## Braconidae (Hymenoptera) from Korea, XVII\*

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**Abstract** – Considerations on the taxonomy of the genus *Triraphis* RUTHE with a checklist of the three species known from the Palaearctic Region. *T. pullus* sp. n. is described from Korea. *T. solitarius* (WATANABE, 1970) is a jun. syn. of *T. tricolor* (WESMAEL, 1838). A key is presented for the three *Triraphis* species. With 13 figures.

#### INTRODUCTION

The first *Triraphis* RUTHE species was described by WESMAEL (1838) under the name *Pelecystoma tricolor*, the original (or syntype) series was taken in Belgium (in the environment of Brussels) and consisted of two specimens  $(1 \ 0 + 1 \ 2; "var.")$ . In 1860, RUTHE set up the genus *Triraphis* for his species *Exothecus discolor* that he had described five years earlier, i.e. in 1855. The identity of *E. discolor* (jun. syn.) with *P. tricolor* (sen. syn.) was recognized by REINHARD (1865: 244). VAN ACHTERBERG (1991: 62) was the first to assign the species *P. tricolor* to its proper genus *Triraphis*. *Triraphis tricolor* (WESMAEL) is distributed in Europe (SHENEFELT 1975: 1209, TOBIAS 1986: 85) and has been reported from Japan (WATANABE 1962, 1970 "Pelecystoma tricolor") and Korea (PAPP 1989: 86 "Rogas tricolor").

WATANABE (1962) listed *Pelecystoma tricolor* WESMAEL from Japan on the basis of 71 QQ and 80 dd. Eight years later (1970) he described *P. gregarium* on the basis of 26 QQ and 30 dd which type material originally belonged to the series of *P. tricolor* WESMAEL from Japan, i.e. WATANABE partly rectified his previous taxonomic statement. A second species was also described by WATANABE under the name *Pelecystoma solitarium* from Japan (type series: 37 QQ and 32 dd).

On my request Dr. M. SUWA (Entomological Department, Hokkaido University, Sapporo) was kind enough to lend me paratypes from the type series of both WATANABE species, two females and two males of each species taxa mentioned above. On the basis of this paratypic material the name *P. solitarium* has proved to represent *T. tricolor*, and *P. gregarium* is a valid species of the genus *Triraphis*.

In the braconid material of the Hungarian Natural History Museum (Budapest) I have found four *Triraphis* specimens (2 99 and 2 od) which originate from Korea. At my first, rather superficial, examination I thought that this series was identical with *T. gregarius*. However, a few features prompted me to doubt in my provisional identification. In a little while I received the WATANABE's type material of *Triraphis* from Sapporo (see also the previous paragraph) and my scepticism was justified: my series from Korea represents a new *Triraphis* species. By the way it seems reasonable to point out that the identity of the two taxa (*P. solitarium* and *P. tricolor*) had been presumed by WATANABE himself when he stated that "...the European form, *Pelecystoma tricolor*, resembles the Japanese ones, *P. gregarium* and *P. solitarium*, but it seems to be more closely related to *solitarium* than to *gregarium*."

<sup>\*</sup> Zoological Collectings by the Hungarian Natural History Museum in Korea, No. 131.

To summarize our present taxonomic knowledge of the *Triraphis* species of the World, the following checklist was compiled:

Triraphis RUTHE, 1860 gregarius (WATANABE, 1970) (Pelecystoma), comb. n. – Japan pullus sp. n. – Korea tricolor (WESMAEL, 1838) (Pelecystoma) – Europe, Korea, Japan = solitarius (WATANABE, 1970) (Pelecystoma), syn. n.

It seems reasonable to suppose that there is or are further latent *Triraphis* species which was or were described in the *Pelecystoma* WESMAEL, 1838 (or in other genera) and still lie up in this genus waiting for taxonomic emendation (see SHENEFELT 1975: 1206-1209).

#### Triraphis pullus sp. n.

(Figs 1-8)

M a terial examined – Holotype  $\mathcal{P}$ : Korea, Pyongyang city, Mt. Ryongak, 31 May 1985, leg. VOJNITS et ZOMBORI, No. 963. – Paratypes (1  $\mathcal{P}$  + 2  $\mathcal{O}$ ): 1  $\mathcal{P}$  + 1  $\mathcal{O}$ : same data as for holotype. 1  $\mathcal{O}$ : same locality as for holotype, taken at light at night, 30 May 1985, leg. VOJNITS et ZOMBORI. No. 962.

Holotype and three paratypes are deposited in the Hungarian Natural History Museum (Department of Zoology), Budapest, Hym. Typ. Nos 7695 (holotype) and 7696-7698 (paratypes).

E t y m o l o g y - The species name "pullus" refers to the dark brown ground colour of the body.

D e s c r i p t i o n o f t h e h o l o t y p e f e m a l e – Body 4.2 mm long. Head in dorsal view (Fig. 1) 1.87 times as broad as long, eye 3.5 times as long as temple, latter constricted, occiput weakly excavated. Temporal carina present, occipital carina absent, temporal and hypostomal carina not meeting each other (Fig. 2). Ocelli small and elliptic, distance between two ocelli as long as greatest diameter of an ocellus, OOL somewhat longer than POL. Eye in lateral view 1.7 times as high as wide, temple ventrally slightly broadening and eye almost three times wider than temple ventrally (Fig. 3). Malar space short, half as long as basal width of mandible. Head polished; face, occiput and temple with disperse hairpunctures. – Antenna nearly one-third longer than body with 38 antennomeres. First flagellomere three times as long as broad apically, further flagellomeres gradually attenuating so that penultimate flagellomere 2.6 times as long as broad.

Mesosoma in lateral view 1.5 times as long as high. Notaulix evenly deep, narrow and finely crenulated. Precoxal suture also finely crenulated. Mesonotum, scutellum and mesopleuron polished with disperse hairpunctures. Propodeum rugose. – Hind femur 4.7 times as long as broad somewhat distally. Basitarsus of hind leg as long as tarsomeres 2-3 combined.

Fore wing as long as body. Pterostigma three times as long as wide, issuing radial vein proximally from its middle; rI one-third shorter than width of pterostigma, r2 2.4 times as long as rI, r3 almost straight and reaching tip of wing. – Nervellus incurved to base of hind wing, i.e. subbasal cell somewhat less wide and nervellus itself not perpendicular to *n. med.* (Fig. 4, arrow).

Metasoma as long as head + mesosoma combined. First tergite (Fig. 5) 1.3 times as long as broad behind, evenly broadening posteriorly, spiracle very small and anteriorly from its middle, pair of converging keels meeting before middle of tergite. Second tergite less transverse, 1.4 times as broad behind as long medially and 1.7 times as long as third tergite. Tergites longitudinally striated with anastomosis, second suture crenulated (Fig. 5). Ovipositor sheath short, in lateral view about as long as first tergite or hind tarsomeres 2-4 combined; posterior end of ovipositor as in Fig. 7.

Ground colour of body blackish brown. Face and cheek light brown, mandible yellowish brown, palpi pale yellow. Scape and pedicel brownish, flagellum dark brown. Prothorax brownish yellow, tegula yellow. Legs brownish yellow, trochanters whitish. Sterni whitish. Wings hyaline, pterostigma and veins opaque brown, parastigma yellow.

Description of the female paratype  $(1 \ \mathcal{Q})$  – Similar to the female holotype. Body 4.1 mm long. Antenna with 36 antennomeres. First tergite 1.31 times as long as broad behind.

D e s c r i p t i o n o f t h e m a l e p a r a t y p e s (2 od - Similar to the female. Body 4 mm long.Head in dorsal view 1.75-1.8 times as broad as long, eye 2.6-2.8 times as long as temple (Fig. 8). Antenna with 26-27 antennomeres. Hind femur 5.5-5.6 times as long as broad distally. First tergite (Fig. 6) 1.5-1.6 times as long as broad behind, second tergite 1.18-1.23 times as broad behind as long medially; tergites striated with less anastomosis (Fig. 6). Body dark brown, first tergite and first and second sternites whitish yellow.

Host unknown.

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Figs 1-13. – Figs 1-8. Triraphis pullus sp. n. 1 = head in dorsal view Q, 2 = head behind with hypostomal (arrow pointing downwards) and occipital (arrow pointing upwards) carinae, 3 = head in lateral view, 4 = nervellus (arrow) of hind wing, 5-6 = tergites 1-2 Q (5) and d (6), 7 = posterior end of ovipositor, 8 = head in dorsal view d. – Fig. 9. T. tricolor (WESMAEL): head in dorsal view. – Figs 10-11. T. gregarius (WATANABE): 10 = head in dorsal view, 11 = tergites 1-2 Q. – Figs 12-13. T. tricolor (WESMAEL): 12 = nervellus (arrow) of hind wing, 13 = tergites 1-2 Q

The new species, *Triraphis pullus* sp. n., is nearest to *T. tricolor* (WESMAEL, 1838) considering their common features: tergites with distinct longitudinal striation, first tergite usually somewhat longer than broad at hind. WATANABE (1970) has described two new *Pelecystoma*, now *Triraphis*, species (*T. gregarius*, *T. solitarius*) of which the latter name is a junior synonym of *T. tricolor*; the synonymy is based on the examination and comparison of the paratypes ( $2\ 9\ + 2\ 0\ 0$ ) of *T. solitarius* with females and males of *T. tricolor* authenticated by me, i.e. compared with the type series. The three species (*T. gregarius*, *T. pullus*, *T. tricolor*) are distinguished with the following key:

- 1 (4) Temple in dorsal view (Fig. 1) less constricted. Nervellus somewhat more incurved to base of hind wing, i.e. subbasal cell somewhat less wide and nervellus itself not perpendicularly issuing from *n. med.* (Fig. 4, arrow). Tergites striated with anastomosis (*T. pullus*) or longitudinally rugose (*T. gregarius*).
- 2 (3) Second tergite less transverse, 1.4 times (\$\bar{Q}\$) and 1.15-1.2 times (\$\display\$) as wide behind as long medially; tergites longitudinally striated with anastomosis; first tergite 1.2-1.3 times (\$\display\$) and 1.35-1.4 times (\$\display\$) as long as broad behind, relatively less broadening posteriorly (Figs 5-6). Ocelli small, distance between two ocelli as long as (or slightly shorter than) greatest diameter of an elliptic ocellus (Fig. 1). Body blackish brown with yellow legs. \$\overline{2}\$; 4.1-4.2 mm, \$\display\$: 4 mm

#### T. pullus sp. n.

3 (2) Second tergite more transverse, 1.7-1.8 times (\$\overline\$) and 1.8-2 times (\$\verline\$) as wide behind as long medially; tergites longitudinally rugose; first tergite as long as broad behind (\$\verline\$\verline\$), relatively more broadening posteriorly (Fig. 11). Ocelli large, distance between two ocelli shorter than greatest diameter of an elliptic ocellus (Fig. 10). Body yellow (\$\verline\$\verline\$) with brownish pattern on tergites 1-2 (\$\verline\$). \$\verline\$ 2.55 mm, \$\verline\$: 3-4 mm

## T. gregarius (WATANABE, 1970)

4 (1) Temple in dorsal view (Fig. 9) more constricted. Nervellus somewhat less incurved to base of hind wing, i.e. subbasal cell somewhat wider and nervellus itself nearly perpendicularly issuing from *n. med.* (Fig. 12, arrow). Ocelli large, distance between two ocelli shorter than greatest diameter of an elliptic ocellus (Fig. 9). Second tergite 1.7-1.8 times (Q) and 1.5-1.6 times (d) as wide behind as long medially; tergites striated with less anastomosis (Fig. 13). Body yellow, brownish yellow with more or less brown, dark brown to blackish brown pattern. Q: 4-5 mm, d: 2.5-3 mm. – (= *Pelecystoma solitarium* WATANABE, 1970)

#### T. tricolor (WESMAEL, 1838)

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