INTRODUCTION

The members of the genus *Euodynerus* Dalla Torre are the dominant appearing eumenine wasps in semi-natural areas of Korea (Kim et al., 2005). Though six species have been identified from the Korean Peninsula to date (Kim and Yoon, 1996), their taxonomy was very fragmentary and somewhat disorganized in several species. North Korean fauna have been established with only four specimens (Giordani Soika, 1976, 1982). The South Korean fauna also have not been thoroughly studied. Specifically, a previously recorded species of *E. notatus pubescens* was questionable with regards to the occurrence in the Korea Peninsula (Giordani Soika, 1986), and the taxonomic identity of *Rhynchium seulii* Radoszkowski which was placed as a member of *Euodynerus* by van der Vecht and Fischer (1972) has yet to be revealed. In the present study, North Korean *Euodynerus* specimens treated by Giordani Soika (1976, 1982) were examined, and misidentification was corrected. The original description of *Euodynerus quadrifasciata atripes* based on one female from North Korea by Giordani Soika (1976) was so brief that its taxonomic adoption for Far Eastern material remained tentative (Yamane, 1990). To elucidate the taxonomic identity of *Rhynchium seulii* Radoszkowski, its original description and additional records were carefully checked.

As a result, four species in the Korean Peninsula were identified, including *E. trilobus, Euodynerus dantici violaceipennis, E. nipanicus nipanicus*, and *E. quadrifasciatus atripes*. The key to the four species were given together with digital images. The species identified as *E. dantici brachyotomus* and *E. notatus pubescence* from North Korea were re-examined, and corrected to *E. dantici violaceipennis* and *E. nipanicus nipanicus*, respectively. *Euodynerus quadrifasciatus atripes* was re-described for future researchers. After careful reading previous descriptions, *Euodynerus seulii* Radoszkowski was tentatively supposed to be conspecific with *E. nipanicus*.

MATERIALS AND METHODS

Specimens which were housed at the Hanseo University (Seosan-si, Chungcheongnam-do, Korea) and Sk. Yamane Collection (Kagoshima Univ., Japan) were mainly used in this study. North Korean material was loaned from the Hungarian Natural History Museum (HNHM). All the examined specimens other than those from the Korean Peninsula were also listed herein.

Terminology principally follows that of Bohart and Stange (1965), Carpenter and Cumming (1985) and Yamane (1990).
All measurements were taken as the maximal length of body parts being measured under an image analyzer. Body length was measured from the anterior margin of the head to the posterior margin of the metasomal tergum II. Lateral lobes were excluded from the measurement of the clypeal width.

As to previously described species and subspecies, the reference to the original publication is provided, with repository of types in parenthesis following. The synonymic list includes the references treating the forms that occur in the Korean Peninsula.

**SYSTEMATIC ACCOUNTS**

Order Hymenoptera  
Family Vespidae  
Subfamily Eumeninae  
Genus *Euodynerus* Dalla Torre, 1904


**Diagnosis.** Out of the eumenine genera having sessile metasoma (metasomal segment I almost as broad as segment II, and tergum I much broader than long), this genus can be easily separated by the combination of the following external features. Cephalic fovea medium-sized to large, shallow and transverse, posteriorly bordered by a weak carina (sometimes obsolete) and with a pair of pits usually spaced by the diameter of posterior ocellus. Pretegula carina and furrow well developed. Epinemic carina usually well developed; pleural and epipleural sutures deep and wide with sharp dense keels on the bottom. Posterior margin of horizontal face of metanotum carinate and dentate; posterior face of metanotum almost precipitous. Propodeum without submedian carina ending near each posterolateral area of metanotum (the superior median portion of propodeum without carina), where the carina usually strongly developed into an acute projection. Metasomal tergum I without basal transverse carina, with an apical lamella at the same plane as tergal disk. Sternum II somewhat truncated behind its basal sulcus. Prepetiole of forewing short, less than one-third as long as stigma. Terminal segment of male antenna bent backward.

**Key to the Korean species of the genus Euodynerus**  
Dalla Torre

1. Ocellar region polished with distinct three tubercles: one of them, apically bifid, situated just behind anterior ocelli and the others close to inner margins of posterior ocelli (circular region of Fig. 1A, B). Upper frons just below ocellar region distinctly and densely punctate, with both large punctures and medium-sized punctures (Fig. 1B). Cephalic fovea comparatively small, its breadth almost as long as the distance between posterior ocelli (Fig. 1A). In both sexes, yellow apical band on tergum I being dilated in lateral parts and black median part characteristically arrow head-shaped (Fig. 2A). ……… *E. trilobus* (Fabricius)  
   - Ocellar region without any tubercle (Fig. 1C). Upper frons strongly reticulate or densely punctate mainly with large punctures, not distinctly bipunctate, at most interspace among punctures with sparse small punctures. Cephalic fovea comparatively larger, its breadth longer than the distance between posterior ocelli (Fig. 1C, J, O). In both sexes, the apical band on tergum I simple or dilated laterally (Fig. 2A-D); if being dilated in lateral parts, black median part not arrow head-shape (Fig. 2B). …………………………2

2. Clypeus longer than broad in both sexes; female clypeus with dense longitudinal carinae and its apical margin almost truncated (Fig. 1D, E). In both sexes, below two-third of posterior vertical face of metanotum impunctate and shining; posterior margin of horizontal face of metanotum with large irregular denticles; carina on propodeal posterior face strong (Fig. 1F). Mesonotum almost bare at most partially with sparse short hairs (Fig. 1G). Cephalic fovea medially smooth and somewhat polished (Fig. 1C). Body maculation extensive: apical band on tergum I being dilated laterally (Fig. 2B). …………………………2

3. Head and mesosoma with short erect dense hairs of uniform length (Fig. 1J). Clypeus almost as long as broad (Fig. 1H, I). Cephalic fovea with both large punctures in its marginal portion, which are almost as large as nearby punctures, and microscopic punctures. Metasomal tergum II with a short but distinct apical lamella; punctures on the tergum strong and large (Fig. 1L). Sternum II medially with a longitudinal groove in subbasal part. ……………………..*E. nipanicus nipanicus* (Schulthess)  
   - Head and mesosoma with long disheveled hairs of vari-
able length (Fig. 1P). Clypeus broader than long (Fig. 1N, O). Cephalic fovea mainly with dense micropunctures on almost entire face. Metasomal tergum II without apical lamella; punctures on the tergum feeble and smaller (Fig. 1M). Sternum II medially without a distinct longitudinal groove in subbasal part, at most with an obscure impression. ............ E. quadrifasciatus atripes Giordani Soika

Euodynerus trilobus (Fabricius), 1787
Vespa triloba Fabricius, 1787: 290, China (coll. Lund).
**Rhynchium trilobus** Fabricius: Kim, 1970: 552, Pl. 52, fig. 633.


**Distribution.** Africa to China: Jiangsu, Zhejiang; Korea: Isl. Jeju-do; Japan: Honshu, Shikoku, Kyushu; Taiwan.

**Remarks.** As shown in the key, this species is unique in having three tubercles in ocellar region. In Korea, this species is very rare and known just from Isl. Jeju-do. There has been no find of additional specimens since 1958.

**Euodynerus dantici violaceipennis** Giordani Soika, 1973


**Distribution.** China: Jianxi (Canton, Soochow); Russian Far East; Korea: Japan: Honshu, Awaji-shima, Kyushu.

**Remarks.** This species is polytypic, comprising more than ten subspecies in the Palearctic region (van der Vecht and Fischer, 1972; Giordani Soika, 1986), and three subspecies has been known to distribute in the Far East, i.e., subsp. *brachytomus*, subsp. *violaceipennis*, and subsp. *nigrescens* of which it was provided by Yamane (1990). In addition to Yamane’s conception for subspecies separation, following differences might be useful for their separation. Body markings of subsp. *brachytomus* are orange yellow and very extensive, for example covering almost entire face of tergum I except for narrow median longitudinal line and larger part of pronotal dorsum. However, body markings of subsp. *violaceipennis*, and subsp. *nigrescens* are deep yellow, yellow or bright yellow, and larger median part of tergum I black and at most anterior half of pronotal dorsum marked. As far as what is known so far, three subspecies are geographically segregated as follows: subsp. *brachytomus* is known to distribute in Transbaikal, near Mongolian area and North Korea, while subsp. *violaceipennis* in the Far East (Russian Far east, North east China, South Korea, and Japan), and subsp. *nigrescens* in Central and Southern Ryukyus of Japan. The sole North Korean specimen identified as *E. dantici brachytomus*, which extended the distributional range to North Korea eastward, by Giordani Soika (1982) is well matched with the South Korean material herein except for slightly deeper maculation (but still not orange yellow, and some of the old Korean specimens were also deep yellow). Thus this subspecies is no longer the Far Eastern and Korean element.

**Euodynerus nipanicus** *nipanicus* (Schulthess), 1908

**Lionotus tomentosus** var. *nipanicus* Schulthess, 1908: 287-288.


? *Rhynchium seuli* Radoszkowski, 1890: 231, ♂, Seoul, Korea (Mus. Berlin); Dalla Torre, 1894: 48; 1904: 35; Oka-


**Distribution.** China (Lee, 1985; Giordani Soika, 1986): Heilongjian, Jilin, Liaoning, Hebei, Shandong (“Tai-shan”), Zhejiang (Hanchaw, Ning-Po, Chusan), Jiangsu (Nan king, Shanghai), Guangdong, Guangxi, Yunnan, Sichuan (Yachow, Suifu, Tsianfou); Eastern Russia: Magadan, Sakhalin, Amur, Primorie; the Korean Peninsula; Japan: Hokkaido, Honshu, Iwajima, Okinawa (Nishino-shima), Shikoku, Kyushu, Isl. Tsushima, Isl. Amakusa, Akune-oshima, Isl. Osumi, Isl. Ogasawara (introduced?).

**Remarks.** Based on the European voucher specimens (♀, Steiermark, Röcksec, NE Mureck, 46°43’15”48’, 20 Jul 1998, Gusenleitner J; ♂, Steiermark, Wardprecht, S Stranden, 46°47’15”48’, 19 Jul 1991, J. Gusenleitner; ♂, Steiermark, Oberrau, 46°43’15”54’, 10 Jul 1991, Gusenleitner J; ♂, ditto, 15 Aug 1993, ditto), *Euodynerus notatus* has no apical lamella on tergum II as in *E. quadrifasciatus*, which is easily observable characteristic to separate this species from *E. nipanicus*. Considering the short erect dense hairs on head and mesosoma, strong punctures and the different shape of cephalic fovea (Cephalic fovea of *E. notatus* with large dense punctures laterally and microscopic punctures medially, but *E. quadrifasciatus* with dense microscopic punctures almost throughout the face), *E. notatus* and *E. quadrifasciatus* are also separated valid species. The sole North Korean specimen identified as *Euodynerus notatus pubescens* by Giordani Soika (1976) is a mere misidentification of *E. nipanicus*, and it is highly possible that Far Eastern material previously identified as *E. notatus* might be *E. nipanicus*. This species is also polytypic, and the other two subspecies, i.e., subsp. *flavicornis* and subsp. *ryukyuensis*, are more extensively maculated and distributed in Ryukyu of Japan (refer to Yamane, 1990).

The original description of *Rhynchium seuli* is insufficient for species distinction, and available information on this species is scarce, with only additional reports by Okamoto (1924). Although Kim (1970, 1980) also described this species from Korea, his voucher specimens (♀, Korea, Isl. Wando, 23 Aug 1961, Park KJ; ♀, Korea, Aengmubong, 8 May 1971, [HYEU 12a]) were *Ancistrocerus oviventris*. The described minor external features and color pattern in the original description and Okamoto’s work are most similar to those for *E. nipanicus nipanicus*. According Dr. Koch (personal communication), the holotype of this species was not in Mus. Berlin in which other types and Korean material treated by Radoszkowski (1890) were housed. Until direct examination of type material, my present treatment on the possible synonymy of this species under the name of *E. nipanicus nipanicus* herein should remain tentative.


**Redescription.** Female. Body length 8.5-10.0 mm. Cephalic fovea broadly transverse (its breadth 1.5 × as long as the distance between posterior ocelli), with dense micropunctures, thus distinctly demarcated from surrounding area with macropunctures, with a slightly deeper area in its medial portion. Clypeus more or less distinctly broader than long, approximately 1.2 times as broad as long. Epicnemial carina very weak, and almost obscure in upper half of ventral mesepisternum. Body sculpture coarse, and body punctures shallow and medium in size.

Following parts/markings yellow (Fig. 2D): a transverse lower frontal spot, a triangular marking at madibular base, a pair of spots on temples, a narrow anterior band on pronotal dorsum (interrupted medially), horizontal face and upper marginal portion of vertical face of metanotum, narrow and somewhat regular apical bands on terga I-V (all the bands almost identical in width), and posterior lateral parts of sternum II. Lower faces of all tarsi reddish black.

Males much as in females except for following differences. Body length 6.0-7.5 mm. Clypeus only slightly broader than long. In addition to the markings mentioned for the female, the following parts yellowish (Fig. 2E): entire surface of clypeus, labrum and mandible except for margins, antennal scape below, both anterior and posterior spots on tegula, a short apical band on tergum V, a line on inner face of fore femur in its half, inner face of mid femur, and outer faces of all tibiae and tarsi. Inner faces of all tarsi reddish yellow.

**Distribution.** Far Eastern Russia: Primorie; the Korean Peninsula; Japan: C. and N. Honshu.

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REFERENCES


