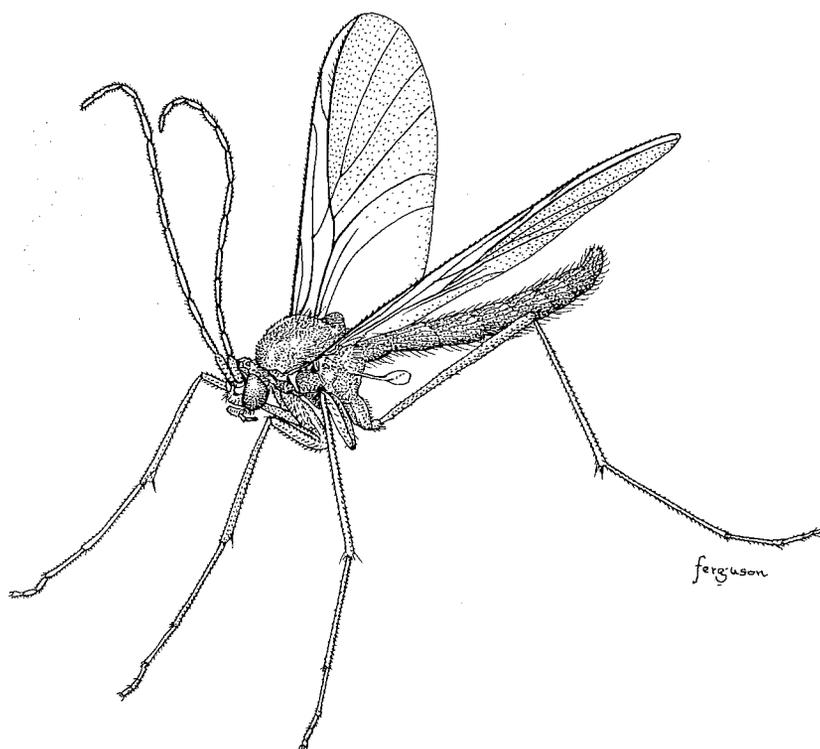


# ISRAEL JOURNAL OF ENTOMOLOGY

VOLUME XXVIII 1994



THE ENTOMOLOGICAL SOCIETY OF ISRAEL

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Tel Aviv University, Tel Aviv 69978  
Tel: 972-3-6408660, Fax: 972-3-6409403  
E-Mail: [afdipter@ccsg.tau.ac.il](mailto:afdipter@ccsg.tau.ac.il)

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COVER: Habitus of *Macrocera levantina* Chandler (Diptera: Keroplatidae), one of 26 new species of Sciaroidea described in this issue from Israel (drawn by W. Ferguson).

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**PROFESSOR ELIAHU SWIRSKI**  
*Recipient of the 1994 Israel Prize in Agriculture*

Professor Eliahu Swirski, to whom we dedicated Volume XXV–XXVI of the *Israel Journal of Entomology* on the occasion of his seventieth birthday, has been awarded the prestigious 1994 Israel Prize in Agriculture, established by the Ministry of Science and Arts. Prof. Swirski has generously donated this prize to be distributed equally between the Rachel & Eliahu Swirski Student Fund of the Department of Entomology of the Volcani Center and the Rachel & Eliahu Swirski Fund for publication of the *Israel Journal of Entomology*.

On behalf of all the members of the Entomological Society of Israel, we congratulate Prof. Swirski, thank him for the donation, and wish him continued good health and many more years of fruitful research activities.

*Manes Wysoki*  
*President*

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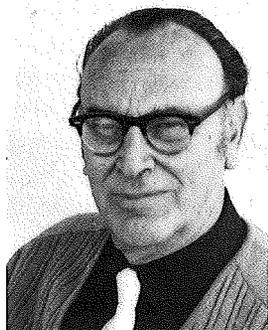
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The papers published in this journal are abstracted and indexed in the REVIEW OF APPLIED ENTOMOLOGY and in ENTOMOLOGY ABSTRACTS.

**OBITUARY**

**Dr. Micha Bar-Zeev**  
**(1915–1994)**



*IN MEMORIAM*

Micha Bar-Zeev was born in Jerusalem on February 23, 1915. He studied Agronomy at the University of Nancy, France, followed by graduate work towards the M.Sc. degree in Entomology at the University of California, Berkeley. On his return from California, he was employed as an entomologist at Mantacheff & Co., a firm dealing in agricultural chemicals. During the Israeli War of Independence, Bar-Zeev served in the I.D.F. as a medical entomologist. He joined the Israeli Institute for Biological Research at Nes Ziyiyona in 1953, when it was just founded, and worked there until 1977, when he was transferred to the Kimron Veterinary Institute at Bet Dagan; he remained there until his retirement in 1980.

During his first years at Nes Ziyiyona, Bar-Zeev carried out research leading to the Ph.D. degree on the effects of environmental factors on mosquito larval development. Upon completing his dissertation, he held a post-doctoral tenure at the USDA Laboratory of Insects Affecting Man and Animals at Orlando, Florida, where he worked with C.N. Smith, the leading authority on insect repellents in the 1950s and 1960s. This association had a major impact on the direction of Dr. Bar-Zeev's research for the remainder of his career, with the exception of a short detour in 1962–1964 when he served as a W.H.O. project leader in Nigeria.

During his stay in Florida, Dr. Bar-Zeev pioneered the use of radioactive materials for the study of mosquito behavior, using for the first time radioactive labeling of the mosquito diet. He published two papers on this subject, of which the first demonstrated that the most potent

repellent, DEET, was not effective systemically and acted only as a topical contact repellent. Later he demonstrated that only areas treated with the repellent would be protected from mosquito bites, as biting would take place even at a very short distance (a few millimeters) from the site of repellent application. Thus, in order to effectively protect people from mosquito bites, a complete coverage of the entire exposed body surface is needed.

Dr. Bar-Zeev developed methods for evaluating repellents against fleas, ticks and several species of mosquitos. He used these techniques when screening a large number of candidate repellents synthesized by USDA chemists. Bar-Zeev's work demonstrated the diversity of sensitivity to repellents among different genera and even species of insects. Later in his career, Bar-Zeev extended his studies to repellents of stored-product insects — with the rationale of impregnating packing material for foodstuffs with repellents in order to protect them from pests. Some electrophysiological effects of repellents on insect chemoreceptors were studied by Dr. Bar-Zeev together with Dr. S. Gothilf.

Despite the fact that research on repellents is continuously being carried out, there is still much room for improvement, as even the best of the repellent formulations lose their efficacy several hours after application and their cosmetic acceptability is far from optimal. Present research on repellents is still based on evaluation methods developed by Bar-Zeev in the 1960s and his papers are often cited.

Early in his career, Dr. Bar-Zeev was also interested in the reaction of the mosquitos to moisture and high humidity, and the location of the hygrometers mediating these responses. In 1960 he published two important papers in this field, in which he demonstrated, through behavioral experiments and ablations of appendages, the presence of hygrometers on the antennae, and water receptors on the tarsi, of the mosquito. Mosquitos, very intensely, avoided wet surfaces. Their discriminatory response at ranges of high relative humidity was very sharp: the mosquitos could discriminate very effectively between 90% and 100% relative humidity. The moisture deterred the females so much that they refused to feed on a human arm, as long as it was kept wet. However, the preference of lower humidity was completely reversed when the mosquitos were desiccated. A loss of about 5% of their body weight by dehydration was enough to reverse the response.

These data helped to explain many of the contradictory findings reported by previous investigators, concerning the responses to moisture.

Altogether Dr. Bar-Zeev published 45 papers, the majority of which dealt with insect repellents.

Dr. Bar-Zeev was one of the founding members of the Entomological Society of Israel and served for many years as its treasurer. In that capacity, he succeeded in preserving the value of the Society's funds even during the worst periods of inflation.

Micha Bar-Zeev died on January 2, 1994. He leaves a wife, two daughters, and four grandchildren. He will be missed by those of us who were fortunate to know him.

*Rachel Galun  
Department of Parasitology  
The Hebrew University—Hadassah Medical Center  
Jerusalem 91010, Israel*

## NOTES FOR AUTHORS

**Israel Journal of Entomology**, a peer-reviewed journal, publishes original contributions in all areas of entomology. Authors are entirely responsible for statements, whether of fact or opinion.

### MANUSCRIPTS

Manuscripts, in English only, are considered on the understanding that their contents would not be published elsewhere. If a preliminary announcement relating to the contents of the paper has already been published, this must be stated.

Papers should be concisely written. Consulting the latest issue of the Journal and the "Style Manual for Biological Journals" is highly recommended. Manuscripts should be submitted in triplicate, typed double space on one side of a page only, together with a 3.5" or 5.25" IBM-compatible diskette. The name and version of the wordprocessor used should be indicated. For programs other than Word-Perfect, Wordstar, MS Word or Einstein, an ASCII version of the file should be included. The title of the paper should be informative, but preferably not exceed twenty words. An abstract provided at the beginning of the paper will indicate the main aspects of the subject, to be followed by 5–7 key words. Words which are to be italicized in print, such as scientific names, should be underlined with a single solid line. No more than three categories of subheadings are allowed; footnotes to text should be kept to a minimum.

### SPELLING

Spelling and terminology should be consistent throughout. Scientific names, on first mention, should be followed by the name of the first describer, written in full. When referring to paired organs in morphological descriptions, the singular form should be used. Names of localities in Israel will be given as they are transliterated in the latest issue of "List of settlements, localities and antiquity sites, Survey of Israel, Ministry of Labour." Regions in Israel and nearby areas should follow the "Fauna Palaestina" map (as in Theodor, O. 1975. Fauna Palaestina, Insecta I: Diptera Pupipara. The Israel Academy of Sciences and Humanities, Jerusalem).

### TABLES

Tables should be kept to a minimum, typed on separate sheets, and their approximate position should be indicated in the manuscript. The same data should not be given both in tables and graphs.

### REFERENCES

1. In the text, reference to the literature should conform to the "name-and-date" system, e.g., Williams (1929); (Bodenheimer, 1938); Jones and Smith (1950). Unpublished references are to be cited as author followed by either (personal communication), (unpublished) or (in press). Only the latter category will appear in the list of references, together with the title of the periodical to which the paper was submitted for publication.

2. When reference is made to taxonomic descriptions, or to quoted passages, the relevant page number(s) should follow the year, e.g., Brown (1939:25).

3. Where three or more authors are concerned, reference is made only to the first, followed by "et al." and the year, e.g., Thomson et al. (1945).

4. The list of references will be given at the end of the article, according to the following examples, with the titles of all periodicals unabbreviated and italicized.

**Bergman, E.D.** 1976. The future of insecticides — a problem of human environment. *Israel Journal of Entomology* 11:5–14.

**Taylor, L.R. and Palmer, J.M.P.** 1970. Aerial sampling. In: Aphid Technology. Edit. H.F. van Emden. Academic Press, London. pp. 125–138.

## ILLUSTRATIONS

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## TAXONOMY

1. Comprehensive treatments of taxa (genera, families, etc.) will receive higher priority over partial treatments. Partial lists of species or faunistic lists, not accompanied by proper keys or references to such keys, will receive lower priority.
2. Authors must comply with the requirements of the International Code of Zoological Nomenclature and with the published Opinions of the International Commission.
3. The following abbreviations should be adopted: *n. gen.* – new genus; *n. sp.* – new species; *n. comb.* – new combination of names; *n. syn.* – denotes synonymy established for the first time; *n. stat.* – will be used to indicate a new change in rank of a name; *nomen nudum*, *nomen dubium*, *nomen novum* are not abbreviated.
4. In treating the taxonomy of a described taxon, the following form is essential for the beginning of a chapter.

*Filippia olea* (Costa, 1832)

(Fig. 1)

*Coccus oleae* Costa, 1982:21; Green, 1868:42 (biology).

*Lecanium oleae* Smith, 1892:15 (list); Brown, 1899:20 (description).

*Filippia oleae* Fernald, 1903:13 (catalog); Hall, 1943:50 (hosts list).

The full references to the above citations should be given in the REFERENCES section.

5. New taxa must be distinguished from related taxa.
6. In describing new species, the complete data of the type-series, together with the collection(s) in which it is deposited, will be recorded in the original description as follows:  
  
MATERIAL EXAMINED. Holotype ♀, ISRAEL: Jerusalem, 14.v.1956, on *Ficus carica*, G. Levi (BMNH). Paratypes, 20 ♀, same data as holotype (USNM); Tel Aviv, 3.v.1962, on *Acacia* sp., G. Brown (1 ♂, 8 ♀; TAU).
7. Authors are required to deposit all type-material in nationally or internationally recognized institutions (not private collections).
8. Records of described species will be listed at the end of each relevant chapter as follows:

MATERIAL EXAMINED. EGYPT: Sinai, Dahab, 13.v.1958, ex. *Phoenix* sp., D. Cohen (1 ♂, 1 ♀; BMNH); ISRAEL: Akko, 20.ii.1967, on *Pistacia vera*, M. Levi (1 ♀; ZTV).

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