

# โครงการหนึ่งอาจารย์หนึ่งผลงาน ประจำปี 2547

## ชื่อโครงการ

"การตีพิมพ์และเผยแพร่งานวิจัยในการประชุมวิชาการ  
ระดับชาติหรือนานาชาติหรือในวารสารวิชาการระดับชาติ  
หรือนานาชาติ"

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สาขาวิชาชีววิทยา สำนักวิชาวิทยาศาสตร์  
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## RELATIONSHIPS OF SOME ELOPOMORPH FISHES INFERRED FROM CRYSTAL MORPHOLOGY ON SULCUS OF SAGITTAL OTOLITH

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Elopomorph fishes of the superorder Elopomorpha include the order Elopiformes (Megalopidae and Elopidae), Albuliformes (Albulidae and Notacantidae), Anguilliformes (Muraenesocidae, Anguillidae, etc) and Saccopharyngiformes (Saccopharyngidae, Eurypharyngidae, etc) In this study, *Elops machnata*, *Megalops cyprinoides* and *Muraenesox cironeus* from southern coasts of Thailand was used as a representative of Elopidae, Megalopidae and Muraenesocidae respectively. Morphology of sagitta and crystals on sulcus of sagitta were investigated by scanning electron microscope in order to use these morphologies to study relationships of these fishes. Sagitta morphology of these fishes is clearly different, however, crystals on sulcus of sagitta show some characters that are similar. Two morphological types of crystals, disc-shaped and bar-shaped or rod-shaped, are found on

sulcus of sagitta of *M. cyprinoides* and *M. cironeus* whereas crystals of *E. machnata* are only disc-shaped which resemble those of *M. cyprinoides*. The disc-shaped crystals of *M. cironeus* differ from crystals of *M. cyprinoides* and *E. machnata*. The similarity of disc-shaped crystals of *E. machnata* and *M. cyprinoides* might reveal the evolutionary steps of crystallization on sulcus of sagitta of these two species and indicate the closed relationship of them. The different characters of disc-shaped crystals in *M. cironeus* but similar in circular shape might indicate the relationships of *M. cironeus* with *M. cyprinoides* and *E. machnata* in order level. The morphology of crystals on sulcus of sagitta of these three fish species is an important character that could be useful for studying relationships among these elopomorphs and also for identification of them.

## OBSERVATION ON CHROMOSOME BEHAVIOR DURING MEIOTIC DIVISION OF *HYPOGASTRURA ADEXILIS* (COLLEMBOLA)

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The complete process of meiotic division was observed in detail in *Hypogastrura adexilis* (Stach, 1964) by squashing whole mount, and the materials were reared in laboratory until use. The results showed that the number of chromosome of this specie is  $2n = 14$  in female and  $2n = 13$  in male; and sex chromosome system can be identified as XX:X0. Anomalous chromo-

some behavior occurs in this specie that sex chromosome in male is "post-reductional", and there is an obvious resting stage between two divisions. These features had not ever been reported in collembolan, but somewhat similar chromosome behavior was ever observed before in some of pterygote insects, such as dragonflies.