

## Two New Species of the Family Zerconidae (Acari: Mesostigmata)

Lee, Won-Koo\* and Jae-Won Lim

(Department of Biology, College of Natural Sciences, Chonbuk National University)

### 구멍응애과(응애강: 증기문목)의 2신종

이 원 구\* · 임 재 원

(전북대학교 자연과학대학 생물과학부 · 전북대 부설 생물다양성연구소)

#### ABSTRACT

This study is based on specimens which had been collected from Chollabuk-do and Chungcheongbuk-do provinces in November 1994 through February 2000. As a result, the following 2 species are described as new to science: *Echinozercon fortunatus* sp. n. and *Eurozercon aserrietaryus* sp. n.

**Key words :** Acari, Mesostigmata, Korea, Taxonomy, Zerconidae

#### INTRODUCTION

From the Korean peninsula, 23 species, 10 genera belonging to the family Zerconidae were known previously. Blaszk (1975b) described three species *Mesozzercon coreaus* Blaszk, 1975, *Echinozercon orientalis* Blaszk, 1975, *Metazercon athiasae*, Blaszk, 1975, and Balszak (1976a, b) added *Mesozzercon plumatus* Aoki, 1966, *Zercon caenorestes* Blaszk, 1976, *Z. powlowskii* Blaszk, 1976, *Z. ectopicus* Blaszk, 1976, *Z. szepczyckii* Blaszk, 1976, *Z. asaphus* Blaszk, 1976 and *Xenozzercon glaber* Blaszk, 1976 from North Korea. Blaszk (1979) described *Koreozzercon bacatus* Halaskova, 1979, *Kaikiozercon peregrinus* Halaskova, 1979, *Kaikiozercon mamilosus* Halaskova, 1979, *Aquilonozzercon desuetus* Halaskova, 1979, *Zercon gerhardi* Halaskova, 1979, *Metazercon mahunkai* Halaskova, 1979, *Eurozercon aquilonis*, Halaskova, 1979, and *Eurozercon pacificus* Halaskova, 1979 in North Korea. Halašková (1979) revised North Korean Zerconidae without addition of further species.

Paik (1983) reported three species *Mixozzercon stellifer* (Aoki 1966), *Zercon armatus* Aoki, 1966, and *Zercon japonicus* Aoki, 1966 in the Republic of Korea. Recently Lim

and Lee (2001) added 8 species newly to the fauna of the Republic of Korea.

Here the authors report 2 zerconid species as new to science.

#### MATERIALS AND METHODS

This study was carried out on Chollabuk-do and Chungcheongbuk-do provinces, Korea during November 1994 to February 1995. Mites were isolated from soil samples through the Berlese Tullgren apparatus. Isolated mites were fixed and preserved in lactic acid (80%) and mounted with polyvinyl alcohol (PVA) medium. The specimens were observed at 100×, 400× and 1,000× under a light microscope and measured by a micrometer. Czeslaw Blaszk (1974, 1975a) were referred to the nomenclature of setae in this article.

#### DESCRIPTION

**Genus *Echinozercon* Blaszk, 1975** 가시구멍응애속  
***Echinozercon fortunatus* sp. n.** 진안구멍응애 (신칭)  
(Holotype) 1♂, Baikwun, Chinan-gun, Chollabuk-do, 16.  
xi.94 (Leg. Jae-Won Lim).

**Male.** Idiosoma length 340.3 μm, width 271.0 μm, distance

\* Corresponding author  
Phone) +82-63-270-3355, Fax) +82-63-270-3362  
E-mail) wkleee@chonbuk.ac.kr

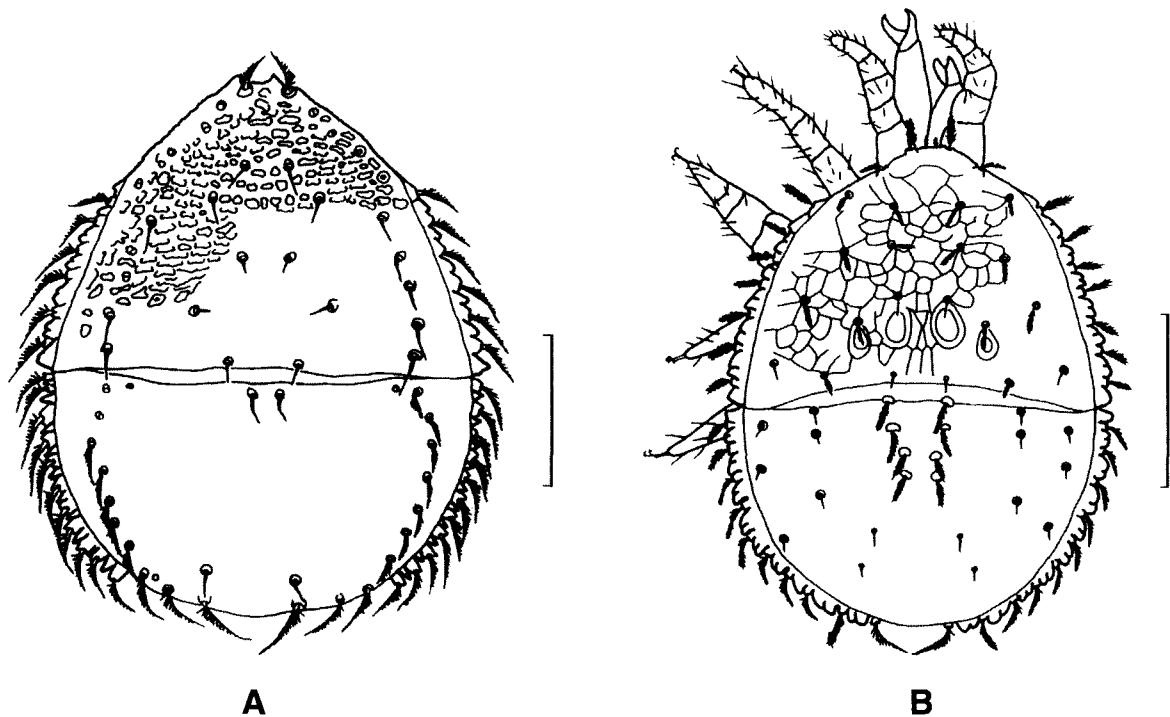


Fig. 1. Dorsal view of *Echinozercon fortunatus* (A) and *Eurozercon aserrisetarius* (B) (scale bar = 100 μm).

at insertion of I6 55 μm and oval shaped with acute anterior margin. Anterior dorsal shield with irregular tile-like sculpture.

Setae i2 and r row on the podosoma serrated but others simple. Setae on opisthonotum serrated leaflet shape except I1 and I5. Setae on Z-row and S-row alternatively arranged each other as Z1-S1-Z2-S2-Z3S3-Z4-S4-Z5. Setae on opisthonotum with 3 pairs of I1, I5, I6 and I2, I3, I4 absent. On podonotum, s-row 7 pairs and R- row 11 pairs (Fig. 1A). Peritremes long and reached the base of P1.

This species is similar to North Korean *E. orientalis* in the shape of idiosoma and setae but smaller in size than the latter (Table 1).

**Remarks.** This species has 3 pairs of setae on I row, and differs from *E. orientalis* (4 pairs) or *E. nipponensis* (6 pairs; Blaszk 1977). The setae on r-row are 11 pairs in this species, instead of 9 and 10 pairs in *E. orientalis* and *E. nipponensis*, respectively (Blaszk 1977).

**Genus Eurozercon Halasková, 1979** 툽날구멍응애속

*Eurozercon aserrisetarius* sp. n. 툽날구멍응애 (신칭)

(Holotype) 1 ♀, Mt. Hoemunsan, Sunchang-gun, Chollabuk-do, 6.ii.1995. (Leg. Jae-Won Lim). (Paratypes) 3 ♀ ♀, Mt. Hoemunsan, Sunchang-gun, Chollabuk-do, 6.ii.1995. (Leg.

**Table 1.** Measurements of *Ecinozercon fortunatus* sp. n.

Position of setae	Setae (length; μm)			
Podonotum	i1 (23)		s1 (-)	r1 (30)
	i2 (-)	z1 (22)	s2 (-)	r2 (30)
	i3 (24)	z2 (24)	s3 (-)	r3 (30)
	i4 (24)		s4 (24)	r4 (27)
	i5 (-)		s5 (24)	r5 (27)
	i6 (13)		s6 (-)	r6 (27)
			s7 (32)	
Opisthonotum	I1 (24)	Z1 (30)	S1 (30)	R1 (28)
	I2 (-)	Z2 (30)	S2 (30)	R2 (28)
	I3 (-)	Z3 (30)	S3 (34)	R3 (28)
	I4 (-)	Z4 (34)	S4 (36)	R4 (28)
	I5 (23)	Z5 (36)		R5 (28)
	I6 (38)			R6 (28)
				R7 (28)
				R8 (28)
				R9 (28)
				R10 (28)
				R11 (28)

Abb. i1-i6: median podonotal row. z1-z2: medio-lateral podonotal row. s1-s7; lateral podonotal row. r1-r6; marginal podonotal row. I1-I6: median opisthonotal row. Z1-Z5; medio-loateral opisthonotal row. S1-S4: lateral opisthonotal row. R1-R11; marginal opisthonotal row.

Jae-Won Lim).

Material observed 5 ♀ ♀, Baekwun-myun, Jechon city, Chungcheongbuk-do.6.ii.1995. 14 ♀ ♀ Mt. Hoemunsan,

## Two New Species of the Family Zerconidae

**Table 2.** Measurements of *Eurozercon aserrisetarius* sp. n.

Position of setae	Setae (length; $\mu\text{m}$ )			
Podonotum	i1 (8)		s1 (10)	r1 (20)
	i2 (19.3)	z1 (12.3)	s2 (14)	r2 (20)
	i3 (20)	z2 (16)	s3 (23.7)	r3 (20)
	i4 (14.7)		s4 (19)	r4 (20.7)
	i5 (10)		s5 (17)	r5 (21.3)
	i6 (8)		s6 (9.3)	r6 (21.3)
Opisthonotum	I1 (13)	Z1 (10.3)	S1 (9)	R1 (20.7)
	I2 (19.3)	Z2 (9.3)	S2 (7.7)	R2 (20.7)
	I3 (18)	Z3 (6.3)	S3 (7.3)	R3 (20.7)
	I4 (15)	Z4 (8)		R4 (20.7)
	I5 (7)	Z5 (20.7)		R5 (20.7)
	I6 (29)			R6 (20.7)
				R7 (20.7)
				R8 (20.7)

Abb. i1-i6: median podonotal row, z1-z2: medio-lateral podonotal row. s1-s6: lateral podonotal row. r1-r6; marginal podonotal row. I1-I6; median opisthonotal row. Z1-Z5; medio-loateral opisthonotal row. S1-S3; lateral opisthonotal row. R1-R8; marginal opisthonotal row.

Sunchang-gun, Chollabuk-do, 6.ii.1995 (Leg. Jae-Won Lim).

**Female.** Idiosomal length 274.3 (270-280)  $\mu\text{m}$ , width 216.7 (212-220)  $\mu\text{m}$  and distance at insertion of I6-I'6 45.7 (45-46)  $\mu\text{m}$ . Among the setae on podonotum i3 longest and others become shorter toward posteriorly. Setae on opisthonotum simple except I1-I4 and R-row. Marginal opisthonotal row consists of 8 setae. Median opisthonotal I5 and medio-lateral opisthonotal Z4 short and simple.

**Remarks.** This species is different from *E. pacificus* by having simple (without barbules) Z1-Z3, and distinguished from *E. aquilonis* by simple I5, Z4.

### 적 요

1994년 11월부터 2000년 2월까지 전북과 충북에서 구멍

응애를 채집하였으며 동정한 결과 다음과 같이 2-종을 관찰하였다.

1. *Echinozercon fortunatus* sp. n. 진안구멍응애 (신칭)
2. *Eurozercon aserrisetarius* sp. n. 톱날구멍응애 (신칭)

### REFERENCES

- Aoki J. 1966. Nachtragsarten der Familie Zerconidae aus Japan. *Bull. Nat. Sci. Mus., Tokyo* **9**(2): 61-68.
- Blaszak C. 1974. Zerconidae (Acarina, Mesostigmata) Polski. *Monografie Fauny Polski, Cracov* **3**: 315pp.
- Blaszak C. 1975a. A revision of the family Zerconidae (Acari, Mesostigmata) (Systematic studies on Family Zerconidae I). *Acarologia*, t. XV II, *Fasc.* **4**: 553-569.
- Blaszak C. 1975b. Contribution to the Knowledge of Zerconidae fauna from North Korea (Acari: Mesostigmata). *Folia Entomol. Hung., Budapest* **28**(2): 263-268.
- Blaszak, C. 1976a. *Xenozzercon glaber* gen. nov., sp. nov. (Acari: Zerconidae) from North Korea. *Bull. Acad. Pol. Sci.* **24**: 33-36.
- Blaszak C. 1976b. Systematic studies on Family Zerconidae II. North Korea Zerconidae (Acari, Mesostigmata). *Acta Zool. Cracov* **21**(16): 527-552.
- Blaszak, C. 1977. *Echinozercon nipponensis* sp. n. (Acari: Zerconidae) a new species of mites from Japan. *Bull. Acad. Pol. Sci.* **25**: 663-666.
- Blaszak, C. 1979. Systematic Studies on the Family Zerconidae. IV. Asian Zerconidae (Acari, Mesostigmata). *Acta Zool. Cracov* **24**(1): 3-112.
- Halašková, V. 1979. Taxonomic studies on Zerconidae (Acari: Mesostigmata) from the Korean People's Democratic Republic. *Acta. Sci. Nat. Brno.* **13**, *Fasc.*, 3. 41pp.
- Lim, J.W. and W.K. Lee. 2001. A taxonomic study of the family Zerconidae (Acari, Mesostigmata) in the Korean peninsula. *Korean J. Syst. Zool.* **17**(2): 191-205. (in Korean)
- Paik, W.H. 1983. Study on predaceous mites of Korea. *Rural Development Administration*, Seoul, 53pp. (in Korean)