九州大学学術情報リポジトリ
Kyushu University Institutional Repository

Records of the Strepsiptera Parasitic on the Korean Apoidea (Notulae StrepsipteroIogicae-XXIII)

Kifune, Teiji

Tadauchi, Osamu

Lee, Chang Eon

https://doi.org/10.5109/2577

出版情報：ESAKIA. 34, pp.209-214, 1994-03-24. Entomological Laboratory, Faculty of Agriculture, Kyushu University
バージョン：
権利関係：

KYUSHU UNIVERSITY

ESAKIA, (34): 209–214. March 31, 1994

Records of the Strepsiptera Parasitic on the Korean Apoidea (Notulae **Strepsipterologicae–XXIII**)[1), 2)]

Teiji KIFUNE
Department of Parasitology, School of Medicine,
Fukuoka University, Fukuoka, 814-01 Japan

Osamu TADAUCHI
Entomological Laboratory, Faculty of Agriculture,
Kyushu University, Fukuoka, 812 Japan

and

Chang Eon LEE
Department of Biology, College of Natural Sciences, Kyungpook
National University, Taegu, 702-701 Korea

Abstract. Six species of the genus *Stylops* and ***Halictoxenos*** are recorded from 6 species of the Korean andrenid and halictid bees. All of the parasites are reported from Korea for the first time.

None has been published on the Strepsiptera nor stylopized insects of Korea. The second and subsequent authors have been engaged in the field surveys under the Korea-Japan Co-operative Science Program in South Korea since 1990 and have collected many bees. Among them, 14 stylopized specimens have been discovered and their parasites are taxonomically studied here. This is the first report on the strepsipterous fauna of the Korean Peninsula.

Stylopidae

1) Results from the Korea-Japan Co-operative Science Program on "The Evolution and Biogeography of the Insects in the East Asia". No. 23.
2) Contribution from the Entomological Laboratory, Faculty of Agriculture, Kyushu University, Fukuoka (Ser. 4, No. 63).

1. *Stylops japonicus* Kifune et Hirashima, 1985 (Fig. 1)

Stylops japonicus. Esakia, (23): 46, figs. 1 & 11.(Japan: Kyushu)

Stylops japonicus: Kifune et Maeta, 1990. Esakia, (spec.issue, 1): 107.(Japan: Honshu & Kyushu)

Specimen examined: (Host: *Andrena (Andrena) sakagamii*) 1 gravid ♀* (fig. 1) extracted from a female host (4/5M-R**), Sim Won Valley, San Mac Meon, Nam Weon Gun, Cheon-La Nam Do, 13. v. 1991 (O. Tadauchi).

Hosts recorded: *Andrena (Andrena) benefica* and A. (*A.*) *sakagamii* (Hymenoptera, Andrenidae).

Distribution: Japan-Honshu (Aomori, Nagano), Kyushu (Fukuoka); Korea-(Cheon-La Nam Do).

Remarks. This is the first stylopized record of A. (*A.*) *sukugumii.*

2. ***Stylops aino* Kifune et Maeta, 1990** (Figs. 2-3)

Stylops aino. Esakia, (spec. issue, 1): 99, figs. 4 & 14. (Japan: Hokkaido)

Specimens examined: (Host: *Andrena (Hoplandrena) pruniphora)* 1 gravid ♀ (fig. 2) extracted from a female host (4/5L) collected on *Chelidonium* (Kusa-no-ou), Gam Jong Li, Dong Meon, Chun Chon Gun, Kang Weon Do, 21. v. 1992 (0. Tadauchi); 1 gravid ♀ (fig. 3) extracted from a female host (4/5R) collected on *Cornus* sp. (Mizuki), Boug Myong Li, Dong San Myon, Chun Chon Gun, Kang Weon Do, 23. v. 1992 (0. Tadauchi).

Hosts recorded: *Andrenu (Hoplandrena) sacharinensis* and *A.* (*H.*) *pruniphora* (Hymenoptera: Andrenidae).

Distribution: Japan-Hokkaido (Teshio); Korea-(Kang Weon Do).

Remarks. These are the first stylopized record of A. (*H.*) *pruniphora.*

3. ***Stylops yamatonis* Kifune et Hirashima, 1985** (Figs. 4-5)

Stylops yamatonis. Esakia, (23): 51, figs. 6 & 16. (Japan: Honshu & Kyushu)

Stylops yamatonis: Kifune et Maeta, 1990. Esakia, (spec. issue, 1): 107. (Japan: Honshu & Kyushu)

Specimens examined: (Host: *Andrenu (Simandrena) kerriue)* 1 gravid ♀ (fig. 4) extracted from a female host (4/5M), Sam Jeong Li, Ma Cheong Meon, Ham Yang Gun, Kyeon Sang Nam Do, 9. v. 1991 (0. Tadauchi); 1 gravid ♀ (fig. 5) extracted from a female host (4/5L) collected on *Brussica* (Aburana), Ogari, Seon Myon, Yang Yang Gun, Kang Weon Do, 27. iv. 1992 (0. Tadauchi).

Hosts recorded: *Andrenu (Simundrenu) yamato* and *A. (S.) kerriae* (Hymenoptera: Andrenidae).

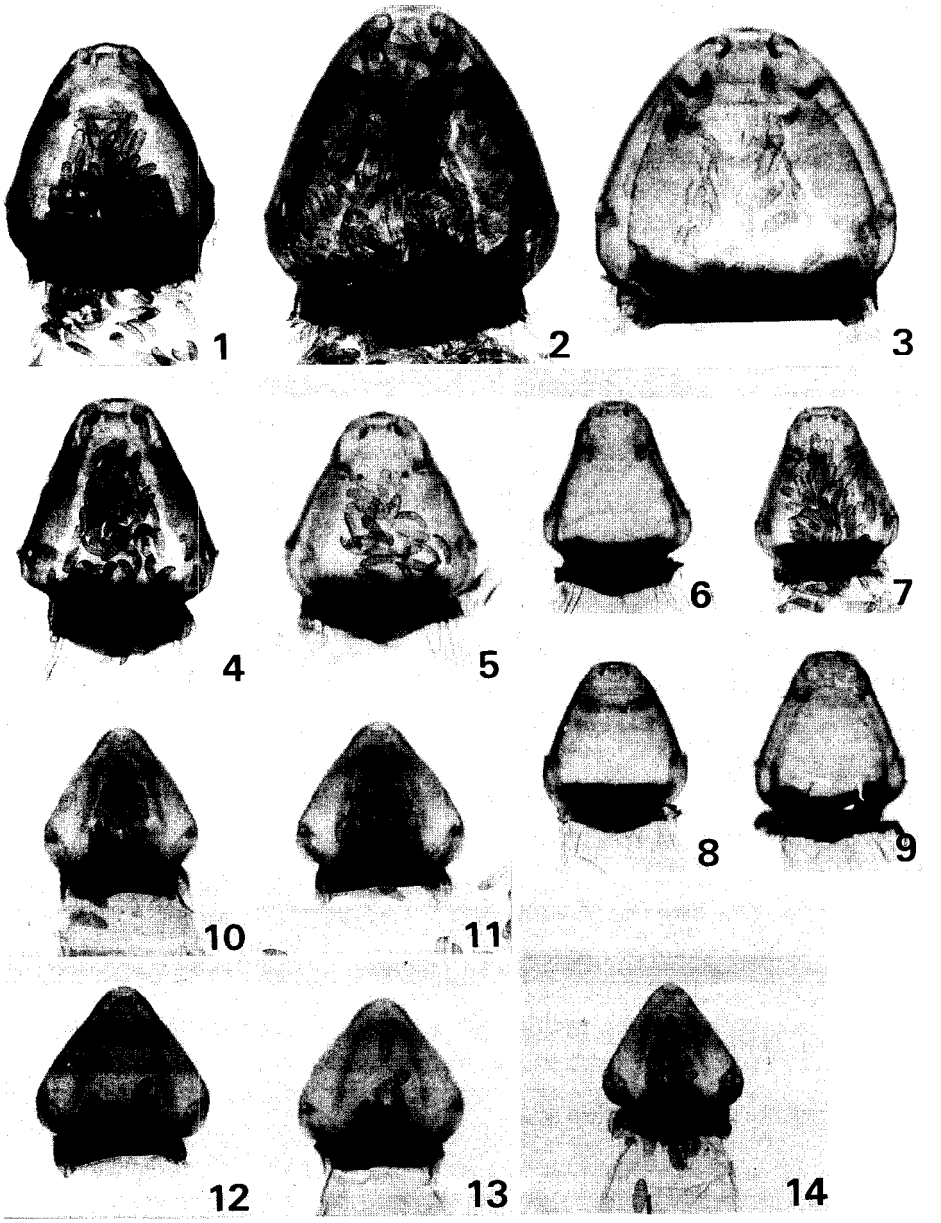
Distribution: Japan-Honshu (Iwate, Shimane), Kyushu (Kagoshima); Korea-(Kang Weon Do, Kyeon Sang Nam Do).

Remarks. These are the first stylopized record of *A.* (*S.*) *kerriae*.

---

* The symbols, ♂ and ♀, are used for the parasite only.

** Parasitic position is indicated by the numbers of the two metasomal tergites between which the parasite is protruded. For example, 4/5M-R means that a parasite is located between the 4th and the 5th metasomal segments near the median line but slightly shifted to the right. L means left.



Figs. **1-14.** Female cephalothoraces of Korean Strepsiptera. – 1, *Stylops japonicus*; 2-3, S. *aino*; **4-5, S. *yamatonis*; *6-9, S. kaguyae*; *10-13,* *Halictoxenos hondonis*; *14, H. duplicis.***

4. Stylops kaguyae **Kifune et Hirashima, 1985** (Figs. 6-9)

Stylops kaguyae. Esakia, (23): 51, figs. 7, 8, 17, 18 & 30. (Japan: Honshu & Kyushu)

Stylops kaguyae: Kifune et Maeta, 1990. Esakia, (spec. issue, 1): 107. (Japan: Honshu & Kyushu)

Specimens examined: (Host: *Andrena (Micrandrena) hikosana*) 1♀ (fig. 6) extracted from a female host (4/5L), Sam Jeong Li, Ma Cheong Mcon, Ham Yang Gun, Kycon Sang Nam Do, 9. v. 1991 (0. Tadauchi); 1♀* on a male host (4/5M), Mt. Nogodan, San Nae Meon, Nam Weon Gun, Cheon-La Nam Do, 10. v. 1991 (T. Saigusa); 1 gravid ♀ (fig. 7) extracted from a female host (4/5R), Sam Jeong Li, Ma Cheong Meon, Ham Yang Gun, Kycon Sang Nam Do, 15. v. 1991 (K. Morimoto)"; 1♀ (fig. 8) extracted from a female host (4/5M) collected on *Spiraea* (Hitoeno-shijimi-bana), Sam Jeong Li, Ma Cheong Meon, Ham Yang Gun, Kyeon Sang Nam Do, 1. v. 1992 (0. Tadauchi); 1♀ (fig. 9) extracted from a female host (4/5M), Sam Jeong Li, Ma Cheong Meon, Ham Yang Gun, Kyeon Sang Nam Do, 1. v. 1992 (T. Saigusa).

Hosts recorded: *Andrena (Micrandrena) kaguya*, *A. (M.) minutulu, A. (M.) hikosana*, and *A. (M.) komachi* (Hymenoptera: Andrenidae).

Distribution: Japan-Honshu (Iwate, Miyagi, Saitama, Yamanashi, Nagano, Hyogo, Shimane, Yamaguchi), Kyushu (Fukuoka, Kagoshima); Korea-(Kyeon Sang Nam Do, Cheon-La Nam Do).

Notes. One of the above-mentioned hosts, A. *(M.) minutula*, was recorded to be parasitized by *Stylops parvulae* Noskiewicz et Poluszyhski in Europe.

Remarks. The *-marked ♀ was not mounted because of injury due to its immaturity. A fly larva was discovered from the abdominal cavity of the "-marked host.

5. *Halictoxenos hondonis* Kifune, 1991 (Figs. 10-13)

Halictoxenos hondonis. Jpn. J. Ent., 59: 368, figs. 2 & 7. (Japan: Honshu)

Specimens examined: (Host: *Lasioglossum (Lasioglossum) exiliceps*) *2* gravid ♀♀ (figs. lo-ll) extracted from a female host (4/5L and R), Sam Jeong Li, Ma Cheong Meon, Ham Yang Gun, Kyeon Sang Nam Do, 10. v. 1991 (0. Tadauchi); 1 gravid ♀ (fig. 12) extracted from a female host (4/5 L), Sim Won Valley, San Nae Meon, Nam Weon Gun, Cheon-La Nam Do, 13. v. 1991 (0. Tadauchi); 1 gravid ♀ (fig. 13) extracted from a female host (4/5L) collected on *Brussicu* (Aburana), Ogari, Seon Myon, Yang Yang Gun, Kang Weon Do, 27. iv. 1992 (0. Tadauchi).

Hosts recorded: *Lasioglossum (Lasioglossum) exiliceps* and *L. (L.) laeviventre* (Hymenoptera: Halictidae).

Distribution: Japan-Honshu (Saitama, Nagano, Fukui); Korea-(Kang Weon-Do, Kyeon Sang Nam Do, Cheon-J-a Nam Do).

Remarks. In the original description of this *Halictoxenos*, the host name was misspelled as *exilipes*. It should be corrected as cited here.

6. *Halictoxenos duplicis* Kifune, 1991 (Fig. 14)

Halictoxenos duplicis. Jpn. J. Ent., 59: 370, figs. 4 & 9. (Japan: Hokkaido)

Specimens examined: (Host: *Lasioglossum (Evylaeus)* sp. 2A) 1 gravid ♀ (fig. 14) extracted from a female host (4/5R) collected on *Crataegus* (Oo-sanzashi), Boug Myong Li, Dong San Myon, Chun Chon Gun, Kang Weon Do, 22. v. 1992 (0. Tadauchi).

Table 1. A list of the stylopized bees in the Far East.

Host Genus (Subgenus) Species	Parasites	Distribuion of parasites			
		China	Taiwan	Korea	Japan
Colletidae					
Hylaeus sp.	*Hylecthrus taiwan*		●		
Halictidae					
Lasioglossum					
(Lasioglossum) occidens	*Halictoxenos nambui*				●
(L.) exiliceps	*H. hondonis*			0	●
(L.) laeviventre	"				0
(Evylaeus) trispine	*H. latifemoralis*				●
(E.) apristum	*H. borealis*				●
(E.) calceatum	*H. evylaei*				●
(E.) duplex	*H. duplicis*				●
(E.) sp. 2A	"			0	
Halictus					
(Seladonia) aerarius	*H. japonicus*				●
"	*H. mirabilis*				●
Andrenidae					
Andrena					
(Andrena) nawai	*Stylops collinus*				●
(A.) benefica	*S. japonicus*				●
(A.) sakagamii	"			0	
(A.) maukensis	*S. truncatus*				●
(A.) longitibialis	*S. oblongulus*				●
(A.) Iapponica shirozui	*S. truncatoides*				●
(A.) aburana	*S. aburanae*				●
(Hoplandrena) dentata	*S. dentatae*				●
(H.) sachalinensis	*S. aino*				●
(H.) pruniphora	"			0	
(Gymnandrena) sasakii	*S. circularis*				●
(G.) watasei	*S. orientis*				●
(G.) parathoracica	*S. hirashimai*				●
(Simandrena) yamato	*S. yamatonis*				●
(S.) kerriae	"			0	
(S.) opacifovea opacifovea	*S. izumoensis*				●
(S.) nippon	*S. nipponicus*				●
(Micrandrena) kaguya	*S. kaguyae*				●
(M.) minutula	"				○
(M.) hikosana				0	○
(M.) komachi					○
(Oreomelissa) mitakensis	*S. montanus*				●
(Taeniandrena) ovatula	*S. borealis*				●
(Mitsukuriella) japonica	*S. subcircularis*				●
(M.) fukaii	"				○
(Plastandrena) carbonaria	*S. nassonowi*	0			
(Holandrena) valeriana	*S. valerianae*				●
	Total no. of parasite species	1	1	6	27

●: Type host and locality.

Hosts recorded: *Lasioglossum* (*Evylaeus*) *duplex* and *L*. (E.) sp. 2A (Hymenoptera: Halictidae).

Distribution: Japan–Hokkaido (Oshima); Korea-(Kang Weon Do).

Remarks. This host also contained a fly larva in the abdominal cavity

All of the present specimens are kept in the Entomological Laboratory, Faculty of Agriculture, Kyushu University (Director: Prof. K. Morimoto).

ACKNOWLEDGEMENTS

The authors wish to express their cordial gratitude to Profs. K. Morimoto and T. Saigusa for their kind cooperation in collecting wild bee materials. The second and subsequent authors are thankful to Dr. Chan Young Lee of College of Forestry, Kang Weon National University for his help for collecting in Kang Weon Do, Korea.

REFERENCES

Kifune, T. 1991. Descriptions of four new species of the genus *Halictoxenos* (Strepsiptera, Stylopidae) from Japan. *Jpn. J. Ent.*, 59: 367-374.

- and Y. Hirashima. 1985. Nine new species of the genus *Stylops* (Strepsiptera: Stylopidae) parasitic on *Andrena* (Hymenoptera: Andrenidae) of Japan (X). Studies on *Esakia*, (23): 4.5-57.

- , - and Y. Maeta. 1982. Four new species of the genus *Halictoxenos* Pierce from Japan (Strepsiptera, Stylopidae) (Studies on the Japanese Strepsiptera VI). *Esakia*, *(19):* 151-160.

——— and Y. Maeta. *Stylops* Ten new species of the genus *Andrena* (Hymenoptera: Stylopidae) parasitic on the genus *Andrena* (Hymenoptera: Andrenidae) of Japan (St *Esakia*, (spec. issue, 1): 97-110.

Tadauchi, O., and C. E. Lee. 1992. The family Andrenidae of Korea (Hymenoptera, *Esakia, (32):* *47-58.*