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Survey and taxonomic notes on the coleopterous (Coleoptera) insect fauna of the New Valley, Egypt

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Abstract:

A survey together with faunistic studies of the coleopterous insects were carried out in the New Valley Governorate using light traps and sweeping nets during a period covered two years, 2017 - 2018. The survey revealed the presence of 93 species under 76 genera belonging to 24 families. The largest number of species was belonged to family Tenebrionidae (20 species), followed by family Carabidae (9 species), then family Cocinellidae (8 species). Families Curculionidae and Dytiscidae, each of 7 species. Other families were represented by smaller number of species. 9 species are common, 44 species were found in considerable numbers and 35 species are rare. Thirty species are pests of which 5 are major pests, 28 species are predators, and 27 species are of less economic importance. The distribution of each species in the deferent geographical regions of Egypt is also included.

Introduction

The New Valley is the largest Governorate in Egypt, representing approximately over 1/3 of the total area of Egypt and characterized in a whole by desert environment including several Oases. Although, there is ambitious and promising agriculture work are performed in the New Valley, there is no detailed study on the diversity of insects in this area and most of the faunistic insect work in this area was no more than fragment and scattered work carried out by Gough (1917 and 1918), Gabriel and Corbet (1949), Hanna (1966), Badran and Nakhla (1969) , Saleh (1974), Moustafa *et al.* (1983), Ahmed (1991), Al-Gamal *et al.* (2001) and Mahbob. and Mahmoud (2013).

As for the coleopterous insect fauna of Egypt, Shalaby (1958) listed in alphabetical order the Egyptian insects

in the insect collection of the Plant Protection Research institute, Min. of Agriculture, Egypt. El Moursy (1996) in the work "Biological diversity of Egypt" listed the coleopterous insects of Egypt together with their distribution. Salem (2017) in his book "The insect fauna of Egypt" presented a comprehensive checklist of insects recorded in Egypt including the coleopterous insects and in 2018 recorded the coleopterous predators in Egypt.

Concerning the fauna of the coleoptera in the New Valley Governorate , very little is known and a very little studies were carried out. On account of the scarcity of knowledge regarding the coleopterous insect fauna in the New Valley, the present work is presented to overcome the lack of information and to assist in recognizing

the insect fauna in this area. It is hoped to be of assistance for more detailed and prospective studies.

Materials and methods

The present work was carried out at the New Valley using light traps and sweeping net during two years (2017 – 2018), and covered the following areas in the New Valley Governorate: Dakhla, Kharga, and Paris Oases. The surveyed areas were cultivated with variable field crops, vegetables and fruit trees. Captured insects were sorted out into species, identified and recorded, then listed in alphabetical order according to families, genera and species. Data are presented in a Table (1) showing the recent scientific names and position of the species together with their collecting method, state of abundance (Common, fair and rare) and their distribution in the geographical regions in Egypt. Identification of species with updates of nomenclature and species status were carried out in the Insect Identification and Classification Department (IICD) in the Plant Protection Research Institute (PPRI), Agricultural Research Center (ARC), Egypt.

Results and discussion

The present survey recorded 93 species under 76 genera belonging to 24 coleopterous families (Anthicidae, Aphodiidae, Bostrychidae, Bruchidae, Buprestidae, Carabidae, Cerambycidae, Chrysomelidae, Cicindellidae, Coccinellidae, Curculionidae, Dermestidae, Dytiscidae, Elateridae, Hydrophilidae, Malachidae, Meloidae, Melolonthidae, Melyridae, Nitidulidae, Ptinidae, Scarabaeidae, Staphilinidae and Tenebrionidae. The survey also indicated that, the largest number of species was belonged to family Tenebrionidae (20 species), followed

by family Carabidae (9 species, then family Coccinellidae (8 species). Families Curculionidae and Dytiscidae, each of 7 species. Other families were represented by smaller number of species. It is noticed that, most of the species were collected by the light traps (76 species), and 28 species by sweeping net. It is also found that 9 species were much abundant, and 44 species were found in considerable numbers, whereas, 35 species are rare. From the economic point of view, 33 species are considered pests, of which 5 species are major pests. 28 species are predators, whereas, other species (27 species) are of not known or of less economic importance.

On the other hand, and according to the records of distribution for the recorded species in the geographical regions of Egypt, it is noticed that, 39 of the surveyed species were recorded from the coastal region, 45 species were previously recorded from the western desert, in addition to 48 species recorded in the present work from this region, 47 species from lower Egypt, 28 species from Upper Egypt, 11 species from eastern desert, 10 species from Gebel Elba and 41 species from Sinai peninsula. It is found also that, four species are found inhabiting all the geographical regions in Egypt, these are: *Callosobruchus chinensis* (Bruchidae), *Straspes squamosa* (Buprestidae), *Croscheria sanguinolenta* (Meloidae) and *Pentodon algrinum* (Scarabaeidae). One species was collected from 6 regions, 6 species were recorded from 5 regions, 12 species from four regions, 22 species from 3 regions, 19 species from 2 regions and 21 species from only one region.

Table (1): List of coleopterous insects as surveyed in the New Valley Oasis, Egypt, together with their economic status, abundancy, means of collection and distribution in Egypt.

Taxa	Collection		Economic status			Abundancy	Distribution in Egypt					
	Light trap	Net	Pest	Predator	Others		N. Coast	W. Desert	Delta	U. Egypt	E. desert	G. Elba
Fam. Anthicidae												
<i>Anthicus crinitus</i> Laferte-Senectere, 1849 (= <i>Hirticomus hispidus</i> Rossi, 1792) (= <i>Anthicus laeviceps</i> Marseul, 1879) (= <i>Anthicus communimacula</i> Fairmaire, 1896)	*			*		++	*	*	*			
<i>Hirticollis hispidus</i> (Rossi, 1792) (= <i>Anthicus hispidus</i> Rossi, 1792)	*			*		+	*	*	*			
Fam. Aphodiidae												
<i>Aphodius lividus</i> (Olivier, 1789)	*				*	+++		*				
<i>Rhyssmodes orientalis</i> (Mulsant, 1874) (= <i>Rhyssmodes aspericeps</i> Reitter, 1892) (= <i>Rhyssmodes parvus</i> Balthasar, 1963) (= <i>Rhyssmodes reitteri</i> D'Orbigny, 1896) (= <i>Rhyssmodes transversus</i> Reitter, 1892) (= <i>Rhyssmodes aspericeps</i> Chevrolat, 1861) (= <i>Rhyssmodes aspericeps</i> Reitter, 1892) (= <i>Rhyssmodes bremeri</i> Endrödi, 1979) (= <i>Rhyssmodes gemmifer</i> Marseul, 1878) (= <i>Rhyssmodes hybridus</i> Reitter, 1892) (= <i>Rhyssmodes obsoletus</i> Reitter, 1887) (= <i>Rhyssmodes orientalis</i> Mulsant and Godart, 1875) (= <i>Rhyssmodes reitteri</i> D'Orbigny, 1896) (= <i>Rhyssmodes transversus</i> Reitter, 1892)	*				*	++	*	*	*			*
Fam. Bostrychidae												
<i>Bostrychoplites zickeli</i> (Marseul, 1867)	*		*			++		*	*			
<i>Phonapate frontalis</i> (Fahraeus, 1871)	*		**			++	*	*	*	*		*
Fam. Bruchidae												
<i>Callosobruchus chinensis</i> (Linnaeus, 1758) (= <i>Bruchus barbicornis</i> Fabricius 1801) (= <i>Bruchus bistratus</i> Fabricius 1801) (= <i>Bruchus chinensis</i> Linnaeus 1888) (= <i>Bruchus scutellaris</i> Fabricius 1792) (= <i>Callosobruchus barbicornis</i> Fabricius 1801) (= <i>Callosobruchus bistratus</i> Fabricius 1801) (= <i>Callosobruchus scutellaris</i> Fabricius, 1801) (= <i>Curculio chinensis</i> Linnaeus 1758) (= <i>Mylabris chinensis</i> Linnaeus 1878) (= <i>Pachymerus chinensis</i> Linnaeus 1905)	*		**			++	*	*	*	*	*	*
<i>Callosobruchus maculatus</i> (Fabricius, 1775)	*		*			++		*				*

(= <i>Bruchus maculatus</i> Fabricius, 1775) (= <i>Bruchus quadrimaculatus</i> Fabricius, 1775) (= <i>Callosobruchus quadrimaculatus</i> Fabricius, 1792)												
Fam. Buprestidae												
<i>Anthaxia angustipennis</i> (Klug, 1829) (= <i>Anthaxia stupida</i> Marseul, 1860) (= <i>Anthaxia moises</i> Obenberger, 1921)	*		*			+		*		*		*
<i>Cyphosoma lawsoniae</i> (Chevrolat, 1838) (= <i>Buprestis lawsoniae</i> Chevrolat, 1838) (= <i>Coeculus buqueti</i> Gory and Laporte, 1839) (= <i>Coeculus gravidum</i> Gory and Laporte, 1839) (= <i>Cyphosoma buqueti</i> Gory and Laporte, 1839) (= <i>Cyphosoma gravidum</i> Gory and Laporte, 1839) (= <i>Cyphosoma houskai</i> Obenberger, 1946) (= <i>Cyphosoma interruptum</i> Obenberger, 1918)	*		*			+		*	*			
<i>Sphenoptera trispinosa</i> (Klug, 1829) (= <i>Buprestis trilineata</i> Palisot de Beauvois, 1807) (= <i>Buprestis trispinosa</i> Klug, 1829) (= <i>Sphenoptera owariensis</i> Gory and Laporte, 1839) (= <i>Sphenoptera trilineata</i> Palisot, 1807)	*		*			++		*	*			
<i>Straspes squamosa</i> (Klug, 1829)	*		*			++		*	*	*	*	*
Fam. Carabidae												
<i>Acupalpus marginatus</i> (Dejean, 1829) (= <i>Stenolophus marginatus</i> Dejean, 1829) (= <i>Badister piceus</i> Ballion, 1871) (= <i>Egadroma marginata</i> Dejean, 1829) (= <i>Stenolophus klettei</i> Gerhardt, 1899) (= <i>Stenolophus piceus</i> Ballion, 1871)	*		*			+		*		*	*	
<i>Bembidion atlanticum</i> Wollaston, 1854 (= <i>Bembidion megaspilum</i> Walker, 1871)	*		*			+		*	*		*	*
<i>Bembidion latiplaga</i> (Chaudoir, 1850) (= <i>Bembidion telemus</i> Ragusa 1892) (= <i>Emphanes latiplaga</i> Chaudoir, 1850)	*		*			+		*	*	*	*	*
<i>Brachinus latipennis</i> Motschulsky, 1864 (= <i>Brachinus latipennis</i> Peyerimhoff, 1907)								*				
<i>Brachinus oblongus</i> Dejean, 1825	*		*			++		*	*	*		
<i>Chlaenius spoliatus</i> Rossi, 1792 (= <i>Carabus spoliatus</i> Rossi, 1792) (= <i>Chlaenites spoliatus</i> Rossi, 1792)	*		*			+		*	*	*		
<i>Glycia castanea</i> (Klug, 1831)	*		*			+		*			*	*
<i>Lebia arcuata</i> (Reiche and Saulcy, 1855) (= <i>Glycia arcuata</i> Reiche and Saulcy, 1855) (= <i>Glycia circumducta</i> Reitter, 1890) (= <i>Lebia circumducta</i> Reitter, 1890)	*		*			+		*				
<i>Pheropsophus africanus</i> (Dejean, 1825)	*		*			++		*			*	*
<i>Pheropsophus parallelus</i> (Dejean, 1825)	*		*			+		*	*			
<i>Tachys lucasi</i> Duval, 1852	*		*			++		*	*	*	*	
Fam. Cerambycidae												
<i>Chlorophorus varius</i> (Müller, 1766)	*		*			++		*	*	*		

(= <i>Clytanthus varius</i> Kiseritzky, 1915) (= <i>Clytus aegyptiacus</i> Ganglbauer, 1882) (= <i>Clytus ornatus</i> Brullé, 1832) (= <i>Clytus verbasci</i> Küster, 1847) (= <i>Clytus viridicollis</i> Gemminger and Harold, 1872) (= <i>Leptura gammoides</i> Geoffroy, 1785) (= <i>Leptura nigro-fasciata</i> Goeze, 1777) (= <i>Leptura strigosa</i> Gmelin, 1790) (= <i>Leptura varia</i> Müller, 1766)													
Fam. Chrysomelidae													
<i>Antipa chobauti</i> Pic, 1902 (= <i>Gynandrophthalma chobauti</i> Pic, 1902) (= <i>Titubaea chobauti</i> Pic, 1902)		*	*			+	*	*					
<i>Diorhabda elongata</i> (Brune, 1832) (= <i>Chrysomela elongata</i> Brulle, 1832) (= <i>Chrysomela costalis</i> Olivier, 1807) (= <i>Galeruca elongata</i> Brulle, 1832) (= <i>Chrysomela carinulata</i> Desbrochers, 1869)		*	*			+		*					
<i>Hypocassida subferruginea</i> (Schrank, 1776) (= <i>Cassida subferruginea</i> Schrank, 1776) (= <i>Cassida ferruginea</i> Goeze, 1777)		*	*			++		*			*		
Fam. Cicindellidae													
<i>Cicindela aulica</i> Dejean, 1831 (= <i>Cicindela bahreïnica</i> Ali, 1978) (= <i>Cicindela cupraria</i> Mandl, 1959) (= <i>Cicindela cyanicolor</i> Mandl, 1959) (= <i>Cicindela hesperidum</i> Wollaston, 1861) (= <i>Cicindela laetecupreoviridis</i> W.Horn, 1891) (= <i>Cicindela massauensis</i> Dokhtoureff, 1887) (= <i>Cicindela orienticola</i> Tschitscherine, 1903)	*			*		++	*	*					*
<i>Cicindela lunulata</i> Fabricius, 1781 (= <i>Calomera lunulata</i> Fabricius, 1781) (= <i>Cicindela barbara</i> Laporte, 1840) (= <i>Cicindela barthelemyi</i> Gené, 1836) (= <i>Cicindela oranensis</i> Schulz, 1909) (= <i>Cicindela otthi</i> Gistel, 1837) (= <i>Cicindela rectangulata</i> Beuthin, 1890) (= <i>Cicindela tripolitana</i> Schulz, 1909) (= <i>Lophyridia lunulata</i> Fabricius, 1781)	*			*		++	*	*	*				*
<i>Lophyra flexuosa</i> (Fabricius, 1787) (= <i>Cicindela flexuosa</i> Fabricius, 1787)	*			*		++	*	*	*				*
Fam. Coccinellidae													
<i>Hippodamia variegata</i> (Goeze, 1777) (= <i>Adonia variegata</i> Goze, 1777) (= <i>Coccinella variegata</i> Goeze, 1777)	*			*				*					*
<i>Coccinella septempunctata</i> Linnaeus, 1758	*	*		*		+	*	*	*	*			*
<i>Coccinella undecimpunctata</i> Linnaeus, 1758	*	*		*		++	*	*	*	*		*	*
<i>Chnootriba elaterii</i> (Rossi, 1794) (= <i>Coccinella chrysomelina</i> Fabricius, 1775) (= <i>Epilachna chrysomelina</i> Fabricius, 1775) (= <i>Coccinella elaterii</i> Rossi, 1794) (= <i>Henosepilachna elaterii</i> Rossi, 1794)		*	*			+++		*	*			*	*
<i>Exochomus nigripennis</i> (Erichson, 1843)	*			*		+	*	*	*	*			*

(= <i>Chilocorus nigripennis</i> Erichson, 1843)																			
<i>Nephus kiesenwetteri</i> Mulsant, 1850 (= <i>Scymnus kiesenwetteri</i> Mulsant, 1850)								*		*									
<i>Rodalia cardinalis</i> (Mulsant, 1850)	*			*		+	*	*	*	*									
<i>Scymnus interruptus</i> (Goeze, 1777)								*		*									*
Fam. Curculionidae																			
<i>Ammocleonus hieroglyphicus</i> Olivier, 1807	*		*			++		*											
<i>Coniatus aegyptiacus</i> Capiomont 1868	*		*			++	*	*											
<i>Lixus anguinus</i> Linnaeus, 1767 (= <i>Curculio anguinus</i> Linnaeus, 1767) (= <i>Curculio bufo</i> Herbst, 1795) (= <i>Curculio mucronatus</i> Fabricius 1792)		*	*			++													
<i>Hypolixus pica</i> (Fabricius, 1798) (= <i>Curculio pica</i> Fabricius, 1798) (= <i>Lixus nubilosus</i> Boheman, 1835) (= <i>Lixus pulvisculosus</i> Boheman, 1835) (= <i>Lixus ornatus</i> Reiche, 1857)		*	*			++	*	*											
<i>Hypera postica</i> (Gyllenhal, 1813) (= <i>Curculio brunnipennis</i> Boheman, 1834) (= <i>Hypera brunnipennis</i> Boheman, 1834) (= <i>Hypera variabilis</i> Herbst, 1795) (= <i>Phytonomus posticus</i> Gyllenhal, 1813) (= <i>Rhynchaenus posticus</i> Gyllenhal, 1813) (= <i>Phytonomus transsylvanicus</i> Petri, 1901) (= <i>Phytonomus variabilis</i> Herbst, 1795)		*	**			++	*	*	*										
<i>Tanymecus migrans</i> Fahrhraeus, 1840	*		*			++		*	*										
<i>Tanymecus musculus</i> Fahrhraeus, 1840	*		*			++		*	*	*									
Fam. Dermestidae																			
<i>Attagenens scalaris</i> Pic, 1893	*	*	*			++	*	*											*
<i>Dermestis frischi</i> Kugelann, 1792 (= <i>Dermestes pollinctus</i> Hope, 1834)		*	**			+	*	*		*	*								
Fam. Dytiscidae																			
<i>Bidessus major</i> Sharp, 1882	*			*		++		*	*										*
<i>Hydroglyphus signatellus</i> (Klug, 1834) (= <i>Hydroporus signatellus</i> Klug, 1834) (= <i>Bidessus signatellus</i> Klug, 1834)	*			*		+		*	*										*
<i>Cybister tripunctatus</i> Olivier, 1795	*	*		*		++	*	*	*										*
<i>Nebrioporus lanceolatus</i> (Walker, 1871) (= <i>Hydroporus insignis</i> Walker, 1871) (= <i>Hydroporus lanceolatus</i> Walker, 1871) (= <i>Deronectes arabicus</i> Sharp, 1882)	*			*		+		*											*
<i>Herophydrus musicus</i> Klug, 1833		*	*			+		*											
<i>Herophydrus solieri</i> Aube, 1838 (= <i>Hyphoporus solieri</i> Aubé, 1838)	*	*		*		++		*											
<i>Rhantus elevates</i> Sharp, 1882	*			*		+		*											*
Fam. Elateridae																			
<i>Agrypnus notodonta</i> Latreille, 1827	*	*	**			+++	*	*		*									
<i>Hemicleus ferrantei</i> Buysson, 1911	*		*			+		*	*										
<i>Aeoloides grisescens</i> (Germar, 1844) (= <i>Cryptohypnus grisescens</i> Germar, 1844)	*		*			+		*	*										
<i>Cardiophorus dilutus</i> Erichson, 1840 (= <i>Craspedostethus dilutus</i> Erichson, 1840)	*		*			+		*	*										*
Fam. Hydrophilidae																			
<i>Enochrus bicolor</i> (Fabricius, 1792) (= <i>Dytiscus chrysomelinus</i> Fabricius, 1787)	*	*		*		+++		*											

(= <i>Hydrobius ferrugineus</i> Küster, 1849) (= <i>Hydrophilus bicolor</i> Fabricius, 1792) (= <i>Hydrophilus fulvus</i> Marsham, 1802) (= <i>Hydrophilus grisescens</i> Gyllenhal, 1827) (= <i>Philhydrus mediterraneus</i> Sahlberg, 1900) (= <i>Philydrus atricornis</i> Kuwert, 1888) (= <i>Philydrus sahlbergi</i> Fauvel, 1887)													
<i>Sternolophus solireri</i> Castelnau, 1840 (= <i>Sternolophus aeratus</i> Reiche, 1854) (= <i>Sternolophus punctulatus</i> Schaufss, 1883) (= <i>Helobius noticolis</i> Mulsant, 1851) (= <i>Hydrous graecus</i> Baudi, 1864)	*			*	+++		*						
Fam. Malachidae													
<i>Malachius alferii</i> Pic, 1919	*			*	+		*					*	*
Fam. Meloidae													
<i>Alosimus viridissimus</i> (Lucas, 1847) (= <i>Lydus viridissimus</i> Lucas, 1847) (= <i>Cantharis viridissimus</i> Lucas, 1847) (= <i>Cantharis opacipennis</i> Fairmaire, 1871) (= <i>Lydus coeruleus</i> Escherich, 1896) (= <i>Oelosimus intermedius</i> Pic, 1897) (= <i>Alosimus bipartitus</i> Pic, 1905) (= <i>Lydus purpurascens</i> , Pic, 1939)						*	*	*	*	*			
<i>Croscherichia sanguinolenta</i> (Olivier, 1811) (= <i>Mylabris sanguinolenta</i> Olivier, 1811) (= <i>Mylabris incerta</i> Klug, 1845) (= <i>Mylabris latrellei</i> Billberg, 1813) (= <i>Zonabris notatipennis</i> Pic, 1897) (= <i>Zonabris ghardaiensis</i> Pic, 1897) (= <i>Zonabris nedjalensis</i> Pic, 1920)						*	*	*	*	*	*	*	*
<i>Hycleus quatuordecimsignatus</i> (Marseul, 1870) (= <i>Mylabris quatuordecimsignatus</i> Marseul, 1870) (= <i>Zonabris pharius</i> Pic, 1916) (= <i>Mylabris peyerimhoffi</i> Pic, 1929)							*	*	*				
<i>Mylabris sisymbrii</i> Klug, 1845							*	*	*	*			
<i>Mylabris tenebrosa</i> Laporte, 1840 (= <i>Zonabris mohtari</i> Escalera, 1910) (= <i>Zonabris postluteofasciata</i> Pic, 1921) (= <i>Zonabris soufensis</i> Pic, 1921) (= <i>Zonabris triluteofasciata</i> Pic, 1921) (= <i>Zonabris uniluteofasciata</i> Pic, 1921) (= <i>Mylabris satanas</i> Mader, 1929) (= <i>Mylabris exuta</i> Normand, 1950) (= <i>Zonabris diverseluteonotata</i> Pic, 1953) (= <i>Zonabris oberthuri</i> Pic, 1953) (= <i>Zonabris pauloluteobifasciata</i> Pic, 1953) (= <i>Zonabris septemnotata</i> Pic, 1953)						*	*						
Fam. Melolonthidae													
<i>Schizonycha nilotica</i> Blanchard, 1851	*			*	+		*	*					*
Fam. Melyridae													
<i>Melyris oblonga</i> (Fabricius, 1775) (= <i>Zygia oblonga</i> Fabricius, 1775)	*	*		*	+		*						
Fam. Nitidulidae													

<i>Carpophilus dimidiatus</i> (Fabricius, 1792) (= <i>Carpophilus auropilosus</i> Wollaston, 1854) (= <i>Carpophilus contingens</i> Walker, 1858) (= <i>Carpophilus dilutus</i> Murray, 1864) (= <i>Carpophilus halli</i> Dobson, 1954) (= <i>Carpophilus lewisi</i> Reitter, 1884) (= <i>Carpophilus limbalis</i> Murray, 1864) (= <i>Carpophilus luridus</i> Murray, 1864) (= <i>Carpophilus nigritus</i> Murray, 1864) (= <i>Carpophilus ochropterus</i> Klug, 1862) (= <i>Carpophilus puberulus</i> Montrouzier, 1860) (= <i>Carpophilus pusillus</i> Stephens, 1830) (= <i>Carpophilus robustus</i> Murray, 1864) (= <i>Carpophilus testaceus</i> Murray, 1864) (= <i>Carpophilus vittiger</i> Murray, 1864) (= <i>Nitidula dimidiatus</i> Fabricius, 1792)							*	*				*
<i>Carpophilus hemipterosus</i> Linnaeus, 1758							*	*				*
Fam. Ptinidae												
<i>Xyletinus bucephalus</i> (Illiger, 1807) (= <i>Ptilinus bucephalus</i> Illiger, 1807) (= <i>Xyletinus striatipennis</i> Fairmaire, 1857) (= <i>Calypterus sericans</i> Mulsant and Godart, 1859) (= <i>Xyletinus brunnescens</i> Obenberger, 1917) (= <i>Xyletinus bicoloricornis</i> Pic, 1924)	**		**			++	*					
Fam. Scarabaeidae												
<i>Adoretus graniceps</i> Reitter, 1889	*			*		+	*		*		*	*
<i>Chironitis pamphilus</i> Menetries, 1849 (= <i>Onitis pamphilus</i> Ménériés, 1849) (= <i>Onitis eumenes</i> Motschulsky, 1859) (= <i>Cheironitis ponticus</i> Lansberge, 1875)	*		*			+	*					
<i>Pentodon algerinum</i> (Herbst, 1789) (= <i>Scarabaeus algerinum</i> Herbst, 1789) (= <i>Pentodon dispar</i> Baudi, 1870)	*		*			+++	*	*	*	*	*	*
Fam. Staphilinidae												
<i>Paederus alfieri</i> Koch, 1934	*	*	*			+++	*	*				
<i>Pinophilus aegyptius</i> Erichson, 1840	*			*		++	*					
<i>Philonthus concinnus</i> (Gravenhorst, 1802) (= <i>Philonthus imperfectus</i> Sahlberg, 1903) (= <i>Philonthus melanarius</i> Mulsant and Rey, 1876) (= <i>Philonthus minor</i> Erichson, 1840) (= <i>Philonthus ochropus</i> Gravenhorst, 1802) (= <i>Staphylinus concinnus</i> Gravenhorst, 1802) (= <i>Staphylinus irregularis</i> Mannerheim, 1830) (= <i>Staphylinus ochropus</i> Gravenhorst, 1802)	*	*		*		++	*	*				
<i>Carpelimus memnonius</i> Erichson, 1840 (= <i>Trogophloeus memnonius</i> Erichson, 1840)	*	*		*		++	*	*				*
Fam. Tenebrionidae												
<i>Adesmia bicarinata</i> Klug, 1830	*			*		+	*	*				*
<i>Adesmia cothurnata</i> Forskal, 1775 (= <i>Tenebrio cothurnata</i> Forskal, 1775) (= <i>Adesmia subserrata</i> Chevrolat, 1877) (= <i>Pemelia bicarinata</i> Klug, 1830)	*			*		+	*					*
<i>Akis elevata</i> Solier, 1836	*		*			+++	*	*	*		*	*

<i>Alphitobius laevigatus</i> Fabricius, 1781 (= <i>Alphitobius piceus</i> Olivier, 1792) (= <i>Dendarus piceus</i> Olivier, 1811) (= <i>Opatrum laevigatum</i> Fabricius, 1781) (= <i>Opatrum piceus</i> Olivier, 1811)	*		*			+++	*	*	*				
<i>Anemia sardoa</i> (Gene, 1839) (= <i>Cheirodes sardoa</i> Gene, 1839)	*			*		++	*	*	*		*		*
<i>Erodium gibbus</i> Fabricius, 1775	*			*		+	*	*					*
<i>Trachyderma hispida</i> (Forskål, 1775) (= <i>Tenebrio hispidus</i> Forskål, 1775) (= <i>Ocnerna hispida</i> Forskål, 1775)		*		*		+	*	*	*	*			*
<i>Trachyderma leprieuri</i> (Allard, 1886) (= <i>Ocnerna sparsispina</i> Boehm, 1914)	*			*		++		*					
<i>Opatroides punctulatus</i> Burelle, 1832	*			*		++	*	*	*	*			*
<i>Pimelia angulata</i> Fabricius, 1775 (= <i>Pimelia consobrina</i> Lucas, 1858) (= <i>Pimelia retrospinosa</i> Lucas, 1858)		*		*		++		*	*	*			*
<i>Pimelia canescens</i> Klug, 1830 (= <i>Pimelia depilata</i> Solier, 1836)	*	*		*		+	*	*					*
<i>Pimelia nilotica</i> S�nac, 1884 (= <i>Pimelia angulata nilotica</i> S�nac, 1884)		*		*		+	*	*	*	*			
<i>Pimelia sericea</i> Olivier, 1795	*	*		*		+	*	*					
<i>Pimelia spinulosa</i> Klug, 1830		*		*		+	*	*					
<i>Scelosodis castaneus</i> (Eschscholtz, 1831)	*	*		*		+		*	*		*		*
<i>Zophosis abbreviata</i> Solier, 1834 (= <i>Zophosis semilineata</i> Deyrolle, 1867)	*			*		++		*	*				
<i>Zophosis carinata</i> Solier, 1834	*			*		++		*		*			
<i>Zophosis plana</i> Fabricius, 1775 (= <i>Erodium planus</i> Fabricius, 1775) (= <i>Zophosis carinata</i> Solier, 1834)	*			*		+		*	*				
<i>Zophosis sulcata</i> Deyrolle, 1867 (= <i>Zophosis bohemanni</i> Deyrolle, 1867) (= <i>Zophosis maeklini</i> Deyrolle, 1867)	*			*		+		*		*		*	
<i>Zophosis pygmaea</i> Solier, 1834 (= <i>Thrioptera crinita</i> klug, 1830) (= <i>Thrioptera maillei</i> Solier, 1836) (= <i>Ocnerna pygmaea</i> Miller, 1861)	*			*		+	*	*					

Northern Coast: N. Coast Western : W. Desert Upper Egypt: U. Egypt Eastern Desert: E. desert
Gabal Elba: G. Elba.

Common +++ Fair ++ Rare + Major pest **

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