

Notes on the Drosophilid Fauna from the Oki Islands^{1),2)}

With 3 Text-figures

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ABSTRACT Collection of drosophilid flies was undertaken in the Oki Islands during the period from 1957 to 1965. A total of 46 species, representing 8 genera, was obtained in 10 localities. It was noted that there were 33 newly obtained species from the Oki Islands. To date, seven species were specific to the Oki Islands. Genital apparatus of male *Drosophila puncticeps* is described.

Of special importance in population genetics of *Drosophila* is the study of geographical distribution, particularly in relation to the problem of speciation.

Thanks to extensive survey work carried out in the past several years in this country, knowledge of geographical distribution of drosophilid flies has been increased to a considerable extent. A decade ago Okada described, on the basis of his comprehensive survey work, 109 species of the Japanese Drosophilidae, including 37 new species and 8 unnamed ones. He noted in his paper that the number of Japanese species will be increased to a great extent through large scale surveys in various localities, especially around the Tōhoku and Chūgoku districts as well as in southern Japan.

The Oki Islands lie within Shimane Prefecture in the South-East part of the Japan Sea, 44 miles off the coast of Honshu: they consist of Dōgo Island and several smaller islands. It seemed to be of significance to carry out a distribution survey of *Drosophila* in the Oki Islands on account of characteristic biotope and bionomy conditions.

Since 1957, the present author has been engaged in a geographical survey of drosophilid flies in the San-In region, including the Oki Islands and has described more than 60 species from the above localities (Wakahama, 1962).

In this paper, the author describes the results of drosophilid collections carried out in the Oki Islands during the past nine years (1957 to 1965).

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METHOD OF COLLECTION

Collections were made at several times in Saigō, Tōgō, Mt. Daimanji, Fuse, Nakamura, Goka, Nagu, Uragō, Kuroki, Ama and Chibu in the Islands during the period from 1957 to 1965 (Fig. 1). Trapping with the use of fermented banana and other fruit was adopted in most cases. Careful net-sweeping as well as sucking methods with a glass pipe were also employed in fungi- and brushy-fields.

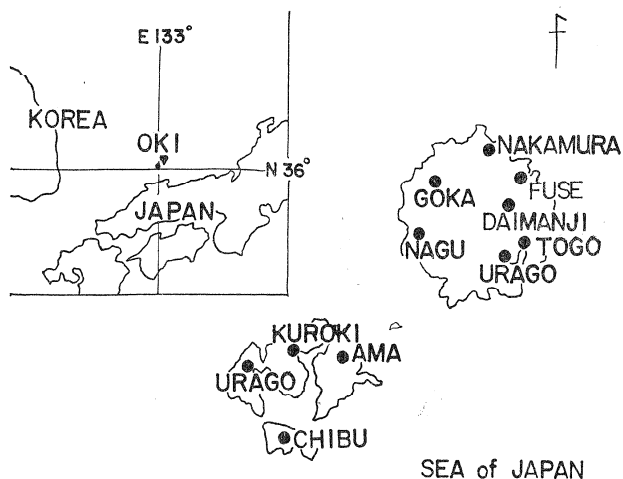


Fig. 1. Maps showing location of the Oki Islands and localities where collections were made on the Islands.

RESULTS AND REMARKS

The species obtained on the Oki Islands in the author's survey was 46 in number. They represent 8 genera. Most of them were obtained in the San-In region (Wakahama, 1962). It is noted that 33 species indicated by asterisks in the following list are newly obtained species of *Drosophila* from the Oki Islands. Among them, the following species were confined in distribution to the Oki Islands: *Microdrosophila purpurata*, *Chymomyza nigrimana*, *Scaptomyza apicalis*, *S. monticola*, *S. polygonia*, *Drosophila puncticeps* and *D. moriwakii*.

List of the Drosophilidae from the Oki Islands

Genus *Amiota* Loew

Subgenus *Amiota* Loew

- 1) *Amiota (Amiota) alboguttata* f. *furcata* Okada*

Distribution: One male was collected in Mt. Daimanji in July, 1964.

Subgenus *Phortica* Schiner

- 2) *Amiota (Phortica) variegata* (Fallèn)*

Distribution: Tōgō, Mt. Daimanji and Goka.

Genus *Leucophenga* Mik
Subgenus *Leucophenga* Mik

- 3) *Leucophenga (Leucophenga) angusta* Okada*
- 4) *L. (L.) magnipalpis* Duda*
- 5) *L. (L.) concilia* Okada*
- 6) *L. (L.) maculata* (Dufour)*

Distribution: All specimens of the genus *Leucophenga* were collected in the fungi-fields near Nagu in August of 1965.

Genus *Microdrosophila* Malloch
Subgenus *Microdrosophila* Malloch

- 7) *Microdrosophila (Microdrosophila) purpurata* Okada*

Distribution: A single male specimen was collected on Mt. Daimanji in August, 1965. This is the first record from the San-In region and Oki Islands.

Genus *Mycodrosophila* Oldenberg

- 8) *Mycodrosophila splendida* Okada*
- 9) *M. poecilogastra* (Loew)*

Distribution: A few specimens (3♀ and 2♂) of *splendida* and one female of *poecilogastra* were obtained in bushes near Goka in August, 1965.

Genus *Liodrosophila* Duda

- 10) *Liodrosophila aerea* Okada*

Distribution: Many specimens of this species were collected on the grassy-field in Mt. Daimanji.

Genus *Chymomyza* Czerny

- 11) *Chymomyza nigrimana* (Meigen)* *fusca*

Distribution: One male of this species was obtained at Goka in July, 1965.

Genus *Scaptomyza* Hardy

Subgenus *Parascaptomyza* Duda

- 12) *Scaptomyza (Parascaptomyza) pallida* (Zetterstedt)

Distribution: Many specimens of this species were collected by net-sweeping from all localities of the Islands.

Subgenus *Scaptomyza* Hardy

- 13) *S. (Scaptomyza) apicalis* Hardy* *(Lind.) collaris*

- 14) *S. (S.) monticola* Okada* *concolor*

- 15) *S. (S.) polygonia* Okada*

Distribution: Many specimens of *polygonia* were collected on Mt. Daimanji in August, 1965 and, however, a few specimens of *apicalis* and *monticola* were obtained near Nagu in August, 1965.

Genus *Drosophila* Fallén

Subgenus *Hirtodrosophila* Duda

- 16) *Drosophila (Hirtodrosophila) alboralis* Momma and Takada*

Distribution: One male was collected at Nagu in August, 1965.

17) *D. (H.) sexvittata* Okada*

18) *D. (H.) histrioides* Okada and Kurokawa*

Distribution: Several specimens of these species were collected in fungi-fields near Nagu in August, 1965.

Subgenus *Dorsilopha* Sturtevant

19) *D. (Dorsilopha) busckii* Coquillett

Distribution: Many specimens were obtained in the inhabited area of the Islands.

Subgenus *Scaptodrosophila* Duda

20) *D. (Scaptodrosophila) coracina* Kikkawa and Peng

Distribution: One of the commonest species in the Islands.

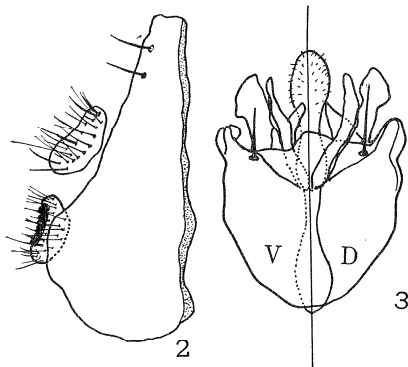
21) *D. (S.) puncticeps* Okada*

Distribution: One male was obtained in the bushes near Nagu in August, 1965.

This species was described as new to science by Okada (1956), based on a female specimen. The male genital apparatus is as follows:

Periphallie organs: Genital arch pale brown, slightly darker at margin; high and trapezoid; upper part with 2 hairs, toe rounded; lower part bare; Anal plate brown, separated from genital arch, oval and with about 20 hairs. Clasper semicircular; with about 10 teeth arranged in a row on the outer margin, and with about 30 hairs (Fig. 2).

Phallic organs: Aedeagus fused, pubescent, rounded at tip. Anterior paramere triangular with a pair of hairs. Posterior paramere simple without pubescence. Ventral fragma somewhat broader (Fig. 3).



Figs. 2-3. Male genital apparatus of *D. puncticeps* Okada. 2.Periphallie organ. 3. Phallic organ, ventral (V) and dorsal (D) views.

Subgenus *Sophophola* Sturtevant

22) *D. (Sophophola) sukuzii* (Matsumura)

Distribution: One of the commonest species in the Islands.

23) *D. (S.) pulchrella* Tan, Hsu and Peng*

Distribution: A few specimens were collected at Saigō in August, 1965.

24) *D. (S.) lutea* Kikkawa and Peng

Distribution: All localities and one of the dominant species on the Islands.

25) *D. (S.) melanogaster* Meigen

Distribution: Commonest species in the inhabited area.

26) *D. (S.) ficusphila* Kikkawa and Peng*

Distribution: One male was collected at Goka in August, 1964.

27) *D. (S.) nipponica* Kikkawa and Peng*

Distribution: A few specimens were obtained in Mt. Daimanji in August, 1965.

28) *D. (S.) auraria* Peng

Distribution: One of the commonest species on the Islands.

Among types (A, B and C) of this species, types A and B were collected mostly in inhabited and mountain areas, while type C was found near the sea coast.

- 29) *D. (S.) rufa* Kikkawa and Peng
Distribution: One of the commonest species.

Subgenus *Drosophila* Fallèn

- 30) *D. (Drosophila) brachynephros* Okada*
- 31) *D. (D.) angularis* Okada*
- 32) *D. (D.) unispina* Okada*
Distribution: Among the above-mentioned three species, *angularis* was one of the commonest species in the Islands, while the other two were rare. A few specimens of these species were recorded at Goka, Nagu and Mt. Daimanji in August, 1964 and 1965.
- 33) *D. (D.) nigromaculata* Kikkawa and Peng
Distribution: Only one female was obtained at Nakamura in July, 1957.
- 34) *D. (D.) testacea* van Roser*
Distribution: One male was obtained on Mt. Daimanji in August, 1965.
- 35) *D. (D.) bizonata* Kikkawa and Peng
Distribution: One of the dominant species on the Islands.
- 36) *D. (D.) histrio* Meigen*
Distribution: A few specimens were collected at Goka, Nagu and Mt. Daimanji in August, 1964 and 1965.
- 37) *D. (D.) sternopleuralis* Okada and Kurokawa
Distribution: Rare but occurred in all localities of the Islands, except Saigō and Tōgō.
- 38) *D. (D.) grandis* Kikkawa and Peng*
Distribution: One female and one male were obtained in bushes near Nagu in August, 1965.
- 39) *D. (D.) immigrans* Sturtevant
Distribution: One of the commonest species on the Islands.
- 40) *D. (D.) curviceps* Okada and Kurokawa*
Distribution: A few specimens were collected at Nagu and Goka in August, 1965.
- 41) *D. (D.) annulipes* Duda
Distribution: One of the commonest species at Kuroki, Uragō, Ama and Chibu, but rather rare in other localities.
The author recorded this species under the name of *D. (D.) virgata* in the previous paper.
- 42) *D. (D.) subtilis* Kikkawa and Peng*
Distribution: A few specimens were obtained at Nagu in August, 1965.
- 43) *D. (D.) pengi* Okada and Kurokawa*
Distribution: A few specimens were collected at Nagu, Goka and Mt. Daimanji in August, 1964 and 1965.
- 44) *D. (D.) virilis* Sturtevant*
Distribution: One of the commonest species in the inhabited area.

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- 45) *D. (D.) lacertosa* Okada
Distribution: One of the commonest species on the Islands.
- 46) *D. (D.) moriwakii* Okada and Kurokawa*
Distribution: One male was obtained on Mt. Daimanji in August, 1964.

REFERENCES

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