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<https://doi.org/10.15017/7348029>

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出版情報 : Sieboldia : acta biologica . Supplement, pp.1-9, 1987-03-31. 九州大学教養部生物学教室  
バージョン :  
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## The Sepsidae from Taiwan (Diptera)<sup>1),2)</sup>

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**Abstract** Eighteen species belonging to 8 genera of Sepsidae are recorded from Taiwan. An identification key to known genera and species is also given.

### Introduction

The Oriental species of Sepsidae comprise 36 species of 11 genera (ZUSKA, 1977; IWASA, 1980, 1982a, 1982b, 1984a and 1984b). From Taiwan, DE MEIJERE (1911) and HENNIG (1941) recorded 11 species and 16 species, respectively. Since then, no recent information is available on the Sepsidae from Taiwan.

In 1985, I had a chance to study Taiwanese Sepsidae as a member of survey on dipterous insects in Taiwan (Tokyo Medical and Dental University Overseas Scientific Research Project in 1985). As a result of the examination, I record 18 species of 8 genera including 4 newly recorded species and give an identification key to known genera and species.

#### 1. *Toxopoda viduata* (THOMSON, 1869)

(Fig. 1)

*Sepsis viduata* THOMSON, 1869, Eugen Resa Dipt. p. 586.

*Toxopoda viduata*: ZUSKA, 1977, Catalog Dipt. Orient. Reg. 3: 75; IWASA, 1984, Kontyû, 52: 307; IWASA, 1986, Kontyû, 54: 655.

Specimens examined. 54♂♂, Kenting Park, 18 Nov. 1985, M. IWASA.

Distribution. Oriental Region (Taiwan, Hong Kong, Philippines, Indonesia and Japan) and New Guinea.

#### 2. *Nemopoda pectinulata* LOEW, 1873

(Fig. 2)

*Nemopoda pectinulata* LOEW, 1873, Beschr. Europ. Dipt. 3: 305.

*Nemopoda pectinulata*: HENNIG, 1949, Flieg. palaearkt. Reg. 39a: 51; ZUSKA, 1977, Catalog

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<sup>1)</sup> Contribution No.129 from the Laboratory of Entomology, Obihiro University of Agriculture and Veterinary Medicine.

<sup>2)</sup> This study was supported by a Grant-in-aid to the Tokyo Medical and Dental University Overseas Scientific Research Project from the Ministry of Education Science and Culture, Japan in 1985.

Dipt. Orient. Reg. **3**: 177.

Specimen examined. 1♂, Alishan—Yushan (2,600—2,700 m), 31 Oct. 1985, M. IWASA.

Distribution. Palaearctic Region and Oriental Region (Nepal and Taiwan). New to Taiwan.

**3. *Decachaetophora aeneipes* (DE MEIJERE, 1911)**  
(Fig. 3)

*Sepsis aeneipes* DE MEIJERE, 1911, Ann. Mus. Nat. Hung. **11**: 119.

*Decachaetophora aeneipes*: DUDA, 1926, Ann. Naturhist. Mus. Wien, **40**: 45; HENNIG, 1949, Flieg. palaearkt. Reg. **39a**: 56; ZUSKA, 1977, Catalog Dipt. Orient. Reg. **3**: 175; IWASA, 1984, Kontyû, **52**: 297.

Specimens examined. 20♂♂, 12♀♀, Alishan (2,600 m), Chiayi, 1 Nov. 1985, M. IWASA; 3♂♂, Yushan (2,700 m), Chiayi, 31 Oct. 1985, M. IWASA; 2♂♂, San Palin (1,100 m), Taipei, 27 Oct. 1985, M. IWASA.

Distribution. Widely distributed in the Oriental, Palaearctic and Nearctic regions.

**4. *Xenosepsis sydneyensis* MALLOCH, 1925**  
(Fig. 4)

*Xenosepsis sydneyensis* MALLOCH, 1925, Proc. Linn. Soc. N. S. W. **50**: 315.

*Meroplus acrosticalis*: HENNIG, 1949, Flieg. palaearkt. Reg. **39a**: 53.

*Xenosepsis sydneyensis*: ZUSKA, 1972, Acta ent. bohemoslov. **69**: 65; ZUSKA, 1977, Catalog Dipt. Orient. Reg. **3**: 180.

Specimen examined. 1♂, Kenting Park, 16 Nov. 1985, M. IWASA

Distribution. Oriental Region [Malaysia (Borneo), Indonesia] and Australia. New to Taiwan.

**5. *Meroplus minutus* (WIEDEMANN, 1830)**  
(Fig. 5)

*Sepsis minuta* WIEDEMANN, 1830, Auss. zweifl. Ins. **2**: 468.

*Meroplus stercorarius*: DUDA, 1925, Ann. Naturhist. Mus. Wien, **39**: 96; HENNIG, 1949, Flieg. palaearkt. Reg. **39a**: 54.

*Meroplus minutus*: PONT, 1979, Handb. Ident. Brit. Ins. **10**: 3; IWASA, 1984, Kontyû, **52**: 299.

Specimen examined. 1♂, Kukuwan (750 m), 4 Nov. 1985, M. IWASA.

Distribution. Holarctic Region. New to Taiwan.

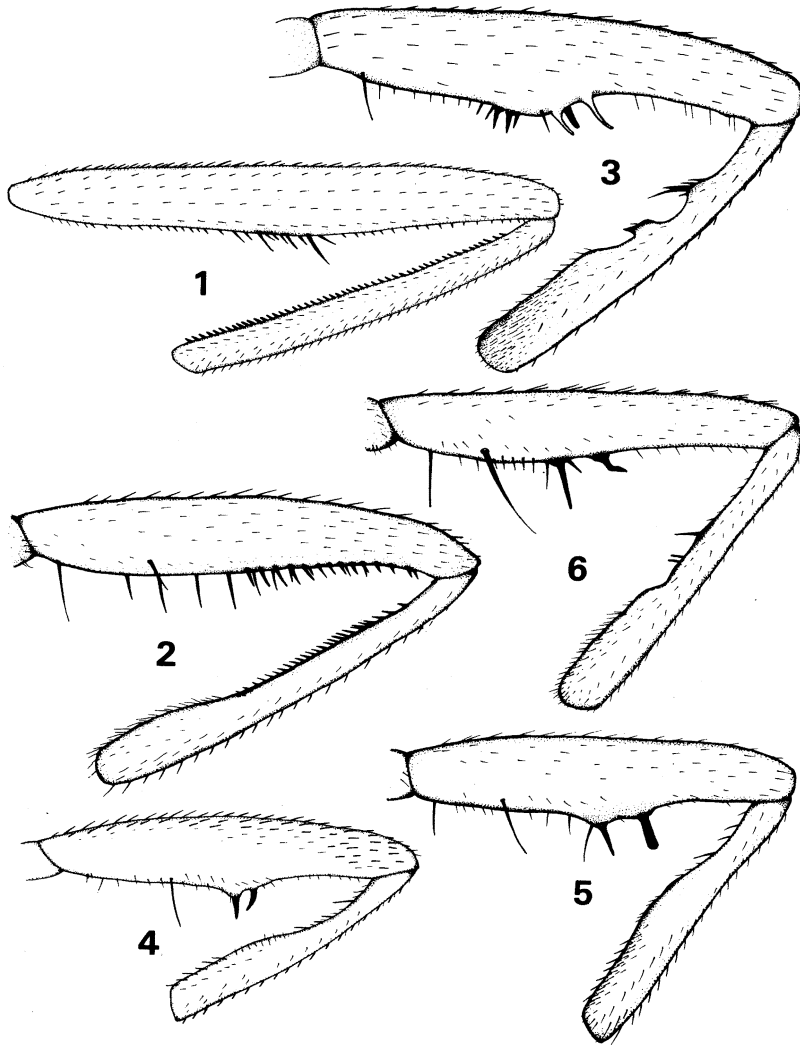
**6. *Meroplus fasciculatus* (BRUNETTI, 1909)**  
(Fig. 6)

*Sepsis fasciculatus* BRUNETTI, 1909, Rec. Ind. Mus. **3**: 365.

*Meroplus fasciculatus*: ZUSKA, 1972, Acta ent. bohemoslov. **69**: 64; ZUSKA, 1977, Catalog Dipt. Orient. Reg. **3**: 177; IWASA, 1984, Kontyû, **52**: 299.

Specimens examined. 3♂♂, Chihpen, Taitung Pref., 14 Nov. 1985, M. IWASA.

Distribution. Oriental Region and New Guinea.



Figs. 1–6. Male fore femora and tibiae (left, anterior view); 1, *Toxopoda viduata* THOMSON; 2, *Nemopoda pectinulata* LOEW; 3, *Decachaetophora aeneipes* (DE MEIJERE); 4, *Xenosepsis sydneyensis* MALLOCH; 5, *Meroplius minutus* (WIEDEMANN); 6, *Meroplius fasciculatus* (BRUNETTI). [Quoted from Iwasa (1984b) except Fig. 4].

7. *Australosepsis niveipennis* (BECKER, 1903)

(Fig. 7)

*Sepsis niveipennis* BECKER, 1903, Mitt. zool. Mus. Berl. 2: 143.

*Australosepsis niveipennis*: ZUSKA, 1968, Acta ent. bohemoslov. 65: 474; ZUSKA, 1977, Catalog Dipt. Orient. Reg. 3: 175; IWASA, 1984, Kontyû, 52: 305.

Specimens examined. 4♂♂, Kenting Park, 19 Nov. 1985, M. IWASA.

Distribution. Widely distributed in the Oriental, Ethiopian and Australian regions.

### 8. *Australosepsis frontalis* (WALKER, 1860)

(Fig. 8)

*Sepsis frontalis* WALKER, 1860, J. Proc. Linn. Soc. Lond., Zool. 4: 163.

*Australosepsis frontalis*: ZUSKA, 1968, Acta ent. bohemoslov. 65: 472; ZUSKA, 1977, Catalog Dipt. Orient. Reg. 3: 174; IWASA, 1984, Kontyû, 52: 304.

Specimens examined. 35♂♂, 20♀♀, Kenting Park, 19 Nov. 1985, M. IWASA.

Distribution. Widely distributed in the Oriental Region.

### 9. *Dicranosepsis bicolor* (WIEDEMANN, 1830)

(Fig. 9)

*Sepsis bicolor* WIEDEMANN, 1830, Auss. zweifl. Ins. 2: 468.

*Dicranosepsis bicolor*: ZUSKA, 1970, Acta ent. bohemoslov. 67: 50; ZUSKA, 1977, Catalog Dipt. Orient. Reg. 3: 75.

Specimens examined. 10♂♂, Kenting Park, 17 Nov. 1985, M. IWASA; 15♂♂, Chihpen, 13 Nov. 1985, M. IWASA; 2♂♂, Kukuwan (600 m), 4 Nov. 1985, M. IWASA; 2♂♂, Yuli, 11 Nov. 1985, M. IWASA; 5♂♂, Tuisui, 10 Nov. 1985, M. IWASA.

Distribution. Oriental and Australian regions.

### 10. *Sepsis lateralis* WIEDEMANN, 1830

(Fig. 10)

*Sepsis lateralis* WIEDEMANN, 1830, Auss. zweifl. Ins. 2: 468.

*Sepsis lateralis*: DUDA, 1926, Ann. Naturhist. Mus. Wien, 40: 22; ZUSKA, 1977, Catalog Dipt. Orient. Reg. 3: 178.

Specimens examined. 5♂♂, Fenchifu (1,405 m), 2 Nov. 1985, M. IWASA; 1♂, Kukuwan (750 m), 4 Nov. 1985, M. IWASA.

Distribution. Widely distributed in the Oriental, Ethiopian, and Mediterranean regions and New Guinea.

### 11. *Sepsis indica* WIEDEMANN, 1824

(Fig. 11)

*Sepsis indica* WIEDEMANN, 1824, Analecta Ent. p. 57.

*Sepsis indica*: ZUSKA, 1977, Catalog Dipt. Orient. Reg. 3: 178.

Specimen examined. 1♂, Chihpen, 14 Nov. 1985, M. IWASA.

Distribution. Oriental Region.

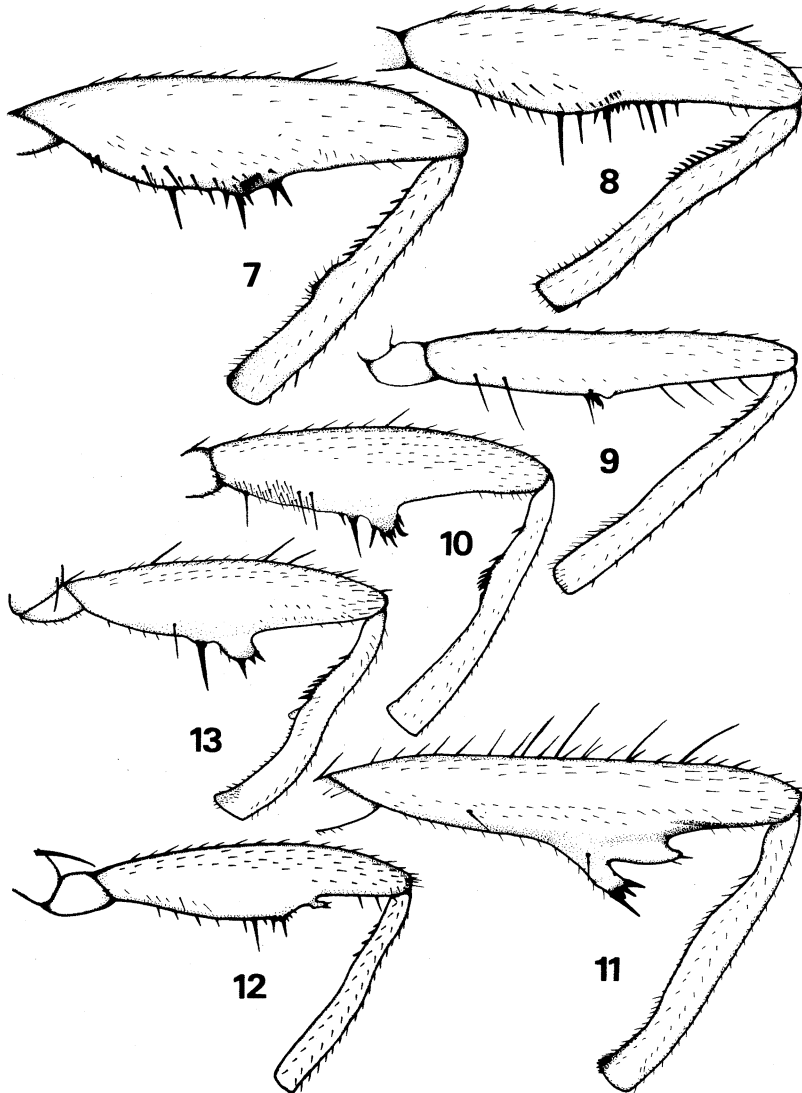
### 12. *Sepsis zuskai* IWASA, 1982

(Fig. 12)

*Sepsis zuskai* IWASA, 1982, Pacif. Ins. 24: 232.

Specimens examined. 20♂♂, Kenting Park, 18 Nov. 1985, M. IWASA.

Distribution. Taiwan, Hong Kong and Indonesia.



Figs. 7–13. Male fore femora and tibiae (left, anterior view); 7, *Australosepsis niveipennis* (BECKER); 8, *Australosepsis frontalis* (WALKER); 9, *Dicranosepsis bicolor* (WIEDEMANN); 10, *Sepsis lateralis* WIEDEMANN; 11, *Sepsis indica* WIEDEMANN; 12, *Sepsis zuskai* IWASA; 13, *Sepsis nitens* WIEDEMANN. [Quoted from IWASA (1980, 1982b and 1984b)].

13. *Sepsis nitens* WIEDEMANN, 1824  
(Fig. 13)

*Sepsis nitens* WIEDEMANN 1824, *Analecta Ent.* p. 57.

*Sepsis nitens* : ZUSKA, 1977, Catalog Dipt. Orient. Reg. 3 : 178.

Specimens examined. 25♂♂, Kenting Park, 19 Nov. 1985, M. IWASA.

Distribution. Oriental and Australian regions.

**14. *Sepsis coprophila* DE MEIJERE, 1906**

(Fig. 14)

*Sepsis coprophila* DE MEIJERE, 1906, Ann. Mus. Nat. Hung. 4 : 176.

*Sepsis coprophila* : DUDA, 1926, Ann. Naturhist. Mus. Wien, 40 : 65 ; ZUSKA, 1977, Catalog Dipt.

Orient. Reg. 3 : 178.

Specimens examined. 3♂♂, Kenting Park, 17 Nov. 1985, M. IWASA.

Distribution. Oriental and Australian regions.

**15. *Sepsis albopunctata* LAMB, 1914**

(Fig. 15)

*Sepsis albopunctata* LAMB, 1914, Trans. Linn. Soc. Lond. 2, 16 : 323.

*Sepsis albopunctata* : DUDA, 1926, Ann. Naturhist. Mus. Wien, 40 : 39. ZUSKA, 1977, Catalog

Dipt. Orient. Reg. 3 : 177.

Specimens examined. 20♂♂, Tuisui, 10 Nov. 1985, M. IWASA.

Distribution. Widely distributed in the Oriental, Ethiopian and Australian regions.

**16. *Sepsis thoracica* (ROBINEAU-DESVOIDY, 1830)**

(Fig. 16)

*Micropeza thoracica* ROBINEAU-DESVOIDY, 1830, Essai Myodaires, p. 742.

*Sepsis thoracica* : DUDA, 1926, Ann. Naturhist. Mus. Wien, 40 : 37 ; HENNIG, 1949, Flieg. palaearkt. Reg. 39a : 67.

Specimen examined. 1♂, Shoka, 6 Mar. 1981, M. IWASA.

Distribution. Palaearctic, Ethiopian and Oriental regions.

**17. *Sepsis punctum* (FABRICIUS, 1794)**

(Fig. 17)

*Musca punctum* FABRICIUS, 1794, Ent. Syst. 4 : 351.

*Sepsis punctum* : DUDA, 1925, Ann. Naturhist. Mus. Wien, 39 : 111 ; HENNIG, 1949, Flieg. palaearkt. Reg. 39a : 84.

Specimens examined. 4♂♂, Alishan (2,600 m), Chiayi Pref., 1 Nov. 1985, M. IWASA ; 1, Alishan—Yushan (2,600—2,700 m), 31 Oct. 1985, M. IWASA.

Distribution. Holarctic Region. New to Taiwan.

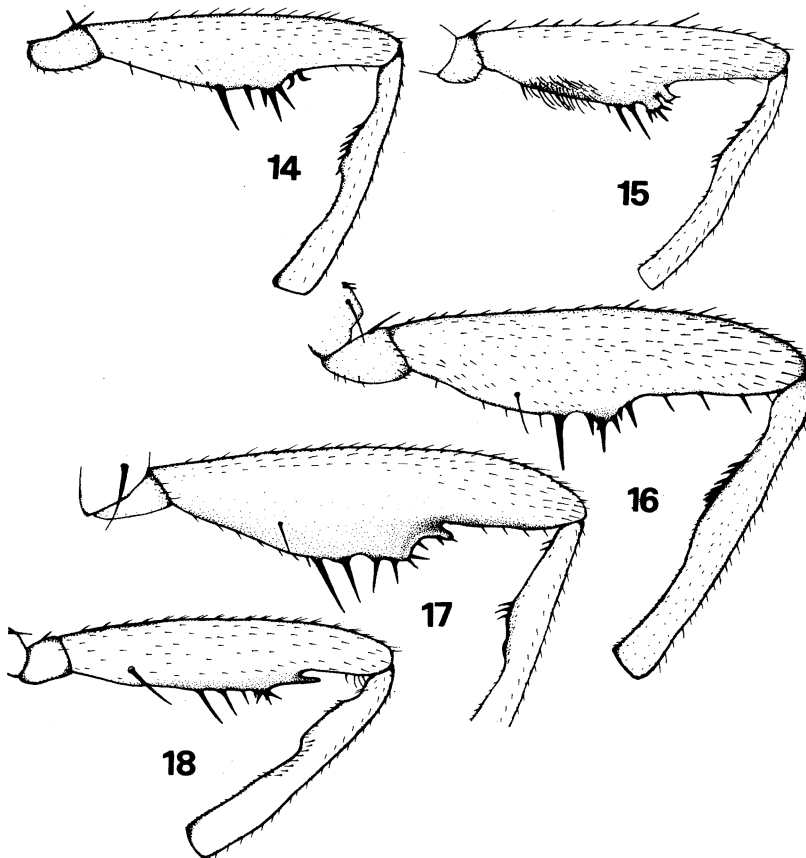
**18. *Sepsis monostigma* THOMSON, 1869**

(Fig. 18)

*Sepsis monostigma* THOMSON, 1869, Eugen Resa Dipt. p. 586.

*Sepsis monostigma* : ZUSKA, 1977, Catalog Dipt. Orient. Reg. 3 : 179.

Specimens examined. 1♂, Kenting Park, 12 Mar. 1981, M. IWASA ; 2♂♂, Chihpen, 14 Nov. 1985, M. IWASA.



Figs. 14–18. Male fore femora and tibiae (left, anterior view); 14, *Sepsis coprophila* DE MEIJERE; 15, *Sepsis albopunctata* LAMB; 16, *Sepsis thoracica* (ROBINEAU-DESVOIDY); 17, *Sepsis punctum* (FABRICIUS), 18, *Sepsis monostigma* THOMSON. [Quoted from Iwasa (1980)].

Distribution. Widely distributed in the Oriental Region; Japan.

**Key to the genera and species of Sepsidae in Taiwan**

1. Large sized, body wholly black and dully shining, inner vertical setae absent, mid femur bent at near half ..... *Toxopoda viduata* (THOMSON)
- Medium or small sized, body reddish to black and glossily shining, inner vertical setae present, mid femur not bent at near half ..... 2
2. Fore femur in both sexes with a series of short anteroventral spines, in male further a row of longer setae present posteroventrally ..... *Nemopoda pectinulata* LOEW
- Fore femur in both sexes without a series of short spines; male fore femur with complicated setae or spines ..... 3

3. Humeral setae absent ..... *Decachaetophora aeneipes* (DE MEIJERE) ..... 4  
 Humeral setae present ..... 4
4. Fronto-orbital setae developed ..... 5  
 Fronto-orbital setae vestigial ..... 8
5. Postvertical setae present and acrostichal setae absent ..... *Meroplus* RONDANI ..... 6  
 Postvertical setae absent and acrostichal setae present .....  
 ..... *Xenosepsis sydneyensis* MALLOCH
6. All pleura rough sculpture, subshining; in male, distal one of 2 ventral spines of fore femur triangular and pointed apically (After ZUSKA, 1972) .....  
 ..... *Meroplus sauteri* (DE MEIJERE)  
 All pleura with fine sculpture, shining; in male, distal one of 2 ventral spines of fore femur not triangular ..... 7
7. Wings hyaline; mid and hind legs brown except yellow basal parts; in male, distal one of 2 ventral spines of fore femur straight and a pair of hair tufts on 4th sternite not developed ..... *Meroplus minutus* (WIEDEMANN)  
 Wings somewhat tinged with brownish; mid and hind legs black except yellow basal parts; in male, distal one of 2 ventral spines of fore femur bending anteriorly and a pair of hair tufts on 4th sternite developed ..... *Meroplus fasciculatus* (BRUNETTI)
8. First and 2nd basal cells united ..... *Australosepsis* MALLOCH ..... 9  
 First and 2nd basal cells separated ..... 10
9. Wing with a diffused dark spot at the end of vein  $R_{2+3}$  .....  
 ..... *Australosepsis niveipennis* (BECKER)  
 Wing without a diffused dark spot at the end of vein  $R_{2+3}$  .....  
 ..... *Australosepsis frontalis* (WALKER)
10. Abdomen in both sexes without distinct macrochaetae; epandrial process bifurcate at the tip ..... *Dicranosepsis bicolor* (WIEDEMANN)  
 Abdomen in male, often in female also, with distinct macrochaetae; epandrial process not bifurcate at the tip ..... *Sepsis* FALLÉN ..... 11
11. Wing without a dark spot at the end of vein  $R_{2+3}$  ..... 12  
 Wing with a dark spot at the end of vein  $R_{2+3}$  ..... 16
12. Sternopleuron posterodorsally pruinose ..... *Sepsis lateralis* WIEDEMANN  
 Sternopleuron wholly pruinose ..... 13
13. Pteropleuron thinly pruinose ..... 14  
 Pteropleuron shining ..... 15
14. Wing tip whitish; male fore femur without a ventral knobbed process at near half; small sized ..... *Sepsis zuskai* IWASA  
 Wing tip not whitish; male fore femur with a ventral knobbed process bearing some short spines at near half ..... *Sepsis indica* WIEDEMANN
15. Male epandrial process short and slender; male fore femur with a ventral knobbed process bearing some short black spines at near half ..... *Sepsis nitens* WIEDEMANN  
 Male epandrial process long and stout; male fore femur directly with some ventral black spines, without a knobbed process ..... *Sepsis coprophila* DE MEIJERE
16. Sternopleuron shining or partly shining ..... 17  
 Sternopleuron wholly pruinose ..... 18
17. Sternopleuron almost shining, only posterodorsal margin thinly pruinose; male fore

- femur with anterobasal batch of hairs ..... *Sepsis albopunctata* LAMB  
 Sternopleuron anteroventrally shining; male fore femur without anterobasal batch of  
 hairs ..... *Sepsis thoracica* (ROBINEAU-DESVOIDY)
18. Male fore femur with a strong anterobasal seta ..... *Sepsis monostigma* THOMSON  
 Male fore femur with a weak anterobasal seta ..... *Sepsis punctum* (FABRICIUS)

### Acknowledgements

I wish to express my sincere thanks to Dr. S. SHINONAGA and Dr. R. KANO of Tokyo Medical and Dental University for their kind arrangement of this survey and for reading the manuscript. My thanks are also due to Prof. K. HORI of Obihiro University of Agriculture and Veterinary Medicine for reading the manuscript.

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