

## **SURVEY OF SOME IMPORTANT INSECTS OF ORDER COLEOPTERA IN QENA GOVERNORATE, EGYPT**

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### **ABSTRACT**

A survey of coleopterous beetles and weevils was conducted at Dshna district, Qena Governorate, Egypt during two successive years from April 2018 to March 2020. This survey revealed the collection of about 47946 & 49246 individuals belonging to 27 families in each year. The most abundant families were Scarabeidae (15145 individuals representing 31.6% of the total catch). This family was collected from April to December, followed by Carabidae (13327 individuals being 27.8% of the total catch). Carabid beetles were caught almost all through the year from March to December. Elateridae was the least abundant (7335 individuals representing 15.3% of the total catch). Elaterid species were collected during March, April, June, July, August, September, October, November, and December in 2018-2019. Similar trend was observed in 2019-2020, since Scarabeidae was the most abundant (15292 individuals representing 31.1% of the total catch) followed by Carabidae (13493 individuals representing 27.5% of the total catch) and finally Elateridae (7764 individuals representing 15.8% of the total catch). The majority of coleopterus species surveyed in the present study were harmful to plants.

**Keywords:** Survey, Coleoptera, beetles, weevils, Qena Governorate.

## INTRODUCTION

Order Coleoptera is the largest order in class Insecta. Most of its species are terrestrial species and few are aquatic species. Only quarter of million species have been described (White 1983). In Egypt, there are about 2974 species belonging to Coleoptera published by Alfieri, (1976) in his professional studies on Egyptian fauna. Very little information is known about the distribution, abundance, and identification of these species. Recently, more attention has been given to survey of insect species in different areas of Egypt (Salem *et al.*, 1985, 1986 and 2020; El-Moursy *et al.*, 1996, 1998 and 2001; Fadl and Mossaad, 1997; El-Akkad *et al.*, 1997; Emad, 2002; El-Shewy, 2007 and 2013; El-Metwally, 2002 and 2008).

In the present study, the coleopterous species were collected from Doshna district, Qena Governorate during two successive years (2018-2019 and 2019-2020). This governorate was chosen based on the importance of cultivated crops, the presence of severe insect pests besides it represents Upper Egypt. It has a wide variety of cultivations such as maize, sugarcane, mango, alfalfa, figs, eggplant, potato, tomato, dates etc.

This study aimed at updating available data about surveying insect species belonging to Coleoptera in this part of Egypt which was not conducted for more than 20 years ago.

## MATERIAL AND METHODS

A light trap of the Robinson type was fitted with a 200-watt bulb (Emad, 2002; Salem *et al.*, 2020) and operated at Doshna district, Qena Governorate from sun set to sun rise for two consecutive years (April 2018 to March 2020). The trap was set up at the Agriculture Research Station.

Sodium cyanide was used as a killing agent within the receptacle of the trap. Catches of coleopterous insects were separated once a month from other groups and sorted into families, genera, and species. Classification, counting, and recording were carried out. Records of monthly catches for each species and each family together with their total annual catches and percentage of abundance were tabulated and alphabetically arranged. All species were identified in the Department of Insect Survey and Taxonomy, Plant Protection Research Institute, Ministry of Agriculture, Dokki, Egypt.

## **RESULTS AND DISCUSSION**

The total catch of coleopterous species during the study period (2018-2019 and 2019-2020) is tabulated in Tables 1 & 2. Data shows that the activity and population density of insects varied from one year to another. The number of the whole catches was 47946 and 49146 throughout the first and second years, respectively. In these two years, the coleopterous insects were collected from April to November. Sometimes were present during March and completely disappeared during January and February. The collected individuals are listed under 28 families and 81 species. Species of Family Scarabaeidae dominated the Coleopterous catches in both years with total number of 15145 and 15292 beetles with 31.6% and 31.1% of the total catches, followed by Carabidae with 13327 and 13493 beetles represented about 27.8% and 27.5% of the total catches in the two years. Other families were less abundant represented by smaller numbers of individuals. On the other hand, the Families Cryptophgidae and Dytiscidae were represented by a lesser number of individuals in the two years.

Family: Anobiidae

Anobiidae is represented by two species belonging to two genera namely, *Lasioderma serricorne* F., 1792 and *Stegobium paniceum* L., 1758. The total number of Anobiid -beetles was 87 and 118 represented 0.20% and 0.04% of the total Coleopterous catch in the first and second years. These specimens were collected during March, April, November, and December.

Family: Anthicidae

Anthicidae are represented by six species belonging to five genera. The total number of individuals in this family was 1185 in both years representing 2.5% and 2.4% of the total annual Coleopterous catch which were trapped from April to December in both years. The population of *Anthicus carinitus* Laf., 1848 was relatively high (953 and 974 individuals) representeing 80.4% and 82.2% for the first and second years of the total Anthicid beetles catch in the two years compared with the poor population of *Stricticomus tobias* Mars., 1879 from which only 8 and 12 individuals were caught represented 0.7% and 1.0% for first and second years.

Family: Bostrychidae

This family is represented by six species belonging to four genera. The total number of Bostrychid beetles was 1926 and 2078 constituted 4.0% and 4.2% of the total Coleopterous catch in the first and second years in Deshna district. This family was collected from April to December and the most abundant Bostrychid species was *Bostrychopsis reichei* Mars., 1867 with total numbers of 1577 and 1690 individuals represented 81.9% and 81.3% of the total family catch, while the rarest species was *Lyctus africanus* Lesne., 1907 with 17 and 28 species represented 0.9% and 1.3% of the total Bostrychid catches in the two years, respectively.

#### Family: Bruchidae

Bruchidae is represented by only one species namely, *Bruchidius incarnatus* Boh., 1833 The total number of these beetles was 39 and 52 and it was collected only during May and June.

#### Family: Carabidae

Eleven species have been recorded in this family belonging to eight genera during the survey periods in Doshna district with total numbers of 13327 and 13493 beetles constituted 27.8% and 27.5% of the total Coleopterous catches in the first and second years of this study. These Carabid beetles were caught almost all through the year (from March to December). The most abundant species was *Tachys tetrephacus* Bedel., 1896 with 8420 individuals representing 63.2% and 62.4% of the total Carabid catch in the first and second years, respectively. The rarest species was *Sphaerotachys lucasi* Jacq., 1852 with total number of individual 18 and 25 representing 0.01% and 0.05% of the total Carabid catches in both studied years. Carabidae was represented in this district by one species only, *Microlestes minutulus* Goeze., 1777.

#### Family: Coccinellidae

This family was represented during this investigation by three species belonging to three genera. The total number of Coccinellid beetles was 151 and 160 constituted 0.3% of total coleopterous catch in first and second year. The beetles of this family were collected from May, June, September, and October. The most abundant species was *Adonia variegata* Go., 1777 with total number of 64 and 72 individuals representing 42% and 45% of the total family catch, while the rarest species was *Rodolia cardinalis* Muls., 1850 with 36 and 46 species individuals representing 23.8% and 28.7% of total coleopterous catch in the two years.

#### Family Chrysomelidae

Chrysomelidae is represented by two species belonging to two genera namely, *Caryedon gonagra* Fab., 1798 and *Phyllotreta cruciferae* G., 1777 The total number of Chrysomelid beetles was 169 individuals forming 0.4% and 0.3% of the total Coleopterous catch in the first and second years. These beetles were collected during March, April, May, June, and November.

#### Family: Cleridae

Family Cleridae was represented only by one species in this study, *Eucymatodera senegalensis* Cast., 1832 This species was collected during March, April, May, June, and October with total number of 137 individuals representing 0.3% and 0.3% of the total Coleopterous catches in both studied years (2018-2019 and 2019-2020).

#### Family Cryptophgidae

This family was represented only by one species, *Cryptophgus affinis* Sturm., 1845 collected during November with total number of 2 and 3 individuals representing 0.004% and 0.006% of the total Cryptophgid catch in the first and second years (2018-2019 and 2019-2020).

#### Family Curculionidae

Curculionidae is represented by only one species, *Hypolixus nubilosus* (Boh.), 1835. This species was collected from May to August. The total number of Curculionid beetles was 53 and 61 forming 0.1% and 0.1% of the total Curculionid catches in both studied years.

#### Family Dermestidae

Dermestidae is represented by only one species that is *Attagenus scalaris* Pic., 1894 The total number of Dermestid beetles was 51 and 48 individuals forming 0.1% and 0.1% of the total catches in the two years. This species was collected during May, July, and September.

**Table1.** Different families of order Coleoptera presented in Dshna district, Qena Governorate along with their species during season, 2018-2019

FAMILY	SPECIES	TOTAL NUMBER OF INDIVIDUALS	PERCENTAGE
<b>Anobiidae</b>		<b>87</b>	<b>0.2</b>
	<i>Lasioderma serricorne</i> F.	52	59.8
	<i>Stegobium paniceum</i> L.	35	40.2
<b>Anthicidae</b>		<b>1185</b>	<b>2.5</b>
	<i>Anthicus crinitus</i> La-Fert.	953	80.4
	<i>Cyclodinus debilis</i> La-Fert.	11	0.9
	<i>Hirticollis hispidus</i> Rossi.	54	4.6
	<i>Leptaleus klugi</i> (Laf.)	100	8.4
	<i>Stricticomus scalaris</i> (Pic.)	59	5
	<i>Stricticomus tobias</i> Mars.	8	0.7
<b>Bostrychidae</b>		<b>1926</b>	<b>4</b>
	<i>Bostrychopsis reichei</i> Mars.	1577	81.9
	<i>Lyctus africanus</i> Lesne.	17	0.9
	<i>Lyctus brunneus</i> Steph.	21	1.1
	<i>Lyctus cornifrons</i> Lesne.	26	1.3
	<i>Rhizopretha dominica</i> F.	46	2.4
	<i>Scobicia chevrieri</i> Villa.	239	12.4
<b>Bruchidae</b>		<b>39</b>	<b>0.1</b>
	<i>Bruchidus incarnates</i> Boh.	39	100
<b>Carabidae</b>		<b>13327</b>	<b>27.8</b>
	<i>Amblystomus metallescens</i> Dej.	120	0.9
	<i>Bembidion rugicollis</i> Rche.	360	2.7
	<i>Cicindela melancholica</i> Fabr.	860	6.5
	<i>Harpalus tenebrosus</i> Dej.	18	0.1
	<i>Microlestes minutulus</i> Goeze.	451	3.4

Cont. **Table1.**

FAMILY	SPECIES	TOTAL NUMBER OF INDIVIDUALS	PERCENTAGE
	<i>Sphaerotachys lucasi</i> (Jacq.)	18	0.1
	<i>Stenolophus marginatus</i> Dej.	684	5.1
	<i>Stenolophus tenebrosus</i> Dej.	63	0.5
	<i>Tachys gilvus</i> Schaum.	1584	11.9
	<i>Tachys tetrephacus</i> Bedel.	8420	63.2
	<i>Tachys torretassoi</i> Schatz&Koch.	749	5.6
<b>Ccociellidae</b>		<b>151</b>	<b>0.3</b>
	<i>Adonia variegata</i> Go.	64	42.4
	<i>Rodolia cardinalis</i> Muls.	36	23.8
	<i>Scymnus interruptus</i> Go.	51	33.8
<b>Chrysomelidae</b>		<b>169</b>	<b>0.4</b>
	<i>Caryedyon gonagra</i> Fab.	39	23.1
	<i>Phyllotreta cruciferae</i> G.	130	76.9
<b>Cleridae</b>		<b>137</b>	<b>0.3</b>
	<i>Eucymatodera senegalensis</i> (Cast.)	137	100
<b>Cryptophgidae</b>		<b>2</b>	<b>0.004</b>
	<i>Cryptophgus affinis</i> Sturm.	2	100
<b>Curculionidae</b>		<b>53</b>	<b>0.1</b>
	<i>Attagenus scalaris</i> Pic.	53	100
<b>Dermestidae</b>		<b>51</b>	<b>0.1</b>
	<i>Attagenus scalaris</i> Pic.	51	100
<b>Dytiscidae</b>		<b>225</b>	<b>0.5</b>
	<i>Eretes sticticus</i> L.	110	49.3
	<i>Hydroglyphus confuses</i> (Klug.)	16	7.2
	<i>Hydaticus leander</i> Rossi.	2	0.9
	<i>Herophydrus solieri</i> Aube.	95	42.6
	<i>Laccophilus umbrinus</i> Most.	2	0.03
<b>Elateridae</b>		<b>7335</b>	<b>15.3</b>
	<i>Agrypnus notodonta</i> Germ.	49	0.7
	<i>Drasterius figuratus</i> Germ.	7286	99.3
<b>Haliplidae</b>		<b>22</b>	<b>0.05</b>
	<i>Canthydrus notula</i> Er.	22	100
<b>Hybosoridae</b>		<b>1769</b>	<b>3.7</b>



Cont. **Table1.**

FAMILY	SPECIES	TOTAL NUMBER OF INDIVIDUALS	PERCENTAGE
	<i>Hybosorus illigeri</i> Reiche.	1769	100
<b>Hydrophilidae</b>		<b>353</b>	<b>0.7</b>
	<i>Cercyon laminatus</i> Sharp.	112	31.7
	<i>Cercyon quisquilius</i> L.	106	30
	<i>Dractylosternum abdominale</i> Fab.	72	20.4
	<i>Helochares melanophthalmus</i> Muls	63	17.8
<b>Meloidae</b>		<b>3</b>	<b>0.006</b>
	<i>Synhoria senegalensis</i> Lap.	3	100
<b>Monotomidae</b>		14	0.03
	<i>Monotoma picipes</i> Her.	14	100
<b>Mycetophagidae</b>		<b>43</b>	<b>0.09</b>
	<i>Typhaea stercorea</i> L.	43	100
<b>Nitidulidae</b>		<b>91</b>	<b>0.2</b>
	<i>Carpophilus immaculatus</i> Luc.	1	1.1
	<i>Eपुरaea luteola</i> Er.	90	98.9
<b>Ptinidae</b>		<b>127</b>	<b>0.3</b>
	<i>Gastrallus striatus</i> Zoufal.	127	100
<b>Scarabaeidae</b>		<b>15145</b>	<b>31.6</b>
	<i>Aphodius lividus</i> Pan.	1586	10.5
	<i>Catharsius sesostris</i> Wat.	11	0.07
	<i>Maladera modesta</i> (Fair.)	263	1.7
	<i>Onitis alexis</i> Klug.	3	0.02
	<i>Onthophagus sellatus</i> Klug.	2	0.01
	<i>Pentodon desert ferrantei</i> N.	18	0.1
	<i>Rhyssemodes orientalis</i> (Muls. God.)	13262	87.6
<b>Scolytidae</b>		<b>82</b>	<b>0.2</b>
	<i>Coccotypes dactyliperda</i> F.	82	100
<b>Silvanidae</b>		<b>4</b>	<b>0.01</b>
	<i>Oryzoephilus surinamensis</i> L.	4	100
<b>Staphylinidae</b>		<b>3791</b>	<b>7.9</b>
	<i>Aleochara bipustulata</i> L.	14	0.4
	<i>Aleochara moesta</i> Grav.	561	14.8



Cont. **Table1.**

FAMILY	SPECIES	TOTAL NUMBER OF INDIVIDUALS	PERCENTAGE
	<i>Philonthus agilis</i> Grave.	577	14.7
	<i>Philonthus concinnus</i> Grav.	196	5.2
	<i>Philonthus discoideus</i> Grave.	644	17
	<i>Philonthus longicornis</i> Steph.	297	7.8
	<i>Philonthus quisquiliarius</i> Gylle.	1017	26.8
	<i>Philonthus Sordidus</i> Grav.	5	0.1
	<i>Pinophilus aegyptius</i> Er.	3	0.1
	<i>Piochardia schaumii</i> Kra.	2	0.1
	<i>Scopaes debilis</i> Hoch.	387	10.2
	<i>Trogophloeus niloricus</i> Er.	88	2.3
<b>Tenebrionidae</b>		<b>1804</b>	<b>3.8</b>
	<i>Alphitobius diaperinus</i> Panz.	33	1.8
	<i>Alphitobius laevigatus</i> Fabr.	272	15.1
	<i>Gonocephalum setulosum</i> Fald.	127	7
	<i>Latheticus oryzae</i> Wat.	244	13.5
	<i>Myrmexchixenus picinus</i> (Aube.)	805	44.6
	<i>Opatroides punctulatus</i> Brull.	323	17.9
<b>Zopheridae</b>		<b>11</b>	<b>0.02</b>
	<i>Bitoma siccana</i> pas.	11	100
<b>Total</b>		<b>47946</b>	

Family: Dytiscidae

This family was represented during this investigation by five species belonging to five genera. The total number of Dytiscid beetles was 223 and 251 representing only 0.5% of total Coleopterous catch in the first and second years, respectively. This family was collected during March, April, June, July, August, September, and October. The most abundant species was *Eretes sticticus* L., 1767 with total numbers of 110 and 118 individuals representing 49.3% and 47.0% of the total family catch. *Hydaticus leander* Rossi., 1790 was a very rare species where

only two and three individuals were collected during the two seasons respectively; representing 0.9% and 1.2% of total coleopterous catches in both studied years.

Family: Elateridae

Elateridae is represented by two species belonging to two genera which are *Agrypnus notodonta* Germ., 1801 and *Drasterius figuratus* Germ., 1844. The total number of Elaterid beetles was 7335 and 7764 representing 15.3% and 15.8% of the total Coleopterous catch in the first and second years, respectively. These numbers were collected during March, April, June, July, August, September, October, November, and December. The largest number of individuals was found in September being 2100 and 2300 in the two years, respectively. The lowest number was in March (36) in the first year and in April (30) in the second year. The most abundant species is *D. figuratus* Grm. with total number of 7286 and 7711 representing 99.3% and 99.3% in the first and second years of the total family catch. *A. notodonta* Germ. was rare in the collections with 49 and 53 individuals representing 0.7% of the total Coleopterous catch in both studied years, respectively.

Family: Haliplidae

Haliplidae is represented by one species only namely, *Canthydrus notula* Er., 1843. This species was collected only during May and June. The total number of Haliplid beetles was 22 and 28 forming 0.05% and 0.06% of the total catches in both studied years (2018-2019 and 2019-2020), respectively.

Family: Hybosoridae

Hybosoridae is represented only by one species i.e., *Hybosorus illigeri* Reiche., 1853. This species was collected from March to October. The total number of Hybosorid beetles was 1769 and 1796 forming 3.7% and 3.7% in the first and second years, respectively.

Family: Hydrophilidae

This family was represented by three genera including four species collected during March to July and from September to December during both studied years. The population of this family was abundant with total annual catch of 353 and 386 individuals representing 0.7% and 0.8% of the total Coleopterous catches, respectively. The largest number of individuals of this family was belonging to *Cercyon laminatus* Sharp., 1873 with total annual catch of 112 and 128 representing 31.7% and 33.2% of the total Hydrophilid catch in the two studied years, respectively, while the lowest number of individuals was belonging to *Helochares melanophthalmus* Muls., 1844 and *Darctylosternum abdominale* Fab., 1792 with total annual catches of 63 and 72 representing 17.8% and 20.4% , respectively, in the first year (2018-2019), 70 and 69 representeing 18.1% and 17.9% of the total family catch, respectively in the second year (2019-2020).

Family: Meloidae

This family was represented by one species, *Synhoria senegalensis* Lap., 1840 collected only during July, August, and October, with total numbers of 3 and 4 representing 0.006% and 0.008% of the total Meloid catch, respectively in first and second years.

Family: Monotomidae

This family was represented by one species, *Monotoma picipes* Her., 1793 collected during September and November only with total numbers of 14 and 15 representing 0.03% and 0.03%, respectively in both studied years (2018-2019 and 2019-2020).

Family: Mycetophagidae

This family was also represented by one species namely, *Typhaea stercorea* L., 1758 collected during September, October, and November with total number of 43 and 44 representing 0.09% and 0.09%, respectively in the first and second years (2018-2019 and 2019-2020).

Family: Nitidulidae

Nitidulidae is represented by two species belonging to two genera which are *Carpophilus immaculatus* Luc., 1846 and *Epuraea luteola* Er., 1843 The total number of Nitidulid beetles was 91 and 112 forming 0.2% in both years, respectively. These species were collected from September to December.

Family: Ptinidae

This family was represented by one species, *Gastrallus striatus* Zoufal., 1897 collected during March, April, May, and June only with total numbers of 127 and 112 individuals representing 0.3% and 0.2% of total Coleopterous catch, respectively in first and second years.

Family: Scarabaeidae

This family is represented by seven species belonging to seven genera. The total numbers of this Scarabaeid beetles were 15145 and 15292 constituted 31.6% and 31.1% of the total Coleopterous catch in first and second years, respectively. This family was collected from April to December. The largest number of individuals was in August (3807) and (3652) in the two years and the lowest numbers were in December (242 and 252) in the two years, respectively.

The most abundant Scarabaeid species was *Rhyssmodes orientalis* (Muls. God.), 1874 with total numbers of 13262 and 13212 representing 87.6% and 86.4% of the total family catch, respectively. While the rarest species was *Onthophagus sellatus* Klug., 1845 and *Onitis alexis* Klug., 1835 with two and three individuals in first year; three and two individuals in second year representing 0.01% and 0.02% in the first year & 0.02% and 0.01% in second year, respectively.

Family: Scolytidae

This family was represented by one species, *Coccotypes dactyliperda* F., 1801 collected during May to December with total number of 82 and 83 representing 0.2% and 0.2% of total Coleopterous catch in first and second years, respectively.

Family: Silvanidae

This family was represented by one species only namely, *Oryzaephilus surinamensis* L., 1758; collected during January, March, and December only with total numbers of 4 and 7 individuals represented 0.01% and 0.01% of total Coleopterous catch in both studied years (2018-2019 and 2019-2020), respectively.

Family: Staphylinidae

Staphylinid beetles were represented by twelve species belonging to six genera collected from March to December with total number of 3791 and 3918 individuals representing 7.9% and 8.0% of the total Coleopterous catch during the first and second years, respectively. The most abundant species, *Philonthus quisquiliarius* Gylle., 1810 had total numbers of 1017 and 984 individuals representing 26.8% and 25.1% of the total family catch, while the rarest species was *Piochardia schaumii* Kra., 1857 with 2 and 3 individuals representing 0.1% and 0.1% of the total Coleopterous catch in the first and second years, respectively.

Family: Tenebrionidae

This family is represented by six species belonging to five genera; the total number of Tenebrionid beetles was 1804 and 1913 constituted 3.8% and 3.9% of the total Coleopterous catch in the first and second years, respectively. This family was collected from March to December. The largest number of individuals was in June, 548 and 521 in the two years and the lowest number was in November and December, being two specimens collected each year. The most abundant species was *Myrmecixenus picinus* Aube., 1850 with a total number of 805 and 886 representing 44.6% and 46.3% of the total catch, while the rarest species was *Alphitobius diaperinus* Panz., 1797 with 33 and 31 individuals representing 1.8% and 1.6% of the total catch in the two years, respectively.

Family: Zopheridae

This family was represented by one species only, *Bitoma siccana* Pas., 1863 appeared in September only in first year with a total number of 11 individuals representing 0.02% and in September and October in second year with a total number of 13 individuals representing 0.03% of the total Zopherid catch.



**Table 2.** Different families of order Coleoptera presented in Deshna district, Qena Governorate along with their species during season, 2019-2020

FAMILY	SPECIES	TOTAL NUMBER OF INDIVIDUALS	PERCENTAGE
<b>Anobiidae</b>		<b>118</b>	<b>0.2</b>
	<i>Lasioderma serricorne</i> F.	60	50.8
	<i>Stegobium paniceum</i> L.	58	49.2
<b>Anthicidae</b>		<b>1185</b>	<b>2.4</b>
	<i>Anthicus crinitus</i> La-Fert.	974	82.2
	<i>Cyclodinus debilis</i> La-Fert.	15	1.3
	<i>Hirticollis hispidus</i> Rosi.	56	4.7
	<i>Leptaleus klugi</i> (Laf.)	78	6.6
	<i>Stricticomus scalaris</i> (Pic.)	50	4.2
	<i>Stricticomus tobias</i> Mars.	12	1
<b>Bostrychidae</b>		<b>2078</b>	<b>4.2</b>
	<i>Bostrychopsis reichei</i> Mars.	1690	81.3
	<i>Lyctus africanus</i> Lesne.	28	1.3
	<i>Lyctus brunneus</i> Steph.	25	1.2
	<i>Lyctus cornifrons</i> Lesne.	28	1.3
	<i>Rhizopretha dominica</i> F.	46	2.2
	<i>Scobicia chevrieri</i> Villa.	261	12.6
<b>Bruchidae</b>		<b>52</b>	<b>0.1</b>
<b>Family</b>	<b>Species</b>	<b>Total number of individuals</b>	<b>Percentage</b>
	<i>Bruchidius incarnates</i> Boh.	52	100
<b>Carabidae</b>		<b>13493</b>	<b>27.5</b>
	<i>Amblystomus metallescens</i> Dej.	101	0.7
	<i>Bembidion rugicolle</i> Rche.	408	3
	<i>Cicindela melancholica</i> Fabr.	881	6.5
	<i>Harpalus tenebrosus</i> Dej.	26	0.2
	<i>Microlestes minutulus</i> Goeze.	445	3.3
	<i>Sphaerotachys lucasi</i> (Jacq.)	25	0.2
	<i>Stenolophus marginatus</i> Dej.	800	6
	<i>Stenolophus tenebrosus</i> Dej.	48	3.6
	<i>Tachys gilvus</i> Schaum.	1584	11.7
	<i>Tachys tetraphacus</i> Bedel.	8420	62.4
	<i>Tachys torretassoi</i> Schatz & Koch.	755	5.6



Cont. Table2.

<b>CCOCINELLIDAE</b>		<b>160</b>	<b>0.3</b>
	<i>Adonia variegata</i> Go.	72	45
	<i>Rodolia cardinalis</i> Muls.	46	28.7
	<i>Scymnus interruptus</i> Go.	42	26.3
<b>Chrysomelidae</b>		<b>169</b>	<b>0.3</b>
	<i>Caryedon gonagra</i> Fab.	39	23.1
	<i>Phyllotreta cruciferae</i> G.	130	76.9
<b>Cleridae</b>		<b>137</b>	<b>0.3</b>
	<i>Eucymatodera senegalensis</i> (Cast.)	137	100
<b>Cryptophgidae</b>		<b>3</b>	<b>0.006</b>
	<i>Cryptophgus affinis</i> Sturm.	3	100
<b>Curculionidae</b>		<b>61</b>	<b>0.1</b>
	<i>Attagenus scalaris</i> Pic.	61	100
<b>Dermestidae</b>		<b>48</b>	<b>0.1</b>
	<i>Attagenus scalaris</i> Pic.	48	100
<b>Dytiscidae</b>		<b>255</b>	<b>0.5</b>
	<i>Eretes sticticus</i> L.	118	47
	<i>Hydroglyphus confuses</i> (Klug.)	16	6.4
	<i>Hydaticus leander</i> Rossi.	3	1.2
	<i>Herophydrus solieri</i> Aube.	111	44.2
<b>Family</b>	<b>Species</b>	<b>Total number of individuals</b>	<b>Percentage</b>
	<i>Laccophilus umbrinus</i> Most.	4	0.05
<b>Elateridae</b>		<b>7764</b>	<b>15.8</b>
	<i>Agrypnus notodonta</i> Germ.	53	0.7
	<i>Drasterius figuratus</i> Germ.	7711	99.3
<b>Haliplidae</b>		<b>28</b>	<b>0.06</b>
	<i>Canthydrus notula</i> Er.	28	100
<b>Hybosoridae</b>		<b>1796</b>	<b>3.7</b>
	<i>Hybosorus illigeri</i> Reiche.	1796	100
<b>Hydrophilidae</b>		<b>386</b>	<b>0.8</b>
	<i>Cercyon laminatus</i> Sharp.	128	33.2
	<i>Cercyon quisquilius</i> L.	119	30.8
	<i>Dractylosternum abdominale</i> Fab.	69	17.9
	<i>Helochares melanophthalmus</i> Muls	70	18.1



Cont. Table1.2

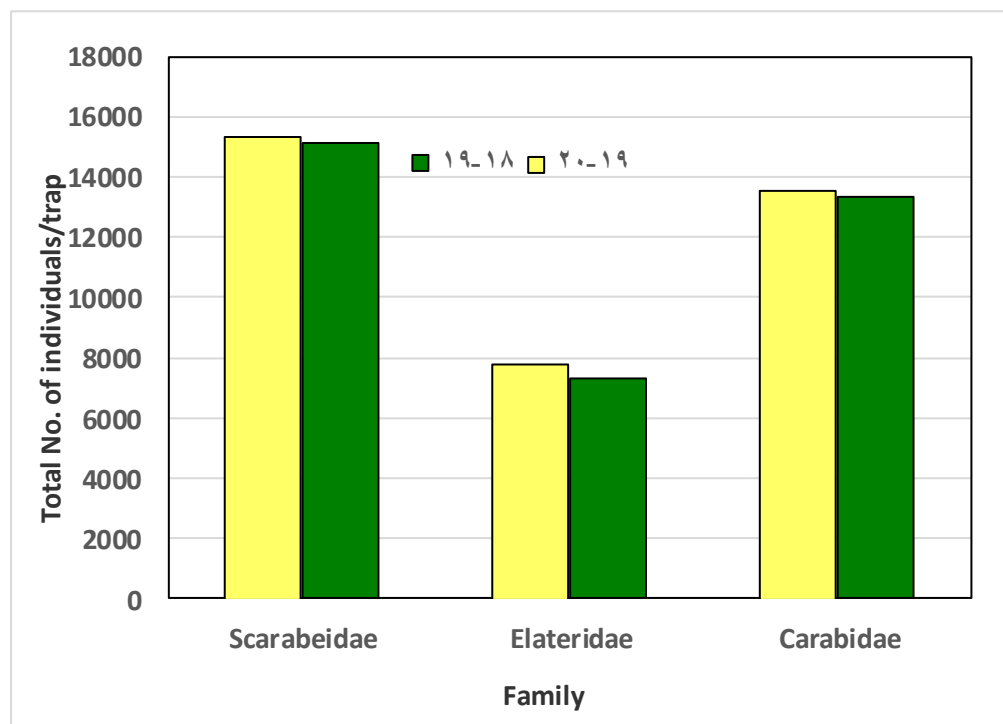
<b>MELOIDAE</b>		<b>4</b>	<b>0.008</b>
	<i>Synhoria senegalensis</i> Lap.	4	100
<b>Monotomidae</b>		<b>15</b>	<b>0.03</b>
	<i>Monotoma picipes</i> Her.	15	100
<b>Mycetophagidae</b>		<b>44</b>	<b>0.09</b>
	<i>Typhaea stercorea</i> L.	44	100
<b>Nitidulidae</b>		<b>112</b>	<b>0.2</b>
	<i>Carpophilus immaculatus</i> Luc.	3	2.7
	<i>Eपुरaea luteola</i> Er.	109	97.3
<b>Ptinidae</b>		<b>112</b>	<b>0.2</b>
	<i>Gastrallus striatus</i> Zoufal.	112	100
<b>Scarabaeidae</b>		<b>15292</b>	<b>31.1</b>
	<i>Aphodius lividus</i> Pan.	1765	11.5
	<i>Catharsius sesostris</i> Wat.	9	0.1
	<i>Maladera modesta</i> (Fair.)	277	1.8
	<i>Onitis alexis</i> Klug.	2	0.01
	<i>Onthophagus sellatus</i> Klug.	3	0.02
	<i>Pentodon desert ferrantei</i> N.	24	0.2
<b>Family</b>	<b>Species</b>	<b>Total number of individuals</b>	<b>Percentage</b>
	<i>Rhyssmodes orientalis</i> (Muls. God.)	13212	86.4
<b>Scolytidae</b>		<b>83</b>	<b>0.2</b>
	<i>Coccotypes dactyliperda</i> F.	83	100
<b>Silvanidae</b>		<b>7</b>	<b>0.01</b>
	<i>Oryzoophilus surinamensis</i> L.	7	100
<b>Staphylinidae</b>		<b>3918</b>	<b>8</b>
	<i>Aleochara bipustulata</i> L.	9	0.2
	<i>Aleochara moesta</i> Grav.	594	15.2
	<i>Philonthus agilis</i> Grave.	600	15.3
	<i>Philonthus concinnus</i> Grav.	201	5.1
	<i>Philonthus discoideus</i> Grave.	695	17.7
	<i>Philonthus longicornis</i> Steph.	294	7.5
	<i>Philonthus quisquiliarius</i> Gylle.	984	25.1
	<i>Philonthus Sordidus</i> Grav.	6	0.2
	<i>Pinophilus aegyptius</i> Er.	10	0.3



Cont. **Table2.**

	<i>PIOCHARDIA SCHAUMII</i> KRA.	3	0.1
	<i>Scopaes debilis</i> Hoch.	434	11.1
	<i>Trogophloeus niloricus</i> Er.	88	2.2
<b>Tenebrionidae</b>		<b>1913</b>	<b>3.9</b>
	<i>Alphitobius diaperinus</i> Panz.	31	1.6
	<i>Alphitobius laevigatus</i> Fabr.	284	14.8
	<i>Gonocephalum setulosum</i> Fald.	119	6.2
	<i>Latheticus oryzae</i> Wat.	252	13.2
	<i>Myrmechixenus picinus</i> (Aube.)	886	46.3
	<i>Opatroides punctulatus</i> Brull.	341	17.8
<b>Zopheridae</b>		<b>13</b>	<b>0.03</b>
	<i>Bitoma sicca</i> pas.	13	100
<b>Total</b>		<b>49246</b>	

Data represented in Fig. (1) demonstrates the occurrence of the most abundant families in order Coleoptera during both seasons of study. According to this figure, families Scarabeidae and Carabidae were the most abundant with almost the same total numbers in both years followed by family Elateridae with significantly lower numbers.



**Fig. 1.** Total number of the most abundant coleopterous families at Dëshna district, Qena Governorate caught using light trap during 2018-2019 and 2019-2020.

The survey adopted by Alfieri (1976) on the Egyptian Coleoptera is regarded as the basic key work on order Coleoptera. It included a list of coleopterous species inhabiting our country with their distribution. Survey of coleopterous beetles has not been studied since Emad (2000). Besides, the survey and abundance of order coleopterous in Qena Governorate has not been studied before. Accordingly, examining and updating Coleopterous insects is considered important.



According to the most recent investigation, and in the present study, the coleopterous species represented in Dshna District have been identified, listed, and included in 27 families.

Salem *et al* (1985) where they surveyed and studied the seasonal activity of coleopterous insects in Beni-Suef Governorate using light traps collected 81 coleopterous species belonging to 12 families, meanwhile, in the present study by using light traps collected 82 coleopterous species belonging to 27 families, in Qena Governorate. In (1986) the same authors surveyed and studied the abundance and fluctuations of coleopterous insects at Noubariah region, Alexandria Governorate, and they captured 98 coleopterous species belonging to 15 families, and in (2020) they surveyed with faunistic studies of the coleopterous insects in the New Valley Governorate, they collected 93 species under 76 genera belonging to 24 families.

El-Moursy *et al.* (1996), provided a list of coleopterous insects and their distribution in various ecological zones. On the other hand, the coleopterous insect fauna of Gabal Elba and the Red Sea Coast was surveyed by Fadl and Mossad (1997) who recorded 242 coleopterous species, while Emad (2000) surveyed and studied the seasonal abundance of coleopterous species in Noubariah and Belbies regions using light traps and captured 135 species belonging to 30 families.

El-Metwally (2002 and 2008) and El-Shewy (2007 and 2013) surveyed certain families and genera of order Coleoptera for taxonomic purposes.

Salah (2017) listed 51 valid species belonging to 17 genera of the Egyptian fauna of the water scavenger beetles of family Hydrophilidae with data on their type localities and distribution, and in (2021). Ismaieel *et al.* (2021) revised 17 species belonging to three genera of aquatic scavenger beetles of family Hydraenidae.

Since most of the survey studies are outdated, here comes the value of the present study that updated the available data about the species surveyed in Qena Governorate. In addition, this study upheld that individuals in the most abundant families were harmful to the cultivated crops and a little number of families had useful species used in the biological control of insect pests such as Coccinellidae and Staphylinidae.

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## حصر لبعض الحشرات الماصة للتربة غمدية الأجنحة

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### المستخلص

أجريت هذه الدراسة بغرض عمل حصر للخنافس والسوس التابع لرتبة غمدية الأجنحة في مركز دشنا، محافظة قنا خلال عامين متتاليين (٢٠١٨-٢٠١٩ و ٢٠١٩-٢٠٢٠). وقد تم خلال هذا الحصر جمع ٤٧٩٤٦، ٤٩١٤٦ فرداً تابعة لـ 27 فصيلة في كل عام. كانت الفصائل الأكثر تواجداً هي Scarabeidae (١٥١٤٥ فرداً بنسبة تواجد بلغت ٣١.٦% من مجموع الأفراد). جمعت أفراد هذه الفصيلة في الفترة من إبريل حتى ديسمبر، تلتها فصيلة Carabidae (١٣٣٢٧ فرداً بنسبة ٢٧.٨% من مجموع الأفراد). تم اصطياد حشرات فصيلة Carabidae على مدار العام تقريباً (مارس - ديسمبر). أخيراً كانت حشرات فصيلة Elateridae هي الأقل تواجداً (٧٣٣٥ فرداً بنسبة ١٥.٣% من مجموع الأفراد). تم جمع أفراد فصيلة Elateridae خلال أشهر مارس، إبريل، يونيو، يوليو، أغسطس، سبتمبر، أكتوبر، نوفمبر وديسمبر في عام ٢٠١٨-٢٠١٩. في عام ٢٠١٩-٢٠٢٠ كانت فصيلة Scarabeidae هي الأكثر تواجداً أيضاً (١٥٢٩٢ فرداً بنسبة تواجد بلغت ٣١.١% من مجموع الأفراد) تلتها أيضاً فصيلة Carabidae (١٣٤٩٣ فرداً بنسبة ٢٧.٥% من مجموع الأفراد) وأخيراً فصيلة Elateridae (٧٧٦٤ فرداً بنسبة ١٥.٨% من مجموع الأفراد). وتشير النتائج المتحصل عليها إلى أن غالبية الأنواع التي تم حصرها كانت ضارة بالنباتات المنزرعة.

الكلمات الرئيسية: الحصر، غمدية الأجنحة، خنافس، سوس، محافظة قنا.