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New Records of Pear Rust Mite, *Phyllocoptes pyrivagrans* Kadono, from Korea (Acari: Eriophyidae)

한국 미기록종 배잎녹응애의 보고

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Abstract - Eriophyid mites, *Phyllocoptes pyrivagrans* Kadono, 1985 on pear are described and illustrated in korea for the first time.

Key Words - *Phyllocoptes pyrivagrans* Kadono, Eriophyid mite, Rust mite, Pear

초 록 - 국내 미기록종인 배나무를 가해하는 배잎녹응애 (*Phyllocoptes pyrivagrans* Kadono, 1985) 를 발견하였으므로 이에 기재 보고한다.

검색어 - 분류, 녹응애, 배잎녹응애, 배나무

Eriophyid mites, variously known as gall mites, blister mites, rust mites and bud mites, are vermiform or fusiform and having only 2 pairs of legs, these invisible mites are very small (less than 1mm long) and are one of the most specialized groups of plant feeders (Keifer, 1946).

Eriophyids cause gall formation as a result of mite attack on individual plant cells, and also cause an array of nongall abnormalities, such as leaf folding and twisting, blisters on the foliage. *Phyllocoptes pyrivagrans* causes browning to leaves of pear tree.

Kim (1989) investigated a systematic and morphological study of the superfamily Eriophyoidae in Korea. In this study, 13 species in 7 genera are recorded. Na *et al.* (1998) reported eriophyid mite, *Aceria tulipae* Keifer and Lee *et al.* (1994) discussed damage rate and control of *Eriophys macrodonis* Keifer but the taxonomical reports on eriophyid mite have been rarely seen from South Korea up to the present.

In Japan, ten species of eriophyid mites of the superfamily Eriophyoidea were described (Huang, 1971) and five species of eriophyid mites including *Phyllocoptes pyrivagrans* feeding on fruit trees were recorded (Kadono, 1981, 1985).

In this paper, a description of the *Phyllocoptes pyrivagrans* are presented from this country for the first time. Permanent slides were prepared with polyvinyl alchol (PVA) and examined under Confocal laser Scanning microscope (CLSM 410). All figures depict adult females and measurements are in μm.

Phyllocoptes Nalepa, 1889

***Phyllocoptes pyrivagrans* Kadono**

배잎녹응애 (신칭) (Fig. 1)

Phyllocoptes pyrivagrans Kadono, 1985, Appl. Ent. Zool. 20(4) 458~460 (Holotype: ♀, Chiba Prefectuaral

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Female (Protogyne): Body 160~176 μm long, 60~74 μm wide, fusiform, color cream to amber; Rostrum 20 μm long, curving downward; antapical seta 8 μm long. Shield 44 μm long, 54 μm wide, subtriangular in anterior outline with a design of a reticulation, scattering microtubercles laterally and posteriorly; anterior lobe acute with a spine apically, projecting over rostral base. Median line present on posterior 2/3; abmedian lines sinuate, running from each side of anterior lobe, gradually diverging to rear margin, submedian lines sinuate, extending from the base of anterior lobe towards front of dorsal tubercles, jointed with two curved lines from abmedian lines. Dorsal tubercles 22 μm apart; dorsal seta 16 μm long, projecting upward.

Foreleg 42 μm long; tibia 10 μm long with tibia seta 7μm long, arising from 1/3 of the segment; tarsus 7 μm long; claw 6 μm long, slightly curved with knob apically; featherclaw 6 μm long, 4-rayed. Hindleg 40 μm long; tibia 9μm long, tarsus 7 μm long, claw 6 μm long and featherclaw 5 μm long. Coxae ornamented with microtubercles and dashes; anterior coxae broadly touching each other; first setiferous coxal tubercles ahead of second tubercles, farther apart than 2nd, second tubercles a little ahead of line across 3rd tubercles; *cxs*1 (first coxae seta) 8 μm long, *cxs*2 13 μm long, *cxs*3 38 μm long, *cxs*1-*cxs*1 13 μm apart, *cxs*2-*cxs*2 11 μm apart, *cxs*3-*cxs*3 27 μm apart.

Abdomen with 63~68 tergites and 76~86 sternites; tergites with elliptical microtubercles larger than those of sternites. Genitalia 13 μm long, 22 μm wide; coverflap with a few transverse lines anteriorly and with 8~10 ribs posteriorly; genital seta (gs) 24 μm long, gs-gs intervals 24 μm long. lateral seta (*ls*) on sternite 11~16, first ventral seta (*vs*1) on sternite 25~33. second ventral seta (*vs*2) on sternite 50~59, third ventral seta (*vs*3) on sternite 6~8 from rear. *ls* 30 μm long, *vs*1 49 μm long, *vs*2 17 μm long, *vs*3 32 μm long; *vs*1-*vs*1 36 μm, *vs*2-*vs*2 18 μm, *vs*3-*vs*3 26 μm apart. Acessory seta (*acs*) 4 μm long, *acs*-*acs* 6 μm apart.

Male: Not known

Material examined: 10 ♀♀, Munsan, Kyeongsangnam-do, 20-VI-1998 (H.S. Lee) on pear.

Distribution and hosts: Japan (Kadono, 1985), Korea (first record) on pear.

Remark: *Phyllocoptes pyrivagrans* Kadono differs from two species which are infesting pear and citrus leaves and buds in korea, *Aculops pelekassi* (Keifer, 1952) and *Epitrimerus pyri* (Nalepa, 1898) in the generic characters. *Aculops pelekassi* infest the surface of fruits, leaves and twigs, causing a rust-like discoloration, known as russeting, which species dorsal tubercles set on almost rear margin and dorsal seta diverging backward but others dorsal tubercles set on front of the rear margin, dorsal seta directed upward. *Epitrimerus pyri* has shield with an anterior lobe, but without promonent lobes and abdomen not microtuberculated. *Phyllocoptes pyrivagrans* lives on both surface of leaves and causes browning of the host leaves. This mite is new to Korea.

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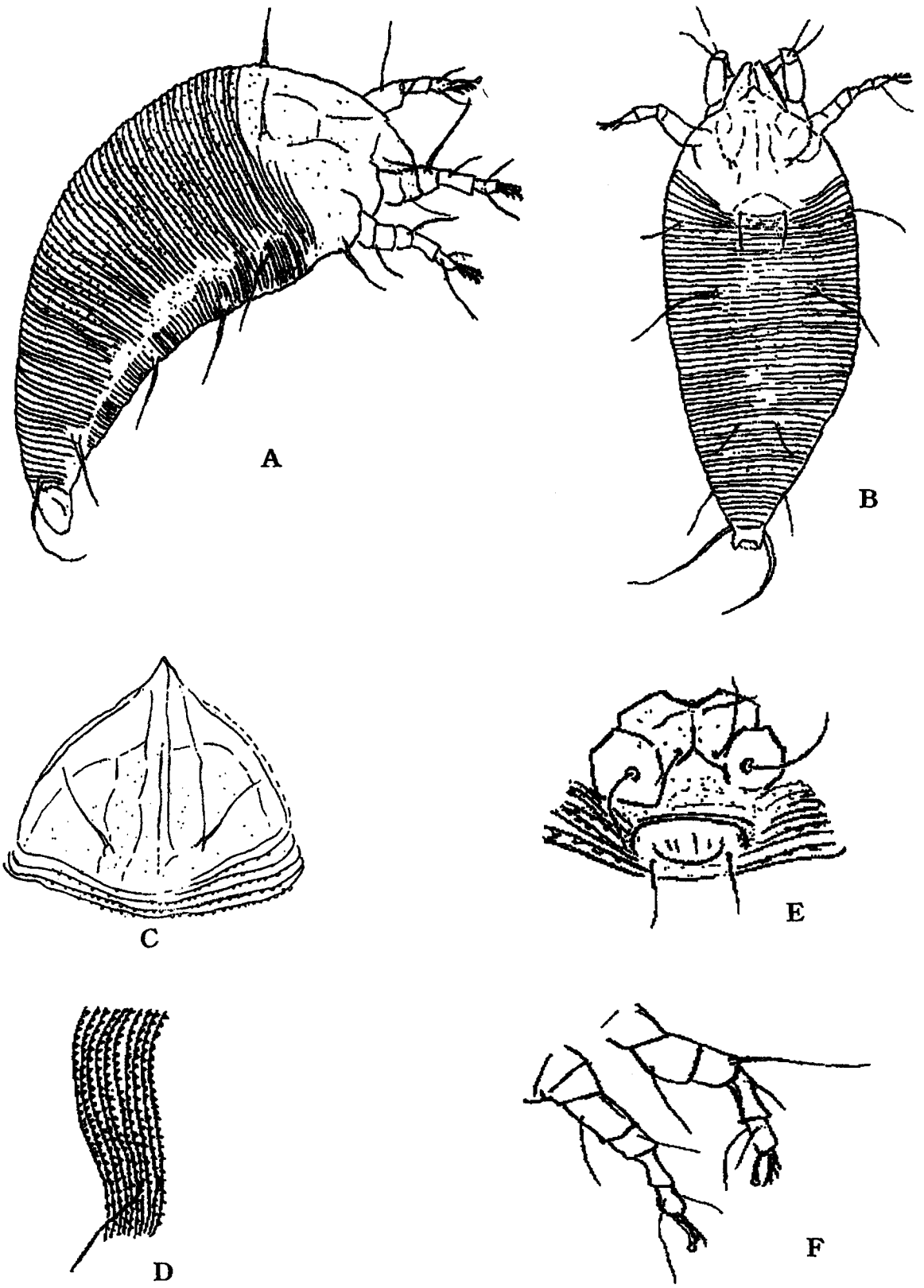

Fig. 1. *Phyllocoptes pyrivagrans* Kadono (♀). A, lateral view of the body; B, Ventral view of the body; C, shield; D, side skin; E, coxae and genitalia; F, first and second legs.