

**Historical records
of insect parasitoids
attacking agricultural
pests in Egypt
(1905 - 2018)**

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Insect parasitoids attacking agricultural pests in Egypt Historical records (1905 - 2018)

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Abstract

Agricultural insect parasitoids are a group of natural enemies live in close association with their hosts, at the host's expense, and eventually kill them. Hosts could include other parasitoid species, resulting in (hyper-parasitoids). Parasitoids are found in a variety of taxa across the endopterygote insects, whose complete metamorphosis may have pre-adapted them for a split lifestyle, with parasitoid larvae and free-living adults. Most parasitoid species belong to order Hymenoptera, where the ichneumonoids, chalcidoids and many other parasitoid wasps are highly specialized for a parasitical way of life. Other parasitoids are found in orders: Diptera, Coleoptera and other orders of endopterygote insects. Some of these, usually but not only wasps, are used in biological pests' control. The intention of this review article is not only to provide a historical overview on the agricultural insect parasitoid fauna recorded in Egypt, but also to help decision makers in selecting the appropriate parasitoid species for bio-controlling a specific economic insect pest through mass production and field release as biocontrol agents among the new concepts of integrated pest management programs in the country. In this review article, we included, in so far as feasible, the available historical records of Egyptian taxonomic lists of the common parasitoid species and their respective agricultural host insects starting from year 1905 up to 2018, whatever published in Egyptian national or international literature. The common insect parasitoid species already recorded in Egyptian agro-ecosystems, during this period (1905-2018), are ordered alphabetically into five tables. The first includes a list of available parasitoid species of common insect pests. The second indicates a list of parasitoid species of insect predators. The third shows a list of parasitoid species attacking insects feeding on weeds. The fourth elucidates a list of hyper-parasitoid species, and the fifth (a & b) reveals the introduced parasitoids and their current establishment status.

Key words: Historical records, Insect parasitoids, Economic insect hosts, Egyptian agro-ecosystems.

Background

Parasitic insects are a group of natural enemies that live in a close association with their hosts, at the host's expense, and eventually kill them. Among these parasitoid species, strategies range from living inside their hosts (endoparasitoids), allowing them to go on growing until the parasitoids emerge as adults, to paralyzing the hosts and living outside them (ectoparasitoids). Hosts could include other parasitoid species, resulting in (hyper-parasitoids). In rare cases, up to five levels of hyper-parasitism (quinquenary parasitoids) are possible. Some parasitoids influence their host's behavior in ways that favor propagation of the parasitoid. Parasitoids are found in a variety of taxa across the endopterygote insects, whose complete metamorphosis may have pre-adapted them for a split lifestyle, with parasitoid larvae and free-living adults. Most of parasitoid species are in order Hymenoptera, where the ichneumonoids, chalcidoids and many other parasitoid wasps are highly specialized for a parasitical way of life. Other parasitoids are found in orders: Diptera, Coleoptera and other orders of endopterygote insects. Some of these, usually but not only wasps, are used in biological pest control.

The intention of this article is not only to provide a historical overview on the common agricultural insect parasitoid fauna recorded in Egypt, but along with the recent published article (El Husseini *et al.*, 2018), it also helps decision makers in selecting the appropriate parasitoid species for bio-controlling of a specific economic insect pest through mass production and field release as biocontrol agents among the new concepts of integrated pest management programs in the country.

This review article included, in so far as feasible, the available historical records of Egyptian taxonomic lists of the common parasitoid species and their respective agricultural host insects starting from year 1905 up to 2018, whatever published in Egyptian national or international literature. During the early period, some of misidentified scientific names on the levels of family, genus and/or species were reported, but have been changed or corrected later. In the present review, the necessary corrections of these names have been made, as being available and according to the most recent or accepted taxon. In addition, a particular taxon, described independently by two or more researchers may have more than one name (as synonyms). In certain instances, it is difficult to determine synonyms for a particular taxon. For the sake of accuracy, few scientific names reported herein might be miss-presented as independent genus or species and the following are considered synonyms for certain parasitoids and host insects.

I- Genus level

- *Anomalon* to *Barylypa*.
- *Bassus* to *Diplazon*.
- *Caradrins* to *Laphygma* and finally to *Spodoptera*.
- *Chloridea* to *Heliothis*.
- *Coccus* to *Lecanium*.
- *Diaohaesma* to *Opius*.
- *Dinooampus* to *Perilitis*.
- *Eutachinus* or *Spoggosia* to *Tachina* and finally to *Exorista*.
- *Exeristes* to *Pimpla*.
- *Gnorimoschema* to *Phthorimaea*.
- *Gymnopareia* to *Actia* and finally to *Strobliomyia*.
- *Leuoania* to *Girphis*.
- *Mycetaspis* to *Chrysomphalus*.
- *Nephus* or *Pullus* to *Scymnus*.
- *Paracerapterocerus* to *Anioetus*.
- *Parnara* to *Chapra*.
- *Platydra* to *Pectinophora*.
- *Pseudococcus* to *Maconelliococcus*.
- *Pyrausta* to *Ostrinia*.
- *Spilocrytus* to *Agrothereutas*.
- *Trichomasthus* to *Bothriophryne*.
- *Triphleps* to *Orius*.

II- Genus and species levels

- *Chilo simplex* to *Chilo suppressalis* and finally to *Chilo agamemnon* Biesz.
- *Plusia circumflexa* to *Cygrapha circumflexa* L.
- *Plusia gamma* to *Autographa gamma* L.

- *Prodenia litura* to *Spodoptera littoralis* (Boisd.)
- *Rhogae kitcheneri* to *Microbracon brevicornis* to *Habrobracon brevicornis* and finally to *Bracon brevicornis* Wesmael.
- *Rhyacia ypsilon* to *Agrotis ypsilon* and finally to *Agrotis ipsilon* Rott.

It is important to point out that those references of parasitoid species and their respective host insects were selected to be herein according to the earliest records. The Egyptian and foreign investigators dealt with parasitoid species in Egypt are mentioned in the attached bibliography. Taxonomically, parasitoids' families mentioned in this review-survey followed those of Borrer and Delong (1970):

Order hymenoptera:

Bethylidae	bethylids
Braconidae (incl. Aphidiinae).....	braconids
Ceraphronidae (= Calliceratidae)	ceraphronids
Chalcididae	chalcidids
Cynipidae (incl. Charipinae and Encoliniae)	gall wasps
Diapriidae	diapirids
Encyrtidae	encyrtids
Eulophidae (incl. Aphelininae and Eiasmidae)	eulophids
Eupelmidae	eupolmids
Eurytomidae	eurytomids
Evaniidae	ensign wasps
Ichneumonidae	ichneumonids
Mymaridae	fairy flies
Pteromalidae	pteromalids
Soelionidae	scelionids
Trichogrammatidae	trichogrammatids

Order Diptera:

Cryptochetidae	cryptochetid flies
Pipunculidae	big-headed flies
Tachinidae	tachinid flies

However, certain family names are presented in tables using their old common names.

The common insect parasitoid species already recorded in Egypt during the mentioned period (1905-2018), are ordered alphabetically into five tables. The first includes a list of available parasitoid species of common insect pests. The second indicates a list of parasitoid species of insect predators. The third shows a list of parasitoid species attacking insects feeding on weeds. The fourth elucidates a list of hyper-parasitoid species, and the fifth (a, b) reveals the introduced parasitoids and their current establishment status.

Comparisons among the parasitoid species, listed in the tables, have showed some facts for instance, in tables (1 and 2), the genera; *Charips* (Cynipidae) and *Tetrastichus* (Eulophidae) serve as primary parasitoid species of harmful insect pests as well as of beneficial insects (predators). In tables (1 and 4), the genera: *Charips* (Cynipidae), *Marietta* (Eulophidae), *Pachyneuron* (Pteromalidae), *Pediobius* (Eulophidae), and *Tetrastichus* (Eulophidae) serve as primary and/or secondary parasitoids (= hyper-parasitoids). In table (4), the hyper-parasitoid species: *Acrysopophagous aegyptiacus* Mercet.,

Marietta javensis (Howard), *Pachyneuron minutissimum* Fo., parasitize their respective host insects that belong to their same taxonomic family.

Debach (1965) stated “in biological control work, the greatest care is still exercised to eliminate or prevent the introduction of any hyper-parasitoids”. The policy of exclusion of hyper-parasitoid species is based on the notion of the secondary species that may seriously impair the functioning of the primary ones in the control of the host e.g. *Pediobius bruchicida* Randani, is a secondary parasitoid of *Bracon brevicornis* Wesmael, which is the primary parasitoid of the pink corn borer, *Sesamia cretica* Led. (Tables 1, 4). However, the secondary parasitoid species is sometimes useful, when it attacks the primary parasitoids of the beneficial insects (predators). In this regard, the secondary parasitoids; *Eupteromalus* sp. and *Achrysoopohagus* sp. are considered useful as the latter genus has 2 advantages; first it attacks *Homalotyius flaminius* Dalm (Table 4), the primary parasitoid of the coccinellids, *Chilocorus bipustulatus* and *Scymnus interruptus* Gooze (Table 2), and second its establishment for the control of its host, *Moconellicoccus hirsutus* Green (Kamal, 1951a) (Table 5). Therefore, the exotic encyrtid, *Achrysoopohagus* sp. plays a role as a useful secondary parasitoid and as a primary parasitoid of the pest.

The genus, *Tetrastichus* can be either beneficial or detrimental to the ultimate control of insect pests. The advantage of this euphorid species; it serves as primary parasitoid of insect pests e.g. *Ferrisia viragata* Okii. (Table 1) and *Ceratitis capitata* Wied. (Table 5). On the other hand, it has deleterious effects through parasitizing the beneficial forms of the following insects: the primary parasitoid, *Apanteles ruficerus* Haliday (Table 4), the predator, *Coccinella undecimpunctata* L. (Table 2), and the beneficial insect *Phytomyza orobanchia* Kalt., which feeds on broomrape immature seeds Kalt.(Table 3).

In respect of the exotic parasitoids (Table 5), the first attempt of utilizing imported parasitoids in pest management dates back to 1909. However, introducing of proper parasitoid species to Egypt are generally lacking at present. The list of the introduced parasitoids and their status, establishment and success to manage their hosts are presented in tables (4 and 5). In some cases, some of the introduced species had no clear status such as the exotic braconid, *Bracon kirkpatricki* Wilk. After the sixties. However, Moursi *et al.* (1979) reported that this parasitoid was recovered from *Eublemma velox* larvae (Noctuidae) on *Asparogus stipularis* Forsk plants in the Egyptian western desert. This may be due to that the western desert has never received any pesticidal applications before.

Generally, Tachinidae seemed to be the oldest family recorded, while the oldest tachinid parasitoid was; *Gonia capitata* or *cilipecta* Rond (Willcocks, 1905).

Hyper-parasitism behavior was not encountered for Braconidae and Ichneumonidae yet, while it has been recorded for Aphidiidae, Bethylidae, Ceraphronidae, Eucolidae, Eupelmidae, Evaniidae, Mymaridae, Chryptochaetidae, Pipunculidae and Tachinidae. According to Borrer and DeLong (1970), members of Aphidiinae and Aphelinidae are added to Braconidae and Eulophidae, respectively.

Table 1: A review list of recorded agricultural common parasitoid species of insect pests in Egypt (1905 – 2018)

Parasitoid Species	Host insect	References
I. HYMENOPTERA		
Fam.: Aphelinidae		
<i>Ablerus atomon</i> (Walker)	<i>Chionaspis stantophri</i> Cooley	Abd-Rabou, 1999b
<i>Ablerus perspeciosus</i> (Girault)	<i>Pseudaulacaspis pentagona</i> (Targioni)	„ „
<i>Alaptus</i> sp.	<i>Coccus hesperidum</i> Linnaeus	Abd-Rabou, 2001a
<i>Aphelinus albipodus</i> Hayat & Fatima	Cereal aphid species	Adly <i>et al.</i> , 2010
<i>Aphelinus mali</i> Hald.	<i>Eriosoma lanigera</i> Hausm.	Kamal, 1951a
<i>Aphelinus</i> sp.	<i>Aphis gossypii</i> Glover	Abul-Nasr & El-Nahal 1963
„ „	<i>Aploneura lentisci</i> Pass	Hassan, 1963
„ „	<i>Macrosiphum pisi</i> (Kltb), <i>Myzus persicae</i> Sulzer	Abd El-Fattah <i>et al.</i> , 2000
<i>Aphytis chrysomphali</i> Mercet	<i>Chrysomphalus personatus</i> Merrill	Priesner & Hosny, 1940
„ „	<i>Chrysomphalus ficus</i> Ril.	„ „
„ „	<i>Parlatoria oleae</i> Colv.	„ „
„ „	<i>Lepidosaphes tapleyi</i> Williams	Swailem, 1973
„ „	<i>Aonidiella aurantii</i> (Maskell)	Abd-Rabou, 1999a
„ „	<i>Chrysomphalus ficus</i> (Ashmead)	„ „
„ „	<i>Paralotoria zizphi</i> (Lucas)	„ „
<i>Aphytis citrinus</i> Copm.	<i>Chrysomphalus ficus</i> (Ashmead)	Moursi, 1999
<i>Aphytis coheni</i> De Bach	<i>Aonidiella aurantii</i> (Maskell)	Abd-Rabou, 1999a
<i>Aphytis diaspidis</i> (Howard)	<i>Parlatoria oleae</i> (Colvee)	„ „
<i>Aphytis lepidosaphes</i> Compare	<i>Lepidosaphes beckii</i> (Newman)	Mahmoud, 1981
<i>Aphytis lingnanensis</i> Compere	<i>Aonidiella aurantii</i> (Maskell)	Abd-Rabou, 1999a
„ „	<i>Aspidiotus hedereae</i> Leonardi	„ „
„ „	<i>Lindingaspis floridana</i> Ferris	„ „
„ „	<i>Chrysomphalus ficus</i> (Ashmead)	Moursi, 1999
<i>Aphytis holoxanthus</i> DeBach	„ „	Hekal and Sakr, 2001
<i>Aphytis maculicornis</i> (Masi)	<i>Diaspis echinocacti</i> (Bouché)	Priesner & Hosny, 1940
„ „	<i>Lepidosaphes ulmi</i> L.	„ „
„ „	<i>Parlatoria oleae</i> Colv.	„ „
„ „	<i>Mycetaspis personata</i> (Comstock)	„ „
„ „	<i>Abgrallaspis cyanophylli</i> (Signoret)	„ „
„ „	<i>Parlatoria oleae</i> Colv.	„ „
<i>Aphytis melinus</i> Debach	<i>Lepidosaphes beckii</i> (Newman)	Moursi, 1999
<i>Aphytis mytilaspidis</i> (Le Baron)	<i>Aonidiella aurantii</i> Mask.	„ „
„ „	<i>Aspidiotus cyanophylla</i> Sign.	„ „
„ „	<i>Aspidiotus hederae</i> Vall.	„ „
„ „	<i>Asterolecanium pustulans</i> Cock.	„ „
„ „	<i>Ceroplastes rusci</i> (Linnaeus)	„ „
„ „	<i>Chionaspis striata</i> Newstead	„ „
„ „	<i>Diaspidiotus lataniae</i> MacGillivray	„ „
„ „	<i>Diaspis echinocacti</i> (Bouché)	„ „
„ „	<i>Lepidosaphes conchiformis</i> (Curtis)	„ „
„ „	<i>Lepidosaphes pinnaeformis</i> (Bouché)	„ „
„ „	<i>Lepidosaphes ulmi</i> L.	„ „
„ „	<i>Parlatoria oleae</i> Colv.	„ „
„ „	<i>Hemiberlesia latania</i> (Signoret)	Abd-Rabou, 1999a
„ „	<i>Lepidosaphes beckii</i> (Newman)	„ „
„ „	<i>Aonidiella aurantii</i> (Maskell)	„ „
„ „	<i>Abgrallaspis cyanophylli</i> (Signoret)	„ „
<i>Aphytis phoenicis</i> De Bach and Rosen	<i>Parlatoria blanchardii</i> (Targioni-Tozzetti)	„ „
<i>Aphytis</i> sp.	<i>Chrysomphalus dictyospermi</i> (Morgan)	„ „
„ „	<i>Insulaspis pallidula</i> (Williams)	„ „

“ ”	<i>Leucaspis riccae</i> Targioni-Tozzetti	“ ”
“ ”	<i>Aonidiella aurantii</i> (Maskell)	Mahmoud, 1981
<i>Aspidiotiphagus citrinus</i> Craw.	<i>Aspidiotus cyanophylla</i> Sign.	Priesner & Hosny, 1940
“ ”	<i>Aspidiotus hederae</i> Leonardi	“ ”
“ ”	<i>Chionaspis striata</i> Newstead	“ ”
“ ”	<i>Chrysomphalus ficus</i> Ril	“ ”
“ ”	<i>Lepidosaphes pinnaeformis</i> (Bouché)	“ ”
“ ”	<i>Lepidosaphes tapleyi</i> (Williams)	El-Nahal <i>et al.</i> , 1976
“ ”	<i>Aspidiotus lounsburyi</i> Berl & Paoli	Priesner & Hosny, 1940
“ ”	<i>Aspidiotus cyanophylli</i> Sign.	
“ ”	<i>Aspidiotus hederae</i> (Vall.)	“ ”
“ ”	<i>Chionaspis striata</i> Newst.	“ ”
“ ”	<i>Chrysomphalus ficus</i> (Ashm.)	“ ”
“ ”	<i>Chrysomphalus personatus</i> Comst.	“ ”
“ ”	<i>Diaspidiotus lataniae</i> (Sign.)	“ ”
“ ”	<i>Diaspis echinocacti</i> B.	“ ”
“ ”	<i>Fiorinia fioriniae</i> Cock.	“ ”
“ ”	<i>Lepidosaphes pinnaeformis</i> (Bouch.)	“ ”
“ ”	<i>Parlatoria proteus</i> (Curtis)	“ ”
<i>Azotus chionaspidis</i> How.	<i>Chionaspis stanophori</i> Cooley	“ ”
<i>Bothriophryne</i> sp.	<i>Ceroplastes horidensis</i> Comstock	Abd-Rabou, 2001b
<i>Coccophagooides kuwanai</i> (Silvestri)	<i>Quadraspidiotus</i> sp.	Abd-Rabou, 2000
<i>Coccophagooides similis</i> (Masi.)	<i>Parlatoria oleae</i> (Colvee)	Abd-Rabou, 200
“ ”	<i>Pulvindria psidii</i> Mask.	“ ”
<i>Coccophagoids</i> sp.	<i>Lepidosaphes beckii</i> (Newman)	Moursi, 1999
“ ”	<i>Pulvinaria mesembryanthemi</i> (Vallot)	Abd-Rabou, 1999a
<i>Coccophagus bivittatus</i> Compere	<i>Coccus hesperidum</i> L.	Abd-Rabou, 2001b
“ ”	<i>Kiliifa acuminate</i> (Sign.)	Abd-Rabou, 1999a
“ ”	<i>Phlocotribus scarabaeoides</i> (Bern)	Abd-Rabou, 2001b
<i>Coccophagus lunulatus</i> How.	<i>Lecanium hesperidum</i> L.	Friesner & Hosny, 1940
<i>Coccophagus lycimnia</i> (Wlker.)	<i>Coccus hesperidum</i> L.	Abd-Rabou, 1999b
“ ”	<i>Ceroplastes floridensis</i> Comstock	Abd-Rabou, 2001b
“ ”	<i>Cecoplaster rusci</i> (Linnaeus)	Abd-Rabou, 2001a
“ ”	<i>Coccus hesperidum</i> L.	“ ”
“ ”	<i>Parasaissetia nigra</i>	“ ”
“ ”	<i>Parthenolecanium persicae</i> (Fabricius)	“ ”
“ ”	<i>Pulvinaria floccifera</i> (Westw.)	“ ”
“ ”	<i>Pulvinaria mesembryanthemi</i> (Vallot)	“ ”
<i>Coccophagus scutellaris</i> Dalm.	<i>Lecanium hesperidum</i> L.	Priesner & Hosny, 1940
“ ”	<i>Pulvinaria floccifera</i> (Westw.)	“ ”
“ ”	<i>Ceroplastes floridensis</i> Comstock	Abd-Rabou, 2001a
“ ”	<i>Coccus hesperidum</i> L.	“ ”
“ ”	<i>Pulvinaria mesembryanthemi</i> (Vallot)	“ ”
<i>Coccophagus semicircularis</i> (Foester)	<i>Pulvinaria tenuivalvata</i> (Newstead)	El-Serwy, 2002
“ ”	<i>Saissetia coffee</i> (Walk.)	“ ”
“ ”	<i>Saissetia oleae</i> (Oliver)	“ ”
<i>Coccophagus</i> sp.	<i>Ceroplastes floridensis</i> Comstock	Abd-Rabou, 2001b
<i>Encarsia artenopae</i> Masi.	<i>Bemisia tabaci</i> Genn.	Hafez <i>et al.</i> 1978-1979
<i>Encarsia aurantii</i> (Howard)	<i>Parlatoria oleae</i> (Colvee)	Abd-Rabou, 2001b
“ ”	<i>Ceroplastes floridensis</i> Comstock	Abd-Rabou, 2001a
“ ”	<i>Parthenolecanium persicae</i> (Fabricius)	“ ”
<i>Encarsia citrina</i> (Craw)	<i>Abgrallaspis cyanophylli</i> (Signoret)	Abd-Rabou, 1999a
“ ”	<i>Aonidiella aurantii</i> (Maskell)	“ ”
“ ”	<i>Aspidiotus hedereae</i> (Ballot)	“ ”
“ ”	<i>Chrysomphalus dictyosperni</i> (Morgan)	“ ”
“ ”	<i>Chrysomphalus ficus</i> (Ashmead)	“ ”
“ ”	<i>Lepidosaphes beckii</i> (Newman)	“ ”
“ ”	<i>Lepidosaphes ulmi</i> (Linnaeus)	“ ”
“ ”	<i>Lindingaspis floridana</i> Ferris	“ ”
“ ”	<i>Parlatoria zizphi</i> (Lucas)	“ ”

.. ..	<i>Parthenolecanium persicae</i> (Fabricius)	Abd-Rabou, 2001a
.. ..	<i>Coccus hesperidum</i> Linn.	Abd-Rabou 2001b
<i>Encarsia davidi viggiani</i>	<i>Aleucolobus niloticus</i> Priesner & Hosny	Abd-Rabou, 1998 a, b
<i>Encarsia elegans</i> Masi	.. ..	Priesner & Hosny, 1940
<i>Encarsia galilea</i> Rrvnay and Gecling	<i>Siphoninus phillyreae</i> (Hal.)	Abd-Rabou, 1996
.. ..	<i>Punica granatum</i> L.	.. ..
<i>Encarsia inaron</i> (Walker)	<i>Bemisia tabaci</i> Genn.	.. ..
.. ..	<i>Siphoninus phillyreae</i> (Hal.)	.. ..
<i>Encarsia indifferentis</i> Merc.	<i>Chionaspis striata</i> Newst.	.. ..
<i>Encarsia lounsburyi</i> (Berlese and Paoli)	<i>Abgrallaspis cyanophylli</i> (Signoret)	Abd-Rabou, 1999a, b
.. ..	<i>Insulaspis pallidula</i> (Green)	.. ..
.. ..	<i>Aonidiella aurantii</i> (Maskell)	.. ..
.. ..	<i>Aspidiotus hedere</i> (Vallot)	.. ..
.. ..	<i>Chrysomphalus ficus</i> (Ashmead)	.. ..
.. ..	<i>Insulaspis pallidula</i> (Green)	Abd-Rabou, 1999 a, b
<i>Encarsia lutea</i> (Masi.)	<i>Bemisia tabaci</i> Genn.	Abdel Fattah <i>et al.</i> , 1984
.. ..	<i>Bemisia afer</i> (Priesner & Hosony)	Abd-Rabou, 1998 a, b
<i>Encarsia mineoi</i> Viggiani	<i>Bemisia tabaci</i> Genn.	Polaszek <i>et al.</i> , 1992
<i>Encarsia olivina</i> (Masi)	<i>Aleurolobus olivinus</i> (Silv.)	Abd-Rabou, 2000
<i>Encarsia partenopea</i> Masi	<i>Siphoninus granati</i> Priesner & Hosny	Priesner & Hosny, 1940
<i>Encarsia</i> sp.	<i>Bemisia tabaci</i> Genn.	Azab <i>et al.</i> , 1969
<i>Eretmocerus corni</i> Haid	<i>Bemisia gossypiperda</i> Misra & Lamba	Priesner & Hosny 1940
<i>Eretmocerus diversiciliatus</i> Silvestri	<i>Bemisia tabaci</i> Genn.	Khalifa and El-Khidir 1965
<i>Eretmocerus mundus</i> Mercet	.. ..	El-Helaly <i>et al.</i> , 1971
<i>Eretmocerus roseni</i> Gerling	<i>Alcaudaleyrodes citri</i> (Ashm.)	Abd-Rabou, 1998 a, b
<i>Eretmocecus siphonini</i> Viqqiani and Battaglia	<i>Acaudaleyrodes rachipora</i> (Singh)	.. ..
<i>Eretmocerus</i> sp.	<i>Bemisia afer</i> (Priesner & Hosony)	Azab <i>et al.</i> , 1969
<i>Euderomphale chelidonii</i> erdos	<i>Acaudaleyrodes proletella</i> (Linn.)	.. ..
<i>Habrolepis aspidioti</i> Compere & Annecke	<i>Chrysomphalus dictyospermi</i> (Morgan)	Abd-Rabou, 1999a
.. ..	<i>Hemiberlesia latania</i> (Signoret)	.. ..
.. ..	<i>Parlatoria ziziphi</i> (Lucas)	.. ..
<i>Habrolepis</i> sp.	<i>Chrysomphalus ficus</i> (Ashmead)	.. ..
<i>Marietta carnesi</i> (Howard)	<i>Chrysomphalus aonidum</i> (Linn.)	Abd-Rabou 2000
<i>Marietta dicta</i>	<i>Coccus hespecidum</i> (Linn.)	Abd-Rabou, 2001b
<i>Marietta exitiosa</i> Comp.	<i>Asteroleconium pustulans</i> Cockerell	Azab <i>et al.</i> , 1969
.. ..	<i>Chrysomphalus ficus</i> (Ashmead)	Moursi, 1999
<i>Marietta leopardina</i> (Motschulsky)	<i>Anagyrus kamali</i> Moursi	Awadallah <i>et al.</i> , 1999
.. ..	<i>Pulvinacia pisdi</i> Maskell	Abd-Rabou, 2001b
.. ..	<i>Saissetia oleae</i> (Olivier)	.. ..
.. ..	<i>Anagyrus</i> sp.	.. ..
.. ..	<i>Aonidiella aurantii</i> (Maskell)	Abd-Rabou, 1999
.. ..	<i>Gyranusoidea indica</i> Shafee & Alam	Awadallah <i>et al.</i> , 1999
.. ..	<i>Parlatoria oleae</i> (Colvee)	Abd-Rabou, 1999a
.. ..	<i>Parlatoria ziziphi</i> (Lucas)	.. ..
.. ..	<i>Ceroplastes floridensis</i> Comstock	Abd-Rabou, 2001
.. ..	<i>Ceroplastes rusci</i> (Linnaeus)	Abd-Rabou, 2001b
.. ..	<i>Coccus hespecidum</i> Linn.	.. ..
.. ..	<i>Parasaissetia nigra</i> (Nietn.)	.. ..
.. ..	<i>Pulvinaria mesembry anthemi</i> (Vallot)	.. ..
.. ..	<i>Saissetia coffeeae</i> (Walker)	.. ..
<i>Marietta picta</i> (Andre)	<i>Ceroplastes floridensis</i> Comstock	Abd-Rabou ,2001a
.. ..	<i>Euphyllura straminea</i> Login.	El-Basha, 2002
.. ..	<i>Stozia ephedrae</i>	Abd-Rabou, 2001b
<i>Marietta</i> sp.	<i>Lepidosaphes ulmi</i> L.	El-Basha, 2002

„ „	<i>Chrysomphalus dictyosperni</i> (Morgan)	Abd-Rabou, 1999a
„ „	<i>Kilifia acuminate</i> (Signorate)	„ „
„ „	Primary parasitoids of pink hibiscus mealybug	Mousa <i>et al.</i> , 2001
<i>Perissopterus</i> sp.	<i>Lepidosaphes ulmi</i> L.	Azab <i>et al.</i> , 1969
<i>Perissopterus zebratus</i> Merc.	“Unknown”	„ „
<i>Physcus testaceus</i> Masi	<i>Lepidosaphes ulmi</i> L.	„ „
<i>Prospaltella berlesei</i> How.	<i>Aulacaspis pentagona</i> Targ.	„ „
<i>Prospaltella lutea</i> Masi.	<i>Bemisia tabaci</i> Genn.	Hafez <i>et al.</i> 1978-1979
<i>Prospaltella</i> sp.	<i>Bemesia tabaci</i> Genn.	El-Kifl <i>et al.</i> , 1974
<i>Pteroptrix arabica</i> (Ferriere)	<i>Parlatoria blanchardi</i> Targioni Tozzetti	Abd-Rabou, 2000a
<i>Pteroptrix bicolor</i> (Howard)	<i>Parlatoria crotonis</i> Douglas	Abd-Rabou, 1999a
<i>Pteroptrix smithi</i> (Compere)	<i>Chrysomphalus aonidum</i> L.	Abd-Rabou, 2000a

Fam.: Aphidiidae

<i>Aphidius colemani</i> Viereck	<i>Hyalopterus pruni</i> (Geoffroy)	Ibrahim and Afifi, 1994
<i>Aphidius eadyi</i> n. sp.	<i>Aphis gossypii</i> Glover	Ragab and Abou El-Naga, 1994
„ „	<i>Liriomyza bryoniae</i> Kalt	El-Kifl <i>et al.</i> , 1974
„ „	<i>Phytomyza atricornis</i> Heig	„ „
<i>Aphidius ervi</i> Haliday	Cereal aphids	Neveen <i>et al.</i> , 2017
<i>Aphidius matricariae</i> Hal.	<i>Aphis gossypii</i> , <i>A. pomi</i> , <i>Myzus persicae</i>	Ibrahim, 1994, 1996
<i>Aphidius picipes</i> (Nees)	<i>Hyalopterus prunic</i>	Ibrahim and Afifi, 1993
„ „	<i>Acrythosiphos</i> sp.	Ibrahim and Afifi, 1994
„ „	<i>Aphis craccivora</i> Koch	Ibrahim, 1996
„ „	<i>Dysaphis</i> sp.	„ „
„ „	<i>Macrosiphum</i> sp.	„ „
„ „	<i>Myzus</i> sp.	„ „
„ „	<i>Sitobion</i> sp.	„ „
„ „	<i>Toxoptera</i> sp.	„ „
<i>Aphidius sonchi</i> Marsh	<i>Aphis maidis</i> Fitch.	Hassan, 1957
<i>Aphidius</i> sp.	<i>Aphis gossypii</i> Glov.	Willcocks & Bahgat, 1937
„ „	<i>Aphis leguminosae</i> Th.	„ „
„ „	<i>Rhopalosiphum padi</i> L.	Hassan, 1963
<i>Aphidius uzbekistanicus</i> Luz.	Cereal aphids.	Ibrahim, 1990
<i>Diaeretiella rapae</i> (MacIntosh)	<i>Aphis craccivora</i> Koch	Ibrahim, 1996
„ „	<i>Brevicoryne brassicae</i> (L.)	Hafez, 1965
„ „	<i>Melanagromyze phoeseoli</i> Tyron	Abul-Nasr & Assem, 1968
„ „	<i>Myzus persicae</i> (Sulz.)	Ibrahim, 1994
<i>Ephedrus persicae</i> Frog.	<i>Aphis craccivora</i> Koch	Ibrahim, 1996
„ „	Cereal aphids	El-Heneidy & Adly 2012
„ „	<i>Aphis gossypii</i> (Glov.)	Ibrahim, 1994
„ „	<i>Myzus persicae</i> (Sulz.)	„ „
<i>Ephedrus</i> sp.	<i>Rhopalosiphum padi</i> L.	Hassan, 1963
<i>Lysiphlebus ambiguus</i> (Hal.)	„ „	Ragab and Abou El-Naga, 1994
<i>Lysiphlebus fabarum</i> (Marshall)	<i>Aphis gossypii</i> Glover	„ „
<i>Lysiphlebus testaceipes</i> (Cress.)	„ „	„ „
<i>Praon flavidode</i> Hal.	<i>Aphis maidis</i> Fitch.	Hassan, 1957
<i>Praon gallicum</i> Hal.	Cereal aphids.	Ibrahim, 1990
<i>Praon necans</i> Mackauer.	Cereal aphids.	El-Heneidy & Adly 2012
<i>Praon</i> sp.	<i>Aphis gossypii</i> Glover	Ragab and Abou El-Naga, 1994
<i>Praon volucre</i> (Hal.)	<i>Aphis pomi</i> (De Geer)	Ibrahim, 1994
„ „	<i>Myzus persicae</i> (Sulz.)	„ „
<i>Trioxys</i> spp.	Cereal aphids	El-Heneidy & Adly 2012

Fam.: Bethylidae

<i>Cephalonoma</i> sp.	<i>Scolytas amaygdali</i> Guerin.	Ismail <i>et al.</i> , 1988
<i>Goniozus legneri</i> Gordh	<i>Epehestia cautella</i> Walker	Kashef <i>et al.</i> , 2002
„ „	<i>Ectomyelois ceratoniae</i> (Zeller)	„ „
<i>Parasierola sellaiaris</i> Say	<i>Pectinophora gossypiella</i> Saund.	Willcocks, 1916
<i>Parasierola</i> sp.	„ „	El-Badry <i>et al.</i> , 1976
<i>Scleroderma ephippium</i> (Saunders)	<i>Stromatum flovum</i> Villers	Khalafallah, 1988–89
Fam.: Braconidae		
<i>Agathis anglica</i> Marshall	“Bollworms”	Willcocks & Bahgat, 1937
<i>Apanteles glomeratus</i> L.	<i>Mamestra brassicae</i> L.	Tawfik, 1969
„ „	<i>Pieris brassicae</i> L.	„ „
<i>Apanteles litae</i> sub sp. <i>operculellae</i> Nixon	<i>Phthorimaea operculellae</i> Zell.	Megahed <i>et al.</i> , 1987
<i>Apanteles platyedrae</i> Wikn.	<i>Pectinophora gossypiella</i> (Saund.)	Hafez, 1969
<i>Apanteles operculella</i> Nixon	<i>Phthorimaea operculellae</i> Zell	Hassanein <i>et al.</i> , 1985
<i>Apanteles ruficrus</i> Haliday	<i>Agrotis ipsilon</i> Rott	Willcocks, 1925
„ „	<i>Autographa</i> sp.	Hassanein <i>et al.</i> , 1985
„ „	<i>Cirphis loreyi</i> (Dup.)	Willcocks, 1925
„ „	<i>Heliothis armigera</i> Hb.	Ismail & Swailem, 1975
„ „	<i>Sesamia cretica</i> Led.	Willcocks, 1925
„ „	<i>Spodoptera littoralis</i> (Boisd.)	Hafez <i>et al.</i> 1976
<i>Apanteles</i> sp.	<i>Chilo agamemnon</i> Blesz.	Fayad, 1975
„ „	<i>Earias insulana</i> (Boisd.)	Kamal, 1936
„ „	<i>Gymnoscelis pumilata</i> Hubn.	Hegazi <i>et al.</i> , 1981
„ „	<i>Heliothis armigera</i> Hb.	Tawfik, 1977
„ „	<i>Hellula undalis</i> F.	Harakly, 1969
„ „	<i>Isochiodon aegyptius</i> Wied	Hafez & El-Said, 1969
„ „	<i>Orgyia dubia judae</i> Stgr.	„ „
„ „	<i>Plutella maculipennis</i> Curtis	Hassanein, 1958
„ „	<i>Prays oleae</i> (Bern.)	El-Khawas <i>et al.</i> , 2000
<i>Apanteles</i> sp. <i>metacarpalis</i> (Thomson)	<i>Isochiodon aegyptius</i> Wied	Harakly, 1974
<i>Apanteles syleptae</i> F.	<i>Palpita unionalis</i> Hb.	Kashef <i>et al.</i> , 1978
„ „	„ „	El-Khawas <i>et al.</i> , 2000
<i>Apanteles xanthostigmus</i> Hal.	„ „	Nasr Feeby <i>et al.</i> , 2002
<i>Aphaereta</i> sp.	<i>Pemphigus bursarius</i> (L.)	Hassan, 1963
<i>Bracon brevicornis</i> Wesmael	<i>Chilo agamemnon</i> Blesz.	Tawfik, 1977
„ „	<i>Deudorix livia</i> Klug.	Hosny <i>et al.</i> , 1966
„ „	<i>Earias insulana</i> Boisd.	Willcocks, 1913
„ „	<i>Heliothis armigera</i> Hubner	Tawfik, 1977
„ „	<i>Ostrinia nubilalis</i> Hubner	Fahmy, 1936
„ „	<i>Pectinophora gossypiella</i> Saund.	Dudgen & Lewis, 1912
„ „	<i>Sesamia cretica</i> Led.	Temerak, 1976
„ „	<i>Spodoptera exigua</i> Hb.	Dudgen & Lewis, 1912
<i>Bracon hebetor</i> Say.	<i>Arenipses sabella</i> Hamps.	Kashef <i>et al.</i> , 2002
„ „	<i>Epehestia kuehniella</i> Z.	Soliman, 1940
„ „	<i>Epehestia calidella</i> (Guenee)	Kashef <i>et al.</i> , 2002
„ „	<i>Epehestia cautella</i> Walker	„ „
„ „	<i>Ectomyelois ceratoniae</i> (Zeller)	„ „
„ „	<i>Galleria mellonella</i> L.	Soliman, 1940
„ „	<i>Hellula undalis</i> Fabr.	Harakly, 1969
„ „	<i>Plodia interpunctella</i> (Hb.)	Soliman, 1940
„ „	<i>Sesamia cretica</i> Led.	Fayad, 1975
<i>Bracon instabilis</i> Marshal	<i>Phthorimaea operculellae</i> Zell	Abbas <i>et al.</i> , 1993
<i>Bracon lefroyi</i> Dudgeon	„ „	Kamal, 1936

<i>Bracon kirkpatricki</i> Wilk	<i>Eublemma velox</i> (Hubn.)	Moursi <i>et al.</i> , 1979
„ „	<i>Pectinophora gossypiella</i> Saund.	Kamal, 1936
<i>Bracon mellitor</i> Say.	„ „	„ „
„ „	<i>Spodoptera exigua</i> Hb.	Hafez, 1951
„ „	<i>Spodoptera littoralis</i> Boisd.	„ „
<i>Bracon (Habrobracon) nigricans</i> (Szépligeti)	<i>Tuta absoluta</i> (Meyrick)	El-Husseini <i>et al.</i> , 2018
<i>Bracon variegator</i>	<i>Earias insulana</i> Boisd.	Willcocks, 1913
„ „	<i>Pectinophora gossypiella</i> Saund.	„ „
<i>Chelonus inanitus</i> L.	<i>Spodoptera littoralis</i> Boisd.	Hafez <i>et al.</i> , 1976
<i>Chelonus</i> sp.	<i>Spodoptera exigua</i> Hb.	Willcocks & Bahgat, 1937
<i>Chelonus sulcatus</i> Nees	<i>Pectinophora gossypiella</i> Saund.	Willcocks, 1916
<i>Dacnusa nipponica</i> Takada	<i>Agromyza nigripes</i> (Meigen)	El-Serwy, 1999
<i>Dacnusa</i> sp.	“Unknown”	Temerak & Ali, 1981
<i>Habrobracon hebetor</i> Say.	<i>Cadra (Ephestia) cautella</i> (Walker)	Marwa <i>et al.</i> , 2012
<i>Hypomicrogaster tiro</i> Reinhard	<i>Cnephacia</i> sp.	Isa & Awadallah 1972
<i>Meteorus gyrator</i> Thunberd	<i>Pieris rapae</i> L.	El-Heneidy and Hassanein 1987
„ „	<i>Spodoptera littoralis</i> Boisd.	„ „
<i>Meteorus laeviventris</i> Wsm.	<i>Agrotis ipsilon</i> Rott.	Bishara, 1932
<i>Meteorus rubens</i> Nees	„ „	El-Heneidy and Hassanein, 1987
„ „	<i>Sesamia cretica</i> Led.	El-Heneidy and Hassanein, 1992
<i>Meteorus</i> sp.	<i>Plutella maculipennis</i> Curtis	Hassanein, 1958
<i>Microctonus</i> sp.	<i>Hypera brunneipennis</i> Boh.	Boraei, 1993
<i>Microplitis demolitor</i> Wilk	<i>Spodoptera littoralis</i> Boisd.	Kamal, 1951b
<i>Microplitis plutellae</i>	<i>Plutella maculipennis</i> Curtis	Hassanein, 1958
<i>Microplitis rufiventris</i> Kokujev.	<i>Heliothis armigera</i> Hb.	Tawfik, 1977
„ „	<i>Spodoptera exigua</i> Hb.	Hammad <i>et al.</i> , 1965
„ „	<i>Spodoptera latebrosa</i> Led.	„ „
„ „	<i>Spodoptera littoralis</i> Boisd.	„ „
<i>Microplitis</i> sp.	<i>Orgyia dubia</i> Judae	Hafez & El-Said, 1969
<i>Opius concolor</i> (Szeph.)	<i>Bactrocera (Dacus) oleae</i> Gmel.	El-Khawas <i>et al.</i> , 2000
<i>Opius nitidulator</i> (Nees)	<i>Pegomia mixta</i> Villenouva	Hassanein <i>et al.</i> , 1993
<i>Opius</i> sp.	„ „	El-Kifl <i>et al.</i> , 1974
„ „	<i>Liriomyza congesta</i> (Becker)	„ „
„ „	<i>Phytomyza atricornis</i> Meig	„ „
<i>Pachyneuron formosum</i> Walker	<i>Psyllaephaga</i> sp.	Nada, 1994
<i>Pachyneuron muscarum</i> Linn.	„ „	„ „
<i>Pachyneuron</i> sp.	„ „	„ „
<i>Phanerotoma leucobasis</i> Kriech.	<i>Ephestia calidella</i> (Guenee)	Kashef <i>et al.</i> , 2002
„ „	<i>Ephestia cautella</i> Walker	„ „
„ „	<i>Ectomyelois ceratoniae</i> (Zeller)	„ „
<i>Phanerotoma</i> sp.	<i>Cryptoblabes gnidiella</i> Milliere	Swailem & Ismail, 1972b
<i>Psyllalia (Opius) concolor</i> (Szeph.)	<i>Bactrocera (Dacus) oleae</i> Gmel.	El-Basha, 2002
<i>Zele chlorophthalma</i> Nees	<i>Agrotis ipsilon</i> Rott.	Kamal, 1951b
„ „	<i>Spodoptera exigua</i> Hb.	„ „
„ „	<i>Spodoptera littoralis</i> Boisd.	„ „
<i>Zele nigricornis</i> Walk.	<i>Agrotis ipsilon</i> Bott.	„ „
„ „	<i>Spodoptera exigua</i> Hb.	„ „
„ „	<i>Spodoptera littoralis</i> Boisd.	Willcocks & Bahgat, 1937
Fam.: Ceraphronidae (= Calliceratidae)		
<i>Lygocerus</i> sp.	<i>Rhopalosiphum padi</i> L.	Hassan, 1963
Fam.: Chalcidae		
<i>Brachymeria aegyptiaca</i> Masi	<i>Cryptoblabes gnidiella</i> (Mille)	Shoukry <i>et al.</i> , 1997

„ „	<i>Deudorix livia</i> Klug.	Awadallah <i>et al.</i> , 1970
„ „	<i>Palpita unionalis</i> Hb.	El-Khawas <i>et al.</i> , 2000
<i>Brachymeria brevicornis</i> (Klug)	<i>Viracola livia</i> Klug.	Hanna, 1939
<i>Brachymeria femorata</i> Panz	<i>Pieris rapae</i> L.	Kamal, 1937
„ „	<i>Plutella maculipennis</i> Curtis	Hassanein, 1958
„ „	<i>Phthorimaea operculellae</i> (Zeller)	Harakly, 1974
„ „	<i>Sarcophaga</i> sp.	Azab <i>et al.</i> , 1962
<i>Brachymeria libyca</i> (M.S.)	„ „	„ „
„ „	<i>Wohlfahrtia trina</i> Wied.	„ „
<i>Brachymeria minuta</i> L.	<i>Liriomyza bryoniae</i> (Kalt.)	El-Kifl <i>et al.</i> , 1974
„ „	<i>Liriomyza congesta</i> Becker	„ „
„ „	<i>Melanagromyza phaseoli</i> (Tryan)	„ „
„ „	<i>Phytomyza atricornis</i> Meig	„ „
<i>Brachymeria somalica</i>	“Unknown”	Masi, 1930
<i>Brachymeria</i> sp.	<i>Eublemma velox</i> Hubn.	Moursi <i>et al.</i> , 1979
„ „	<i>Gymnosceles pumilata</i> Hubn.	Hegazi <i>et al.</i> , 1981
<i>Chalcis brevicornis</i>	<i>Erias insulana</i> Boisd.	Willcocks, 1912
<i>Chalcis modesta</i> Masi	<i>Prays oleae</i> Bern.	Nasr Feeby <i>et al.</i> , 2002
<i>Chalcis</i> sp.	“Bollworms”	Kamal, 1936
<i>Dirhinoides wohlfahrtiae</i> Fieriere	<i>Lucilia</i> sp.	Azab <i>et al.</i> , 1962
„ „	<i>Musca</i> sp.	„ „
„ „	<i>Sarcophaga</i> sp.	„ „
<i>Dirhinus gifardii</i> (Silvestri)	<i>Bactrocera zonata</i> (Saunds.)	El-Husseini <i>et al.</i> , 2008
<i>Enargopelta</i> sp.	<i>Asterolecanium pustulans</i> (Kil.)	Habib, 1943
<i>Euchalicidia caryobori</i> Hanna	<i>Ceratitis capitata</i> (Wied.)	Sarhan, 1981
<i>Habrocytus</i> sp.	<i>Bruchophagus ononis</i> Mayer	Hegazi & Moursi, 1979
<i>Hockeria bispinosa</i> Walker	<i>Prays oleae</i> Bern	Nasr Feeby <i>et al.</i> , 2002
<i>Sphegigaster</i> sp.	<i>Smynthurodes betae</i> West.	Hassan, 1963
<i>Trigonura rubens</i> (Klug.)	“Unknown”	Masi, 1930

Fam.: Cynipidae (incl. Charipinae)

<i>Alloxysta</i> sp.	Primary cereal aphid parasitoids	Ibrahim, 1990
<i>Charips</i> sp.	<i>Smynthurodes betae</i> West	Hassan, 1963
„ „	<i>Liriomyza bryoniae</i> (Kalt)	El-Kifl <i>et al.</i> , 1974
<i>Phaenoglypha</i> sp.	Primary cereal aphid parasitoids	Ibrahim, 1990

Fam.: Diapriidae

<i>Spilomicrus</i> sp.	<i>Aphis gossypii</i> Glover	Abd El-Fattah <i>et al.</i> , 2000
„ „	<i>Macrosiphum pisi</i> Harris	„ „
„ „	<i>Myzus persicae</i> Sulzer	„ „
<i>Trichopria</i> sp.	“Unknown”	Temerak & Ali, 1981

Fam.: Encyrtidae

<i>Acerophagus</i> sp.	<i>Amonostherium arabicum</i> Ezzat	Abd-Rabou, 2001b
<i>Anagyrus aegyptiacus</i> Moursi	<i>Pseudococcus filamentosus</i> Cock.	Moursi, 1948c
<i>Anagyrus greeni</i> How.	“Unknown”	Priesner & Hosny, 1940
<i>Anagyrus kamali</i> Moursi	<i>Maconellicoccus hirsutus</i> Green	Moursi, 1948b
<i>Anagyrus pseudococcii</i> Gir.	„ „	Priesner & Hosny, 1940
„ „	<i>Planococcus citri</i> Risso	Abul-Nasr and El-Nahal, 1963
<i>Anagyrus</i> sp.	<i>Liriomyza trifolii</i> (Burgess)	Metwally, 1991
„ „	<i>Maconellicoccus hirsutus</i> Green	Mousa <i>et al.</i> , 2001
<i>Anicetus asticanus</i> Gir.	<i>Ceroplastes africanus</i> Green	„ „
<i>Anicetus italicus</i> (Masi)	<i>Lecanium longulum</i> Dougi	„ „
<i>Aphidencyrtus aphidivorus</i> Mayr	<i>Aphis maidis</i> Fitch.	Hassan, 1957

„ „	<i>Smynthurodes betae</i> West.	Hassan, 1963
<i>Aphytus flavus</i> (Howard)	<i>Chrysomphalus ficus</i> Ashm.	Tawfik <i>et al.</i> , 1970
„ „	<i>Coccus hesperidum</i> Linn.	„ „
„ „	<i>Eriococcus argensi</i>	„ „
„ „	<i>Pulvinaria iceryi</i> (Sign.)	„ „
„ „	<i>Saissetia oleae</i> Bern.	„ „
<i>Baeoanusia oleae</i> Silv.	„ „	Priesner & Hosny, 1940
<i>Blastothrix acacia</i> (Risbec)	<i>Pulvinari psidi</i>	Abd-Rabou, 2001b
<i>Blastothrix erythrostethus</i> Walk.	<i>Ceroplastes africanus</i> Green	Priesner & Hosny, 1940
„ „	<i>Waxiella mimosa</i> Mask.	Abd-Rabou, 2001b
<i>Blepyrus insularis</i> (Cameron)	<i>Ferrisia virgata</i> (Ckll.)	Awadallah <i>et al.</i> , 1999
<i>Bothriophryne</i> sp.	<i>Asteroloeceanum pustulans</i> Cock.	Priesner & Hosny, 1940
„ „	<i>Ceroplastes rusci</i> L.	„ „
<i>Bothriophryne tenuicornis</i> Merc.	<i>Ceroplastes africanus</i> Gr.	„ „
<i>Cheiloneurus</i> sp.	<i>Ceroplastes floridensis</i> Comstock	Abd-Rabou, 2001a
„ „	<i>Ceroplastes horidensis</i> Comstock	Abd-Rabou, 2001b
„ „	<i>Pulvinaria mesembryan-themi</i> (Vallot)	„ „
<i>Clausenia</i> sp.	<i>Maconellicoccus hirsutus</i> (Green)	Mousa <i>et al.</i> , 2001
<i>Cowperia</i> sp.	„ „	„ „
<i>Copidosoma</i> sp.	<i>Heliothis armigera</i> Hubner	Ismail & Swailem, 1975
<i>Cowperia</i> sp.	<i>Pulvinari psidi</i> (Mask.)	Abd-Rabou, 2001b
<i>Diversinervus elegans</i> Silvestri	<i>Ceroplastes floridensis</i> Comstock	„ „
„ „	<i>Coccus hesperidum</i> Linn.	Abd-Rabou, 2001b
„ „	<i>Kiliifa cuminata</i> (Signorat)	Abd-Rabou, 2000
„ „	<i>Lecanium hesperidum</i> L.	Priesner & Hosny, 1940
„ „	<i>Pulvinaria floccifera</i> Westw.	„ „
„ „	<i>Pulvinaria tenuivalvata</i> (Newstead)	El-Serwy, 2002
„ „	<i>Pulvinaria mesembryanthemi</i> (Vallot)	Abd-Rabou, 2000
„ „	<i>Pulvinaria psidii</i> (Mask.)	„ „
„ „	<i>Parasaissetia nigra</i> (Niet.)	Abd-Rabou, 2001b
„ „	<i>Saissetia oleae</i> Bern.	Priesner & Hosny, 1940
<i>Encyrtus infelix</i> (Embleton)	<i>Ceroplastes floridensis</i> Comstock	Abd-Rabou, 2001b
„ „	<i>Saissetia coffeae</i> (Walker)	„ „
„ „	<i>Saissetia hemisphaerica</i> (Targ.)	Priesner & Hosny, 1940
<i>Encyrtus</i> sp.	<i>Coccus longulus</i> (Douglas)	Abd-Rabou, 2001a
<i>Euaphytes flavus</i> How.	<i>Lecanium hesperidum</i> L.	„ „
„ „	<i>Pulvinaria floccifera</i> West.	„ „
„ „	<i>Saissetia oleae</i> Bern.	„ „
<i>Gyranusoidea inica</i> (Stafee, Alam & Agarwal)	<i>Maconellicoccus hirsutus</i> (Green)	Awadallah <i>et al.</i> , 1999
<i>Habrolepis aspidiofisi</i> Compers & Anneke	<i>Chrysomphalus dictyospermi</i> (Morg.)	Abd-Rabou, 2000
„ „	<i>Aonidiella aurantii</i> (Maskell)	Mahmoud, 1981
„ „	<i>Lepidosaphes beckii</i> (Newman)	Moursi, 1999
<i>Habrolepis pascucorum</i> Mercet	<i>Chrysomphalus ficus</i> Ashm.	Hafez & Saad, 1969
<i>Habrolepis</i> sp.	<i>Lindingaspis rossi</i> Mask.	Swailem <i>et al.</i> , 1976
„ „	<i>Chrysomphalus ficus</i> (Ashm.)	Abd-Rabou, 2000
<i>Leptomastidea abnormis</i> (Girault)	<i>Ferrisia virgata</i> (Ckll.)	Awadallah <i>et al.</i> , 1999
„ „	<i>Maconellicoccus hirsutus</i> (Green)	Mousa <i>et al.</i> , 2001
<i>Leptomastidea</i> sp.	<i>Planococcus citri</i> (Risso)	Abul-Nasr and El-Nahal, 1963
<i>Leptomastix algirica</i> Trjapitzin	<i>Maconellicoccus hirsutus</i> (Green)	Mousa <i>et al.</i> , 2001
<i>Leptomastix flavus</i> Mercet	<i>Pseudococcus filamentosus</i> (Cock.)	Priesner & Hosny, 1940
<i>Leptomastix nigrum</i> Compere	<i>Maconillicoccus hirsutus</i> (Green)	Abd-Rabou, 2000
<i>Leptomastix phenacocci</i> Compere	„ „	Compere, 1938

„ „	<i>Pseudococcus filamentosus</i> (Cock.)	Moursi, 1948d
<i>Leptomastix</i> sp. nr. <i>abyssinicum</i>	<i>Ferrisia virgata</i> (Ckll.)	Rashad, 1975
<i>Leptomastix</i> sp.	<i>Maconellicoccus hirsutus</i> (Green)	Mousa <i>et al.</i> , 2001
<i>Leptomastix truncatellus</i> Dal.	<i>Philocotribus scarabaeoides</i> Bern	Ismail <i>et al.</i> , 1988
„ „	<i>Scolytus amygdali</i> Guerin	„ „
<i>Metaphycus africanus</i> Compere	<i>Ceroplastes floridensis</i> Comstock	Abd-Rabou, 2001b
„ „	<i>Coccus hesperidum</i> Linn.	Abd-Rabou, 2000
<i>Metaphycus bartletti</i> Annecke & Mynhardt	<i>Saissetia oleae</i> Bern.	„ „
„ „	<i>Ceroplastes floridensis</i> Comstock	„ „
<i>Metaphycus flavus</i> (Howard)	„ „	„ „
„ „	<i>Coccus longulus</i> (Douglas)	Abd-Rabou, 2001b
„ „	<i>Parasaisstia niger</i> (Nietnes)	„ „
„ „	<i>Pulvinaria floccifera</i> (Westwood)	„ „
„ „	<i>Pulvinaria tenuivalvata</i> (Newstead)	El-Serwy, 2002
<i>Metaphycus helvolus</i> (Compere)	<i>Pulvinaria floccifera</i> (Westwood)	Abd-Rabou, 2000
„ „	<i>Pulvinaria mesembcyanthemi</i> (Vallot)	„ „
„ „	<i>Pulvinaria pisdii</i>	„ „
„ „	<i>Saissetia coffeae</i> (Halker)	„ „
<i>Metaphycus lounsburyi</i> (Howard)	„ „	„ „
„ „	<i>Saissetia coffee</i> (Walk.)	Abd-Rabou, 2001a
„ „	<i>Waxiella mimosae</i>	„ „
<i>Metaphycus zebratus</i> (Mercet)	<i>Ceroplastes floridensis</i> Comstock	Abd-Rabou, 2001a
„ „	<i>Ceroplastes rusci</i> L.	„ „
„ „	<i>Saissetia oleae</i> Bern	Priesner & Hosny, 1940
<i>Microteris aeruginosus</i> Dalman	“Unknown”	Marcet, 1925
<i>Microterys flavus</i> (Howard)	<i>Ceroplastes floridensis</i> Comstock	Abd-Rabou, 2001b
<i>Microterys nietenri</i> (Motschulsky)	<i>Pulvinaria tenuivalvata</i> (Newstead)	El-Serwy, 2002
<i>Paraceraptocerus africanus</i> Giralut	„ „	„ „
„ „	<i>Parasaissetia nigra</i> (Niet.)	Abd-Rabou, 2001a
<i>Paraceraptocerus coccidiphagus</i> (Mercet)	<i>Saissetia oleae</i> Bern.	„ „
<i>Paraceraptocerus italicus</i> (Masi)	<i>Coccus longulus</i> (Douglas)	„ „
<i>Prochiloneurus aegyptiacus</i> (Mercet)	<i>Anagyrus</i> sp.	Awadallah <i>et al.</i> , 1999
„ „	<i>Gyranusoidea indica</i> Shafee, Alam and Agarwal	„ „
<i>Prochiloneurus bolivari</i> Mercet	Primary parasitoids of <i>Maconellicoccus hirsutus</i> (Green)	Mousa <i>et al.</i> , 2001
<i>Protyndarichus coccidiphagus</i> (Mercet)	<i>Lecaniodiaspis africana</i> Gr.	Priesner & Hosny, 1940
„ „	<i>Lecanium hesperidum</i> L.	„ „
„ „	<i>Saissetia nigra</i> (Nietn.)	„ „
<i>Psyllaephaga</i> sp.	<i>Auphyllura phillyreae</i> Foerster	Nada, 1994
<i>Psyllaephagus euphyllura</i> (Masi)	<i>Euphyllura straminea</i> Log.	El-Basha, 2002

Fam.: Eucoilidae

<i>Kleidotoma</i> sp.	“Unknown”	Temerak & Ali, 1981
<i>Rhoptromeris</i> sp.	<i>Chilo agamemnon</i> (Bles.)	Fayad, 1975

Fam.: Eulophidae (incl. Elasmidae)

<i>Achrysocharella formosa</i> (Wetw.)	<i>Liriomyza bryoniae</i> (Kalt.)	El-Kifl <i>et al.</i> , 1974
<i>Achrysocharella</i> sp.	<i>Liriomyza congesta</i> (Beck.)	Khalil <i>et al.</i> , 1974
<i>Baryscapus</i> sp.	<i>Phylocinstis citrella</i> Stainton	Tawfik <i>et al.</i> , 1996
<i>Chrysocaris</i> sp.	<i>Liriomyza bryoniae</i> (Kalt.)	El-Kifl <i>et al.</i> , 1974
„ „	<i>Phytomyza atricornis</i> Meig.	„ „
<i>Diglyphus crassinervis</i> (Erd.)	<i>Liriomyza congesta</i> (Beck.)	Khalil <i>et al.</i> , 1974
<i>Diglyphus mioeus</i> (Walk.)	„ „	„ „
<i>Diglyphus</i> sp.	<i>Liriomyza brassicae</i> (Riley)	Hafez <i>et al.</i> , 1974
„ „	<i>Liriomyza bryoniae</i> (Kalt)	El-Kifl <i>et al.</i> , 1974
„ „	<i>Liriomyza congesta</i> (Beck.)	„ „

“ ”	<i>Phytomyza atricornis</i> Meig.	“ ”
<i>Elasmus platyedrae</i> Ferr.	<i>Pectinophora gossypiella</i> Saund.	Ferriere, 1935
<i>Euderomphale ezzati</i> Abd Rabou	<i>Pairthero lecanium persicae</i>	Abd-Rabou, 2001a
“ ”	<i>Trialeurodes vaporariorum</i> Westwood	Abd-Rabou, 2001b
<i>Hemiptarsenus dropini</i> (Walker)	<i>Liriomyza congesta</i> Becker	Khalil <i>et al.</i> , 1974
<i>Hemiptarsenus zilahisebossi</i> (Erdos)	“ ”	Hafez <i>et al.</i> , 1974
<i>Necremnus artynes</i> (Nermar)	<i>Tuta absoluta</i> (Meyrick)	El-Husseini <i>et al.</i> , 2018
<i>Pediobius acantha</i> (Walk.)	“ ”	Khalil <i>et al.</i> , 1974
<i>Pediobius amaurocoela</i> Westw.	“Unknown”	Tawfik <i>et al.</i> , 1974a
<i>Pediobius thysanopterus</i> Burks	<i>Gynaikothrips ficorum</i> Marshal	El-Husseini <i>et al.</i> , 2006
<i>Pleurotropis</i> sp.	<i>Pectinophora gossypiella</i> Saund.	Kamal 1936
“ ”	<i>Gynaikothrips ficorum</i> Marchal	Tawfik, 1967
<i>Prigalius agraules</i> Walker	<i>Bactrocera (Dacus) oleae</i> Gmel.	El-Khawas <i>et al.</i> , 2000
<i>Prigalius</i> sp.	<i>Phyllocnistis citrella</i> Stainton	Tawfik <i>et al.</i> , 1996
<i>Ratzoburgiola incomplete</i> Bouck.	“ ”	“ ”
<i>Sympiesis</i> sp.	“ ”	“ ”
<i>Tetrastichus amythestinus</i> Ratz.	<i>Prays oleae</i> Bern.	Nasr Feeby <i>et al.</i> , 2002
<i>Tetrastichus ceroplastae</i> (Gir.)	<i>Ceroplastes floridensis</i> Com.	Ragab, 1995
“ ”	<i>Ceroplastes rusci</i> L.	“ ”
<i>Tetrastichus maculifer</i> Silvestri	<i>Pauropsylla trichaeta</i> Petty	Awadallah & Swailem, 1975
<i>Tetrastichus</i> sp.	<i>Tetraneura hirsuta</i> Baker	Hassan, 1963
“ ”	<i>Ceroplastes floridensis</i> Comstock	Abd-Rabou, 2001b
“ ”	<i>Ceroplastes rusci</i> L.	“ ”
“ ”	<i>Coccus hesperidum</i>	“ ”
“ ”	<i>Parthero lecanium</i>	“ ”
<i>Tetrastichus</i> sp. nr. <i>principiae</i> Dom	<i>Ferrisia virgata</i> Ckll.	Rashad, 1975
<i>Tetrastichus</i> sp. nr. <i>sempronius</i> Erd.	<i>Caroplastes rusci</i> L.	“ ”

Fam.: Eupelmidae

<i>Eupelmus</i> sp.	<i>Bactrocera (Dacus) oleae</i> Gmel.	El-Khawas <i>et al.</i> , 2000
“ ”	<i>Philocotribus scarabaeoides</i> Bern	Ismail <i>et al.</i> , 1988
“ ”	<i>Scolytas amaygdali</i> Guerin	“ ”
<i>Eupelmus urozonus</i> Dal	<i>Melanagromyza phaseoli</i> (Tryon)	Abul-Nasr & Assem, 1968
<i>Macroneara</i> sp.	“ ”	“ ”

Fam.: Eurytomidae

<i>Cryptotrymna</i> sp.	<i>Melanagromyza phoseoli</i> (Tryon)	El-Kifl <i>et al.</i> , 1974
<i>Eurytoma martelli</i> Masi	<i>Bactrocera (Dacus) oleae</i> Gmel.	El-Khawas <i>et al.</i> , 2000
<i>Euryotoma</i> sp.	<i>Bactrocera (Dacus) oleae</i> Gmel.	“ ”
“ ”	<i>Melanagromyza albocilia</i> Hendel	Shalaby, 1974
“ ”	<i>Melanagromyza phaseoli</i> (Tryon)	Abul-Nasr & Assem, 1968
“ ”	<i>Scolytus amaygdali</i> Gue.	Ismail <i>et al.</i> , 1988

Fam.: Evaniidae

<i>Evania appendigaster</i> L.	<i>Blatta orientalis</i> L.	Adair, 1923
“ ”	<i>Periplaneta americana</i> L.	“ ”

Fam.: Ichneumonidae

<i>Agrothereutes tunetanus</i> Haberum	<i>Orgyia dubia</i> (Tauscher)	Hafez & El-Said, 1970
<i>Amorphota epehistiae</i> Cameron	<i>Epehestia kuehniella</i> Zeller	Willcocks, 1925
<i>Barylypa humeralis</i> Brauns.	<i>Heliothis armigera</i> (Hb.)	Tawfik, 1977
“ ”	<i>Spodoptera exigua</i> (Hb.)	Willoccks & Bahgat, 1937
“ ”	<i>Spodoptera littoralis</i> (Boisd.)	Kamal, 1951b
<i>Barylypa paradoxus</i> Schmed.	<i>Spodoptera exigua</i> (Hb.)	Willcocks, 1925
<i>Barylypa rufa</i> (Holmgren)	“ ”	Ismail & Swailem, 1975
“ ”	<i>Orgyia dubia</i> (Tauscher)	Hafez & El-Said, 1970

<i>Bathyplectes curculionis</i> (Thoms.)	<i>Hypera brunneipennis</i> (Boh.)	Tawfik <i>et al.</i> , 1976c
<i>Campoplex xanthostoma</i> Grav.	<i>Heliothis armigera</i> (Hb.)	Tawfik, 1977
<i>Casinaria</i> sp. nr. <i>tenuiventris</i> (Gravenhorst)	“Unknown”	„ „
<i>Diadegma aegyptiacum</i> Horestmann	<i>Cryptoblabes gnidiella</i> (Mille)	Shoukry <i>et al.</i> , 1997
<i>Diadegma chrysobicta</i> (Perkins)	<i>Epeorus calidella</i> (Guenee)	Kashef <i>et al.</i> , 2002
„ „	<i>Epeorus cautella</i> Walker	„ „
<i>Diadegma molliplum</i> Hlmgrn	<i>Phthorimaea operculella</i> Zell.	Abbas <i>et al.</i> , 1993
<i>Diplazon laetatorius</i> Fahr.	“Unknown”	Atries, 1967
<i>Diplazon</i> sp.	“Unknown”	Tawfik <i>et al.</i> , 1976c
<i>Eulimnerium xanthostoma</i> Grav.	<i>Agrotis ipsilon</i> Rott.	Kamal, 1951b
„ „	<i>Spodoptera exigua</i> (Hb.)	„ „
„ „	<i>Spodoptera littoralis</i> (Boisd.)	„ „
<i>Exeristes roborator</i> Fabr.	<i>Pectinophora gossypiella</i> (Saund.)	Hafez <i>et al.</i> 1969
<i>Gelis</i> sp.	“Unknown”	Tawfik <i>et al.</i> , 1976c
<i>Heniscopilus repentinus</i> Himgr	<i>Agrotis ipsilon</i> Rott.	Willcocks & Bahgat ,1937
<i>Hyposoter ebeninus</i> Grav.	<i>Pieris rapae</i> L.	Abbas and Hassanein, 1989
<i>Limnerium interruptum</i> (Panzer)	<i>Pectinophora gossypiella</i> (Saund.)	Willcocks, 1916
<i>Nythobia</i> sp.	<i>Hellula undalis</i> F.	Harakly, 1969
<i>Omoygus mutabilis</i>	<i>Spodoptera exigua</i> (Hb.)	Willcocks & Bahgat, 1937
<i>Ophion luteus</i> L.	<i>Agrotis ipsilon</i> (Rott.)	„ „
<i>Pimpla ephippium</i> Nigra	<i>Ostrinia nubilalis</i> (Hb.)	Fahmy, 1936
<i>Pimpla roborator</i> Fabr.	<i>Pectinophora gossypiella</i> (Saund.)	Willcocks, 1916
<i>Pimpla</i> sp.	<i>Cryptoblabes gnidiella</i> Mill.	Gough, 1913
<i>Sagaritis brachycera</i> Thoms.	<i>Spodoptera exigua</i> (Hb.)	Willcocks & Bahgat, 1937
<i>Sinophorus zanhostomus</i> (Gravenhorst)	<i>Artogia (Pieris) rapae</i> L.	Askar and El-Husseini, 2016
<i>Sympiesis</i> sp.	<i>Phyloconistis citrella</i> Stainton	Tawfik <i>et al.</i> , 1996
<i>Venturia canescens</i> (Grav.)	<i>Epeorus calidella</i> (Guenee)	Kashef <i>et al.</i> , 2002
„ „	<i>Epeorus cautella</i> Walker	„ „
<i>Xanthopimpla punctata</i> Fr.	<i>Palpita unionals</i> (Hb.)	Nasr Feeby <i>et al.</i> , 2002
<i>Zele chlorophthalma</i> (Nees)	<i>Spodoptera littoralis</i> (Boisd.)	Hafez <i>et al.</i> , 1976

Fam.: Lavernidae

<i>Psychotria</i> sp.	<i>Pyroderces simplex</i> Wism.	Tawfik & El-Sherif, 1970
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Fam.: Mymaridae

<i>Alaptus aegyptiacus</i> Soyka	<i>Aspidiotus hederae</i> (Vallot)	Soyka, 1950
„ „	<i>Chrysomphalus personatus</i> Fernald	„ „
„ „	<i>Pseudococcus longispinus</i> Comst.	„ „
„ „	<i>Saissetia oleae</i> Bern	„ „
<i>Alaptus minimus</i> Wik.	“Unknown”	Kryger, 1932
<i>Alaptus pallidicornis</i> Forster	<i>Leucanium hesperidium</i> (Linn.)	Soyka, 1950
<i>Alaptus priseneri</i>	<i>Ceroplastes africanus</i> Green	„ „
„ „	<i>Waxiella mimosa</i> Signoret	Abd-Rabou, 2001a
<i>Alaptus</i> sp.	<i>Saissetia oleae</i> (Olivier)	„ „
<i>Anagrus empoascae</i> Dozier	“Jassids”	El-Kifl <i>et al.</i> , 1974
<i>Anagrus incarnatus</i> (Hal.)	<i>Delphax fairmairei</i> Perris	Marcos, 1953
„ „	<i>Tettigoniella viridis</i> (Linn.)	„ „
<i>Anagrus unilinearis</i> (Hal.)	“Unknown”	Soyka, 1950
<i>Anagrus utomus</i> (L.)	“Jassids”	El-Kifl <i>et al.</i> , 1974
<i>Anagrus</i> sp.	<i>Criomorphus pteridis</i> (Boh.)	Marcos, 1953
<i>Erythmelus</i> sp.	“Jassids”	El-Kifl <i>et al.</i> , 1974
<i>Gonatocerus aegyptiacus</i> Soyka	“Unknown”	Soyka, 1950
<i>Gonatocerus africanus</i> Risbec	„ „	„ „
<i>Gonatocerus dakhlae</i> Soyka	„ „	„ „

<i>Gonatocerus flavius</i> Soyka	„ „	„ „
<i>Gonatocerus priesneri</i> Soyka	„ „	„ „
<i>Maidliella aegyptiaca</i> Soyka	„ „	„ „
<i>Novickyella dakhlae</i> Soyka	„ „	„ „
<i>Oglobiniella aegyptiace</i> Soyka	„ „	„ „
<i>Parechthrodryinas coccidiphagus</i> (Mercet)	<i>Coccus hesperidum</i> (Linn.)	Abd-Rabou, 2001b
„ „	<i>Parasaissetia nigra</i> (Nietner)	„ „
<i>Scutellista cyanea</i> Motschulsky	<i>Ceroplastes floridensis</i> Comstock	Abd-Rabou, 2001a
<i>Stethynium</i> sp.	“Jassids”	El-Kifl <i>et al.</i> , 1974

Fam.: Platygastridae

<i>Allotropa</i> sp. near <i>mecrida</i> (Walker)	<i>Maconellicoccus hirsutus</i> (Green)	Mousa <i>et al.</i> , 2001
„ „	„ „	„ „
<i>Amitus hesperidium</i> Silvestr.	„ „	„ „

Fam.: Pteromalidae

<i>Asaphas</i> sp.	Primary parasitoids of cereal aphids	Ibrahim, 1990
<i>Bruchobius</i> sp.	<i>Sitotroga cerealella</i> Oliv.	Hammad <i>et al.</i> , 1967
<i>Callitula</i> sp.	<i>Chilo agamemnon</i> Blesz.	Fayad, 1975
<i>Catolaccus crassiceps</i> Masi	<i>Auphyllura phillyreae</i> Foerster	Nada, 1994
<i>Cerocephala cornigera</i>	<i>Phlocotribus scarabaeoides</i> (Bern.)	Ismail <i>et al.</i> , 1988
„ „	<i>Scolytus amaygdali</i> Guerin	„ „
<i>Cheiropachus quadrum</i> (Fab.)	<i>Phlocotribus scarabaeoides</i> Bern.	„ „
„ „	<i>Scolytus amaygdali</i> Guerin	„ „
„ „	<i>Zeuzera pyrina</i> L.	„ „
„ „	<i>Phlocotribus scarabeoides</i> Bern.	„ „
<i>Conomorium eremita</i> (Foerster)	<i>Sesamia cretica</i> Led.	Ahmed & Kira, 1960
<i>Cryptoprymna latipes</i> Ronaldi	<i>Bactrocera (Dacus) oleae</i> Gmel.	El-Khawas <i>et al.</i> , 2000
„ „	<i>Prays oleae</i> Bern.	„ „
<i>Cryptoprymna</i> sp.	<i>Melanagromyza phaseoli</i> (Tryon)	Abul-Nasr <i>et al.</i> , 1968
<i>Enargopelta nigra</i> Merc.	<i>Lecaniodiaspis africana</i> News.	Priesner & Hosny, 1940
<i>Enargopelta</i> sp.	<i>Asterolecanium pustulans</i> Cock.	„ „
<i>Habrocytus sequester</i> Walk	“Unknown”	Tawfik <i>et al.</i> , 1976b
<i>Halticoptera circulus</i> Walker	<i>Liriomyza trifolii</i> (Burgess)	Metwally, 1991
<i>Halticoptera</i> sp.	<i>Liriomyza congesta</i> (Becker)	Hafez <i>et al.</i> , 1974
„ „	<i>Melanagromyza phaseoli</i> (Tryon)	Abul-Nasr & Assem, 1968
<i>Muscidifurax raptor</i> (Gir.)	<i>Musca</i> sp.	Azab <i>et al.</i> , 1962
<i>Nesonia vitripennis</i> (Walker)	<i>Chrysomya albiceps</i> Wied	„ „
„ „	<i>Lucilia sericata</i> Meig.	„ „
„ „	<i>Musca vicina</i> Macq.	„ „
„ „	<i>Sarcophaga carnaria</i> Meig	„ „
„ „	<i>Sarcophaga falculata</i> Pand.	„ „
<i>Pachycrepoideus vindemia</i> (Rondani)	<i>Ceratitis capitata</i> (Wied.)	Sarhan, 1981
„ „	<i>Musca</i> spp.	„ „
<i>Pachyneuron ministristimum</i> Forst	<i>Symntherodes betae</i> West.	Hassan, 1963
<i>Pachyneuron muscarum</i> L.	<i>Euphyllura straminea</i> Log.	El-Basha, 2002
„ „	<i>Pulvinaria tenuivalvata</i> (Newstead)	El-Serwy, 2002
<i>Pachyneuron</i> sp.	Primary parasitoids of cereal aphids	Ibrahim, 1990
„ „	Primary parasitoid of <i>Maconellicoccus hirsutus</i> (Green)	Mousa <i>et al.</i> , 2001
<i>Pteromalus puparum</i> L.	“Unknown”	Tawfik <i>et al.</i> , 1976b
<i>Rhaphitelus maculatus</i> Walk.	<i>Phlocotribus scarabaeoides</i> Bern.	Ismail <i>et al.</i> , 1988
„ „	<i>Zeuzera pyrina</i> L.	„ „
<i>Scutellista cyanea</i> Motsch.	<i>Ceroplastes africanus</i> Gr.	Priesner & Hosny, 1940
„ „	<i>Ceroplastes rusci</i> L.	„ „

„ „	„ „	Ragab, 1995
„ „	<i>Ceroplastes floridensis</i> Coms.	„ „
„ „	<i>Saissetia coffeae</i> (Wlk.)	„ „
„ „	<i>Coccus hesperidum</i> Linn.	Abd-Rabou, 2001b
„ „	<i>Saissetia hemisphaerica</i> Targ.	Priesner & Hosny, 1940
„ „	<i>Saissetia nigra</i> (Nietn.)	„ „
„ „	<i>Saissetia oleae</i> (Oliver)	„ „
„ „	<i>Parasaissetia nigra</i> (Heitner)	Abd-Rabou, 2001b
„ „	<i>Saissetia coffeae</i> (Walker)	„ „
„ „	<i>Saissetia oleae</i> (Oliver)	„ „
„ „	<i>Waxiella mimosa</i> (Sign.)	„ „
<i>Spalangia gemina</i> Boucek	<i>Ceratitis capitata</i> (Wied.)	Sarhan, 1981

Fam.: Scelionidae

<i>Microphanurus megacephalus</i> (Ashm.)	<i>Nezara viridula</i> L.	Priesner, 1931
<i>Platytenomus hylas</i> Nixon	<i>Sesamia cretica</i> Led.	Ahmed & Kira, 1960
<i>Telenomus nawaii</i> Ashm.	<i>Agrotis epsilon</i> Rott.	Kamal, 1951b
„ „	<i>Spodoptera exigua</i> Hb.	„ „
„ „	<i>Spodoptera littoralis</i> Boisd.	„ „
<i>Telenomus spodopterae</i> (Dodd)	<i>Agrotis epsilon</i> Rott.	„ „
„ „	<i>Spodoptera exigua</i> Hb	„ „
„ „	<i>Spodoptera littoralis</i> Boisd.	„ „
<i>Telenomus</i> sp.	<i>Sesamia cretica</i> Led.	Temerak & Negm, 2009
<i>Trissulcus basalis</i> Wollaston	<i>Nezara viridula</i> (L.)	El-Husseini <i>et al.</i> , 2006

Fam.: Signiphoridae

<i>Chartocerus subaeneus</i> (Forster)	<i>Alloptropa</i> sp.	Awadallah <i>et al.</i> , 1999
„ „	<i>Leptomastidea abnormis</i> (Girault)	„ „
„ „	<i>Maconellicoccus hirsutus</i> (Green)	Abd-Rabou, 1999a

Fam.: Trichogrammatidae

<i>Oligosita</i> sp.	Leaf hoppers	El-Kifl <i>et al.</i> , 1974
<i>Oligosita thoracica</i>	Leaf hoppers	Kryger, 1932
<i>Paracentrobria dimorpha</i>	<i>Sesamia cretica</i> Led.	Temerak, 1981
<i>Trichogramma bourrachae</i> Pint & Babault	<i>Prays oleae</i> (Bern.) & <i>Palpita unionalis</i> (Hub.)	Hegazi <i>et al.</i> , 2005
<i>Trichogramma cardubensis</i> Vargas & Cabello	„ „	„ „
<i>Trichogramma cacoeciae</i> Marshall	<i>Cadra (Ephestia) cautella</i> (Walker)	Marwa <i>et al.</i> , 2012
<i>Trichogramma evanescens</i> Westwood	<i>Anagasta kuehniella</i> (Zeller)	Abbas, 1987
„ „	<i>Antiercta ornatalis</i> (Dup.)	Awaddallah <i>et al.</i> , 1976
„ „	<i>Chilo agamemnon</i> (Blesz.)	Willcocks, 1925
„ „	<i>Danais chrysippus</i> L.	Swailem & Ismail, 1972a
„ „	<i>Earias insulana</i> (Boisd.)	Willcocks & Bahgat, 1937
„ „	<i>Galleria mellonella</i> L.	Abbas, 1987
„ „	<i>Ostrinia nubilalis</i> (Hb.)	Fahmy, 1936
„ „	<i>Pectinophora gossypiella</i> (Saund.)	Kamal, 1936
„ „	<i>Sesamia cretica</i> Led.	Willcocks ,1925
„ „	<i>Prays oleae</i> (Bern.) & <i>Palpita unionalis</i> (Hub.)	Hegazi <i>et al.</i> , 2005
„ „	<i>Sitotroga cerealella</i> (Oliver)	Abbas, 1987
„ „	<i>Spodoptera littoralis</i> (Boisd.)	Willcocks & Bahgat,1937
„ „	<i>Virachola livia</i> Klug	Awadallah <i>et al.</i> , 1971
<i>Trichogramma minutum</i> Riley	<i>Pectinophora gossypiella</i> (Saund.)	Kamal, 1936
„ „	<i>Sitotroga cerealella</i> (Oliver)	Abbas, 1987
„ „	<i>Spodoptera littoralis</i> (Boisd.)	Kamal, 1951a
„ „	<i>Trichoplusia ni</i> (Hub.)	„ „

“ ”	<i>Thyridopteryx ephemeraeformis</i> Haw	“ ”
<i>Trichogramma nubilale</i> Ertle and Davis	Unknown	“ ”
<i>Trichogramma</i> sp.	<i>Prays oleae</i> (Bern.)	El-Basha, 2002
“ ”	<i>Monothochaeta nigra</i> Blood and Krugger	El-Agamy <i>et al.</i> , 1994
<i>Trichogramma</i> spp.	<i>Tuta absoluta</i> (Meyrick)	El-Husseini <i>et al.</i> , 2018

II. DIPTERA

Fam.: Agromizidae

<i>Chrysonotomyi</i> sp.	<i>Liriomyza trifolii</i> (Burgess)	Metwally, 1991
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Fam.: Pipunculidae

<i>Chalarus spurius</i> (Fallen)	<i>Cicadella notata</i> Curt.	Morcos, 1953
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Fam.: Tachinidae

<i>Exorista larvarum</i> L.	<i>Agrotis ipsilon</i> (Huf.)	Willcocks & Bahgat, 1937
“ ”	<i>Anadiasa undata</i> Klug	Hafez, 1953
“ ”	<i>Autographa gamma</i> L.	“ ”
“ ”	<i>Heliothis armigera</i> Hubner	Ismail & Swailem, 1975
“ ”	<i>Spodoptera exigua</i> Hb.	Willcocks & Bahgat, 1937
“ ”	<i>Spodoptera littoralis</i> (Boisd.)	“ ”
“ ”	<i>Syngrapha circumflexa</i> L.	Hafez, 1953
<i>Exorista segregata</i> (Rond)	<i>Orgyia dubia</i> (Tausher)	Hafez & El-Said, 1970
<i>Exorista</i> sp. (<i>Spoggosia</i> sp.)	“ ”	“ ”
<i>Gonia capitata</i> or <i>cilipecta</i> Rond	<i>Agrotis ipsilon</i> (Huf.)	Willcocks, 1905
<i>Strobliomyia aegyptia</i> Will	<i>Earias insulana</i> (Boisd.)	Willcocks & Bahgat, 1937
“ ”	<i>Heliothis armigera</i> (Hubner)	Ismail & Swailem, 1975
“ ”	<i>Spodoptera exigua</i> Hb.	Willcocks & Bahgat, 1937
“ ”	<i>Spodoptera littoralis</i> (Boisd.)	Bishara, 1934
“ ”	“ ”	Kamal, 1951b

Table 2: A review list of common parasitoid species recorded on certain predators in Egypt

Parasitoid	Host insect (and family)	References
HYMENOPTERA		
Braconidae		
<i>Perlitus coccinellae</i> Schr.	<i>Coccinella undecimpunctata</i> L. (Coccinellidae)	Kamal, 1951b
Chalcididae		
<i>Pachytomus</i> sp.	<i>Sphodromantis</i> sp. (Mantidae)	Dcbaski, 1919
Cynipidae		
<i>Charips</i> sp.	<i>Leucopis puncticornis aphidivora</i> (Ochthiphilidae)	Hassan, 1957
Encyrtidae		
<i>Homalotylus flaminius</i> Dalm.	<i>Chilocorus bipustulatus</i> L. (Coccinellidae)	Hecht, 1936
“ ”	<i>Scymnus interruptus</i> Goeze (Coccinellidae)	Priesner & Hosny, 1940
<i>Homalotylus quaylei</i> Timb	<i>Pharoscymnus varius</i> Kirsch (Coccinellidae)	“ ”
<i>Homalotylus vicinus</i> Silv.	<i>Scymnus</i> sp. (Coccinellidae)	“ ”
“ ”	<i>Oxynychus marmottani</i> Fairm (Coccinellidae)	“ ”
<i>Syrphophagus</i> sp.	<i>Paragus aegyptius</i> Macq. (Syrphidae)	Tawfik <i>et al.</i> , 1974c
“ ”	<i>Sphaerophoria flavicoauda</i> Zett (Syrphidae)	Tawfik <i>et al.</i> , 1974d
“ ”	<i>Syrphus corollae</i> Fabre (Syrphidae)	Tawfik <i>et al.</i> , 1974b
“ ”	<i>Xanthogramma aegyptium</i> Wied (Syrphidae)	Tawfik <i>et al.</i> , 1974d

Eulophidae		
<i>Tetrastichus coccinelliae</i> Kurdj	<i>Coccinella undecimpunctata</i> L. (Coccinellidae)	Kamal, 1951b
<i>Tetrastichus pubescens</i> Nees	<i>Chrysopa vulgaris</i> Schn. (Chrysopidae)	„ „
Ichneumonidae		
<i>Diplazon laetatorius</i> Fab.	<i>Paragus aegyptius</i> Macq. (Syrphidae)	Tawfik <i>et al.</i> , 1974c
„ „	<i>Sphaerophoria flavicauda</i> Zett. (Syrphidae)	Hassan, 1957
„ „	<i>Syrphus corollae</i> Fabre. (Syrphidae)	Tawfik <i>et al.</i> , 1974b
„ „	<i>Xanthogramma aegyptium</i> Wied. (Syrphidae)	Hassan, 1957
Scelionidae		
<i>Telenomus</i> sp.	<i>Chrysopa vulgaris</i> Schn.	Kamal, 1951b

Table 3: A review list of common parasitoid species on the insects feeding on weeds in Egypt

Parasitoid	Host insect	References
Braconidae		
<i>Apanteles</i> sp. (<i>laevigatus</i> group)	<i>Bedellia somnulentella</i> Zell	Awadallah <i>et al.</i> , 1976
<i>Bracon</i> sp.	<i>Chapra (Parnara) mathias</i> F.	Willcocks, 1925
„ „	<i>Gengenes nostrodamus</i> F.	„ „
<i>Opius</i> sp.	<i>Pegomya mixta</i> Villeneuve	Shalaby, 1974
Eulophidae		
<i>Ratzeburgiola incomplete</i> Boucek	<i>Bedellia somnulentelia</i> Zell.	Awadallah <i>et al.</i> , 1976
<i>Tetrastichus</i> sp.	<i>Phytomyza orobanchia</i> Kalt.	Tawfik <i>et al.</i> , 1976a
Eurytomidae		
<i>Eurytoma</i> sp.	<i>Bedellia somnulentella</i> Zell.	Awadallah <i>et al.</i> , 1976
„ „	<i>Melanagromyza albocilia</i> Hendel.	„ „
Ichneumonidae		
<i>Mesochorus</i> sp.	<i>Bedellia somnulentella</i> Zell	Awadallah <i>et al.</i> , 1976
Pteromalidae		
<i>Cyrtoptyx</i> sp. nr. <i>dacicida</i> Masi	<i>Hypolixus nubilosus</i> Boh.	Tawfik <i>et al.</i> , 1976d
<i>Picrosytoides</i> sp.	„ „	„ „
Tachinidae		
<i>Sturmia pelmatoprocta</i> Br. Berg.	<i>Chapra (Parnara) mathias</i> F.	Willcocks, 1925
Trichogrammatidae		
<i>Trichogramma evanescens</i> West.	<i>Antiercta ornatalis</i> Dup.	Awadallah <i>et al.</i> , 1976

Table 4: A review list of common hyperparasitoid species recorded in Egypt

Parasitoid	Host insect (and family)	References
Aphelinidae		
<i>Marietta javensis</i> (Howard)	<i>Aphytis lepidosaphes</i> Comper (Aphelinidae)	Zaki, 1977
<i>Marietta leopardina</i> (Molschulsty)	<i>Anagyrus kamali</i> (Encyrtidae)	Awadallah <i>et al.</i> , 1999
„ „	<i>Anagyrus</i> sp. (Encyrtidae)	„ „
„ „	<i>Gyranusoidea indica</i> (Encyrtidae)	„ „
<i>Marietta picta</i> (Andre)	<i>Habrolepis pascuorum</i> Mercet (Encyrtidae)	Tawfik <i>et al.</i> , 1970
Chalcididae		
<i>Dirhinus giffardii</i> Silv.	<i>Exorista larvarum</i> L. (Tachinidae)	Kamal, 1951b
Cynipidae		

<i>Alloxysta</i> spp.	<i>Aphidius</i> spp. (Aphidiidae)	El-Heneidy and Adly, 2012
<i>Charips</i> sp.	<i>Diaeretiella rapae</i> Curtis (Aphidiidae)	Hafez, 1965
<i>Phaenoglyphis</i> sp.	<i>Aphidius matricariae</i> (Hall.) (Aphidiidae)	El-Heneidy and Adly, 2012
Encyrtidae		
<i>Acrysopophagus aegyptiacus</i> Mercet	<i>Homalotylus flaminius</i> Dalm (Encyrtidae)	Tawfik <i>et al.</i> , 1973
<i>Acrysopophagus</i> sp.	" "	" "
<i>Aphidencyrtus</i> sp.	<i>Aphidius</i> spp., <i>Diaeretiella rapae</i> (Aphidiidae)	El-Heneidy and Adly, 2012
<i>Prochiloneurus aegyptiacus</i> Mercet	<i>Anagyrus</i> sp. (Encyrtidae)	Awadallah <i>et al.</i> , 1999
" "	<i>Gyranusoidea indica</i> (Encyrtidae)	" "
Eulophidae		
<i>Pediobius amaurocoela</i> (Wst.)	<i>Conomorium eremite</i> Foerster (Pteromalidae)	Ahmed & Kira, 1960
<i>Pediobius bruchicida</i> (Randani)	<i>Bracon brevicornis</i> Wesm. (Braconidae)	Temerak, 1983
<i>Tetrastichus galactopus</i> (Ratzeburg)	<i>Sinophorus zanhostomus</i> (Gravenhorst)	Askar and El-Husseini, 2016
<i>Tetrastichus</i> sp.	<i>Apanteles</i> sp. (Braconidae)	Hafez & El-Said, 1970
" "	<i>Microplitis</i> sp. (Braconidae)	" "
Megaspilidae		
<i>Dendrocerus</i> spp.	<i>Aphidius</i> spp., <i>Diaeretiella rapae</i> (Aphidiidae)	El-Heneidy and Adly, 2012
Pteromalidae		
<i>Asaphes vulgaris</i> Wlk.	<i>Aphidius rapae</i> Curtis (Aphidiidae)	Hafez, 1965
<i>Eupteromalus</i> sp.	<i>Perlitus coccinellae</i> Schr. (Braconidae)	Kamal, 1951b
<i>Pachyneuron minutissimum</i> Fo.	<i>Asaphes-vulgaris</i> Wlk. (Pteromalidae)	Hafez, 1965
<i>Pachyneuron</i> sp.	<i>Anagyrus</i> sp. (Encyrtidae)	Moursi, 1948c
Signiphridae		
<i>Chactocerus subaeneus</i> (Forster)	<i>Allotropa</i> sp. (Platygastridae)	Awadallah <i>et al.</i> , 1999
" "	<i>Leptomastidae abnormis</i> (Encyrtidae)	" "

(1) The genus *Acrysopophagus* (Tawfik 1973) was reported by (Kamal 1951a) as *Achrysopophagus*.

Table 5-A: A review list of introduced parasitoid species to Egypt (Kamal 1951a)

Parasitoid	Country (and year)	Host insect	Degree of establishment
Aphelinidae			
<i>Aphelinus mali</i> (Hald.)	"Unknown" (1932)	<i>Eriosoma lanigera</i> (Hausm.)	SS
" "	England (1934)	" "	SS
<i>Encarsia formosa</i> Gahan	Italy (1988)	<i>Bemisia tabaci</i>	S
" "	" "	<i>Trialeurodes vaporariorum</i>	S
<i>Encarsia lahorensis</i> Howard	Florida (1996)	<i>Dialeucodes citri</i> (Ashmead)	S
<i>Encarsia transvena</i> Timberlake	Florida (1997)	<i>Bemisia tabaci</i> (Genn.)	S
<i>Eretmocerus mundus</i> (Mercet)	Italy (1996)	" "	S
Braconidae			
<i>Bracon lefroyi</i> Dudgeon and Gough	India (1909)	<i>Earias insulana</i> Boisd.	D
" "	India (1912)	" "	D
" "	India (1934)	Boll worms (<i>Earias</i> & <i>Pectinophora</i>)	D
" "	India (1935)	" "	S
<i>Bracon kirkpatricki</i> Will.	Kenya (1928)	<i>Pectinophora gossypiella</i> Saund.	S
" "	Sudan (1931)	" "	S
<i>Bracon mellitor</i> Say	Hawaii (1935)	<i>Pectinophora gossypiella</i> Saund.	D
" "	Australia (39-41)	<i>Spodoptera littoralis</i> (Boisd.)	D
<i>Chelonus blackburni</i> Cam.	U.S.A. (1937)	<i>Pectinophora gossypiella</i> Saund.	P
<i>Diachasma tryoni</i> Cam.	Hawaii (1934)	<i>Ceratitis capitata</i> Wied.	D
" "	Hawaii (1935)	" "	D
" "	Hawaii (1936)	" "	D
<i>Opius humilis</i> Silv.	Hawaii (1934)	" "	D
" "	U.S.A. (1935)	" "	D
" "	Hawaii (1935)	" "	P
" "	Hawaii (1936)	" "	S

<i>Opius tryoni</i> Cam.	Hawaii (1938)	„ „	S or D
Cryptochaetidae			
<i>Cryptochaactum iceryae</i> Will	U.S.A. (1935)	<i>Icerya purchasi</i> Mask.	S
„ „	U.S.A. (1937)	„ „	P
Encyrtidae			
<i>Achrysopophagus</i> sp.	Java (1937)	<i>Maconellicoccus hirsutus</i> Green	SS
„ „	Java (1938)	<i>Maconellicoccus & Pseudococcus</i> (2)	SS
<i>Anagyrus aegyptiacus</i> Moursi	Java (1934)	„ „	P
<i>Anagyrus kamali</i> Moursi	„ „	„ „	P
<i>Anagyrus</i> sp.	Java (1933)	„ „	D
„ „	Java (1936)	„ „	S
„ „	Java (1939)	„ „	SS
<i>Comperiella bifasciata</i> How	U.S.A. (1934)	<i>Chrysomphalus ficus</i> Riley	D
„ „	U.S.A. (1936)	<i>Aonidiella & Chrysomphalus</i> (2)	D
„ „	U.S.A. (1942)	<i>Chrysomphaius ficus</i> Riley	D
<i>Lepitomastix phenacocci</i> Compere	Java (1934)	<i>Maconellicoccus & Pseudococcus</i>	P
<i>Lepitomastix</i> spp.	Java (1936)	„ „	S
„ „	Java (1939)	„ „	SS
Eulophidae			
<i>Dasyscapus parvipennis</i> Gah.	Gold Coast (38/39)	<i>Thrips tabaci</i> Lind.	D
<i>Tetrastichus giffardianus</i> Silv.	Hawaii (1934)	<i>Ceratitis capitata</i> Wied.	D
„ „	Hawaii (1935)	„ „	D
„ „	Hawaii (1936)	„ „	D or P
„ „	Hawaii (1938)	„ „	D
Scelionidae			
<i>Telenomus nawaii</i> Ashm.	Fig Islands (1936)	<i>Agrotis ipsilon</i> Rott.	P
„ „	„ „	<i>Spodoptera exigua</i> Hubn	P
„ „	„ „	<i>Spodoptera littoralis</i> Boisd.	P
„ „	Fig Islands (1937)	(<i>Agrotis & S. exigua & S. littoralis</i>)	P
<i>Telenomus spodoptera</i> Dodd	Java (39/41)	<i>Spodoptera littoralis</i> Boisd.	D
Tachinidae			
<i>Actia nigritula</i> Mall	Australia (1939)	<i>Spodoptera littoralis</i> Boisd.	D
„ „	Australia (39/41)	„ „	D
Trichogrammatidae			
<i>Trichogramma minutum</i> Riley	England (1931)	Boll worms (<i>Earias & Pectinophora</i>)	P

⁽¹⁾ SS= Succeeded and well established. S= Succeeded and established. P= Partial success or establishment.

D= Not liberated, diet before liberation, or not established.

⁽²⁾ *Maconellicoccus hirsutus* Green and *Pseudococcus filamentosus* Ckll.

⁽³⁾ *Anoniediella aurantii* Mask and *Chrysomphalus ficus* Riley.

Table 5-B: A review list of introduced parasitoid species into Egypt and their status

Parasitoid Name	Target Host	Year	Introduced from	Current Status
<i>Goniozus legneri</i> (Gordh)	<i>Pectinophora gossypiella</i> (Saunds.)	1992	Australia via USA	S.
<i>Trichogrammatoidae bactrae</i> Nagavaja	<i>Pectinophora gossypiella</i> (Saunds.)	1992	Australia via USA	S.
<i>Lysiphlebus testaceipes</i> (Cresson)	Aphid species	1999	Czech Republic	S.
<i>Aphelinus albipodus</i> Hayat & Fatima	Aphid species	1999	USA	S.
<i>Aganaspis daci</i> Weld.	<i>Bactrocera zonata</i> (Saund.)	2009	Eastern Asia via USDA	S.

The above parasitoid species were introduced into Egypt by Dr. A. H. El-Heneidy (ARC, Egypt) through collaborative projects with American Universities.

Conclusion

In this review article, it is included, in so far as feasible, the available historical records of Egyptian taxonomic lists of the common agricultural parasitoid species and their respective host insects

starting from year 1905 up to 2018, whatever published in Egyptian national or international literature. This review article aimed to provide a historical overview on the common agricultural insect parasitoid fauna recorded in Egypt, and to help decision makers in selecting the appropriate parasitoid species for bio-controlling a specific economic insect pest through mass production and field release as biocontrol agents among the new concepts of integrated pest management programs in the country.

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