Drosophilid Survey of Ten Localities, South Korea

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南韓 10個地域의 초파리 分布調査

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(Received Nov. 5, 1958)

Until a few years ago only six species of the drosophilid fauna of Korea had been known (Kikkawa & Peng, 1938). Recently, however, a drosophilid survey in Korea has progressed since 1955, resulting in the reporting that the member of species known to occur in Korea approximates 50. (Chung 1955, Chung *et al* 1956, Paik *et al* 1957, Takada & Lee 1958). The author had continued the collections of drosophilids during a period ranging from May 1957 till October 1958, resulting in the capture of a total of 2198 drosophilid flies involving 44 speices (Figs 1, 2; Tables 1 and 2).

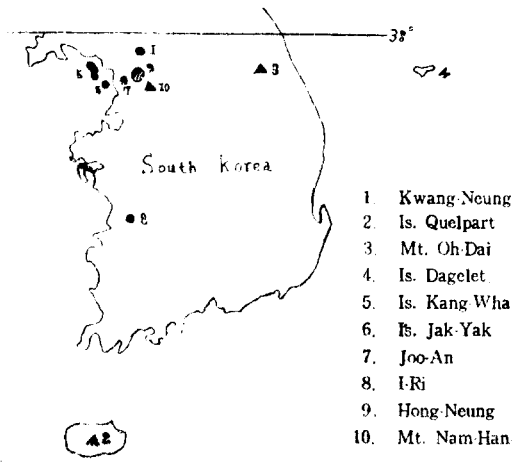

Fig. 1 Map showing ten localities where the present collections were made.

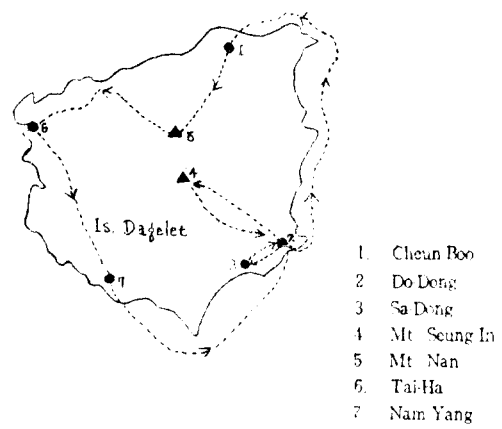

Fig. 2 Map showing seven localities of collections in Dagelet Island.

Here, the author must express his cordial thanks to Professor Okada Toyohi of Tokyo Metropolitan University, Japan, for his kind help and valuable advice given in the identification of species and also to Mr. S.H. Oh who is senior student of Korea University and Miss. Rho who is graduate student of Ewha Womans University, for their helps in the present collection.

Some remarks will be given as follows:

1. Collecting methods or feeding habits:-As Table 2 shows, species belong to *Scaptomyza* were obtained by sweeping on grasses, especially most of them were found to be feeders on "clover flower." Species of *Mycodrosophila* and most species of *Hirtodrosophila* were captured on decayed mushrooms with a sweeping net. All species *Sophophora* and *Drosophila* were obtained at fruit-baits. *D. melanogaster* MEIGEN and *D. virilis* STURTEVANT were domestic and sometimes *D. busckii* COQUILLETT, *D. nigromaculata* KIKKAWA & PENG were found on garbages or toilets. *D. auraria* PENG was the most popular species in the field

Table 1. Localities and Dates of Collections

Localities	Dates	Collecting Areas
1. Kwang-Neung	May, June, August and Sept., '57 May and Sept., '58	Forest around Kwang-Neung Forestry Exp. Station
2. Quelpart Island	July 19-26 '57	Che-JooCity, Kwan-Eum, Mt. Han-Ra (North and South sides)
3. Mt. Oh-Dai	July 23-26 '58	Wol-Jeung and Sang-Won
4. Dagelet Island (Ool-Neung Do)	August 1-13 '58	Do-Dong, Sa-Dorg, Cheun-Boo, Nam-Yang, Tai-Ha, Mt. Seung-In
5. Kang-Wha Island	Oct., '57 and May '58	Forest around Chun-Deung
6. Jak-Yak Island	May '57	Grass-fields
7. Joo-An	June '57	Around bank of salt pan
8. I-Ri	August '57	Wood-lands
9. Hong-Neung(Seoul)	June '58	Forest of the Central Forestry Experimental Station
10. Mt. Nam-Han	June '58	Forest around Nam-Han Castle

collections.

2. Some remarks for certain species (see Table 2):-A male of *Amiota* (*Amiota*) sp. was obtained from Mt. Oh-Dai with a sweeping net. It resembles *Amiota alboguttata* (WÄHLBERG) but its genitalia differs slightly from the species of Japan. Whether it agrees with the species from Siberia or not is uncertain. Species of Genus *Leucophenga* and of Genus *Microdrosophila* were not found in the present collection. Species of Genus *Chymomyza* have not yet been appeared in the Korean drosophilid fauna. *Scaptomyza* sp. like *disticha* from Dagelet Island resembles closely *S. disticha* (DUDA) but differs from it in pattern of bands of abdominal tergites. A female *S.* sp. like *polygonia* resembles *S. polygonia* Okada but was not able to be examined thoroughly, for its original description is only about male (Okada, 1956 "Systematic study of Drosophilidae and Allied Families of Japan"). Coloration and pattern of bands of *D.(H.) sexyittata* were various. *D. lutea* KIKKAWA & PENG has been reported by the previous authors (Chung *et al* 1956, Kwang-Joo in Chunnam Province, Mt. Chi-Ri, Quelpart Island; Pak *et al* 1957, Mt. Moo-Tung in Chunnam Province, Mt. Han-Ra in Quelpart Island; Takada & Lee 1958, Mt. Kye-Lyong in Choong-nam Province) but was not found in the present collection. This fact suggests that its habitats are in the southern localities of Korea. *D. sp.* like *phalerata* resembles *D. phalerata* MEIGEN from Europe but differs from it in having the 6th abdominal tergites not black medially (by Okada) *D.* (*D.*) sp. like *grandis* differs from *D. grandis* KIKKAWA & PENG having 4 longitudinal stripes on mesonotum and deeply fuscous crossveins. *D.*(*D.*) sp. like *komaii* resembles both *D. komaii* KIKKAWA & PENG and *D. immigrans* STURTEVANT but was not able to be examined thorougly because its band-pattern of abdominal tergites undeveloped. *D.* (*D.*) sp. like *lacertosa* differs from *D. lacertosa* OKADA in having deeply fascous crossveins. *D. D.* sp.-1 has a characteristic egg guides, but it is difficult to examine, for band-patterns and coloration undeveloped (by Okada).

3. The drosophilid fauna of Dagelet Island (see Fig. 2, Tables 1 and 2): This island is located in the East Sea 76 miles far from Chook-Byeun (Kang-Won Province), 138 miles from Po-Hang (Kyung-Pook Province), 173 miles from Pu-San and 172 miles from Sakai-Minado (Tottori Province, Japan). Bedause of its geographical and zoo-geographical conditions, many biologists have been interested in its scientific study. P. S. Cho reported his work "Lepidoptera collected from Dagelet Island" 1929 (Chosen Hakubutsu-gakkai Magazine No. 8). It was the first time that scientific study of the fauna. was made. Until P. S. Cho reported his work "The Fauna of Dagelet Island" 1955 (The University of Seung-Kyoon-Kwan Bulletin No. 2) only a few fragmental reports were made by several investigators. The author had expected to find out the

Teble 2. Drosophilid Flies Obtained from Ten Localities of Korea

Species	Localities*										Total	Collecting Methods**
	1	2	3	4	5	6	7	8	9	10		
Amiota (Phortica) variegata	1	·	4	·	·	·	·	·	·	·	5	Sm, T
A. (Amiota) sp.	·	·	1	·	·	·	·	·	·	·	1	Sm
Mycodrosophila splendida	2	·	·	1	·	·	·	·	·	·	3	Sm
Myco. basalis	1	·	·	·	·	·	·	·	·	·	1	Sm
Myco. poecilogastra	4	·	·	·	·	·	·	·	·	·	4	Sm
Scaptomyza disticha	127	·	·	15	29	49	77	5	4	25	331	Sg
S. sp. like *disticha*	·	·	·	1	·	·	·	·	·	·	1	Sg
S. apicalis	1	·	·	·	1	·	·	·	·	·	2	Sg
S. graminum	6	·	·	2	1	1	·	·	·	4	14	Sg
S. polygonia	3	·	·	·	8	1	2	·	·	·	14	Sg
S. sp. like *polygonia*	1	·	·	·	·	·	·	·	·	·	1	Sg
Drosophila (Hirtodrosophila) alboralis	·	6	10	·	·	·	·	·	·	·	16	Sm
D.(H.) sexvittata	20	13	11	·	·	·	·	·	·	·	44	Sm
D.(H.) trivittata	1	·	·	18	·	·	·	·	·	·	19	Sm
D.(H.) nokogiri	5	·	·	·	·	·	·	·	·	·	5	Sm, T
D.(H.) histrioides	6	·	4	·	·	·	·	·	·	·	10	Sm, T
D.(Dorsilopha) busckii	·	1	·	·	·	·	·	·	·	·	1	T, G
D.(Paradrosophila) coracina	·	8	2	3	·	·	·	·	·	·	13	T,G,Sg
D.(P.) puncticeps	·	·	·	2	·	·	·	·	·	·	2	Sm
D.(Sophophora) bifasciata	·	·	4	23	·	·	·	·	·	·	27	T
D.(S.) suzukii	·	145	2	56	·	·	·	·	·	·	203	T
D.(S.) melanogaster	·	·	·	·	·	·	·	·	5	·	5	T,G
D.(S.) nipponica	·	·	·	·	1	·	·	·	·	·	1	T,Sg
D.(S.) auraria(Type A,B,C)	24	193	21	336	74	·	·	11	56	·	715	T,Sg
D.(Drosophila) brachynephros												
D.(D.) angularis	320	11	44	5	4	·	·	·	72	·	460	T,Sg,Sm
D.(D.) unispina												
D.(D.) nigromaculata	1	·	·	1	36	·	·	3	·	·	41	T,Sg,G
D.(D.) sp. like *kuntzei*	·	·	1	·	·	·	·	·	·	·	1	T
D.(D.) sp. like *phalerata*	·	·	2	·	·	·	·	·	·	·	2	T
D.(D.) testacea	13	·	3	·	·	·	·	·	1	·	17	T,Sm
D.(D.) bizonata	28	2	13	1	1	·	·	·	·	·	45	T,Sm
D.(D.) sternopleuralis	·	1	·	·	·	·	·	·	·	·	1	T
D.(D.) histrio	4	2	4	1	·	·	·	·	1	·	12	T
D.(D.) sp. like *grandis*	1	·	·	·	·	·	·	·	·	·	1	T
D.(D.) immigrans	·	31	·	·	·	·	·	·	·	·	31	T
D.(D.) sp. like *komaii*	·	3	·	·	·	·	·	·	·	·	3	T
D.(D.) virilis	·	1	·	27	·	·	·	·	·	·	28	T,G
D.(D.) sordidula	1	·	2	1	·	·	·	·	2	·	6	T,Sg,G
D.(D.) lacertosa	25	·	2	77	·	·	·	·	2	·	106	T,Sg,G
D.(D.) sp. like *lacertosa*	·	·	·	1	·	·	·	·	·	·	1	T,Sg,G
D.(D.) cheda	·	3	·	·	·	·	·	·	·	·	3	T
D.(D.) sp. 1	·	·	·	1	·	·	·	·	·	·	1	T
D.(D.) sp. 2	·	·	·	1	·	·	·	·	·	·	1	T

Total : 2189

* Locality : 1, Kwang-Neung; 2, Quelpart Island; 3, Mt. Oh-Dai; 4, Dagelet Island; 5, Kang-Wha Island; 6, Jak-Yak Island; 7, Joo-An; 8, I-Ri; 9, Hong-Neung(Seoul); 10, Mt. Nam-Han.

**Collecting methods: Sm, sweeping on mushrooms; Sg, sweeping on grasses; T, trapping(peach and apple-baits); G, garbages.

drosophilid fauna of the island differing from main-land's one because of its geographical conditions as described above. Unexpectedly 22 species of drosophilids which are also common in main-land were obtained, that is, none of them are endemic to the island. Only it is worthwhile to say that *D.* (*H.*) *trivittata* STROBL and *D.*(*S.*) *bifasciata* POMINI were captured in the island more than in main-land. *D.* (*S.*) *auraria* PENG was also dominant in the island as was in main-land. The fauna of this island is very poor as Ueki & Sakada 1935 and Cho 1955 described in their papers. According to Cho's paper (The fauna of Dagelet Island 1955) 174 species of the fauna of this island was listed involving 133 species of insects and the endemic species of insects to the Island were none. Here, 22 drosophilid speecies, were obtained in the present collection, should be added to the fauna of Dagelet Island,, they are as follows: *Mycodrosophila splendida* OKADA (Tai-Ha ♂ 1), *Scaptomyza disticha* (DUDA) (Sa-Dong ♀ ♀ 3, Mt. Seung-In ♂ 1 ♀ ♀ 8), *S.* sp. like *disticha* (Sa-Dong ♀ 1), *S. graminum* (FALLEN) (Mt. Seung-In ♂ 1 ♀ 1), *D.*(*H.*) *trivittata* STROBL (Mt. Seung-In ♂ ♂ 8 ♀ ♀ 10), *D.* (*Paradrosophila*) *coracina* KIKKAWA & PENG (Mt. Seung-In ♂ ♂ 2 ♀ 1), *D.*(*P.*) *punctıceps* OKADA (Mt. Seung-In ♂ 1 ♀ 1), *D.*(*S.*) *bifasciata* POMINI (Mt. Seung-In ♂ ♂ 13 ♀ ♀ 10), *D.*(*S.*) *suzukii* (MATSUMURA) (Cheun-Boo ♂ ♂ 3 ♀ 1, Mt. Nan ♂ ♂ 4 ♀ ♀ 12, Tai-Ha ♂ ♂ 11 ♀ ♀ 7, Nam-Yang ♂ 1 ♀ ♀ 3, Mt. Seung-In ♂ ♂ 3, ♀ ♀ 11), *D.*(*S.*) *auraria* (Type A, B and C) PENG (Do-dong ♂ ♂ 8, Sa-Dong ♂ ♂ 2 ♀ ♀ 3, Cheun-Boo ♂ ♂ 60 ♀ ♀ 9, Mt. Nam ♂ ♂ 13 ♀ ♀ 9, Tai-Ha ♂ ♂ 113 ♀ ♀ 82, Nam-Yang ♂ ♂ 5 ♀ ♀ 4, Mt. Seung-In ♂ ♂ 7 ♀ 1), *D.*(*D.*) *brachynephros* OKADA, *D.*(*D.*) *angularis* OKADA, *D.*(*D.*) *unispina* OKADA (Sa-Dong ♀ 1, Tai-Ha ♂ 1 ♀ ♀ 2, Mt. Seung-In ♂ 1), *D.*(*D.*) *nigromaculata* KIKKAWA & PENG (Seung-In ♀ 1), *D.*(*D.*) *bizonata* KIKKAWA & PENG (Seung-In ♂ 1), *D.* (*D.*) *histrio* MEIGEN (Mt. Seung-In ♀ 1), *D.* (*D.*) *viritis* STURTEVANT (Do-Dong ♂ ♂ 14 ♀ ♀ 13), *D.*(*D.*) *sordidula* KIKKAWA & PENG (Cheun-Boo ♂ 1), *D.*(*D.*) *lacertosa* OKADA (Do-Dong ♂ ♂ 25 ♀ ♀ 30, Cheun-Boo ♀ 1, Mt. Nam ♂ ♂ 8 ♀ ♀ 13), *D.*(*D.*) sp. like *lacertosa* (Do-Dong ♂ 1), *D.*(*D.*) sp.-1 (Mt. Nan ♀ 1), *D.*(*D.*) sp.-2 (Mt. Seung-In ♀ 1).

Summary

The collections of drosophilid flies of ten localities (Kwang-Neung in Kyung-Ki Province, Quelpart Island, Mt. Oh-Dai in Kang-Won Province, Dagelet Island, Kang-Wha Jsland in Kyung-Ki Province, Jak-Yak Island in Kyung-Ki Province, Joo-An in Kyung-Ki Province, I-Ri in Chun-Book Province, Hong-Neung in Seoul, and Mt. Nam-Han in Kyung-Ki Province) was made during a period ranging from May 1957 till October 1958, resulting in the capture of a total of 2198 drosophilid flies involving 4 genera, 7 subgenera, 44 species. Of 44 species *D.*(*H.*) *trivittata* STROBL, *Mycodrosophila splendida* OKADA, *D.*(*S.*) *auraria* PENG (Type C) and 10 unknown species probably are new to the Korean drosophilid fauna. Ten unknown species will be examined thoroughly and its results will be reported in the nearest future by the author.

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摘 要

1. 著者가 1957年 5月부터 1958年 9月까지 南韓 10個地域 卽 光陵(京畿道), 濟州島, 五台山(江原道), 鬱陵島, 江華島, 丹藥島(京畿道), 朱安(京畿道), 裡里(全北), 洪陵(서울), 南漢山城(京畿道)에서 복숭아, 사과等의 果實 Trap方法과 Sweeping法으로 採集한 초파리는 4屬, 7亞屬, 44種 2198마리였다.
2. 今番採集에서 얻은 韓國產未記錄種은 *D.* (*H.*) *trivittata* Strobl *Mycodrosophila splendida* Okada, *D.* (*S.*) *auraria* Peng(Type C)의 3種이며 未知 10種은 現在 檢索中이기니와 그 結果는 밀지않아 發表할 豫定이다.
3. 鬱陵島採集은 1958年 8月 1日부터 13日까지에 이루어졌으며 採集地는 道洞, 沙洞, 天府, 台霞, 南陽, 卵峰, 聖人峰이며 그 結果 採集된 22種은 鬱陵島產動物目錄에 새로히 附加하는 바이다.