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| Zeitschrift für Fischkunde | Band 8 | Heft 1/2 | 15.10.2006 | S. 99-100 |
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Kurze Mitteilung/Short note

## ***Buxeus*, a new colour gene in the guppy, *Poecilia reticulata* PETERS, 1859 (Teleostei, Cyprinodontiformes)**

***Buxeus*, ein neues Farbgen beim Guppy, *Poecilia reticulata* PETERS, 1859 (Teleostei, Cyprinodontiformes)**

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**Zusammenfassung:** Ein gelb-grünes, metallisch schillerndes Farbmerkmal, genannt *Buxeus*, wird von *Poecilia reticulata* beschrieben. Wie die Ergebnisse vor allem reziproker Paarungen mit bekannten Stämmen nahe legen, wird dieses Merkmal, das nur adulte Männchen zeigen, vom Y-Chromosom kodiert.

Genetic investigations in the guppy (*Poecilia reticulata*) have a long tradition. The guppy is probably the first species in which a colour gene strictly linked to the Y-chromosome was discovered (SCHMIDT 1920, WINGE 1922a, b, 1927). In the course of its domestication numerous phenotypes and colour genes have been described and studied (e.g., DZWILLO 1959, NAYADU 1979, FERNANDO & PHANG 1990, PHANG et al. 1990, PHANG & FERNANDO 1990, 1991, KHOO et al. 1999a, b, c).

In 1997 I received a strain of guppies whose males were characterised by a yellow-green metallic colour extending from the head to nearly the base of the caudal fin including the neck and back. The unpaired fins, often coloured in domesticated guppy strains, are slightly white or transparent (fig. 1). Females are uncoloured. I named this strain *Buxeus* (*buxeus* lat. = yellow-green). To study the mode of inheritance of this remarkable colouring a series of crosses with two guppy strains, *Pauper* (cf. WINGE 1927) and *Maculatus* (cf. WINGE 1922b) were performed. In both strains the characteristic colouring of males is determined by loci on the Y-chromosome; females are not coloured (WINGE 1922, 1927; pers. obs.) and, therefore, resemble phenotypically the *Buxeus* females.

All strains were kept at 27 °C in 120 l aquaria, planted with *Cryptocoryne* sp. They were fed

with *Artemia salina*, *Daphnia* spec., crushed *Spirulina* and high quality flake food.

For each cross two males and two females were mated and kept in 45-l aquaria under similar conditions. The offspring of each breeding was raised separately until the colouring was fully developed. The crosses (males first, female last) gave the following results:

**A1:** *Pauper* x *Buxeus*. F<sub>1</sub>: 92 males (all *Pauper*), 99 females (uncoloured).

**A2:** F<sub>1</sub> from *Pauper* x *Buxeus*. F<sub>2</sub>: 72 males (all *Pauper*), 104 females (uncoloured).

**A3:** F1 from *Pauper* x *Buxeus* x *Buxeus*. 75 males (all *Pauper*), 80 females (uncoloured).

**B1:** *Maculatus* x *Buxeus*. F<sub>1</sub>: 160 males (all *Maculatus*), 198 females (uncoloured).

**B2:** F1 from *Maculatus* x *Buxeus*. F<sub>2</sub>: 48 males (all *Maculatus*), 61 females (uncoloured).

**B3:** F1 from *Maculatus* x *Buxeus* x *Buxeus*: 29 males (all *Maculatus*), 33 females (uncoloured).

**C1:** *Buxeus* x *Pauper*. F<sub>1</sub>: 82 males (all *Buxeus*), 103 females (uncoloured).

**C2:** F<sub>2</sub> (F<sub>1</sub> x F<sub>1</sub>): 122 males (all *Buxeus*), 101 females (uncoloured).

**D1:** *Buxeus* x *Maculatus*. F<sub>1</sub>: 133 males (all *Buxeus*), 146 females (uncoloured).

**D2:** F<sub>2</sub> (F<sub>1</sub> x F<sub>1</sub>): 20 males (all *Buxeus*), 34 females (no colour marks).

As seen from the results *Buxeus* appeared exclusively when a male of this phenotype was