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A new species of ***Pentacladia*** Westwood, 1835 (Hymenoptera, Chalcidoidea, Eupelmidae) from Yayladağı, Hatay, Turkey

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Summary

A new species, ***Pentacladia hatayensis*** n.sp. (Hymenoptera: Chalcidoidea; Eupelmidae) is named and described from Yayladağı, Hatay, Turkey. The systematic position of the new species was discussed and its diagnostic characters were photographed by using SEM. Some biological informations were also given for the new species. ***Pentacladia*** (= ***Chilorophus***) ***hyalinus*** Hedqvist was transferred to the genus ***Calosota Curtis*** (Comb.nov.).

Key words: ***Pentacladia hatayensis*** n.sp, Eupelmidae, Hatay, Turkey
Anahtar sözcükler: ***Pentacladia hatayensis*** n.sp, Eupelmidae, Hatay, Türkiye

Introduction

The genus, ***Pentacladia*** Westwood, 1835 (Hymenoptera, Chalcidoidea, Eupelmidae) was described with an included species, ***P. elegans*** Westwood in short descriptions for the both taxa (Graham, 1993). Since that time, any author has not recognized the genus. In Graham's work the status of the included species of this genus: ***elegans***; ***eques*** Haliday, 1862; ***halidayi*** Walker, 1873; ***incertus*** Masi, 1923 (preceding ones as species of ***Chilorophus*** Haliday, 1862); ***coerulescens*** Foerster, 1878 (as species of ***Charitolophus*** Foerster, 1878), were discussed very well in detail, and the genera, ***Chilorophus*** and ***Charitolophus***, were synonymized with ***Pentacladia*** (Graham, 1993). The works on ***Chilorophus*** were done as descriptions of some new species and given identification keys for the species of the genus. Nikol'skaya (1952) gave the diagnostic characters of the genus and provided an identification key for its three species, males of ***eques*** and

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halidayi, and female of ***incertus***. Peck et al. (1964) gave also some diagnostic characters for the genus such as antenna attached in middle of face, in male with four or five long branches, postmarginal vein and radius unusually short, the latter capitate and stated about two species in southern Europe, with five branches in male antenna. Boucek (1967) in his work on ***Eusandallum*** Ratzeburg stated that the genus ***Chilorophus*** differs from ***Eusandallum*** in having rudimental postmarginal and stigmal veins, in female a silvery pubescens on the first funicle segment, no epipygial carina and having ramose antennae in males. Boucek (1970) synonymized ***C. halidayi*** (in probable statement) with ***Stenoceroides walkeri*** (Curtis, 1836) after finding a male eupelmid specimens with four branches in each antenna from Israel in the Erdoes Collection and later he re-established ***Stenoceroides*** Dalla Torre, 1897 as a valid genus. Hedqvist (1970) described a new species, ***Chilorophus hyalinus***, from female and figured its some diagnostic characters. In his description he stated that the new species has female antennae with 7 funicular segments, the first three ones with silvery pubescens ventrally, and with 3 segmented clava; antennae inserted below the level of the anterior margin of eyes; gaster having last segment with a median carina; prepectus small, forewing with very short marginal and stigmal veins. He also combined ***Oodera seyrigi*** Risbec, 1952 with ***Ooderella*** Ashmead, 1896 as comb.nov. Boucek (1976) transferred ***O. seyrigi*** to ***Chilorophus*** as comb.nov. and stated that ***C. seyrigi*** could be separated from the other known species of the genus mainly on the absence of the dense silvery hairs at the base of the flagellum and on the dense white pubescence covering the propodeum even in the middle. Boucek (1977) recorded ***C. eques*** from Yugoslavia, and stated it widely distributed in the Mediterranean countries. Boucek (1988) synonymized again ***Stenoceroides*** with ***Eusandallum*** and also transferred ***Chilorophus koebelei*** Ashmead, 1896 to ***Eusandallum*** as comb. nov. from Australia. Gibson (1989) gave very good characters in separating ***Chilorophus*** from other known genera of the subfamily Calosotinae; they are: the postero-dorsally directed mesopleural suture; small prepectus not extended to tegula; subequally short to punctiform postmarginal and stigmal vein, and males with pectinate antennae and reduced forewing setation; female antennae with 9 flagellar segments, including clava undivided, except females of ***C. hyalinus*** with 11 flagellar articles having clava three segmented; scutello-axillar complex with scuto-scutellar sutures anteriorly convergent, straight or very slightly outcurved; middle legs without pegs along anteroapical edge; gastral terga 8 and 9 indistinguishably fused as syntergum dorsally, laterally with oblique sulcus below circus indicating line of fusion, in dorsal view syntergum evenly convex and tapered posteriorly. He gave a catalog of taxa including seven named species from Palaearctic and Ethiopian regions. Noyes (1998) in his excellent work on Chalcidoidea listed six species of ***Pentacladia*** by following Graham (1993), viz.; ***elegans***, ***eques***, ***halidayi***, ***hyalinus***, ***incertus***, ***seyrigi***. Recently, Delvare (2001) revised the species of ***Pentacladia*** and he stated ***hyalinus*** and ***incertus*** as synponyms of ***elegans*** and also he added two new species, ***mateui*** Delvare and ***matilei*** Delvare and two new subspecies, ***Pentacladia elegans insularis*** Delvare and ***Pentacladia eques mauritanica*** Delvare. He also gave a diagnostic key for the species and the subspecies of the genus.

In a trip with my friend, Prof. Dr. Abdurrahman Yiğit, to Yayladağı, Hatay we collected an interesting eupelmid, and a week later I went there again for capturing some more specimens of that species, but I could find only one more specimen. Two of them are females of ***Pentacladia*** and they are regarded as a new species.

Material and Method

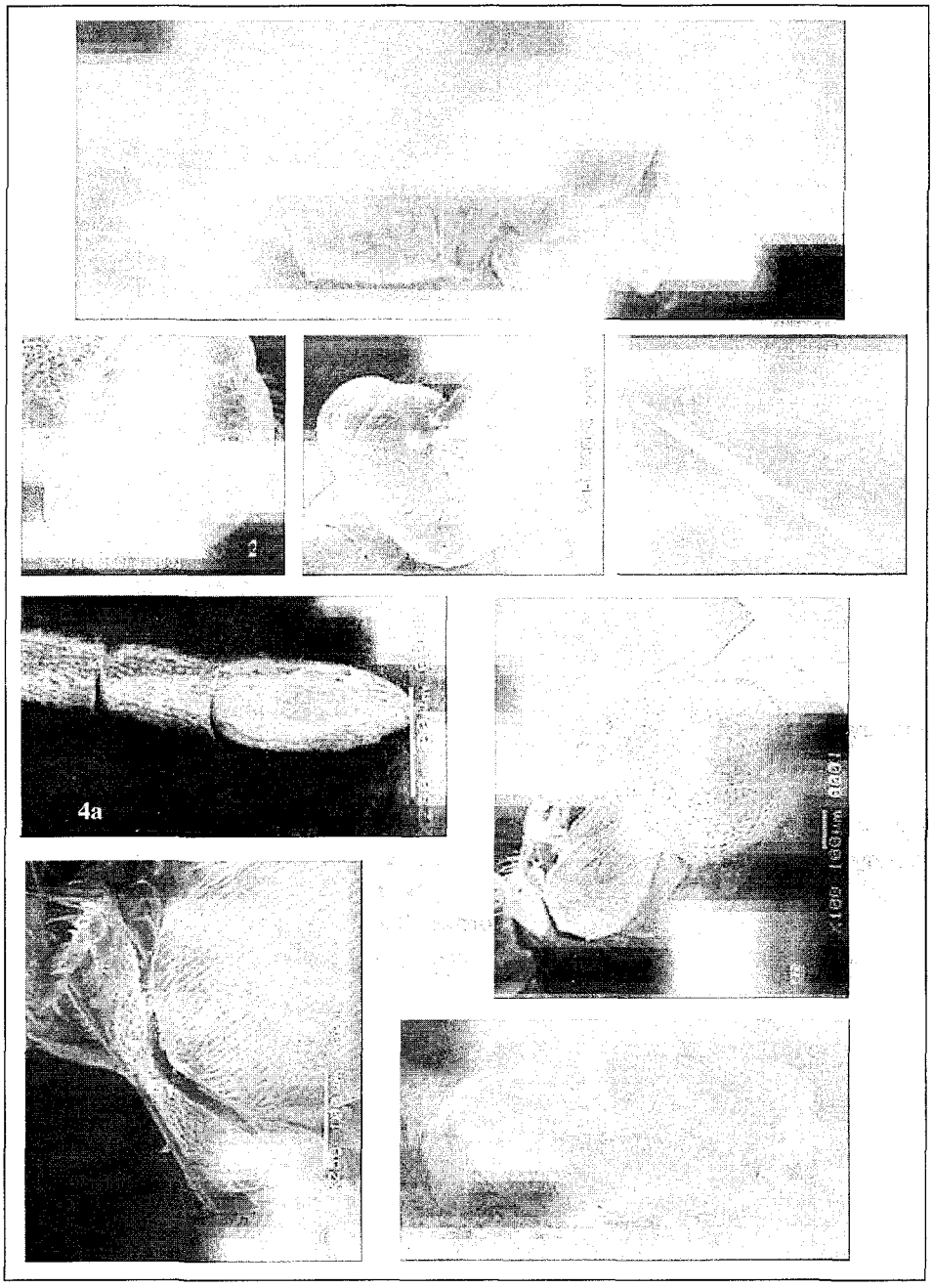
The specimens were collected from the fields in which there were some dried fig trees and some vinestocks. The sweeping was made randomly on the surface of field and from the branches of trees. One of the specimens, paratype female, was prepared for studying in SEM and later the broken parts were moved from specimen–chamber and remounted on a card. The diagnostic characters of the new species were photographed from SEM and a stereoscopic microscope. The figures were compared with figures of Delvare (2001).

Results and Discussion

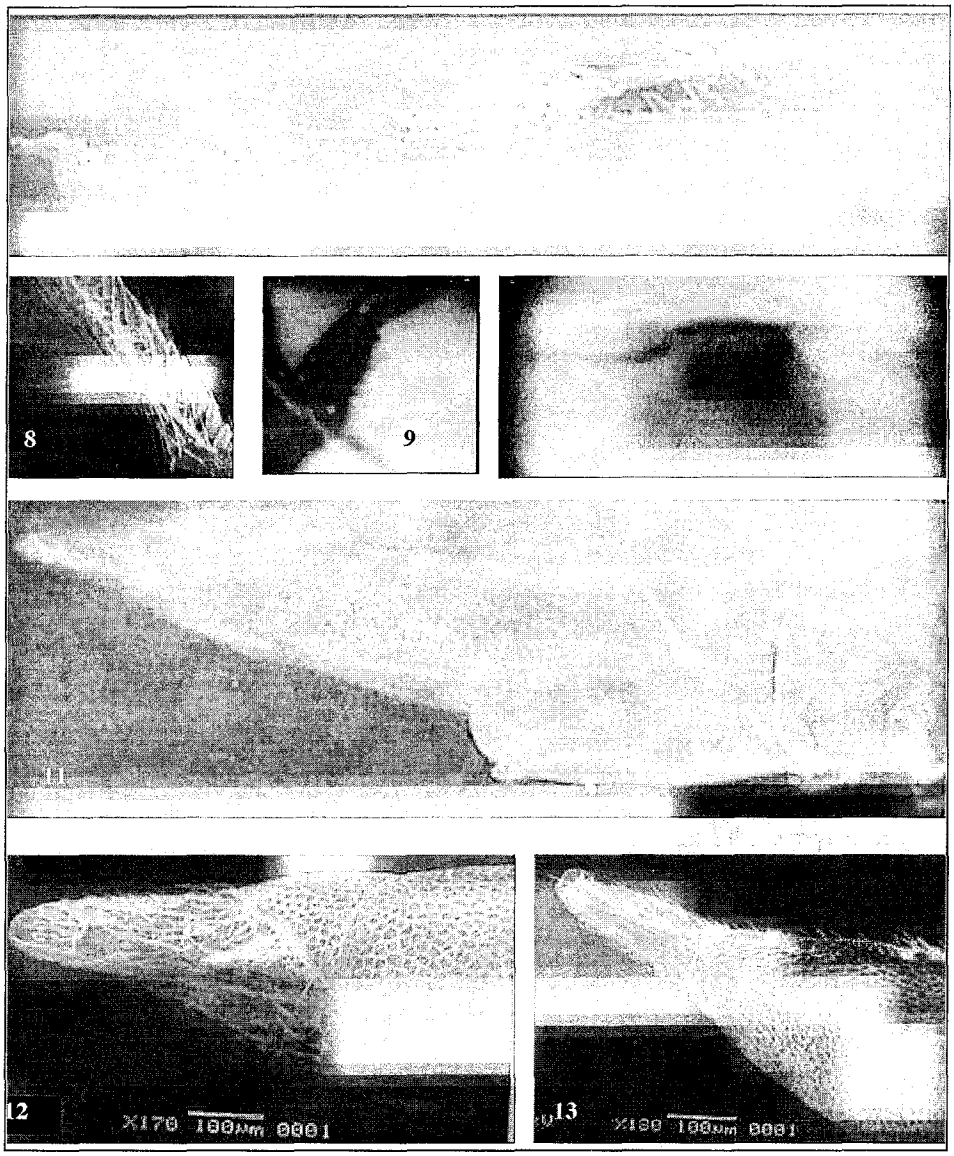
Pentacladia hatayensis n. sp.

Female: Length 4.6– 4.9 mm. Body (Fig. 1) black with greenish-coppery reflections on mainly mesonotum, propodeum, bases of first and most parts of sixth and seventh terga of gaster; clypeus, labrum and basal one thirds of scape, first tree segments of tarsi testaceous, apical tarsal segments brownish; tibiae dark brown; epipygium pale testaceous; scutellum slightly, terga of gaster dark coppery; antennae blackish, upper part of scape vialeceous, dorsum of the first, second and half of third flagellar segments with long, dense, silvery pubescense; wings brownish cloudy excepts basally and a hyaline band just after postmarginal vein along from costal margin to anal margin, margins of the hyaline band almost straight and parallel to each other; venation dark brown (Fig. 10); sides of propodeum and basal upper corners of Mt7 with white hairs.

Head (Fig.3) in dorsal view transverse with rounded temples as long as 0.33 width of eye. Relative width of head 49, length 27, height 40, vertex 31, eye width 18, length 27, malar space 15, minimum width of frontovertex 26, width of scrobes in upper two-thirds 9, pedicellus plus flagellum 62, antennal segments (length: width): scape 25:4, pedicellus 6:3, ring segment 2:2.5, first funicle segment 13:4, second 10:5, third 8.5:5, fourth and fifth 8:5, sixth 6.5:4.5, seventh 6:4.5, clava 10:5. Scropes cavity (Fig. 2) deeply continues up to mid level of eye, not reaching to median ocellus, with sharply developed sides which are bent to each other on upper parts; interantennal ridge distinct and high, confined to lowest quarter of scrobes; insertion of antennae with lowest margin of sockets at lower ocular line; eyes sparsely and shortly, but conspicuously pubescent; clypeus very short, depressed, its lower margin almost truncate; antennae with scape not reaching to vertex; pedicellus twice as long as wide, ring segment only slightly wider than long, flagellum distinctly compressed laterally, first funicular segment distinctly narrower than the other funiculars, about 3.25 times as long as wide,



Figures 1-7. ***Pentacladia hatayensis*** n. sp. 1. body of female (lateral view); 2. head (frontal view); 3. head (dorsal view); 4. female antenna; 4a. same (apical segments); 5. apical part of scutellum, metanotum and propodeum; 6. mesonotum (dorsal view); 7. mesonotum (lateral view).



Figures 8-13. ***Pentacladia hatayensis*** n. sp. 8. basitarsus of middle leg; 8a. tarsus of middle leg; 9. foretibia; 10. forewing; 11. metasoma (lateral view); 12. apical segments of metasoma (lateral view); 13. same, (dorsal view).

and distinctly shorter than following two segments, and 1.3 times as long as the second one; second funicular twice as long as wide, 3rd – 5th 1.6 times, 6th and 7th 1.45 times, clava twice as long as wide (Figs. 4, 4a).

Thorax (Figs. 5-7) deeply and broadly reticulated, on scutellum reticulations distinctly lengthened to longitudinally rugulose, due to this scutellum seems almost longitudinally striate; notauli distinctly developed, meeting on upper half of

mesoscutum; pronotum about 0.62 times as wide as mesoscutum, and 0.60 times as long as width; mesoscutum broad, about 1.4 times as wide as long; relative length of thorax 60; scutellum length 29, maximum width 19, width at base 10; width of axilla 7; axillar sutures straight; prepectus separated from base of tegula about 1.7 times as long as prepectus; acropleuron about 1.63 times as long as broad, reticulately punctulate on most parts, but posteriorly reticulations become lengthened; metanotum (Fig. 5) overlaid medially by scutellar apex, the distance between its both sides wider than basal width of scutellum; propodeum (Fig. 5) relatively short, length in the middle 9; distance between spiracles 37; diameter of spiracle 4; distance between anterior edge of spiracle and anterior border of propodeum 7; medially reticulated, with median carina and C–shaped carinae originated from anterior edge and lengthened to posterior edge laterally in the holotype and only medially reticulated in the paratype. Protibiae with 6 denticle-like spicules along dorsal surface and two dorsoapical strong spicules (Fig. 9). Middle leg with tibial spur thickened and setose, about as long as width of tibia; tarsus about 0.84 times length of tibia; basitarsus (Figs. 8, 8a) short, subequal in length to tarsomers 2-4; tarsomers 1-4 with row of slender spines along anteroventral edge and row of pegs along posteroventral edge as stated by Gibson (1989). Metatibia with spine– like spicules along dorsal surface. Forewing (Fig. 10) with distal 0.66 setose; length of veins in ratios: SMV 48; MV 15; PMV 3.5; STV 3.5; costal cell with about 10 setae in two rows on upper surface and completely setose on under surface; MV and PMV separated from costal edge by about half width of MV.

Metasoma (Fig. 11) ovate-lanceolate; relative length 107, width 34; relative length of terga: Mt2 27; Mt3 7; Mt4 10; Mt5 14; Mt6 24 laterally, 16 medially; Mt7 25; syntergum 23. Petiole very short; posterior edges of Mt2 and Mt3 deeply, Mt4 slightly incised medially, of Mt5 entire; of Mt6 broadly incurved; Mt7 with posterior edge rounded and extended to level of cerci; Mt8 and Mt9 fused as syntergum dorsally (Figs.12; 13), syntergum in dorsal view convex and tapered posteriorly; circus button-like, with 3-4 setae in subequal length.

Male not known.

Biology: Unknown, swept from dried branches of fig tree, infected by ***Agrilus*** sp. (Coleoptera: Buprestidae).

Holotype (Female): Yayladağı, Hatay, 200 m, 26.V. 2001 (leg. A. Yiğit), deposited in Department of Plant Protection, Agriculture Faculty, Mustafa Kemal University, Hatay, Turkey.

Paratype (Female): Yenice, Yayladağı, Hatay, 200 m, 31.V.2001 (leg. M. Doğanlar), deposited in the author collection.

Distribution: Hatay, Turkey.

Comments: ***C. hyalinus*** Hedqvist should be combined with ***Calosota*** Curtis, 1836 in having female antennae with three segmented clava and lower incertion of antennae (Comb.nov.). The genus, ***Pentacladia*** Westwood has five

species and two subspecies (Delvare, 2001): ***elegans***, e. ssp. ***insularis***, ***eques***, e. ssp. ***mauritanica***, ***seyrigi***, ***mateui*** and ***matilei***. By following the key of Delvare (2001) the new species, ***P. hatayensis*** n. sp. is close to ***P. elegans*** in general view, mainly in having a silvery pubescens on the first tree funicular segments (in the other species of the genus have the silvery pubescens on the first two funicular segments or none of them, like ***eques*** and ***seyrigi***, is having silvery pubescens). ***P. hatayensis*** n. sp. differs from ***elegans*** in having head dorsally 1.76-1.8 times as broad as long, (in ***elegans*** head dorsally 2.0-2.2 times as broad as long); in ***P. hatayensis*** n. sp. pedicellus plus flagellum 1.63 times as long as breadth of head (in ***elegans*** pedicellus plus flagellum 1.50 times as long as breadth of head); in ***P. hatayensis*** n. sp. the first funicular segment distinctly shorter than total length of second and third segments, and 2.1 times as long as seventh funicular segment, (in ***elegans*** the first funicular segment distinctly as long as total length of second and third segments, and 3 times as long as seventh funicular segment); in ***P. hatayensis*** n. sp. scutellum with distinct lengthened reticulation, (in ***elegans*** scutellum with shorter reticulation as fig. 3 of Delvare (2001); in ***P. hatayensis*** n. sp. forewing with parallel straight-sided hyaline band, (in ***elegans*** forewing with hyaline band circular as fig. 4 of Delvare (2001); in ***P. hatayensis*** n. sp. metasoma with posterior edges of Mt2 and Mt3 deeply, Mt4 shallowly incised medially, (in ***elegans*** only the posterior edge of Mt2 deeply and Mt3 shallowly incised medially as fig. 6 of Delvare (2001).

Özet

Yayladağı, Hatay, Türkiye'den yeni bir *Pentacladia* Westwood, 1835 türü (Hymenoptera, Chalcidoidea, Eupelmidae)

Pentacladia hatayensis n. sp. (Hymenoptera, Chalcidoidea, Eupelmidae) Yayladağı, Hatay, Türkiye'den isimlendirilmiş, tanımı yapılmış ve önemli ayırt edici morfolojik özellikleri taramalı elektron mikroskoptan fotoğrafları çekilerek saptanmıştır. Yeni türle ilgili bazı biyolojik bilgiler de verilmiştir.

Ayrıca ***Pentacladia*** (= ***Chilorophus***) ***hyalinus*** Hedqvist ***Calosota*** Curtis cinsine nakledilmiştir (comb.nov.).

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