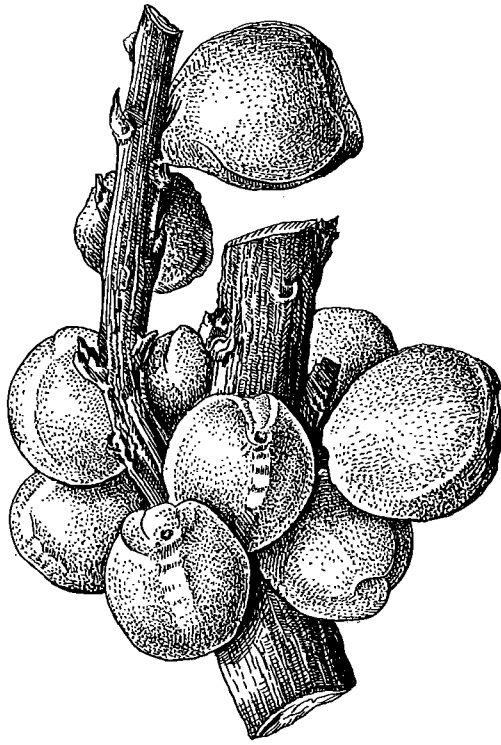


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COVER: *Trabutina mannipara* (Hemprich and Ehrenberg) (Homoptera: Coccoidea: Pseudococcidae), ovisacs. This mealybug is one of the species believed to be the source of the biblical manna that allowed the Israelites to survive in the Sinai wilderness. The genus *Trabutina* is revised in this issue by E.M. Danzig and D.R. Miller.

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OBITUARY

Dr. Shoshana Yathom
(1925–1994)



IN MEMORIAM

Dr. Shoshana Yathom died on November 28, 1994, after a long illness. She was born at Ružany (near Slonim), Poland (today Byelorussia), on March 25, 1925, and immigrated to Israel as a child in 1934. Shoshana spent her early formative years at the Miqwe Yisrael Agricultural School, where her father served as the school physician. This environment had a major influence on her future. Thus, even though she majored in the humanities at the Herzlia High School in Tel Aviv (1942), she chose agricultural entomology as her academic profession.

After some agricultural wartime service (WW II) in 1943, she commenced studies at the Hebrew University of Jerusalem, obtaining her M.Sc. degree in 1947 with a thesis on "Conservation properties of cut flowers" (supervisor: Prof. M. Plaut). In 1948–49 she served her country on military service during the Israel War of Independence. During 1949–50 she taught zoology and botany at the Ayanot Agricultural High School and in 1950 she conducted research on wood borers for the Ministry of Defense. In 1951, she became a researcher in the Division of Entomology of what is today the Volcani Center, ARO. In 1960 she received her Ph.D. degree

from the Faculty of Agriculture of the Hebrew University for her dissertation entitled "Life history of *Hylemyia antiqua*" (supervisor: Prof. H.Z. Avidov). She worked at the Volcani Center until her retirement in 1990.

During her 40 years of involvement in research on agricultural entomology, she concentrated her major efforts in helping the farmers of Israel to minimize damage caused and losses incurred by insect pests. The production and marketing boards of cotton, vegetables and other crops always looked for help from her in finding immediate, *ad hoc* solutions to their entomological problems. In this she was often successful, spending a considerable amount of time in the field, observing the insects under natural conditions, studying their phenology, manipulating the management of the crops and introducing various control agents.

Shoshana believed in educating the farmers and maintaining close contacts with the instructors of the Extension Service who supervise pest control in the field. She published over 50 papers in *Hassadeh* (in Hebrew) and, in addition, some 30 mimeographed research reports, describing the current pest control problems and how to handle them. Most of her 40 papers in English were also published in Israel, earlier in *Ktavim* and later in the *Israel Journal of Entomology*. Shoshana catered to the Israeli entomologists and farmers — most unselfishly disregarding her own academic career, which could have been advanced by more publications in international journals.

Shoshana was among the founders of the Entomological Society of Israel and one of its most active members. She served as its President and also as its Secretary for several terms, organized frequent scientific meetings and managed to maintain it as one of the most active scientific societies in Israel. In this capacity, she again kept in mind the farmers and the instructors of the Extension Service and often organized symposia in which they were brought up-to-date on developments in pest management. Being very concerned about the fate of the *Israel Journal of Entomology*, she donated a significant sum of money to establish a permanent endowment — securing the future of the journal.

Shoshana started her entomological research work on a severe cotton pest, the spiny bollworm, *Earias insulana*. She was fortunate enough to work from 1951 with Prof. E. Rivnay, who was an inspired entomologist and who influenced her approach to entomology. They published several papers together on the spiny bollworm. This pest, still unknown in Israel in the 1950s, suddenly infested cotton heavily in 1956. The two researchers studied the bionomics and phenology of the pest and conducted an extensive screening program that resulted in a reduction and subsequent elimination of unnecessary insecticide applications. The introduction of irrigation into many crops and the application of new cultivation practices to vegetable crops resulted in the enhanced importance of various Anthomyiid and muscid pests; several injurious species were studied by Shoshana:

(i) The onion maggot, *Delia (Hylemyia) antiqua*. Shoshana's biological and phenological studies established the seasons of activity and diapause of this pest. As a result, correct timing of preventive control measures could be established more effectively, and thus unnecessary treatments could be avoided.

(ii) The seed maggot, *Delia platura*. This polyphagous insect became a very destructive pest in the late 1950s. Shoshana studied the bionomics and the causes of the increase in its population. She proposed to sow after irrigation, thereby reducing damage by preventing oviposition. Insecticides were screened and various application methods were tested and recommended.

(iii) The phenology of an occasional pest, the cereal root maggot, *Delia flavibasis*, was studied in wheat fields and, when damage was incurred by it, in corn seedlings; it was established, however, that the latter did not endanger development and yield and thus control measures were not necessary.

(iv) Expansion of the late-sown sorghum area was accompanied by total infestation by *Atherigona soccata*. A study undertaken by Shoshana revealed that the absence of diapause, a very short developmental period and thereby overlapping of generations, resulted in a very rapid build-up of large populations. These were attracted to oviposit on the young sorghum seedlings. Control measures based on contact insecticide cover sprays against the adults were ineffective, due to the rapid growth of the plants. Only soil treatments with systemic insecticides provided protection during the susceptible stage of plant development.

In the 1960s, the potato tuber moth, *Phthorimaea (Gnorimoschema) operculella*, became a major pest in potato fields in Israel, causing heavy yield losses. It became imperative to improve control methods during the growing season. Shoshana conducted a toxicological study that established the efficacy of various insecticides against larvae and adults. This was followed by large-scale field trials and, as a result, recommendations for control were issued which are still effective today. Simultaneously, an ecological survey was conducted by her in potato fields all over the country. This study proved that normal conditions of sanitation and a sound cultural regime, especially proper irrigation, could eliminate infestations during the growing season; thus picking time was reached with low pest populations and loss in yield. In the mid 1970s, however, a new aspect of damage by this pest became evident. Tomatoes grown for processing were infested by *P. operculella* larvae, rendering the products unmarketable. An extensive field study, based on the use of pheromone-baited traps, was initiated. Thus, the distribution and phenology of the pest were established in various parts of the country. Shoshana showed that pheromone-baited traps, placed around tomato fields, proved reliable for monitoring the appearance of moths in the field and its correlation with ecological conditions within the crop.

In the early 1970s an unknown damaging factor causing heavy losses appeared in onion crops. This factor, which was identified as a soil mite, was found in various soils all over the country, but mainly in onion and garlic crops. A thorough study was undertaken, in cooperation with Prof. U. Gerson. They found that only one species, *Rhizoglyphus robine*, was involved. A cooperative BARD project was carried out in 1980–83. The bionomics of the mite, and possible causes for its outbreaks, were studied, and the ecology of the pest was established. For monitoring field populations a special soil trap was designed and extensively used to monitor the presence of mites in the soil. Finally, cultural and chemical management methods were studied and recommended.

The serpentine leafminer, *Liriomyza trifolii*, was introduced into Israel in 1978 and became established as a major polyphagous pest of flower and vegetable crops. Immediate control measures undertaken were all based on trial and error with high insecticide doses and yielded unreliable results. In 1983 work on this pest began, and in 1984 Shoshana received a grant for a BARD project. Bionomics of the pest was studied in gypsophila and cotton plants, and a method for monitoring adult populations was established. Various control methods were studied and as crops affected included export items, use of gamma radiation as a quarantine method was considered. After preliminary promising tests, the use of gamma radiation on various immature stages was studied, and the minimum dose for radiation disinfestation was established for each stage.

During the course of many years Shoshana operated light traps for noctuid moths in various parts of Israel, and a large mass of data was accumulated. About 400 species of insects were recorded, 80% of which were lepidopterans. The analysis of the data yielded reliable information on the noctuid species present in this country. Aspects studied included the population density of each species in different years; dispersion in various parts of the country; status as a permanent resident or as a migrant species; the source of migrations and its trend; and diapause and season of termination of diapause. The emerging information clearly pointed to a seasonal migration of several noctuid species occurring simultaneously; this suggested a common factor responsible for the phenomenon, most likely meteorological. The publications based on the light trap catches, as well as unpublished information recorded on tapes, are constantly used by many colleagues working on various aspects of some of the species that appear in the light traps.

Shoshana had close scientific affiliations abroad. From 1967–69 she conducted research work at the Research Council of British Columbia, Canada. In 1973 and 1974 she spent long periods of research with the Centre of Overseas Pest Research (COPR), London, UK. She participated actively in many national and international congresses and other meetings.

Shoshana was devoted to her colleagues, whatever their status or rank, assisting them professionally and with their daily personal worries. She understood the problems of new immigrant scientists and did everything in her power to assist and advise them. She also helped them in preparing papers, coached them in administrative difficulties and taught them to pursue problems to their solutions. She took upon herself the task of sorting out any injustice done either to her colleagues or junior staff, going so far as to recruit other colleagues in the dispute, and was always available in time of need.

Shoshana is survived by her sister, Shulamith.

Shoshana Yathom will be sorely missed by her family, friends, and the entire agricultural community of Israel.

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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 standard 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 spaced on one side of a page only, leaving 3-cm margins on both sides, 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 WordPerfect, 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 italicized in the manuscript or underlined with a single solid line. No more than three categories of subheadings are allowed. Footnotes to text should be kept to a minimum.

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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. Locality records should preferably be followed by coordinates. Names of localities in Israel will be given as they are transliterated in the "Israel Touring Map" (1:250,000) and "List of Settlements," published by the 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).

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.

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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.

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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 oleae (Costa, 1832)

(Fig. 1)

Coccus oleae Costa, 1832:21; Green, 1868:42 (biology).

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 verbatim 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).

Records of specimens other than type series will be listed at the end of each relevant chapter in a similar manner, but see "SPELLING" above.

7. Authors are required to deposit all type-material in nationally or internationally recognized institutions (not private collections).

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