

Insect Species Caught by a Light Trap in Tripoli, Libya

NAWAL A. HESSEIN AND AMER M. A. KRAIM¹

ABSTRACT

A light trap was used in an attempt to make a survey for the existing insects in Tripoli, Libya. The qualitative observations indicated that certain groups of insects are caught in large numbers. New records include 37 species of which 22 species were identified up to the generic name only.

INTRODUCTION

For the survey of insects, light traps are particularly suitable for this purpose mainly because they can catch sufficiently large numbers of easily identified species. In different countries they have been used for many purposes. Recently Douwes and Stenvam (4) have used light traps for insect surveying, sampling and for studying the effect of pollution on insect fauna in Sweden. Several workers have tested their effect on populations of certain insect species. Lawson *et al.* (5) reported its effect on the reduction and control of field populations of the tobacco hornworm, *Manduca sexta* (L.). Also Day *et al.* (3) had used it as a control measure against adults of the southern potato wireworm, *Conoderus falli* Lane.

In the present study, a light trap was used to survey existing insect species in Tripoli as well as a possible mean for reducing the populations of some injurious insect pests from the field of experiment.

MATERIALS AND METHODS

In the summer of 1973, the farm of the college has been selected to conduct the study. An omnidirectional electric light trap equipped with one 500 watts ordinary clear lamp bulb was used in this study. Because this kind of trap catches adult insects from all directions, they can collect twice to four times as much as the unidirectional traps (1). For this reason the omnidirectional trap was chosen to test its efficiency as a general survey trap and in the same time as a control trap under our conditions.

The used trap has a funnel with a wide mouth of 45 cm in diameter, and 55 cm high.

¹ Nawal A. Hessein and Amer M. A. Kraim, Department of Plant Production, Faculty of Agriculture, University of Tripoli, Tripoli, Libyan Arab Republic.

The funnel is fixed below the bulb. A one litre killing jar is connected to the narrow end of the funnel. Calcium cyanide was used as a killing agent.

Samples were collected from the trap every other day. In the laboratory all the micro- and macro-Lepidoptera were excluded because of their unsatisfactory condition. The rest of the insects were separated in groups and placed in 70 % alcohol for preservation and future study. For identification, the samples were sent to Dr. Richard H. Foote, from the Systematic Entomology Laboratory, United States Department of Agriculture, at Beltsville, Maryland.

RESULTS AND DISCUSSION

The following are the insect species which were attracted to the light trap. All the names with an asterisk are newly reported species or families

Orthoptera	Hemiptera — Homoptera
Gryllotalpidae	Cicadellidae
<i>Gryllotalpa africana</i> Beauv.	* <i>Balclutha hebe</i> (Kirkaldy)
Hemiptera — Heteroptera	* <i>Circulifer tenellus</i> (Baker)
Cydnidae	* <i>Empoasca decipiens</i> Paoli
* <i>Sehirus</i> sp.	* <i>Exitianus taeniaceps</i> (Kirschbaum)
Miridae	* <i>Euscelidius variegatus</i> (Kirschbaum)
* <i>Lygus apicalis</i> Fieb.	* <i>Fieberiella</i> sp.
* <i>Phytocoris</i> sp.	* <i>Neoliturus alboguttatus</i> (Lethierry)
* <i>Trigonotilus brevipes</i> Jak.	<i>Opsiis statogalus</i> Fieber
Pentatomidae	* <i>Psammotettix</i> sp.
* <i>Peribalus</i> sp.	* <i>Psammotettix alienus</i> (Dahlbom)
Reduviidae	* <i>Selinocephalus aegypticus</i> (Dlabola)
* <i>Reduvius jakowleffi</i> Retter	
Stenocaphalidae	
* <i>Dicranocephalus albipes</i> (Fabr.)	
Neuroptera	
Chrysopidae	
An unidentified species of the green lace wings.	
*Hemerobiidae	
An unidentified species of the brown lace wings.	
Myrmeleontidae	
An unidentified species of the ant-lions.	
Coleoptera	Diptera
Anobiidae	Calliphoridae
* <i>Xyletinus bucephalus</i> Illiger	* <i>Calliphora</i> sp.
Meloidae	* <i>Lucilia caesar</i> (L.)
* <i>Mylabrus</i> sp.	Cecidomyiidae
Scarabaeidae	* <i>Anarete</i> sp.
* <i>Aphodius</i> sp.	Dolichopodidae
* <i>Glaresis</i> sp.	* <i>Hydrophorus praecox</i> (Lehmann)
* <i>Onthophagus</i> sp.	Sarcophagidae
	* <i>Sarcophaga</i> sp.
	Sciaridae
	* <i>Bradysia</i> sp.

Hymenoptera

Braconidae

- **Meteorus* sp.
- **Microplitis* sp.
- **Rogas* sp.
- **Yelicones* sp.
- **Zelex* sp.

Formicidae

- Camponotus* sp.
- **Paratrechina* sp.
- Pheidole* sp.

Hymenoptera (Cont.)

Ichneumonidae

- **Gelis* sp.
- **Meloboris* sp.

Sphecidae

- Philanthus triangulum* (F.)
- **Podalonia* sp.

The above list indicates that light traps can be used successfully for surveying insect populations. The list contains 37 new species of which 22 species were identified up to the generic name only. Family Hemerobiidae is also newly reported. They are considered new records because they did not appear in the list prepared by Damiano (2) which is the only available record for the insect fauna of Libya.

Our qualitative observations indicate that light traps can be also used for reducing the populations of some insect pests existing in the field. The high numbers of the pentatomids, the cicadellids and the scarabaeids trapped are good examples. Unfortunately some natural enemies such as the chrysopids and ichneumonids were also trapped.

It can be concluded from this preliminary work that quantitative studies require more than one light trap in different parts of the field in order to correlate more accurately the numbers of some important groups of insects with the season, environmental factors, and vegetation. This study may give a record and future predictions for the possible existing pests and their natural enemies.

LITERATURE CITED

1. Anonymous. 1969. Principles of plant and animal pest control. Vol. 3, Insect-pest management and control. Publication 1695, National Academy of Science, Washington, D.C. pp. 254-263.
2. Damiano, A. 1961. Elenco delle specie di insetti dannosi ricordati per la Libia fino al 1960. Tipografia del governo. Nazirato dell'Agricoltura, Tripoli. 81 p.
3. Day, A., J. M. Stanely, J. C. Webb, and J. G. Harstock. 1973. Southern potato wireworms: Light trap catches of adults in an isolated agricultural area. Ann. Entomol. Soc. Amer. 66:757-760.
4. Douwes, Per and Haken Stenvam. 1972. Station nets for light traps. Entomol. Tidskr 93:70-82.
5. Lawson, F. R., C. R. Gentry, and J. M. Stanely. 1963. Effect of light traps on hornworm populations in large areas. U.S.D.A.-A.R.S. (Ser.) 33-91, 18 p.