nymphs attack cotton buds, and flowers and stems of clover and weeds; Baghdad: May & June; Ramadi & Kerbala: Nov; Hilla: Sept & Oct.

- 328 *Cyrtopeltis (Nesidiocoris) tenuis* Reut. ? Adults and nymphs feed on blossom of eggplant, tomato, potato and tobacco; Baghdad: Aug—Dec; Diwaniya: Aug.
329. *Deraecoris (Camptobrochis) pallens* (Reut.). Adults and nymphs attack flowers and young stems of wheat; Erbil: July; Diyala & Kerbala: Nov; Baghdad: Jan, March—May, Aug & Sept; Hilla: Oct & Nov.
330. *D. punctulatus* (Fall). Same on grape, alfalfa and crucifers.
331. *Tuponia lethierryi* (Reut.). Adults and nymphs attack young twigs and buds of *Tamarix*; Baghdad: April.

PENTATOMIDAE

332. *Aelia acuminata* (L). Adults and nymphs feed on young stems and heads of wheat and barley which produce empty seeds; produce bad odour and when left on hay, render them unsuitable as animal food; Mosul: June; Erbil: Aug; Diyala: April; Baghdad: March, April & July; Hilla: Sept.
333. *A. albovittata* Fieb. Same; North & Middle: undated.
334. *A. glehana* Fr. (= *A. rostrata* B.). Adults and nymphs attack young stems and soft grains of wheat and weeds; Mosul, Erbil & Sulaimaniya: June.
335. *Apodiphus amygdali* Germ. Adults and nymphs feed on stems and twigs of peach, plum and apricot; Baghdad: summer.
336. *Bayrada hilaris* Burm. (= *B. picta* F.). ? Adults and nymphs feed on stems and leaves of crucifers, cowpea, sugarcane and *Capparis*; Baghdad: Oct—Dec; Diyala: April; Hilla: June; Kerbala: Nov; Kut: Dec; Basra: Sept.
337. *Carpocoris fuscispinus* (Boh.). Adults and nymphs feed on young stems and heads of wheat and barley; Sulaimaniya: May; Kut: March; Amara: April.

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338. *C. pudicus* (Poda) (= *C. nigricornis* F.). Adults and nymphs feed on young stems and heads of wheat, barley, pistachio and crucifers, which produce empty seeds; stink odour left on hay renders it unsuitable for animal consumption; Mosul: March & June; Erbil, Sulaimaniya & Kirkuk: undated.
339. *C. purpureipennis* De G. Same on wheat, potato, carrot and weeds; Mosul: April; Erbil: May.
340. *Codophila lunulata* (Goeze). Adults and nymphs attack flowers and fruit pods of alfalfa and weeds; Mosul: July.
341. *Dolycoris baccarum* (L.).<sup>2</sup> Adults and nymphs feed on young and soft parts of cereals, vegetables and tobacco; Mosul: March, April, June, Sept & Nov; Erbil: May, Aug & Nov; Sulaimaniya: May; Kut: March; Amara: April.
342. *Eurydema ornatum* (L) (= *E. festivum* L.). Adults and nymphs attack flowers and terminal parts of cotton, turnip and crucifers; Up. Jezira: March; Erbil: Aug; Sulaimaniya: May; Diyala: Dec; Baghdad: Feb, March, June, July, Nov & Dec; Ramadi: Nov; Kerbala: Nov & Dec.
343. *Eurygaster integriceps* Put.<sup>4</sup> Adults and nymphs feed on young stems and heads of wheat and barley which produce empty seeds; stink odour left on hay renders it unsuitable for animal consumption; Mosul: June; Erbil: Aug; Sulaimaniya: April; Baghdad: Jan, June & Nov.
344. *Eysarcoris incospicuus* (H—S). Adults and nymphs feed on young and soft parts of cotton, legumes and forage crops; Mosul & Nasiriyah: Sept; Erbil & Basra: Aug; Baghdad: Jan, April—Sept & Nov; Ramadi: Nov.
345. *Graphosoma semipunctata* (F.). Adults and nymphs feed on flowers of carrot; Mosul: June.
346. *Nezara graminea* Fieb.<sup>2</sup> Adults and nymphs attack developing fruits of cotton, corn and millet.

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347. *N. (Acrosternum) heegeri* Fieb. Same on cotton and vegetables.
348. *N. viridula* (L.). \* Same on cotton, corn, alfalfa, sugar-beet and vegetables; Baghdad: Feb, March, May—Aug & Dec; Ramadi: March; Kut: March & Dec; Kerbala: Oct & Nov.
349. *Piezodorus lituratus* F. (= *P. incarnatus* Germ.). Adults and nymphs attack okra, plum and wheat heads; Mosul: March & April; Erbil: Aug.
350. *Thalagmus flaxolineatus* (F.). Adults and nymphs feed on carrot flowers; Mosul: June.

PYRRHOCORIDAE

351. *Pyrrhocoris apterus* (L.). Adults and nymphs attack flowers and fruits of alfalfa; Mosul: Sept; Diyala: Nov & Dec; Baghdad: Feb, June, Nov & Dec; Ramadi: Nov; Kut & Kerbala: Dec.

TINGIDAE

352. *Monosteira buccata* Horv. \* Adults and nymphs attack leaves of poplars and willow; chlorosis, break-down of leaf tissue, and early fall of leaves result; infestation encourages attack by *Melanophila picta* (cf. 96); Mosul: May—Sept; Sulaimaniya: Aug; Baghdad: April—July.
353. *M. unicostata* M. H. Same on poplar, oak and stone-fruit trees; Sulaimaniya: Aug; Diyala: Sept.
354. *Stephanitis pyri* F. (= *S. oshanini* Vass.). \* Adults and nymphs attack leaves and sepals of pome and stone-fruit trees and sunflower; brown spots appear on both, and gum exudes from feeding spots; chlorosis results; Erbil: Sept; Sulaimaniya: Aug; Baghdad: June—Aug.

HOMOPTERA

ALEYRODIDAE (ALEURODIDAE)

355. *Acaudaleyrodes alhagi* P. & H. Adults and nymphs feed on *Zizyphus* leaves.

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356. *Bemisia tabaci* (Geun.). Adults and nymphs feed on leaves of cotton, okra, tobacco, sunflower, sesame, cucurbits, legumes, etc.; chlorosis results; Baghdad: July & Aug.
357. *Trialeurodes* sp. Adults and nymphs feed on citrus leaves; honey-dew is secreted on leaves and chlorosis results.

APHIDIDAE

358. *Acyrthosiphon gossypii* Mordvilko. Adults and nymphs feed on leaves of turnip and legumes, producing leaf curl; Baghdad: March, April, Oct & Nov; Ramadi: April; Kut: Jan; Hilla & Diwaniya: March.
359. *A. (Macrosiphum) pisum* (Harris). Adults and nymphs feed on leaves, stems and fruit pods of alfalfa, beans and broad bean; Baghdad: Feb, March & Oct.
360. *A. (Tija) scariolae* (Nevsky). <sup>3</sup> <sup>4</sup> Adults and nymphs feed on young leaves and terminal parts; Baghdad: March—May; Hilla: Feb.
361. *Aphis craccivora* Koch. <sup>3</sup> Adults and nymphs feed on young growths, leaves and seedling pods of citrus, legumes, cucurbit, liquorice and tomato; leaves become dry and fall; fungi grow on honey-dew; country-wide: year-round.
362. *A. durantae* Theob. Adults and nymphs feed on pomegranate leaves.
363. *A. fabae* Scop. <sup>4</sup> Adults and nymphs feed on stems, leaves and flowers of broad bean and other legumes, beet, mustard, artichoke, tomato and celery and secrete honey-dew; Mosul: April—June; Baghdad: Jan—May; Ramadi & Diwaniya: Feb; Kut: April.
364. *A. ficus* Theob. Adults and nymphs feed on leaves, buds and flowers of fig; Sulaimaniya: May.
365. *A. gossypii* Glover. Adults and nymphs feed on leaves of cotton, okra, tobacco, cucurbits, legumes, pome and stone-fruit trees, and pomegra-

- nate; chlorosis and leaf curl result; honey-dew on cotton seedlings; Middle & South: spring-autumn.
366. *A. nerii* Fonsc. Adults and nymphs feed on leaves of oleander and weeds; Baghdad: Jan—May & Oct—Dec; Kut: Feb.
367. *A. pomi* De G.<sup>3</sup> Same on apple; Mosul: May.
368. *A. punicae* Passer. Adults and nymphs feed on shoot tips, leaf under-surface and flowers of pomegranate; attack by sooty mold is encouraged; Mosul: May; Baghdad: March—June; Kerbala: May & July.
369. *A. ruborum* (Borner). Adults and nymphs feed on young growths of blackberry above and below soil surface; Mosul: April; Sulaimaniya: Oct; Baghdad: April.
370. *A. solanella* Theob. Adults and nymphs feed on leaves of broad bean, corn, beet, poppy and weeds; chlorosis and leaf curl result; honey-dew on infested leaves; country-wide: spring—autumn.
371. *A. verbasci* Schrank. Adults and nymphs feed on young twigs and leaves of *Verbascum sinuatum*; Baghdad: Jan.
372. *A. sisyphi* Theob. Adults and nymphs feed on young growths of *Zizyphus nummularia*; Baghdad: April.
373. *Asiphum* sp.<sup>1</sup> Adults and nymphs feed on leaves of Euphrates poplar, causing leaf deformation, and petiole and internode shortening; infested branches have tips of bushy appearance; Erbil: May-Aug; Diyala: April.
374. *Baizongia pistaciae* (L.). Adults and nymphs feed on leaves of turpentine tree which produce cylindrical, horn-like galls; Mosul: undated.
375. *Brachycaudus amygdalinus* (Schput.). Adults and nymphs feed on leaves of almond, peach and *Rumex*, causing leaf curl; Mosul: April; Erbil & Ramadi: July; Diyala: March; Baghdad: Jan, March & April.

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376. *B. helichrysi* (Kalten.). Adults and nymphs feed on stems, leaves and flowers of *Centaurea*, causing deformation and wilting of infested plants; Baghdad: April.
377. *Brachyunguis harmalae* Das. Adults and nymphs feed on leaves of tomato and *Peganum harmala*; Mosul & Baghdad: April.
378. *B. tamaricis* (Licht.).<sup>1</sup> Same on *Tamarix*; Baghdad: June; Diwaniya; Oct; Basra: April & May.
379. *Brevicoryne (Hayhurstia) atriplicis* (L.). Adults and nymphs feed on leaves and flowers of *Chaenopodium*, causing leaf curl; infested plants may die; Baghdad: April—June.
380. *B. brassicae* (L.).<sup>2</sup> Same on cabbage, cauliflower, mustard and turnip; Mosul: Sept & Nov; Diyala: Dec; Baghdad: Feb—April & July; Hilla & Kerbala: March; Kut: March & April; Basra: March & July.
381. *Callipteriniella (Chroamphis) juglandicola* (Kalten.). Adults and nymphs feed on young walnut leaves; sooty mold develop on infested leaves; Mosul: May & Oct; Arbil: June—Sept; Diyala: Nov.
382. *Capitophorus carduinus* (Walk.). Adults and nymphs feed on leaves of *Carduus*; Erbil: July.
383. *C. elaeagni* (Del Guer.). Same on artichoke; Baghdad: April.
384. *Chaitophorus* sp. Adults and nymphs feed on leaves of poplars, willow and *Cynanchium*; usually attended by ants; Mosul: May; Baghdad: July.
385. *C. euphraticus* Borner. Same on Euphrates poplar; Baghdad: April & July.
386. *C. leucomelas* Koch. Adults and nymphs feed on upper side of Euphrates poplar leaves, causing slight curling of margins; Baghdad: Aug; Diyala: Oct.
387. *C. niger* group.<sup>1</sup> Adults and nymphs feed on willow leaves; usually attended by ants; Mosul & Sulaimaniya: Aug.

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388. *C. populeti* group.<sup>1</sup> Same on willow and poplars; Mosul: June & Aug.
389. *C. truncatus* group. Same on willow; Amara: Aug.
390. *C. versicolor* Koch. Adults and nymphs feed inside leaf galls of Euphrates poplar; Diyala: Oct; Baghdad: Aug.
391. *Cinara (Cupressobium) cupressi* Buckston. Adults and nymphs feed on twigs and branches of Oriental arborite; always attended by ants; Baghdad: undated.
392. *C. (Lachniella) tujafilina* (Del Guer.).<sup>1</sup> Same on Oriental arborite and *Tamarix*; Baghdad: March & April.
393. *Dactynotus (Uromelan) carthami* H.R.L. Adults and nymphs feed on safflower leaves; Baghdad: March.
394. *D. cichorii* Koch. Same on lettuce; Diyala: Jan.
395. *D. jaceae* (L.). Adults and nymphs feed on stems and leaves of *Centaurea*; Erbil: July.
396. *D. sonchi* (Geof.). Adults and nymphs feed on young stems of lettuce, *Sonchus* and *Carthamus*; Mosul: April & May; Baghdad: Feb—June; Kut: March & April; Kerbala: April.
397. *Drepanosiphoniella* sp.<sup>1</sup> Adults and nymphs feed on maple leaves; Sulaimaniya: May.
398. *Dysaphis plantaginea* (Pass.) (= *Anuraphis roseus* Baker). Adults feed on stems and young fruits of apple; nymphs on clusters of leaf and fruit buds; leaf curl results; Mosul: April.
399. *Eriosoma lanigerum* (Hausmann).<sup>4</sup> Adults and nymphs feed on roots, stems, branches and sometimes on leaves of apple; infested trees produce cankers on roots and branches; country-wide: year-round.
400. *E. lanuginosum* (Hartig).<sup>3</sup> Adults and nymphs feed on leaves and terminal growths of elm; infested trees produce large pocket-galls and close clusters of stunted leaves; Mosul & Sulaimaniya: May.

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401. *E. ulmi* (L.). <sup>2</sup> Same; Mosul: May.
402. *Eucarazzia elegans* (Ferrari). Adults and nymphs feed on shoots, flowers and leaf undersurface of mint; Baghdad: April.
403. *Eulachnus (Protolachnus) tuberculostemmata* (Theob.). <sup>2</sup> Adults and nymphs attack pine needles, and encourage growth of sooty mold on honey-dew; Mosul: Jan & May; Sulaimaniya: May.
404. *Forda formicaria* Heyden. Adults and nymphs attack pistachio leaves which produce galls; in winter they feed on grass roots; Mosul & Sulaimaniya: undated; Erbil: July.
405. *F. hirsuta* Mordvilko. Adults and nymphs attack leaves of turpentine tree causing marginal leaf galls; Erbil: Oct.
406. *Geoica utricularia* (Passer.). <sup>2</sup> Adults and nymphs feed on young leaves of turpentine tree and wild pistachio which produce spherical red galls; Mosul & Sulaimaniya: Nov.
407. *Gobaishia pallida* (Hald.). Adults and nymphs feed on elm leaves which form galls in which they live; Mosul: May.
408. *Hyalopterus amygdali* (Blanchard). Adults and nymphs feed on under-surface of leaves of cherry and stone-fruit trees, and secrete honey-dew which prevents normal growth of the host; Baghdad: Dec—April; Hilla: April.
409. *H. pruni* (Geof.) (= *H. arundinis* (Fabr.)). Same on stone-fruit trees and reed; Mosul: April, May & Oct; Sulaimaniya: May-July; Baghdad: March—May & Nov—Jan; Kut, Amara, Diwaniya & Nasiriya: March; Hilla: March & April; Basra: March & Oct.
410. *Lachnus swirski* H. R. L. <sup>2</sup> Adults and nymphs feed on young stems and twigs of oaks; always attended by ants; Mosul & Sulaimaniya: Aug—Oct.
411. *Lipaphis erysimi* (Kalten.). Adults and nymphs feed on leaves of tomato

and crucifers, causing chlorosis and leaf curl; country-wide; autumn-spring.

412. *L. lepidii* (Nevsky). Adults and nymphs feed on leaf axiles of cress and hairy cress; Baghdad & Diyala: March.
413. *Longiunguis donacis* (Passer.). Adults and nymphs feed on reed leaves; Mosul: May; Baghdad: April.
414. *L. sacchari* (Zehnt.) (= *Aphis sorghi* Theob.). Same on sorghum; Baghdad: Nov.
415. *Macrosiphoniella (Pyrethromyzus) sanborni* (Gill.). Adults and nymphs feed on stems, buds and leaves of chrysanthemum; infestation prevents normal growth of flowers; Mosul: March & April; Baghdad: March—May & Oct—Dec; Amara & Basra: March.
416. *Macrosiphum (Sitobion) avenae* (Fabr.) (= *M. granarium* (Kirby)). Adults and nymphs feed on leaves and developing seeds of carrot, barley and wheat; Baghdad: Nov; Hilla: March.
417. *M. euphorbiae* Thomas. Same on wheat, barley and soybean; Mosul: April.
418. *M. rosae* (L.). Adults and nymphs feed on terminal shoots and young leaves of rose and saw thistle, preventing normal growth of flowers; Mosul: May; Erbil: July; Baghdad & Basra: Feb—May.
419. *Myzocallis* sp. Adults feed on undersurface of young leaves of large oak trees; Mosul: April—Oct; Erbil: Oct; Sulaimaniya: Sept & Oct.
420. *M. castanicola* group.<sup>1</sup> Same on oak and wild pistachio; Sulaimaniya: May.
421. *M. hoplochaitophorus* group.<sup>1</sup> Same on oak; Mosul: April.
422. *Myzus (Nectarosiphon) persicae* (Sulzer).<sup>4</sup> Adults and nymphs attack young leaves of nearly all kinds of cultivated and wild plants, causing leaf curl and may transmit viral diseases; country-wide; year-round.

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423. *Pemphigus bursarius* (L) (= *P. lactularius* Pass.).<sup>2</sup> Adults and nymphs feed on young branches and leaf petioles of poplars; which form galls in summer they migrate to feed on roots of composite plants; Mosul & Baghdad; May.
424. *P. lichtensteini* Tullgreen.<sup>2</sup> Adults and nymphs feed on leaves of poplars and willow, and live inside galls of poplar branches and willow leaves; Mosul: May; Erbil: Oct; Diyala: May & June; Baghdad: May, June & Dec.
425. *P. protospirae* Lichten. Adults and nymphs feed and live inside galls on petioles of poplar; Mosul: May.
426. *P. (Fordia) riccobonii* De Stefani.<sup>2</sup> Adults and nymphs feed on leaves of wild pistachio and turpentine tree, and roll their margins where they live; red pocket galls are formed on leaves; Mosul: May & June; Sulaimaniya: Aug—Nov.
427. *P. vesicarius* (Passer.). Adults and nymphs live inside poplar galls; Sulaimaniya: May.
428. *Phloeomyzus* sp.<sup>3</sup> Adults and nymphs feed on sap of poplar stems and branches; Erbil: Sept; Baghdad: June.
429. *Pterochlorus (Pterochloroides) persicae* (Choldkovsky). Adults and nymphs feed on stems and branches of pome and stone-fruit trees, encouraging attack by sooty mold; Mosul: April; Erbil: Oct; Diyala: Jan & Sept; Baghdad: Jan—May & Sept; Ramadi & Kut: March.
430. *Rhopalosiphum maidis* (Fitch).<sup>2</sup> Adults and nymphs feed on leaves, heart leaves, flowers and flower heads of cereals, legumes, tomato and sunflower; Mosul: Oct; Baghdad: Feb—May & Nov; Hilla, Kerbala, Diwaniya, Nasiriya & Basra: March.
431. *R. rufiabdominalis* (Sasaki). Adults and nymphs feed on leaves and roots of wheat, rice and reed; Baghdad: March.

432. *Sappaphis (Dysaphis) apiifolia* (Theob.). Adults and nymphs feed on leaves of parsley; Ramadi: Nov.
433. *S. foeniculus* (Theob.). Same on celery; Baghdad: April.
434. *S. mali* (Ferrari). Same on apple, causing leaf curl; Mosul: May.
435. *Schizaphis (Toxoptera) graminum* (Rond.). Adults and nymphs attack blades and green ears of cereals and tomato; Diyala: March & May; Baghdad: Feb—May & Dec.; Hilla: March.
436. *Slavum* sp.<sup>1</sup> Adults feed on dormant buds of oak and wild pistachio, causing the formation of red, cauliflower-like galls; Mosul: Nov.
437. *Smynthurodes betae* West. Adults and nymphs feed on turnip roots and elm and pistachio leaves, causing the formation of leaf-galls; Mosul: May.
438. *Tetraneura africana* Goot. Adults and nymphs feed on rhizomes and roots of Bermuda grass; Baghdad: May.
439. *T. coerulescens* (Passer.). Adults and nymphs live in elm leaf galls; Mosul: May.
440. *T. cynodontis* Theob. Adults and nymphs feed rhizomes of Bermuda grass; Baghdad: Dec & Jan.
441. *T. gallarum* (Gmelin). Adults and nymphs live in elm leaf galls; North: May.
442. *Thelaxes confertae* Born.<sup>2</sup> Adults and nymphs feed on young leaves, acorns and cupules of oaks; infested acorns have brown walls, and prematurely fall down; Sulaimaniya: May, July, Aug & Oct.
443. *T. suberis* Del G. Adults and nymphs live in oak galls produced by *Andricus insana* (cf. 554); Mosul & Sulaimaniya: Oct; Erbil: July.
444. *Theroaphis trifolii* (Monell).<sup>2</sup> Adults and nymphs feed on alfalfa leaves; Baghdad: April.

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445. *Tuberculatus* / *Myzocallis* group.<sup>3</sup> Adults and nymphs feed on young oak leaves which result in dwarf leaves; Sulaimaniya: May.
446. *Tuberculoides* sp.<sup>2</sup> Same; this aphid produces edible manna; Erbil: July; Sulaimaniya: undated.
447. *Tuberolachnus salignus* (Gmelin) (= *Lachnus viminalis* L.).<sup>2</sup> Adults and nymphs feed on young twigs of willow and apple; Diyala: Feb; Baghdad: April & May.

APHROPHORIDAE (CERCOPIDAE)

448. *Philaenus leucophthalmus* L. Adults and nymphs feed on stems and leaves of tomato; Mosul: Sept.

ASTEROLECANIIDAE

449. *Asterolecanium* sp.<sup>1</sup> Adults and nymphs feed on twigs and branches of oak; Sulaimaniya: Oct.
450. *A. bellum* Russel.<sup>1</sup> Same; Sulaimaniya: Oct.
451. *A. minus* Lind. Same; Mosul & Erbil: Oct.
452. *A. phoenicis* Ramachandra-Rao.<sup>3</sup> Adults and nymphs attack leaves and fruits of date-palms, causing general weakness of trees; less severe on fruits; Baghdad & Basra: year-round.

CICADELLIDAE (JASSIDAE)

453. *Balclutha hebe* Kirk.<sup>4</sup> Adults and nymphs feed on leaf undersurface of grape; leaves show yellowish-white spots, become dry and finally fall down; Baghdad: March—June.
454. *Circulifer tenellus* Baker.<sup>4</sup> Adults and nymphs feed on beet leaves; vector of curly-top disease; Mosul: Jan, March, April, July, Oct & Nov.
455. *Empousca* sp. Adults and nymphs feed on leaf undersurface of sesame and broad bean; leaves show yellowish-white spots, become dry and

finally fall down: Baghdad: Oct & Nov.

456. *Erythroneura* sp. ♀ \* Same on grape.

#### CICADIDAE

457. *Cicadatra alhageos* (Kolenati) (= *C. viridissima* (Walk.) ). Adults attack young stems and twigs of loquat by splitting bark for oviposition; nymphs feed on roots; Mosul: April & July; Erbil & Sulaimaniya: Aug; Baghdad: Feb.

458. *C. fraseri* China. Same; host unidentified; Baghdad: July.

459. *C. glycyrrhiza* Kolenati. Same on grape; Erbil & Sulaimaniya: Aug; Baghdad: July.

460. *C. musiva* Germ. Same on an unidentified weed; Erbil: Jan.

461. *Magicicada septendecim* L. <sup>1</sup> Same on sugar-beet; Mosul: June & July.

#### CIXIIDAE

462. *Olearus pallens* Germ. Adults feed on stems and leaves of sugar-beet, rice and other cereals; nymphs on roots; Diwaniya: Sept.

#### COCCIDAE

463. *Anapulvinaria (Pulvinaria) pistaciae* (Bodenh.). Adults and nymphs attack young twigs, fruits and leaves of pistachio; infested parts become dry and fall down; Mosul: April-Nov.

464. *Bodenheimera rachelis* Bodenh. Adults and nymphs attack leaves and stems of *Vitex*; Mosul: Oct.

465. *Ceroplastes rusci* (L.). Adults and nymphs attack twigs, leaves and fruits of fig, oleander and myrtle; Baghdad: May.

466. *Coccus hesperidium* L. Same on fig, oleander and citrus; damage results

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from honey-dew and sooty mold; chlorosis results and finally both leaves and fruits fall down; Baghdad: Oct.

467. *Eulecanium bituberculatum* Targ.—Tozz. <sup>2</sup> Adults and nymphs attack twigs and branches of pome and stone-fruit trees.
468. *E. ciliatum* Douglas. <sup>1</sup> Same on hawthorn; Erbil: Oct.
469. *Parthenolecanium* sp. <sup>1</sup> Premature females feed on small oak trees; Sulaimaniya: May.
470. *Pulvinaria* sp. <sup>2</sup> Premature females feed on trunk, young shoots and leaves of poplar.
471. *Rhizopulvinaria (Pulvinaria) artemisiae* Lichten. <sup>1</sup> Premature females feed on subterranean stems of *Teucrium*; Erbil: Oct.
472. *R. dianthi* Bodenh. Premature females feed on *Dianthus* roots; Erbil: Oct.

CONCHASPIDIDAE

473. *Archaspis ephedrae* Bodenh. Premature females feed on twigs of *Ephedra*; Sulaimaniya: Oct.

DIASPIDIDAE

474. *Abgrallaspis (Diaspidiotus) ephedrarum* Lind. Adults and nymphs feed on *Ephedra* stems; Sulaimaniya: Oct.
475. *Acanthomytilus (Mytilococcus) intermittens* Hall. Adults and nymphs feed on leaves and twigs of *Eragrostis*; Basra: Oct.
476. *A. kurdicus* Bodenh. Adults and nymphs feed on twigs and leaf under-surface of maple; Erbil & Sulaimaniya: Oct.
477. *Aonidiella (Chrysomphalus) orientalis* (Newst.). <sup>4</sup> Adults and nymphs attack twigs, leaves and fruits of date-palm, olive, poplar, citrus and sissoo; chlorosis results and both leaves and fruits fall down; Baghdad, Ramadi, & Kut: Feb, April, July & Oct.

478. *Aspidiotus (Quadraspidiotus) perniciosus* Comst. Nymphs feed on bark, terminal buds and around blossom causing chlorosis and vigour-decrease.
479. *Aulacaspis rosae* (Bouche). Adults and nymphs attack rose twigs.
480. *Chionaspis engedensis* Bodenh. <sup>1</sup> Adults and nymphs feed on leaves of *Tamarix* which fall down later; Sulaimaniya: Oct; Basra: July & Oct.
481. *Chrysomphalus dictyospermi* (Morg.). Adults and nymphs feed on leaves and fruits of citrus.
482. *Coccomytilus sureyanus* Bodenh. Adults and nymphs feed on twigs and branches of *Acantholimon* and *Astragalus*; Mosul & Sulaimaniya: Oct.
483. *Diaspidiotus caucasicus* Borkh. Adults and nymphs feed on twigs of young Euphrates poplar; Mosul & Baghdad: undated.
484. *D. herzlianus* Bodenh. Adults and nymphs feed on *Ephedra* stems; Mosul, Sulaimaniya & Kirkuk: Oct.
485. *Diaspis echinocacti* Bouche (*D. calyptroides* Costa). Same on *Opuntia*; Baghdad: Oct.
486. *Hemiberlesia (Diaspidiotus) lataniae* (Sign.). Adults and nymphs feed on mulberry leaves; Ramadi: Oct.
487. *Koroneaspis aegilopus* Koroneos. Adults and nymphs feed on twigs and branches of okra and *Loranthus*; Mosul & Sulaimaniya: Oct.
488. *Lepidosaphes (Mytilococcus) beekii* (Newm.). Adults and nymphs feed on twigs, leaves and fruits of citrus.
489. *L. conchiformis* (Gmelin). Adults and nymphs feed on twigs and branches of fig.
490. *L. ficus* (Sign.). Same as in 489.
491. *L. juniperi* (Lind.). Adults and nymphs attack needles and fruits of juniper; Mosul: Oct.

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492. *L. minimus* (Newst.). Adults and nymphs attack twigs, branches and leaves of fig; Baghdad: Oct.
493. *L. pistaceae* Archang. Same on maple and turpentine tree; Erbil & Sulaimaniya: Oct.
494. *L. ulmi* (L.). Adults and nymphs attack trunk, branches and fruits of pome and stone-fruit trees; growth retardation may result; Mosul: Nov; Sulaimaniya: Oct.
495. *Leucaspis pusilla* (Loew). <sup>3</sup> Adults and nymphs attack pine needles which become chlorotic and may fall down; Mosul: March, Aug & Oct.
496. *Melanaspis (Aonidiella) inopinata* (Leon). Adults and nymphs attack trunk and branches of pistachio, apple, almond and walnut, and produce cavities in young branches.
497. *Mytilococcus sanduri* Bodenh. Adults and nymphs attack blades of *Andropogon*; Mosul: Oct.
498. *Nilotaspis (Mytilococcus) bicuspis* (Hall.). Adults and nymphs attack twigs and branches of *Tamarix*; Basra: Oct.
499. *N. (Coccomytilus) halli* (Green). <sup>2</sup> Same on pome and stone-fruit trees; Mosul, Sulaimaniya & Baghdad: Oct.
500. *N. (Coccomytilus) isis* (Hall.). Same on *Tamarix*; Basra: Oct.
501. *Parlatoria blanchardii* (Targ. - Tozz.). <sup>3</sup> Adults and nymphs attack leaves of date-palm; the tree is weakened, and both quality and quantity of crop are reduced; Baghdad & Basra: year-round.
502. *P. morrisoni* McK. Adults and nymphs attack trunk, branches, leaves and fruits of citrus, leaving scales and red spots on sites of feeding.
503. *P. (Syngenaspis) oleae* (Clovee) (= *P. calianthina* Berl. & Leon). Same on olive, citrus, pome and stone-fruit trees; Mosul, Erbil & Sulaimaniya: Oct.

504. *Phoenicococcus marlatti* Ckll. <sup>2</sup> Adults and nymphs attack leaf bases and trunk of date-palm; Baghdad: March—July; Basra: Oct.
505. *Quadraspidiotus populi* Bodenh. Adults and nymphs feed on twigs, branches and leaves of Euphrates poplar; Baghdad: Oct.
506. *Q. salvonicus* (Green). Same; Baghdad: Oct.
507. *Q. zonatus* Frauenfeld. Same on *Loranthus europeus*; Mosul & Sulaimaniya: Oct.
508. *Salicicola archangelskajae* Arch. (= *Leucaspis crategi* Bodenh.). Same on hawthorn; Erbil & Sulaimaniya: Oct.
509. *S. kermanensis* Lind. <sup>2</sup> Adults and nymphs feed on twigs, branches and young stems of poplars and willow; Erbil: March-Aug; Baghdad & Basra: Oct.
510. *S. (Suturaspis) pistaceae* Lind. Same on turpentine tree; Mosul, Erbil & Sulaimaniya: Oct.
511. *Targionia vitis* Sign. Adults and nymphs feed on oak branches and leaves; Sulaimaniya: Oct.

KERMESIDAE (KERMIDAE)

512. *Kermes* sp. <sup>1</sup> Adults and nymphs feed on young twigs and branches of oak; Erbil: May; Sulaimaniya: Aug.

ORTHEZIIDAE

513. *Orthezia urticae* L. Adults and nymphs feed on twigs and leaves of *Astragalus*; Sulaimaniya: Oct.

PSEUDOCOCCIDAE

514. *Acanthococcus (Eriococcus) aceris* (Sign.). Adults and nymphs feed on leaves and tender twigs of maple and sycamore; Erbil: Oct.

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515. *Antonina graminis* Mask. ♂ ♀ Adults and nymphs attack leaf axiles of Bermuda grass, causing chlorosis and death of plant; Baghdad: Sept.
516. *A. phragmitis* Marchal. Adults and nymphs attack *Phragmites* stems; Erbil: Oct.
517. *Eriococcus mumtazi* Bodenh. Adults and nymphs attack leaves of grasses; Mosul & Erbil: Oct.
518. *E. teucriiculus* Bodenh. Adults and nymphs attack twigs and branches of *Teucrium*; Mosul: Oct.
519. *Nipaecoccus vastator* (Mask.). Adults and nymphs attack young twigs, buds, leaves and fruits of citrus, grape, fig, rose, pome and stone-fruit trees; abnormal dwarf fruits result; Diyala, Baghdad & Kerbala: May, June, Sept & Oct.
520. *Phenacoccus aceris* Sign. Adults and nymphs attack trunk, twigs, buds and leaves of sycamore; Erbil & Sulaimaniya: Oct.
521. *P. basorae* Bodenh. Adults and nymphs feed between stem and leaf sheath of Bermuda grass; Basra: Oct.
522. *P. euphorbiaefolius* Bodenh. Adults and nymphs feed on upper surface of *Euphorbia* leaves; Sulaimaniya: Oct.
523. *P. mymeriani* Bodenh. Attack roots and stems of *Teucrium*; Mosul: Oct.
524. *P. prosopidis* Bodenh. Attack branches of *Prosopis*; Basra: Oct.
525. *P. radii* Bodenh. Same on *Alhagi*; Basra: Oct.
526. *Planococcus citri* (Risso). ♂ ♀ Adults and nymphs feed on aerial and subterranean parts of mulberry, grape and pomegranate, and secrete honey-dew on which dust and sooty mold accumulate; Mosul & Baghdad: Oct.
527. *P. ficus* Sign. Same on fig; Baghdad: Sept.

528. *Pseudococcus parietaricola* Bodenh. Adults and nymphs attack *Parietaria* leaves; Erbil: Oct.
529. *Rhizococcus (Eriococcus) insignus* (Newst). Adults and nymphs feed on *Eragrostis* stems; Basra: Oct.
530. *Rhizoecus cynodontis* Bodenh. Adults and nymphs feed between stem and leaf sheath of Bermuda grass; Basra: Oct.
531. *Ripersia imperatae* Hall. Adults and nymphs feed on reed stems; Mosul: Oct.
532. *Trionymus yaelae* Bodenh. Adults and nymphs feed between stem and leaf sheath of *Phalaris*; Mosul: Oct.

PSYLLIDAE (CHERMIDAE)

533. *Agonoscena targionii* (Licht.). Adults and nymphs attack leaves and fruits of pistachio.
534. *Camarotoscena hoverlandti* Vondr. <sup>2</sup> Adults and nymphs attack leaves and shoots of poplar, causing leaf curl and shoot deformation; Mosul: Aug & Sept; Sulaimaniya: undated.
535. *C. speciosa* Flor. <sup>4</sup> Adults and nymphs feed on upper surface of young poplar leaves, causing inward leaf roll; rolled parts swell and turn red; Erbil: May—Dec.
536. *Egeirotrioza* sp. <sup>2</sup> Adults and nymphs attack young twigs of Euphrates poplar and willow; infested apices of young twigs swell; Mosul & Baghdad: Nov.
537. *E. ceardi* Berg. <sup>3</sup> Adults and nymphs feed on leaves of Euphrates poplar, causing the formation of thick-walled, green-to-black small galls on both leaf surfaces; Erbil: June—Nov; Diyala & Baghdad: April.
538. *Euphyllura olivina* (Costa). <sup>3</sup> <sup>4</sup> Adults and nymphs attack flower clusters and new shoots of olive.

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539. *Trioza* sp.<sup>4</sup> Adults and nymphs feed on twigs of young Euphrates poplar trees, causing irregular swellings of infested parts; infested bark around each individual insect is discoloured; Mosul & Baghdad: undated.

TROPIDUCHIDAE

540. *Ommatissus (Ommatidiotus) binotatus* Fieb.<sup>2</sup> <sup>4</sup> Adults and nymphs feed on leaves of date-palm, and secrete honey-dew which prevents normal growth of leaves and fruits, and delays fruit ripening; Middle & South: May, June, Sept & Oct.

HYMENOPTERA

AGAONTIDAE

541. *Blastophaga psenes* (L.).<sup>2</sup> Pollinates female fig flowers; Sulaimaniya: May.

APIDAE

542. *Apis mellifera* L. Workers pollinate flowers of various species of flowering plants and produce honey and wax; North: spring-autumn; Middle: year-round.

543. *Prosopis* sp. Adults emerge from cut branches of pistachio heavily-infested with *Octodesmus* and *Chaetoptelius vestitus* (cf. 47 & 255); Mosul: May.

544. *P. cornuta* Sm. Same; Mosul: May.

545. *Xylocopa violacea* L. Adults cut long tube-like tunnels in dry wood of walnut, where they build their breeding cells; Mosul: June.

CEPHIDAE

546. *Cephus pygmaeus* L. Larvae dig down stem of wheat, barley and rye until

they reach near soil level; there, they make holes in stem base in which they hibernate; infested stems may break, and seeds do not ripe; Ramadi: March.

547. *C. tabidus* (F). Larvae stem borers of wheat, barley and corn; Baghdad: March.

CYNIPIDAE

548. *Andricus (Cynips) caput-medusae* (Hartig).<sup>1</sup> Larvae attack apical buds of oak which produce very large, solitary, green-to-white, medusae-shaped galls; Mosul & Sulaimaniya: Feb & March.
549. *A. ceconii* Keif.<sup>1</sup> Larvae feed on staminate flowers of oak, replacing them by gregarious, flat, green-to-red galls, 5—13 mm diameter; Mosul: April; Sulaimaniya: May.
550. *A. coriaria* Hart.<sup>1</sup> Larvae feed in terminal and lateral buds of oak which produce gregarious green, broad-based galls, 20—30 mm diameter, tapering to blade-like point; Mosul & Sulaimaniya: Dec & Jan.
551. *A. gallae-tinctoriae* (Oliv.). Larvae feed in lateral and sometimes terminal buds of oak which produce large, spherical galls with irregularly-ridged surface; these are the *Afus* galls, of commercial value; Mosul & Sulaimaniya: Oct & Nov.
552. *A. grossulariae* (Gir.).<sup>1</sup> Larvae feed in staminate flowers of oak, replacing them by solitary, pear-shaped galls, 3—5 mm diameter; Mosul: April; Sulaimaniya: May.
553. *A. hartigi* Hart.<sup>1</sup> Larvae feed in lateral buds of oak which produce solitary or paired, yellow-to-brown galls of rubber-like texture, 20—30 mm diameter, directly attached to shoot; stellate forms with very short blunt spines; Mosul & Sulaimaniya: Feb & March.
554. *A. insana* (Westwood). Larvae feed in terminal and lateral buds of oak

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- which produce large, short-stalked, solitary, yellow-to-reddish brown galls, 20—35 mm diameter; Mosul & Sulaimaniya: Feb & March.
555. *A. kollaris* (Hart.).<sup>1</sup> Larvae feed in leaf petioles of oaks which produce large, round, solitary, green-to-orange brown galls, 6—15 mm diameter; Mosul: April & Aug; Sulaimaniya: Aug & Oct.
556. *A. lucidus* Hart.<sup>1</sup> Larvae feed in lateral buds of oak which produce gregarious, sessile, spherical, green-to-white galls, 10—20 mm diameter; Sulaimaniya: May.
557. *A. multiplicatus* (Gir.).<sup>1</sup> Larvae feed in open buds of oaks causing leaf and petiole deformation, which result in green bushy shoot that turns brown when leaves die; Mosul & Sulaimaniya: March & April.
558. *A. seckendorffii* Wacht.<sup>1</sup> Larvae feed in lateral buds of oak which produce gregarious, stalked, spherical green galls, covered with short papillae; galls 15—30 mm diameter each; Mosul: March & April.
559. *A. tomentosa* Trost.<sup>1</sup> Larvae feed in lateral buds of oak which produce gregarious, velvety-surfaced, white galls; each gall has 10—20 mm diameter resembling an inverted cone; Mosul: March & April.
560. *Aphelonyx cerricola* Gir.<sup>1</sup> Larvae feed in twigs of oaks which produce solitary (or in small groups), spherical, large, hairy, green-to-brown galls, 7—14 mm diameter; Mosul & Sulaimaniya: Oct—Dec.
561. *Chilaspis nitida* Gir.<sup>1</sup> Larvae feed on leaves of oak which produce gregarious, small, globular galls on their undersurfaces; also feed on staminate flowers, replacing them by large, hairy, mulberry-like galls, up to 30 mm diameter each; Mosul: April & Nov—Jan; Sulaimaniya: May & Nov—Jan.
562. *Cynips quercusfolii* L.<sup>1</sup> Larvae feed on lower surface of oak leaves which produce solitary and gregarious, spherical galls; each 10—20 mm in diameter, yellow-to-red, with wrinkled surface when mature; Mosul & Sulaimaniya: Jan & Feb.

563. *Neuroterus glandiformis* Gir. Larvae live in oak fruits causing very early development of acorn; acorn galls are solitary, green, 6—8 mm diameter each; Mosul & Sulaimaniya: May & June.
564. *N. lanuginosus* Gir. Larvae feed on lower surface of oak leaves which produce gregarious, small, globular galls; each 3—6 mm in diameter, covered with dense, apically-white hairs; Mosul & Sulaimaniya: March & April.
565. *N. macropterus* Hart. Larvae feed on apices of young twigs of oak which produce large, swelled galls, 5—60 mm diameter each; larvae arranged in concentric cells; Mosul & Sulaimaniya: March & April.

#### EURYTOMIDAE

566. *Eurytoma amygdali* End. Larvae dig in fruits and seeds of almond, apricot and plum, causing them to split; Mosul & Baghdad: April; Erbil: March.
567. *Harmolita tritici* Fitch. Larvae dig inside wheat stems which produce galls above nodes that break later.

#### FORMICIDAE

568. *Camponotus compressus* (F). Workers in bee hives and stores; feed on and contaminate sugary food; Diyala & Nasiriyah: April; Baghdad: Feb—Dec; Hillah: Nov.
569. *Dorylus (Typhlopone) fulvus* (West). Same on stored food; Mosul & Diwaniyah: Aug; Baghdad: Feb—April & Dec; Kerbala: Nov.
570. *Messor barbarus* L. Same in bee hives and on stored food; Mosul: Feb & Nov; Baghdad: Nov—March; Basra: Jan.
571. *Pheidole megacephala* F. Same on stored food; Baghdad: May & June.
572. *Polyrhachis simplex* Meyr. Same as above.

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### MEGACHILIDAE

573. *Megachile argentata* F. Adults cut green leaves of rose to construct their nests in soil or rotten wood; Baghdad: Oct & Nov; Basra: undated.
574. *M. flavipes* Spin. Same; Baghdad: Oct & Nov; Basra: undated.
575. *M. minutissima* Radosz. Same; Baghdad: Oct & Nov; Basra: undated.
576. *M. rotundata* Fab. Same on *Robinia* to construct their nests in soil or wood infested by *Clytus rhamni* (cf. 117); Baghdad: Oct & Nov; Basra: undated.
577. *M. schnabli* Rad. Same on rose; Baghdad: Oct & Nov; Basra: undated.

### VESPIDAE

578. *Polistes foederatus* Kol. Workers feed on ripe dates, grapes and other fruits; country-wide: summer.
579. *P. gallicus*. Same; Erbil: July; Baghdad: April, Nov & Dec.
580. *P. hebroeus* F. (= *P. macaensis* (F)). Same; Diyala: April—Dec; Baghdad: March—Oct; Hilla: April; Basra: Dec.
581. *P. nymphula* Cnr. Same; Basra: undated.
582. *Vespa orientalis* L. Workers feed on ripe fruits and dead flesh (cf. 1061); Erbil: July; Diyala: April & Dec; Ramadi: Sept—Nov; Kut: June-Oct; Kerbala: Nov; Hilla & Diwaniya: Jan & Oct.
583. *Vespula germanica* F. Same on ripe grapes, dates and other fruits; Mosul; Sept, Nov & Dec; Erbil: Aug.

### ISOPTERA

### HODOTERMITIDAE

584. *Anacanthotermes turkestanicus* (Jacobsen). <sup>2</sup> Workers occasionally damage live and dead wood of buildings.

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585. *A. ubachi* (Navas). <sup>2</sup> Workers feed on live wood of wild plants and dead wood of felled crops and trees; Erbil & Diyala: April.
586. *A. (Hodotermes) vagans* (Hagen). <sup>2</sup> Same; Ramadi & Basra: March.

RHINOTERMITIDAE

587. *Reticulotermes clypeatus* Lash. Workers dig inside live and dead wood of oak and pine, causing destruction of acorns; Mosul & Sulaimaniya: March & Nov.

TERMITIDAE

588. *Amitermes vilis* (Hagen). <sup>2</sup> Workers feed on roots and stems of live and dead plants, and damage timber; Baghdad: undated.
589. *Microcerotermes diversus* Silvestri. <sup>4</sup> Workers feed on live wood of *Acacia*, *Eucalyptus* and *Casuarina*, causing death of infested trees; also on building wood, furniture and paper; Baghdad: March—Oct.
590. *M. gabrielis* Weid. <sup>4</sup> Workers feed on live and dead wood of sycamore and *Eucalyptus*; Erbil, Kirkuk, Ramadi & Nasiriyah: Feb—April.

LEPIDOPTERA

ARCTIIDAE

591. *Ocnogyna loewii* Z. <sup>2</sup> Larvae feed on beet leaves; North & Middle: Nov—Jan.
592. *Utetheisa pulchella* L. <sup>3</sup> Larvae defoliate sesame, cotton and hemp; country-wide: May—Nov.

BOMBYCIDAE

593. *Bombyx mori* L. <sup>2</sup> Larvae feed on mulberry leaves, and spin silk cocoons of commercial value; North & Middle: March—May.

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COLEOPHORIDAE (OECOPHORIDAE)

594. *Coleophora limosipenella* Dup. <sup>2</sup> Larvae feed on young leaves of apple; Baghdad: spring.

COSMOPTERYGIDAE

595. *Anatrachyntes corticella* Sn. (= *Pyroderces simplex* Wlms.). <sup>2</sup> Adults breed, and larvae feed within fallen and damaged cotton bolls; Baghdad: undated.

COSSIDAE

596. *Cossus (Trypanus) cossus* L. <sup>3</sup> Larvae wood borers of willow; Mosul, Erbil & Sulaimaniya: June.

597. *Dyspessa ulula* (Borkh.). <sup>3</sup> Larvae dig through bulbs of onion and garlic; North: June, July & Sept.

598. *Dyspessacossus fereidum* Gr. - Gsh. <sup>3</sup> Larvae are wood borers of willow; Erbil: May & June.

599. *Zeuzera pyrina* L. <sup>4</sup> Larvae bore through stems of young apple, walnut and almond trees, and branches of old ones; infestation facilitates entry of fungi; North: June & July.

600. *Z. regina* Stgr. <sup>3</sup> Same; North: June & July.

DANAIDAE

601. *Danais chrysippus* L. <sup>3</sup> Larvae feed on leaves of *Asclepias* and *Caltropis*; Mosul: April & Sept; Baghdad: June—Oct; Hilla: Oct; Kut: July—Sept; Basra: April, Aug & Oct.

GELECHIIDAE

602. *Anacampsis disquei* Mees. <sup>3</sup> Larvae roll oak leaves, and each one lives and feeds singly within; Mosul: May, June & Aug.

603. *Anarsia aleurodes* Meyr. <sup>3</sup> Larvae feed on poplar leaves which produce galls; Hilla: undated.
604. *A. lineatella* Zell. <sup>3</sup> Larvae bore through twigs and ripe and unripe stone-fruits causing their rot and decay; attacked young fruits shrivel and die while on mature ones gum accumulates on the site of attack; Baghdad: May-July.
605. *Pectionophora (Platyedra) gossypiella* (Saund.). <sup>3</sup> Larvae feed on flower buds, bolls and seeds of cotton, okra and other Malvaceae; blossom fails to open; North & Middle: spring-summer.
606. *Phthorimaea ergasima* (Meyr.). Larvae are leaf miners of eggplant.
607. *P. (Gnorimoschema) operculella* Zell. <sup>3</sup> Larvae are leaf miners and stem borers of potato, tobacco and pepper in the field, and potato tuber borer in store; Mosul: Sept & Oct; Baghdad: Nov—July; Hilla: March.
608. *Platyedra villetta* (Zell.). <sup>3</sup> Larvae attack buds, bolls, seed pods and young stems of hollyhock, cotton and other Malvaceae.
609. *Pseudoteleia squamodorella* Ams. <sup>1</sup> Larvae feed on leaves of Euphrates poplar; Mosul: Sept; Baghdad: March.
610. *Recurvaria pistaciicola* (Danil). Larvae attack young fruits of pistachio causing them to shrivel and fall down in large numbers; Mosul: April.
611. *Scrobipalpa (Gnorimoschema) ocellatella* Boyd. Larvae bore through leaf petioles to stems, roots and terminal growths of sugar-beet; Sulaimaniya: Aug & Sept.

GLYPHIPTERYGIDAE

612. *Simaethis (Hemerophila) nemorana* Hubn. <sup>2</sup> Larvae feed on fig leaves and, sometimes on young fruits; North: April.

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GEOMETRIDAE

613. *Gymnoscelis pumilata* Hubn. <sup>3</sup> Larvae feed on leaves and flowers of bean; North: July.
614. *Nychoides variabilis* Brandt. <sup>3</sup> Same on almond and apricot; North: May-July, Sept & Oct; Middle: March.
615. *Oulobophora externata* H—S. <sup>3</sup> Same pistachio; North: April & May.
616. *Zamacra flabellaria* Heeg. Same on legumes; Diyala: Dec—Feb.

GRACILLARIDAE

617. *Acrocercops confusa* Meyr. <sup>3</sup> Larvae mine through leaves of castor bean and injure young plants; Baghdad: June.
618. *Lithocollelis* sp. <sup>3</sup> Larvae feed on apple leaves, forming central blisters; Middle: March.
619. *Phyllonorycter corylifoliella* Haw. <sup>3</sup> Larvae are leaf miners of apple; one or two larvae per leaf may exist; Middle & South: warm seasons.

HESPERIIDAE

620. *Carcharodus alceae* Esp. (= *C. malvarum* Hoff.). <sup>3</sup> Larvae roll leaf margins of hollyhock and other Malvaceae, and feed within; Erbil: April & July; Sulaimaniya: Sept; Diyala: Feb, April, June, July & Oct; Baghdad: Aug—Nov.
621. *Pelopidas thrax* (Hubn.). <sup>3</sup> Larvae feed on leaves of sugarcane, rice and other cereals; Middle: summer.

LASIOCAMPIDAE

622. *Chilena proxima* Stgr. <sup>1</sup> Same on *Prosopis*; Erbil, Kirkuk, Diyala & Kut: May & Aug; Baghdad: May.

623. *Eriogaster philippii* Bart. <sup>1</sup> Same on oak; Erbil: undated.
624. *Lasiocampa grandis* L. <sup>3</sup> Larvae feed on oak trees and heavily defoliate them; Mosul: Sept.
625. *Pachypasa otus* (Drury). <sup>2</sup> Larvae feed on leaves of oak, juniper, cypress and pistachio; Mosul: June & July.
626. *Streblote (Nadiasa) siva* Lef. <sup>2</sup> Same on apple, pomegranate, willow, *Zizyphus*, *Tamarix* and *Eucalyptus*; Middle & South; March—Dec.

#### LYCAENIDAE

627. *Lampides (Cosmolyce) boeticus* (L.). <sup>2</sup> Larvae feed on leaves, buttons, flowers and seeds of bean, broad bean and other legumes; country-wide: Feb—Dec.
628. *Tarucus rosacea* Aust. (= *T. mediterraneae* B—B). Larvae feed on *Zizyphus* leaves; white patches appear on infested leaves; Baghdad, Amara & Basra: Feb—Oct.
629. *T. theophrastus* (F). Same; Baghdad: Nov; Basra: March.

#### LYMANTRIIDAE

630. *Euproctis (Prothesia) melania* (Stand.). <sup>4</sup> Larvae attack young buds of oak and wild apple first, then skeletonize leaves, and, finally defoliate the tree completely.
631. *Lymantria lapidicola* H—S. <sup>2</sup> Larvae feed on leaves of almond and apricot; Erbil: Aug & Sept; Sulaimaniya: Oct.
632. *Ocneria (Lymantria) dispar* L. <sup>4</sup> Same on oak and poplar; North summer.
633. *O. signatoria* Christ. <sup>2</sup> Same on *Tamarix*; Baghdad & Kut: April & Oct.
634. *O. terebynthina* Stgr. <sup>2</sup> Larvae are leaf skeletonizers of wild pistachio; North: June & Sept.

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635. *Ocnerogyia amanda* Stgr. <sup>4</sup> Same on fig; North & Middle: June & July.  
636. *Paraocneria raddei* Christ. Larvae feed on leaflets of wild pistachio, leaving midribs only; partial defoliation results; Mosul: June; Erbil: July.

LYONETIIDAE (PHYLLOCNISTIDAE)

637. *Bedellia somnulentella* (Zell.). <sup>2</sup> Larvae are leaf miners of *Taraxacum*; Baghdad: March.  
638. *Bueculatrix* sp. First-instar larvae mine through *Zizyphus* leaves.  
639. *Kermania pistaciella* Amsel. Larvae feed beneath bark of pistachio; Mosul: May.  
640. *Phylloconistis* sp. <sup>1</sup> Larvae mine through young leaves of poplars; Erbil: May.  
641. *P. citrella* Staint. <sup>3</sup> Same on citrus; Basra: undated.

MOMPHIDAE

642. *Batrachedra amydraula* Meyr. <sup>4</sup> Larvae feed in soft seeds of dates and tissues around; infested dates cease to grow, gradually dry, turn light red and finally fall down; one larva may attack more than one fruit; Middle & South: April—July.  
643. *Pyroderces phillocarpa* Meyr. <sup>2</sup> Larvae feed inside fallen dates; Baghdad: April.

NOCTUIDAE

644. *Agrotis* sp. Larvae cut off young plants of tomato, potato, tobacco, beet and turnip at soil level; Baghdad: Feb—April.  
645. *A. exclamationis* L. <sup>3</sup> Larvae feed on roots and stems of cabbage, lettuce, sugar-beet and root crops, and cut off young plants at soil level; fungi

may get entry through cuts and cause rot and decay; North: spring & autumn.

646. *A. herzogi* Rebel. (= *A. hoggari* Roths.).<sup>2</sup> Larvae feed on grape roots and cut off newly-transplanted plants at soil level; Middle & South: Nov—March.
647. *A. epsilon* Hufn.<sup>4</sup> Same on cotton, lettuce, cabbage, sugar-beet and root crops; country-wide: spring-autumn.
648. *A. (Euxoa) segetum* Schiff.<sup>4</sup> Same; country-wide: spring-autumn.
649. *A. spinifera* Hubn. Larvae feed on roots of Bermuda grass; country-wide: Nov—July.
650. *Anua tirhaca* Cr.<sup>3</sup> Larvae feed on myrtle leaves; Baghdad: Jan, March, May & Nov.
651. *Apatele aceris* L.<sup>3</sup> Same on poplar; Middle: April, May & Oct.
652. *A. rumicis* L.<sup>3</sup> Same on water mint and *Prunus*; North: spring & summer.
653. *Arcyphora (Euxestis) dentula* Led.<sup>3</sup> Same on pomegranate; Middle & South: July—Oct.
654. *Autographa (Plusia) gamma* L.<sup>3</sup> Same on cotton, cabbage, potato, poppy, lucerne and nettle; North & Middle: winter-spring.
655. *Caradrina clavipalpis* Scop.<sup>4</sup> Same on wheat and other cereals; country-wide: early summer & autumn.
656. *Catocala elocata* Esp.<sup>3</sup> Same on poplar and willow; North & Middle: June & Oct.
657. *C. lesbia* Christ.<sup>3</sup> Same on poplar; Diyala: Oct.
658. *C. lupina* H—S.<sup>3</sup> Same on poplar and willow; North: Aug.
659. *C. optima* Stgr.<sup>3</sup> Same on poplar; Baghdad: June.

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660. *C. purepera* Giorn.<sup>3</sup> Same on poplar and willow; North & Middle: June & Oct.
661. *Dicycla oo* L.<sup>1</sup> Same on oak; Mosul: May.
662. *Dysgonia torrida* (Guen.) (= *D. albivittata* Guen.).<sup>3</sup> Same on pomegranate and bramble; North & Middle: April & Oct.
663. *Earias insulana* Boisd.<sup>4</sup> Larvae feed on growing tips, flower buds, bolls, and seed pods of cotton, okra, dwarf mallow and hollyhock causing their destruction; country-wide: year-round.
664. *Euxoa (Agrotis) conspicua* Hubn. Larvae attack germinating seeds, stems and roots of young tobacco, cabbage, beet and cereals at soil level; North & South: April, May, Sept & Oct.
665. *Hadjina viscosa* Frr.<sup>3</sup> Larvae feed on *Pluchea* leaves; South: year-round.
666. *Heliothis armigera* Hubn. (= *H. obsoleta* F).<sup>4</sup> Larvae bore through cotton bolls, tomato fruits, corn ears and safflower leaves; Baghdad: March—June.
667. *H. (Chloridea) nubigera* H—S.<sup>2</sup> Larvae feed on leaves and young fruits of tomato, tobacco, water-melon and other cucurbits; North & Middle: April & June—Nov.
668. *H. peltigera* Schiff.<sup>4</sup> Larvae feed on leaves and buttons of cotton, tobacco, sunflower and chick pea; country-wide: May—July & Nov.
669. *H. viriplaca* (Hubn.) (= *H. dispacea* L).<sup>2</sup> Larvae feed on leaves and fruits of legumes; North: May & Aug.
670. *Hypoglaucitis benenotata* Warr.<sup>1</sup> Larvae feed on *Tamarix* leaves; Basra: March—May.
671. *Leucania (Mythimna) loreyi* (Dup.). Larvae feed on terminal growths of corn, sorghum and other cereals; country-wide: May—Aug & Nov.

672. *Mormonia neonympha* Esp. <sup>3</sup> Larvae feed on liquorice leaves; Up. Jezira & Basra: May; Diyala: June; Kut: May & June.
673. *Mythimna zaea* Dup. <sup>3</sup> Larvae feed on terminal growths of corn and other cereals; country-wide: Aug & Oct.
674. *Nycteola asiatica* Krul. (= *Sarrothripus revayana* Scop.) <sup>3</sup> Larvae feed on poplar leaves causing partial defoliation; Mosul: Oct.
675. *Oria musculosa* Hubn. <sup>3</sup> Larvae feed on heads of wheat and other cereals; infested heads dry, whiten and get easily detached from stalk; country-wide: Feb, March, May & June.
676. *Pandesma anysa* Guen. <sup>3</sup> Larvae are nocturnal feeders of Euphrates poplar leaves; by day, they hide beneath bark; Kut: May; Amara: May & June.
677. *Parallelia (Dysgonia) algira* (L.). Larvae feed on leaves of pomegranate and bramble; Amara: Aug; Basra: June.
678. *P. geometrica* F. <sup>3</sup> Same on bramble; Baghdad & Basra: July; Amara: Oct.
679. *Phlogophora meticulosa* L. <sup>3</sup> Same on beet and lettuce; North: autumn.
680. *Plecoptera reflexa* Guen. <sup>4</sup> Larvae feed on sissoo leaves leading to tree defoliation; Ramadi: Aug.
681. *Plusia chalcites* Esp. <sup>3</sup> Larvae feed on leaves of annual weeds; North & Middle: Feb, March & Oct; South: Aug.
682. *P. (Trichoplusia) ni* Hubn. (= *Autographa brassicae* Riley). Larvae feed on leaves of cabbage and cauliflower, resulting in stunted growth of cabbage heads; Mosul: April; Diyala: March.
683. *Porphyrynia (Eublemma) parva* Hubn. Larvae bore through spongy layer of heads of sunflower and other composites; Amara: May—Oct.

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684. *Sesamia cretica* Led. <sup>4</sup> Larvae bore straight through young, rolled and unopen leaves of corn, sorghum and sugar cane, and through stalk and corn ears; Baghdad: June, July & Oct; Diwaniya: April.
685. *S. nonagrioides* Lef. <sup>2</sup> Larvae feed inside rice stalk and cause death of its upper portion; Diyala: April.
686. *Spodoptera cilium* Guen. <sup>4</sup> Larvae feed on leaves, flowers and flower buds of weeds and grasses; North & Middle: April—Nov.
687. *S. (Laphygma) exigua* Hubn. <sup>4</sup> Young larvae web up top shoots of cotton, sugar-beet, alfalfa, broad bean, sunflower, okra, celery and Bermuda grass; mature larvae defoliate host plant, and, sometimes attack fruits and cotton bolls; country-wide: March—Nov.
688. *S. littoralis* (Boisd.) (= *Prodenia litura* F.). <sup>3</sup> Larvae feed on leaves, flowers and flower buds of cotton, castor bean, peanut and green gram; Middle & South: April—Nov.
689. *Syngrapha circumflexa* L. <sup>3</sup> Larvae feed on leaves of vegetables and garden flowers; country-wide: spring, autumn.
690. *Triphaena pronuba* L. <sup>3</sup> Same; Diyala & Kerbala: Feb & April.
691. *Xanthodes graellsii* Feisth. <sup>3</sup> Same on cotton, okra and other Malvaceae; Middle & South: April—July & Oct.
692. *Xylena exosoleta* (L.). <sup>3</sup> Larvae feed on leaves and topshoots of flax and legumes; North: April; Baghdad: March, Oct & Nov.

NOTODONTIDAE

693. *Cerura vinula* L. <sup>1</sup> Larvae feed on poplar leaves; Mosul & Diyala: April & Sept.

NYMPHALIDAE

694. *Polygonia egea* Cr. <sup>2</sup> Same on *Parietaria*; Mosul: April.

695. *Vanessa (Pyrameis) cardui* L. <sup>2</sup> Same on *Malva*, mint, artichoke and tomato; country-wide: spring, autumn.

OLETHREUTIDAE

696. *Hedya neubiferana* (Haw.) (= *Argyroploce variegana* (Hubn.)). Larvae skeletonize quince and hawthorn leaves; also attack flowers and buds.
697. *Laspeyresia pomonella* (L.). <sup>4</sup> Larvae feed inside apple, pear and walnut fruits; North & Middle: March—Oct.
698. *Lobesia botrana* (Schiff.). Larvae feed on flowers and fruits of grape causing fruit rot; Baghdad: June & July.

PAPILIONIDAE

699. *Iphiclus podalirius* L. <sup>3</sup> Larvae feed on leaves of apple, almond, wild pear and other Rosaceae; Sulaimaniya: July.
700. *Papilio demoleus* L. <sup>3</sup> Larvae feed on growing tips and young leaves of citrus; Baghdad & Hilla: Sept—Nov.
701. *P. machaon* L. <sup>3</sup> Larvae feed on leaves of rue and dill; North & Middle: March—Nov.

PHYCITIDAE (PYRALIDAE)

702. *Ectomyelois ceratoniae* Zell. <sup>3</sup> Larvae bore through young fruits of pomegranate, apple, orange, almond, walnut and dried fig causing fruit rot; Sulaimaniya: April; Diyala, Baghdad, Ramadi, Hilla & Kerbala: April—Nov.
703. *Ephestia calidella* Gn. <sup>3</sup> Larvae feed inside fallen or stored dates between skin flesh and seed; Middle & South: year-round.
704. *E. cautella* Walk. <sup>4</sup> Same; Middle & South: March—Nov.

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705. *E. dowsoniella* Rich. & Th. <sup>2</sup> Same; Middle & South: year-round.
706. *E. elutella* Hubn. <sup>3</sup> Same; Middle & South: year-round.
707. *Myelopsis phoenicis* Durr. Larvae feed on dates; Middle & South: July—Sept.
708. *Phycita diaphna* Stgr. <sup>2</sup> Larvae roll leaves of Euphrates poplar and castor bean, and feed within; also attack inflorescence and destroy seeds; Middle: summer-autumn.
709. *Plodia interpunctella* (Hubn.). <sup>4</sup> Larvae feed on ripe, fallen, harvested or stored dates; also feed on dried fruits and cereal products; Middle & South: year-round.

PIERIDAE

710. *Aporia crataegi* L. <sup>3</sup> Larvae feed on leaves of apple, pear and cherry; Erbil: June; Sulaimaniya: May.
711. *Catopsilia florella* F. <sup>2</sup> Same on *Senna* and *Cassia*; South: March—April.
712. *Colias croceus* Fourc. (= *C. edusa* F.). <sup>3</sup> Same on alfalfa, clover and other legumes; country-wide: March—June.
713. *Colotis fausta* Oliv. <sup>2</sup> Same on *Capparis*; Diyala: July; Baghdad: June—Dec; Amara: Sept—Dec.
714. *Gonepteryx farinosa* Zell. <sup>2</sup> Same on *Rhamnus*; North: undated.
715. *Pieris (Mancipium) brassicae* L. <sup>4</sup> Larvae feed on foliage, especially heart leaves of cabbage and other crucifers; growth retardation or cessation results; North: Nov—Jan.
716. *P. napi* Verity. <sup>2</sup> Same; North: undated.
717. *P. rapae* L. <sup>4</sup> Same; country-wide: Nov—June.

718. *Pontia daplidice* L. <sup>1</sup> Same; Mosul: June; Diyala: year-round; Amara: April & May.

**PTEROPHORIDAE**

719. *Trichoptilius congrualis* Walk. <sup>1</sup> Larvae live and feed inside bud galls of oak caused by *Andricus caput-medusae* (cf. 548); Sulaimaniya: Aug & Sept.

**PYRALIDAE**

720. *Acrobasis tumidana* D & S. <sup>3</sup> Larvae tie together leaves of young shoots of oak in which they feed and pupate; Sulaimaniya: June.

721. *Aglossa pinguinalis* L. <sup>3</sup> Larvae feed on dried cereal seeds and refuse; Baghdad: March & April.

722. *Antigastra catalaunalis* Dup. <sup>3</sup> Larvae feed on leaves, terminal buds, flowers and seed pods of sesame; North: Aug—Nov.

723. *Arenipses sabella* Hamps. <sup>4</sup> Larvae feed on blossom of date-palm, first prior to- and during pollination, then inside fruits; infested dates become dry; Middle & South: March—Oct.

724. *Chilo suppressalis* Walk. (= *C. simplex* (Buttler), *C. oryzae* (Flet.) ) <sup>1</sup> Larvae are stem borers of rice, corn and sorghum; Amara: April.

725. *Cornifrons ulceratalis* Led. Larvae feed on sesame leaves; Middle (desert): March, April & Nov.

726. *Dioryctria mendacella* Staud. <sup>4</sup> Larvae attack pine cones causing partial to complete destruction of cones; Mosul: June—Oct.

727. *D. pineae* Staud. <sup>4</sup> Same; Mosul: June—Nov.

728. *Euzophera batangensis* Caradja. <sup>2</sup> Larvae feed inside walnut fruit which turns brown; fruit coat usually shrinks; Mosul: Sept; Erbil: Oct & Nov.

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729. *E. villora* Feld. Larvae feed on stem pulp of eggplant, and axiles of its lower leaves; chlorosis and weakness of severely infested plants result; South: March & April.
730. *Galleria mellonella* L. <sup>4</sup> Larvae feed on bee-wax in hives; country-wide: Feb—April & Sept—June.
731. *Hellula undalis* F. <sup>3</sup> Larvae feed on leaves of cabbage and turnip, and bore through stems and heads; country-wide: March—Oct.
732. *Hymenia fascialis* Z. (= *H. recurvalis* F.). <sup>3</sup> Larvae feed on leaves of beet and root crops; Middle & South: Oct & Nov.
733. *Hypsopygia costalis* F. <sup>3</sup> Larvae feed on stored clover; North: June-Aug.
734. *Lepidogma obratalis* Chr. <sup>2</sup> Larvae tie small branchlets of *Tamarix* together and feed within; Basra: March—May, Aug & Sept.
735. *Loxostege nudalis* Hamps. <sup>4</sup> Larvae feed on *Amaranthus* leaves; Baghdad: May—Oct.
736. *Ostrinia (Pyrausta) meridionalis* Stgr. <sup>3</sup> Larvae feed in stem of wild mint; North: May—Oct.
737. *Pachyzancla licarsialis* Walk. <sup>3</sup> Larvae feed on roots of lawn grass; Middle & South: Oct—March.
738. *Pyralis farinalis* L. <sup>3</sup> Larvae feed on dry cereal seeds and refuse; Erbil: May; Baghdad: Oct.
739. *Pyrausta aurata* Scop. Larvae in mint stem; Baghdad: April.
740. *P. cespitalis* Schiff. Same on *Plantago*; Amara: March & April.
741. *Spermatophora hornigii* Led. <sup>3</sup> Larvae feed inside fallen dates; Baghdad, Amara & Basra: Sept.
742. *Udea rubigalis* (Guen.) (= *Phlyctaenia ferrugalis* Hubn.). Larvae feed on tender growths of cabbage and lettuce just above heart, and cover

leaves with web and excrement; when ready to pupate they roll leaves and fasten their margins with web; Baghdad: March.

#### SATURNIIDAE

743. *Perisomena caesigena* Kupido.<sup>1</sup> Larvae feed on oak leaves; Mosul: Nov.  
744. *Saturnia pyri* Schiff.<sup>3</sup> Same on apple and willow; North: April & May.

#### SCYTHRIDAE

745. *Syringopais (Scythris) temperatella* Led.<sup>4</sup> Larvae mine through leaves of wheat, barley and other cereals, producing parallel hyaline tunnels on leaf surface; chlorosis and stunted growth results; North: May & June; Middle & South: Feb—May.

#### SESIIDAE (AEGERIIDAE)

746. *Eusphecia pimplaeformis* Ob.<sup>4</sup> Larvae bore through phloem of thick, healthy stems of poplars and willows, or through thinner stems and branches; sap exudes from points of attack; Mosul: April & May; Baghdad: March & April.  
747. *Sciapteron (Paranthrene) tabaniformis* Rott.<sup>4</sup> Young larvae feed on inner bark of poplars and willows; later stages on wood of branches of young plants; Mosul: April & May; Baghdad: March & April.

#### SPHINGIDAE

748. *Acherontia (Manduca) atropos* L.<sup>2</sup> Larvae feed on leaves of potato and sesame; Baghdad: Feb.  
749. *A. styx* Westw.<sup>3</sup> Same on pumpkin, *Duranta* and *Lycium*; Baghdad: Oct; Amara: May—July.  
750. *Berutana kotschyi* Koll.<sup>3</sup> Same on grape; Erbil: May & Aug.

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751. *Celerio euphorbiae* L.<sup>3</sup> Same on *Euphorbia*; host may be defoliated; North: May—July.
752. *C. lineata* F.<sup>3</sup> Same on grape, snapdragon and *Rumex*; country-wide: spring & early summer.
753. *Dephnis nerii* L.<sup>3</sup> Same on oleander and *Vinca*; North & Middle: April, July, Sept & Nov.
754. *Herse convolvuli* L.<sup>3</sup> Same on sweet potato and *Convolvulus*; Baghdad: May.
755. *Hippotion celerio* L.<sup>3</sup> Same on grape; Middle: undated; Basra: March & April.
756. *Lathoe populi* L.<sup>1</sup> Larvae defoliate poplar and willow; defoliation starts at tree top and proceeds downwards; Mosul: April; Erbil: Aug.
757. *Theretra (Chaerocampa) alecto* L.<sup>3</sup> Larvae feed on grape leaves; vines may be defoliated; country-wide: March—Sept.

THAUMETOPOEIDAE

758. *Thaumetopoea solitaria* Freyer.<sup>3</sup> Same on pistachio; North: Sept & Oct.

TINAEIDAE

759. *Niditinea fuscipunctella* Haw.<sup>3</sup> Larvae feed on dried animal and plant material; Baghdad: April—Dec.
760. *Trichophaga abruptella* Wall. Larvae feed on carpets, woollen clothes and other fabrics.

TORTRICIDAE

761. *Cacoecia (Archips) rosana* L.<sup>3</sup> Larvae feed on foliage of pome and stonefruit trees and poplar, and roll terminal leaves with web; North & Middle: May & June.

762. *Cydia fagiglandana* Zell.<sup>4</sup> Larvae feed singly between acorn and capsule wall of oaks; infested acorns show brown patches and fall down early; Mosul & Sulaimaniya: Aug—Oct.
763. *Epinotia festivana* Hubn.<sup>2</sup> Larvae live between two leaves of oak, held together by silk and feed on both; Mosul, Erbil & Sulaimaniya: May, June & Aug.
764. *E. trimaculata* Den. Larvae fasten two young leaves of poplar together and feed upon their inner surfaces until skeletonized; Mosul: May & June.
765. *Gypsonoma hapalosarca* Mayr. (= *G. euphraticana* Ams).<sup>1</sup> Same on Euphrates poplar; Mosul: Sept; Baghdad & Basra: Oct.
766. *Pammene amygdalooides* Dup.<sup>1</sup> Larvae live and feed inside oak leaf galls of *Andricus multiplicatus* (cf. 557); Mosul & Sulaimaniya: Sept.
767. *P. fasciana* L. (= *P. juliana* Curtis).<sup>1</sup> Larvae live and feed inside leaf and bud galls of oaks caused by *A. insana*, *A. kollari* and *A. multiplicatus* (cf. 554, 555 and 557); Mosul & Sulaimaniya: Sept—Nov.
768. *P. gallicolana* Zell.<sup>1</sup> Larvae live and feed inside oak leaf galls of *A. multiplicatus* (cf. 557); Mosul & Sulaimaniya: May.
769. *Sparganothis pilleriana* (Denis & Schiff.).<sup>2</sup> Larvae fasten grape leaves with web and feed upon them; North: May.

YPONOMEUTIDAE

770. *Plutella maculipennis* Curt.<sup>4</sup> Larvae feed on leaves of cabbage and wild crucifers; Middle & South: March & April.
771. *P. xylostella* L. Same on clover and weeds; Mosul: April; Baghdad: May.
772. *Yponomeuta padella* L. Larvae feed on apple leaves held together by web many larvae may live in one web; Erbil: June—Aug.

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ORTHOPTERA

ACRIDIDAE (LOCUSTIDAE)

773. *Acrida oxycephala* (Pall.) (= *A. deserti* Uv.). Adults and nymphs feed on soft green parts of vegetables and field crops; Mosul: Feb & Oct—Nov; Erbil: Feb; Sulaimaniya: Nov; Baghdad: Aug, Sept & Nov; Amara: June.
774. *A. (Acridella) robusta* Uv. Same; Amara: June.
775. *Acrotalus insubricus* Scop. (= *A. versicolor* Burr.).<sup>2</sup> Adults and nymphs feed on leaves, buds and seedlings of cotton and other crops; country-wide: Feb—Dec.
776. *Aiolopus savignyi* (K) (= *A. affinis* Bol.). Adults and nymphs feed on young field crops and their leaves; Mosul, Diyala & Baghdad: April-June.
777. *A. (Epacromia) strepens* (Latr.). Same on cotton and other crops; Mosul, Diyala & Ramadi: March—May.
778. *A. (Epacromia) thalassinus* Rossi. Same; Middle & South: Feb—May, Aug, Oct & Nov.
779. *Anacridium (Acridium) aegyptium* (L).<sup>1</sup> Same on vegetables, field crops, poplars and fruit trees; Erbil: May—Aug; Amara: Sept & Oct.
780. *Calliptamus barbarus* Costa. Same on field crops; Erbil, Sulaimaniya, Kirkuk, Diyala & Baghdad: May—Aug & Nov.
781. *C. (Caloptenus) italicus* L.<sup>3,4</sup> Same on field crops, vegetables and cereals; Mosul, Diyala, Baghdad & Hilla: May.
782. *Chorthippus brunneus* Thumb. (= *Stauroderus bicolor* Charp.). Same on clover and forage crops; Mosul: June & July; Baghdad: undated.
783. *Dociostaurus hauensteini* (Bolivar). Same on cereals and forage crops; North & Middle: May; Amara: April.

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784. *D. (Stauronotus) maroccanus* Thumb. <sup>4</sup> Adults and nymphs of the migratory phase completely destruct vegetables, field crops, cereals, fruit and forest trees; Mosul & Baghdad: April & May; Kut: May.
785. *D. tartarus* Uv. Adults and nymphs feed on leaves and tender parts of field crops; occasionally attack cotton.
786. *Duroniella fracta* (Krauss). <sup>3</sup> Adults and nymphs feed on leaves and young plants of lucerne and forage crops; Amara: April.
787. *Euprepocnemis plorans* (Charp.). Same on vegetables and field crops; Mosul, Sulaimaniya & Baghdad: July, Aug & Nov.
788. *Locusta danica* L. <sup>2</sup> Same on wheat and barley; Diyala: undated.
789. *L. migratoria* L. Adults and nymphs feed on leaves, young stems and shoots of vegetables and field crops; Middle & South: Feb, May & June.
790. *Mioscirtus wagneri* Uv. Same on cereals; Diyala, Baghdad, Ramadi, Kut & Basra: May; Amara: June & Nov.
791. *Ochrilidia acuta* (Bol.). Same on lucerne and forage crops; Baghdad April & Sept.
792. *O. tibialis* Fieb. <sup>2</sup> Same; Baghdad: Sept; Amara: June & Oct.
793. *Oedaleus decorus* (Germ.) (= *O. nigrofasciatus* Latr.). Same on cotton and other crops.
794. *O. senegalensis* (Kr.). Same; Diyala & Ramadi: May.
795. *Oedipoda coerulescens* (L.). Same; Baghdad: May—Aug, Oct & Nov.
796. *O. miniata* (Pall) (= *O. salina* Gmel.). Same on cucurbits and other crops; North & Middle: June.
797. *Pyrgodera armata* F. W. Same on field crops; Erbil: May & July; Diyala: July.

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798. *Pyrgomorpha conica* Oliv. <sup>2</sup> Same on cucurbits and other crops; Baghdad: Oct; Amara: March & June.
799. *P. guntheri* Burr. Same on field crops; Mosul, Diyala & Baghdad: April & May.
800. *Ramburiella turcomana* F. W. Same on cereals; Diyala: May; Baghdad: June.
801. *Schistocerca gregaria* (Forsk.). <sup>4</sup> Adults and nymphs of the migratory phase completely defoliate vegetables, field crops, fruit and forest trees; country-wide: March-June.
802. *Sphingoderus carinatus* (Sauss.). <sup>2</sup> Adults and nymphs feed on leaves and young plants of cotton and cereals; Diyala: Aug.
803. *Sphingonotus coerulans* L. Same on vegetables and field crops; Baghdad & Amara: undated.
804. *S. obscuratus* Sauss. Same; Diyala & Ramadi: May.
805. *S. starapes* Sauss. Same; Diyala & Baghdad: May & July.
806. *Thisoicetrinus dorsatus* F.W. (= *T. pterostichus* F.W.). Same on cotton and field crops; Sulaimaniya & Baghdad: June & July; Diyala: July; Amara: June.
807. *Thisoicetrus adspersus* Redt. <sup>2</sup> Same on *Acacia*; Baghdad: Feb; Amara: June, Aug & Sept.
808. *T. buxtoni* Uv. <sup>2</sup> Same on camel thorn and grasses; Amara: May & June.
809. *T. littoralis* (Ramb.). Same on alfalfa, vegetables and field crops; North & Middle: Oct & Nov.
810. *Tropidopola cylindrica* March. Same on sugarcane, rice and other field crops; Baghdad, Kut & Nasiriya: March, Sept & Nov; Amara: Jan, April, May, Oct & Nov.

BLATTIDAE

811. *Blatella germanica* L. Adults and nymphs feed on dead animal and plant material; Amara: June, Aug & Nov; Basra: May.
812. *Blatta orientalis* L. Same on stored animal and plant products; country-wide: warm seasons.
813. *Heterogamodes maris-mortui* (Janson). Adults and nymphs feed on dead animal and plant material; Amara: June—Nov; Basra: May.
814. *Ischnoptera evansi* Chop. Same; Amara: Aug.
815. *Periplaneta americana* L. Same; country-wide: warm seasons.
816. *Polyphaga aegyptiaca* (L.). Same; Amara: March & April; Basra: May-Aug.
817. *P. africana* L. Same; Diyala & Kut: Nov.
818. *Schelfordella (Periplaneta) tartara* Sauss. Same; Amara: April-June & Sept; Basra: May.
819. *Supella supellectilium* (Serv.). Same as above.
820. *Supellina buxtoni* Chop. Same; Amara: Sept.

GRYLLIDAE

821. *Acheta (Tartarogryllus) burdigatensis* Serv. <sup>2</sup> Adults and nymphs feed on young leaves, buds and seedlings of cotton, beet, melon and store products.
822. *A. desertus* (Pall.). Same; Kut: Aug; Amara: April & May; Basra: March.
823. *A. (Gryllus) domesticus* (L.). <sup>3</sup> Same but feed on clothes also; country-wide: warm seasons.
824. *Gryllus bimaculatus* De G. <sup>3</sup> Adults and nymphs feed on seedlings; Diyala & Amara: Aug.

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GRYLLOTALPIDAE

825. *Gryllotalpa gryllotalpa* (L) (= *G. vulgaris* Latr.). <sup>♂, ♀</sup> Adults and nymphs attack roots of vegetables and field crops, causing heavy damage; country-wide; warm seasons.

TETTIGONIIDAE

826. *Conocephalus buxtoni* Chop. <sup>♂</sup> Adults and nymphs feed on leaves and stems of rice and other crops; Amara: June.
827. *C. fuscus* F. <sup>♂</sup> Adults and nymphs feed on rose leaves; Amara: May & Oct.
828. *Decticus (Tettigonia) albifrons* Cyr. <sup>♂</sup> Adults and nymphs attack maturing ears, cobs, pods, young shoots and leaves of vegetables, field crops and cereals; Diyala & Hilla: April & May; Baghdad: April—June; Amara: June.
829. *Homorocoryphus (Conocephalus) nitidulus* Scop. <sup>♂</sup> Adults and nymphs feed on leaves of rice and corn; Amara: Oct.
830. *Platycleis (Metrioptera) affinis* Fieb. Adults and nymphs feed on soft grains, young tobacco plants and vegetables; Mosul & Hilla: June; Sulaimaniya: Aug; Diyala: May.
831. *P. escalerae* Bolivar. Same; Amara: May & June.
832. *P. intermedia* (Serv.). Same as above.
833. *P. persica* Uv. Same on wheat and barley; Amara: June.
834. *Tettigonia caudata* (Charp.). Adults and nymphs feed on soft grains, seed pods and seedlings of cereals, legumes, tobacco and clover; Diyala & Hilla: April & May; Baghdad: April—June; Amara: July.
835. *T. (Phasgonura) viridissima* L. Same; Mosul: June-Aug; Diyala & Kut: May & July; Baghdad: March; Kerbala: May; Nasiriya: July.

THYSANOPTERA

PHLOEOTHRIPIDAE

836. *Haplothrips tritici* Kurdj.<sup>3</sup> Attacks ears and soft grains of wheat, barley and mustard causing pale spots on ears; seeds shrivel and decrease in weight and size; Diyala: undated; Baghdad: May.

THRIPIDAE

837. *Anaphothrips alternans* (Bagn.). Adults and nymphs feed beneath leaf sheath of Bermuda grass; Baghdad: May.
838. *A. obscurus* (Mull.). Adults and nymphs feed on inflorescence of Bermuda grass producing silver top; Baghdad: May.
839. *Frankliniella intonsa* (Tryb.).<sup>3</sup> Adults and nymphs attack leaves, ears and flower heads of wheat, flax, lettuce, potato, alfalfa and *Calendula*; Sulaimaniya: Oct; Baghdad: May.
840. *F. pallida* Uz. Adults and nymphs attack leaves and flowers of cotton; Baghdad: May.
841. *Heliothrips indicus* Bag. Adults and nymphs feed on leaves of cotton, okra, hollyhock and sissoo, producing leaf curl and chlorosis.
842. *Retriothrips syriacus* (May.) (= *R. aegyptiacus* March., *Dictyothrips zanoniana* De G.).<sup>3'4</sup> Adults and nymphs feed on leaves and fruits of cotton, rice, mulberry, fig, grape, pome and stone-fruit trees; defoliation and shrivelled fruits result; Diyala: Nov; Baghdad: May & July; Amara: Aug.
843. *Taeniothrips vulgarissimus* (Haliday). Adults and nymphs feed on nectarine fruits which show cracks, scars, patches on skin, and gum secretion; Erbil: April.

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844. *Thrips tabaci* Lind. (= *T. solanacearum* Ports.). Adults and nymphs feed on leaves of cotton, onion, tobacco, wheat, tooth pick, squash and cucumber which show white blotches and wilting; upper part of plant may die; They also act as virus vectors; Sulaimaniya: Oct; Baghdad: Feb—May; Hilla: April; Kut: May.

PART II. ENTOMOPHAGOUS SPECIES, 845—1084

ACARINA

CHEYLETIDAE

845. *Acaropsis sollers* Rhodendorf. All stages feed on non-embryonated eggs of *Trogoderma granarium*; Baghdad: year-round.

PHYTOSEIIDAE

846. *Typhlodromus rhenanus* (Oudm.). Predator of *Eriophyes pyri*; Mosul: Feb & Oct.

COLEOPTERA

CARABIDAE

847. *Anthia 12-guttata* Bou. Adults prey upon other small beetles; Ramadi & S. desert: April; Amara: March & April; Basra: April & Nov.
848. *Calosoma maderae* (F.). Adults and larvae prey upon nymphs of *Eurygaster integriceps*; Baghdad: March—July & Sept; Diyala: April & May; Nasiriya: March, April & Sept.
849. *Chlaenius* spp. Adults prey upon immature stages of a variety of insects; Mosul: April; Baghdad: March—Sept; Kut: July; Basra: April—June.
850. *Lebia holomera* Chaud. Same; Baghdad: April; Kerbala: Nov.

CHRYSOMELIDAE

851. *Diorhabda fisheri* (Fald.). Probably prey upon early-instar nymphs of *E. integriceps*; Baghdad: Sept.

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CICINDELIDAE

852. *Cicindela asiatica* Brulle. Adults and larvae feed on a variety of live and dead insects; Baghdad: April.
853. *C. deserticola* Fald. Same; Baghdad: May & June; Kut: May.
854. *C. germanica* L. Same; Baghdad: April.
855. *C. hilariola* Bates. Same; Feb—April, Sept & Oct.
856. *C. lunulata* F. Same; Mosul: undated; Baghdad: April; Hilla, Nasiriya & Basra: Sept; Amara: March.
857. *C. melancholica* F. Same; Mosul & Hilla: Sept; Erbil: July; Baghdad: March-June; Ramadi: May; Nasiriya: April & Sept.
858. *C. pumaea* Dej. Same; Mosul: March & April.
859. *Megacephala euphratica* Latr. & Dej. Same on various species of grasshoppers; Baghdad: March—July; Ramadi & Hilla: May; Nasiriya: April.

CLERIDAE

860. *Trichodes* spp. Adults feed on pollen of Umbelliferae; larvae prey upon bee larvae; March—June; Baghdad: March & May.
861. *T. longisimus* (Abeille). Adults feed on pollen of *Achillea* (Compositae); larvae live in bee nests; Mosul: June.

COCCINELLIDAE

862. *Adalia decempunctata* L. Adults and larvae prey upon all stages of the aphid *Thelaxes confertae* found on *Quercus aegilops*; Sulaimaniya: June—Sept.
863. *Chilocorus bipustulatus* L. Adults and larvae prey upon all stages of

- Parlatoria oleae*, *Chrysomphalus dictyospermi* and peach aphids; Mosul, Erbil & Sulaimaniya: Oct.
864. *Coccinella conglobata* L. Same on *T. confertae* and other aphids; Sulaimaniya: spring-early summer.
865. *C. septempunctata* L. Same; Erbil: July & Dec; Kirkuk: April; Diyala: April, May, Nov & Dec; Baghdad & Ramadi: Oct—June; Kut: Nov.
866. *C. undecimpunctata* L. Adults and larvae feed on all stages of aphids; they also feed on eggs and young larvae of *Spodoptera littoralis*; Mosul: April & Sept; Erbil: July; Diyala: April; Baghdad: Feb, March & May—Aug; Ramadi & Kut: March; Hilla: Oct; Kerbala: March & Nov.
867. *Diomus rubidus* (Motsch.). Adults and larvae feed on all stages of *Nipaecoccus vastator*; Baghdad: July.
868. *Exochomus* spp. Same on aphids; Baghdad: March, July—Sept; Hilla: Nov.
869. *E. nigripennis* Er. Adults and larvae feed on eggs of *N. vastator*, and on all stages of aphids; Baghdad: April & Oct.
870. *E. pubescens* Kust. Adults and larvae feed on all stages of aphids; Baghdad: March & July—Sept.
871. *E. quadripustulata* (L). Same on *T. confertae*; Mosul: Nov; Sulaimaniya: June—Sept.
872. *Hyperaspis pumila* Muls. Same on *N. vastator*; Baghdad: July.
873. *Nephus bipunctatus* Kug. Same on *Aphis punicae*; Baghdad: Dec.
874. *N. (Sielis) hiekei* Fursch. Larvae prey upon eggs and nymphs of *N. vastator*; Baghdad: undated.
875. *N. nigricans* Weise. Same; Baghdad: undated.

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876. *N. quadrimaculatus* (Hbst.). Same on *Parlatoria blanchardii*; Baghdad: March & Oct.
877. *Pharoscymnus setulosus* Chevr. Same on certain unidentified coccid; Baghdad: Nov.
878. *P. smirnovi* Dobzhansky. Same on *P. blanchardii*; Baghdad & Hilla: Nov.
879. *Scymnus* spp. Larvae feed on eggs and crawlers of diaspisid scales; Baghdad: Jan & Aug; Hilla: Nov.
880. *S. (Pullus) ebneri* (Wse.). Same on *P. blanchardii*; Baghdad & Basra: Nov.
881. *Thea 22-punctata* (L). Adults and larvae feed on all stages of the mites *Tetranychus telarius* and *Bryobia praetiosa*; Erbil: July; Diyala: Dec; Baghdad: May—July.

**COLYDIIDAE**

882. *Aulonium bicolor* F. Probably prey upon the scolytid beetle *Onthotomicus proximus*; Mosul: May.

**HISTERIDAE**

883. *Platysoma (Cylistoma) cornix* Mars. Same; Mosul: May.

**LAMIIDAE**

884. *Agapanthia cardui* (L). Same; large and stout larvae show cannibalism (cf. 223); Mosul & Sulaimaniya: May & June; Baghdad & Amara: March.

**MALACHIIDAE**

885. *Malachius* sp. Adults and larvae prey upon immature stages of the tortricid moth *Cydia*; Baghdad: March & July.

MELOIDAE

886. *Lydus preustus* Mars. Larvae probably feed on eggs of grasshoppers (cf. 229); Mosul: May.
887. *Mylabris calida* Pallas. Larvae feed on eggs of *Dociostaurus maroccanus* and *Locusta migratoria*; Mosul & Sulaimaniya: Aug; Erbil: June.
888. *M. polymorpha* Pallas (= *M. quattuordecimpunctata* Pallas). Same; Mosul: April; Baghdad: June & July.
889. *M. quadripunctata* L. Same (cf. 233); Mosul: May & June; Sulaimaniya: May.

NITIDULIDAE

890. *Carpophilus fumatus* Boh. Adults and larvae prey upon all stages of aphids; Baghdad: June—Aug; Basra: March.
891. *C. mutilatus* Erich. Same; Baghdad: May & June; Kerbala & Basra: March.
892. *Cybocephalus rufifrons* Rtt. Same on *P. blanchardii*; country-wide: Dec.

OSTOMIDAE (TROGOSITIDAE)

893. *Tenebrioides mauritanicus* (L.). Usually feed on stored grains and flour; occasionally on other insects in the same medium; Baghdad: Jan, April & July—Aug.

STAPHYLINIDAE

894. *Paederus fuscipes* Curt. Adults prey upon eggs and larvae of *S. littoralis*; Baghdad: March & May; Ramadi: March; Hilla: Oct.

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DERMAPTERA

MACROPTERA

FORFICULIDAE

895. *Forficula auricularia* L. ? Adults prey upon immature stages of *Laspeyresia* and other insects.

896. *F. lucasi* Dohrn. ? Same as above.

LABIDURIDAE

897. *Labidura riparia* Pallas. ? Adults prey upon larvae of *S. littoralis* and pupae of *Pactinophora gossypiella*; Diyala: Aug; Amara: June—Aug.

DIPTERA

MACROPODINA

BOMBYLIIDAE

898. *Anthrax* spp. Larvae feed on eggs of grasshoppers; Mosul: Oct; Ramadi: May; Kerbala: Sept; Basra: undated.

899. *A. binotata* Schiner. Adults emerge from wood of *Robinia pseudoacacia* infested by the cerambycid beetle *Clytus*, and wood of *Populus nigra* infested by the buprestid *Melanophila picta* (cf. 117 & 96); Mosul: May; country-wide; May & June.

900. *A. oxyale* Wied. Larvae feed on eggs of grasshoppers; Mosul: Oct.

901. *Bombylius simulans* Austen. Same; Mosul: May.

902. *Cytherea* sp. Same; Ramadi: April.

903. *Villa* sp. Larvae develop in nest cells of solitary bees; Erbil: July.

**CALLIPHORIDAE**

904. *Pollenia* sp. Larvae are endoparasites of the earthworm *Allolobophora*; Mosul: Sept—Nov; Erbil: Oct; Sulaimaniya: May; Kirkuk: Jan; Diyala: April; Baghdad: Jan—June; Diwaniya: March.

**CECIDOMYIIDAE**

905. *Diorodiplosis* sp. Larvae prey upon eggs and nymphs of *N. vastator* and other mealybugs; Baghdad: Oct.
906. *D. pseudococci* (Felt). Same; Baghdad: April, May & Aug.

**CHAMAEMYIIDAE**

907. *Leucopis* sp. Larvae prey upon gall-forming aphids; Baghdad: April.

**CHLOROPIDAE**

908. *Thaumetomyia* sp. Larvae prey upon the aphid *Pemphigus* spp.; Baghdad: Feb, June & Oct; Hilla: Oct.

**CONOPIDAE**

909. *Myopa buccata* L. Larvae are endoparasites of bumble bees and wasps; Baghdad: March.

**DOLICHOPODIDAE**

910. *Hydrophorus* sp. Adults prey upon larvae of aquatic Diptera.

**EMPIDIDAE**

911. *Empis (Coptophlebia)* sp. Adults prey upon agromyzid flies and other small insects; larvae are predators and scavengers; Baghdad: March.
912. *Hilara* sp. Same; Baghdad: March.

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LONCHAEIDAE

913. *Lonchaea* sp. Larvae prey upon weevils larvae; Baghdad: Oct.

MUSCIDAE

914. *Hylemya cilicrura* Rond. Larvae feed on eggs of *Schistocerca* and other locusts (cf. 305).

915. *Paregle* sp. Same on locusts; Baghdad: Feb & Oct.

916. *Scatophaga* sp. Adults prey upon the fly *Oscinella frit*; larvae are saprophagous.

917. *S. stercoraria* L. Adults suck out body fluids of mycetophilid, bibionid, simulid and muscid flies, and other small Diptera; larvae are saprophagous in dung; Kirkuk & Diyala: April.

PHORIDAE

918. *Megaselia* sp. Larvae are parasites of *Anthonomus*, *Tipula*, *Spodoptera* and *Antigastra*; Baghdad: March.

SARCOPHAGIDAE

919. *Sarcophaga carnaria* L. Larvae are parasitic on nymphs and adults of grasshoppers; Baghdad: March & April.

920. *Wohlfahrtia* sp. Larvae feed on eggs of grasshoppers.

SYRPHIDAE

921. *Lasiophthicus (Scaeva) pyrastri* (L.). Larvae prey upon all stages of the aphid *Hyalopterus pruni*; Mosul: April & Nov; Baghdad: Jan & April.

922. *Paragus* sp. Same on *Aphis fabae*; Baghdad: March & June.
923. *Sphaerophoria scripta* L. Same on *H. pruni* and *Brevicoryne brassicae*; Mosul: April & July—Oct; Sulaimaniya: Jan; Baghdad: Feb—May & Oct—Nov.
924. *Syrphus* sp. Same on aphids; Baghdad: Oct—Feb & April.
925. *S. (Matasyrphus) corollae* Fab. Same on *Aphis* and *B. brassicae*; Diyala: Dec; Baghdad: Feb, April, Nov & Dec.

TACHINIDAE

926. *Exorista* sp. Larvae are parasitic on lepidopterous larvae; Mosul: June.
927. *Microphthalma disjuncta* Wied. Same on scarabaeid beetles.
928. *Nemorilla floralis* Fall. Same on the moths *Spodoptera exigua* and *Antigaster*; Baghdad: May.

THEREVIDAE

929. *Psilocephala fraunfeldi* Loew. Adults prey upon smaller Diptera; larvae upon soft-bodied insects; Ramadi: Aug.
930. *Thereva* spp. Same; Mosul: July.

HEMIPTERA

ANTHOCORIDAE

931. *Anthocoris minki* Dohrn. Adults and nymphs prey upon all stages of the aphid *Forda* inside galls; Erbil & Baghdad: July.
932. *A. nemoralis* (F). Associated with psyllids on *Populus nigra*; nature of the association undetermined; Mosul: Nov.

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933. *Orius albidipennis* (Reut.). Adults and nymphs prey upon aphids and small soft-bodied insects, and upon eggs and mobile stages of the mite *T. atlanticus*; Baghdad: Aug—Nov.

LYGAEIDAE

934. *Geocoris albipennis* F. Adults and nymphs prey upon other small Hemiptera.  
935. *G. megacephalus* Rossi. Same as above.  
936. *G. sicculus* Fleb. Same as above.

MIRIDAE

937. *Campylomma diversicornis* Reut. Adults and nymphs feed on eggs and immature stages of mites, aphids and the white fly *Trialeurodes* (cf. 326); Baghdad: Aug—Dec; Djwaniya: Aug.

NABIDAE

938. *Nabis* sp. Adults and nymphs prey upon psyllid nymphs; Baghdad: May.  
939. *N. capsiformis* Germ. Same on aphids, psyllids and other insects; Mosul: May; Ramadi: March.  
940. *N. feroides* Rm. Same; Mosul: Sept.  
941. *N. ferus* L. Same on psyllids and the cicadellid *Circulifer tenellus*; Mosul: Sept; Kirkuk: Aug; Baghdad: March-June & Sept—Nov.  
942. *N. palifer* Seid. Adults and nymphs prey upon nymphs of aphids and psyllids, and soft-bodied larvae of other insects; Erbil: Aug; Baghdad: Jan & May; Hilla: Oct; Kut: Dec.  
943. *N. pseudoferus* Rm. Same; Erbil: Aug; Kut: Dec.

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944. *N. sareptanus* D. Same; Baghdad: May & July.

945. *N. viridulus* Spin. Same; Erbil: Aug.

REDUVIIDAE

946. *Reduvius annulipes* Reut. Adults and nymphs prey upon smaller Hemiptera; Baghdad: July.

HYMENOPTERA

AMPULICIDAE

947. *Ampulex assimilis* Kohl. Larvae are ecto- and endoparasites of cockroaches; Baghdad: March & May.

APHELINIIDAE

948. *Coccophagus lecanii* (Fitch). Larvae are parasitic on nymphs and adults of *Coccus hesperidium*; Baghdad: Oct; Ramadi: undated.

949. *Marietta (Perissopterus) picta* (Andre). Larvae are parasitic on female coccids; Baghdad: Oct.

APHIDIIDAE

950. *Aphidius funberis* Mackauer. Larvae are specialized parasites of nymphs and adults of the aphids *Dactynotus jaceae* and *D. sonchi*; Mosul: April & May; Erbil: July; Baghdad: Feb—June; Kerbala: April; Kut: March & April.

951. *A. matricariae* Haliday. Same on *Aphis* spp. and *Myzus persicae*; Mosul: May; Baghdad: March & April.

952. *A. rosae* Haliday. Same on *Macrosiphum rosae*; Mosul: May; Erbil: July.

953. *A. transcaspicus* Telenga. Same on *Longianuis Conacis* and *H. pruni*; Mosul: May; Erbil: July; Baghdad & Kut: April & May.

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954. *Diaeretiella rapae* McIntoch. Larvae are endoparasites of nymphs of *D. sonchi* and *B. brassicae*; Mosul: April, May & Sept—Nov; Baghdad, Kerbala & Basra: April.
955. *Lysiphlebus ambiguus* Haliday. Larvae are endoparasites of nymphs and adults of *A. fabae*, *A. gossypii*, *A. nerii* and *A. craccivora*; Baghdad, Kerbala, Kut, Amara & Basra: Feb—June.
956. *L. fabarum* Marshall. Same on *Aphis* spp. Mosul: May; Erbil: July; Baghdad: Feb—May.
957. *L. salicaphis* Fitch. Larvae are specialized parasites of the aphid *Chaitophorus* adults and nymphs; Mosul: May.
958. *L. thelaxis* Stary. Same on the aphid *Thelaxes suberis*; Mosul & Sulaimaniya: Oct; Erbil: July.
959. *Monoctonia pistaciaecola* Stary. Same on *Forda* and *Pemphigus* spp.; Mosul: May & June; Erbil: July; Sulaimaniya: Aug—Nov.
960. *Praon abjectum* Haliday. Same on *Aphis* spp.; Baghdad: April.
961. *P. exsoletum* Nees. Larvae are specialized parasites of the aphid *Therioaphis* and also of the moth *Phyllonorycter*; Baghdad: April.
962. *P. flavinode* Haliday. Larvae are specialized parasites of nymphs and adults of the aphid *Tuberculoides*; Erbil: July.
963. *P. volucre* Haliday. Same on *H. pruni*, *L. donacis* and *M. rosae*; Mosul: May; Erbil: July.
964. *Trioxys* sp. Same on *Aphis* sp., *A. parietariae* and *Brachycaudus* sp. Mosul: May.
965. *T. acalephae* Marshall. Same on *Aphis* sp.; Mosul: May.
966. *T. angelicae* Haliday. Same on *A. craccivora*, *A. punicae*, *A. solanella*, *A. sisyphi*; Mosul: May; Baghdad: April.

967. *T. pallidus* Haliday. Same on *Tuberculoides* sp.; Mosul: May; Erbil: July.

968. *T. quercicola* Stary. Same on *T. suberis*; Erbil: July.

BETHYLIDAE

969. *Sclerodermus* sp. Larvae are parasitic on coleopterous grubs and lepidopterous caterpillars.

BRACONIDAE

970. *Apanteles plaudicolae* Cam. Larvae are parasitic on lepidopterous larvae; most probably on *Pieris* spp.; Baghdad: April.

971. *Bracon (Microbracon) hebetor* Say. (= *Habrobracon kitchneri* Dudge & Gough). Larvae are ectoparasites of the moths *Earias insulana*, *Antigastra catalaunalis*, *Ephestia cautella*, *Plodia interpunctella* and *Hellula*; Baghdad & Basra: year-round.

972. *B. nigripedator* Nees. Larvae are parasitic on larval weevils *Larinus grisescens* and *L. syriacus*; Baghdad: June.

973. *B. (Glabrobracon ?) urinator* F. Same; Baghdad: June.

974. *Chelonus mutabilis* (Nees). Same on *S. littoralis*; Baghdad: Nov.

975. *Macrocentrus* sp. Same; Baghdad: May.

976. *Microplitis* sp. Same as above.

977. *Opius* sp. Same on the fly *Phytomyza atricornis*; Middle & South: March — May.

978. *Phanerotoma ocularis* Kohl. Same on lepidopterous larvae; Baghdad: May.

979. *Rogas* spp. Same; Sulaimaniya: May: July.

980. *R. bicolor* (Spin.). Same; Baghdad: undated.

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981. *Vipio* sp. Larvae are ectoparasites of tenthredinid wasps, cecidomyiid flies, Coleoptera and Lepidoptera; Diyala: April.

CHALCIDIDAE

982. *Brachymeria intermedia* Nees. Larvae are endoparasites of lepidopterous pupae; Baghdad: Nov & Dec.
983. *Dirhinus hesperidum* (Rossi). Larvae are ectoparasites of puparia of tephritid flies; Baghdad: undated.
984. *Prospaltella* sp. Larvae are parasitic on aleurodidae nymphs; Baghdad: summer.

CHRYSIDIDAE

985. *Chrysis blanchardi* Luc. Larvae are ectoparasitic on mature larvae of megachilid bees and vespid wasps; Baghdad: Nov; Amara: Sept.
986. *C. buxtoni* Morice. Same; Amara: June & Aug.
987. *C. cyanopyga* Dahlb. Same; Basra: April.
988. *C. exigua* Mocs. Same; Amara: April & June.
989. *C. fuscipennis* Brull. Same; Amara: Oct.
990. *C. interjecta* Lins. Same on larvae of the beetle *Octodesmus*; Mosul: May.
991. *C. maculicornis* Kl. Same on mature larvae and prepupae of megachilid bees and vespid wasps; Amara: June & Aug.
992. *C. palliditarsis* Spin. Same; Amara: June.
993. *C. scutellaris* F. Same; Amara: Sept.
994. *C. (Hexachrysis) stilboides* Spin. Same; Amara: Aug.
995. *Hedychridium hilare* Morice. Same; Amara: June.

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996. *Omalus* sp. Same; Baghdad: March.

997. *Stilbum cyanurum* Forster. Same; Amara: undated.

DRYINIDAE

998. *Dryinus* sp. Adults prey upon cicadellids; larvae are parasitic on nymphs and adults.

ENCYRTIDAE

999. *Achrysopophagus aegyptiacus* Mercet. Larvae are endoparasites of *N. vastator* females; Baghdad: Aug.

1000. *Anagyrus* sp. Same; Baghdad: March—Oct.

1001. *A. bohemani* Westwood. Same; Baghdad: March—Oct.

1002. *A. diversicornis* Mercet. Same; Baghdad: March—Oct.

1003. *A. pseudococci* (Girault). Same; Baghdad: March—Oct.

1004. *Cheiloneurus* sp. Secondary parasites on same; Baghdad: March—Oct.

1005. *Procheiloneurus aegyptiacus* Mercet. Larvae are endoparasites of *N. vastator* females; Baghdad: July.

EULOPHIDAE

1006. *Achrysocharella formosa* (Westwood). Larvae are endoparasitic on *vastator* females; Baghdad: July.

1007. *A. orientalis* Ferr. Larvae are hyperparasites of leaf-mining beetles through larvae or pupae of the primary euplid host; Baghdad: April.

1008. *Aphelinus mali* Hald. Larvae are endoparasitic in nymphs and adults of the aphid *Eriosoma lanigerum*; Diyala & Baghdad: undated.

1009. *A. mytilaspidis* Le Baron. Same on aphids.

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1010. *Cirrospilus* sp. Hyperparasite of lepidopterous pupae through its primary braconid and ichneumonid hosts; Baghdad: April.
1011. *Diglyphus* sp. Larvae are endoparasitic in larval *P. atricornis*; Baghdad: May.
1012. *Euplectrus* sp. Same *Spodoptera*; Sulaimaniya: Aug.
1013. *Pediobius acantha* (Walk.). Same on *P. atricornis*; Baghdad: Jan & Feb.
1014. *P. (Pleurotropis) epilachnae* Ronwer. Same on the beetle *Epilachna chrysomelina*; North & Middle: Jan—June & Aug—Dec.
1015. *Tetrastichus* sp. Larvae are endoparasitic on females of *N. vastator*; Baghdad: July.

EVANIIDAE

1016. *Evania dimidiata* F. Larvae are parasitic on eggs of cockroaches; Baghdad: Aug—Nov.

FORMICIDAE

1017. *Cataglyphis* sp. Adults (workers) collect larvae of *E. insulana*.
1018. *C. bicolor* (F). Workers probably prey upon nymphs of the bug *Eurygaster integriceps*; Diyala: March; Baghdad: March, April & Oct—Jan.
1019. *Monomorium salomonis* L. Adults feed on sugary food; workers collect larvae of *E. insulana*; Kirkuk: April.
1020. *Pheidole megacephala* F. Workers collect larvae of fruit flies; Baghdad: April.

ICHNEUMONIDAE

1021. *Campoplex* sp. Larvae are probably parasitic on larval moth *Laphygma*; Baghdad: Feb & April.
1022. *Diplazon laetatorius* (F). Females feed on contents of fresh eggs of syrphid flies and oviposit on embryonated eggs; larvae are parasitic in host larvae resulting from these eggs; Basra: Feb & April.
1023. *Ephilates* sp. Larvae are endoparasites of lepidopterous, coleopterous and hymenopterous larvae.
1024. *Mesochorus* sp. Larvae are hyperparasites of Braconidae and other Ichneumonidae.
1025. *Ophion* sp. Larvae are endoparasites of scarabaeid larvae; Baghdad: Feb.
1026. *Pimpla* sp. Same on the larvae of the vespid wasp *Odynerus*; Baghdad: undated.

LARRIDAE

1027. *Palarus fabius* Nurse. Larvae prey upon adult bees and wasps.

MEGACHILIDAE

1028. *Coelioxys* sp. Larvae kill larvae of *Megachile* spp.

MUTILLIDAE

1029. *Ephutomma syriaca* Andre. Females attack adult bees and suck their body fluids; Baghdad: Aug.
1030. *Mutilla* sp. Larvae are ectoparasites of mature larvae and pupae of bees.

MYZINIDAE

1031. *Myzine arabica* Guer. Larvae are ectoparasitic on scarabaeid larvae.

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POMPILIDAE (PSAMMOCHARIDAE)

1032. *Pompilus* sp. Larvae are ectoparasitic on spiders.

1033. *Psammochares* sp. Same as above.

PTEROMALIDAE

1034. *Halticoptera* sp. Larvae are endoparasitic on *P. atricornis* larvae; Baghdad: Jan & Feb.

1035. *Pachyneuron* sp. Larvae are endoparasites of *N. vastator* females; Baghdad: March—Oct.

1036. *Sphegigaster* sp. Same on *P. atricornis* larvae; Baghdad: Jan & Feb.

1037. *Thinodytes cyzicus* (Walk.). Same; Baghdad: Jan & Feb.

SCELIONIDAE

1038. *Telenomus* sp. Larvae are egg parasites of *E. integriceps*.

1039. *Trissolcus (Asolcus) grandis* (Thaus.). Same as above.

1040. *T. semistriatus* (Nees). Same as above.

1041. *T. vassilievi* (Mayr.). Same; unlocated: May.

SCOLIIDAE

1042. *Campsomeris thoracica* (Klug). Larvae are parasitic on scarabaeid grubs; Baghdad, Ramadi & Hilla: Nov.

SIGNIPHORIDAE

1043. *Chartocerus* sp. Larvae are parasitic on *N. vastator* females; Baghdad: July.

1044. *C. (Xana) kurdliyumovi* (Nikolskaya). Same; Baghdad: Aug.

SPHECIDAE

1045. *Ammophila tydei* Guill. Larvae are parasitic on lepidopterous larvae; Baghdad: Dec.
1046. *Cercers* spp. Larvae are parasitic on adult solitary bees; Baghdad: Nov.
1047. *Chalybion bengalense* (Dahlb). Same on spiders; Baghdad: May.
1048. *Chlorion* spp. Same on Orthoptera; Baghdad: March & Dec.
1049. *Larra* sp. Larvae are ectoparasitic on *Gryllotalpa* adults and nymphs; Baghdad & Mosul: summer.
1050. *Liris haemorrhoidalis* Kohl. Larvae are parasitic on adult field crickets; Baghdad: Nov—March.
1051. *Notogania (Notogonidea) subtesselata* Smith. Same as above.
1052. *Oxybelus* sp. Same; Baghdad: March; Basra: undated.
1053. *Philanthus abdulkader* Lep. Same on boney bee *Apis mellifera*; Baghdad: Nov.
1054. *Podium* sp. Same on Orthoptera.
1055. *Sceliphron* spp. Same on spiders; Diwaniya: Aug & Nov.
1056. *Sphex* sp. Same on large Orthoptera.
1057. *Stizus* spp. Same on Orthoptera; Diyala: summer.
1058. *Tachytes* spp. Same on field crickets; Baghdad: Nov.

TORYMIDAE

1059. *Ditropinotus aureoviridis* Cwf. Larvae are ectoparasitic on mature larvae of the eurytomid wasp *Harmolita tritici*; Baghdad: May.
1060. *Paraholaspis conthurrata* Masi. Same on the trypetid fly *Acanthiophilus helianthi*; Baghdad: June.

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VESPIDAE

1061. *Vespa orientalis* L. Adults prey upon lepidopterous larvae and workers of honey bee *A. mellifera* (cf. 532); Erbil: July; Diyala: April & Dec; Baghdad: Feb, May & Oct—Jan; Ramadi: Sept—Nov; Kut: June—Oct; Kerbala: Nov; Hilla & Diwaniya: Jan & Oct.

NEUROPTERA

CHrysopidae

1062. *Chrysopa* sp. Larvae prey upon eggs and nymphs of *N. vastator*; Baghdad: undated.
1063. *C. carnea* Stéph. Larvae prey upon live aphids *H. pruni* and their endo-parasites, eggs of *E. integriceps*, immature stages of the moth *Laspeyresia*, and upon *N. vastator*; Baghdad: March & April; autumn.
1064. *C. vulgaris* Schneider. Larvae prey upon different stages of aphids, jassids, psyllids, coccids, thrips and mites.

HEMEROBIIDAE

1065. *Wesmaelius* sp. Same on aphids, smaller Homoptera and mites; Mosul: April.

MYRMELEONTIDAE

1066. *Myrmecaelurus trigrammus* Pallas. Larvae prey upon ants.

1067. *Neuroleon arenarius* Navas. Same as above.

NEMOPTERIDAE

1068. *Halter halteratus* Forsk. Same on Psocoptera and other small insects.

1069. *Olivieria extensa* Oliv. Same as above.

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ODONATA

AGRIIIDAE (AGRIONIDAE)

1070. *Agrion splendens* Harris. Adults prey upon mosquitoes and smaller Diptera; Sulaimaniya: May & Sept; Diyala: May & Oct; Baghdad: July—Oct.

COENAGRIIIDAE (COENAGRIONIDAE)

1071. *Agriocnemis* sp. Same as above.
1072. *Ischnura bukharensis* Bartenev. Same; Diyala: May—Oct; Amara & Basra: March—June & Aug—Nov.
1073. *I. evansi* Morton. Same; Amara & Basra: Feb—May & Nov.
1074. *I. pumilio* (Charp.). Same as above.
1075. *Platycnemis latipes* Klug. Same as above.

LESTIDAE

1076. *Lestes barmara* (Fabr.). Same as above.
1077. *Sympetrum pedisca* Selys. Same; Diyala: Nov; Amara: May.

ORTHOPTERA

MANTIDAE

1078. *Blepharopsis mendica* Giglio-Tos. Adults and nymphs prey upon small insects; Amara: April, May, Aug & Sept.
1079. *Empusa egena* Charp. Same; Amara: March & April.
1080. *E. uvarovi* Chopard. Same; Amara: Sept.
1081. *Eremiaphila turacica* Westwood. Same; Baghdad & Ramadi: April.

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1082. *Mantis religiosa* L. Same; Diyala: June; Baghdad: April—Aug; Amara: June & Nov.

THYSANOPTERA

AEOLOTHRIPIDAE

1083. *Aeolothrips fasciatus* L. Adults and nymphs prey upon immature stages of *Laspeyresia* sp.; Baghdad & Kut: May.

THRIPIDAE

1084. *Parascolothrips priesneri* Mound. Adults and nymphs prey upon adults and immature stages of the mite *T. atlanticus*; Baghdad: Jan, Feb & June.

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## مقدمة

بلغ مجموع الانواع في هذا الكتاب ١٠٨٤ نوعا ، منها ٨٤٤ نوعا تتغذى على النباتات ومنتجاتها ، و ٢٤٠ نوعا تتغذى على انواع اخرى من الحشرات او تفترسها . وتيسيرا للاستفادة القصوى من هذه النشرة فقد ابعت النسق الابجدى في ترتيب الرتب ، والعوائل ضمن الرتبة ، والاجناس والانواع ضمن العائلة الواحدة واعطيت كل نوع منها رقما متسلسلا .

والمعلومات الاساسية والموجزة حول كل نوع تتضمن اسمه العلمي ومرادفه ان وجد واهميته الاقتصادية وغذاؤه وعادات تغذية وتأثير ذلك على العائل ، واخيرا انتشاره في العراق ومواسم ظهور اضراره البالغات .

وقد رمزت للأهمية الاقتصادية لكل نوع بعد اسمه العلمي مباشرة بالارقام ٤ ، ٣ ، ٢ ، ١ ، لتعني أهمية اقتصادية عظمى ومتوسطة وقليلة وعديمة ، على التوالى . أما الانواع التي لا نعرف اهميتها فقد تركتها بدون رمز . لقد ذكرت انتشار الانواع حسب محافظات القطر . بادئا بالشمال باتجاه الجنوب وبالشرق باتجاه الغرب فأن لم تتيسر معلومات حول ذلك ذكرته حسب المناطق . ويلاحظ القارئ اننى لم استعمل الاسماء الجديدة للمحافظات التي غيرت اسماؤها القديمة . والذى حداني الى ذلك هو ان هذا التغير حديث العهد ، تم منه بضع سنوات فقط ، وأن معظم البحوث حول حشرات العراق تشير الى مناطقه بأسماء المحافظات القديمة فالاسماء الجديدة ان اصبحت مألوفة لدى العراقي فهي غير مألوفة بالمرة للقارئ العربي والاجنبي .

اعطيت الاسماء المحلية للنباتات كالمحاصيل الحقلية ، الخضروات والاشجار المشمرة . واحيانا اخرى فأن اسم محلى واحد يدل على اكثرب من نوع واحد . فالانواع الممثلة باسماء محلية لها أسماء علمية في فهرست النباتات المضيفة . تطلق احيانا على الاعشاب الضارة والنباتات البرية لختلف الاجناس اسم محلى واحد . وقد عمل مصدر بالاسماء العلمية لهذه النباتات تجنبآ من الخطأ .

وهذا الكتاب يدلنا على ثغرات كثيرة في معلوماتنا حول بعض الانواع ، خصوصا ما يتعلق منها بأهميتها الاقتصادية وبانتشارها ومواسم ظهورها في العراق . وأأمل ان تكون هذه الثغرات حافزا لباحثينا ليقوموا بابحاث تسد بعض هذه الثغرات .

وختاما اتقدم بالشكر الى لجنة تحرير منشورات مركز بحوث التاريخ الطبيعي لقبولهم نشر هذه ، والدكتور جليل ابو الحب - استاذ علم الحشرات

**الحشرات والعلم العراقي  
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**عزيز العلي**

**مختص بعلم الحشرات**

**قسم الحشرات - مديرية وقاية المزروعات العامة**

**ابو غريب - بغداد - العراق**

**رقم الاريداع في المكتبة الوطنية  
ببغداد ٣١٣ لسنة ١٩٧٧**

**مطبعة الزهراء - بغداد  
١٩٧٧/١٢/٧٠٠**

وزارة التعليم العالي والبحث العلمي

جامعة بغداد

آب ١٩٧٧

# مركز لحوث التاريخ الطبيعي

نشرة رقم ٣٣

الحشرات والعلم العراقي  
النباتية والمفترسة والطفيلية

وضع

عزيز العل

