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The Acronictinae, Bryophilinae, Hypenodinae and Hypeninae of Israel (Lepidoptera: Noctuidae)

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Abstract

Eight species of Acronictinae, thirteen of Bryophilinae, one of Hypenodinae and seven of Hypeninae (Lepidoptera: Noctuidae) were recorded in Israel, five of which are new for Israel, four of which were colleted in the Israeli-German survey (*Acronicta psi*, *Craniophora pontica*, *Craniophora melanisans* and *Cryphia labecula*) and one of which (*Craniophora ligustri*) was found in the Tel Aviv University collection. Four species previously recorded in Israel were not found during this survey (*Cryphia maeonis*, *Victrix tabora*, *Schrankia taenialis*, and *Cryphia amseli*). Two species (*Cryphia labecula*, *Victrix marginelota*) are endemic to Israel and Lebanon; two, (*Cryphia paulina* and *Craniophora melanisans*), are endemics of the West Arabian Peninsula. The distribution, phenology and ecology of the 29 species is discussed.
KEY WORDS: Lepidoptera, Noctuidae, Acronictinae, Bryophilinae, Hypenodinae, Hypeninae, Israel.

Los Acronictinae, Bryophilinae, Hypenodinae y Hypeninae de Israel (Lepidoptera: Noctuidae)

Resumen

Se registraron en Israel ocho especies de Acronictinae, trece de Bryophilinae, una de Hypenodinae y siete de Hypeninae (Lepidoptera: Noctuidae), cinco de las cuales son nuevas para Israel, cuatro de las cuales fueron colectadas durante la exploración Israelí-Alemana (*Acronicta psi*, *Craniophora pontica*, *Craniophora melanisans* y *Cryphia labecula*) y una de las cuales (*Craniophora ligustri*) fue encontrada en la colección de la Universidad de Tel Aviv. Cuatro especies anteriormente citadas en Israel, no han sido encontradas durante esta exploración (*Cryphia maeonis*, *Victrix tabora*, *Schrankia taenialis*, and *Cryphia amseli*). Dos especies (*Cryphia labecula*, *Victrix marginelota*) son endémicas para Israel y Líbano; dos (*Cryphia paulina* and *Craniophora melanisans*), son endémicas del oeste de la Península Arábica. Se discute la distribución, fenología y ecología de 29 especies.
PALABRAS CLAVE: Lepidoptera, Noctuidae, Acronictinae, Bryophilinae, Hypenodinae, Hypeninae, Israel.

Introduction

Within the Israeli-German project for the study of the Israeli Lepidoptera fauna, intensive collecting was conducted from 1986-2004. This project was a joint effort of the Tel Aviv University, The Hebrew University, the Nature Reserves and Park Authority of Israel, the Zoologische Staatssammlung Munich, Germany and the Museum Witt, Munich, Germany.

The Geography of Israel

Israel is located in the eastern part of the Mediterranean Basin in the northern part of the Syrian East African Rift Valley. In contrast to the more uniform and monotonous landscapes of the Levant, Israel is morphologically distinctive with a large variety of different habitats (KOSSWIG, 1955). The northern part of Israel includes Mt Hermon (2200 m above sea-level) with annual snow and typical Tragacanth vegetation, while the Dead Sea area is about 400 m below sea-level with Ethiopian pockets rich in afro-tropical fauna and flora (BYTINSKI-SALZ, 1961; ZOHARY & ORSHANSKY, 1949). The centre of the country is Mediterranean while in the south and east Irano-Turanian grassland and deserts are found (MÜLLER *et al.*, 2005). The Arava Valley and the Negev are known for numerous natural and artificial oases (ORNI & EFRAT, 1980). In consequence of these alternating geographical and climatic zones a rich fauna and flora of different origin could establish itself (EIG, 1926; LATTIN, 1967; ZOHARY, 1962, 1966). Many species are found in Israel in their furthest point of geographical distribution (BODENHEIMER, 1930; 1932; 1935; FURTH, 1975; JAFFE, 1988). Israel can be divided in five Phyto-geographic regions (ZOHARY, 1966).

The Mediterranean temperate Zone covers those areas which receive an annual average precipitation of 350 mm or more. The hills of Jerusalem and the coastal plain at the same latitude are the most southern parts of the Mediterranean territory in the Near East (ZOHARY, 1962). The Mediterranean vegetation is divided into two distinct types: That of the hills and that of the coastal plain. In the hills with its higher precipitation (about 500-700 mm) maquis is dominant. Today, most of the coastal plain consists of agriculture areas and human habitation.

The Irano-Turanian Zone is a semi arid area, a dry steppe or desert steppe, which stretches from its south west border in Israel through Iran, Turkestan and inner Asia to the Gobi desert. The average annual rainfall is 200-300 mm during winter only. Low brush or dwarf bushes with *Artemisetum* plant associations are characteristic for this region.

The Saharo-Arabian eremic zone is a true desert which centres on the Arabian Peninsula. Winter rainfall of up to 200 mm is followed by a short period of blooming, and afterwards the vegetation dries rapidly up. The vegetation is very sparse averaging over large areas in one plant per one to ten square metres (KUGLER, 1988).

The Ethiopian tropical zone in Israel is only represented in small enclaves in the lower Jordan valley, the Dead Sea area and the Arava Valley where they are surrounded by extreme desert or halophytic vegetation. High temperature, abundant fresh water and rich soil conditions are typical of these oases (ZOHARY & ORSHANSKY, 1949).

The Tragacanth high altitude zone is restricted to the peak of Mt Hermon (above 1900 m). Snow coverage with very low temperatures in winter and hot, dry summer create specific plant communities dominated by spiny, round, dense, cushion like shrubs such as *Astragalus* and *Onobrychis*. The main water source in this area is melting snow, consequently most of this karstic mountain area is rather arid. Different types of forest are only found along the foot hills and within canyons.

The Acronictinae, Bryophilinae, Hypenodinae and Hypeninae

The Acronictinae and Hypenodinae are composed of two subfamilies each (MITCHELL *et al.*, 2005). The Acronictoids include the Acronictinae and Bryophilinae, the Hypeninae include the Hypeninae and Hypenodinae (= Strepsimaninae).

Species of the subfamily Acronictinae are mainly medium sized, ground-coloured with grey darkened wings with luscious and black maculae. Worldwide approximately 400 Acronictinae species are known (SPEIDEL *et al*., 1996). The bulk of the species are found in temperate regions, many of them reaching far to the north. The larvae of the Israeli species typically develop on deciduous trees like *Salix*, *Populus, Platana, Quercus* and others, as well as on some shrubs, including *Crataegus* and *Rosa*. This restricts them mostly to deciduous forests in the Levant, in Israel mainly to riverine forests. Only

one species, the polyphagous *Acronicta rumicis* (Linnaeus, 1758), is a known pest, damaging occasionally nurseries of fruit-trees and roses (AVIDOV & HARPAZ, 1969).

Bryophilinae are predominantly small sized and develop on all kind of different lichens (SEITZ, 1914). Worldwide about 200 species are known (SPEIDEL *et al.*, 1996). Especially in Israel the larvae are feeding at night when their food becomes softened by the nocturnal dew. The strikingly coloured larvae develop in early summer and often pupate on the host plant in a cocoon. The imagos correspond remarkably with the different hues of the lichen-covered surfaces on which they rest.

The Hypeninae and Hypenodinae are mainly tropical. From the roughly 500 species of Hypeninae, only about 40 species are Palaearctic (KLUICHKO, 1978; SPEIDEL *et al*., 1996).

Material and methods

Lepidoptera were collected during a period of 18 years totalling about 3000 nights of mobile light traps powered by generator (250 Watt bulbs HQL & ML) and about 1500 nights of mobile light trap systems powered by batteries (12Volt 8 Watt & 20Watt, 6 Volt 4 Watt Black light UVB tubes) moved on a daily basis. Additionally an intensive network of permanent light traps (220V 20W Black light UVB & UVC tubes) was maintained. Traps were relocated on an annual basis. From year to year 10-34 traps were operated.

Characterization of abundance

Rare: less then 10 specimens per year from all sites. Fairly common: an average of 11-50 specimens per site per year and in less then 20% of the collecting sites in the zone of occurrence.

Common: an average of 51-200 specimens per site per year and from 20 to 60% of the collecting sites in the zone of occurrence. Abundant: an average of more then 200 specimens per site per year and in more than 60% of the collecting sites in the zone of occurrence. Local: only found in one zone in less then 4 locations. Locally common: in less then 20% of the surveyed sites. Locally abundant: in less then 20% of the surveyed sites.

Faunistic survey of the Acronictoid and Hypeninae Noctuids

Subfamily Acronictinae Heinemann, 1859

Simyra dentinosa Freyer, 1839

Distribution pattern: Hyrcan (Caspian). Balkans, southern part of Eastern Europe, Near and Middle East. Introduced in the USA(PECORA *et al,* 1992). Recorded from all the Levant countries. In Israel: all over the Semi-arid zone. Fairly common in the Judean Desert and Central Negev in canyons with rich vegetation. Elsewhere rare.

Bionomics: Univoltine, spring, medium elevation steppe species. In Israel uncommon in light traps, but occasionally found in large numbers as larvae. Flight period: January - March. Host plants: the larvae feed on leaves and flowers of large Euphorbiaceae species. On Balkans the larvae were found mainly on *Euphorbia myrsinites* and *E. esuloides* (HACKER, 1989; 2001).

Acronicta aceris (Linnaeus, 1758)

Distribution pattern: Ponto-Mediterranean. From central England to Morocco, including Near and Middle East and West Asia. Represented in the Levant by *A. aceris judaea* Staudinger 1901; recorded from all the Levant countries. In Israel: in northern part of Rift Valley, from Sea of Galilee, to upper heights of Mt Hermon (2000 m.a.s.l., tragacanth vegetation) also in adjacent areas of Galilee, Golan Heights and northern Coastal Plain (‘En Afeq Nature Reserve). Locally common.

Bionomics: Bivoltine, riverine, sylvicolous species. Flight period: March - August with peak in

May - August. Host plants: larvae feed on *Acer*, *Tilia*, *Quercus*, *Betula*, *Ulmus, Salix* and *Populus*. In Israel the larvae were found on *Q. calliprinos* (BYTINSKI-SALZ & STERNLICHT, 1967).

Acronicta psi (Linnaeus, 1758)

This is a new record for the fauna of Israel.

Distribution pattern: Trans-Palaearctic. From Europe and Northern Africa to northern Iran, Central Asia, southern and central Siberia and Mongolia. In the Levant recorded only from Lebanon and Israel. In Israel: along streamlets in Upper Galilee, and Upper Golan Heights. In the middle of the 20th century the species was common in many wet grassland areas: around Hula Valley, in See of Galilee area and even on wetlands of Central Coastal Plain (Bet Dagan) (Data of Tel Aviv University Collection). Rare and local.

Bionomics: Bivoltine, riverine, sylvicolous species. Flight period: February - April and September - October. Host plants: larvae feed on *Salix* and others deciduous trees and shrubs. In Israel the larvae were found in May on leaves of *Prunus pissardii* (HALPERIN & SAUTER, 1991-1992).

Acronicta pasiphae Draudt, 1936

Distribution pattern: Irano-Turanian. Known only from south-eastern Turkey, Iraq, Iran and the Levant. In the Levant recorded only from Israel. In Israel: from foothills to upper heights of Mt Hermon (2000 m.a.s.l., tragacanth vegetation). Rare on lower altitudes, fairly common on upper altitudes.

Bionomics: Probably bivoltine, riverine, sylvicolous species. Inhabits oases with trees and shrubs along water courses in steppe areas. Flight period: May - September; peaks in May and in August. Host plants: unknown.

Acronicta rumicis (Linnaeus, 1758)

Distribution pattern: Trans-Palaearctic. From Europe and Northern Africa through temperate Northern Asia to the Pacific Ocean. In the Levant represented by *A. rumicis pallida* Rothschild, 1920; widespread in all the countries. In Israel: in wetlands of the Temperate zone, especially in northern part of Rift Valley and along Coastal Plain. Locally common.

Bionomics: Multivoltine, wetland species. Flight period: all year round, peaks in May - July and in November. Host plants: larvae feed polyphagous on various herbs, occasionally damaging nurseries of fruit-trees and roses (AVIDOV & HARPAZ, 1969). In Israel the larvae were found on natural vegetation from February - June in Jordan Valley and on Coastal Plain on foliage of: *Calligonum comosum, Ficus bengalensis, Ligustrum ovalifolium, Melaleuca* spp., *Populus* spp., *Ulmus* spp. (HALPERIN & SAUTER, 1991-1992) and on *Q. calliprinos* (BYTINSKI-SALZ & STERNLICHT, 1967).

Craniophora ligustri ([Denis & Schiffermüller], 1775)

This is a new record for the fauna of Israel.

Distribution pattern: Trans-Palearctic. All over Europe through Northern Asia to Japan. In the Levant only recorded from Israel. In Israel: two specimens were collected 1964 in the wetlands of the Hula Valley (Kfar Blum) by Shoham Z. These specimens were recently discovered in the Tel Aviv University Collection.

Bionomics: Bivoltine, wetland species. Flight period: so far only once collected in September. Host plants: larva feed on *Ligustrum*, *Fraxinus, Alnus glutinosa, Corylus avellana*.

Craniophora pontica (Staudinger, 1879)

This is a new record for the fauna of Israel.

Distribution pattern: Mediterranean. From southern Balkans through Near East, parts of Middle East to Afghanistan. In the Levant recorded only from Lebanon and Israel. In Israel: dense river forests in the north of Temperate zone (Nahal Keziv, Tel Dan Nature Reserve). Rare.

Bionomics: Bivoltine, riverine, sylvicolous species. Flight period: April - May and in September. Host plants: larvae feed on *Fraxinus*.

Craniophora melanisans Wiltshire, 1980

This is a new record for the fauna of Israel.

Distribution Pattern: Endemic Arabian. Known from Saudi Arabia and Oman (HACKER, 1999). In the Levant recorded only from Israel. In Israel: only one specimen was collected in a riverine forest in the north of Temperate zone (Banyas Nature Reserve).

Bionomics: Probably multivoltine oases species. Flight period: the Israeli so far only collected in August; in Saudi Arabia in May; in Oman - in October. Host plants: unknown.

Subfamily Bryophilinae Guenée, 1854

Cryphia algae (Fabricius, 1775)

Distribution pattern: Mediterranean. In the Near and Middle East. In the Levant recorded only from Israel. In Israel: all over Temperate zone in dense forests on medium elevations, especially in forests of Mt Hermon, Upper Golan Heights and Galilee. Locally fairly common.

Bionomics: Univoltine, summer, medium altitude sylvicolous species. Flight period: June - August. Host plants: larvae feed on lichen found on old trees, especially on *Quercus* spp. and *Populus*.

Cryphia ochsi (Boursin, 1941)

Distribution pattern: Mediterranean. Restricted to Central and Eastern part of Mediterranean Basin. In the Levant recorded only from Lebanon and Israel. In Israel: all over Temperate zone especially in maquis. Fairly common in the Hula Valley, in the Golan Heights and the Galilee.

Bionomics: Univoltine, summer, sylvicolous species. Flight period: May - August. Host plants: unknown. Probably lichen like other congeners. In Israel the larvae were found in July - October on dry stems and branches of: *Acer negundo*, *Arbutus andrachne*, *Cotoneaster franchetii*, *Elaeagnus pungens*, *Morus alba*, *Pinus halepensis*, *Pistacia atlantica* and *Pyracantha* spp. (HALPERIN & SAUTER, 1991-1992).

Cryphia tephrocharis Boursin, 1953

Distribution pattern: Ponto-Mediterranean. Widespread in Turkey and the Balkans. In the Levant recorded from Lebanon, Israel and Jordan. In Israel: wetlands in Hula Valley (Tel Dan Nature Reserve, Banyas Nature Reserve). Rare.

Bionomics: Univoltine, summer, sylvicolous species. Flight period: May - August. Host plants: unknown. Probably lichen like other congeners.

Cryphia rectilinea (Warren, 1909)

Distribution pattern: Mediterranean. Widespread on the Balkans, Italy and Turkey. In the Levant recorded only from Lebanon and Israel. In Israel: all over Temperate zone in different types of forest on medium elevation, especially in forests on Mt Hermon and adjacent parts of the Upper Golan Heights and Galilee. Fairly common.

Bionomics: Univoltine, summer, sylvicolous species. Flight period: May - September. Host plants: unknown. Probably lichen like other congeners. In Israel the larvae were found September - October on dry stems of: *Celtis occidentalis*, *Morus alba* and *Pinus brutia* (HALPERIN & SAUTER, 1991-1992).

Cryphia amseli Boursin, 1952

Distribution pattern: Probably endemic to the arid part of Rift Valley. Known only from the type locality: Israel, Jericho, mid April 1952. Not observed since.

Bionomics: Probably univoltine, spring, steppe species. Host plants: unknown.

Cryphia labecula (Lederer, 1855)

This is a new record for the fauna of Israel.

Distribution pattern: Probably endemic to Lebanon mountain range. Only once collected in adja-

cent southern part of Turkey. In Israel: few specimens were collected on foothills of Mt Hermon (Banyas Nature Reserve).

Bionomics: Probably univoltine, summer, sylvicolous species. Flight period: so far only collected May - June. Host plants: unknown. Probably lichen like other congeners.

Cryphia raptricula ([Denis & Schiffermüller], 1775)

Distribution Pattern: Ponto-Mediterranean. From the Atlantic Ocean to Central Asia. Southward reaching the northern parts of the Sahara desert. Widespread in the Levant in mountainous areas. In Israel: all over Temperate and Semi-arid zones, in Israel the most widespread *Cryphia* species. Common on medium elevations of the Temperate zone, elsewhere - rare.

Bionomics: Univoltine, summer, ubiquitous species. Flight period: in the Temperate zone May - September. In the semi-Arid zone in May and October - November. Host plants: larvae feed on lichen on rocks, trees, occasionally also on algae.

Cryphia petrea (Guenée, 1852)

Distribution pattern: Mediterranean. From Spain through Northern Africa to Near and Middle East. In the Levant represented by *C. petrea contristans* (Lederer, 1857); recorded from Lebanon, Jordan and Israel. In Israel: only few specimens were collected on wetlands in northern part of the Rift Valley (Banyas Nature Reserve). Rare.

Bionomics: Univoltine, late summer, sylvicolous species. Flight period: in Israel the specimens were collected August. Host plants: unknown. Probably lichen like other congeners.

Cryphia maeonis (Lederer, 1865)

Distribution pattern: Ponto-Mediterranean. Near and Middle East, mainly in Steppes and semi-deserts. In the Levant only known from Jordan and Israel. In Israel: Judean Mts., only observed by BODENHEIMER (1932) and AMSEL (1933).

Bionomics: Univoltine, summer, steppe species. Flight period: June - August. Host plants: unknown. Probably lichen, like other congeners.

Cryphia paulina (Staudinger, 1892)

Distribution pattern: Endemic to Eastern Arabia, Israel, Jordan and Sinai (Egypt). In Israel: all over the Arid and Semi-arid zones. Common in the Negev, elsewhere - rare.

Bionomics: Probably univoltine, summer, deserticolous species. Flight period: April – May, less common September - October. Host plants: unknown. Probably lichen on stones like some other congeners.

Cryphia amasina (Draudt, 1931)

Distribution pattern: Ponto-Mediterranean. From Near and Middle East to Turkmenistan and Arabian Peninsula. In the Levant fragmented populations, in Lebanon, Jordan and Israel. In Israel: in Temperate zone mainly in xerophyte localities on medium elevations. Fairly common.

Bionomics: Univoltine, summer, medium elevation steppe species. Flight period: from July - October. Host plants: unknown. Probably lichens on stones like other congeners.

Victrix tabora (Staudinger, 1892)

Distribution pattern: Irano-Turanian. In Turkey restricted to South-eastern part of the Taurus Mts., the mountains of northern Iraq and western Iran (WILTSHIRE, 1957). In the Levant only in Israel. In Israel: the species was only recorded by BODENHEIMER (1932) and AMSEL (1933) from the Judean Mts.

Bionomics: Univoltine, autumnal, mountainous steppe species. Flight period: autumnal. Host plants: unknown.

Victrix marginelota (Joannis, 1888)

Distribution pattern: Probably endemic to Lebanon and Israel. Until recently only known from Lebanon (Beirut). In Israel: mountainous steppe of Mt Hermon. Fairly common in the tragacanth zone (2000 m.a.s.l.), only occasionally collected on dry slopes as low as 1000 m.

Bionomics: Univoltine, autumnal, mountainous steppe species. Flight period: August, October. Host plants: unknown.

Subfamily Hypenodinae Forbes, 1954

Schrankia taenialis (Hübner, [1809])

Distribution pattern: Mediterranean. Throughout Central Europe to Sardinia, Sicily, North Turkey and Azerbaijan. In Israel: only recorded by AMSEL (1933) from the See of Galilee.

Bionomics: Bivoltine, steppe species. Flight period: summer. Host plants: larvae feed on *Melampyrum*, *Calluna* spp., *Thymus* spp.

Subfamily Hypeninae Herrich-Schäffer, 1851

Nodaria nodosalis (Herrich-Schäffer, [1851])

Distribution pattern: Afro-Tropical. Widespread in tropical Africa, also in Yemen, Oman, Northern Africa, south France, Italy, Albania, Bulgaria, Greece and Lebanon. In the Levant recorded only from Lebanon and Israel. In Israel: only a few specimens were collected in the area of the Sea of Galilee (Jordan Park).

Bionomics: In Mediterranean Basin bivoltine, in subtropics and tropics multivoltine, wetland species. Flight period: in Israel so far only collected in April. Host plants: larvae feed on *Ipomoea* and *Lactuca*.

Polypogon plumigeralis (Hübner, [1825])

Distribution pattern: Ponto-Mediterranean. Central and Southern Europe, North Africa Northern Iran and Afghanistan. Widespread in Near East. In the Levant in Lebanon, Israel and Jordan. In Israel: in forested grassland from the Sea of Galilee area (Jordan Park) the Hula Valley to the foothills of Mt Hermon (Banyas Nature Reserve, Tel Dan Nature Reserve). In the middle of the 20th century also in wetlands of the coastal plain including Tel Aviv. Rare.

Bionomics: Bivoltine, wetland species. Flight period: in Israel so far only collected April - May. Host plants: larvae polyphagous on deciduous trees, shrubs and herbs including *Rubus* spp., *Sarothamnus* spp., *Rosa*, *Cytisus* and *Hedera helix*.

Hypena obsitalis (Hübner, [1813])

Distribution pattern: Ponto-Mediterranean. Widespread and abundant throughout the Mediterranean Basin and in Near and Middle East, towards the south reaching the Sahara. Recorded in all Levant countries. In Israel: all over the Temperate zone especially in humid and shady places. Common in Sea of Galilee area and in Hula Valley, elsewhere - rare.

Bionomics: Multivoltine, wetland species. Flight period: March - May and August - October. Host plants: larvae feed on *Parietaria* spp. and *Urtica* spp.

Hypena lividalis (Hübner, 1796)

Distribution pattern: Afro-Tropical. Possibly Circum-Tropical. Known from the West-Palaearctic region and the Neotropics. In Western, Central and Northern Europe a rare migrant. In the Mediterranean sclerophyllous forest zone widespread and often abundant. In the Levant recorded from Lebanon, Jordan and Israel. In Israel: all over the country, in Temperate zone on medium elevations common, in the semi-Arid and Arid zones concentrated in oases.

Bionomics: Multivoltine, ubiquitous species. Flight period: all year round with peak April - May. Host plants: larvae feed on *Urtica* spp. and *Parietaria* spp.

Hypena munitalis Mann, 1861

Distribution pattern: Ponto-Mediterranean. Widespread in Turkey, Balkans, and the Armenian-Caucasian region. A characteristic species of Mediterranean sclerophyllous forests. In the Levant recorded only from Lebanon and Israel. In Israel: only one specimen was collected on the upper part of Mt Hermon.

Bionomics: Bivoltine, sylvicolous species. Flight period: in Israel so far only collected early July. Host plants: larvae feed on *Stellaria* and *Vincetoxicum tmoleum*.

Zekelita antiqualis (Hübner, [1809])

Distribution pattern: Ponto-Mediterranean. Throughout Balkans, Near East and Caucasian region. In the Levant recorded from Lebanon, Israel and Jordan. In Israel: on medium elevations of Temperate zone. In Judean Mts. locally common, elsewhere - rare.

Bionomics: Probably multivoltine, grassland and forested grassland. Flight period: March - May and in October. Host plants: larvae feed on *Salvia officinalis* and other Labiatae.

Zekelita ravalis (Herrich-Schäffer, 1851)

Distribution Pattern: Ponto-Mediterranean. Near and Middle East, Kazakstan, Kirghizia, Pakistan, Afghanistan, Egypt and Bahrain. Recorded in all the Levant countries. In Israel: all over the country. Widespread and common all over the Temperate zone, in the semi-Arid and Arid zones concentrated in oases.

Bionomics: Multivoltine, ubiquitous species. Over-wintering in larval stage. Flight period: all year around. Peak April - May. Host plants: *Alhagi*.

Results

Altogether, 29 species of the four subfamilies Acronictinae (8), Bryophilinae (13), Hypenodinae (1) and Hypeninae (7) were found in Israel. The four species *Acronicta psi*, *Craniophora pontica*, *Craniophora melanisans* and *Cryphia labecula* were colleted the first time during this survey, while a few specimens of *Craniophora ligustri* were found in the Tel Aviv University collection. Four species, previously recorded in Israel, were not encountered during this survey, three of which were recorded by BODENHEIMER (1932) and AMSEL (1933): *Cryphia maeonis*, *Victrix tabora*, *Schrankia taenialis*. The fourth species, *Cryphia amseli,* is only known from Jericho from the type series described 1952 by BOURSIN.

Four species are sub-endemic to Israel, *Cryphia labecula* and *Victrix marginelota* to Israel and Lebanon, *Cryphia paulina* and *Craniophora melanisans,* to the Western Arabian Peninsula.

Some rare and local species like *Hypena munitalis* and *Acronicta psi*, found in northern Israel, generally have a wide distribution pattern (Ponto Mediterranean or Trans-Palaearctic) with Israel at its border.

The subfamily Acronictinae is represented by 8 species. *S. dentinosa* is typically found in spring on medium elevated steppes, mostly in the Central Negev and the Judean Desert. The four species of *Acronicta* occur predominantly in wetlands and river forests in northern Israel. Only *A. rumicis* is widespread all over the Temperate zone in wetlands, while *A. pasiphae* is found only in the forested canyons of Mt Hermon. All three species of the genus *Craniophora* are very rare and restricted to wetlands along the foothills of Mt Hermon (Tel Dan and Banyas Nature Reserves).

The 13 species of the Bryophilinae are mostly of Mediterranean and Ponto Mediterranean origin. Almost all (10 / 11) the species of *Cryphia* are sylvicolous in Israel. Only *Cryphia paulina* is common in the arid mountains of the Negev, where it is even found during the hottest summer months (July - August). The two species of *Victrix* (*V. tabora* and *V. marginelota*) are univoltine, autumnal, mountain-

ous steppe species, occurring in Israel only at the upper altitudes of Mt Hermon and probably at the upper altitudes of the Judean Mts.

Schrankia taenialis, the only Israeli species in the Hypenodinae, was not seen during the survey. Its present status in Israel is not known.

The subfamily Hypeninae is represented in Israel by seven species that are mainly of Afro-Tropical or Ponto-Mediterranean distribution patterns. They occurred typically in the Temperate zone on grasslands and scattered Park forests. Only *Hypena lividalis* and *Zekelita ravalis* penetrate into the desert where they usually concentrate at oases. *Hypena munitalis* was only seen on top of Mt Hermon in the Tragacanth zone.

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