

The Flesh Flies (Diptera, Sarcophagidae)
from the Northern Part of Vietnam

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Abstract The collection of the Sarcophagidae made by the third author on the National Science Museum Northern Vietnam Expedition 1995 and 1997 is dealt with. Thirty-two species are listed, nineteen of them being new to Vietnam.

Key words: Diptera, fauna, new record, Northern Vietnam, Sarcophagidae.

Introduction

The present paper records thirty species of the Sarcophagidae from the northern part of Vietnam based upon the specimens collected by the National Science Museum Northern Vietnam Expedition 1995 and 1997. So far as we know, nineteen sarcophagid species were previously recorded from Vietnam (Lopes *et al.*, 1977; Fan, 1992; Pape, 1996; Think, 1998). Nineteen of the 32 species collected are new to Vietnam and these newly recorded flies and new localities are preceded by asterisks in the text. In our survey, however, we failed in collecting six previously recorded species: *Amobia quatei* Kurahashi, *Parasarcophaga dux* (Thomson), *P. scopariiformis* (Senior-White), *P. hirtipes* (Wiedemann), *Sinonipponia hainanensis* (Ho) and *Pierretia glovovesica* Ye (Lopes *et al.*, 1977; Think, 1988; Fan, 1992; Pape, 1996). The species recorded in the present study are of the so-called Oriental elements except *Parasarcophaga aratrix* (Pandellè) and seem to be common in Southwest to Southeast Asia and the southern part of China. The surveys were made in various habitats from lowlands (alt. 170 m) to highlands (alt. 1,950 m). Most species were distributed throughout lowlands to highlands, but the following six species were limited only to the lowlands below 420 m above sea-level: *Hosarcophaga serrata* (Ho), *Boettcherisca peregrina* (Robineau-Desvoidy), *Lioproctia beasoni* (Senior-White), *Sarcorohdendorfia intricata* (Walker), *Kalshovenella flavibasis* Baranov, *Pterosarcophaga membranocorporis* (Sugiyama). On the other hand, *Phallosphaera gravelyi* (Senior-White), *Sarcorohdendorfia antilope* (Böttcher), *Bercaea africa* (Wiedemann), *Parasarcophaga aratrix* (Pandellè) and *P. khasiensis* (Senior-White) were collected only in the highlands more than 1,000 m above sea-level.

Identified specimens are shared and preserved in the National Science Museum, Tokyo and the Institute of Ecology and Bioresources, Hanoi.

Subfamily Miltogrammatinae

Tribe **Amobiini**

**Amobia auriceps* (Baranov)

Pachyophthalmus auriceps Baranov, 1935: 558.

Material examined. N. VIETNAM: 1 ♂ 1 ♀, Son La Prov., nr Moc Chau, Truong Yen, 900 m, 19–21. VI. 1997, H. Kurahashi.

Distribution. **Oriental Region:** Taiwan, *Vietnam, Laos, India (Tamil Nadu), Sri Lanka, Philippines and Malaysia (Malaya). **Australasian/Oceanian Regions:** Papua New Guinea (Bismarck Arch.), Australia and Hawaiian Is. (Hawaii, Oahu).

Tribe **Miltogrammatini**

Miltogramma angustifrons (Townsend)

Eumiltogramma angustifrons Townsend, 1933: 444.

Miltogramma angustifrons: Pape, 1996: 107.

Material examined. N. VIETNAM: 9 ♂ 1 ♀, Ninh Binh Prov., Nho Quan, Cuc Phuong, 170 m, 10–11. VII. 1997, H. Kurahashi.

Distribution. **Oriental Region:** Taiwan, Vietnam, Laos, Thailand and India (Assam). **Palaearctic Region:** Japan (Honshu) and China (Beijing, Jiangsu). **Australasian/Oceanian Regions:** Papua New Guinea (New Guinea) and Solomon Is.

Miltogramma iberica (Villeneuve)

Miltogramma ibericum Villeneuve, 1913: 508.

Miltogramma iberica: Pape, 1996: 110.

The present species is very similar to the preceding one, but distinguished from it by the criteria shown in Fig. 1.

Material examined. N. VIETNAM: 24 ♂ 2 ♀, Ninh Binh Prov., Nho Quan, Cuc Phuong, 170 m, 10–11. VII. 1997, H. Kurahashi; 4 ♂ 1 ♀, Son La Prov., nr Moc Chau, Truong Yen, 900 m, 19–21. VI. 1997, H. Kurahashi; 2 ♂, Nghe An Prov., Que Phong, 250 m, 7–8. VII. 1997, H. Kurahashi.

Distribution. **Oriental Region:** Taiwan, China (Zhejiang, Fujian, Guandong, Guangxi), Vietnam, India (Jammu and Kashmir) and Malaysia (Borneo). **Australasian/Oceanian Regions:** Papua New Guinea (Bismarck Arch.). Widely distributed in the Palaearctic Region.

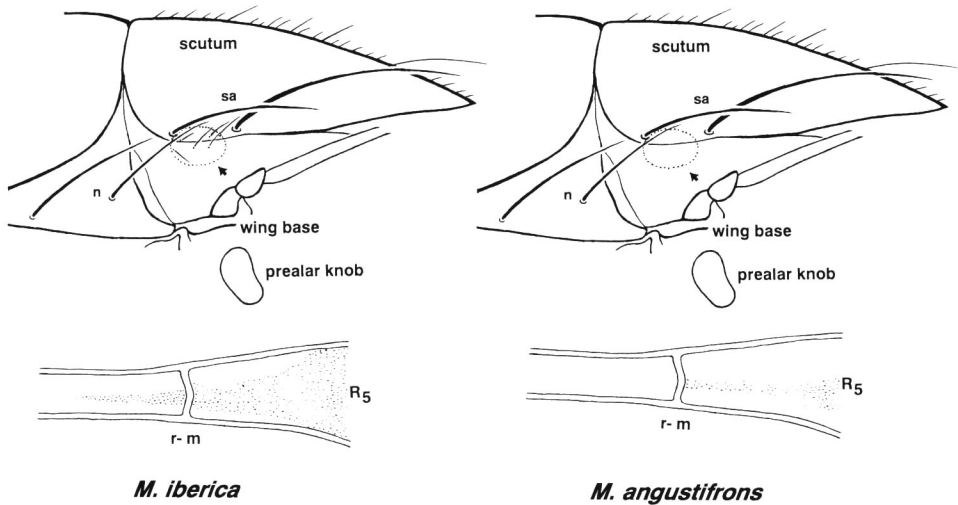


Fig. 1. Hairiness on lateral side of scutum (above) and distribution of microtrichia around r-m vein (below) in *Miltogramma iberica* (Villeneuve) and *M. angustifrons* (Townsend).

*Tribe Metopiini

**Taxigramma multipunctata* Rondani

Heteropterina multipunctata Rondani, 1859: 211.

Material examined. N. VIETNAM: 1 ♂ 1 ♀, Nghe An Prov., Que Phong, 250 m, 7–8. VII. 1997, H. Kurahashi.

Distribution. **Oriental Region:** *Vietnam. Widely distributed in the Palearctic and Afrotropical Regions.

Metopia nudibasis (Malloch)

Opsidiopsis nudibasis Malloch, 1930: 439.

Metopia nudibasis: Pape, 1996: 102.

Material examined. N. VIETNAM: 1 ♀, Nghe An Prov., Que Phong, 250 m, 7–8. VII. 1997, H. Kurahashi.

Distribution. **Oriental Region:** Japan (Ryukyu Is.), China (Zhejiang, Guangdong), Vietnam, Laos, India (Karnataka), Sri Lanka, Philippines and Malaysia (Borneo, Malaya). **Palearctic Region:** Japan (Honshu). Widely distributed in the Australasian and Afrotropical Regions.

**Metopia sauteri* (Townsend)

Chaetanicia sauteri Townsend, 1932: 445.

Material examined. N. VIETNAM: 1 ♀, Lao Cai Prov., Lao Cai to Sapa, 800–1,200 m, forest, 6–7. X. 1995, H. Kurahashi; 2 ♂ 2 ♀, Ninh Binh Prov., Nho Quan, Cuc Phuong, 170 m, 10–11. VII. 1997, H. Kurahashi; 2 ♂ 3 ♀, Son La Prov., nr Moc Chau, Truong Yen, 900 m, 19–21. VI. 1997, H. Kurahashi; 1 ♂ 1 ♀, Son La Prov., E of Ban Song, Deo Cao Pha, 420 m, 22–23. VI. 1997, H. Kurahashi.

Distribution. **Oriental Region:** Japan (Ryukyu Is.), Taiwan, China (Yunnan), *Vietnam, Laos, Nepal and India. **Palaearctic Region:** Japan (Honshu, Kyushu) and China (Shanghai).

Metopia tshernovae Rohdendorf

Metopia tshernovae Rohdendorf, 1955: 368.

Metopia tshernovae: Pape, 1996: 104.

Material examined. N. VIETNAM: 1 ♂, Son La Prov., nr Moc Chau, Truong Yen, 900 m, 19–21. VI. 1997, H. Kurahashi.

Distribution. **Oriental Region:** China (Yunnan), Vietnam, Laos, Thailand and India (Jammu and Kashmir). Widely distributed in the Palaearctic Region.

**Metopia yunnanica* Chao et Zhang

Metopia yunnanica Chao et Zhang, 1988: 282.

Material examined. N. VIETNAM: 3 ♀, Lai Chau Prov., Mt. Phang Si Pang, N. ridge, 1,970 m, 2, 3, 4. X. 1995, H. Kurahashi; 13 ♂ 17 ♀, Lao Cai Prov., nr Sapa, O Quy Ho, 1,750 m, 28–30. VI. 1997, H. Kurahashi (NIID); 2 ♂ 2 ♀, Lao Cai Prov., nr Sapa, Deo Tram Ton, 1,950 m, 27–29. VI. 1997, H. Kurahashi.

Distribution. **Oriental Region:** China (Yunnan), *Vietnam and Thailand.

Subfamily Sarcophaginae

Tribe **Protodexiini**

**Blaesoxipha rufipes* (Macquart)

Agria rufipes Macquart, 1839: 113.

Material examined. N. VIETNAM: 3 ♂, Son La Prov., E of Ban Song, Deo Cao Pha, 420 m, 22–23. VI. 1997, H. Kurahashi.

Distribution. **Oriental Region:** Japan (Ryukyu Is.), China (Guangdong, Yunnan), *Vietnam, Laos, Thailand, India (Meghalaya, Tamil Nadu), Pakistan, Sri Lanka, Philippines, Malaysia (Borneo, Malaya) and Indonesia (Java). Widely distributed in the Palaearctic, Afrotropical, Australasian and Oceanian Regions.

Tribe **Sarcophagini******Sarcorohdendorfia antilope*** (Böttcher)

Sarcophaga antilope Böttcher, 1913: 380.

The present species seems to have a habitat in mountainous areas more than 1,000 m above sea-level in the northern part of Vietnam.

Material examined. N. VIETNAM: 2♂ 1♀, Son La Prov., nr Moc Chau, Truong Yen, 900 m, 19–21. VI. 1997, H. Kurahashi; 3♂ 1♀, Lao Cai Prov., Lao Cai to Sapa, 800–1,200 m, 6–7. X. 1995, H. Kurahashi; 1♂, Lao Cai Prov., nr Sapa, O Quy Ho, 1,750 m, 28–30. VI. 1997, H. Kurahashi.

Distribution. **Oriental Region:** Japan (Ryukyu Is.), Taiwan, China (Zhejiang, Hunan, Yunnan, Hainan), Nepal, India, Philippines, Malaysia (Malaya), Singapore and Indonesia (Kalimantan, Java, Celebes). **Palaearctic Region:** Russia (Far East), Japan (Honshu, Kyushu), South Korea and China (Heilongjiang, Liaoning, Henan, Sichuan, Hubei). **Australasian/Oceanian Regions:** Papua New Guinea (New Guinea, Bismarck Arch.), Solomon Is., Australia (Queensland) and Micronesia.

****Sarcorohdendorfia inextricata*** (Walker)

Sarcophaga inextricata Walker, 1860: 132.

The present species seems to be a lowland inhabitant in contrast to the preceding species. The first author (R. K.) observed the same kind of altitudinal habitat segregation in both species in Yunnan, China (Kano, unpublished).

Material examined. N. VIETNAM: 1♂, Son La Prov., E of Ban Song, Deo Cao Pha, 420 m, 22–23. VI. 1997, H. Kurahashi; 1♂, Ninh Binh Prov., Nho Quan, Cuc Phuong, 170 m, 10–11. VII. 1997, H. Kurahashi; 2♀, Nghe An Prov., Que Phong, 250 m, 7–8. VII. 1997, H. Kurahashi.

Distribution. **Oriental Region:** China (Yunnan), *Vietnam, Thailand, Malaysia (Malaya) and Indonesia (Celebes).

****Lioproctia beesoni*** (Senior-White)

Sarcophaga beesoni Senior-White, 1924: 243.

Material examined. N. VIETNAM: 1♂, Nghe An Prov., Que Phong, 250 m, 7–8. VII. 1997, H. Kurahashi.

Distribution. **Oriental Region:** Taiwan, China (Shanghai, Zhejiang, Fujian, Hunan), *Vietnam, Thailand, Myanmar, Nepal, India (West Bengal). **Palaearctic Region:** Japan (Kyushu), China (Jiangsu, Anhui, Henan, Hubei, Sichuan).

Lioproctia pattoni (Senior-White)

Sarcophaga pattoni Senior-White, 1924: 242.

Burmanomyia pattoni: Thinh, 1988: 14.

Sarcophaga (Lioproctia) pattoni: Pape, 1996: 345.

Material examined. N. VIETNAM: 3♂, Ha Tay Prov., Mt. Tan Vien, 500 m, secondary forest, 15–16. X. 1995, H. Kurahashi; 2♂, Vinh Phu Prov., Mt. Tam Dao, 930–1,230 m, forest, 21–27. IX. 1995, H. Kurahashi.

Distribution. **Oriental Region**: Taiwan, China (Yunnan), Vietnam, Nepal, India (Nagaland, Mizoram, Tripura, Tamil Nadu), Philippines, Malaysia (Malaya), Singapore and Indonesia (Java). **Palaearctic Region**: China (Henan, Hubei, Sichuan).

****Phallosphaera gravelyi*** (Senior-White)

Sarcophaga gravelyi Senior-White, 1924: 229.

Material examined. N. VIETNAM: 2♂, Lao Cai Prov., nr Sapa, Deo Tram ton, 1956 m, 27–29. VI. 1997, H. Kurahashi; 2♂ 2♀, Vinh Phu Prov., Mt. Tam Dao, 930–1,230 m, 21–17. IX. 1995, 2–4. VII. 1997, 13. VII. 1997, H. Kurahashi.

Distribution. **Oriental Region**: Taiwan, China (Zhejiang, Fujian, Hunan, Guizhou, Guangdong, Yunnan), *Vietnam, Thailand, Nepal, India (Andhra Pradesh, Tamil Nadu) and Indonesia. **Palaearctic Region**: Japan (Honshu, Kyushu), Russia (Far East), North Korea (N. Korea) and China (Liaoning, Shaanxi, Hubei, Sichuan).

****Fengia ostindicae*** (Senior-White)

Sarcophaga ostindicae Senior-White, 1924: 233.

Material examined. N. VIETNAM: 1♂, Lao Cai Prov., Lao Cai to Sapa, 800–1,200 m, forest, 6–7. X. 1995, H. Kurahashi; 1♂, Vinh Phu Prov., Mt. Tam Dao, 930–1,230 m, forest, 21–27. IX. 1995, H. Kurahashi; 1♂, Son La Prov., E of Ban Song, Deo Cao Pha, 420 m, 22–23. VI. 1997, H. Kurahashi.

Distribution. **Oriental Region**: Taiwan, China (Guangdong, Yunnan, Hainan), *Vietnam, Thailand and India (Mizoram, ?Assam, Uttar Pradesh).

****Pterosarcophaga membranocorporis*** (Sugiyama)

Sarcophaga membranocorporis Sugiyama, 1987: 73.

Material examined. N. VIETNAM: 2♂, Ninh Binh Prov., Cuc Phuong, 370 m, primary forest, 11–14. X. 1995, H. Kurahashi.

Distribution. **Oriental Region**: Taiwan and *Vietnam.

****Kalshovenella flavibasis*** Baranov

Kalshovenella flavibasis Baranov, 1941: 403.

Pierretia otiophalla Fan et Chen, 1982: 241.

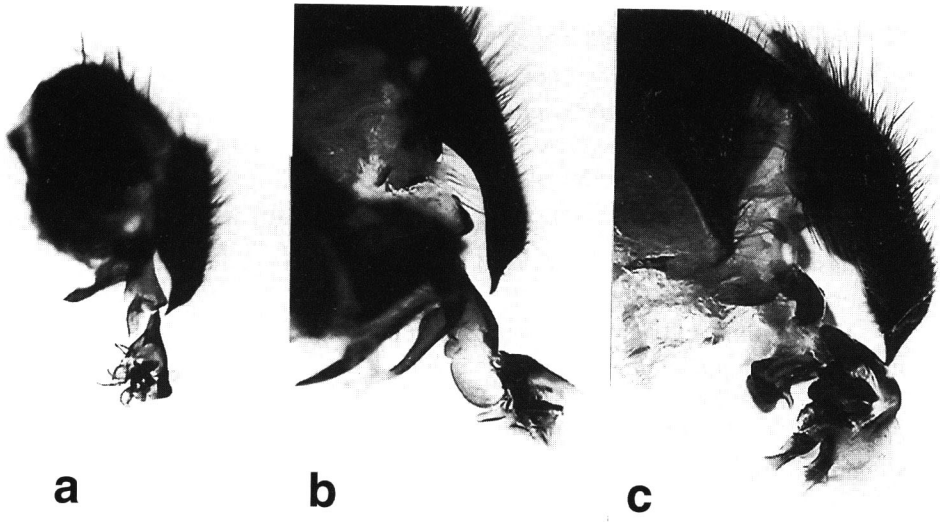


Fig. 2. Male genitalia of rare sarcophagid flies in northern Vietnam, lateral view. a: *Kalshovenella flavibasis* Baranov, b: *Pterosarcophaga membranocorporis* (Sugiyama), c: *Parasarcophaga aratrix* (Pandellè).

The present species has ever been recorded only from Hainan, China and Java, Indonesia, and seems to be rare in northern Vietnam.

Material examined. N. VIETNAM: 1♂, Ninh Binh Prov., Nho Quan, Cuc Phuong, 170 m, 10–11. VII. 1997, H. Kurahashi.

Distribution. **Oriental Region:** China (Hainan), *Vietnam and Indonesia (Java).

****Boettcherisca nathani* Lopes**

Boettcherisca nathani Lopes, 1961: 79.

Material examined. N. VIETNAM: 4♂, Lao Cai Prov., Lao Cai to Sapa, 800–1,200 m, forest, 6–7. X. 1995, H. Kurahashi; 1♀, Lai Chau Prov., Mt. Phang Si Pang, N. ridge, 1,970 m, 2. X. 1995, H. Kurahashi; 20♂ 1♀, Ha Tay Prov., Mt. Tan Vien, 500 m, secondary forest, 15–16. X. 1995, H. Kurahashi; 10♂ 1♀, Son La Prov., nr Moc Chau, Truong Yen, 900 m, 19–21. VI. 1997, H. Kurahashi; 4♂, Son La Prov., E of Ban Song, Deo Cao Pha, 420 m, 22–23. VI. 1997, H. Kurahashi; 1♂, Son La Prov., Deo Pha Din, 1,000–1,400 m, 24. VI. 1997, H. Kurahashi; 82♂ 40♀, Vinh Phu Prov., Mt. Tam Dao, 930–1,230 m, forest, 21–27. IX. 1995, 17–18. VI. 1997, 2–4, 13. vii. 1997, H. Kurahashi; 2♂ 2♀, Nghe An Prov., Que Phong, 150 m, 7–8. VII. 1997, H. Kurahashi; 17♂, Ninh Binh Prov., Nho Quan, Cuc Phuong, 170 m, 370 m, 11–14. X. 1995, 10–11. VII. 1997. H. Kurahashi.

Distribution. **Oriental Region:** China (Yunnan), *Vietnam, Thailand, Nepal, Pakistan, India (West Bengal, Gujarat, Maharashtra, Tamil Nadu), Philippines, Mal-

aysia (Malaya) and Indonesia (Kalimantan, Sumatra).

Boettcherisca peregrina (Robineau-Desvoidy)

Myophora peregrina Robineau-Desvoidy, 1830: 356.

Boettcherisca peregrina: Thinh, 1988: 14.

Material examined. 1♂, Nghe An Prov., Que Phong, 250 m, 7–8. VII. 1997, H. Kurahashi; 1♂, Ninh Binh Prov., Nho Quan, Cuc Phuong, 170 m, 10–11. VII. 1997. H. Kurahashi.

Distribution. **Oriental Region:** Japan (Ryukyu Is.), Taiwan, China (Zhejiang, Jiangxi, Hunan, Guizhou, Fujian, Guangdong, Guangxi, Yunnan, Hainan), Vietnam, Thailand, Myanmar, Bhutan, Nepal, India (Manipur, Meghalaya, Assam, Delhi, Himachal Pradesh, Madhya Pradesh, Karnataka, Kerala), Sri Lanka, Malaysia (Malaya), Singapore and Indonesia (Kalimantan). **Palaearctic Region:** Japan (Hokkaido, Honshu, Kyushu), Russia (Far East), North Korea, South Korea and China (Heilongjiang, Jilin, Liaoning, Neimenggu, Hebei, Tianjin, Beijing, Shandong, Shanxi, Shaanxi, Ningxia, Gansu, Shanghai, Jiangsu, Anhui, Henan, Hubei, Sichuan, Xizang). Widely distributed in Seychelles, Madagascar, and the Australasian and Oceanian Regions.

****Hosarcophaga serrata*** (Ho)

Sarcophaga serrata Ho, 1938: 120.

Material examined. N. VIETNAM: 2♂, Ninh Binh Prov., Cuc Phuong, 370 m, primary forest, 21–27. IX. 1995, H. Kurahashi.

Distribution. **Oriental Region:** Taiwan, *Vietnam, Thailand and Indonesia (Java, Kalimantan).

****Bercaea africa*** (Wiedemann)

Musca africa Wiedemann, 1824: 49.

Material examined. N. VIETNAM: 1♀, Lao Cai Prov., nr Sapa, O Quy Ho, 1,750 m, 28–30. VI. 1997, H. Kurahashi.

Distribution. **Oriental Region:** China (Hunan, Yunnan), *Vietnam, Bhutan, Nepal, Pakistan, India (Arunachal Pradesh, Assam, West Bengal, Himachal Pradesh). Widely distributed in the Palaearctic, Nearctic, Afrotropical, Australasian and Oceanian Regions.

Seniorwhitea princeps (Wiedemann)

Sarcophaga princeps Wiedemann, 1830: 359.

Seniorwhitea orientaloides: Thinh, 1988: 14.

Material examined. N. VIETNAM: 1♂, Lao Cai Prov., 80 km SE of Lao Cai, 150 m, village, 1. X. 1995, H. Kurahashi; 4♂ 1♀, Son La Prov., E of Ban Song, Dao Cao Pha, 420 m, 22–3. VI. 1997, H. Kurahashi; 1♂, Son La Prov., Deo Pha Din, 1,000–1,400 m, forest, 24. VI. 1997, H. Kurahashi; 7♂, Vinh Phu Prov., Mt. Tam Dao, 500 m, forest, 930–1,230 m, 21–27. IX. 1995, 26. IX. 1995, 2–4. VII. 1997, H. Kurahashi; 1♀, Ha Tay Prov., Mt. Tan Vien, 500 m, secondary forest, 6–7. X. 1995, H. Kurahashi; 1♂, Nghe An Prov., Que Phong, 250 m, 7–8. VII. 1997, H. Kurahashi; 7♂ 4♀, Ninh Binh Prov., Nho Quan, Cuc Phuong, 170 m, 370 m, primary forest, 11–14. X. 1995, 10–11. VII. 1997, H. Kurahashi.

Distribution. **Oriental Region:** Taiwan, China (Zhejiang, Fujian, Jiangxi, Hunan, Guangdong, Guangxi, Yunnan, Hainan), Vietnam, Laos, Thailand, Myanmar, Bhutan, Nepal, India (Arunachal Pradesh, Nagaland, Manipur, Mizoram, Tripura, Meghalaya, Assam, Sikkim, West Bengal, Bihar, Uttar Pradesh, Delhi, Haryana, Himachal Pradesh, Punjab, Gujarat, Maharashtra, Orissa, Madhya Pradesh, Karnataka, Kerala, Andhra Pradesh, Tamil Nadu), Sri Lanka, Malaysia (Malaya), Singapore and Indonesia (Sumatra). **Palaearctic Region:** China (Shandong, Jiangsu, Shanghai, Shaanxi, Henan, Hubei, Sichuan, Xizang). **Australasian/Oceanian Regions:** Hawaii Is. (Oahu, Kauai).

**Harpagophalla kempii* (Senior-White)

Sarcophaga kempii Senior-White, 1924: 247.

Material examined. N. VIETNAM: 2♂, Nghe An Prov., Que Phong, 250 m, 7–8. VII. 1997, H. Kurahashi; 1♀, Ninh Binh Prov., Nho Quan, Cuc Phuong, 170 m, 10–11. VII. 1997, H. Kurahashi.

Distribution. **Oriental Region:** China (Fujian, Jiangxi, Guangdong, Guangxi, Yunnan, Hainan), *Vietnam, Laos, Thailand, Myanmar, Nepal, India (Arunachal Pradesh, Meghalaya, Assam, Sikkim, Bihar, Uttar Pradesh, Madhya Pradesh, Maharashtra, Karnataka, Kerala), Sri Lanka, Philippines, Malaysia (Malaya), Singapore and Indonesia (Java, Celebes). **Palaearctic Region:** China (Sichuan). **Australasian/Oceanian Regions:** Papua New Guinea (New Guinea).

Parasarcophaga albiceps (Meigen)

Sarcophaga albiceps Meigen, 1826: 22.

Parasarcophaga albiceps: Thinh, 1988: 14.

Material examined. N. VIETNAM: 1♀, Lai Chau Prov., Mt. Phang Si Pang, N. ridge, 1,970 m, 4. X. 1995, H. Kurahashi; 13♂ 7♀, Lao Cai Prov., Lao Cai to Sapa, 800–1,200 m, forest, 6–7. X. 1995, H. Kurahashi; 6♂, Ha Tay Prov., Mt. Tan Vien, 500 m, secondary forest, 15–16. X. 1995, H. Kurahashi; 31♂ 6♀, Vinh Phu Prov., Mt. Tam Dao, 930–1,230 m, forest, 21–27. IX. 1995, 17–18. VI. 1997, 2–4, 13. VII. 1997,

H. Kurahashi; 1 ♂ 1 ♀, Vinh Phu Prov., Mt. Tam Dao, 480 m, 950 m, 24. IX. 1995, 21. X. 1997, H. Ono; 44 ♂ 8 ♀, Son La Prov., nr Moc Chau, Truong Yen, 900 m, 19–21. VI. 1997, H. Kurahashi; 3 ♂, Son La Prov., E of Ban Song, Deo Cao Pha, 420 m, 22–23. VI. 1997, H. Kurahashi; 2 ♂ 4 ♀, Son La Prov., Deo Pha Din, 1,000–1,400 m, 24. VI. 1997, H. Kurahashi; 5 ♂, Ninh Binh Prov., Nho Quan, Cuc Phuong, 170 m, 10–11. VII. 1997, H. Kurahashi; 23 ♂ 2 ♀, Ninh Binh Prov., Nho Quan, Cuc Phuong, 170 m, 370 m, 11–14. X. 1995, 10–11. VII. 1997, H. Kurahashi.

Distribution. **Oriental Region:** Japan (Ryukyu Is.), Taiwan, China (Zhejiang, Fujian, Jiangxi, Hunan, Guizhou, Guangdong, Guangxi, Yunnan, Hainan), Vietnam, Bhutan, Nepal, Pakistan, India (Arunachal Pradesh, Nagaland, Manipur, Mizoram, Meghalaya, Tripur, Assam, Sikkim, West Bengal, Bihar, Uttar Pradesh, Delhi, Haryana, Punjab, Himachal Pradesh, Rajasthan, Gujarat, Orissa, Madhya Pradesh, Maharashtra, Karnataka, Goa, Kerala, Andhra Pradesh, Tamil Nadu), Philippines, Malaysia (Malaya), Singapore, Indonesia (Kalimantan, Java) and Andaman Is. Widely distributed in the Palearctic, Australasian and Oceanian Regions.

****Parasarcophaga aratrix*** (Pandellè)

Sarcophaga aratrix Pandellè, 1896: 191.

Material examined. N. VIETNAM: 1 ♂, Vinh Phu Prov., Mt. Tam Dao, 930–1,200 m, forest, 21–27. IX. 1995, H. Kurahashi.

Distribution. **Oriental Region:** *Vietnam. **Nearctic Region:** Alaska, Canada (Manitoba). Widely distributed in the Palearctic Region.

Parasarcophaga brevicornis (Ho)

Sarcophaga brevicornis Ho, 1934: 23.

Parasarcophaga brevicornis: Thinh, 1988: 14.

Material examined. N. VIETNAM: 6 ♂ 2 ♀, Lao Cai Prov., Lao Cai to Sapa, 800–1,200 m, forest, 6–7. X. 1995, H. Kurahashi; 7 ♂, Son La Prov., nr Moc Chau, Truong Yen, 900 m, 19–21. VI. 1997, H. Kurahashi; 4 ♂, Nghe An Prov., Que Phong, 250 m, 7–8. VII. 1997, H. Kurahashi.

Distribution. **Oriental Region:** Japan (Ryukyu Is.), Taiwan, China (Zhejiang, Fujian, Guizhou, Guangdong, Guangxi, Yunnan, Hainan), Vietnam, Thailand, Myanmar, Nepal, Pakistan, India (Arunachal Pradesh, Nagaland, Manipur, Mizoram, Meghalaya, Tripura, Assam, West Bengal, Bihar, Delhi, Himachal Pradesh, Jammu and Kashmir, Rajasthan, Gujarat, Orissa, Madhya Pradesh, Maharashtra, Goa, Andhra Pradesh), Philippines, Malaysia (Malaya), Singapore and Indonesia (Kalimantan). **Palearctic Region:** Russia (Far East), Japan (Honshu, Kyushu, Shikoku), South Korea and China (Liaoning, Hebei, Beijing, Shandong, Jiangsu, Henan, Hubei, Sichuan).

****Parasarcophaga iwuensis*** (Ho)

Sarcophaga iwuensis Ho, 1934: 34.

Material examined. N. VIETNAM: 4♂, Lao Cai Prov., Lao Cai to Sapa, 800–1,200 m, forest, 6–7. X. 1995, H. Kurahashi; 1♂, Nghe An Prov., Que Phong, 250 m, 7–8. VII. 1997, H. Kurahashi; 1♂, Ninh Binh Prov., Nho Quan, Cuc Phuong, 170 m, 10–11. VII. 1997, H. Kurahashi.

Distribution. **Oriental Region:** Taiwan, China (Zhejiang, Fujian, Hunan, Guizhou, Guangdong, Guangxi, Yunnan, Hainan), *Vietnam, Thailand, Bhutan, Nepal and Pakistan.

Parasarcophaga javana Macquart

Sarcophaga javana Macquart, 1851: 205.

Parasarcophaga doleschalli Johnston et Tiegs, 1921: 73.

Parasarcophaga (Liosarcophaga) doleschalli: Lopes, Kano, Shinonaga & Kurahashi, 1977: 568.

Material examined. N. VIETNAM: 10♂ 2♀, Vinh Phu Prov., Mt. Tam Dao, 930–1,230 m, forest, 17–18. VI. 1997, 2–4, 13. VII. 1997, H. Kurahashi; 3♂ 1♀, Son La Prov., nr Moc Chau, Truong Yen, 900 m, 19–21. VI. 1997, H. Kurahashi; 1♂, Lao Cai Prov., Sapa, 1,500 m, town, 2. X. 1995, H. Kurahashi; 1♂, Lao Cai Prov., nr Sapa, Deo Tram Ton, 1,950 m, 27–29. VI. 1997, H. Kurahashi; 1♀, Nghe An Prov., Que Phong, 250 m, 7–8. VII. 1997, H. Kurahashi.

Distribution. **Oriental Region:** China (Guangxi), Vietnam, Thailand, Nepal, India, Malaysia (Borneo) and Indonesia (Java, Ambon).

****Parasarcophaga khasiensis*** (Senior-White)

Sarcophaga khasiensis Senior-White, 1924: 246.

Material examined. N. VIETNAM: 6♂, Lao Cai Prov., Mt. Phang Si Pang, N. ridge, 1,900–1,970 m, 2, 5. X. 1995, H. Kurahashi.

Distribution. **Oriental Region:** China (Yunnan), *Vietnam, Thailand, Bhutan, Nepal and India (Nagaland, Manipur, Meghalaya, Jammu and Kashmir, Rajasthan). **Palaearctic Region:** China (Sichuan).

Parasarcophaga misera (Walker)

Sarcophaga misera Walker, 1849: 829.

Parasarcophaga orchidea: Thinh, 1988: 14.

Material examined. N. VIETNAM: 1♂, Lao Cai Prov., Sapa, 1,500 m, at light, 13. V. 1995, Y. Nishikawa; 1♀, Lao Cai Prov., Lao Cai to Sapa, 800–1,200 m, forest, 6–7. X. 1995, H. Kurahashi; 1♀, Son La Prov., Yen Chau, Na Khan, 280 m, 2. V. 1995,

Y. Nishikawa; 2♂ 1♀, Son La Prov., nr Moc Chau, Truong Yen, 900 m, 19–21. VI. 1997, H. Kurahashi; 5♂ 2♀, Nghe An Prov., Que Phong, 250 m, 7–8. VII. 1997, H. Kurahashi; 2♂, Ninh Binh Prov., Nho Quan, Cuc Phuong, 170 m, 10–11. VII. 1997, H. Kurahashi.

Distribution. **Oriental Region:** Japan (Ryukyu Is.), Taiwan, China (Zhejiang, Fujian, Jiangxi, Hunan, Guizhou, Guangdong, Guangxi, Yunnan, Hainan), Vietnam, Thailand, Myanmar, Bangladesh, Bhutan, Nepal, Pakistan, India (Arunachal Pradesh, Nagaland, Manipur, Mizoram, Meghalaya, Tripura, Assam, Sikkim, West Bengal, Uttar Pradesh, Himachal Pradesh, Jammu and Kashmir, Punjab, Delhi, Haryana, Rajasthan, Bihar, Madhya Pradesh, Orissa, Gujarat, Maharashtra, Karnataka, Goa, Kerala, Andhra Pradesh, Tamil Nadu), Sri Lanka, Laccadive Is., Philippines, Malaysia (Borneo, Malaya), Indonesia (Kalimantan, Java, Sumatra) and Andaman Is. **Palaearctic Region:** South Korea, China (Jilin, Liaoning, Hebei, Shanxi, Shaanxi, Gansu, Shandong, Jiangsu, Shanghai, Anhui, Henan, Hubei, Sichuan) and Afghanistan. **Australasian/Oceanian Regions:** Indonesia (Irian Jaya), Papua New Guinea (New Guinea), New Caledonia and Australia (Queensland).

Parasarcophaga taenionota (Wiedemann)

Musca taenionota Wiedemann, 1819: 22.

Sarcophaga knabi: Thinh, 1988: 14.

Material examined. N. VIETNAM: 1♀, Lao Cai Prov., Lao Cai to Sapa, 800–1,200 m, forest, 6–7. X. 1995, H. Kurahashi; 1♂, Vinh Phu Prov., Mt. Tam Dao, 930–1,230 m, forest, 21–27. IX. 1995, H. Kurahashi; 1♂, Vinh Phu Prov., Mt. Tam Dao, 500 m, secondary forest, 26. IX. 1995, H. Kurahashi; 1♀, Vinh Phu Prov., Tam Dao, 980 m, 24. IX. 1998, H. Ono; 1♂, Ha Tay Prov., Mt. Tan Vien, 500 m, secondary forest, 15–16. X. 1995, H. Kurahashi. 2♂, Nghe An Prov., Que Phong, 250 m, 7–8. VII. 1997, H. Kurahashi; 1♂, Ninh Binh Prov., Nho Quan, Cuc Phuong, 170 m, 10–11. VII. 1997, H. Kurahashi.

Distribution. **Oriental Region:** Taiwan, China (Zhejiang, Fujian, Jiangxi, Hunan, Guizhou, Guangdong, Guangxi, Yunnan, Hainan), Vietnam, Thailand, Myanmar, Bangladesh, Bhutan, Nepal, Pakistan, India (Nagaland, Manipur, Mizoram, Tripura, Meghalaya, Assam, Aikkim, West Bengal, Bihar, Uttar Pradesh, Delhi, Himachal Pradesh, Haryana, Rajasthan, Gujarat, Maharashtra, Karnataka, Goa, Orissa, Madhya Pradesh, Kerala, Andhra Pradesh, Tamil Nadu), Sri Lanka, Laccadive Is., Philippines, Malaysia (Malaya), Singapore, Indonesia (Kalimantan, Java, Bali) and Andaman Is. **Palaearctic Region:** Russia (Far East) and China (Jilin, Liaoning, Neimenggu, Hebei, Beijing, Shandong, Shanxi, Shaanxi, Ningxia, Gansu, Jiangsu, Shanghai, Henan, Hubei, Sichuan, Xizang). **Australasian/Oceanian Regions:** Indonesia (Maluku, Irian Jaya), Papua New Guinea (New Guinea, Bismarck Arch.), Australia (Queensland), Pitcairn Is., French Polynesia (Society Is.), Western Samoa,

Marshall Is., Mariana Is. and Caroline Is.

***Parasarcophaga yunnanensis* Fan**

Parasarcophaga yunnanensis Fan, 1964: 308.

Parasarcophaga (Liosarcophaga) vietnamica Verves, 1980: 38.

Parasarcophaga yunnanensis: Thinh, 1988: 14.

Material examined. N. VIETNAM: 2♂, Son La Prov., nr Moc Chau Truong Yen, 900 m, 19–21. VI. 1997, H. Kurahashi; 19♂, Ha Tay Prov., Mt. Tan Vien, 500 m, secondary forest, 15–16. X. 1995, H. Kurahashi; 42♂, Ninh Binh Prov., Nho Quan, Cuc Phuong, 170 m, 370 m, forest, 11–14. X. 1995, 10–11. VII. 1997, H. Kurahashi; 2♂, Hatay Prov., Bavi, Ao Vua, 70 m, 4. X. 1997, H. Ono.

Distribution. **Oriental Region:** China (Yunnan), Vietnam, Thailand, Nepal and Pakistan.

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