

## Eight species of whiteflies (Homoptera: Aleyrodidae) newly recorded from Korea

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**Abstract:** *Aleuroclava magnoliae* (Takahashi), *Aleurotrachelus ishigakiensis* (Takahashi), *Aleyrodes lonicerae* Walker, *Asterobemisia carpini* (Koch), *Bemisia afer* (Priesner and Hosny), *Dialeurolobus pulcher* Danzig, *Pealius polygoni* Takahashi, and *Pealius rubi* Takahashi are newly recorded from Korea.

**Key words:** Homoptera, Aleyrodidae, *Aleuroclava*, *Aleurotrachelus*, *Aleyrodes*, *Asterobemisia*, *Bemisia*, *Dialeurolobus*, *Pealius*, New record, Korea

### Introduction

Whiteflies (Homoptera: Aleyrodidae) are one of the most economically important groups of insects found on food crops and ornamentals plants. Due to globalization and subsequent increase in the exportation of ornamental plants, the movement of exotic pests between countries is likely to occur. To facilitate the recognition of potential exotic insects, many countries have a working list of species of insects known to occur in the country. Only seven species of whiteflies have been recorded from Korea (Kwon 1994, Lee et al. 2000). Based upon studies conducted in nearby or neighboring areas by Danzig (former USSR), David (India) and Takahashi (Japan-Taiwan), it can be hypothesized that more than seven species of whiteflies are likely to occur in the Republic of Korea. In this paper, we add eight whiteflies species, *Aleuroclava magnoliae* (Takahashi), *Aleurotrachelus ishigakiensis* (Takahashi), *Aleyrodes lonicerae* Walker, *Asterobemisia carpini*

(Koch), *Bemisia afer* (Priesner and Hosny), *Dialeurolobus pulcher* Danzig, *Pealius polygoni* Takahashi, and *Pealius rubi* Takahashi to the Korean fauna, and provide illustrations and information on distribution and host plants for each of these species. An asterisk (\*) is used to indicate new host or distribution records.

### 1. *Aleuroclava magnoliae* (Takahashi)

(Figs. 1-2)

*Aleurotuberculatus magnoliae* Takahashi, 1952.  
*Aleuroclava magnoliae* (Takahashi) Martin, 1999.

**Specimens examined.** Korea. Gyeonggido: Seoul, 5 puparia, on *Cornus alba*, 10. VIII. 2003 (S.J. Suh); Suwon, 1 puparium, on *Magnolia kobus*, 25. VIII. 1998 (G.M. Kwon).

**Distribution.** Japan and \*Korea.

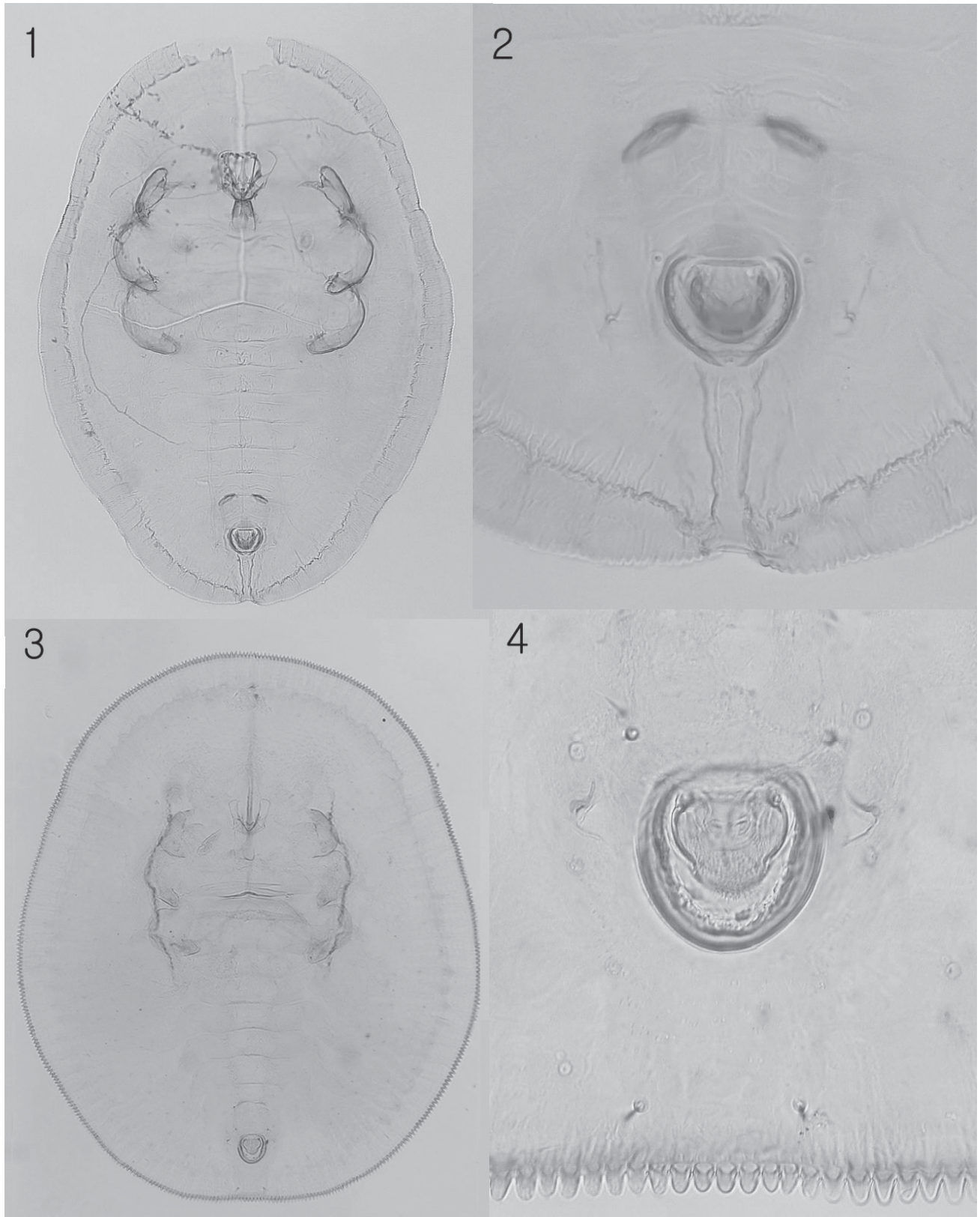


Figure 1-4. 1) *Aleuroclava magnoliae*, puparium; 2) *A. magnoliae*, vasiform orifice; 3) *Aleurotrachelus ishigakiensis*, puparium; 4) *A. ishigakiensis*, vasiform orifice.

**Host plants.** \**Cornus alba* L. (Cornaceae). In addition, fourteen different plant families were listed as hosts in Japan (Takahashi 1952).

**2. *Aleurotrachelus ishigakiensis*  
(Takahashi)  
(Figs. 3-4)**

*Trialeurodes ishigakiensis* Takahashi, 1933.  
*Aleurotrachelus ishigakiensis* (Takahashi) Takahashi, 1951.

**Specimens examined.** Korea. Jeju-do: Namjeju, 40 puparia, on *Pittosporum tobira*, 17. IV. 1998 (M.L. Lee); Hallimgongwon, 2 puparia, on *Morus bombycis*, 4. X. 2003 (S.J. Suh).

**Distribution.** Japan and \*Korea.

**Host plants.** Eleven different plant families were listed as hosts in Japan (Takahashi 1933, Takahashi 1951, Miyatake 1980).

**3. *Aleyrodes lonicerae* Walker  
(Figs. 5-6)**

*Aleyrodes fragariae* Walker, 1852.  
*Aleyrodes lonicerae* Walker, 1852.  
*Aleurodes lonicerae* Koch, 1857.  
*Aleurodes rubi* Signoret, 1868.  
*Aleurodes spiraeae* Douglas, 1894.  
*Aleurodes menthae* Haupt, 1934.  
*Aleyrodes borchsenii* Danzig, 1966.  
*Conantulus lacombiensis* Goux, 1988.

**Specimens examined.** Korea. Gyeonggi-do: Anyang, 2 puparia, on *Dicentra spectabilis*, 18. IX. 1998 (M.L. Lee); Gangwha, 3 puparia, on *Dicentra spectabilis*, 13. X. 1998 (M.L. Lee); Goyang, 20 puparia, on *Chelidonium majus* var. *asiaticum*, 3. VII. 1998 (M.L. Lee). Gyeongsangbuk-do: Bonghwa, 2 puparia, on *Platycodon grandiflorum*, 21. X. 1999 (G.M. Kwon).

**Distribution.** \*Korea, Europe and Mediterranean countries (Austria, Channel Islands, Corsica, Former Czechoslovakia, Denmark, England, Finland, France, Germany, Hungary, Isle of Man, Israel, Italy, Netherlands, Norway, Poland, Romania, Russia, Sicily, Sweden, Switzerland, Turkey, Wales, Yugoslavia).

**Host plants.** \**Dicentra spectabilis* (L.) Lem. (Papaveraceae) and \**Platycodon grandiflorum* (Jacq.) A.DC. (Campanulaceae). More than 18 different plant families are listed as hosts of this species in Europe (Mound and Halsey 1978, Martin et al. 2000).

**4. *Asterobemisia carpini* (Koch)  
(Figs. 7-9)**

*Aleurodes carpini* Koch, 1857.  
*Aleurodes avellanae* Signoret, 1868.  
*Aleyrodes vaccinii* Künow, 1880.  
*Aleurodes ribium* Douglas, 1888.  
*Aleurodes rubicola* Douglas, 1891.  
*Aleurochiton avellanae* (Signoret) Harrison, 1920a.  
*Asterochiton carpini* (Koch) Harrison, 1920b.  
*Aleurochiton vaccinii* (Künow) Ryberg, 1938.  
*Asterobemisia carpini* (Koch) Trehan, 1940.  
*Bemisia* (*Neobemisia*) *avellanae* (Signoret) Visnya, 1941.  
*Bemisia* (*Neobemisia*) *ribium* (Douglas) Visnya, 1941.  
*Asterobemisia avellanae* (Signoret) Zahradnik, 1956.

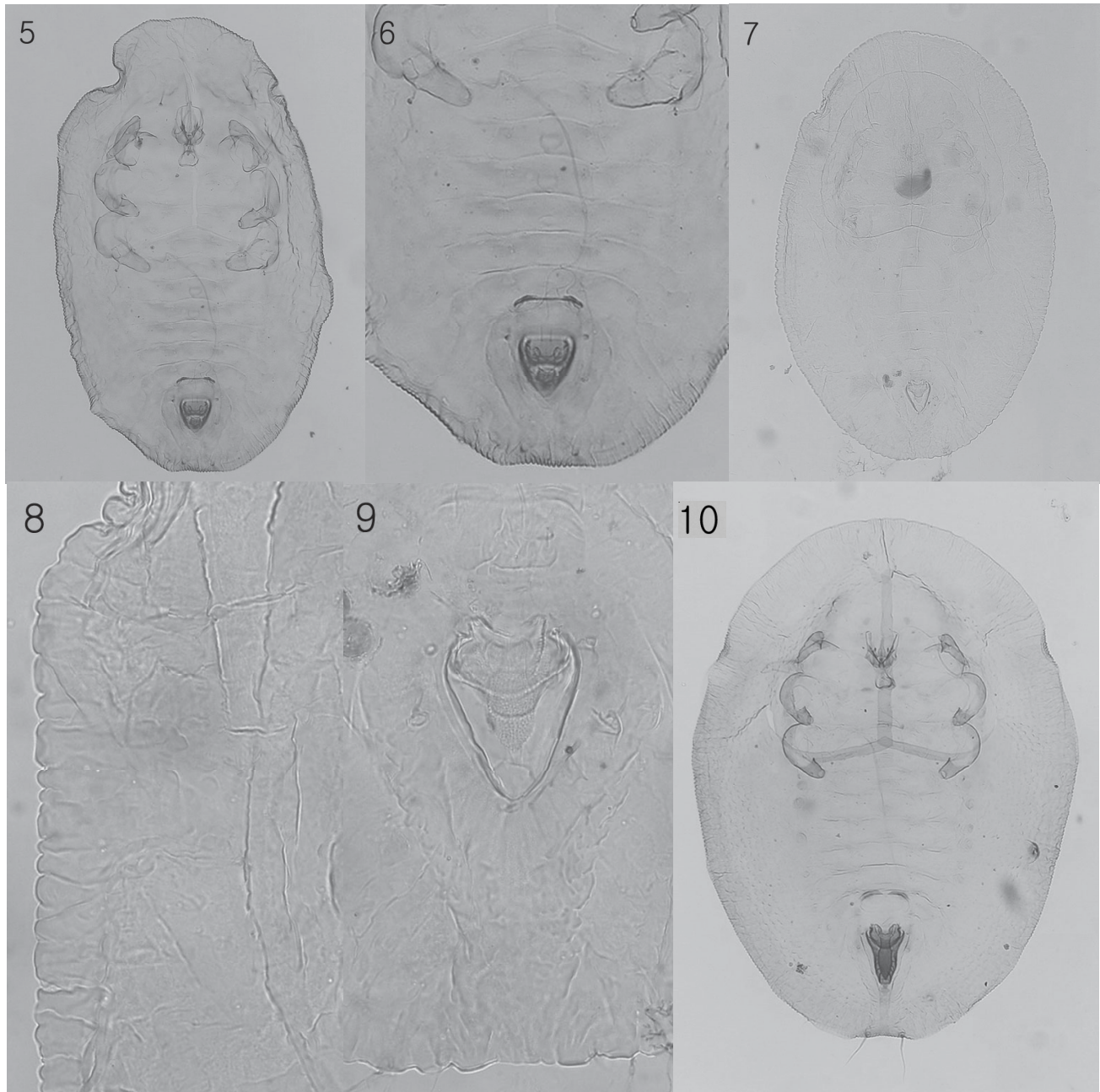
**Specimens examined.** Korea. Gyeonggi-do: Gangwha, 2 puparia, on *Artemisia princeps* var. *orientalis*, 12. X. 1998 (M.L. Lee); Same locality, 2 puparia, on *Lespedeza bicolor*, 13. X. 1998 (M.L. Lee).

**Distribution.** Japan, \*Korea, Europe and Mediterranean countries (Austria, Bulgaria, Former Czechoslovakia, Denmark, England, Finland, France, Germany, Greece, Hungary, Italy, Netherlands, Poland, Romania, Russia, Spain, Sweden, Yugoslavia).

**Host plants.** \**Artemisia princeps* var. *orientalis* (Pampan.) Hara (Compositae) and \**Lespedeza bicolor* Turcz. (Leguminosae). In addition, fifteen plant families are reported as hosts of this species in Europe (Mound and Halsey 1978, Martin et al. 2000).

**5. *Bemisia afer* (Priesner and Hosny)  
(Figs. 10-11)**

*Dialeurodoides afer* Priesner and Hosny, 1934.  
*Bemisia hancocki* Corbett, 1936.  
*Bemisia* (*Neobemisia*) *hancocki* Corbett; Visnya, 1941.  
*Bemisia* (*Neobemisia*) *afra* (sic) (Priesner and Hosny) Visnya, 1941.  
*Bemisia citricola* Gomez-Menor, 1945.  
*Bemisia afer* (Priesner and Hosny) Habib and Farag, 1970.



Figures 5-10. 5) *Aleyrodes lonicerae*, puparium; 6) *A. lonicerae*, abdominal segments and vasiform orifice; 7) *Asterobemisia carpini*, puparium; 8. *A. carpini*, thoracic tracheal margin; 9) *A. carpini*, vasiform orifice; 10) *Bemisia afer*, puparium.

**Specimens examined.** Korea. Gyeonggido: Suwon, 3 puparia, on *Rosa hybrida*, 30. VI. 1998 (S.H. Lee); Same locality, 4 puparia, *Rosa hybrida*, 6. VII. 1998 (S.H. Lee).

**Distributions.** Australia, China (Shaanxi, Fujian), India, \*Korea, Pakistan, Europe and Mediterranean countries (Corsica, Egypt, England, France,

Greece, Israel, Italy, Malta, Rhodes, Sicily, Spain, Turkey).

**Host plants.** \**Rosa hybrida* L. (Rosaceae). In addition, twenty plant families are reported as hosts in Europe and Mediterranean countries (Mound and Halsey 1978, Martin et al. 2000).

**6. *Dialeurolobus pulcher* Danzig**

(Figs. 12-13)

*Dialeurolobus pulcher* Danzig, 1964.

**Specimens examined.** Korea. Chungcheongnam-do: Gongju, 4 puparia, on *Poncirus trifoliata*, 25. VIII. 1999 (M.L. Lee). Gyeongsangbukdo: Andong, 2 puparia, on *Lagerstroemia indica*, 26. VIII. 1999 (M.L. Lee).

**Distributions.** \*Korea and Russia (Caucasus).

**Host plants.** \**Lagerstroemia indica* L. (Lythraceae) and \**Poncirus trifoliata* Rafin. (Rutaceae). In addition, *Crataegus* sp. (Rosaceae) and *Pyracantha coccinea* are listed as hosts of this species in Russia (Danzig 1964).

**7. *Pealius polygoni* Takahashi**

(Figs. 14-16)

*Pealius polygoni* Takahashi, 1934.

**Specimens examined.** Korea. Gangwondo: Hwacheon, 3 puparia, on *Persicaria hydropiper*, 1. IX. 1998 (M.L. Lee).

**Distributions.** Japan, \*Korea and Taiwan.

**Host plants.** \**Persicaria hydropiper* (L.) Spach (Polygonaceae). In addition, *Polygonum longisetum*, *P. perfoliatum*, and *P. thunbergii* are listed as hosts of this species in Japan (Takahashi and Mamet 1957, Miyatake 1980) and *Polygonum* sp. is listed as a host of this species in Taiwan (Takahashi 1934)

**8. *Pealius rubi* Takahashi**

(Figs. 17-18)

*Pealius rubi* Takahashi, 1936.

**Specimens examined.** Korea. Jeju-do: Sanbangsa, 4 puparia, on *Cornus kousa*, 15. IV. 1998 (M.L. Lee).

**Distributions.** Japan, \*Korea and Taiwan.

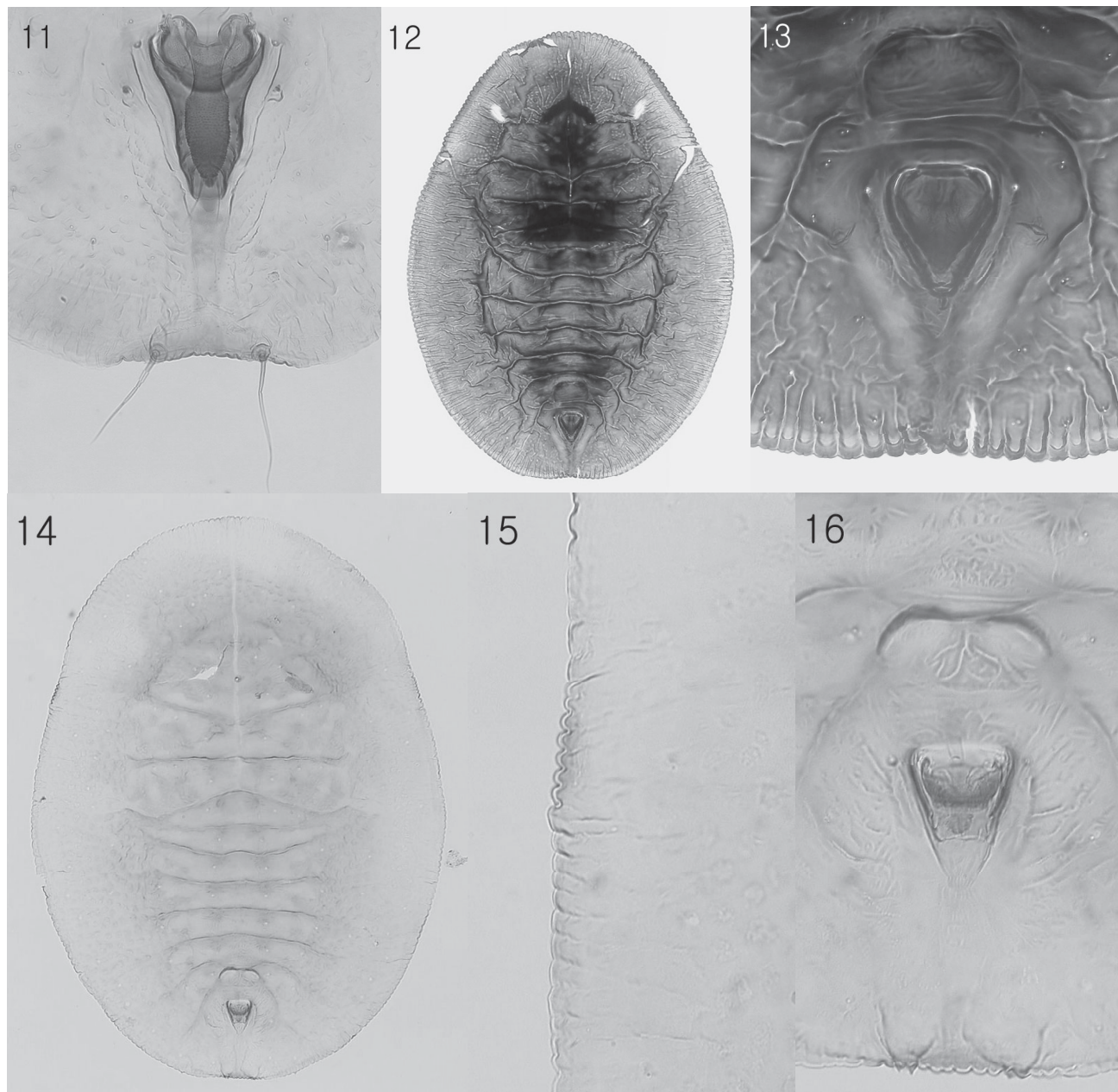
**Host plants.** \**Cornus kousa* Buerg. (Cornaceae). In addition, nine plant families are listed as hosts of this species in Japan (Takahashi 1936, Takahashi 1955) and *Rubus* sp. is listed as a host of this species in Taiwan (Takahashi 1936).

**Discussion**

Previously, only the following seven species of whiteflies had been reported as occurring in the Republic of Korea: *Aleurocanthus spiniferus* (Quaintance), *Aleuroclava hikosanensis* (Takahashi), *Bemisia tabaci* (Gennadius), *Dialeurodes citri* (Ashmead), *Pealius azaleae* (Baker and Moles), *Trialeurodes packardi* (Morrill), and *Trialeurodes vaporariorum* (Westwood). The majority of these species are considered economically important and widely distributed. In this paper, eight additional species are added to the number of whitefly species known to occur in Korea. This information can and will act as an additional tool for the identification of whitefly species in Korea. Additional collecting trips and taxonomic studies will likely result in additional species being added to our knowledge of the Korean whitefly fauna.

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Figures 11-16. 11) *Bemisia afer*, vasiform orifice; 12) *Dialeurolobus pulcher*, puparium; 13) *D. pulcher*, vasiform orifice; 14) *Pealius polygoni*, puparium; 15) *P. polygoni*, thoracic tracheal margin; 16) *P. polygoni*, vasiform orifice.

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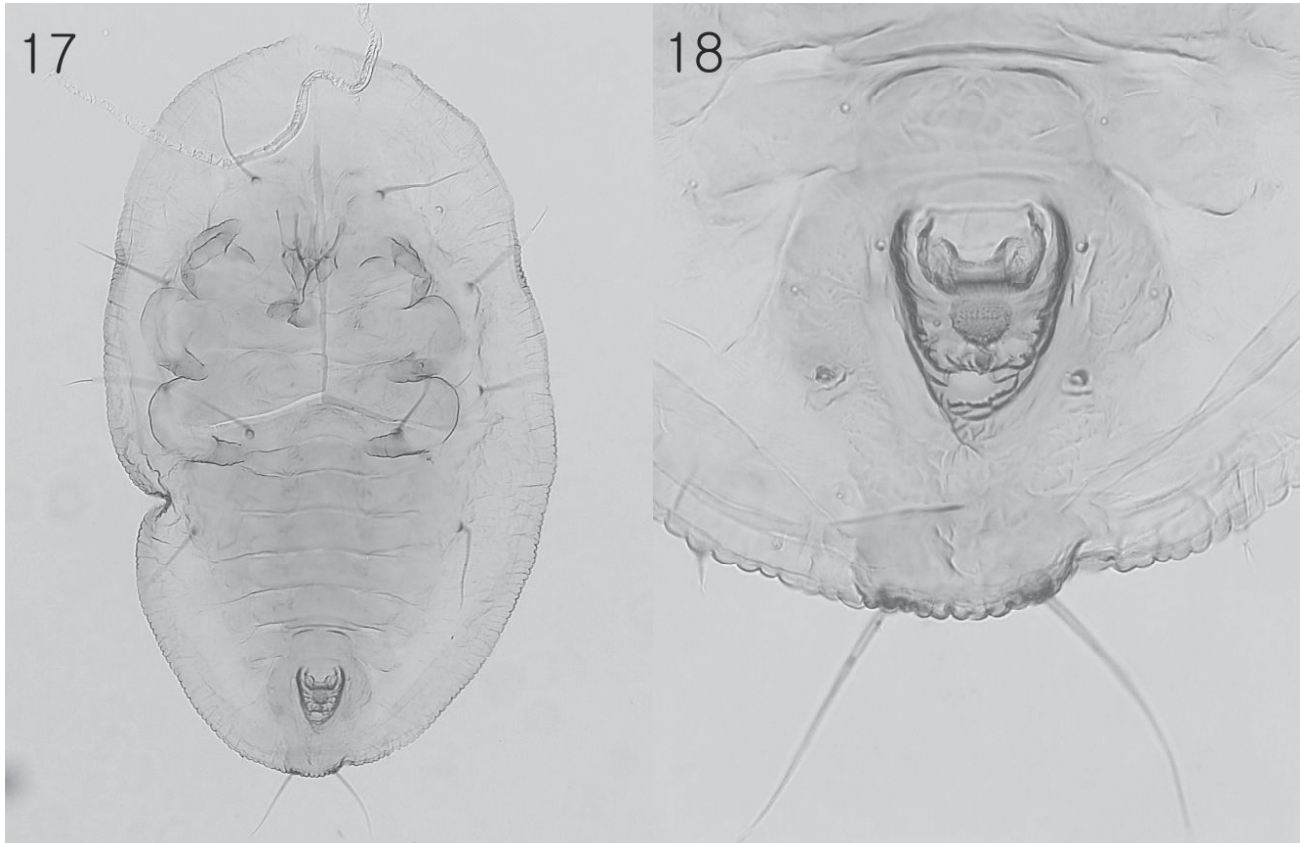


Fig. 17-18. 17) *Pealius rubi*, puparium; 18) *P. rubi*, vasisform orifice.

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