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SUMMARY

Family Chrysomelidae or the so-called leaf beetles, is a very large group of phytophagus coleoptera, worldwide in distribution, and its members vary considerably in general appearance, size, colouration and habits. The adults and larvae feed upon different organs of different plant groups. The majority of adults are leaf feeders, while the feeding habits of larvae are more diverse as they may feed openly on leaves, within leaves as miners, within stems or roots, or externally upon roots in the soil. Many chrysomelid species are economically important pests of cultivated plants in Egypt, such as cotton, maize, white beet, sugar cane and some vegetables. Meanwhile, certain chrysomelids are considered benficial, for acting as biological control agents of noxious weeds.

The present work started by examination and thorough review of old and recent available literature on the chrysomelid species in general. Simultaneously with this step, the main Egyptian Insect Collections were examined for material regarded as chrysomelids. The gathered information indicated that many of these species are destructive to crop fields, while others are of minor harm to agriculture. In addition, this group of insects has practically recevied little attention in Egypt. More recently, a small part of this job including two subfamilies, Cryptocephalinae and Chrysomelinae, has been covered taxonomically. The present study planned to deal with the remaining part, i.e., classification and determination of recent taxonomic position of eight chryomelid subfamilies and their categories for the first time in Egypt. These subfamilies are Alticinae, Cassidinae, Chlamisinae, Clytrinae, Criocerinae, Eumolpinae, Galerucinae and Hispinae.

Next, a wide collecting procedure was carried out to cover practically all suspicious plants in different localities of main Egyptian geographical zones. The specimens were mainly collected by sweeping vegetation or picked up by

hand, and also light traps were successfully used to catch some chrysomelid beetles.

According to the previous literature, the eight chrysomelid subfamilies, within the scope of the present work, included ninty one species represented in Egyptian fauna. Representatives of most species were obtained from the field collection during this work, and some species were available at Insect Collections. In addition some other chrysomelid species, which have never been obtained whether from the field collection or at insect collections, were introduced in the work according to the diagnostic features adopted by certain investigatores. Also, from this group of insects, three species only were not included in the present study, and left out at the time being.

It is worth to mention here that four chrysomelid species, not previously known to exist in Egypt, were determined during this work and confirmed in the British Museum as follows : *Longitarsus emineus* Warchalowski, *Podagrica malave* (Illiger) and *Psylliodes saulcyi* Allard from subfamily Alticinae and *Calomicrus flavipennis* Lucas from subfamily Galerucinae. These species were recorded for the first time in Egypt during this work, they represent new records. Also two genera, *Angulaphthona* Bechyne in subfamily Alticinae and *Calomicrus* Stephens in subfamily Galerucinae, not previously known to exist in Egypt, were added as new records in Egypt.

In addition, three other unknown species (two species were collected during this work and one species represented in the collection of Ministry of Agriculture) were determined in the British Museum as follows : *Altica bicarinata* (Kutschera), *Epitrix priesneri* (Heikertinger) and *Podagrica puncticollis* Weise, all assigned to subfamily Alticinae. Medvedev (1996) in his study about the chrysomelids fauna of Saudi Arabia, recorded Egypt among other countries within the world distribution of these species, without any detailed data regarding their host plants, Egyptian localities, etc., although, these

species have not been previously recorded from Egypt whether at the Egyptian Insect Collection or in the professional list of Alfieri (1976) about the Coleoptera of Egypt. Accordingly, these species may be considered new records in Egypt during the current study.

Identification of chrysomelids under investigation was done through consultation with specialists abroad, in different National Museums. Accordingly, the members of this group have been subjected to many nomenclatorial changes. These nomenclatorial results obtained in this study may be summarised under the following items :

- Twenty one species recorded in combination with subgenera, these species were corrected to appear without these subgenera.
- Thirteen changes in the generic name, i.e., eleven species were transferred to other genera, and two subgenera promoted to genera.
- Five changes in the specific name, i.e., two varieties were changed into two species within the same genera and three specific names were demoted to subspecies within other genera.

The occurrence of all these nomenclatorial changes means that the group of insects under consideration is still in need to further investigation, since similar changes are to be expected with the species not available for the present work.

The recognition characters with some illustrations for all the higher categories, including the family Chrysomelidae, the eight chrysomelid subfamilies and all genera represented in this work, are recorded. Photographs and illustrated diagnostic characters are submitted for all chrysomelid species under investigation. From every genus, represented in this work, including more than one species, only one species was described and illustrated in detail, and the other species of the same genus were also described and illustrated, but not to the same degree of details, their description took the comparative shape with the first species. Illustrated keys are constructed wherever needed, i.e., for the

three related families of superfamily Chrysomeloidea, the ten subfamilies of family Chrysomelidae, the genera of each subfamily, and for the species of each genus.

A special chapter is devoted to give an idea about the chrysomelid species collected during this work, including a considerable number of new records for both localities and host plants. Also, distribution of all chrysomelids, represented in Egypt, in main Egyptian geographical zones as indicated in Egyptian Insect Collections and more recently in author collection was given. In addition maps are here submitted to illustrate these results along with previous original records. Also, a list of all host plants of chrysomelid species in Egypt, including Scientific, English, Arabic and family name of the host plant was given.