

ABSTRACTS

- 1 **SYMPATRY OF *STREPTOCEPHALUS TORVICORNIS* (WAGA, 1842) AND *S. RUBRICAUDATUS* (KLUNZIGER, 1867) (ANOSTRACA, CRUSTACEA) : HYBRIDIZATION AND NICHE SELECTION. E. Adriaens - University of Gent (RUG).**

S. torvicornis and *S. rubricaudatus* can occur sympatrically, *i.e.* they live at the same time in the same temporary pools. Laboratory hybrids were obtained from no-choice mating tests between *S. torvicornis* and *S. rubricaudatus*. The mixing of species-specific characteristics found in the hybrids is discussed, based on the structure of the setae of the limbs and the antennae of the males. The F1 generation was non fertile. The hatching percentage of the hybrid cysts was much lower than that of the parental populations. Only about half of the hybrids reached maturity. Some of those that did reach the adult stage, died prematurely because of deformation of the filtration apparatus. Feeding *S. torvicornis* and *S. rubricaudatus* with nematodes, cladocerans and rotifers showed that they consume food particles of different size. The same was seen when comparing both sexes of the same species. In general the diet of *S. rubricaudatus* is composed of smaller particles. The considered populations of *S. torvicornis* and *S. rubricaudatus* are reproductive isolated and they have a different feeding ecology.

- 2 **MORPHOLOGICAL ADAPTATIONS TO PECTORAL FIN ADDUCTION IN *POMATOSCHISTUS LOZANOI* (GOBIIDAE). D. Adriaens, D. Decléyre and W. Verraes - University of Gent (RUG).**

Pomatoschistus lozanoi is a goby with a typical benthic life style. Forward propulsion, generated through pectoral fin adduction is of great importance during locomotion. The present morphological study is based on dissections, clearing with staining and serial sectioning of several specimens of *Pomatoschistus lozanoi*. The study gives a detailed description of the osteological and myological components, as well as of the ligaments of the girdle-apparatus. Like several other benthic fishes, gobies seem to have well developed pectoral fins. The strongly branched fin rays articulate with an enlarged distal margin of the rigid shoulder

plate, formed by the plate-like proximal radial bones. Well developed adductor muscles are present between the shoulder girdle and the fin rays, necessary for a powerful pectoral fin adduction. This -drag based- pectoral propulsion is optimised in *Pomatoschistus lozanoi* due to some morphological adaptations in skeletal and muscular structures. Thus in *Pomatoschistus lozanoi* the pectoral girdle seems to be better adapted to pectoral fin adduction than in a generalised teleost fish.

3 CLADISTICS AND METAZOAN RELATIONSHIPS.

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A recently published cladistic analysis of metazoan relationships (1) based on 77 developmental and morphological characters is shown to be defective with respect to both methodological issues and character interpretations. It is therefore not surprising that many conclusions of this analysis are not supported by the data. Originally the analysis was performed with the programs PHYSIS WAGNER.S and PAUP 2.4. From the resulting cladogram it was amongst others concluded that: 1) Hemichordata (= Pterobranchia + Enteropneusta) and Lophophorata (= Ectoprocta + Brachiopoda + Phoronida) are paraphyletic groups, 2) Pseudocoelomata is a sister group to the Acoelomata + Eucoelomata, 3) Acoelomata is a sister group to the Eucoelomata, 4) Entoprocta are deuterostomes and 5) Nemertea is a sister group to the protostomes. However a simple, but more exhaustive, re-analysis of the same data set using the program HENNIG86 showed that none of these conclusions is warranted. Moreover, a scrutiny of the data set revealed several erroneous character interpretations (e.g. eutely in Priapulida) or false homologies (e.g. the proboscis of Nemertea, Echiura and Enteropneusta). Hence we corrected the data set and re-analysed it again. This yielded a cladogram in which 1) the relationships between Acoelomata, Pseudocoelomata and Eucoelomata were unresolved, 2) both the Hemichordata and Lophophorata appeared as monophyletic groups and 3) both Nemertea and Entoprocta branched off together with Acoelomata + Protostomia. In conclusion, cladistic analyses of metazoan relationships may be very informative, but need to be performed with caution.

- (1) F. SCHRAM (1991). In: Simonetta, A.M. & Conway Morris, S. (Eds.), *The early evolution of Metazoa and the significance of problematic taxa*. Cambridge University Press.