

# Digest of Japanese Odonatological Short Communications

edited and translated by

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*Aeschna*, 1994 (28): 10-12.

## Records of *Sympetrum parvulum* (Barteneff) from unusual habitats in Shiga and Gifu Prefecture, Central Honshu

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*Sympetrum parvulum* (Barteneff) is known to inhabit bogs, fallow or abandoned paddy fields in the flatlands or lowlands, where short aquatic plants grow or sunny paddy fields or bogs surrounded with clumps of trees at skirts of hills.

The author collected some of the species at unusual habitats, rather different from well known habitats, in the survey of odonata fauna in Shiga Prefecture in 1993. Mr. Fujimoto, K. and Mr. Yoshida, M. also collected adults of this species at similar habitats to those that the author found, and thankfully they offered the data to him.

The followings are the aspects of habitats in Shiga Pref.

Two males were captured at Terasho, Konan-cho, Shiga Pref. on October 17, 1993. The habitat at a skirt of hills is ill drained and pooled with rainwater. The bed of the pool is muddy. It is surrounded with a few marshy vegetation. Usually the species inhabits rather wider bogs at skirts of hills, however, in Shiga Pref. there are few places like those.

Those small ill drained places at skirts of hills as the author found are easily found in the prefecture. Thereafter, Mr. Fijimoto and Mr. Yoshida found and captured the dragonflies at the similar habitats in Shiga Pref. Also this species were found at artificial habitats similar to the above mentioned environment in the prefecture.

In the student days of the author, the typical habitats of the species had not been found in Gifu City. But the author captured some females of the species at a kind of small dam of a stream in a dell, which he had thought to be a habitat of the species.

*Gekkan-Mushi*, 1995. No. 290: 37.

## *Sympetrum frequens* emerged in midsummer

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*Sympetrum frequens* (Selys) usually emerges simultaneously from the end of June to the beginning of July. Rarely it emerges in the midsummer or late in the cool summer. The author sighted *S. frequens* emerged late in the fiercely hot summer in 1994.

They occurred from a pool at a wasteland in Ohara, Chichibu City, Saitama Pref. On August 4 teneral *S. frequens* soon after emerged were found there, with a few larvae. Until August 13 three male and three females respectively were collected. They seemed smaller than early emerged individuals (five males and three females), though, not so different in the abdominal length, but smaller in the thorax.

The reason of late emergence and small body might have resulted from that the pool had been puddled late in the season so that hatching of eggs had been delayed, and moreover, the larval stage had been shortened by the hot summer.

Table 1 Body sizes of the collected *Sympetrum frequens*.

Thorax: mesothorax, unit: mm.

| Length  | Late emerged |        | Usually emerged |        |
|---------|--------------|--------|-----------------|--------|
|         | Male         | Female | Male            | Female |
| Body    | 37.7         | 34.3   | 39.9            | 39.4   |
| s.d.    | 1.5          | 1.0    | 1.3             | 2.0    |
| Abdomen | 24.3         | 23.0   | 25.8            | 23.1   |
| s.d.    | 0.0          | 0.7    | 1.2             | 5.5    |
| Thorax  | 5.6          | 5.1    | 6.7             | 6.3    |
| s.d.    | 0.8          | 0.5    | 0.3             | 0.5    |

*Gekkan-Mushi*, 1995. No. 291: 36-37.

## *Oligoaeschna pryleri* (Martin) was captured at Sapporo after an interval of 30 years

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*Oligoaeschna* (Martin) occurs rarely in Hokkaido, and in Sapporo this species was only reported in 1962 by Nagase and Hoshikawa about a specimen captured at Toyohira Valley. Koyama (1994) regarded it extinct there. The author captured a male of this species at Nishioka reservoir on August 23, 1992. The dragonfly was hovering around slowly at a height of three meters at a sunny spot in a forest. It was much aged with smoked wings seasonably.

*Gekkan-Mushi*, 1995. No. 290: 38-39.

### Questions on the larvae of *Somatochlora alpestris* (Selys)

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*Somatochlora alpestris* (Selys) is distributed in the cold districts from northern Europe to Siberia, and in Japan only at the highland bogs near Mt. Daisetsu. Its flying season is short, two months from the beginning of July. The authors could get some knowledge about the larvae of the species, although it was difficult to observe the species in the bad weather of the highland.

Observations were made on August 14, 1988 and August 13, 1993 at Numanotaira, Kawakami-cho. On the former day it was fine and the flight of males and oviposition of females were sighted. Single oviposition was sighted twice in the morning at small and shallow pools, of which depth were 5-50 cm. Females oviposited in the mud or in the water selecting water edges of short grasses. They produced clusters of eggs at the ovipositor during hovering at a height of 20 cm and moved down to lay eggs on the mosses or the mud, and moved up to the start points. They repeated the up and down movements for three to four minutes.

The larvae of the species were found with those of *Aeshna nigroflava* Martin at the depth of 20-30 cm in the shallow pools at the highland bogs.

On August 13, 1993 it was rainy and cold. Many of dead *Sympetrum frequens* were found here and there at the bogs and none of *S. alpestris* was seen.

None of exuviae of the species was found, however, two last instar larvae were found at a so shallow pool, in which

the water was rather warmer than that of deeper spot.

We visited there five days after, and only saw *Enallagma boreale circumlatum* and *Aeshna nigroflava*. Seemingly the same larvae that were sighted before were still left unchanged.

In Hokkaido in 1993 we had severely abnormal weather. It snowed at Mt. Daisetsu at the end of June and the bad weather affected the bloom of alpine flowers. Even in August it was cool and the summer ended short, and the first snow fell in September.

Therefore, it was suggested that the emergence might not have occurred at Numanotaira in 1993, and the larvae might have overwintered at the last stage, or might have been dead.

We wonder whether the last instar larva, which misses emergence period, can overwinter or dies away.

*Gekkan-Mushi*, 1995. No. 290: 38-39.

### Unsuccessful and abnormal coupling of *Calopteryx atrata* (Selys)

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Many researches have been made on the copulatory behaviour of *Calopteryx* species, males of which display courtship. Some reports on *Calopteryx* species were also made on the behaviour of refusing male by female. Arai (1982) reported in a short communication that a female of *Calopteryx atrata* (Selys) had refused tandem flight with a male.

The authors observed an abnormal refusing behaviour by a female of *C. atrata* at the Tokigawa River, Higashi-matsuyama, Saitama Pref. on August 29, 1993.

At 17:00 p.m. tandem form of the species was sighted 20 meters apart from the authors. Usually the copulatory behaviour of this species reaches a peak from morning to noon and the oviposition ends by 15:00 p.m.

The female refused copulation, but only followed the male without beating wings. After twenty minutes the male abandoned copulation and they separated. The necessary condition for copulation is said to fly after tandem formation, however, this time tandem flight was in vain.

**Description of the larva of  
*Chlorogomphus brunneus keramensis*  
Asahina, 1972  
(Cordulegastridae, Odonata)**

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The morphology of the larvae of Japanese *Chlorogomphus* had been made clear on three species; *C. brunneus*, *C. b. costalis*, *C. iriomotensis* and a subspecies; *C. brevistigma okinawensis*, except a subspecies of *Chlorogomphus brunneus keramensis*, which was unfound (Hirose, 1962; Ishida & Ishida, 1985; Matsuki, 1992; Matsuki & Watanabe, 1993; Aoki & et al., 1995).

Nagamine collected a larva of the older instars of seemingly *C. b. keramensis* on Tokashiki Island in July 1993. The larva reared by Sugimura, emerged in June 1994. Expectedly the emerged dragonfly was a female of the species. The following is the description of the larva of *C. b. keramensis*.

#### 1. Material

A female larva of the older instars collected on Tokashiki Island, Okinawa, on July 2, 1993, by Nagamine, Kunio, emerged on June 8, 1994. The specimen is kept by the Museum, "Shimanto Tombo Shizenkan".

#### 2 Morphology

Body length, 38.2 mm; head width, 8.2 mm; metafemur length, 5.8 mm; abdominal length, 26.8 mm; abdominal width, 8.8 mm.

The body is shown in Fig. 1. The surface of the exuviae is light brown and rough, easy to be stuck with mud. The edge of the oval head is swollen, compound eyes not jugged like those of the Anotogastrid species. Antenna is consisted of seven flagelliform segments. The first and second segments are, common to this genus, fatter than other segments. Aoki (1994) suggested that the ratio of the width to the length of the intersegment of the antenna is different among the species of the genus.

Labium, shown in Fig. 3. Premental setae, five long setae with two short ones on the right side, six long setae with two short ones on the left side. Two median processes of prementum (Fig. 4) is so same as those of *C. b. brunneus*, 12-13 deep crenulations on the distal margin of palpus, with four palpal setae regularly spaced on the external margin.

Tarsus with three segments in each leg. Wing sheaths spread, hind ones reaching halfway across fourth segment.

Abdomen elongates ovally, slight brown, black twin spotted on the dorsal side of 4-9 segment. No dorsal hook no

lateral spine like other species of the genus. Epiproct and paraprocts are pointed sharply, the ratio of the former to the latter, 45:43. Cerci is shorter than paraprocts, 1:7. Ovipositor sheath not developed (Fig. 7).

#### 3. Comparison with *C. b. brunneus*

No clear difference was recognized between the specimen and that of a female *C. b. brunneus* from Okinawa.

#### 4. Habitat

The larva was collected in a small sandy pool of the upper stream (20-30 cm wide and rocky bed) of a river on the Tokashiki Island. The spot was dark and was covered with trees. At such places like this on Okinawa, usually *C. b. brunneus* flies around on patrol.

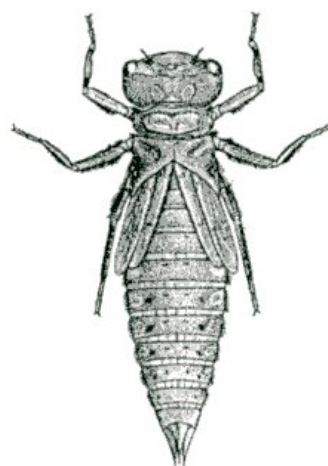


Fig. 1 Final instar larva of *Chlorogomphus keramensis*

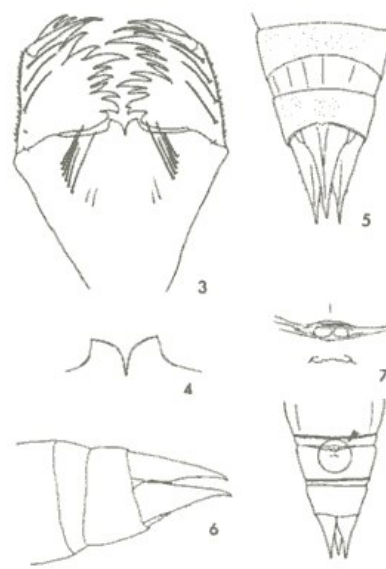


Fig. 3-7 *Chlorogomphus keramensis* (3) labium, (4) Median processes of prementum, (5) posterior part of abdomen, dorsal view, (6) abdomen, lateral view, (7) abdomen, ventral view and ovipositor sheath.

## Odonata appeared at a newly made pond in the Sayama Hills, 1994

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A swamp, where reed grew thick until 1993, was rearranged to a pond in March 1994. The author observed there from the end of May to July to see what kind of odonata would appear at such a newly made pond.

Followings are the newcomers,

1. *Libellula quadrimaculata asahinai*
2. *Orthetrum j. japonicum*
3. *Anax nigrofasciatus*
4. *Anax parthenope julius*
5. *Orthetrum albistylum speciosum*
6. *Crocothemis servilia*
7. *Sympetrum frequens*
8. *Pseudothemis zonata*
9. *Ephthalma elegans*
10. *Pantala flavescens*
11. *Sympetrum kunckeli*

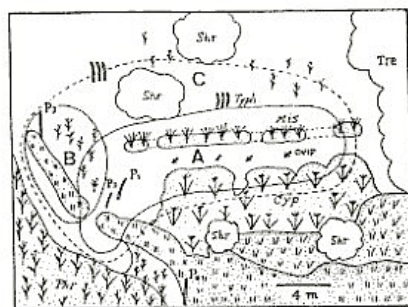


Fig. 1 Breeding site preferred by *Libellula quadrimaculata*.

Males preferably patrolled A spot, resting at P1, P2 of dead reeds. Females oviposited (OVIP) only at A. A spot is shallowest and was covered with the algae and humus.

## The insect for the month *Indolestes peregrinus*

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In Japan three species of odonata overwinter. They are all belong to Zygoptera; *Lestidae*: *Sympecma paedisca paedisca* and *Indolestes peregrinus*, *Coenagrionidae*: *Aciagrion migratum*.

Here I show the wing venations of *I. peregrinus* and *A. migratum* as the model pattern of *Lestidae* and *Coenagrionidae*, respectively (Fig. 1) The venational pattern of *I. peregrinus* is subdivided, while that of *A. migratum* is large and systematic. This difference may result from that *Coenagrionidae* is one of the group of odonata, that genealogically differentiated later and simplified the pattern

*Indolestes* are the southerly odonata, which are distribute in the east zone of Eurasia, the Southeast Asia and Australia, from Aomori to Amami-oshima in Japan.

The following is the life history of *I. peregrinus*. the adults emerge in July, and overwinter in immature stage with their body colour brown. In March of the next spring they are matured and the body colour of males turns to blue, while that of females turns to partially light green. In the lowlands they reproduce from the end of March through May, though in the cold districts they reproduce from the end of May to the beginning of June and emerge at the beginning of September.

According to the report by Mr. Rai, males and females of the damselfly were prepared to overwinter with their heads stuck to the branches of trees at a height lower than 60 cm, at the temperature lower than 13°C.

While, *S. paedisca* is recognized as a northerly species, is distributed from the north to the northeast of Eurasia, from Hokkaido to the north of Kyushu in Japan. Their body colour is brown and not changed from teneral throughout adult stage.

I had compared the behaviours of both species, which inhabit sympatricly Chiarai-ike pond at Mejiro, Tokyo.

As stated above, *I. peregrinus* perches at an angular at a branch of a tree lower than one meter, as if it seems another branch. While, *S. paedisca* sticks flat and tightly to a dead branch laid on the ground. It cannot be easily found unless it moves. This inconspicuity relies upon that *I. peregrinus* is similar to a dead branch, and *S. paedisca* is confused with the surroundings. The former is called mimicry and the latter cryptic coloration. (Text for the cover photo.)

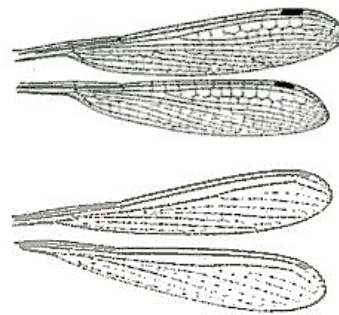


Fig. 1 Wing venations of *Indolestes peregrinus* (top) and *Aciagrion migratum* (bottom)