

SHORT COMMUNICATIONS

INDIVIDUAL AND GEOGRAPHIC VARIATION IN  
*COENAGRION GLACIALE* (SELYS, 1872), WITH DESCRIPTION OF  
A NEW SUBSPECIES (ZYGOPTERA: COENAGRIONIDAE)

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*Coenagrion glaciale glaciale* (Selys, 1872) (syn. *Agrion tugur* Bartenev, 1956) is redescribed and a description is given of *C. glaciale orientale* ssp. n. (♂ holotype: Monkukhay River, Primorye, USSR, May 26, 1962; ♀ allotype: the same locality, June 1, 1962; both in the collections of the Institute of Biology of the USSR Academy of Sciences, Novosibirsk). In both ssp. a number of aberrant specimens were encountered; these are described under the names *C. glaciale glaciale* f. *pallida* and *C. glaciale orientale* f. *fusca*. Some speculations are offered concerning the origin of the two ssp. and their aberrant forms.

INTRODUCTION

In several earlier papers we have dealt with some biological and ecological aspects and with the faunistics of *Coenagrion glaciale* (Sel.) (syn. *Agrion tugur* Bart.) (cf. BELYSHEV, 1966 a, 1966 b, 1968). In the present note the individual and geographic variation is considered on the basis of a series of 197 specimens from various Siberian localities. As it appears, the populations from the Southern (and probably also Central) Priamurye belong to a distinct subspecies, described and illustrated below under the name *C. glaciale orientale* ssp. n.

*COENAGRION GLACIALE GLACIALE* (SELYS)

Figures 1 a-f

*Agrion glaciale* SELYS, 1872: 41, pl. 2, fig. 9

*Agrion glaciale* SELYS, 1876: 1268.

*Coenagrion glaciale* (Selys) KIRBY, 1890: 149.

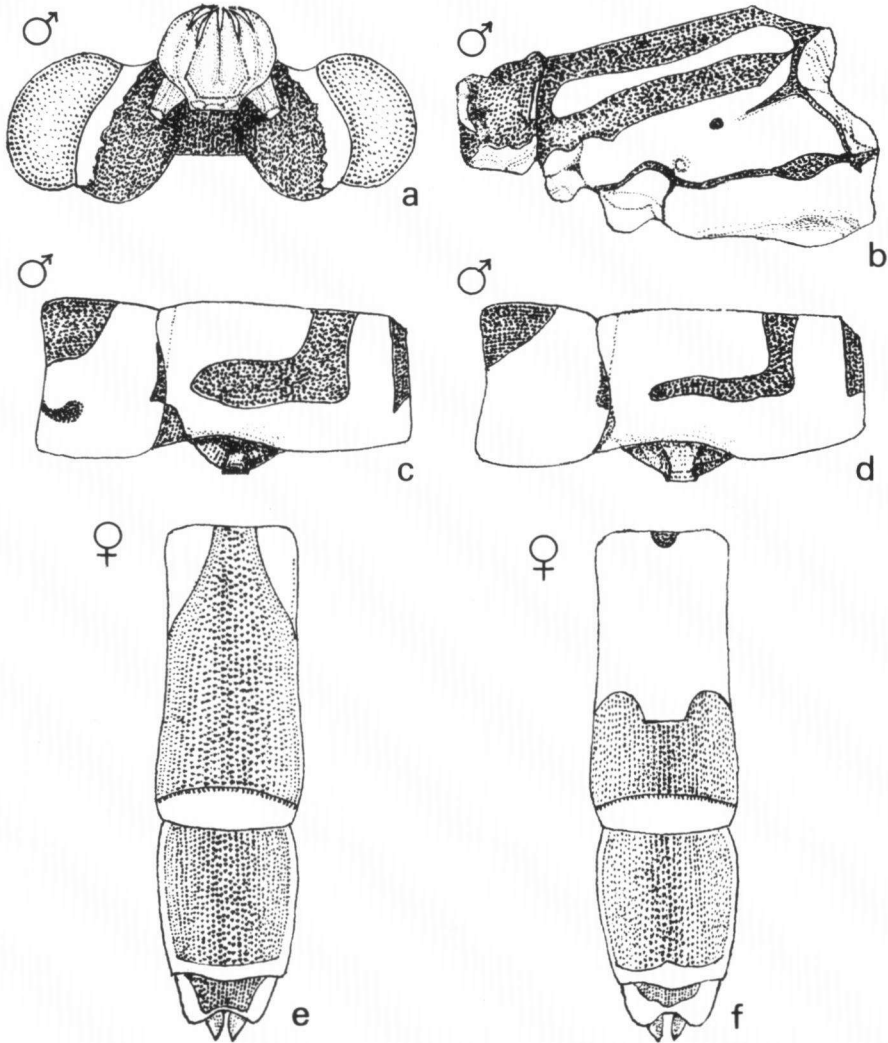


Fig. 1. Colour patterns in *Coenagrion glaciale glaciale* (Selys): (a-c, e) f. typica; – (d, f) f. *pallida* nov. Further explanation in text.

*Agrion glaciale* Selys JAKOBSON & BIANKI, 1905: 820, 826 (key).  
*Agrion glaciale* Selys BARTENEV, 1912: 443.  
*Agrion tugur* BARTENEV, 1956: 225-227, 236, 237-238, 6 figs.  
*Agrion glaciale* Selys BELYSHEV, 1963: 34, 92 (key).  
*Agrion glaciale* Selys BELYSHEV, 1966 a: 402-404.  
*Agrion glaciale* Selys BELYSHEV, 1966 b: 463-464.  
*Agrion glaciale* Selys BELYSHEV, 1968: 490, 523, fig. 24 (distributional map).

**D i a g n o s i s .** *Male:* Basal part of the head predominantly black, with narrow light bands at eye margins (Fig. 1 a). The black band on the second lateral suture of thorax complete. Light spots above the light lower margins of the lateral sides of prothorax usually absent (Fig. 1 b). The pattern on the 2nd tergite rough, with wide obtuse bands (Fig. 1 c). *Female:* Black spot on the 8th tergite narrowing towards the anterior margin of tergite to approximately one third of original width. The 10th tergite almost wholly black (Fig. 1 e).

**I n d i v i d u a l v a r i a t i o n .** In our series, 16 mature males (20%), and 1 mature female (6%), all from Tibilate, Southern Pribaikalia, USSR (July, 1960) are generally lighter in coloration and exhibit a reduction of black areas. In males, the U-like spot on the 2nd tergite has only narrow arms (Fig. 1 d), while in females the black spot on the 8th tergite covers only its posterior part, and the tergite 10 is not entirely black. For this form we suggest the name *C. glaciale f. pallida*.

**R a n g e .** The Lena River Basin, Pribaikalia, North-Eastern Siberia and Upper Primurye.

#### *COENAGRION GLACIALE ORIENTALE* SSP. NOV.

Figures 2 a - f

**D i a g n o s i s .** *Male:* Basal part of head mainly light coloured, with wide light bands at eye margins (Fig. 2 a). Black band on second lateral suture of thorax covering its posterior half only. Light spots above light lower margins of sides of prothorax usually present (Fig. 2 b). Black U-shaped pattern on second tergite fine, its longitudinal arms narrow and pointed (Fig. 2 c). *Female:* Black spot on 8th tergite usually covering only its back half. 10th tergite with X-shaped spot (Fig. 2 e).

For this subspecies we suggest the name *Coenagrion glaciale orientale* ssp. n.

**I n d i v i d u a l v a r i a t i o n .** In 3 males (10%) and 4 females (40%), all from Monkhukhay river, Primorye, USSR (May 28, 1962) we noticed a much more extensive dark coloration. In these males the U-like pattern on the 2nd

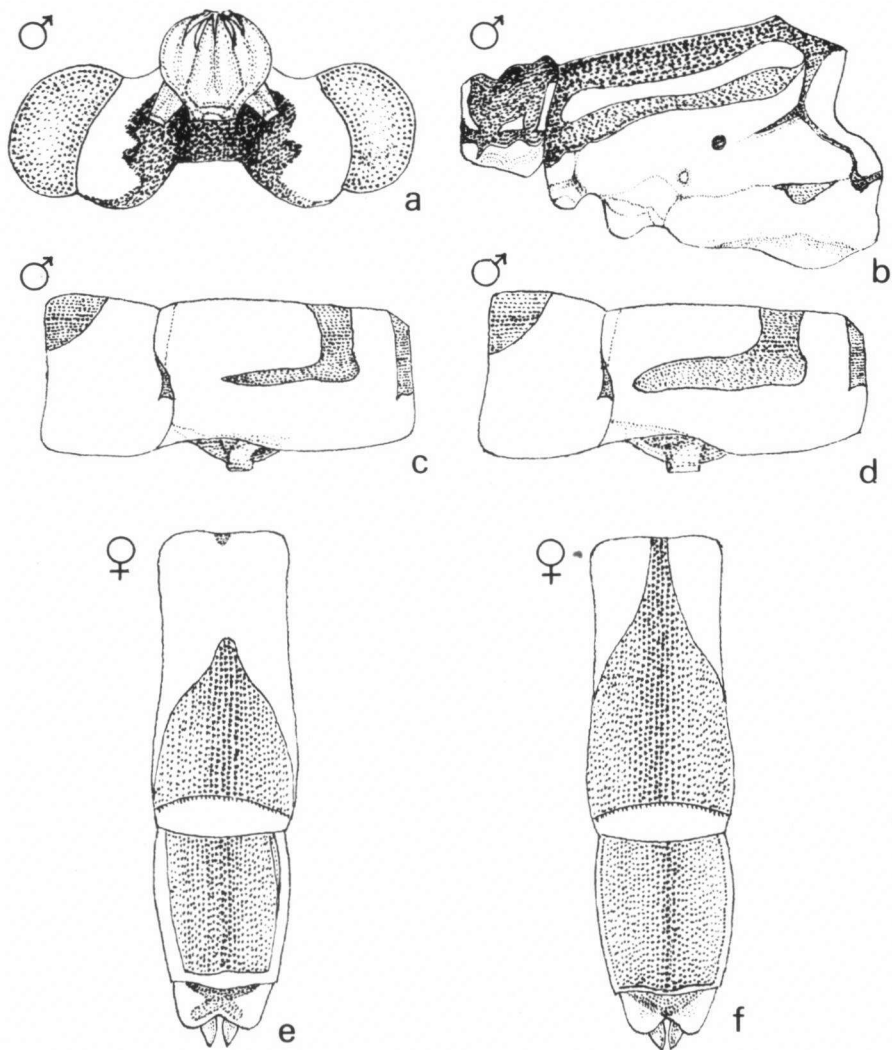


Fig. 2. Colour patterns in *Coenagrion glaciale orientale* ssp. n.: (a-c, e) f. typica; - (d, f) f. *fusca* nov. Further explanation in text.

tergite has broad arms (Fig. 2 d). In the dark females the black spot on the 8th tergite in extreme cases extends up to the anterior margin (Fig. 2 f).

For this darker form we suggest the name *Coenagrion glaciale orientale* f. *fusca*.

R a n g e . Southern, and probably Central Priamurye, USSR.

## SPECULATIONS ON THE ORIGIN OF VARIABILITY

- (1) The variability encountered in both subspecies clearly follows the same pattern (cf. Figs. 1 c and 2 d; 1 e and 2 f; 1 f and 2 e).
- (2) In *C. glaciale orientale* we consider the f. *fusca* as archaic, since it seems to be especially developed in the females, the evolution of which is usually behind that of males (BELYSHEV, 1967). The species is of Siberian, but not Priamurye origin.
- (3) The ssp. *glaciale orientale* form may be of more recent origin, arisen under the influence of a new environment.

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