

**The genus *Oxythyrea* Mulsant in Israel
(Coleoptera: Scarabaeidae: Cetoniinae: Cetoniini)**

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ABSTRACT

The occurrence and distribution of species of the genus *Oxythyrea* Mulsant in Israel are revised based on specimens in the National Collection of Insects, Department of Zoology, Tel Aviv University, and from the private collection of Oz Rittner. Three species occur in Israel: *O. noemi* Reiche and Saulcy, *O. cinctella* (Schaum), and *O. abigail* Reiche and Saulcy. A key for the identification, distribution maps, and notes on the biology of each species are provided.

KEYWORDS: Coleoptera, Scarabaeidae, Cetoniinae, *Oxythyrea*, distribution, identification key, Israel

INTRODUCTION

The genus *Oxythyrea* Mulsant is one of the 21 genera of the Palaearctic Cetoniini, and it presently comprises 11 species in Europe, West Asia, and Africa (Schenkling, 1921; Sabatinelli, 1981; Krajčůk, 1998; Smetana, 2006). Among the Palaearctic Cetoniini genera, *Oxythyrea* is characterized morphologically by the combination of a long, narrow, flat, and very pointed scutellum (as in *Tropinota* Mulsant, *Epicometis* Burmeister, and *Celidotella* Reitter) and by two teeth at the posterior margin of the fore tibia rather than three teeth in the above-mentioned genera (Baraud, 1985, 1992; Medvedev, 1964; Mikšić, 1982). *Oxythyrea* species are some of the most frequently met beetle species in Israel, especially during the spring bloom, and they comprise a very conspicuous insect group in the Israeli landscape. In the present study, we review the distribution and biology of the *Oxythyrea* species occurring in Israel and provide a key for their identification.

MATERIALS AND METHODS

For this study, we examined the 427 *Oxythyrea* specimens in the National Collection of Insects, Department of Zoology, Tel Aviv University, Tel Aviv, Israel (TAUI), and

the private collection of Oz Rittner, Rishon leZiyyon, Israel (OR). Because the large majority of the examined specimens are from TAUI, only specimens deposited at OR are cited as such.

Transliterated names of the localities follow the "Israel Touring Map" (1:250.000) and "List of Settlements", published by the Israel Survey, Ministry of Labor. Where names of localities have changed, the most recent transliterated Hebrew or Arabic names are indicated with the old names in square brackets; for example: 'En Hemed [Aquabel-la]. Erroneous spellings are also indicated in brackets. Localities are listed from North to South and from West to East. Collecting localities were plotted on a map available from Google Earth and Google Maps web services, which was used according to guidelines in the webpage <http://www.google.com/permissions/geoguidelines.html>

Biological notes are based on personal observations by the authors. Morphological terminology follows Torre-Bueno et al. (1989).

RESULTS

Based on the examined material, we ascertain that only three species occur in Israel: *Oxythyrea abigail* Reiche and Saulcy, 1856, *O. cinctella* (Schaum, 1841), and *O. noemi* Reiche and Saulcy, 1856. The old records of *O. funesta* (Poda, 1761) from Israel (Baudi, 1894; Bodenheimer, 1937; Chikatunov and Pavliček, 1997) are probably the result of erroneous identifications as indicated by specimens labeled as *O. funesta* in the TAUI collection that are actually *Oxythyrea noemi*. *Oxythyrea albopicta* Motschulsky 1845, which is known from the mountains of Syria and Lebanon, has not been found in Israel to date.

KEY TO THE SPECIES OF *OXYTHYREA* IN ISRAEL

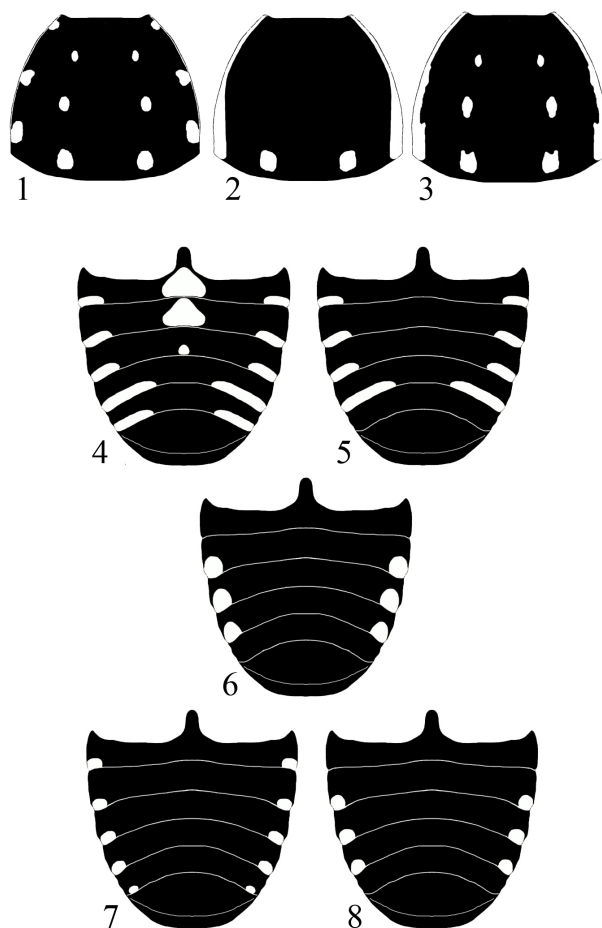
1. Dorsum with white erect hairs; pronotum with 6 dots in two longitudinal, parallel rows; abdominal sternites 4 and 5 each with transverse white stripe; male with a white spot in the middle of abdominal sternites 1 and 2.....***O. abigail* Reiche and Saulcy**
- 1. Dorsum glabrous; pronotum variable; abdominal sternites with white spots only laterally **2**
2. Pronotum with 2 white depressed spots posteriorly***O. cinctella* (Schaum)**
- 2. Pronotum with 4–6, rarely 2, white spots in two longitudinal rows.....
.....***O. noemi* Reiche and Saulcy**

***Oxythyrea abigail* Reiche and Saulcy, 1856**

(Figs. 1, 4, 5, 9)

Diagnosis

Body more robust, enlarged, and rounded than in *O. noemi* and *O. cinctella*. Pronotum hairy (almost glabrous in *O. cinctella* and *O. noemi*), with 4–6 white spots in two longitudinal rows (Fig. 1) and laterally delimited by interrupted white lines consisting of 3 semicontiguous spots on each side. Elytra with several round white spots, more or less equal in size, not connected to each other, usually larger and more evenly distributed than in *O. cinctella* and *O. noemi*. Male with triangular white spot on the middle of the



Figs. 1–8. *Oxythyrea*, body patterns. 1–3. Pronotum, dorsal view. 1. *O. abigail*. 2. *O. cinctella*. 3. *O. noemi*. 4–8. Abdomen, ventral view. 4. *O. abigail*, male. 5. *O. abigail*, female. 6. *O. cinctella*, male. 7. *O. noemi*, male. 8. *O. noemi*, female.

first visible abdominal sternite and additional 1–2 white spots on second and third visible abdominal sternites (Fig. 4). These spots are absent in the female (Fig. 5) as well as in the male of *O. noemi* and *O. cinctella*. Abdomen ventrally on each side with 3 short white lines and more distally with 2 white longer lines in male, one such longer line in female.

Material Examined

ISRAEL: **Central Coastal Plain:** Qesarya [Qaesarea], 19.v.1959, J. Krystal (1 ex.);

15.v.1960, L. Fishelson (2 ex.); Hadera, 5.iv.1953 (1 ex.); Netanya, 3.v.1997, R. Hoffman (1 ex.); **Southern Coastal Plain**: Tel Aviv, 21.iii.1997, T. Yacobovitch (1 ex.); Bat Yam, 14.iii.1940 (2 ex.), 18.ii.1942 (2 ex.), 28.iv.1942 (1 ex.), 24.iii.1944 (2 ex.), all Ch. Bytinski-Salz; Holon, 17.iii.1986, E. Shney-Dor (1 ex.), 1.iii.1986, E. Shney-Dor (1 ex.), 28.iii.1946, Ch. Bytinski-Salz (3 ex.), 10.v.1974, D. Furth (1 ex.), 10.v.1978, D. Furth (1 ex.); Moledet (Holon), 28.ii.1946, Ch. Bytinsky-Salz (5 ex.); Rishon LeZiyyon, 8.ii.1942, Ch. Bytinski-Salz (1 ex.), 10.iii.1942, Ch. Bytinsky-Salz (2 ex.), 26.i.1957, O. Yarkoni (1 ex.), 4.iii.2003, R. Hoffman (1 ex.), 7.iii.2008, O. Rittner (2 ex.; OR); Even Yehuda, 15.iii.1935, Hecht (1 ex.), 25.iii.1935, Hecht (2 ex.); Nizzanim, 7.vi.2008, O. Rittner (4 ex.; OR); Neta'im, 28.iii.1953 (3 ex.); **Northern Negev**: Be'er Sheva' [Beer-Sheba], 14 km south, 13.iii.1963, J. Wahrman (2 ex.); Bor Mashash, 7.iv.1996, O. Nahum (1 ex.); **Central Negev**: Tel Yeroham [Tel-Yeruham], 11.iv.1962 (1 ex.).

Distribution

World: Syria, Lebanon, Cyprus, Israel, and Egypt (Smetana, 2006).

Israel: Central and Southern Coastal Plain, Northern and Central Negev (mainly in Be'er Sheva area) (Fig. 9). Confined to sand dune areas.

Biology

This species is found in sand dune areas, often in association with *O. noemi* and *Tropinota vittula* Reiche and Saulcy. The adults are usually active from late February, with the rise in temperature (about 10–14 days after appearance of *O. noemi*), until the end of May (when *O. noemi* adults have already disappeared in the same areas). Adults feed on various flowers of Brassicaceae, Asteraceae, and Apiaceae, although flowers of other families are also visited less frequently or when no other flowers are available.

Oxythyrea cinctella (Schaum, 1841)

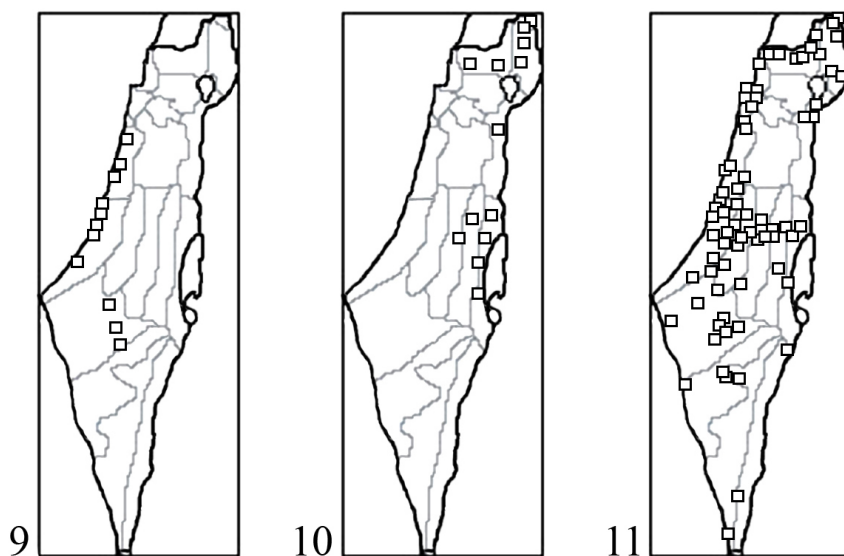
(Figs. 2, 6, 10)

Diagnosis

Body more elongate than in *O. noemi* and *O. abigail*. Pronotum almost glabrous, shining black, with 2 clear, depressed white spots posteriorly (6 in *O. noemi*) and delimited laterally by a continuous white line (Fig. 2). Abdomen ventrally with 3 white spots on each side, larger in males (Fig. 6). Elytra with several white, uneven dots, some of which are confluent.

Material Examined

ISRAEL: **Mt. Hermon**: Har Hermon, 1400 m, 30.v.2008, O. Rittner (2 ex.; OR); Mivzar Nimrod [Qal'at Nimrod], 8.vi.1975, J. Kugler (1 ex.); **Golan Heights**: Mas'ada, 17.iii.1973, D. Furth (1 ex.); Merom Golan, 18.iii.1973, M. Kaplan (1 ex.); Lehavot ha-Bashan, 7.vi.1958, L. Fishelson (1 ex.); Nahal Yehudiyya Reserve [Qusbiye], 3.v.1980, D. Furth (1 ex.); **Upper Galilee**: Rosh Pina, 18.iv.1941, Ch. Bytinski-Salz (1 ex.); Ein Ya'aqov, 2.iv.2010, O. Rittner (1 ex.; OR); **Jordan Valley**: Nahal Peza'el [Wadi



Figs. 9–11. Distribution of *Oxythyrea* in Israel, 9. *O. abigail*. 10. *O. cinctella*. 11. *O. noemi*.

Faza'el], 9.iv.1986, I. Susan (2 ex.); **Judean Foothills**: Hartuv [Har Tuv], 5.iii.1954 (1 ex.); **Judean Hills**: Yerushalayim [Jerusalem], 15–30.iii.1940, Ch. Bytinski-Salz (1 ex.), 23.iv.1940 (3 ex.), 1–15.v.1940 (1 ex.), 7.iv.1947 (5 ex.), 14.iv.1951 (1 ex.), all N. Gratz; 29.iv.1952, E. Swirski (1 ex.); Yerushalayim, Qiryat 'Anavim [Kiri'at Anavim], 8.v.1949, Ch. Bytinski-Salz (1 ex.); **Judean Desert**: Mezada [Massada], 17.iv.1973, D. Furth (1 ex.); Nahal Teqoa', 31.iii.2009, O. Rittner (3 ex.; OR).

Distribution

World: former Yugoslavia (Macedonia), Albania, Bulgaria, Greece, Turkey, Syria, Lebanon, Israel, Jordan, Russia, Georgia, Azerbaijan, Armenia, Iraq, Iran, Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan, Afghanistan, Pakistan, and China (Xinjiang) (Smetana 2006).

Israel: Mt. Hermon, Golan Heights, Upper Galilee, Judean Hills, and Judean Desert (Fig. 10). Most of the above records are from relatively high altitudes, and the only two records from lower altitudes (Nahal Peza'el and Mezada) need confirmation.

Biology

Adults are active from mid-March to June and are much less common than *O. noemi* and *O. abigail*. Adults feed on different flowers, mainly of Brassicaceae, Asteraceae, and Apiaceae. This species is often found together with *O. noemi*.

***Oxythyrea noemi* Reiche and Saulcy, 1856**

(Figs. 3, 7, 8, 11)

Diagnosis

Pronotum almost hairless, with 4–6 white spots in two longitudinal rows (Fig. 3). In some specimens, only the basal spots are clearly visible. Pronotum laterally delimited by white interrupted lines consisting of three white spots on each side. In some specimens, these lines are uninterrupted or only one pair of spots is visible posteriorly. Elytra with several irregular, small white spots, not rounded, of different size, some of which are confluent. Distribution of spots on elytra greatly variable; white spots on pronotum and elytra very faint in some specimens. Abdomen ventrally on each side with 5 white spots in male (Fig. 7), 3 in female (Fig. 8).

Material Examined

ISRAEL: **Mt. Hermon:** Har Hermon, 1700 m, 16.iv.1993, V. Chikatunov (1 ex.), Mivzar Nimrod [Qalaat Nimrod], 8.vi.1975, J. Kugler (1 ex.); **Golan Heights:** Golan, 7.v.1979, K. Yefenov (1 ex.); Merom Golan, 10.vii.1982, Y. Zvik (1 ex.); Nahal Yehudiyia Reserve [Qusbiye or Qasabiya (Golan)], 19.iv.1976, M. Kaplan (8 ex.), 20.iii.1984, I. Nussbaum (1 ex.); Nahal Daliyot, 6.v.1975, A. Freidberg (1 ex.); **Carmel Ridge:** Carmel, 1.v.1972, K. Yefenov (2 ex.), 29.iii.1972, K. Yefenov (1 ex.); Carmel (Har Shana), 24.iii.1989, J. Kugler (3 ex.); Haifa [Kaifa], Reitter (1 ex.); Nahal Oren 24.v.1995, A. Freidberg (1 ex.), 22.vi.1996, R. Hoffman (1 ex.), 24.ii.1998, V. Chikatunov (3 ex.); Bat Shelomo, 20.v.1975, M. Kaplan (7 ex.); Zikhron Ya'acov [Ziqron Yaaqov] 31.iv.1953 (3 ex.), 10.v.1960, L. Fishelson (1 ex.), 29.iv.1958, H. Lewinsohn (1 ex.); Gal'ed, Even Yizhaq [Gilead], 18.iv.1980, Goldberg (1 ex.); **Upper Galilee:** Senir, 28.v.1987, E. Shney-Dor (3 ex.); Manara, 15.v.1973, J. Halperin (1 ex.), 4.iv.1974, J. Halperin (3 ex.); Shamir, 17.v.1960, L. Fishelson (2 ex.); Hula 10.v.1948, Ch. Bytinski-Salz (1 ex.); Shelomi, 3.v.2000, T. Osten (1 ex.); Hanita, 23.iii.1976, D. Gerling (1 ex.); Monfort, 15.iv.1988, E. Shney-Dor (1 ex.); Nahal Keziv, 12.iii.1999 (3 ex.), 27.iii.1999 (1 ex.), 21.iv.1999 (5 ex.), 23.iv.1999 (1 ex.), 24.iv.1999 (3 ex.), 1.v.1999 (3 ex.), 7.v.1999 (16 ex.), 20.v.1999 (2 ex.), 11.vi.1999 (1 ex.), 1.iv.2000 (5 ex.), 13.iv.2000 (1 ex.), 15.iv.2000 (1 ex.), 13.iv.2001 (1 ex.), 22.iv.2000 (1 ex.), 13.v.2000 (4 ex.), 26.v.2000 (1 ex.), 17.vi.2000 (3 ex.), 6.iv.2001 (1 ex.), 28.v.2001 (1 ex.), all M. Finkel; Kabri, 19.iv.1968, K. Yefenov (2 ex.); Gadot, 18.iv.1973, D. Furth (2 ex.); 'En Zetim [Ein Zeitim], 21.v.1997, E. Elron (1 ex.), Z. Cohen (1 ex.); 28.v.2003, R. Hoffman (1 ex.); Har Meron [Jarmaq], 15.v.1960, L. Fishelson (2 ex.), 16.v.1960, L. Fishelson (1 ex.), 15.iv.1962, Avigdor (3 ex.); Har Meron, 23.v.1962, J. Kugler (1 ex.); 19.v.1970, K. Yefenov (1 ex.); 1.v.1995, V. Chikatunov (1 ex.); 24.iv.2002, V. Chikatunov (1 ex.); 24.iv.2002, L. Friedman (1 ex.); Rosh Pina, 19.iii.1940 (5 ex.), 15.iv.1941 (2 ex.), Ch. Bytinski-Salz; 29.iii.1952, V. Israel (1 ex.); **Lower Galilee:** Korazim, 16.iv.1970, K. Yefenov (2 ex.), Qiryat Tiv'on [Tivon], 25.iii.1955, L. Fishelson (1 ex.); 'En Dor 14.iii.1981, E. Shney-Dor (1 ex.); Nahal Tavor shore, 25.iii.2001, L. Friedman (1 ex.); **Northern Coastal Plain:** 'Akko [Acre], 17.iii.1952,

E. Swirski (3 ex.); Ma'agan Mikha'el, 4.v.1998, A. Freidberg (1 ex.); **Central Coastal Plain:** Binyamina, 25.iii.1925, O. Theodor (1 ex.); Givat 'Ada, 20.iii.2004, G. Wizen (1 ex.); Berekhath Ya'ar, 6.vi.2003, A. Friedberg (1 ex.); Nahal Alexander, 21.iii.1981, E. Shney-Dor (1 ex.); Netanya, 11.iv.1957, Machlis (19 ex.), 2.v.1980 (2 ex.); Nahal Poleg [Wadi Faliq], 4.iii.1956, A. Shulov (1 ex.); Nahal Poleg, 19.iii.1996, M. Varon (1 ex.), 19.iii.1996, O. Nachum (1 ex.), 19.iii.1996, Z. Pavise (1 ex.), 19.iv.1996, A. Keinan (1 ex.); Tel Aviv, Tel Barukh [Tel-Baruch], 21.iii.1997, N. Segal (1 ex.), 21.iii.1997, G. Yacov (1 ex.), 21.iii.1997, T. Grossman (1 ex.), 21.iii.1997, Ishor (1 ex.), 21.iii.1997, Y. Nadler (1 ex.), 21.ii.1997, Z. Cohen (1 ex.), 21.iii.1997, S. Ben-Aroya (1 ex.), 21.ii.1997, E. Sheffer (1 ex.), 2.iv.1998, N. Meltzer (1 ex.); Tel Aviv, 6.ii.1946, E. Swirski (1 ex.), 22.ii.1954, E. Swirski (1 ex.), 9.iv.1952, E. Swirski (1 ex.), 20.iii.1970, R. Kopan (1 ex.), 27.iii.1971, R. Kopan (1 ex.), 2.iv.1970, R. Kopan (1 ex.), 8.iv.1981, A. Freidberg (1 ex.), 13.iv.1992, R. Hoffman (1 ex.), 18.iv.1994, D. Simon (2 ex.), 15.iii.1995, V. Chikatunov (6 ex.), 21.iii.1997, A. Mayrose (1 ex.), 21.iii.1997, A. Ben-Pazi (1 ex.); Kefar haBaptistim, 16.iii, I. Harold (1 ex.); Kefar Azar, iii.1955 (1 ex.); **Yizre'el Valley:** Allonim, 14.iv.1941, Ch. Bytinski-Salz (2 ex.); **Samaria:** Gilboa', 4.v.1972, K. Yefenov (4 ex.); **Jordan Valley:** Jordan Valley, v.1981, E. Shney-Dor (2 ex.); Jordan River delta, 22.ii.1973, D. Furth (1 ex.); Biq'at Bet Zayda [Beteicha], 16.v.1973, J. Kugler (1 ex.); Ginosar, 6.iii.1965, Ch. Bytinski-Salz (3 ex.); Teverya [Tiberias], 8.v.1940, Ch. Bytinski-Salz (3 ex.); Deganya, 18.iii.1947, Ch. Bytinski-Salz (1 ex.); Afqim 4.iv.1971 (1 ex.); **Judean Foothills:** Latrun 2.iv.1981, E. Shney-Dor (1 ex.), 12.iv.1981, E. Shney-Dor (2 ex.); Newe Shalom, 14.vi.1997, R. Hoffman (1 ex.); Bet Me'ir [Beit-Meir], 8.v.1958, J. L. Werner (1 ex.); Zor'a [Tzorah], 27.ii.1955 (1 ex.); Hartuv [Har Tuv], 31.iii.1952 (2 ex.); 3.iii.1954, 27.ii.1955 (2 ex.), 27.iii.1955 (1 ex.), 20.v.1957, O. Yarkoni (1 ex.), 26.iii.1958, A. Shulov (1 ex.), 17.iii.1958, Machlis (1 ex.); Bet Guvrin, 4.v.1982, M. Sokolover (1 ex.); **Judean Hills:** Ben Shemen 1.iii.1986, E. Shney-Dor (2 ex.); Shores, 4.iii.2004, I. Zonstein (1 ex.); Ma'ale haHamisha, 16.v.1994, Y. Gottlib (1 ex.); Zur Hadassa 31.iii.2001, Y. Mandelik (1 ex.), 21.iv.2001, Y. Mandelik (1 ex.); Yerushalayim [Jerusalem], 15–30.iii.1940, Ch. Bytinski-Salz (3 ex.), 18.iii.1945, Ch. Bytinski-Salz (1 ex.), 29.iv.1952, E. Swirski (1 ex.), 13.v.1952, P. Amitai (2 ex.), 3.vi.1952, P. Amitai (2 ex.), 14.v.1954 (1 ex.), 10.iii.1955, D. Gershon (1 ex.), 9.v.1957, J. Wahrman (2 ex.), 15.vi.1957, A. Shulov (1 ex.), 20.iii.1958, J. Halperin (1 ex.), 5.iv.1964, A. Yenechson (2 ex.), 18.iv.1969, Y. Mendelbrod (1 ex.), 11.iii.1972, M.T. (1 ex.); Yerushalayim, 'En Kerem, [En Kerem], 9.v.1978 (1 ex.); Yerushalayim, Qiryat 'Anavim [Kiriath Anavim], 8.v.1949, Ch. Bytinski-Salz (2 ex.); 'Adulam, 3.iv.2003, T. Levanoni (1 ex.); Sedot Mikha, 22.iii.2002, V. Chikatunov (1 ex.); **Southern Coastal Plain:** Bat Yam, 14.iii.1940, Ch. Bytinski-Salz (1 ex.); Miqwe Yisrael [Mikve Israel], 22.iii.1948, Ch. Bytinski-Salz (1 ex.); 12.iv.1948, Ch. Bytinski-Salz (5 ex.); 5.iv.1952, E. Swirski (6 ex.); 8.iv.1952, E. Swirski (1 ex.); Nes Ziyona, 9.v.1989, E. Shney-Dor (2 ex.); 'Eqrone [Ekron], 30.v.1941, D. Furth (1 ex.); Gan-Yavne 28.iv.1973, D. Furth (1 ex.); Kefar Menahem, 12.iv.1952 (1 ex.); Tel Qeshet 30.iii.2004, I. Zonstein (2 ex.); **Northern Negev:** Lahav, 4.iv.1996, M. Trebic (1 ex.); 7.iv.1996, O. Nahum (1 ex.); 7.iv.1996, T. Kimchi

(1 ex.); 7.v.1996, V. Chikatunov (1 ex.); Be'eri, 22.iv.1981, Ch. Bytinski-Salz (2 ex.); I. Yarom (1 ex.); Nizzana, 28.iii.1986, E. Shney-Dor (3 ex.); Ruḥama, 30.iii.1969 (2 ex.); Bitronot Ruḥama, Naḥal Ḥazav, 5.iv.2005, L. Friedman (2 ex.); Mishmar ha-Negev, 30.v.1959, J.L. Werner (1 ex.); Gilat, 18.iv.1950 (1 ex.); Ze'elim [W. Seyal], 10. iv.1952 (1 ex.); **Judean Desert**: Naḥal Perat [Wadi Qilt or Wadi Kelt], 24.iv.1940, Ch. Bytinski-Salz (2 ex.), 9.iv.1973, D. Furth (3 ex.), 14.v.1986, E. Shney-Dor (1 ex.), 24. v.1986, E. Shney-Dor (1 ex.); **Dead Sea Area**: Yeriḥo [Jeriho], 23.ii.1941, Ch. Bytinski-Salz (5 ex.); 22.iv.1934, Hecht (1 ex.); 'En Gedi [Ein-Gedi], 16.iii.1954, J. Krystal (3 ex.), 16.iii.1958 H. Lewinsohn (1 ex.), 15.ii.1959, J. Halperin (1 ex.); Naḥal 'Arugot, 1.iii.1960, Tami (1 ex.); **Central Negev**: 'Arad, 21.iii.1973, M.T. (1 ex.); Mash'abe Sade, 29.iii.1940, M. Pener (1 ex.), 19.iii.1978, M. Kaplan (1 ex.); Yeroḥam, 15. iv.1969 (1 ex.); Kefar Yeroḥam Reserve, 25.iii.1971, B. Galil (1 ex.); Naḥal Boqer [W. Boker], 8.v.1987, E. Shney-Dor (4 ex.), 27.iii.1986, E. Shney-Dor (1 ex.), 14.ii.1987, E. Shney-Dor (1 ex.); Sede Boqer, 10.iv.1958, J. Halperin (1 ex.), 16.iv.1997, A. Maklakov (1 ex.), 16.iv.1997, 21.iii.1997, E. Sheffer (1 ex.); 'En 'Avedat [Ein Avdat], 9. iii.1973, D. Furth (3 ex.); 'Avedat, 14.iv.1975, A. Freidberg (1 ex.); Upper Naḥal Zin [Wadi Nafha or Wadi Nafeh], 7.iv.1965 (1 ex.), 5.iv.1962, M. Pener (1 ex.), 29.iii.1970, M. Pener (1 ex.); Mizpe Ramon, 10.iv.1999, E. Ivanicka (3 ex.); Makhtesh Ramon, 16.iii.1970, M. Kaplan (1 ex.); Har Ḥoresha, 900–1000 m, 18.iv.1998, A. Freidberg (1 ex.); Naḥal Neqarot [Nekarot], 21.iii.1963, J. Kugler (1 ex.); **Arava Valley**: Hazeva, 6.vi.2000, V. Kravchenko (1 ex.); **Southern Negev**: Naḥal Shani, 10.iii.1974, D. Furth (1 ex.); Ramat 'Uvda, 16.iv.1997, O. Shnayder (1 ex.).

Distribution

World: Cyprus, Lebanon, Syria, Israel, Jordan, Turkey and Egypt (Sinai) (Alfieri, 1976; Smetana, 2006).

Israel: This species is practically distributed throughout Israel and is very common everywhere (Fig. 11).

Biology

Adults feed on various flowers of Brassicaceae, Asteraceae, and Apiaceae, but also feed on flowers of other plant families as well.

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