Revision of the genus *Chilaspis* Mayr, 1881 (Hymenoptera: Cynipoidea: Cynipidae)

Juli PUJADE-VILLAR *[1], Palmira ROS-FARRÉ [1] & George MELIKA [2]

(1) Universitat de Barcelona, Facultat de Biologia,
Departament de Biologia Animal, Avda. Diagonal 645, E-08028 Barcelona, Spain.
(2) Systematic Parasitoid Laboratory,
Central Plant Protection and Soil Conservation Service, Kelcz-Adelffy St. 6, H-9730 Köszeg, Hungary.

Abstract – Diagnostic characters for the Western Palaearctic genus *Chilaspis* and a key for its separation from closely related genera, *Biorhiza*, *Cynips*, *Plagiotrochus*, and *Dryocosmus* are given. *Dryocosmus mayri* is transferred to the genus *Chilaspis*. *Chilaspis nitida* spp. *israeli* is considered as a valid species: *Chilaspis israeli* Sternlicht, 1968, **n. stat.** Lectotypes of *Chilaspis nitida*, *Ch. loewii*, *Ch. israeli* **n. stat.** and *Ch. mayri* **n. comb.** are designated. Redescriptions, diagnostic characters and a species key are also given. *Chilaspis tivoni* and *Ch. miriami* (Sternlicht, 1968b, *in litt.*) are **nomina nuda**. Cynipid inquilines and parasitoids reared from galls of *Chilaspis mayri* are given for the first time. *Cynips ampullaeformis* Méhes, 1953, *C. cadiformis* Méhes, 1953, *C. dissimilis* Méhes, 1953, and *Dryocosmus confusus* Méhes, 1953 are **nomina nuda**; *Biorhiza weldi* Yasumatsu and Matsuda, 1955 is a **n. syn.** of *B. nawai* (Ashmead, 1904).

Résumé – **Révision du genre *Chilaspis* Mayr, 1881 (Hymenoptera: Cynipoidea: Cynipidae)** – Les caractères diagnostiques du genre paléarctique occidental *Chilaspis* sont donnés ainsi qu'une clé permettant la séparation des genres étroitement liés, *Biorhiza*, *Cynips*, *Plagiotrochus* et *Dryocosmus*. *Dryocosmus mayri* est attribué au genre *Chilaspis*. *Chilaspis nitida* spp. *israeli* est considéré comme une espèce valide: *Chilaspis israeli* Sternlicht, 1968, **n. stat.** Les lectotypes de *Chilaspis nitida*, *Ch. israeli* **n. stat.** et *Ch. mayri* **n. comb.** sont désignés. Les redescriptions, les caractères de diagnose et une clé pour la séparation des espèces sont également donnés. *Chilaspis tivoni* et *Ch. miriami* (Sternlicht, 1968b, *in litt.*) sont des **nomina nuda**. Des Cynipides inquilines et des parasites provenant des galles de *Chilaspis mayri* sont cités pour la première fois. *Cynips ampullaeformis* Méhes, 1953, *C. cadiformis* Méhes, 1953, *C. dissimilis* Méhes, 1953, et *Dryocosmus confusus* Méhes, 1953 sont des **nomina nuda**; *Biorhiza weldi* Yasumatsu & Matsuda, 1955 est un **n. syn.** de *B. nawai* (Ashmead, 1904).

The genus *Chilaspis* was described by Mayr (1881) with designation of *Chilaspis nitida* (Giraud 1859), asexual form, as the genotype. Subsequently Wachtl (1882) described *Chilaspis löwii*, which was considered by Schlechtendal (1888) as the sexual generation of *Ch. nitida* (see Kieffer 1897-1901). Gillette (1891) described *Chilaspis ferrugineus* from North-America, which was later transferred to the *Loxaulus* Mayr, 1881 genus by WELD (1951) and recently revised by Melika & Abrahamson (2000). *Chilaspis nitida* ssp. *israeli* was described by Sternlicht (1968a), while galls of *Chilaspis tivoni* and other galls named in the legend of Plate 3 as *Ch. miriami* were described later also by Sternlicht (1968b).

Diagnostic characters that are currently used to separate adults of the genus *Chilaspis* Mayr, 1881, from those of *Dryocosmus* Giraud, 1859, are insufficient and incomplete. Also, the genus *Chilaspis* is closely related phylogenetically to *Plagiotrochus* Mayr, 1881 (Pujade-Villar *et al,* unpublished data; Liljeblad *et al.* 2002) and its sexual generation is morphologically similar to *Biorhiza* Westwood, 1840 (according to Kieffer 1897-1901). Thus, the morphological limits between these genera must be revised and corrected.

Considering all this, we decided to carry out a complete revision of the *Chilaspis* genus.

* Corresponding author. E-mail : pujade@porthos.bio.ub.es
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Material and methods

Type series and material of all species included into the *Chilaspis* genus were examined from the following institutions:

HNHM Hungarian Natural History Museum, Budapest, Hungary (L. Zombori)
MNHN Muséum National d'Histoire Naturelle, Paris, France (C. Villemant-Ait Lemkadem)

NHML The Natural History Museum (British Museum), London, England (S. Lewis)
NHMW Naturhistorisches Museum, Wien, Austria (S. Schödl)
TAU Department of Zoology, Tel-Aviv University, Tel-Aviv, Israel (O. Manheim)
TLF Tiroler Landesmuseum Ferdinandeum, Innsbruck, Austria (P. Heumer)
SPL Systematic Parasitoid Laboratory, Köszeg, Hungary
UB University of Barcelona, Spain, Collection of Dr. J. Pujade-Villar

We follow the current terminology of morphological structures (Gibson 1985; Ronquist & Nordlander 1989) and surface sculpturing is given after Harris (1978).

Measurements and abbreviations used here include:

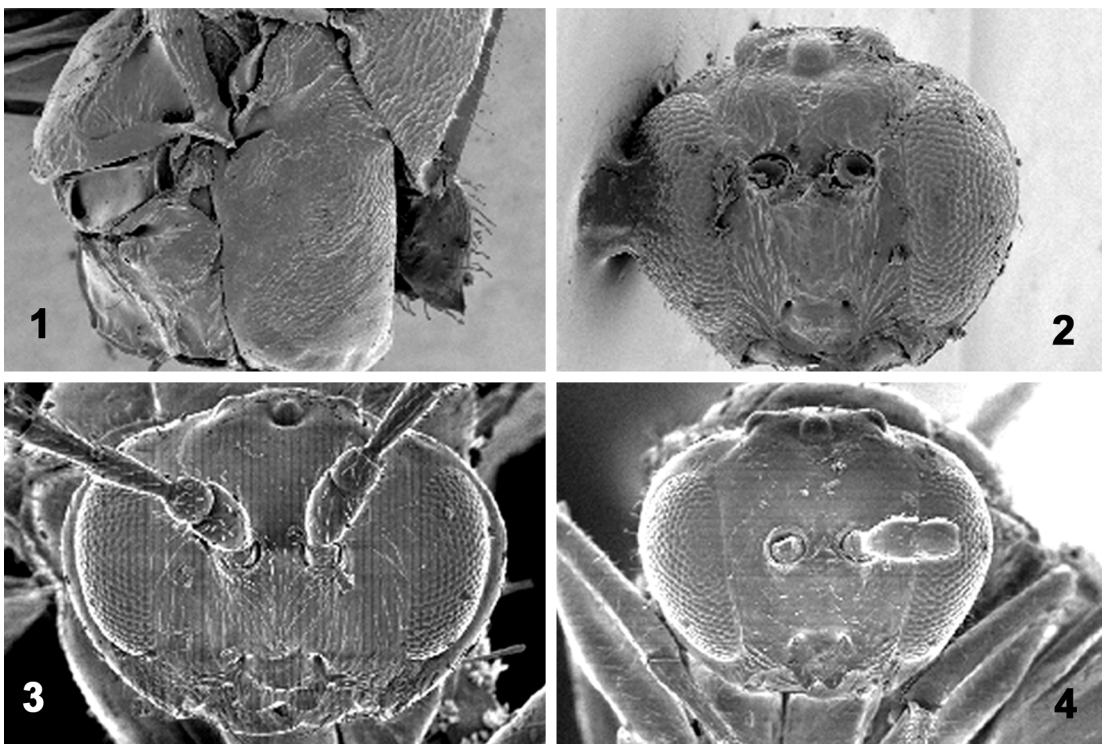
F1-F12 1st and subsequent flagellomeres;
POD (post-ocellar distance) is the distance between the inner margins of the posterior ocelli;
OOD (ocellar-ocular distance) is the distance from the outer edge of a posterior ocellus to the inner margin of the compound eye;
COD is the distance between lateral and frontal (central) ocellus;
T1-T5 length of tarsal segments.

The SEM pictures of *Chilaspis* were taken by one of the co-authors, Dr. Palmira Ros-Farré, at a low voltage, without coating.

Genus ***CHILASPIS*** Mayr

The genus *Chilaspis* was monospecific until now; it had only one European species (*Ch. nitida*) before the present work. In this study we transfer *Dryocosmus mayri* to *Chilaspis* and we consider that the subespecies *Ch. nitida israeli* is a valid species and that it is different from *Ch. nitida*. *Chilaspis* is a rarely cited genus distributed in Central Europe, the hosts plants of *Ch. mayri* and *Ch. nitida* are *Quercus cerris* and *Q. macrolepis*. One species, *Ch. israeli*, has been collected on *Q. ithaburensis* in Israel and on *Q. persica* in Iran.

The genus is characterised by 15-16-segmented antennae in males, 14-15-segmented in sexual females and 13-14 in asexual females; malar sulcus absent, malar space with striae at basis of clypeus; head, mesoscutum and mesopleuron smooth and shiny; notauli complete, reaching pronotum; scutellum delimited by a distinct



Figures 1-4
1, lateral mesosoma of the sexual female of *Plagiotrochus quercusilicis*. – 2-4, head in frontal view. – 2, *Dryocosmus nervosus* (male). – 3, *Chilaspis nitida* (asexual female). – 4, *Chilaspis israeli* stat. nov. (sexual female).

Table 1 – Distribution of some Cynipid genera and species richness.

Genus	Nearctic (America North of Mexico)	Western Palaearctic	Eastern Palaearctic
Chilaspis	–	3	–
Dryocosmus	16	2	5
Plagiotrochus	–	14	1
Biorhiza	–	1	1
Cynips	–	11	1

sharp carina, smooth or with a very weak, delicate sculpture; scutellar foveae distinct, with smooth, shiny or very delicate sculpturing bottom, separated by a more or less distinct carina; propodeum with two distinct longitudinal bent carinae that delimit a smooth or delicately sculptured central area; metasoma strongly compressed laterally; ventral spine of hypopygium short, with sparse white setae reaching behind the apex of the spine.

Genera *Cynips* Linnaeus, 1758 and *Biorhiza* resemble *Chilaspis* in having smooth mesoscutum and mesopleuron, but they present malar sulcus, and the malar space lacks striae at the basis of the clypeus. *Chilaspis* also resembles two other genera, *Plagiotrochus* and *Dryocosmus*, however, differs from the first by smooth scutum and mesopleuron and differs from *Dryocosmus* by the length of the facial striae and some other characters given below in the key. These four morphologically closely related genera, *Biorhiza*, *Chilaspis*, *Dryocosmus* and *Plagiotrochus*, can be separated according to the following key:

1. Striae irradiating from clypeus to compound eye present (fig. 2-4), sometimes indistinct because of short malar space; malar sulcus absent. Propodeal lateral carinae strongly and uniformly bent, sometimes with median carina (fig. 15-19). Ventral spine of hypopygium slender, variable in length, with sparse setae 2

– Striae absent, sometimes malar space coriaceous; malar sulcus present or absent. Propodeal lateral carinae different. Ventral spine of hypopygium broad, very short, with apical tuft of setae . . . . . ***Biorhiza*** Westwood and ***Cynips*** Linnaeus

2. Scutum more or less conspicuously sculptured, transversely rugose in some asexual forms; mesopleuron distinctly sculptured, coriaceous, alutaceous or weakly reticulated, forming a band (fig. 1). Prominent part of ventral spine of hypopygium 2.0-4.0 times as long as broad . . . . . ***Plagiotrochus*** Mayr

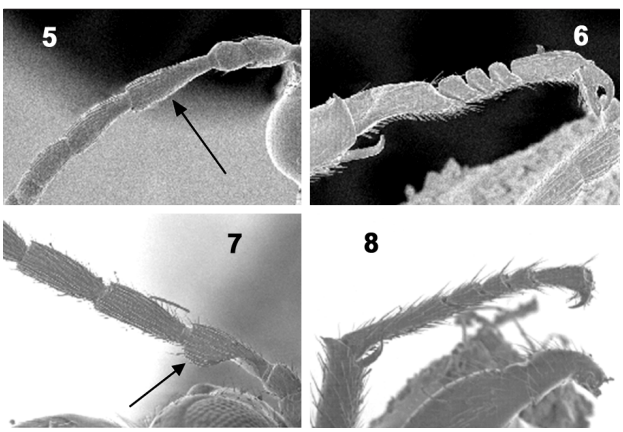
– Scutum smooth or very delicately alutaceous; mesopleuron smooth or very delicately sculptured, but not forming such a band. Prominent part of ventral spine of hypopygium less than 2.0 times as long as broad, usually as long as broad 3

3. Striae irradiating from clypeus to half of eye height, some of them reaching antennal foramen (fig. 2); vertex and occiput sculptured, sometimes strongly coriaceous or rugose. Scutellum (fig. 9) uniformly sculptured (wrinkled); scutellar foveae separated or not by weak carina. Pronotum, especially in females, with long and distinct striae in lateral posterior part . . . . . ***Dryocosmus*** Giraud

– Striae indistinct or weak, irradiating from clypeus in malar space and in lower face only (fig. 3-4); vertex and occiput smooth or very weakly coriaceous. Scutellum (fig. 10-14) usually uniformly smooth or weakly sculptured in central part and sometimes with some wrinkles prolonging marginal carina; scutellar foveae separated by distinct carina. Pronotum smooth in females, some times with indistinct striae in males . . . . ***Chilaspis*** Mayr

Currently, the genus *Biorhiza* includes two species: *B. pallida* (Olivier, 1791) from the Western-Palaearctic and *B. nawai* (Ashmead, 1904) (= *weldi* Yasumatsu & Matsuda, 1955, **n. syn.**) known from Japan and Far East of Russia (Table 1). Kovalev (1965) mentioned that according to Dr. K. Yasumatsu (in personal communication), *B. nawai* and *B. weldi* are supposedly synonyms. Two other species, *Biorhiza australiensis* Kieffer, 1906 described from Australia and *B. cecconiana* (Kieffer, 1901), from Italy, were dubiously included in this genus. Weidner (1961) cited *B. pallida* from Himalayas but the species he found probably belongs to *B. nawai* or it might be a new undescribed species.

Twelve valid species were described in the genus *Cynips*, seven of which are known from Europe, one of which, *Cynips staminobia* Kovalev, 1965 is known from Russian Far East (Kovalev 1965), and four of which are known from the Transcaucases, Azerbaijan (Belizin,



Figures 5-8
5-6, *Chilaspis israeli* stat. nov. (sexual form). – 5, male antenna (arrow shows the first flagelomere). – 6, tarsal segments of the first leg (female). – 7-8, *Chilaspis nitida* (sexual form). – 7, male antenna (arrow shows the first flagelomere). – 8, tarsal segments of the first leg (female).

1961; Maisuradze, 1961, 1962) (Table 1). We have not considered the dubious species described from Europe (see Dalla-Torre & Kieffer 1910), nor the species described by Méhes (1953) on the basis of galls, one of which was synonymized recently (Melika *et al*. 2000: 280). Other *Cynips* species: *C. ampullaeformis*, *C. cadiformis* and *C. dissimilis* described by Méhes (1953) are **nomina nuda** (according to the International Code of Zoological Nomenclature, Art. 1b and Art. 72c, species described on the basis of galls after 1930 are not valid). Within *Cynips*, Kinsey (1930) described three Nearctic subgenera, *Antron*, *Atrusca* and *Besbicus*, which were later, however, arisen to generic level by Weld (1952). Status of these genera must be revised (Pujade-Villar *et al.* 2001).

The genus *Plagiotrochus* includes 15 species (Bellido *et al.* 2000; Pujade-Villar & Ros-Farré 1998; Pujade-Villar *et al.* 2000; Melika *et al.* 2001) (Table 1). This number of species will probably decrease when the life cycles of these species are resolved. Except one Himalayan species, *P. semicarpifoliae* (Cameron, 1902) which has been introduced to North and South America (Pujade-Villar 1998; Pujade-Villar & Díaz 2001), all others have a Western Palaearctic distribution.

The genus *Dryocosmus* has a Holarctic distribution with 16 known Nearctic (Burks 1979), 2 Western Palaearctic and 6 Eastern Palaearctic species (Table 1). This genus needs a revision, especially the Nearctic and Eastern Palaearctic species (Pujade-Villar *et al* 2001); more precise and strict diagnostic generic limits must be established. Also, several Eastern Palaearctic species are known from either asexual or sexual generation only and probably some of them might be paired in alternate generations (Pujade-Villar 1985). Life cycles of these species must be completed experimentally in order to know the exact number of species. *D. confusus* Méhes (1953) is a **nomen nudum** (according to the International Code of Zoological Nomenclature, Art. 1b and Art. 72c, species described on the basis of galls after 1930 are not valid). On the basis of the gall description given by Méhes (1953) it might be synonym of the sexual form of *Plagiotrochus razeti* Barbotin, 1985, because when these galls are attacked by *Synesgus crassicornis* (Curtis, 1838) their morphology is similar to the gall figured as *Dryocosmus confusus*.

Below, we are giving a key to the *Chilaspis* species:

Key to species of *Chilaspis*

1. Gena not broadened behind eye (fig. 4); sexual form 2
– Gena strongly broadened behind eye (fig. 3); asexual form 4

2. Segments of tarsi, at least foretarsi, very short (fig. 6); F1 clearly longer than F2; antennae 15-segmented in females and 16-segmented in males; F1 in males straight, not modified (fig. 5) . . . . . ***Ch. israeli*** Sternlicht **n. stat.**
– Segments of tarsi of normal length (fig. 8); F1 nearly as long as F2; antennae 14-15-segmented in females and 15-segmented in males; F1 in males curved, excavated and distally swollen (fig. 7) 3

3. Scutellum normally sculptured; ocelli large, OOD and COD in males shorter than diameter of ocellus (fig. 20), in females COD equal to diameter of ocellus; antennae 15-segmented, however F12 and F13 not always distinctly separated in females; F2 curved in males . . . . . ***Ch. mayri*** (Muellner) **n. comb.**
– Scutellum entirely or with central area smooth; ocelli smaller, OOC and COD larger; antennae always 14-segmented; F2 in male almost straight . . . . . ***Ch. nitida*** (Giraud) (= *loewii* Wachtl)

4. Antennae 13-segmented; F11 2.0 times as long as F10 . . . . . ***Ch. nitida*** (Giraud)
– Antennae 14-segmented; F11 equal F10 . . . . . ***Ch. israeli*** Sternlicht **n. stat.**

REVIEW OF THE SPECIES

Chilaspis nitida (Giraud)

Andricus nitidus Giraud, 1859. *Verh. Ges. Wien*, 9: 361 [♂, ⊕]
Cynips nitida (Giraud) Schenck, 1962/63. *Jahrb. Ver. Naturk. Nassau* XVII/XVIII: 177, 185
Cynips (*Andricus*) *nitidus* (Giraud) Kaltenbach, 1967. *Verh. preuss. Rheinl.*, XXIV: 69
Chilaspis nitida (Giraud) Mayr, 1881. *Jahresb. W. Komm.-Ober.*, 20: 32.
Chilaspis löwii Wachtl, 1882. *Wien. Ent. Zeit.*, 1: 289, 291-293 [♂, ♀, ⊕]
Chilaspis loevii Wachtl. Kieffer 1897-1901: 600
Chilaspis nitida (= *löwi* Wachtl) (Giraud) Dalla Torre & Kieffer, 1910. *Das Tierreich*: 407.

Material examined. – **Type material**: – ***Andricus nitidus*** Giraud (asexual form). **Lectotype** ♂ labelled "1 août" (Giraud's handwriting), "Museum Paris, Ch-1, Col. Giraud 1877" (white labels), "Lectotype" (red label) designated by Pujade-Villar-1982, "*Chilaspis nitida* (Giraud)" (white label). "*Andricus nitidus* Giraud", and "Ch-1". **Paralectotypes**: 2 ♂♂ with similar data and each with additional labels "Ch-2" and "Ch-3". The last with Giraud's handwriting label "chloridoma" (according to Houard (1911) it is Giraud's provisional name for this species). Types are deposited at MNHN. – ***Chilaspis loewii*** Wachtl (sexual form). **Lectotype** ♀ labelled "*Chilaspis Loewii*, 24.4.882, Wiens" (black handwriting label), "140" (pink label), "Lectotype" (red label), *Chilaspis nitida* (=*lewii*) female Pujade-Villar det 2000 (black label). **Paralectotypes**: 31 ♂♂ and 17 ♀♀ with same data, with additional label "paralectotype". Types are deposited at TLF, except 1 ♂ and 1 ♀ paralectotypes in UB.

Additional material. – Asexual form. **NHMW**: 2 ☿☿ collected in Vienna by Mayr; SPL: about 100 ☿☿ "Hungary, Györ-Moson-Sopron Co., Löverek, *Q. cerris*. 995. Thuroczy K.", 4 ☿☿ on 1 pin "Schönbrunn. 9.7.85", "Kolary" (blue label), "*Nitida* det. Kolary"; 1 ☿ "Nagyharsányi hg. 1965.VIII.25", "leg. Moczár L". – Sexual form. **NHMW**: 19 ♂♂ and 19 ♀♀ collected in Vienna identified by Mayr, Loew, Handlirsch and Kolary; SPL: 1 ♀ "Hungary, Tatabanya, ex *Q. cerris*. 12.05.997 G. Stone"; 1 ♂ and 1 ♀ "Wien Mai", "Kolary" (blue label), ""Loewii det. Kolary"; 2 ♂♂ and 2 ♀♀ on 2 pins "Wien Austr. inf.", "*Loewii.* Det. Löw" (gift from Dr. S. Schödl, MHNH (Vienna). **HNHM**: 2 ♀♀ "Bakony, Mogyoro kert. 1957.V.22. leg. J. Papp"; 1 ♀ "Vácz Szokolya. Biro 1926.IX.2"; 1 ♀ "Matrafüred. Leg. Gebhardt"; 1 ♀ "Matrahaza. 1957.VI.1.", "leg. Gebhardt".

Redescription – **Asexual form** (figs. 3, 11, 15). 1.4-2.6mm, usually 2.4-2.6mm (see comments below). Body and legs yellow to amber, brown to black-brown around ocelli; antennae brown distally; wings hyaline, veins brown.

Head (fig. 3). Nearly 1.6 times as broad as high in frontal view, 2.1-3.3 times as broad as long in dorsal view; smooth except few short irradiating striae from clypeus (indistinct in the stereomicroscope due to the light colour), with sparse setae under antennal foramina. Gena broadened behind eye. Clypeus apically sinuous, projected over mandibles. Malar space short, 0.3-0.35 times as long as height of compound eye. Face with weak median carina going from clypeus to basis of antennal foramen. Transfacial line 1.4-1.7 times as long as height of eye; distance between antennal foramina shorter than their diameter, which equals half the distance between antennal foramina and inner margin of eye. Ocelli not or slightly elevated over dorsal margin of head; POD:OOD:COD is 6:6:3, while diameter of lateral ocellus is 2 in same units. Antenna filiform, 13-segmented, with long and sparse hairs; pedicellum as long as broad; F1 equals F2; F1 to F4 broadened distally.

Mesosoma. Smooth, scutellum sometimes weakly sculptured laterally; without pubescence, except some scattered white setae in superior part of pronotum, mesopleural triangle, lateral part of notauli, scutellum dorso-laterally and laterally, and propodeum outside delimited central area. Pronotum with short basal carinae. Notauli complete; median mesoscutal sulcus absent; anterior parallel and parapsidal lines present but very indistinct because of light colour; parascutal carina long, reaching notauli. Scutellum rounded, delimited around by distinct carina; scutellar foveae oval-rectangular, shallow, smooth and shiny, separated by weak median carina, without carinae posteriorly (fig. 11). Mesopleural triangle defined by incomplete carina (indistinct because of light colour). Postero-dorsal margin of axilla complete; subaxillar bar narrow, posteriorly expanded. Metanotal foveae smooth, without pubescence, ventral bar of foveae irregularly sculptured. Metascutellum rectangular, irregularly sculptured, incised basally. Lateral carinae of propodeum complete, curved or slightly bent basally, delimited central area with some sparse and weak carinae, median carina more or less impressed (fig. 4a). Legs with all tarsal segments longer than broad, T1 longest, tarsal claws simple, without basal lobe. Forewings pubescent, ciliated; radial cell open, 4.0 times as long as broad; Rs prolonged at margin; 2r curved; areolet distinct, triangular and large; Rs + M reaching to 2/3 of basalis length.

Metasoma. Strongly compressed laterally, larger than thorax; ventral spine of hypopygium short, longer than broad, with long and scattered setae reaching beyond apex but never forming apical tuft.

Variability. In Giraud's type specimens the head is square in dorsal view while in Mayr's specimens it is rather rectangular.

Gall. Globular or slightly egg-shaped, 4-6 mm in diameter; gall surface velvety; pale green or greyish green; usually gregarious. Galls are attached to the lateral veins of underside of leaves of *Quercus cerris* by a short peduncle, and may be fused together. Monolocular, with a thick wall (see figures e.g. in Ambrus, 1979: 68; Csóka, 1997:108). The mature galls fall from the leaves, and become brown in colour.

Comments. There are three small galls (2 mm of diameter) in Giraud's collection, one of which has an emerging hole, probably belonging to the type specimen labelled as "Ch-2" which is an aberrant wasp compared to other asexual specimens; its length is just 1.4 mm.

Sexual form (figs. 7, 8, 12, 16). **Female**. 2.3-2.8 mm. Head and mesosoma yellow-brown to brown. Antennae brown, F3-F4 lighter. Legs yellow to dark yellow, lighter than thorax. Metasoma dark brown, lighter superiorly and near petiole. Wings hyaline, veins yellow-brown to brown.

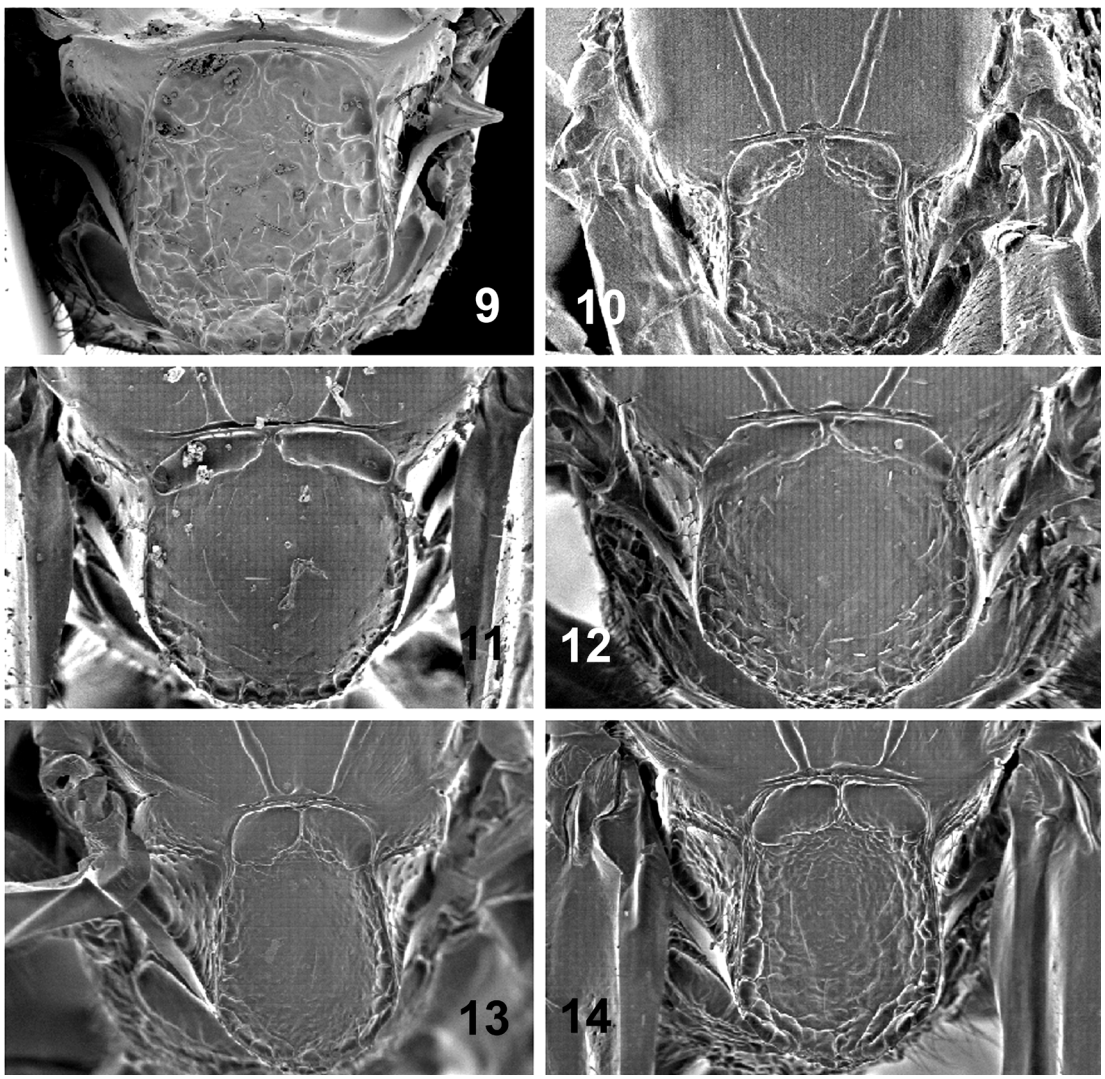
Head. Nearly 1.3 times as broad as high in frontal view; with scarce pubescence behind ocelli and on genae, nearly 2.0 times as broad as long in dorsal view; smooth, with few short irradiating striae from both sides of clypeus. Clypeus sinuous, projecting over mandibles. Face with scarce and short setae, with weak median carina from clypeus to antennal foramen; front glabrous. Gena not broadened behind eye. Malar space 0.21-0.23 times as long as height of eye. Transfacial line 1.2 times as long as height of eye; distance between antennal foramina equal to their diameter, which is less than distance between antennal foramina and internal margin of eye. Ocelli slightly elevated over dorsal margin of head; POD:OOD:COD is 6:6:3, while diameter of lateral ocellus is 2 in the same units. Antenna filiform, 14-segmented, with long and sparse hairs; pedicellum shorter than broad; F1 equal F2 in length and shape, broadened distally.

Mesosoma. Smooth, except few short carinae on lateral part of pronotum, anterior delicate carinae on mesopleuron, and delicate sculpture around margins of scutellum (central part smooth); without pubescence, except some scattered white setae on superior part of pronotum, lateral margin of scutum, lateral part of notauli, mesopleural triangle, scutellum dorso-laterally and laterally, and propodeum outside delimited central area. Notauli complete; median mesoscutal sulcus inconspicuous or only indicated; anterior parallel and parapsidal lines weak and very indistinct because of light colour; parascutal carina long, reaching notauli. Scutellum rounded to subtrapezoid, marginated, delimited by distinct carina; scutellar foveae subrectangular, shallow, shiny, smooth or very delicately sculptured, without carinae posteriorly, separated by weak median carina

or short superior punctiform space (fig. 12). Mesopleural triangle not defined by complete carina. Postero-dorsal margin of axilla complete; subaxillar bar narrow, posteriorly expanded. Metanotal foveae with some weak carinae, without pubescence, ventral bar of foveae irregularly sculptured. Metascutellum rectangular, slightly curved inferiorly, irregularly sculptured. Lateral carinae of propodeum complete, angled medially, delimited rugose central area with more or less complete median carina (fig. 16). Legs with all tarsal segments longer than broad, T1 longest one, tarsal claws simple, without basal lobe (fig. 8). Forewings pubescent, ciliated, weakly clouded around veins; radial cell open, 3.4 to 3.7 times as long as broad; Rs prolonged at margin; 2r slightly angled; areolet distinct, triangular and large; Rs + M reach to 2/3 of basalis length.

Metasoma. Strongly compressed laterally, as long as thorax, slightly higher than thorax; ventral spine of hypopygium short, as long as broad, with long and scattered setae reaching beyond apex but never forming apical tuft.

Male. 2-2.6 mm. *Head* similar to female, but 1.2-1.3 times as broad as high in front view; transfacial line shorter, equal to eye height; malar space 0,12-0,13 times as long as height of eye; ocelli strongly elevated over dorsal margin of head; POD:OOD:COD is 7:5:3. Antenna 15-segmented; pedicellum shorter than broad; F1 excavated and clearly expanded in distal half; internal side of F2 straight, very slightly curved laterally and thickened in distal part, not excavated (fig. 7); F13 shorter than F12. Forewings with 2r vein curved. *Mesosoma* similar to female, with scutellar foveae separated by weak median carina



Figures 9-14
Scutellum. – 9, *Dryocosmus nervosus* (male). – 10, *Chilaspis israeli* stat. nov. (sexual female). – 11, *Chilaspis nitida* (asexual female). – 12, *Chilaspis nitida* (sexual female). – 13-14, *Chilaspis mayri* n. comb. (sexual female)

and less impressed propodeal carinae. *Metasoma* less compressed; petiole short.

Variability. The scutellum varies from completely smooth in some specimens to sculptured along the margins and smooth in central area only in others; the number and length of carinae inside the central area of the propodeum are not constant.

Gall. Cottonwool-like galls on the catkin inflorescence of *Q. cerris*. Sometimes petioles and leaf primordia are involved. Gall an irregularly shaped mass, 10-30 mm in diameter, cherry- to walnut-sized, covered in a soft pile of long hairs, divided in colour into carmine red and pale violet areas (see figures e.g. in Ambrus, 1979: 92; Csóka, 1997:108). Coat similar to wool, with a silky lustre. At the centre of this structure there are 2-3 extremely hard monolocular inner galls. Some of the galls fall with the catkins.

Taxonomic comments – According to the International Code of Zoological Nomenclature (Art. 32.5.2.1) the specific name originally written "*lövii*" needs to be corrected to "*loewii*".

Biology – The alternation of generations between *Chilaspis loewii* (sexual form) and *Chilaspis nitida* (asexual form) has never been demonstrated experimentally. Nevertheless, Schlechtendal (1888) and Kieffer (1897-1901) affirmed that these two forms were related. Later, many authors assumed this connection. After Sternlicht (1968a) there is some strong evidence against this relationship (see biology of *Ch. israeli* below).

The sexual gall matures at the end of May, adults emerging in June. The asexual galls appear at the end of the summer, they mature through autumn and fall in October. Asexual wasps emerge in the following spring or remain in diapause for a further year. These species (both generations) trophically associate with *Q. cerris* only. Ionescu (1973) noted *Q. petraea* and *Q. robur* as the host plants, however these records are very doubtful and must be confirmed.

Distribution – It is a central and southern European species. It is known from Austria (Giraud 1859; Wachtl 1882; and in this paper), Germany (Dalla Torre & Kieffer 1910), Bulgaria (Vassileva-Samnalieva 1974), Hungary (Ambrus 1974; Melika & Bechtold 1999; Melika *et al*. 2000) and Romania (Ionescu 1973).

Chilaspis israeli (Sternlicht) **stat. nov.**

Chilaspis nitida ssp. *israeli* Sternlicht, 1968. Sexual form in *Marcellia*, 35 (1-2): 49, 50, 51. [♂, ♀, ⊕]

Chilaspis nitida ssp. *israeli* Sternlicht, 1968. Asexual form in *Marcellia*, 35 (1-2): 48, 49, 50. [☿, ⊕]

Material examined – Type material. Sexual form: **Lectotype** ♂ labelled "Manara U. Galilee, March-1957, coll. M. Sternlicht" (white label), "*Chilaspis nitida* ssp *israeli*, det A. Sternlicht" (blue label), "Lectotype" (red label) and "*Chilaspis israeli* male Pujade-Villar det. 2000", deposited in NHML. **Paralectotypes**: 10 ♂♂ with same labels as holotype (deposited in NHML); 2 ♀♀ labelled "Dorr 15.04.1957, *Q. ithaburensis*, nº B1309 s. g., *Chilaspis nitida israeli* n.ssp, Sternlicht det" (deposited in TAU). Galls are lost.

Additional material. Sexual form. **NHMW**: 7 ♂♂ and 4 ♀♀ "Berg Tabor Nazaret ...", "coll Mayr" (UB: 1 ♂ and 1 ♀); TAU: 1 ♂ "nº 3420, Tiv'on 11.03.1958, *Q. ithaburensis* Sternlicht col.", 4 ♂ "nº 124, 149-A, 151-A and 152-A", "Tiv'on 04.1954, *Q. ithaburensis* Sternlicht col.". **SPL**: 3 ♀♀ (nº 124, 149-A, 151-A and 152-A) labelled "Israel, Tiv'on, Q. it. 11.III.1958. col. M. Sternlicht" (gift from Ms. Ora Manheim, TAU); 4 ♂♂ and 4 ♀♀ labelled "IRAN, Lorestan, Zagros Mnt. 1993-94. leg. E. Sadeghi", "ex *Q. persica*, catkin gall (Code 10), em. 06.993", "*Chilaspis israeli* Sternlicht, det. G. Melika 2000" (gift from Dr. Ebrahim S. Sadeghi, Inst. of Forests and Rangelands, Tehran, Iran). Asexual form: adults lost (O. Manheim, pers. com., TAU). Only 5 galls labelled "nº Y-394" in the TAU collection and 1 gall without labels in NHML are preserved.

Redescription – **Sexual form** (figs. 4-6, 10, 17, 18). **Female**. 1.6- 2.6 mm. Head, mesosoma and legs yellow-amber. Antennae brown, first 5 segments lighter. Metasoma brown to dark brown; yellow-amber in males. Wings hyaline, veins yellow-brown to brown.

Head (fig. 4). Nearly 1.3 times as broad as high in frontal view, 2.3 times as broad as long in dorsal view; with scarce pubescence behind ocelli and on genae; smooth, with few short irradiating striae from both sides of clypeus. Clypeus sinuous, projecting over mandibles. Face, with scarce and short setae, without median carina; front glabrous. Gena not broadened behind eye. Malar sulcus absent, malar space short, 0.25 times as long as height of eye. Transfacial line as long as height of eye; distance between antennal foramina smaller than their diameter, which is longer than distance between antennal foramina and internal margin of eye. Ocelli slightly elevated over dorsal margin of head; POD:OOD:COD is 7:5:3, while lateral diameter of lateral ocellus is 2 in the same units. Antenna filiform, 15-segmented, with short and sparse hairs; pedicellum longer than broad; F1 longer than F2 but similarly shaped; broadened distally.

Mesosoma. Smooth, except few short carinae on lateral part of pronotum and rugose sculpture of scutellum laterally; without pubescence, except some scattered white setae on superior part of pronotum, lateral margin of scutum, laterally prolonged notauli, mesopleural triangle, scutellum dorso-laterally and laterally, and propodeum outside delimited central area. Notauli complete; median mesoscutal sulcus usually absent or in the form of a very short triangle, anterior parallel and parapsidal lines absent; parascutal carina long, reaching notauli. Scutellum (fig. 10) rectangular to slightly trapezoidal, marginated, delimited around by distinct carina; scutellar foveae smooth, deep,

large, indistinctly defined posteriorly, separated by a weak carina. Mesopleural triangle small, not defined. Postero-dorsal margin of axilla complete; subaxillar bar narrow, posteriorly expanded. Metanotal foveae with some weak carinae, not pubescent; ventral bar of foveae irregularly sculptured. Metascutellum rectangular, irregularly sculptured. Lateral carinae of propodeum complete, angled medially, delimited central carinated area with median and irregular carinae (fig. 17). Legs with all tarsal segments very short, especially in fore- and midtarsi (fig. 6); T2 to T4 shorter than broad; T1 equal or slightly shorter than T5; tarsal claws simple, without basal lobe. Forewings pubescent, ciliated, weakly clouded around veins; radial cell 3.6-3.9 times as long as broad; Rs slightly prolonged at margin; 2r almost straight, only slightly curved; areolet distinct, long, triangular and large; Rs + M present reach to 2/3 of basalis length.

Mesosoma. Strongly compressed laterally; equal to thorax in length and slightly higher; ventral spine of hypopygium short, as long as broad, with long and scattered setae reaching beyond apex but never forming apical tuft.

Male. 2.1-2.4 mm. *Head* similar to female except head only 1.2 times as broad as high in front view; transfacial line shorter, 0.8-0.9 times as long as height of eye; malar space also slightly shorter, 0.11-0.12 times as long as height of eye; POD:OOD:COD is 8:4:3, while diameter of lateral ocellus is 3. Antenna 16-segmented; pedicellum longer than broad; F1 straight, not excavated, curved and expanded distally; F2 slightly curved and thickened distally (fig. 5); F12 equal to F13 and longer than F14. *Mesosoma*: similar to females, with weaker carinae in delimited central area of propodeum (fig. 18); radial cell in males 3.5-3.7 times as long as broad. Metasoma with very short, inconspicuous petiole.

Variability. The sculpture of scutellum, the length and depth of the median mesoscutal line and the number, shape and impression of carinae in the delimited central area of the propodeum may vary, both in females and males. Some specimens have absolutely smooth scutellum, while in others the scutellum is strongly rugose laterally; the median mesoscutal line (sulcus) is much more deeply impressed in larger specimens.

Gall. According to the description given by Sternlicht (1968a), galls are similar to those of *Ch. nitida*, but on *Quercus ithaburensis* in Israel and *Q. persica* in Iran. The galls are unfortunately lost (O. Manheim, *pers. comm*.).

Asexual form. In the original description (Sternlicht 1968a: 48-50) some drawings and a short diagnosis are given. Unfortunately, adults from the original Sternlicht's series are lost (O. Manheim, *pers. comm*.). Diagnostic characters given by Sternlicht (1968a) are insufficient and incomplete. We do not posses newly collected material of the asexual generation of this species and, thus, cannot give a detailed redescription of the asexual females herein. Only some asexual galls from Sternlicht's original series are preserved: one gall is deposited in the NHML and some others in the TAU Museum. The galls are similar to those of *Chilaspis nitida*, asexual form.

So, according to Sternlicht (1968a), we can differentiate the asexual forms of *Chilaspis nitida* and *Ch. israeli* **n. stat.** only by the number of antennal segments and the relative length of the last flagellomeres. We don't know, whether the length of tarsal segments is similar to those of the sexual form redescribed above.

Taxonomic comments – Some male specimens of the type series were sent to the British Museum by Sternlicht (designated as lectotype and paralectotypes by J. Pujade-Villar 2000); the rest of the type series, which were supposedly deposited at the TAU Museum are lost (O. Manheim, *pers. com*.), with the exception of 2 females that were recently found (nº B1309). Some other male and female specimens of this species have been found in Mayr's collection (NHMW), collected in Nazaret and Tiv'on by Sternlicht. Some specimens can be found in the SPL collection.

This sexual form was named by Sternlicht (1968a) as *Chilaspis nitida* ssp. *israeli* but the morphological differences are so strong that we consider it as a valid species. It is closely related to the sexual generation of *Ch. nitida* (= *Ch. loewii*). Both species induce galls of the same shape, which occurs in other cynipid species also, e.g. the *Andricus kollari* group. The adults of the two species differ in the shape and size of the tarsal segments, in the colouring, in the number of antennomeres, in the shape and size of F1 in males, and some other characters (see also the key to species above).

Biology – The life cycle of *Chilaspis israeli* was demonstrated by Sternlicht (1968a: 48). Galls of the asexual form appear in May but they are not conspicuous until September-October, when the gall starts to grow; the adults emerge in November and December. The galls of the sexual form appear between February and March, they develop quickly, and adults emerge in March and April. Both generations associate with *Q. ithaburensis*, and they were recently found in Iran on *Q. persica*.

Distribution – Israel (Sternlicht 1968a, 1968b), Iran (Lorestan, new record).

Chilaspis mayri (Müllner, 1901), **comb. nov.**

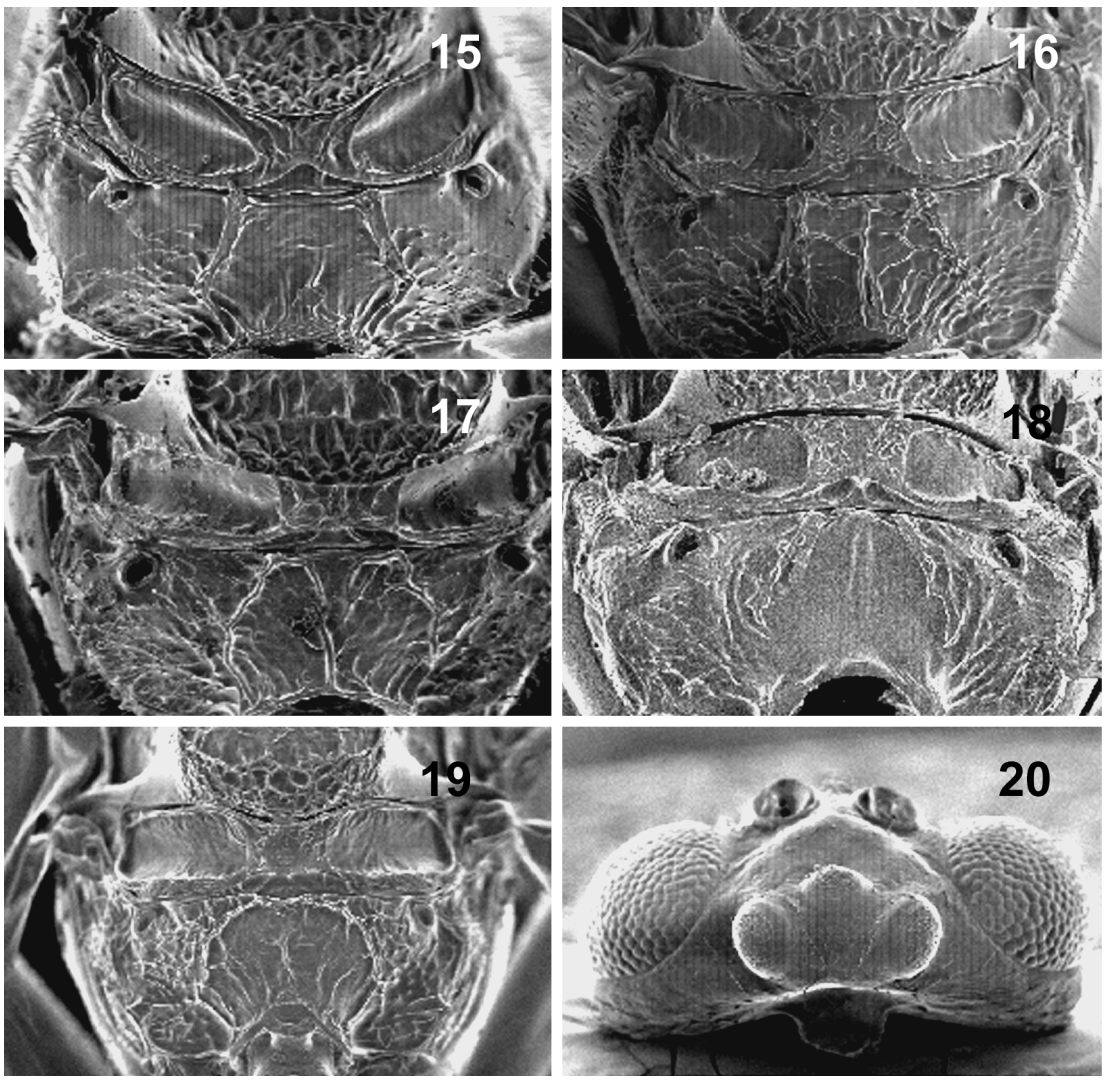
Dryocosmus mayri Müllner, 1901. *Verh. Ges. Wien*. 51 (3): 525-527 [♂, ♀, ⊕]
Chilaspis tivoni Sternlicht, 1968. *Israel Journ. Entomol.* 3 (2): 28 & 43. [⊕] **nomen nudum**
Chilaspis miriami Sternlicht, 1968. *Israel Journ. Entomol*. 3 (2): 50 [typographic error] **nomen nudum**

Material examined – **Type material**. Sexual form: **Lectotype** ♀ labelled "Coll. G. Mayr" (black label), "*Dryoc. Mayri* det M. F. Müllner" (black label), "Lectotype Pujade-Villar-2000" (red label) and "*Chilaspis mayri* det. Pujade-Villar 2000" (black label). **Paralectotype**: 9 ♂♂ and 9 ♀♀ (3 ♂♂ and 6 ♂♂ are well preserved, while 6 ♂♂ and 3 ♀♀ are very defective) with the same labels as the lectotype. Types are deposited in the NHMW.

Additional material. **NHMW**: 15 ♂♂ and 18 ♀♀ labelled "Collect. Mayr", "*mayri* Müll. det Mayr"; 1 ♂

and 1 ♀ on one pin (one female is *Neuroterus*) labelled "Collect. G. Mayr", "*Dryoc*. Mayri det. M. F.Müllner". **UB**: 4 ♂♂ and 4 ♀♀ with the same labels as in Vienna; 4 ♂♂ & 8 ♀♀ "Corfú Island (Greece) ex *Q. macrolepis* (E. Kwast leg.), 6 to 8.05.1998"; 1 ♀ "Zikhron Ya'aqov (Israel) on *Q. ithaburensis*, 21.iii.1985", "*Dryocosmus mayri-tivoni*, M. Sternlicht det."; 1 ♂ and 1 ♀ with handwriten labels "*Dryocosmus mayri*, N.H.M. Wien". **TAU**: 6 ♂♂ & 7 ♀♀ with handwriten labels "*Dryocosmus mayri*, N.H.M. Wien"; 1 ♂ "Tiv'on (Israel) on *Q. ithaburensis*, 14.ii.1955", "nº 567BC13 Sternlicht col"; 1 ♀ "Tiv'on (Israel) on *Q. ithaburensis*, 28.ii.1955", "nº 563BC13 Sternlicht col., *Trigonaspis tivoni* s. g., ?genus nr *Chilaspis* R. D. Eady det 1955". **NHML**: 1 ♂ with handwriting labels "HaSallelim 25285. *Q. ithaburensis*, sticky bud gall coll. D.Gerling", white label "*Dryocosmus mayri* Mullner det. M. Sternlicht". **SPL**: 2 ♀♀ "Hungary, Fonyod, Belatelep. 12.05.1944. Méhes Gy.", "*Dryocosmus mayri* Müllner. Det. Méhes Gy". **HMNH**: 6 ♀♀ with the same labels as in the SPL collection.

Gall material. **NHMW**: 3 twigs with galls labelled "Rekawinkel (Austria) 14.05.1896 on *Q. cerris*", 2 galls "*ibidem*, 23.05.1896". UB: one gall "Rekawinkel (Austria) 14.05.1896 on *Q. cerris*"; 3 galls labelled "Zikhron Ya'aqov (Israel) on *Q. ithaburensis*,



Figures 15-20
15-19, Propodeum. – 15, *Chilaspis nitida* (agamic female). – 16, *Chilaspis nitida* (sexual female). – 17, *Chilaspis israeli* stat. nov. (sexual female). – 18, *Chilaspis israeli* stat. nov. (male). – 19, *Chilaspis mayri* n. comb. (sexual female). – 20, head in dorsal view of the male of *Chilaspis mayri* n. comb.

21.iii.1985", "*Dryocosmus mayri-tivoni*, M. Sternlicht det". TAU: 22 galls labelled "Zikhron Ya'aqov (Israel) on *Q. ithaburensis*, 21.iii.1985", "*Dryocosmus mayri-tivoni*, M. Sternlicht det".

Redescription – Sexual form (figs. 13, 14, 19, 20). **Female**: 2.2-2.6 mm. Head yellow-brown to dark brown. Antennae dark brown, first 3 or 4 antennomeres lighter. Thorax amber to brown; legs lighter, yellow to dark yellow. Gaster brown, lighter near petiole and dark, almost black dorsally. Wings hyaline, with dark veins.

Head. 1.3-1.4 times as broad as high in frontal view, nearly 2.0 times as broad as long in dorsal view; smooth, without pubescence, with few short irradiating striae from both sides of clypeus. Clypeus slightly sinuous, apical margin slightly projecting over mandibles. Face with few scarce and short white setae under antennal foramina; front glabrous. Gena not broadened behind eye. Malar sulcus absent, malar space short, 0.16-0.17 times as long as height of eye. Transfacial line slightly longer than height of eye; distance between antennal foramina slightly shorter than their diameter, which equals to distance between antennal foramina and internal margin of eye. Ocelli elevated over dorsal margin of head; POD:OOD:COD is 7:6:3, while diameter of lateral ocellus is 3 in the same units. Antenna filiform, 14-15-segmented, two last flagellomeres not always distinctly separated.

Mesosoma. Smooth, except few short carinae on lateral parts of pronotum and scutellum sometimes with weak uniform sculpture; without pubescence, except for some scattered white setae on superior part of pronotum, lateral margins of scutum, mesopleural triangle, laterally prolonged notauli, scutellum dorsolaterally and laterally, and propodeum outside delimited central area. Notauli complete; median mesoscutal line, anterior parallel and parapsidal lines absent; parascutal carina long, reaching notauli. Scutellum trapezoid, almost smooth (fig. 13) or delicately sculptured, marginated, delimited around by distinct carina (fig. 14); scutellar foveae rectangular, shallow, indistinctly delimited posteriorly, separated by weak median carina. Mesopleural triangle not defined by complete carina. Postero-dorsal margin of axilla complete; subaxillar bar narrow, posteriorly expanded. Metanotal foveae with some weak carinae, without pubescence, ventral bar of foveae irregularly sculptured. Metascutellum rectangular, irregularly sculptured. Lateral carinae of propodeum more or less complete delimiting more or less rugose central area with more or less distinct irregular carinae (fig. 19). Tarsal legs of usual shape; tarsal claws simple, without basal lobe. Forewing pubescent and ciliated; weakly clouded around veins; radial cell 3.5-3.8 times as long as broad; Rs slightly prolonged at margin; 2r slightly curved; areolet distinct, triangular and large; Rs + M reaching to 2/3 of basalis length.

Mesosoma. Strongly compressed laterally; as long and slightly higher than thorax; ventral spine of hypopygium short, 1.5 times as long as broad, with short and scattered setae, never forming apical tuft.

Males. 1.8-2.5 mm. Colour similar to females, except for one specimen that has brown head and circular area around mouthparts and thorax brown dorsally and yellow laterally. *Head* similar to female, except head 1.2-1.3 times as broad as high in frontal view; transfacial line shorter, 0.75 times as long as height of eye; malar space only 1.5 times as long as height of eye; POD:OOD:COD is 7:3:4, while diameter of lateral ocellus is 5 in the same units (fig. 20). Antenna 15-segmented, F1 excavated and clearly expanded in distal half; F2 curved and slightly thickened distally, not excavated. *Mesosoma* similar to the female, scutellum usually smooth, propodeal carinae distinct. *Metasoma* with petiole as long as broad, compressed.

Variability. Type specimens collected in Austria and Israel are darker than specimens collected in Corfu (Greece), which are amber or amber-brown. The scutellum varies from absolutely smooth in some lighter individuals to weakly and uniformly sculptured in some females of the typical series, but not as strongly as mentioned in Kieffer (1902), except for one female collected in Israel. The shape of propodeal carinae strongly varies in different specimens. Antennae in females normally 15-segmented, only rarely the number of antennomeres is 14 because of indistinct suture between F12 and F13.

Gall. Plurilocular, fusiform, in buds, located at the tip of young shoots, or on the underside of the leaf lamina (Ambrus, 1979), usually in merging clusters. Individual galls are approximately spherical, 5-7 mm across, but often form irregularly shaped clusters 15-20 mm across. Surface shiny, with apical white pale hairs, sometimes warty, and always sticky. Colour light green to purple-red, dark when mature. On leaves, development of the gall causes the leaf axis to bend downwards. Interior spongy, moist, brown, and the wall later thickens and hardens. Larval chamber yellow.

Taxonomic comments – *Chilaspis tivoni* was described only on the basis of galls from *Quercus ithaburensis*, and it had been figured in the legend of the paper as "*Chilaspis miriami*" (Sternlicht, 1968b). The description of adults has never been published and, thus, "*Chilaspis tivoni*" and "*Chilaspis miriami*" are **nomina nuda** (according to the International Code of Zoological Nomenclature: Art. 1b, Art. 72c and Appendix G). After studying galls and adults from Sternlicht's collection we have no doubts that *Ch. tivoni* and *Ch. miriami* are *Chilaspis mayri*.

Biology – Only a sexual generation is known to induce galls on *Q. cerris*, *Q. macrolepis* (Greece, E. Kwast leg.) and *Q. ithaburensis*. It might be that the asexual generation of this species was described by Müllner (1901) (see comments in Kieffer 1897-1901: 588). We examined the galls described by Müllner, which are deposited in the NHMW and they strongly coincide with *Neuroterus minutulus* Giraud, 1859 the type material of which is unfortunately lost (MNHN, C. Villemant-Ait Lemkadem, *pers. comm.*). Gall develops by May. Adults emerge in May in Europe and in February and March in Israel (according Sternlicht 1968b and labels of the examined material).

Distribution – A central European species. Rare. Known from Austria (on *Q. cerris*, Dalla Torre & Kieffer

1910), Greece (on *Q. macrolepis*, Pujade-Villar *et al., in prep.*), Hungary (on *Q. cerris*, Ambrus 1979; Melika & Bechtold 1999; Melika *et al.* 2000), and Israel (on *Q. ithaburensis,* Sternlicht 1968b).

DISCUSSION

The separation between *Dryocosmus* and *Chilaspis* is not optimal yet. There are many characters shared by both genera, such as smooth scutum, the shape of F1 and F2 in male antennae, the general aspect of propodeal carinae, the strongly compressed metasoma, and some others. Differences between *Chilaspis* and *Dryocosmus*, according to bibliographical references, lay in the differently sculptured scutellum and head. According to these characters, *Dryocosmus mayri* is a species that can be placed between *Dryocosmus* and *Chilaspis*.

Type species of the *Dryocosmus* genus, *D. cerriphilus* Giraud, 1859 a.f., and the other Western-Palaearctic species, *D. nervosus* (Giraud, 1859) s.f., show indistinctly defined scutellar foveae with sculptured bottom (Pujade-Villar 1985), while *D. kuriphilus* Yasumatsu, 1951, the last species included into the *Dryocosmus* genus, from the Eastern Palaearctic, has a well delimited scutellar foveae, with a longitudinally striated bottom. Scutellar foveae in *Chilaspis* are marked but they are smooth or at most weakly sculptured in some specimens, never striated. The scutellum in the *Dryocosmus* species mentioned above is conspicuously and sometimes coarsely sculptured, while it is smooth or only weakly sculptured in *Chilaspis*. Moreover, the pronotum is laterally sculptured and carinated in *Dryocosmus* females, and almost smooth in *Chilaspis*, particularly in *Ch. mayri*. These morphological traits induce us to think that *D. mayri* must be included into the *Chilaspis* genus, and therefore we suggest that the correct name of this species is *Chilaspis mayri*, **n. comb.**

APPENDIX

No cynipid inquilines and parasitoids have been reared and referred in literature from galls of *Chilaspis mayri*. The study of Sternlicht's collection in TAU has been very interesting and 5 parasitoid and one cynipid inquiline species have been detected and identified. All specimens were reared by Sternlicht from *Ch. mayri* galls collected at Aokhron Ya'aqov (Israel) from *Q. ithaburensis* on 21.03.1985 and they emerged on 28.03.1995. Chalcidoid species cited below are new faunistic records for Israel (according to Noyes 1998) and an inquiline in Cynipidae galls is also mentioned for the first time from Israel.

CYNIPIDAE: *Synergus albipes* Hartig, 1841: 11 ♂♂ & 7 ♀♀ (3 ♂♂ & 2 ♀♀ deposited in UB). CHALCIDOIDEA. EURYTOMIDAE: *Eurytoma brunniventris* Ratzeburg, 1852: 1 ♂ & 2 ♀♀. *Sycophila variegata* (Curtis, 1831): 2 ♂♂ & 1 ♀; TORYMIDAE: *Megastigmus dorsalis* (Fabricius, 1798): 5 ♂♂ & 1 ♀; PTEROMALIDAE: *Mesopolobus amoenus* (Walker 1834): 16 ♂♂ & 3 ♀♀ (2 ♂♂ & 1 ♀ deposited in UB); *Cecidostiba fungosa* (Geoffroy, 1785) (= *hilaris* Walker, 1836): 11 ♂♂ & 11 ♀♀ (2 ♂♂ & 2 ♀♀ deposited in UB).

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