Acta Zoologica Academiae Scientiarum Hungaricae 55 (3), pp. 263–274, 2009

NEW SPECIES OF CYNIPID GALLWASPS OF THE GENUS PLAGIOTROCHUS MAYR, 1881 FROM NEPAL AND JORDAN (HYMENOPTERA: CYNIPIDAE: CYNIPINI)

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Three new species of cynipid gallwasps, *Plagiotrochus smetanai* MELIKA & PUJADE-VILLAR sp. n. and *Plagiotrochus follioti* PUJADE-VILLAR et MELIKA sp. n. from Nepal, and *Plagiotrochus csokai* MELIKA et PUJADE-VILLAR sp. n. from Jordan are described. Data on the diagnosis, distribution and biology of the new species are given. With 33 figures.

Key words: gallwasp, Cynipidae, Cynipini, *Plagiotrochus*, taxonomy

INTRODUCTION

The genus *Plagiotrochus* MAYR, 1881 (Hymenoptera: Cynipidae: Cynipini) includes 14 species (PUJADE-VILLAR & ROS-FARRÉ 1998, NIEVES-ALDREY 2001). The majority are known from the Western Palaearctic, particularly from the Mediterranean region including the Iberian Peninsula, southern France, Italy, Turkey, the Middle East and North Africa. One species, *P. semicarpifoliae* (CAMERON, 1902) has been described from the Himalayas (BELLIDO *et al*. 2000).

Phylogenetic analysis has shown that *Plagiotrochus* belongs to a basal lineage of Cynipini (PUJADE-VILLAR & ARNEDO 1997, LILJEBLAD & RONQUIST 1998, NYLANDER 2004, LILJEBLAD *et al.* 2008). The basal position of *Plagiotrochus* is supported by some morphological peculiarities of adults, and is also compatible with the apparent structural simplicity of the galls they induce (NIEVES-ALDREY 2001). Recent analysis also supports *Plagiotrochus* as the sister group of *Dryocosmus*. Both genera are clearly separated from the other Cynipini genera (ÁCS *et al*. 2007) and associated with a divergent group of oak hosts in the section *Cerris* (mostly evergreen and semi-evergreen species). Section *Cerris* oaks are absent from America and probably evolved at mid-latitudes in Asia. The Western Palae-

arctic *Cerris* oaks are almost certainly derived from Asian species that spread westwards along the foothills of the Himalayas, followed by adaptive radiation in Turkey and the Near East, where the extant species richness is highest (ROKAS *et al*. 2003, NIEVES-ALDREY, J. L. & MASSA 2006, STONE *et al*. 2009). The basal position of eastern species within the *Dryocosmus* clade, though tentative, is compatible with the hypothesis that this section *Cerris*-associated radiation originated in the Eastern Palaearctic. This would also require an eastern origin of *Plagiotrochus*, followed by parallel westwards expansion (BELLIDO *et al*. 2000). The current known centre of *Plagiotrochus* diversity is the Mediterranean region, with 14 species (NIEVES-ALDREY 2001), but the existence of a plesiomorphic species, *P. semicarpifoliae* in Nepal and further unidentified *Plagiotrochus* from South Korea (G. MELIKA, unpubl. data) means that an Eastern Palaearctic origin is at least possible. Furthermore, the description of three new species of *Plagiotrochus* from Asia, and in particular two from Nepal also supports this idea. The high species richness in the Iberian Peninsula would then represent a secondary radiation (BELLIDO & PUJADE-VILLAR 2001, ÁCS *et al*. 2007).

MATERIALS AND METHODS

We follow the current terminology of morphological structures (LILJEBLAD & RONQUIST 1998, MELIKA 2006). Abbreviations for forewing venation follow RONQUIST & NORDLANDER (1989), cuticular surface terminology follows that of HARRIS (1979). Measurements and abbreviations used here include: F1–F12, 1st and subsequent flagellomeres; POL (post-ocellar distance) is the distance between the inner margins of the posterior ocelli; OOL (ocellar-ocular distance) is the distance from the outer edge of a posterior ocellus to the inner margin of the compound eye; LOL, the distance between lateral and frontal ocelli. The width of the forewing radial cell is measured from the margin of the wing to the Rs vein. Species descriptions are given on the basis of the type series (holo- and paratypes) examined. Images of wasp anatomy were produced with a digital Nicon Coolpix 4500 camera attached to a Leica DMLB compound microscope, followed by processing in CombineZP (Alan Hadley) and Adobe Photoshop 6.0. Line drawings were then prepared from hard copy printouts.

DESCRIPTIONS

Plagiotrochus smetanai MELIKA et PUJADE-VILLAR, sp. n.
(Figs 1)

Description – Female (holotype). Head and mesosoma uniformly dark brown with lighter lower face (in some specimens head and mesosoma light brown, with slightly darker mesoscutum and mesoscutellum); metasoma uniformly reddish brown; antennae, palpi labialis and maxillaris,

mandibles, tegulae and legs yellow (in some specimens hind coxae light brown at the base and tips of mandibles dark brown to black); wings with indistinct pale light brown veins; head and mesosoma with uniform relatively sparse, white, short setation; metasoma smooth, without setae. Head (Figs 1.a–c) alutaceous to very delicately coriaceous, with uniform sparse short white setae, 1.9–2.0 times as broad as long from above, 1.1 times as broad as high in front view and very slightly broader than mesosoma. Gena alutaceous, not broadened behind eye, invisible in front view, narrower than cross diameter of eye. Malar space delicately coriaceous to alutaceous, with some striae radiating from clypeus and reaching eye margin, 0.37 times as long as height of eye. POL 1.4 times as long as OOL; OOL 2.1 times as long as length of lateral ocellus and 1.36 times as long as LOL. Transfacial distance nearly equal to height of eye and 1.4 times as long as height of lower face (distance between antennal rim and ventral margin of clypeus); diameter of antennal torulus 1.58 times as long as distance between them, and 0.7 times distance between torulus and eye margin. Inner margins of eyes distinctly converging ventrad. Lower face delicately coriaceous, with distinct striae reaching toruli and extending into area between torulus and eye, median area slightly elevated, with stronger sculpture. Clypeus smooth, shiny, small, slightly higher than broad, with small indistinct anterior tentorial pits, with very indistinct epistomal sulcus and clypeo-pleurostomal line, ventrally rounded, not emarginate, medially not incised. Frons, vertex, interocellar area and occiput uniformly alutaceous. Antenna (Fig. 1.g) with 12 flagellomeres, nearly as long as head+mesosoma; pedicel distinctly broader than subsequent flagellomeres, longer than broad; F1 slightly shorter than F2, F2 the longest flagellomere, F3–F4 equal in length, slightly shorter than F2; subsequent flagellomeres shorter; distal flagellomeres slightly broader than proximal ones; placoid sensilla white, distinct on F3–F12, absent on F1–F2. Mesosoma (Fig. 1.k) flattened dorsoventrally, longer than high in lateral view, with sparse, short, white setation. Pronotum uniformly and delicately coriaceous to alutaceous, with delicate wrinkles in anteroventral edge; propleuron smooth, with very few delicate, longitudinal striae (Fig. 1.i). Mesoscutum slightly broader than long (width measured across the basis of tegulae); alutaceous to very delicately coriaceous, with fine, transversely orientated units which give an impression of transversely striated sculpture; notauli very narrow, complete, albeit, very superficially impressed in anterior third; median mesoscutal line absent; parapsidal lines very narrow, indistinct; anterior parallel lines distinct, extending to 1/3 of length of mesoscutum (Fig. 1.j). Mesoscutellum flattened dorsoventrally in lateral view, 2/3 length of mesoscutum, only slightly longer than broad, uniformly alutaceous, with stronger, coriaceous sculpture along lateral margins and posteriorly, not overhanging metanotum. Scutellar foveae narrow, transverse, nearly twice as broad as high, well-delimited, shining, smooth, without setae; separated by a very narrow but distinct central median carina (Fig. 1.j). Mesopleuron smooth, shining, middle part delicately reticulate, slightly impressed, especially below speculum (Fig. 1.k); mesopleural triangle smooth to alutaceous; acetabular carina delimiting a narrow smooth area laterally. Metapleural sulcus reaching mesopleuron 1/3 down; axillar carina narrow, with longitudinal parallel striae; axillula ovate, smooth, shiny, with sparse, white setation; subaxillular bar smooth, shining, in the most posterior end slightly higher than height of metanotal trough; carina along anterior border of propodeal spiracle very indistinct; pit at spiracle shallow, smooth, shining; ventral bar of metanotal trough smooth, shining, no more than 0.5 times height of metanotal trough. Metascutellum very delicately coriaceous to alutaceous, nearly 2.0 times as high as height of smooth, shining ventral impressed area of metascutellum; metanotal trough smooth, shining, without setae. Lateral propodeal carinae strongly curved laterad in the middle, without setae; central propodeal area smooth, shining, with some delicate wrinkles, without setae, with complete median longitudinal carina; lateral propodeal area delicately coriaceous to alutaceous, with sparse white setation; nucha short, with delicate longitudinal sulci (Fig. 1.l). Forewing with pale yellow veins, margin with distinct long cilia; radial cell open, 5.4 times as long as broad, Rs and R1 nearly reaching wing margin; areolet large, distinct, triangular; Rs+M nearly reaching basalis in its lower

third (Fig. 1.m). Tarsal claws simple, without basal lobe. Metasoma (Fig. 1.n) nearly equal to length of head+mesosoma, slightly longer than high in lateral view, all tergites smooth, shining, without setae and micropunctures; prominent part of ventral spine of hypopygium very short, nearly as long as broad in ventral view, with few very short subapical setae, never extending behind apex of spine. Length 1.2–1.5 mm.

Male. Similar to female but head very slightly higher than broad in front view, malar space higher than female; gena much broader behind eye; distance between antennal toruli equal or slightly larger than diameter of torulus; POL 2.3 times as long as OOL (Figs 1.d-f). Antenna with 13 flagellomeres, longer than head+mesosoma, F1 slightly curved, dorsally flattened, basally excavated

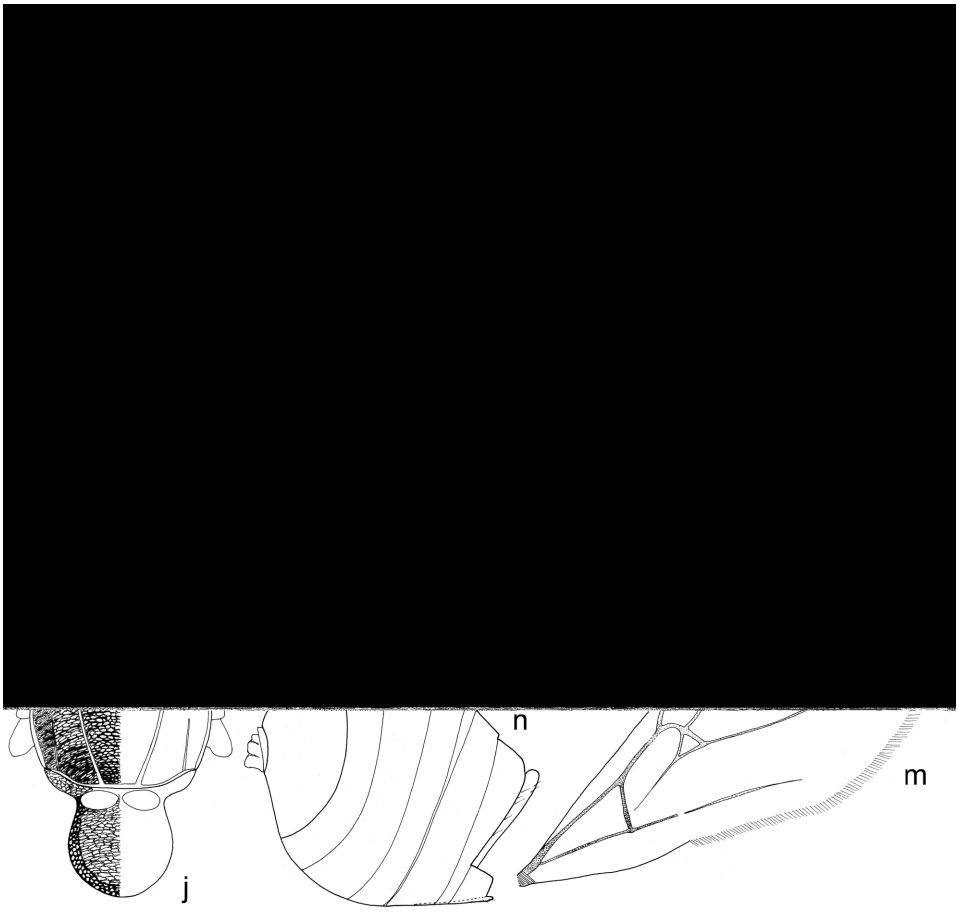

Fig. 1. *Plagiotrochus smetanai*, sp. n. Head: a = female, front view, b = female, dorsal view, c = female, lateral view, d = male, front view, e = male, dorsal view, f = male, lateral view; g–h = antenna: g = female, h = male; i–n = female: i = pronotum and propleuron, front view, j = mesoscutum and mesoscutellum, dorsal view, k = mesosoma, lateral view, l = metascutellum and propodeum, posterodorsal view, m = forewing, n = metasoma, lateral view

and apically swollened, 1.6–1.8 times as long as F2, placodeal sensilla on F2–F13 (Fig. 1.h). Length 1.1–1.3 mm.

Gall. Unknown.

Etymology – In honour of Dr. ALEŠ SMETANA, a famous specialist of Staphylinidae and researcher at the Canadian National Collection of Insects, Agriculture and Agri-Food Canada, Ottawa, Canada, who collected the new species.

Type material – Holotype female: Nepal, Phulcoki, 2600 m, 13.X.1983, oak forest ss. A. Smetana. Paratypes: 4 females and 2 males with the same labels as the holotype. The holotype female is deposited in the Canadian National Collection of Insects, Ottawa, Canada; 3 female and 2 male paratypes in the collection of the Pest Diagnostic Laboratory, Tanakajd, Hungary; 1 female paratype in the JP-V collection of the Barcelona University, Catalonia, Spain.

Diagnosis – Most closely resembles *Plagiotrochus cardiguensis* (TAVARES, 1928) by the very weak, alutaceous or delicately coriaceous frons, vertex and mesoscutum and weakly differentiated scutellar foveae. However, in *P. cardiguensis* striae on the lower face and notauli are indistinct, while in *P. smetanai* the lower face has distinct, radiating striae reaching antennal toruli; notauli distinct, complete, reaching the pronotum. Females are also similar to *Plagiotrochus follioti* but gena not broadened behind compound eye and prominent part of ventral spine of hypopygium much shorter in *P. smetanai*.

Biology – Only the sexual generation is known. Adult wasps were swept in October in an oak forest. The most closely related species, *Plagiotrochus cardiguensis*, is known from Spain, Portugal (NIEVES-ALDREY 2001), Andorra (PUJADE-VILLAR 1994a, b, BELLIDO & PUJADE-VILLAR 1999) and France (Corsica) (PUJADE-VILLAR *et al.* 2000). It induces catkin galls on *Q. ilex,* rarely on *Q. coccifera.* It is possible that *Plagiotrochus smetanai* induce their galls on the closely related oak *Quercus baloot* and similar taxa that are widespread in the Himalayas. Adult *P. smetanai* were collected in October and at this time they must induce galls on other plant parts than catkins, such as leaves, fruits or twigs. It is also unusual among cynipids in general for the sexual generation adults to be flying in Autumn and not in Spring.

Distribution – Nepal (Phulcoki, 2600 m a.s.l.).

Plagiotrochus follioti PUJADE-VILLAR et MELIKA, sp. n.
(Fig. 2)

Description – Female (holotype). Head and mesosoma uniformly chestnut brown with lighter lower face; metasoma uniformly reddish brown; antennae chesnut brown; scape and pedicel yellow; palpi labialis and maxillaris, mandibles, tegulae and legs yellow (base of hind coxae light brown and tips of mandibles red); wing veins light brown; head and mesosoma with uniform relatively sparse white short setae; metasoma smooth, without setation. Head (Figs 2.a–c) alutaceous to very delicately coriaceous, with uniform sparse short white setae, 1.8–1.9 times as broad as long from above, 1.1–1.2 times as broad as high in front view and very slightly broader than mesosoma. Gena

alutaceous, broadened behind eye, visible in front view, 1.5 times as broad as the diameter of eye in lateral view. Malar space delicately coriaceous to alutaceous, with some striae radiating from clypeus and reaching eye margin, 0.27 times as long as height of eye. POL 1.6 times as long as OOL; OOL 4.0 times as long as length of lateral ocellus and 1.2 times as long as LOL. Transfacial distance 1.1 times as long than height of eye and 1.4 times as long as height of lower face (distance between antennal rim and ventral margin of clypeus); diameter of antennal torulus 4.0 times as long as distance between them, and 0.8 times longer than distance between torulus and eye margin. Inner margins of eyes almost parallel. Lower face alutaceous, with few distinct striae reaching eye margin and absent in the midle of the face, median area slightly elevated, alutaceous, shiny. Clypeus smooth, shiny, small,

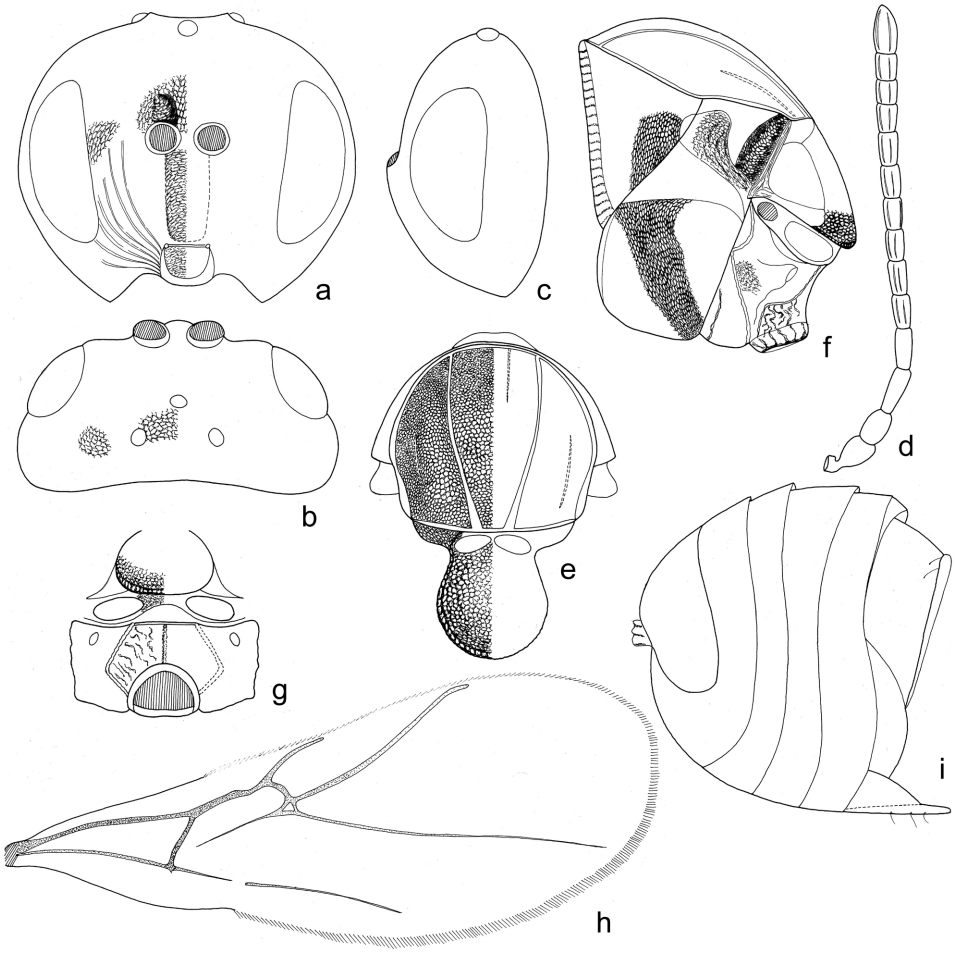

Fig. 2. *Plagiotrochus follioti*, sp. n., asexual female. Head: a = front view, b = dorsal view, c = lateral view; d = antenna; e = mesoscutum and mesoscutellum, dorsal view; f = mesosoma, lateral view; g = metascutellum and propodeum, postero-dorsal view; h = forewing; i = metasoma, lateral view

quadrangular, with small indistinct anterior tentorial pits, with very indistinct epistomal sulcus and clypeo-pleurostomal line, ventrally rounded, not emarginate, medially not incised. Frons slightly depressed, alutaceous, without median carina. Vertex, interocellar area and occiput uniformly alutaceous. Antenna (Fig. 2.d) with 12 flagellomeres, longer than head+mesosoma; pedicel distinctly broader than subsequent flagellomeres, 1.5 times as long as broad; F1 slightly curved and equal in length to F2, F3=F4 and slightly shorter than F2; subsequent flagellomeres shorter; distal flagellomeres slightly broader than proximal ones; placoid sensilla white, distinct on F3–F12, indistinct but present on F2 and absent on F1. Mesosoma (Fig. 2.e–g) flattened dorsoventrally, longer than high in lateral view, with sparse short white setation. Pronotum uniformly and delicately coriaceous to alutaceous; propleuron smooth, with very few delicate longitudinal striae. Mesoscutum slightly broader than long (width measured across the basis of tegulae); shiny, alutaceous, with fine transversely orientated units which give an impression of transversely striated sculpture anteriorly; notauli complete, very narrow, very superficially impressed in anterior third; median mesoscutal line absent; parapsidal lines indistinct; anterior parallel lines indistinct. Mesoscutellum flattened dorsoventrally in lateral view, marginated, 2.2 times shorter than mesoscutum, 1.3 times as long as broad, uniformly alutaceous , sculpture similar to the posterior part of the mesoscutum (Fig. 2.e). Scutellar foveae narrow, superficial, transverse, nearly twice broader than high, weakly delimited posteriorly, shining, smooth, without setae; separated by a point (Fig. 2.e). Mesopleuron smooth, shining, middle part delicately reticulate, slightly impressed, especially below speculum; mesopleural triangle smooth to alutaceous; acetabular carina delimiting a narrow smooth area laterally (Fig. 2.f). Metapleural sulcus reaching mesopleuron 1/3 down; axillar carina narrow, with longitudinal parallel striae; axillula ovate, smooth, shiny, with few sparse white setation; subaxillular bar smooth, shining, in the most posterior end slightly higher than height of metanotal trough; carina along anterior border of propodeal spiracle very indistinct; pit at spiracle shallow, smooth, shining; ventral bar of metanotal trough smooth, shining, no more than 0.5 times height of metanotal trough. Metascutellum very delicately coriaceous to alutaceous, nearly 2.0 times as high as height of smooth, shining ventral impressed area of metascutellum; metanotal trough smooth, shining, without setae. Lateral propodeal carinae strongly curved laterad in the middle, without setae; central propodeal area smooth, shiny, with some delicate wrinkles, without setae, with complete median longitudinal carina; lateral propodeal area delicately alutaceous, with sparse white setation; nucha short, with delicate longitudinal sulci (Fig. 2.g). Margin og forewing with distinct long cilia; radial cell opened, 4.2 times as long as broad, Rs and R1 nearly reaching wing margin; areolet small, distinct, triangular; Rs+M nearly reaching basalis in its lower third (Fig. 2.h). Tarsal claws simple, without basal lobe. Metasoma (Figs 2.i) nearly equal to length of head+mesosoma (in some specimens the tergum are expanded and then the length of the metasoma is longer than head + mesosoma), as long as high in lateral view, all tergites smooth, shining, without setae and micropunctures; prominent part of ventral spine of hypopygium long, 3.0–4.0 times as long as broad in ventral view, with few very short apical setae, never extending beyond apex of spine. Length 1.8–2.1 mm.

Gall. Unknown.

Etymology – In recognition of the continuing contribution of Dr. ROGER FOLLIOT, our friend and colleague, to research on alternating generations of cynipid gallwasps.

Type material – Holotype female: Nepal, Phulcoki, 2600 m, 13.X.1983, oak forest ss. A. Smetana. Paratypes: 3 asexual females with the same labels as the holotype; 1 female: Nepal, Siwapuri Dara, 2450 m, 19.IV–2.V.1985, A. Smetana . The holotype and 1 paratype are deposited in the Canadian National Collection of Insects, Ottawa, Canada; 1 female paratype in the collection of the Pest Diagnostic Laboratory, Tanakajd, Hungary; 2 paratypes in the JP-V collection of the Barcelona University, Catalonia, Spain.

Diagnosis – Most closely resembles *Plagiotrochus smetanai* but the genae are broadened behind eye and the prominent part of the ventral spine of the hypopygium is much longer. *Plagiotrochus follioti* also resembles the sexual form of *P. cardiguensis* (TAVARES, 1928) by the very weak, alutaceous or delicately coriaceous frons, vertex and mesoscutum and weakly differentiated scutellar foveae, however, the length of notauli and the broadened genae differs it. *Plagiotrochus follioti* is closely related to the asexualform of *P. yeusei* BARBOTIN, 1985, however, in *P. yeusei* OOL 3.5 times as large as LOL, while in *P. follioti* OOL only 1.2 as large as LOL and the surface sculpture is more impressed in *P. yeusei*.

Biology – The asexual generation only is known. Adult wasps were swept in October in an oak forest. The most closely related species is *P. smetanai*, sexual form, described above. The asexual forms of *Plagiotrochus* usually emerge from lignified tissue, most often from twigs and branches, and for this reason this new species could be expected to form a twig gall. Nevertheless, adults of *P. follioti* were collected in October which is unusual for asexual generations that usually emerge by the end of the winter and in spring, never in the autumn like in this case. The oaks' phenology in Nepal differ from that in the Western Palaearctic what might be an explanation for the unsual emerging of this species (GOVAERTS & FRODIN 1998).

Distribution – Nepal (Phulcoki and Siwapuri Dara, 2600 and 2450 m a.s.l., respectively).

Plagiotrochus csokai MELIKA et PUJADE-VILLAR, sp. n.
(Fig. 3)

Description – Asexual female (holotype). Body rusty brown; scutum between anterior parallel lines and along parapsides with black stripes; antennae, head posteriorly, propodeum and metasoma dorsally dark brown to black; coxae, trochanters and femura rusty brown, tibiae and tarsi dorsally dark brown; wings with distinct dark brown veins. Head (Figs 3.a–c) very delicately coriaceous, with very few short white setae, 1.7 times as broad as long from above, 1.3 times as broad as high in front view, slightly broader than mesosoma. Gena coriaceous, distinctly broadened behind eye, visible in front view, nearly as broad as cross diameter of eye. Malar space coriaceous, with striae radiating from clypeus and not reaching eye, 0.5 times as long as height of eye. POL 1.6 times as long as OOL; OOL 1.8 times as long as length of lateral ocellus and 1.3 times as long as LOL. Transfacial distance slightly longer or equal to height of eye and 1.5 times as long as height of lower face (distance between antennal rim and ventral margin of clypeus); diameter of antennal torulus 3.7 times as long as distance between them, and nearly equal to distance between torulus and eye margin. Inner margins of eyes parallel. Lower face delicately coriaceous, with few delicate striae, which not reaching toruli; median area elevated. Clypeus trapezoid, coriaceous, slightly impressed, distinctly broader than high, with distinct, small anterior tentorial pits, with distinctly impressed epistomal sulcus and clypeo-pleurostomal line, ventrally emarginate, medially very slightly incised. Frons coriaceous to reticulate, with sparse piliferous punctures, area between antennal toruli and median ocellus slightly darker than rest of frons, very slightly impressed, heart-shaped; in holotype female very tiny incomplete carina present, starting from toruli level and extending to half way to median ocellus (in one paratype female carina more distinct, in another paratype female carina invisible); small area in front of median ocellus impressed. Vertex, interocellar area and occiput uniformly coriaceous. Antenna

with 12 flagellomeres, longer than head+mesosoma; pedicel 1.6 times as long as broad, slightly broader than F1; F1 the longest antennal segment, only 1.2 times as long as F2, F3 slightly longer than F4; F4–F7 equal in length, subsequent flagellomeres very slightly shorter, F12 slightly longer than F11; terminal flagellomeres very slightly broadened; placoid sensilla on F3–F12, absent on F1–F2 (Fig. 3.d). Mesosoma flatenned dorsoventrally, distinctly longer than high in lateral view, with very

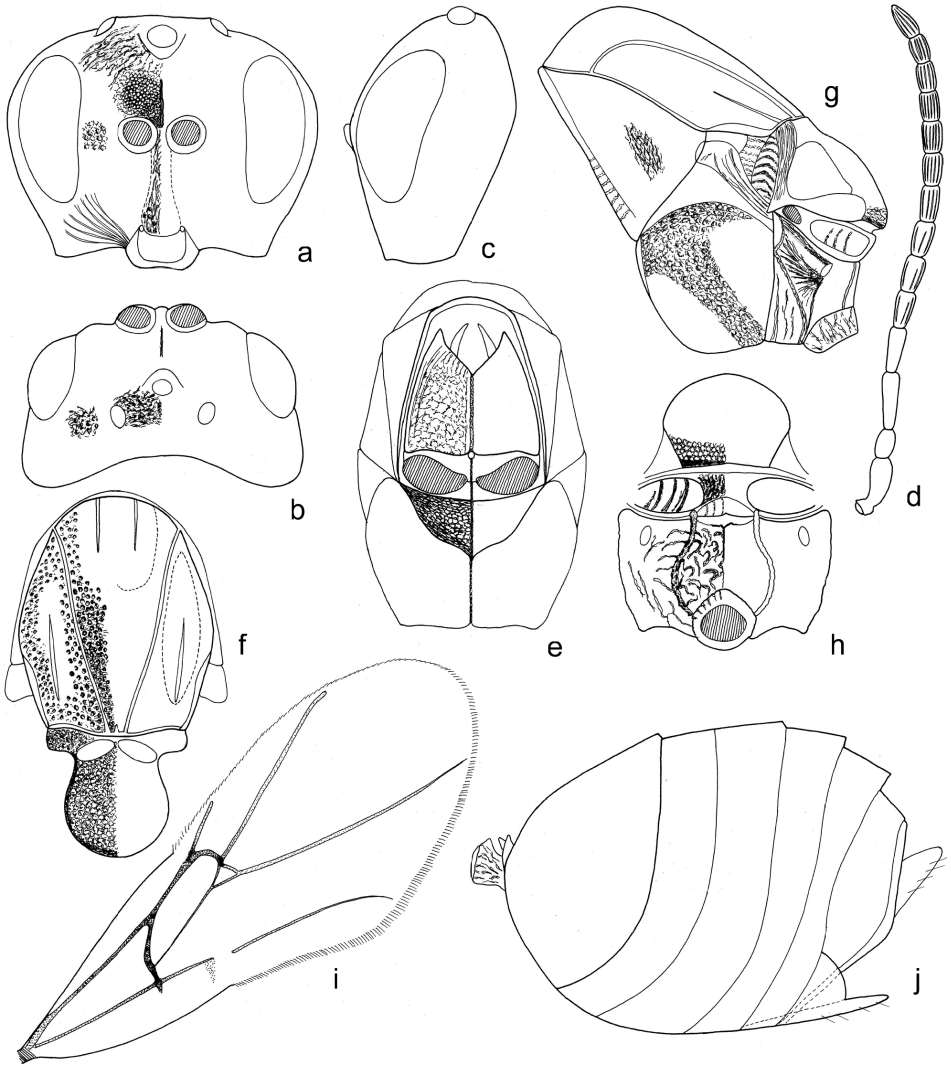

Fig. 3. *Plagiotrochus csokai*, sp. n., asexual female. Head: a = front view, b = dorsal view, c = lateral view; d = antenna; e = pronotum and propleuron, front view; f = mesoscutum and mesoscutellum, dorsal view; g = mesosoma, lateral view; h = metascutellum and propodeum, postero-dorsal view; i = forewing; j = metasoma, lateral view

few short white setae. Pronotum uniformly coriaceous, with delicate wrinkles in anteroventral edge (Fig. 3.g). Propleuron delicately coriaceous (Fig. 3.e). Mesoscutum longer than broad (width measured across the basis of tegulae), alutaceous (in one paratype female delicately coriaceous), with distinct deep punctures, especially along both sides of notauli and parapsidal lines; notauli complete, well-impressed in all length; median mesoscutal line very short, in a form of a short triangle; parapsidal lines broad, distinct, smooth, shiny, black; anterior parallel lines short, extending to 1/4 of length of mesoscutum (Fig. 3.f). Mesoscutellum flattened in lateral view, 1.8 times shorter than mesoscutum, slightly longer than broad, uniformly rugose, very slightly overhanging metanotum. Scutellar foveae transverse, much broader than high, well-delimited around, shiny, smooth, without setae; separated by a narrow but distinct central median carina (Fig. 3.f). Mesopleuron delicately coriaceous, with some sparse distinct punctures, speculum and lower part of mesopleuron smooth, shiny; mesopleural triangle uniformly coriaceous; acetabular carina delimiting a narrow, smooth area laterally (Fig. 3.g). Metapleural sulcus reaching mesopleuron 1/3 down, areas delimited by metapleural sulcus rugose, with irregular short interrupted striae, with sparse long white setation; axillar carina broad, with longitudinal parallel striae; axillula ovate, smooth, shining, with relatively dense white setae; subaxillular bar smooth, shiny, in the most posterior end slightly shorter than height of metanotal trough; carina along anterior border of propodeal spiracle strong; pit at spiracle shallow, smooth, shiny; ventral bar of metanotal trough smooth, shiny, mo more than 0,5 times height of metanotal trough (Fig. 3.g). Metascutellum delicately coriaceous, 2.0 times as high as height of ventral impressed area; metanotal trough smooth, shining, without setae, with distinct longitudinal parallel wrinkles; ventral impressed area of the metascutellum smooth, shining, with some longitudinal parallel delicate wrinkles. Lateral propodeal carinae strongly curved laterad slightly below mid height, without setae; central propodeal area smooth, shiny, with numerous delicate irregular wrinkles and median complete longitudinal carina, without setae; lateral propodeal area uniformly coriaceous, with irregular wrinkles, with sparse white setae; nucha short, without distinct longitudinal sulci (Fig. 3.h). Forewing with distinct dark brown veins, margin with distinct but short cilia; radial cell opened, very narrow, long, 5.2 times as long as broad, Rs and R1 nearly reaching wing margin, areolet distinct, large, triangular, Rs+M well-marked and reaching basalis in its lower third (Fig. 3.i). Tarsal claws simple, without basal lobe. Metasoma (Fig. 3.j) nearly equal to length of head+mesosoma, longer than high in lateral view; all metasomal tergites without micropunctures and setae; prominent part of ventral spine of hypopygium 2.5 times as long as broad in ventral view, subapical setae very short and sparse, never extending behind apex of spine. Length 4.3–4.6 mm.

Gall. Unknown.

Etymology – In recognition of the continuing contribution of Dr. GYÖRGY CSÓKA (Forest Research Institute, Hungary) to research on oak gallwasps.

Type material – Holotype female: O. Jordan, J. Kapperich, Deh Been, 700 m b. Jerash, 2.3.58. Paratypes: 2 females: O. Jordan, J. Kapperich, Jordantal, Arda Road, 600 m, 8.3.1958. The holotype female is deposited in the Hungarian Museum of Natural History, Budapest; 2 female paratypes in the collection of the Pest Diagnostic Laboratory, Tanakajd, Hungary.

Diagnosis – Strongly broadened genae suggest that it is an asexual generation female. *Plagiotrochus csokai* belongs to a group of *Plagiotrochus* species with the mesosoma dorsoventrally flattened, elongated, the mesoscutum is longer than the mesoscutellum, notauli are complete, the median mesoscutal line present, and the frontal carina noticeable (*P. amenti* KIEFFER, 1901, *P. australis* (MAYR,

1882), *P. marianii* (KIEFFER, 1902), and *P. razeti* BARBOTIN, 1985). However, in *P. csokai* the mesoscutum is alutaceous, with distinct deep punctures, the pronotum without longitudinal ridges laterally, while in other mentioned species (except *P. amenti*) the mesoscutum with close subparallel transverse sharp ridges and the pronotum laterally with longitudinal ridges. In *P. amenti* the pronotum without longitudinal ridges laterally and the mesoscutum is also alutaceous, like in *P. csokai*, however, the mesoscutum without distinct deep punctures. In *P. amenti* POL more than 2.0 times as long as OOL and the head and the mesosoma are black, while in *P. csokai* POL only 1.6 times as long as OOL and the head and the mesosoma are rusty brown, never black.

Biology – Adult females were swept in August. Although the host oak is unknown, we expect the host to be a section *Cerris* oak.

Distribution – Currently known only from Jordan, although further sampling in similar habitats is required to establish its true distribution.

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Acknowledgments – We thank Ms. MÁRIA BECHTOLD (Pest Diagnostic Laboratory, Tanakajd, Hungary) for making drawings from digital photographs and microscopic preparation and for mounting and labeling the type material. This work was supported by OTKA T049183 and Bolyai Scholarship to ZS. PÉNZES.

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Revised version received March 16, 2009, accepted May 21, 2009, published September 9, 2009