

A SURVEY OF DROSOPHILIDAE IN TOL-SAN ISLAND

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The Drosophilid fauna of Korea have been actively surveyed since 1955 by Chung et al (1955, 1956), Paik and Kim (1957), Takada and Lee (1958, 1959), Kang et al (1958, 1959), Chung (1958), Chung and Rho (1959). Kim (1961), referring to the external male genitalia, studied systematic relationships among the species of Korean Drosophila.

For the purpose of presenting more data of Drosophilid fauna of Korea the author has made a collectin of species at Mt. Kum-O (223m in height) few times, which is located in the southern area of Tolsan Island, Chunnam Province (Fig. 1). The first collection was done from July 26 to 31 in 1959, the second was July 25 to 30 in 1961, when unfortunately, we had much rain, so we could not get a good result, and the third collection was July 23 to 26 in 1963. A total of 1036 specimens belonging to 16 species (Table 1) were obtained. Among them, *D. virgata* was collected for the first time in this Island, and this species is new to Korean Drosophilid fauna.

The author wants to express his most sincere appreciation to Professor Y. K. Paik of the Department of Biology, Yonsei University, Seoul, Korea, for his kind help and valuable advice given in the course of this work.

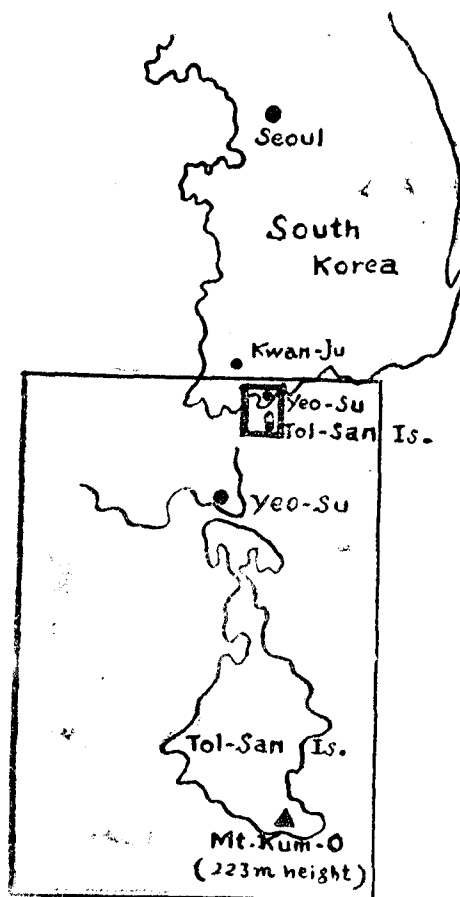


Fig.1 Map showing Mt. Kum-O where the present collections were made.

TABLE 1

Drosophilid flies obtained from Tol-San Island, Chunnam Province, South Korea: Collection was made with the use of fermenting fruits and a sweeping net (1959—1963).

Species	Dates of collection			Total	Collecting methods
	July, 1959	July, 1961	July, 1963		
<i>Leucophega magnipalpis</i>	—	—	1	1	S.
<i>Mycodrosophila splendida</i>	—	1	—	1	S.
<i>Mycodrosophila koreana</i>	1	—	—	1	S.
<i>Scaptomyza graminum</i>	—	—	2	2	S.
<i>D. (Paradrosophila) coracina</i>	14	—	8	23	T.
<i>D. (Sophophora) suzukii</i>	271	7	2	280	T.
<i>D. (S.) lutea</i>	3	—	6	9	T.
<i>D. (S.) melanogaster</i>	1	—	—	1	T.
<i>D. (S.) auraria (Type C)</i>	40	31	133	204	T.S.
<i>D. (S.) rufa</i>	22	19	6	107	T.S.
<i>D. (Drosophila) brachynephros</i>	—	—	2	2	T.
<i>D. (D.) angularis</i>	95	2	34	131	T.
<i>D. (D.) bizonata</i>	26	—	—	26	T.S.
<i>D. (D.) sp. of quinaria section</i>	3	—	14	17	T.S.
<i>D. (D.) immigrans</i>	24	6	199	229	T.S.
<i>D. (D.) virgata</i>	—	—	2	2	T.

Total:1036

※ Collecting methods: S.Sweeping, T.Trapping.

COLLECTING METHODS

Following the Patterson's method (1943), large trap cans (27cm by 27cm) were used to collect flies and fermenting apples, peaches, and tomatoes were placed in the bottom of cans for bait. All collections were done, as a rule, just before sunrise and just after sunset by sweeping over the trap-cans with the hand net devised by Wheeler (1955). He also used sweeping method on the grass, mushroom, tree-blood or timber pile, marshy place, and decaying vegetable.

SOME REMARKS FOR CERTAIN SPECIES

D. rufa was collected for the first time in this island in July 1959, this species was also collected by Chung in August 1959, and Kim in July 1961 in Huk-San Island. This species seems to be distributed in the southern islands of Korea.

2 males of *D. virgata* were collected for the first time in Tol-San Island in July 1963, and it is new to Korean Drosophilid fauna. This specimens strictly coincides with Chinese form described by Tan, Hsu, & Sheng, and Japanese form described by Okada (1956), but some external features and phallic organs differs from the Japanese form and Chinese form.

Here, the author presents a full description of *D. virgata* collected in Tol-San Island.

D. virgata Tan, Hsu, & Sheng

♂: Body about 3.2mm. Antenna yellow, the base of third joint black. Arista with 12 branches including a small fork, 3 below it. Palpus black with two long apical setae. Orb₂ about 2/5 size of orb₁. Anterior oral margin black, or₂ over half size of vibrissa. Ocellar triangle small, black. Periorbits yellow, with anteriorly convergent paired narrow black stripes. Face yellowish white. Carina yellow, high and black below. Cheek yellowish white, over 1/5 as broad as the greatest diameter of eye.

Mesonotum yellow, with 7 black longitudinal stripes. Scutellum yellowish brown, with a pair of dark longitudinal posteriorly convergent stripes. Thoracic pleura yellow, with 3 dark longitudinal stripes, sterno-index about 0.8.

Legs yellow, fore femur with a row of spinules on the inner surface showing characteristics of the group. Legs brownish, coxae, tibiae and femore mottled with dark spots: Coxa of fore legs with two patches, femur with a large median patch, tibiae with two, proximal one is paler. Coxa of middle leg with a black patch on the frontal portion, each femur of middle and hind legs with median patch and tibia with two patches, proximal one is paler. Preapicals on all three tibiae; apicals on middle.

Wings clear, cross veins clouded. Costal index about 4.0; 4th vein index 1.4; 4C-index 0.6; 5X-index 1.2; Cl-bristles 2, third costal section with heavy bristles on its basal 1/5. Halteres yellowish white, black basally, hu 2, subequal. Cross distance of dorsocentral bristles about twice the length distance. Anterior scutellars divergent.

Abdominal tergites yellow, each with medianly interrupted black caudal band which is laterally curved forward, and with a black spot on each side. Sternites pale grey and quadrate.

Periphallic organs (Fig.2): Genital arch narrow above and broad below; upper and middle portion bare, lower portion with about 15 bristles; heel triangularly pointed; toe broadly roundish. Primary teeth of clasper 8. Anal plate ovoid, larger than Japanese form, and with about 28 bristles; lower tip with about 7 stout setae.

Phallic organs (Fig.2): Aedeagus orange brown, apically pointed and curved rectan-

gularly. Novasternum deeply notched and with submedian spine. Ventral fragma weakly quadrate.

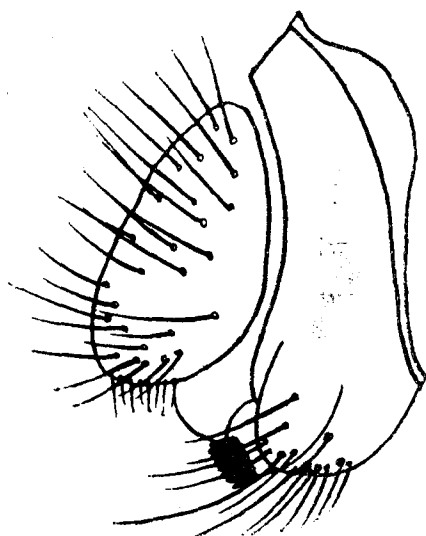
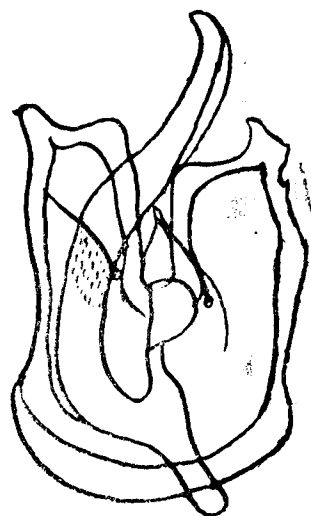


Fig.2 *Drosophila virgata*
(2). Phallic organ.



(1). Periphallial organ

SUMMARY

These collections were made in 1959, 1961, and 1963 at Mt. Kum-O of Tol-San Island. A total of 1036 specimens were collected by trapping and sweeping, and they were represented by 16 species as given in Table 1. Among them, *D. rufa* was collected in this Island and Huk-San Island so far, this species seems to be distributed only in the southern islands of Korea.

2 males of *D. virgata* were collected for the first time, and this species is new to the Korean Drosophilid fauna, but some external features differ from the Japanese form and Chinese form. So the author presents a full description of the species.

D. auraria (Type C), *D. rufa*, *D. suzukii* belonging to Subgenus *Sophophora* and *D. angularis*, *D. immigrans* belonging to Subgenus *Drosophila* were dominant species in the island.

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—抄 錄—

突山島의 초파리 調査

全南大學校 文理科大學 生物學教室

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1. 著者は 1959年 7月 26일부터 31일까지, 1961年 7月 25일부터 30일까지, 그리고 1963年 7月 23일부터 26일까지, 세 차례에 걸쳐서 全羅南道 麗川郡 突山面 最南端에 位置하는 金鰲山(海拔223m)에서 Trap法과 sweeping法으로서 초파리를 採集하여 4屬 16種 1036個體를 調査하였다.
2. *D. rufa*가 1959年 7월에 이 섬에서 처음으로 採集되었고 그 뒤 1959年 8월에 鄭瑢載氏, 1961年 7월에 著者에 依하여 黑山島에서 採集 調査되었는데, 至今까지 韓國 其他 地域에서 는 全然 採集 안된 것으로 보아 이 種의 分布地域은 韓國의 南海島嶼地方에 限한것 같아 생각 된다.
3. *D. virgata*가 今年採集에 이 섬에서 처음으로 採集되었음으로 韓國產초파리 未記錄種으로 報告하는 바이며, 그 若干의 外部形態 및 雄性外部生殖器가 日本產과 中國產것과 다름으로 全體的인 記載를 하였다.
4. Sophophora亞屬의 *D. auraria* (C型) *D. rufa* 그리고 *D. suzukii* Drosophila 亞屬의 *D. angularis* *D. immigrans*는 이 섬에서 가장 優勢한 種이라는 것이 이번 採集에 依하여 調査되었다.