

A list of drosophilid flies collected in Shimane Prefecture, Japan

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Abstract We collected drosophilid flies in the east region of Shimane Prefecture including the Oki Islands, Japan from 2011 to 2015 by two collection methods, net sweeping and fermented banana bate traps. A total of 73 drosophilid species belonging to 17 genera were recorded (59 species belonging to 17 genera in the Oki Islands and 55 species belonging to 12 genera in the mainland of Shimane). Following 13 species belonging to 10 genera were newly recorded from Chugoku region; *Amiota dispina*, *Leucophenga acutipollinosa*, *Microdrosophila maculata*, *Dichaetophora pseudotenuicauda*, *Mycodrosophila erecta*, *M. japonica*, *M. shikokuana*, *Paramycodrosophila nakamurai*, *Scaptomyza elmoi*, *Zaprionus aungsani*, *Hirtodrosophila nudinokogiri*, *Drosophila imaii* and *D. oshimai*. Combining with previous reports, 87 species belonging to 19 genera of drosophilid flies were recorded. This covers 28% of Drosophilidae species distributing in the whole land of Japan.

Keywords : the Drosophilidae, faunal survey, new records, Shimane, Oki Islands.

Introduction

Drosophilid fauna was intensively studied several area in Japan, for example, Hokkaido, Tokyo, Ryukyu Islands, Ogasawara Islands and Ehime Prefecture (Okada, 1988; Toda, 2012; Beppu, 2000, 2005, 2006; Okada, 1965; Hirai et al., 2000; Kondo and Kimura, 2008; Watada et al., 2011, Watada et al., 2000; Hoshina and Watada, 2001; Katoh and Watada, 2012, 2013) and summarized as the web database of DrosWLD-Species by Toda. However, in the southwestern mainland of Japan, the faunal survey had rarely been carried out, especially the side of Sea of Japan (Wakahama, 1964; Kanegae et al., 2012).

Here we report the distribution of drosophilid species in Shimane Prefecture located in the Chugoku region, southwestern part of the main Honshu Island. The area of Shimane is approximately 6,700km², including 346km² of the Oki Islands comprising four main and numerous small islands located about 50km apart from the mainland

of Shimane. Shimane Prefecture faces to the Sea of Japan on the north side and to Chugoku Mountain range (about 500 to 1,500m in elevation) on the south side bounded on Hirosima Prefecture, and is a part of the San-in region consisting of the northern part of the Chugoku region facing the Sea of Japan. These geographic conditions make the climate characteristic of the San-in region, such as cloudy winter and humid summer. The surveys of drosophilid flies in Shimane Prefecture were carried out by Wakahama (1964) and Kanegae et al. (2012), however these surveys were only made around Matsue-Shi in Shimane mainland, and the other regions including the Oki Islands are left to be unknown. We collected and identified drosophilid flies in the Oki Islands and the east region of Shimane mainland in order to know the drosophilid fauna in the San-in region including isolated islands, the Oki Islands.

Fly collection

Fly collection was made by net sweeping and fermented banana bait traps. A total number of collection spots were 34, of which 19 and 15 spots were in Oki Islands and Shimane mainland, respectively (Figure 1). The

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collection was made from June to October except the spots of Inland of Shimane Prefecture (September to October). Following 12 sites, the collection was made by only net sweeping: Minami (Ama-Cho), Shin-Okudani (Okinoshima-Cho), Mt. Makuragi (Matsue-Shi), Mt. Shin (Matsue-Shi), Nishimochida-cho (Matsue-Shi), Mt. Yogai (Yasugi-Shi), Mt. Sanbe (Oda-Shi), Ryuzuga-taki (Un-nan-Shi), Yae-daki (Un-nan-Shi), Mt. Oyorogi (Iinan-Cho), Mt. Tamamine (Okuizumo-Cho) and Mt. Sentsu (Okuizumo-Cho). At the other sites, the collection was made by net sweeping and traps together.

Results and discussion

A total of 73 species belonging to 17 genera were recorded in this study. In the Oki Islands, 60 species belonging to 17 genera and in the mainland of Shimane 54 species belongs to 12 genera were recorded. The number of species and genera collected in Oki Islands was larger than that in the mainland of Shimane, and it may be due to more frequent net-sweeping collection in Oki Islands. Twenty one species belonging to 14 genera were newly recorded in Shimane Prefecture and the following 13 species belonging to 10 genera were newly recorded from the Chugoku region: *Amiota dispina*, *Leucophenga acutipollinosa*, *Microdrosophila maculata*, *Dichaetophora pseudotenuicauda*, *Mycodrosophila erecta*, *M. japonica*, *M. shikokuana*, *Paramycodrosophila nakamurai*, *Scaptomyza elmoi*, *Zaprionus aungsani*, *Hirtodrosophila nudinokogiri*, *Drosophila imaii* and *D. oshimai*. Table 1 summarizes the drosophilid species recorded in Shimane Prefecture by previous studies (Okada, 1988; Kanegae et al., 2012) and this study. As a result, 87 species belonging to 19 genera were recorded in Shimane Prefecture. In the whole land of Japan, 312 drosophilid species was recorded in the web database of DrosWLD-Species and the number of species recorded from Shimane covers 28% of it. In order to understand Drosophilid fauna in Shimane Prefecture, it is required to collect flies in spring and summer at inland of Shimane Prefecture.

A list of drosophilid flies is shown in the following section, with collection localities and methods **T** and/or **S**. **T** means collected by banana bait traps and **S** means collected by net sweeping.

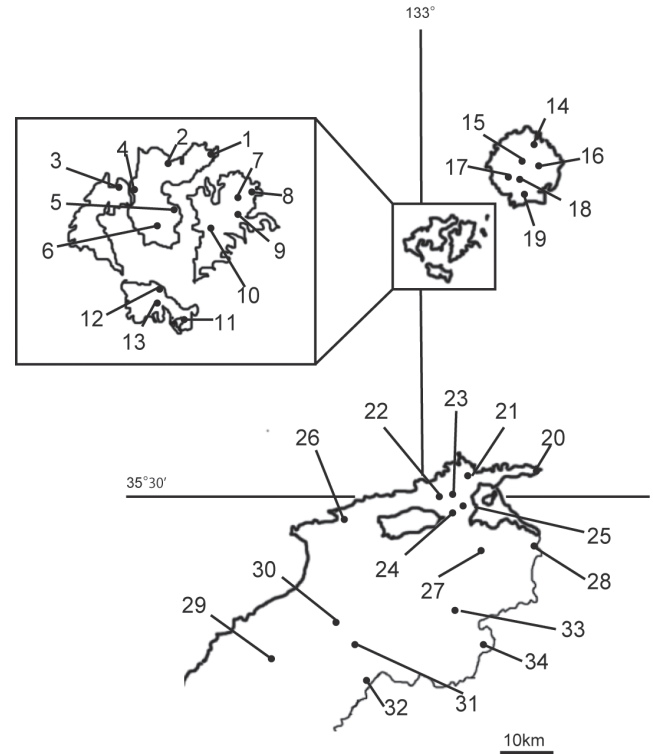


Figure 1. Geographical distribution of collection localities in Shimane Prefecture. Numbered localities correspond to follows: 1 Uka (Nishinoshima-Cho), 2 Mimiura (Nishinoshima-Cho), 3 Funabiki (Nishinoshima-Cho), 4 Mita (Nishinoshima-Cho), 5 Oyama (Nishinoshima-Cho), 6 Mt. Takuhi (Nishinoshima-Cho), 7 Mt. Kinko-ji (Ama-Cho), 8 Toyoda (Ama-Cho), 9 Hobomi (Ama-Cho), 10 Minami (Ama-Cho), 11 Kurii (Chibu-Mura), 12 Shoyo-ji Temple (Chibu-Mura), 13 Usuge (Chibu-Mura), 14 Shin-Okudani (Okinoshima-Cho), 15 Kori, (Okinoshima-Cho), 16 Mt. Daimanji, (Okinoshima-Cho), 17 Dangyo-notaki, (Okinoshima-Cho), 18 Kamenohara Water Bird Park, (Okinoshima-Cho), 19 Kamo, (Okinoshima-Cho), 20 Jizozaki (Matsue-Shi), 21 Mt. Makuragi (Matsue-Shi), 22 Mt. Shin (Matsue-Shi), 23 Nishimochida-cho (Matsue-Shi), 24 Rakuzan Park (Matsue-Shi), 25 Mt. Dake (Matsue-Shi), 26 Bessho-cho (Izumo-Shi), 27 Mt. Hoshigami (Matsue-Shi), 28 Mt. Yogai (Yasugi-Shi), 29 Mt. Sanbe (Oda-Shi), 30 Ryuzuga-taki (Unnan-Shi), 31 Yae-daki (Unnan-Shi), 32 Mt. Oyorogi (Iinan-Cho), 33 Mt. Tamamine (Okuizumo-Cho), 34 Mt. Sentsu (Okuizumo-Cho).

Amiota dispina Okada, 1960, Mushi, **34**:97.

Specimens examined. Kamenohara Water Bird Park, **S**.

Amiota furcata Okada, 1971, Konchu, **39**:85.

Specimens examined. Hobomi, Mt. Daimanji, Kamenohara Water Bird Park, **S**.

Phortica conifera (Okada, 1977), Bull. biogeogr. Soc. Jap., **32**:18.

Specimens examined. Kori, Mt. Daimanji, Ryuzuga-taki, **S**.

- Phortica kappa* (Okada, 1978), Acta ent. bohemoslov., 74:112.
Specimens examined. Kori, Mt. Daimanji, Dangyo-no-taki, Ryuzuga-taki, **S**.
- Phortica magna* (Okada, 1966), Mushi, 34:99.
Specimens examined. Mt. Daimanji, Jizo-zaki, **S**.
- Phortica okadai* (Moca 1977), Acta ent. bohemoslov., 74:122.
Specimen examined. Uka, Mimiura, Oyama, Mt. Takuhi, Mita, Funabiki, Mt. Kinko-ji, Toyoda, Dangyo-no-taki, Kamenohara Water Bird Park, **ST**.
- Leucophenga acutipollinosa* Okada, 1987 Kontyu, 55: 676.
Specimens examined. Shoyo-ji Temple, **S**.
- Leucophenga angusta* Okada, 1956, Syst. Study Dros. Jap.: 28.
Specimens examined. Funabiki, Toyoda, **S**.
- Leucophenga concillia* Okada, 1956, Syst. Study Dros. Jap.: 30.
Specimens examined. Kamo, Kori, Mt. Yogai, **S**.
- Leucophenga maculata* (Dufour, 1839), Annls Sci. nat. Paris, 12: 14.
Specimens examined. Oyama, Mita, Minami, Shoyo-ji Temple, Mt. Daimanji, Dangyo-no-taki, **S**.
- Leucophenga orientalis* Lin and Wheeler, 1972, Univ. Texas Publ., 7213: 249.
Specimens examined. Oyama, Mita, Toyoda, Hobomi, Mt. Daimanji, Kori, Dangyo-no-taki, Mt. Makuragi, Bessho-cho, Mt. Yogai, Ryuzuga-taki, **S**.
- Leucophenga ornata* Wheeler, 1959, Univ. Texas Publ., 5914: 184.
Specimens examined. Mt. Daimanji, Kamenohara Water Bird Park, Bessho-cho, Mt. Yogai, **S**.
- Leucophenga quadripunctata* (de Meijere, 1908), Tijds. Ent. 51: 154.
Specimens examined. Nishimochida-cho, **S**.
- Paraleucophenga argentosa* (Okada, 1956), Syst. Study Dros. Jap.: 24.
Specimens examined. Kurii, Mimiura, Kori, **ST**.
- Microdrosophila maculata* Okada, 1960, Kontyu, Tokyo, 28: 217.
Specimens examined. Oyama, Shoyo-ji Temple, Mt. Daimanji, **S**.
- Microdrosophila pseudopleurolineata* Okada, 1968, Kontyu, Tokyo, 36: 319.
Specimens examined. Mt. Daimanji, Mt. Makuragi, Ryuzuga-taki, Mt. Sentsu, **S**.
- Microdrosophila purpurata* Okada, 1956, Syst. Study Dros. Jap.: 40.
Specimens examined. Mt. Daimanji, Mt. Yogai, Yae-daki, **S**.
- Liodrosophila aerea* Okada, 1956, Syst. Study Dros. Jap.: 57.
Specimens examined. Oyama, Toyoda, Shin-Okudani, Mt. Daimanji, Kamenohara Water Bird Park, Mt. Makuragi, Mt. Shin, Nishimochida-cho, Rakuzan park, Bessho-cho, Mt. Yogai, Mt. Sanbe, Ryuzuga-taki, Mt. Tamamine, Mt. Sentsu, **S**.
- Dichaetophora lindae* (Wheeler and Takada, 1964), Ins. Micronesia, 14: 238;
Specimens examined. Oyama, Mt. Takuhi, Mt. Daimanji, Kamenohara Water Bird Park, Mt. Makuragi, Nishimochida-cho, Bessho-cho, Mt. Yogai, **S**.
- Dichaetophora pseudotenuicauda* (Toda, 1983), Kontyu, Tokyo, 51: 468.
Specimens examined. Mt. Sentsu, **S**.
- Dichaetophora surukella* (Okada, 1965), Kontyu, 33:344.
Specimens examined. Oyama, Mt. Daimanji, Bessho-cho, **S**.
- Dichaetophora tenuicauda* (Okada, 1956), Syst. Study Dros. Jap.: 141.
Specimens examined. Oyama, Toyoda, Kori, Dangyo-

no-taki, Nishimochida-cho, Rakuzan Park, Ryuzuga-taki, Mt.yogai, **ST**.

Mycodrosophila erecta Okada, 1968, Kontyu, Tokyo, 36: 324.

Specimens examined. Mt. Daimanji, Mt. Makuragi, **S**

Mycodrosophila gratiosa (de Meijere, 1911), Tijds. Ent., 54: 404.

Specimens examined. Dangyo-no-taki, Mt. Makuragi, Rakuzan Park, **S**.

Mycodrosophila japonica Okada, 1956, Syst. Study Dros. Jap.,: 44.

Specimens examined. Yae-daki, Mt. Sentsu, **S**.

Mycodrosophila planipalpis Kang, Lee and Bahng, 1966, Korean J. Zool., 9: 27.

Specimens examined. Kori, Mt. Daimanji, Mt. Makuragi, Nishimachida-cho, Bessho-cho, Mt. Yogai, Ryuzuga-taki, **S**.

Mycodrosophila poecilogastra (Loew, 1874), Z. Gesam. Naturw., 43: 419.

Specimens examined. Kori, Ryuzuga-taki, **S**.

Mycodrosophila shikokuana Okada, 1956, Syst. Study Dros. Jap.: 45.

Specimens examined. Ryuzuga-taki, **S**.

Paramycodrosophila nakamurai Okada, 1973, Kontyu, Tokyo, 41: 434.

Specimens examined. Mt. Daimanji, **S**.

Dettopsomyia nigrovittata Malloch, 1924, Proc. Linn. Soc. N.S.W., 49:352.

Specimens examined. Uka, Mita, Funabiki, **T**.

Scaptomyza elmoi Takada, 1970, Annot. zool. japon., 43:144.

Specimens examined. Uka, Oyama, Hobomi, Shoyo-ji Temple, Kori, Mt. Shin, **S**.

Scaptomyza pallida (Zetterstedt, 1847), Dipt. Scand.,

Disposita et descripta, 6: 2571.

Specimens examined. Oyama, Mita, Mt. Kinko-ji, Toyoda, Hobomi, Kurii, Shoyo-ji Temple, Mt. Daimanji, Kori, Kamo, Dangyo-no-taki, Mt. Dake, Mt. Shin, Rakuzan Park, Bessho-cho, Mt. Sanbe, Ryuzuga-taki, Yae-daki, Mt. Tamamine, **ST**.

Scaptomyza graminum (Fallen, 1823), Diptera Sveciae: Geomyzides, 2: 8.

Specimens examined. Oyama, Ryuzuga-taki, **S**.

Zaprionus aungsani Wynn and Toda, 1988, Kontyu, Tokyo, 56: 844.

Specimens examined. Mt. Daimanji, Kori, **ST**.

Zaprionus grandis (Kikkawa and Peng, 1938), Jap. J. Zool., 7: 543.

Specimens examined. Kamenohara Water Bird Park, **S**.

Scaptodrosophila coracina (Kikkawa and Peng, 1938), Jap. J. Zool., 7: 523.

Specimens examined. Uka, Mimiura, Funabiki, Mita, Oyama, Mt. Takuhi, Mt. Kinko-ji, Toyoda, Kurii, Shoyo-ji Temple, Usuge, Kori, Mt. Daimanji, Dangyo-no-taki, Kamenohara Water Bird Park, Kamo, Jizo-zaki, Nishimochida-cho, Rakuzan Park, Mt. Dake, Bessho-cho, Mt. Hoshigami, Ryuzuga-taki, **ST**.

Scaptodrosophila subtilis (Kikkawa and Peng, 1938), Jap. J. Zool., 7: 541.

Specimens examined. Uka, Mita, Mt. Takuhi, Mt. Kinko-ji, Usuge, Shoyo-ji Temple, Zizo-zaki, Mt. Hoshigami, Bessho-cho, **T**.

Scaptodrosophila puncticeps (Okada, 1956), Syst. Study Dros. Jap.:94.

Specimens examined, Kori, Dangyo-no-taki, Kamenohara Water Bird Park, Ryuzuga-taki, **S**.

Hirtodrosophila alboralis (Momma and Takada, 1954), Annot. zool. japon., 27:98.

Specimens examined. Ryuzuga-taki, Mt. Sentsu, **S**.

Hirtodrosophila histrioides (Okada & Kurokawa, 1957),

Kontyu, 25:4.

Specimens examined. Mt. Makuragi, **S**.

Hirtodrosophila kangi (Okada and Lee, 1961), Trans. Kyoto Ent. Soc. (Akitu), 9: 20.

Specimens examined. Mt. Daimanji, **S**.

Hirtodrosophila nudinokogiri (Okada, 1967), Mushi, 41: 17.

Specimens examined. Shin-Okudani, **S**.

Hirtodrosophila quadrivittata (Okada, 1956), Syst. Study Dros. Jap.: 83

Specimens examined. Ryuzugataki, Mt. Sentsu, **S**.

Hirtodrosophila sexvittata (Okada, 1956), Syst. Study Droso. Jap.: 78.

Specimens examined. Mt. Tamamine, Mt. Sentsu, **S**.

Lordiphosa collinella (Okada, 1968), Kontyu, Tokyo, 34: 339.

Specimens examined. Oyama, Shoyo-ji Temple, Mt. Daimanji, Kamenohara Water Bird Park, Kori, Dangyo-no-taki, Mt. Shin, **S**.

Lordiphosa mommai (Takada & Okada, 1960), Annot. zool. japon., 33: 143.

Specimens examined. Ryuzuga-taki. Mt. Sentsu, **S**.

Lordiphosa stackelbergi (Duda, 1935), Die Fliegen Pal. Reg., 58g: 96.

Specimens examined. Toyoda, Shoyo-ji Temple, Mt. Daimanji, **S**.

Drosophila imaii Moriwaki and Okada, 1967. Evolution, 21:114.

Specimens examined. Nishimochida-cho, **S**.

Drosophila oshimai Choo and Nakamura, 1973, Kontyu, Tokyo, 41: 305.

Specimens examined. Nishimochida-cho, Mt. Tamamine, **S**.

Drosophila subpulchrella Takamori and Watabe, 2006,

Entomological Science, 9: 122.

Specimens examined. Oyama, Mt. Daimanji, Kori, Kamenohara Water Bird Park, Mt. Makuragi, Mt. Yogai, Ryuzuga-taki, **ST**.

Drosophila suzukii (Matsumura, 1931), 6000 Illus. Insects Japan Empire: 367.

Specimens examined. Uka, Mimiura, Oyama, Mita, Mt. Takuhi, Mt. Kinko-ji, Toyoda, Kurii, Shoyo-ji Temple, Usuge, Kor, Mt. Daimanji, Dangyo-no-taki, Kamenohara Water Bird Park, Kamo, Jizo-zaki, Mt. Makuragi, Mt. Shin, Nishimochida-cho, Rakuzan Park, Mt. Dake, Bessho-cho, Mt. Oyorogi, Mt. Sanbe, Ryuzuga-taki, **ST**.

Drosophila lutescens Okada, 1975, Kontyu, Tokyo, 43: 241.

Specimens examined. Uka, Mimiura, Mita, Oyama, Mt. Takuhi, Mt. Kinko-ji, Toyoda, Hobumi, Kurii, Shoyo-ji Temple, Usuge, Mt. Daimanji, Dangyo-no-taki, Kamenohara Water Bird Park, Kamo, Jizo-zaki, Mt. Makuragi, Mt. Shin, Nishimochida-cho, Rakuzan Park, Mt. Dake, Bessho-cho, Mt. Hoshigami, Mt. Sentsu., **ST**.

Drosophila melanogaster Meigen, 1830, Syst. Besch. Bek. Europ. Zweifl. Ins., 6: 85.

Specimens examined. Uka, Mita, Funabiki, Toyoda, Usuge, Mt. Daimanji, Kamo, Rakuzan Park, **ST**.

Drosophila simulans Sturtevant, 1919, Psyche, 26: 153.

Specimens examined. Uka, Funabiki, Shoyo-ji Temple, Usuge, Kamo, Zizo-zaki, Rakuzan Park, Bessho-cho, Mt. Hosigami, **ST**.

Drosophila ficusphila Kikkawa and Peng, 1938, Japan. J. Zool., 7: 531.

Specimens examined. Uka, Mita, Oyama, Kamenohara Water Bird Park, **T**.

Drosophila auraria Peng, 1937, Annot. Zool. Japon., 16: 20.

Specimens examined. Kurii, Shoyo-ji Temple, Dangyo-no-taki, **ST**.

Drosophila biauraria Bock and Wheeler, 1972, Univ. Texas Publ., 7213: 53.

Specimens examined. Uka, Mita, Funabiki, Mimiura, Kurii, Shoyo-ji Temple, Kamenohara Water Bird Park, Mt. Daimanji, Kamo, Kori, Dangyo-no-taki, Rakuzan Park, **ST**.

Drosophila rufa Kikkawa and Peng, 1938, Japan. J. Zool., 7: 529.

Specimens examined. Uka, Mimiura, Funabiki, Mita, Oyama, Mt. Takuhi, Mt. Kinko-ji, Toyoda, Hobomi, Kurii, Shoyo-ji Temple, Usuge, Kori, Mt. Daimanji, Dangyo-no-taki, Kamenohara Water Bird Park, Kamo, Jizo-zaki, Mt. makuragi, Mt. Shin, Nishimochida-cho, Rakuzan Park, Mt. Dake, Bessho-cho, Mt. Hoshigami, Mt. Yogai, **ST**.

Drosophila triauraria Bock and Wheeler, 1972, University of Texas Publication, 7213: 54.

Specimens examined. Oyama, Mita, **ST**

Drosophila virilis Sturtevant, 1916, Ann. Ent. Soc. Am., 9: 330.

Specimens examined. Kori, Rakuzan Park, **ST**.

Drosophila lacertosa Okada, 1956, Syst. Study Dros. Jap.: 158.

Specimens examined. Mimiura, Mt. Daimanji, Kori, Kamo, Kamenohara Water Bird Park, Dangyo-no-taki, Ryuzuga-taki, **ST**.

Drosophila sordidula Kikkawa and Peng, 1938, Japan. J. Zool., 7: 539.

Specimens examined. Mt. Daimanji, Jizo-zaki, Bessho-cho, Yae-daki, Mt. Oyorogi, Mt. Tamamine, **ST**.

Drosophila hydei Sturtevant, 1921, Carnegie Inst. Publ., 301: 101.

Specimens examined. Mt. Hoshigami, **T**.

Drosophila daruma Okada, 1956, Syst. Study Dros. Jap.: 155.

Specimens examined. Bessho-cho, **T**.

Drosophila angularis Okada, 1956, Syst. Study Dros. Jap.: 128.

Specimens examined. Oyama, Mt. Kinko-ji, Bessho-cho, Mt. Hoshigami, Mt. Sanbe, Mt. Oyorogi, Mt. Tamamine,

ST.

Drosophila brachynephros Okada, 1956, Syst. Study Dros. Jap.: 126.

Specimens examined. Oyama, Mt. Kinko-ji, Mt. Daimanji, Kori, Jizo-zaki, Nishimochida-cho, Rakuzan Park, Bessho-cho, **ST**.

Drosophila nigromaculata Kikkawa and Peng, 1938, Japan. J. Zool., 7: 537.

Specimens examined. Kurii, Mt. Daimanji, Kamenohara Water Bird Park, Bessho-cho, Ryuzuga-taki, Mt. Tamamine, **ST**.

Drosophila bizonata Kikkawa and Peng, 1938, Japan. J. Zool., 7: 532.

Specimens examined. Uka, Mimiura, Funabiki, Mita, Oyama, Mt. Takuhi, Mt. Kinko-ji, Kurii, Shoyo-ji Temple, Mt. Daimanji, Dangyo-no-taki, Jizo-zaki, Rakuzan Park, Mt. Shin, Bessho-cho, Mt. Hoshigami, Mt. Yogai, Ryuzuga-taki, **ST**.

Drosophila sternopleuralis Okada and Kurokawa, 1957, Kontyu, Tokyo, 25: 6.

Specimens examined. Uka, Oyama, Mita, Mt. Kinko-ji, Toyoda, Minami, Mt. Daimanji, Kori, Dangyo-no-taki, Kamenohara Water Bird Park, Mt. Makuragi, Mt. Shin, Nishimochida-cho, Rakuzan, Park, Bessho-cho, Mt. Hoshigami, Ryuzuga-taki, Mt. Oyorogi, Mt. Sentsu, **ST**.

Drosophila albomicans Duda, 1924, Arch. Naturg., 90A(3): 209, 245.

Specimens examined. Bessho-cho, **T**.

Drosophila annulipes Duda, 1924, Arch. Naturg., 90A (3) : 209, 221, 250.

Specimens examined. Oyama, Uka, Mita, Funabiki, Mt. Takuhi, Kurii, Shoyo-ji Temple, **ST**.

Drosophila curviceps Okada and Kurokawa, 1957, Kontyu, Tokyo, 25: 8.

Specimens examined. Oyama, Hobomi, Usuge, Yae-daki, Mt. Oyorogi, **ST**.

Table 1. A list of drosophilid species recorded from each survey in Shimane Prefecture.

Genus	species	Description				
			Okada (1988)	Kanegae et al. (2012)	Oki Islands (Present study)	Shimane mainland (Present study)
1	<i>Amiota</i>	<i>dispina</i>	Okada, 1960			○
2		<i>furcata</i>	Okada, 1971		○	○
3	<i>Portica (Phortica)</i>	<i>conifera</i>	Okada, 1977			○ ○
4		<i>kappa</i>	Okada, 1978	○	○	○ ○
5		<i>magna</i>	Okada, 1966			○ ○
6		<i>okadai</i>	Okada, 1966	○	○	○
7	<i>Leucophenga (Leucophenga)</i>	<i>acutipollinosa</i>	Okada, 1987			○
8		<i>angusta</i>	Okada, 1956	○		○
9		<i>quadripunctata</i>	(de Meijere, 1908)		○	
10		<i>concellia</i>	Okada, 1956	○		○ ○
11		<i>maculata</i>	(Dufour, 1839)	○		○
12		<i>orientalis</i>	Lin & Wheeler, 1972	○	○	○ ○
13		<i>ornata</i>	Wheeler, 1959	○		○ ○
14	<i>Paraleucophenga</i>	<i>argentosa</i>	(Okada, 1956)	○		○
15	<i>Microdrosophila</i>	<i>maculata</i>	Okada, 1960			○
16		<i>pseudopleurolineata</i>	Okada, 1968		○	○ ○
17		<i>purpurata</i>	Okada, 1956		○	○ ○
18	<i>Liodrosophila</i>	<i>aerea</i>	Okada, 1956	○		○ ○
19	<i>Dichaetophora</i>	<i>lindae</i>	(Wheeler & Takada, 1964)		○	○ ○
20		<i>pseudotenuicauda</i>	(Toda, 1983)			○
21		<i>surukella</i>	(Okada, 1965)		○	○ ○
22		<i>tenuicauda</i>	(Okada, 1965)			○ ○
23	<i>Mycodrosophila</i>	<i>basalis</i>	Okada, 1956	○		
24		<i>erecta</i>	Okada, 1968			○ ○
25		<i>gratiosa</i>	(de Meijere, 1911)	○		○ ○
26		<i>japonica</i>	Okada, 1956			○
27		<i>planipalpis</i>	Kang, Lee & Bahng, 1966		○	○ ○
28		<i>poecilogastra</i>	(Loew, 1874)			○ ○
29		<i>shikokuana</i>	Okada, 1956			○
30	<i>Styloptera</i>	<i>nishiharui</i>	Okada, 1982		○	
31	<i>Paramycodrosophila</i>	<i>nakamurai</i>	Okada, 1973			○
32	<i>Dettopsomyia</i>	<i>nigrovittata</i>	Malloch, 1924			○
33	<i>Scaptomyza (Paracaptomyza)</i>	<i>elmoi</i>	Takada, 1970			○ ○
34		<i>pallida</i>	(Zetterstedt, 1847)	○	○	○ ○
35	<i>Scaptomyza (Scaptomyza)</i>	<i>consimilis</i>	Hackman, 1955	○		
36		<i>graminum</i>	(Fallen, 1823)	○	○	○ ○
37		<i>polygonia</i>	Okada, 1956	○		
38	<i>Cymomyza</i>	<i>fuscimana</i>	Zetterstedt, 1838	○		
39		<i>obscuroides</i>	Okada, 1976		○	
40	<i>Zaprionus</i>	<i>aungsani</i>	Soe Wynn & Toda, 1988			○
41		<i>grandis</i>	(Kikkawa & Peng, 1938)	○	○	○
42	<i>Scaptodrosophila</i>	<i>coracina</i>	(Kikkawa & Peng, 1938)	○	○	○ ○
43		<i>subtilis</i>	(Kikkawa & Peng, 1938)	○	○	○ ○
44		<i>puncticeps</i>	(Okada, 1956)			○ ○
45	<i>Hirtodrosophila</i>	<i>alboralis</i>	(Momma & Takada, 1954)	○	○	○
46		<i>histrioides</i>	(Okada & Kurokawa, 1957)	○		○
47		<i>kangi</i>	(Okada & Lee, 1961)			○
48		<i>nudinokogiri</i>	(Okada, 1967)			○
49		<i>quadrivittata</i>	(Okada, 1956)	○		○
50		<i>sexvittata</i>	(Okada, 1956)	○		○
51		<i>trivittata</i>	Strobl, 1893	○		

Table 1. Continued.

Genus	species	Description				
			Okada (1988)	Kanegae et al. (2012)	Oki Islands (Present study)	Shimane mainland (Present study)
52	<i>Lordiphosa collinella</i>	(Okada, 1968)			○	○
53	<i>mommai</i>	(Takada & Okada, 1960)				○
54	<i>stackelbergi</i>	(Duda, 1935)		○	○	
55	<i>Drosophila (Sophophola) imaii</i>	Moriwaki & Okada, 1967				○
56	<i>oshimai</i>	Choo & Nakamura, 1973				○
57	<i>subpulchrella</i>	Takamori & Watabe, 2006	○	○	○	○
58	<i>suzukii</i>	(Matsumura, 1934)	○	○	○	○
59	<i>lutescens</i>	Okada, 1975	○	○	○	○
60	<i>melanogaster</i>	Meigen, 1830	○	○	○	○
61	<i>simulans</i>	Sturtevant, 1919			○	○
62	<i>ficusphila</i>	Kikkawa & Peng, 1938	○		○	
63	<i>auraria</i>	Peng, 1937	○	○	○	
64	<i>biauraria</i>	Bock & Wheeler, 1972			○	○
65	<i>kikkawai</i>	Burla, 1954	○			
66	<i>rufa</i>	Kikkawa & Peng, 1938	○	○	○	○
67	<i>triauraria</i>	Bock & Wheeler, 1972	○	○	○	
68	<i>Drosophila (Drosophila) virilis</i>	Sturtevant, 1916	○		○	○
69	<i>moriwakii</i>	Okada & Kurokawa, 1957	○			
70	<i>pengi</i>	Okada & Kurokawa, 1957	○	○		
71	<i>lacertosa</i>	Okada, 1956	○	○	○	○
72	<i>sordidula</i>	Kikkawa & Peng, 1938	○		○	○
73	<i>hydei</i>	Sturtevant, 1921	○	○		○
74	<i>daruma</i>	Okada, 1958	○			○
75	<i>angularis</i>	Okada, 1958	○	○	○	○
76	<i>brachynephros</i>	Okada, 1958			○	○
77	<i>nigramaculata</i>	Kikkawa & Peng, 1938	○	○	○	○
78	<i>unispina</i>	Okada, 1958	○	○		
79	<i>testacea</i>	von Roser, 1840	○			
80	<i>bizonata</i>	Kikkawa & Peng, 1938	○	○	○	○
81	<i>historio</i>	Meigen, 1830	○	○		○
82	<i>sternopleuralis</i>	Okada & Kurokawa, 1957	○	○	○	○
83	<i>albomicans</i>	Duda, 1924			○	
84	<i>annulipes</i>	Duda, 1924	○	○	○	
85	<i>curviceps</i>	Okada & Kurokawa, 1957			○	○
86	<i>immigrans</i>	Sturtevant, 1921	○	○	○	○
87	<i>Drosophila (Dorsilopha) buskii</i>	Conquillet, 1901	○	○	○	○

Drosophila immigrans Sturtevant, 1921, Carnegie Inst. Publ., 301: 83.

Specimens examined. Uka, Mimiura, Funabiki, Mita, Oyama, Mt. Takuhi, Mt. Kinko-ji, Toyoda, Hobomi, Kurii, Shoyo-ji Temple, Usuge, Kori, Mt. Daimanji, Dangyo-no-taki, Kamenohara Water Bird Park, Kamo, Nishimocidacho, Rakuzan Park, Mt. Dake, Bessho-cho,

Mt. Hoshigami, **ST**.

Drosophila busckii Coquillett, 1901, Ent. News, 12: 16.
Specimens examined. Mita, Mt. Kinko-ji, Kurii, Mt. Daimanji, Kamo, Kamenohara Water Bird Park, Jizo-zaki, Rakuzan Park, Mt. Hoshigami, **ST**.

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