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Drosophila Survey of Hokkaido, XXVIII. Drosophilid Flies from Six Localities of Northern Hokkaido¹⁾²⁾

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(With 1 Text-figure and 2 Tables)

Drosophilid surveys have been carried out by us for some fifteen years with special consideration toward natural populations, based on collections covering more than ten localities of northern Hokkaido (Fig. 1). The results were reported fragmentally by Takada (1958), Kaneko and Shima (1962) and Wakahama *et al.* (1963), leaving most of them unpublished because of a small number of individuals and species available for study.

We wish in this paper to present some summer collection data derived from six localities of northern Hokkaido in 1964, 1965 and 1967.

We are grateful to Professor Sajiro Makino for his helpful advice. We also acknowledge the hospitality of the Forestry Office members, for their kind cooperation in collection.

Localities of Collection and Method

Collection sites and dates are shown in Table 1 and Figure 1, with some necessary remarks. Collection method followed that reported in the previous paper (Kaneko and Tokumitsu 1969). Generally, collections were carried out at one hour-interval during a period from sunrise to sunset for successive three days as follows: 4.00-19.00 in Nisama, Rebun Is. and Rishiri Is; 5.00-18.00 in Toikanbetsu and Shumarinai; 5.00-19.00 in Yagishiri Is. In addition to the above, incidental collections were also undertaken by means of net sweeping on various vegetations and near human eyes in Rebun Is. and Shumarinai.

Results

A total of 9,888 flies of the family Drosophilidae was obtained in the present survey. The flies were represented by 34 species (36 forms) belonging to 5 genera. They are summarized in Table 2. Among them, 9,501 specimens involving 31

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species (32 forms) covering 4 genera (*Amiota*, *Leucophenga*, *Scaptomyza* and *Drosophila*) were obtained by trapping, while 387 specimens represented by 13 species (14 forms) belonging to 4 genera (*Amiota*, *Microdrosophila*, *Scaptomyza* and *Drosophila*) were secured by net sweeping.

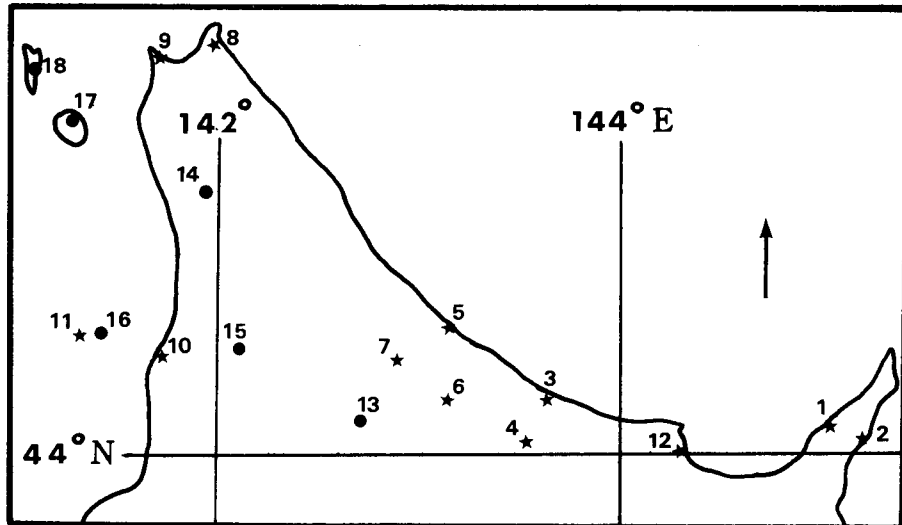


Fig. 1. Map of Northern Hokkaido, showing collecting localities. 1-12 (asterisks): collections were made from 1950 to 1962. 13-18 (closed circles): localities dealt with in the present survey. 1, Utoro. 2, Raus. 3, Naka-Yubetsu. 4, Engaru. 5, Okoppe. 6, Kitami-Takinoue. 7, Ichinohashi. 8, Naebutoro. 9, Wakkanai. 10, Kotambetsu. 11, Teuri Is. 12, Abashiri. 13, Nisama. 14, Toikanbetsu. 15, Shumarinai. 16, Yagishiri Is. 17, Himenuma in Rishiri Is. 18, Nairo in Rebun Is.

Table 1. Localities and dates of collections and the number of flies and species obtained from each locality

Localite	Date	Num. of flies	Genera	Species*	Collector
Nisama	July 28-30, 1964	1095	3	16(17)	T. Tokumitsu
Toikanbetsu	Aug. 26-28, 1964	2376	1	15	E. Momma
Yagishiri Is.	Aug. 4-6, 1965	372	1	11	E. Momma
Rishiri Is. (Himenuma)	Aug. 16-19, 1965	1244	4	15	A. Kaneko
Rebun Is. (Nairo)	Aug. 20-23, 1965	824	3	15	A. Kaneko
Shumarinai	Aug. 15-18, 1967	3977	4	28(30)	A. Kaneko
Total		9888	5	34(36)	

* Numericals in parentheses denote the number of forms.

Drosophila tenuicauda obtained from Shumarinai was apparently classified in two types on the basis of black band patterns on abdominal tergites. One was a medially interrupted black band, while another was a non-interrupted caudal band on each tergite. The former specimens were smaller in body size than the latter.

Generally *Drosophila auraria* includes three races, A, B, and C (Kurokawa 1956). Cohabitation of the three races was observed in the southwestern part and Hidaka district of Hokkaido (Kaneko 1960, Takada 1960, Kaneko *et al.* 1968, Kaneko and Tokumitsu 1969). Race C has not been obtained so far in northern Hokkaido (see Fig. 1).

Unusual sex ratios were noted in some species. Female superiority was observed in *Scaptomyza pallida*, *Drosophila nigromaculata*, *D. testacea* and *D. coracina*. The same feature was reported in *D. nigromaculata*, *D. testacea*, *D. lacertosa* and *D. coracina* by Takada (1960), Kaneko and Shima (1962), Kaneko *et al.* (1968), and Kaneko and Tokumitsu (1969). The remarkable male preponderance was observed in *Amiota alboguttata*, *Drosophila bifasciata*, *D. auraria* and *D. lacertosa*.

Summary

Summer collection surveys of drosophilid flies were carried out in six localities of northern Hokkaido in 1964, 1965 and 1967. A total of 9,888 specimens was obtained: they were represented by 34 species (36 forms) belonging to the following 5 genera: *Amiota*, *Leucophenga*, *Microdrosophila*, *Scaptomyza* and *Drosophila* (Table 2). Most of them were collected by trapping, while *Amiota alboguttata*, *Microdrosophila cristata*, most of *Scaptomyza pallida* and *S. okadai*, *Drosophila magnipunctinata*, *D. tenuicauda*, and a few others were secured by net sweeping on various vegetations and near human eyes.

No specimen of *D. auraria* race C was obtained. Extreme sex ratios were noted in *D. nigromaculata* and *D. testacea*.

References

- Kaneko, A. 1960. *Drosophila* survey of Hokkaido, XVI. Some ecological note on the attractiveness of different yeasts to drosophilid flies. Jour. Fac. Sci. Hokkaido Univ., Ser. VI, Zool. 14: 493-498.
- , and T. Shima 1962. *Drosophila* survey of Hokkaido, XVIII. Drosophilidae from four localities of Hokkaido. Ibid. 15: 74-79.
- , and T. Tokumitsu 1969. *Drosophila* survey of Hokkaido, XXVII. On drosophilid flies from seven localities of the Hidaka District in Southern Hokkaido. Ibid. 17: 244-256.
- , T. Tokumitsu, and T. Shima 1968. *Drosophila* survey of Hokkaido, XXIV. On *Drosophila* collections of six localities in the southwestern part of Hokkaido. Ibid. 16: 531-536.
- Kurokawa, H. 1956. Comparative studies on some characteristics of three races of *Drosophila auraria*. Annot. Zool. Japan. 29: 225-233.
- Takada, H. 1958. *Drosophila* survey of Hokkaido, X. Drosophilidae from several

Table 2. Numerical data of drosophilid collections in

Species	Localities		Nisama		Toikanbetsu		Yagishiri Is.	
	Methods		Trap		Trap		Trap	
	♀ ♀	♂ ♂	♀ ♀	♂ ♂	♀ ♀	♂ ♂		
<i>Amiota alboguttata</i> f. <i>furcata</i>	—	—	—	—	—	—	—	—
<i>A. alboguttata</i> f. <i>elongata</i>	—	—	—	—	—	—	—	—
<i>A. dispina</i>	—	—	—	—	—	—	—	—
<i>A. variegata</i>	1	0	—	—	—	—	—	—
<i>Leucophenga</i>								
<i>quinquemaculipennis</i>	—	—	—	—	—	—	—	—
<i>Microdrosophila cristata</i>	—	—	—	—	—	—	—	—
<i>Scaptomyza pallida</i>	1	1	—	—	—	—	—	—
<i>S. okadai</i>	—	—	—	—	—	—	—	—
<i>S. concimilis</i>	—	—	—	—	—	—	—	—
<i>Drosophila</i> sp. of <i>fenestrarum</i> group	2	0	—	—	—	—	—	—
<i>D. histrioides</i>	0	1	—	—	—	1	4	—
<i>D. coracina</i>	116	70	—	—	—	1	1	—
<i>D. bifasciata</i>	19	25	25	27	2	14	—	—
<i>D. imaii</i>	—	—	—	—	—	—	—	—
<i>D. helvetica</i>	—	—	0	1	—	—	—	—
<i>D. suzukii</i>	—	—	—	—	—	—	—	—
<i>D. lutea</i>	—	—	—	—	—	—	—	—
<i>D. magnipunctata</i>	—	—	2	0	—	—	—	—
<i>D. mommai</i>	—	—	—	—	—	—	—	—
<i>D. auraria</i> race A	11	31	—	—	8	8	—	—
<i>D. auraria</i> race B	121	269	2	0	—	—	—	—
<i>D. brachynephros</i>	12	10	1	0	1	1	—	—
<i>D. unispina</i>	—	—	0	1	1	3	—	—
<i>D. nigromaculata</i>	200	104	15	4	31	9	—	—
<i>D. testacea</i>	24	44	11	7	52	41	—	—
<i>D. histrio</i>	1	1	—	—	—	—	—	—
<i>D. funebris</i>	—	—	3	2	—	—	—	—
<i>D. tenuicauda</i>	—	—	—	—	—	—	—	—
<i>D. pengi</i>	—	—	—	—	—	—	—	—
<i>D. ezoana</i>	2	0	6	7	—	—	—	—
<i>D. moriwakii</i>	6	6	46	81	—	—	—	—
<i>D. lacertosa</i>	5	7	888	1155	70	118	—	—
<i>D. okadai</i>	1	2	30	32	1	1	—	—
<i>D. neokadai</i>	—	—	15	14	4	0	—	—
<i>D. pseudosordidula</i>	—	—	0	1	—	—	—	—
<i>D. sordidula</i>	2	0	—	—	—	—	—	—
Total	524	571	1044	1332	172	200	—	—

localities of Hokkaido. Jour. Fac. Sci. Hokkaido Univ., Ser. VI, Zool. 14: 120-127.

——— 1960. *Drosophila* survey of Hokkaido, XIII. Some remarkable or rare species of *Drosophila* from the southernmost area in the Hidaka mountain range. Annot. Zool. Japon. 33: 188-195.

six localities of northern Hokkaido

Rishiri Is.		Rebun Is.				Shumarinai			
Trap		Trap		Net		Trap		Net	
♀ ♀	♂ ♂	♀ ♀	♂ ♂	♀ ♀	♂ ♂	♀ ♀	♂ ♂	♀ ♀	♂ ♂
0	1	—	—	—	—	1	0	0	11
—	—	—	—	—	—	—	—	0	3
0	1	—	—	—	—	—	—	—	—
—	—	—	—	—	—	0	1	0	1
3	1	—	—	—	—	—	—	—	—
—	—	—	—	3	0	—	—	2	2
1	1	5	1	49	20	—	—	4	7
—	—	1	2	7	5	—	—	46	48
—	—	—	—	—	—	—	—	2	1
—	—	—	—	2	2	—	—	1	0
4	4	—	—	—	—	—	—	—	—
19	30	—	—	—	—	11	7	—	—
109	267	7	33	—	—	283	655	—	—
—	—	—	—	—	—	47	151	—	—
4	0	—	—	—	—	—	—	2	0
6	0	—	—	—	—	0	1	—	—
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	25	22
—	—	—	—	—	—	—	—	3	0
4	3	59	38	—	—	6	6	—	—
—	—	—	—	—	—	7	9	—	—
—	—	—	—	—	—	1	7	—	—
—	—	6	6	—	—	8	5	—	—
57	14	183	23	6	12	106	21	20	7
403	132	93	15	—	—	123	82	1	0
3	0	—	—	—	—	27	67	—	—
—	—	—	—	—	—	—	—	—	—
—	—	—	—	7	10	—	—	35	21
—	—	—	—	—	—	6	10	—	—
—	—	—	—	—	—	82	74	—	—
18	17	9	14	—	—	62	63	—	—
57	85	49	100	—	—	720	952	—	—
—	—	11	22	—	—	25	17	—	—
—	—	12	4	—	—	36	33	—	—
—	—	7	1	—	—	0	1	—	—
—	—	—	—	—	—	—	—	—	—
688	556	442	259	74	49	1551	2162	141	123

Wakahama, K.I., A. Kaneko, and T. Tokumitsu 1963. *Drosophila* survey of Hokkaido, XIX. Collection records in three localities of Hokkaido, with a note on the diurnal behavior of certain species. *Annot. Zool. Japon.* 36: 92-96.