

Obituary



Maroko Myohara

* June 3rd, 1951

† May 24th, 2013

We dedicate the contributions of this Newsletter to the memory of Dr Maroko Myohara (Tsukuba, Japan), who passed away suddenly on 24 May 2013, at the age of 61. Dr Maroko Myohara was a developmental biologist at the National Institute of Agrobiological Sciences in Tsukuba, Japan. Her outstanding and lasting contribution to the knowledge of enchytraeid biology was the discovery of *Enchytraeus japonensis* as a new model organism for the study of the molecular mechanisms of tissue and organ regeneration in metazoa. In a series of studies she elucidated the basic patterns of regeneration including neural control and stage-specific gene expression. Her work has been taken up and is being continued by several other working groups, mainly in Japan. To date, 27 original research papers on the topic have made *Enchytraeus japonensis* one of the best-known annelids regarding development and regeneration.

Myohara-san had not always worked with *E. japonensis*. She decided to study enchytraeid regeneration after being introduced to these worms by Dr Yoshio Nakamura, who had discovered and described *E. japonensis*. She had told the authors that, when she heard about the fragmenting and regenerating capabilities of *E. japonensis*, she was immediately moved by a strong excitement and clarity. She decided to make that worm her study organism and, during her spare time, she discretely started to gather data on the worms that Dr Nakamura had kindly given her. She became more and more delighted by the research potential of *E. japonensis*, and later, with data at hand, she succeeded in receiving the support of her boss to change her research topic and to dedicate her full time to *E. japonensis*.

Myohara-san hosted Rut Collado and Rüdiger Schmelz during a three-week stay at her institute in 1999, where we worked on the taxonomy of *E. japonensis*. Myohara-san supervised Cintia Niva as a postdoctoral fellow. Myohara-san did not attend the symposia on enchytraeids, but was always interested in the symposia, maintained good contact with some of us and was helpful and supportive in every possible way.

In the following we list the publications of Maroko Myohara on *Enchytraeus japonensis*. A detailed obituary with a complete reference list will be published by others in the journal 'Development, Growth & Differentiation'.

Rüdiger M. Schmelz, Cintia Niva

List of publications of Maroko Myohara on *Enchytraeus japonensis*

- Tochinai, S., F. Kobari & M. Myohara (1996): Fragmentation and regeneration in *Enchytraeus japonensis*. – Zoological Science **13** (Suppl.): 76.
- Kobari, F., M. Myohara & S. Tochinai (1996): Histological analysis of regeneration in *Enchytraeus japonensis*, with special reference to the posterior regeneration. – Zoological Science **13** (Suppl.): 80.
- Myohara, M., C. Yoshida-Noro, F. Kobari & S. Tochinai (1999): Fragmenting oligochaete *Enchytraeus japonensis*: a new material for regeneration study. – Development Growth & Differentiation **41**: 549–555.
- Schmelz, R. M., R. Collado & M. Myohara (2000): A taxonomical study of *Enchytraeus japonensis* (Enchytraeidae, Oligochaeta): Morphological and biochemical comparisons with *E. bigeminus*. – Zoological Science **17**: 505–516.
- Yoshida-Noro, C., M. Myohara, F. Kobari & F. Tochinai (2000): Nervous system dynamics during fragmentation and regeneration in *Enchytraeus japonensis* (Oligochaeta, Annelida). – Development Genes and Evolution **210**: 311–319.
- Inomata, K., F. Kobari, C. Yoshida-Noro, M. Myohara & S. Tochinai (2000): Possible neural control of asexually reproductive fragmentation in *Enchytraeus japonensis* (Oligochaeta, Enchytraeidae). – Invertebrate Reproduction and Development **37**: 35–42.

- Myohara, M. (2004): Differential tissue development during embryogenesis and regeneration in an annelid. – *Developmental Dynamics* **231**: 349–358.
- Myohara, M., C. C. Niva & J. M. Lee (2006): Molecular approach to annelid regeneration: cDNA subtraction cloning reveals various novel genes that are upregulated during the large-scale regeneration of the oligochaete, *Enchytraeus japonensis*. – *Developmental Dynamics* **235**: 2051–2070.
- Niva, C. C., J. M. Lee & M. Myohara (2008): Glutamine synthetase gene expression during the regeneration of the annelid *Enchytraeus japonensis*. – *Development genes and evolution* **218**(1): 39–46.
- Myohara, M. (2012): What Role Do Annelid Neoblasts Play? A Comparison of the Regeneration Patterns in a Neoblast-Bearing and a Neoblast-Lacking Enchytraeid Oligochaete. – *PLoS ONE* **7**(5): e37319 [doi:10.1371/journal.pone.0037319].