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A new species of the *virilis* group of the genus
***Drosophila* (Diptera)**

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Until a decade ago, only seven species had been known of the *Drosophila* fauna of Hokkaido. Recently, however, a new species was added by Momma and Takada (1954), while several species new to Hokkaido were added by Mizuno (1952), Wakahama (1956), Momma (1956, 1957) and Okada (1956). At the present time data have been accumulated indicating that the number of species known to occur in Hokkaido approximates forty.

The junior author (H.T.) has continued the collection of drosophilids with yeasted fruit-baits in eight areas of Hokkaido during a period ranging from April 1951 till November 1956, resulting in the capture of a total of 6645 drosophilid flies (Takada 1957).

During their survey at Asahidake (Mt. Taisetsu), Akan, Bihoro, and Yoichi, the junior author collected with the assistance of his co-workers 12 specimens of an unknown species of the genus *Drosophila*: they closely resemble, but clearly differ from, *Drosophila littoralis* Meigen from Europe. Those specimens were mentioned in their field notes as *littoralis*-like species.

D. littoralis was described by Meigen in 1830 from Germany. Duda (1935) and some other investigators have reported this species to occur in a number of different localities in northern and southern Europe. Burla (1951) collected it in almost all areas throughout Switzerland, as the most frequent species in the banks of streams, lakes, springs and related habitats. Other recent records of *littoralis* have come from the Netherlands (Sobels, Vlijm and Lever, 1954), Scotland (Basden 1954) and Norway (Basden and Harnden 1956). The form here in question will be described in this paper as a new species of *virilis* group in comparison with *littoralis* from Europe. It is to be newly added to the *Drosophila* fauna of Hokkaido.

The authors wish to offer their sincere thanks to Professor S. Makino, Hokkaido University, for his kind leadership in every way in carrying out the present study,

and to Dr. E. Momma for his invaluable suggestions. The European specimen of *D. littoralis* were sent for reference by the courtesy of Professor A. Buzzati-Traverso, Pavia University, through the kind assistance of Professor D. Moriwaki, Tokyo Metropolitan University, to whom the authors' cordial thanks are due.

Drosophila (Drosophila) ezoana sp. nov.

Figs. 1-5.

Japanese name: Ezokuro-shôjobae.

♂ and ♀: Body blackish brown, about 3.5 mm. in length. Head brownish black. Eye dark red, with thick pale piles. Antenna brown, arista with about 7-8 branches including a small terminal fork, 2 branches below it. Palpus greyish brown, with a long apical and a few shorter marginal setae. Ocellar triangle dark brown. Front brownish black, about 1/2.3 as broad as the greatest head width, and with numerous minute frontal hairs. Clypeus brownish black. Cheek about 1/3 as broad as the greatest diameter of eye, with a brownish triangular spot. Carina high, narrow, and sulcate. Second orbital about 1/3 size of first. Second oral about 1/3 size of vibrissa.

Mesonotum brownish black, with indistinct dark median longitudinal stripe. Scutellum brownish black. Thoracic pleura blackish brown. Humeral bristles 2, upper longer. Acrostichal hairs in 6 rows. No prescutellar bristles. Cross distance of dorsocentral bristles about half length distance. Anterior scutellars divergent. Sterno-index about 0.8.

Legs greyish brown. Preapicals on all three tibiae, apicals on middle. Wings somewhat dusky, crossveins brown, posterior crossvein clouded. Costal-index about 3.2; 4V-index about 1.4; 4C-index about 1.0. Third costal section with heavy bristles on its basal 3/5. Halteres yellowish white. Abdominal tergites entirely brownish black. Abdominal sternites grey.

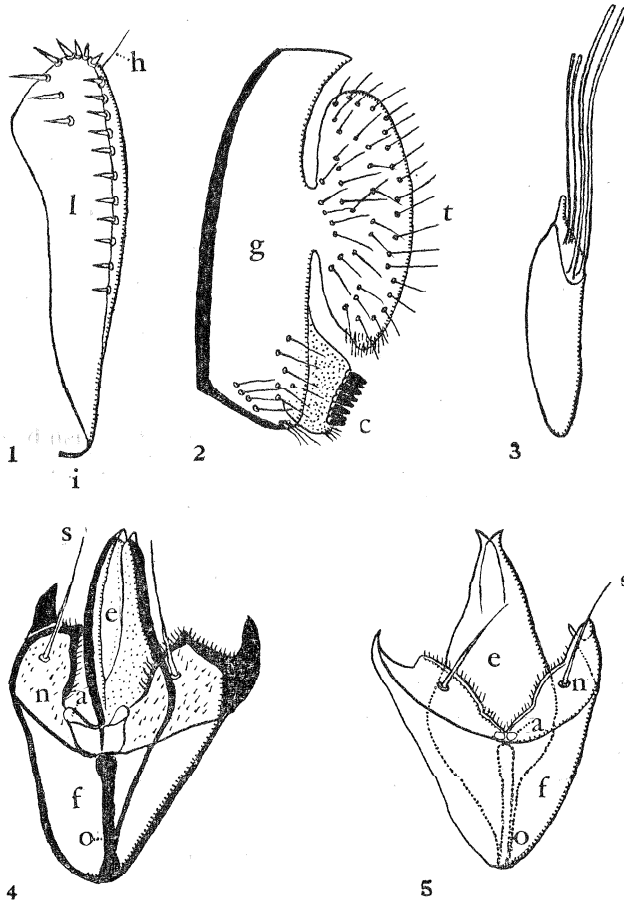
Testes pale orange, with 4 inner and 6 outer coils or gyres. Spermatheca bell-shaped. Ventral receptacle spiral with about 50 coils. Sperm pump without diverticula.

Periphallic organs (Fig. 2): Genital arch (g) with about 11-15 bristles on lower portion, upper portion bare; heel (lower anterior corner) low and obtuse-angled; toe (lower posterior corner) broad and roundish. Anal plate (t) relatively large, fusiform, and fused at middle with genital arch. Clasper (c) one, primary teeth 7-8, arranged in a straight row, which does not reach the lower tip of the clasper, marginal bristles 6-9.

Phallic organs (Fig. 4): Aedeagus (e) pale brown, large fusiform, darker at margin, and apically with divergent pale processes. Basal apodeme of aedeagus (o) about half as long as aedeagus itself. Anterior paramere (a) small, pale brownish grey, fused to novasternum. Novasternum or hypandrial plates (n) dark brown, pubescent, and each with a long stout submedian

spine (s). Ventral fragma (f) pale brown, darker at margin, nearly as long as broad, proximally narrowing with convergent lateral almost straight margins, and rounded at the anterior tip. Phallosomal index (length-ratio of aedeagus and its apodeme) about 1.4.

Egg-guide (Fig. 1): Lobe (l) subapically broadest, apically rather



- Drosophila (Drosophila) ezoana* sp. nov.
 1. Egg-guide; 2. Periphalllic organs (lateral aspect); 3. Egg;
 4. Phallic organs (ventral aspect).

- Drosophila (Drosophila) littoralis* Meigen.
 5. Phallic organs (ventral aspect) of an Italian specimen.
 a, anterior paramere; c, clasper; e, aedeagus; f, ventral fragma; g, genital arch; h, subterminal hair; i, basal isthmus; l, egg-guide lobe; n, novasternum; o, basal apodeme of aedeagus; s, submedian spine; t, anal plate.

rounded, basally tapering, and with about 18 marginal and 2 discal pointed teeth. Subterminal hair (h) located near the tip of the lobe. Basal isthmus (i) narrow and very short.

Egg (Fig. 3): With 4 filaments, anterior pair much thinner than the posterior one.

Holotype: ♂, Asahidake, Hokkaido, 8 VIII '53 (Takada leg.). Deposited at the Zoological Institute, Hokkaido University.

Allotopotype: ♀, Collected together with holotype. Deposited at the Zoological Institute, Hokkaido University.

Paratypes: 1 ♀, Asahidake, collected together with holotype; 2 ♂♂ and 1 ♀, Bihoro, Hokkaido, 4 VIII '54; 3 ♂♂ and 1 ♀, Akan, Hokkaido, 11 VIII '54; 2 ♂♂ Yoichi, Hokkaido, 13 X '55 (H. Tadada leg.).

Distribution: Hokkaido.

Feeding habits of imagines: Collected in fruit traps.

Relationships: Closely allied to *D. (D.) littoralis* Meigen (Fig. 5) from Europe. There are many characters common to both species as listed below. But the present species differs from its ally in several characters especially in aedeagus, as mentioned below.

Characters common to *D. (D.) ezoana* sp. nov. and *D. (D.) littoralis* Meigen.

Arista with about 7-8 branches including a small fork.

Palpus with a long and a few shorter setae.

Carina sulcate.

Cheek about 1/3 greatest diameter of eye.

Eye dark red, with thick piles.

Mesonotum with indistinct dark median longitudinal stripe.

Acrostichal hairs in 6 rows, prescutellars absent.

Anterior scutellars divergent.

3rd costal section with heavy bristles on its basal 3/5.

Posterior crossvein clouded.

Sterno-index about 0.8.

Ventral receptacle with about 50 loose coils.

General features of periphallallic organs and egg-guide.

Eggs with 4 filaments.

Characters different between the two species.

| <i>D. (D.) ezoana</i> sp. nov. | <i>D. (D.) littoralis</i> Meigen |
|--|----------------------------------|
| Body brownish black in general coloration. | Greyish brown. |
| Aedeagus marginally darker than the central portion. | Unicolorous. |
| Phallosomal index about 1.4. | About 2.0. |

Spermatheca bell-shaped.

Testis with about 4 inner and 6
outer coils.

Spherical.

About 6 outer and 8 inner coils.

Remarks: The specimens proved difficult to maintain in stock in the laboratory, and the culture was soon lost.

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