

# Saga of Herr Hilgendorf's worms...

(Oligochaeta, Megascolecidae)

Robert J. Blakemore

**Abstract.** Herr Dr. Franz Hilgendorf, who first introduced Darwin's evolutionary theory to Tokyo in 1873, collected '*Vermes*' for Dr. Wilhelm Michaelsen in Hamburg. The *Metaphire hilgendorfi* (Michaelsen, 1892)/*Amyntas tokioensis* (Beddard, 1892) parthenogenetic/clonal spp-complex has since snowballed into >60 names, and its resolution remains the hottest yet seemingly intractable problem in Oriental (and Cosmopolitan) earthworm systematics. Reproductive structures, morphometrics, colouration or intestinal caeca characterizations are largely defunct. Molecular 'solutions' are meaningless without DNA analysis of types under the strict ICZN Principle of Typification in chronological order under its Principle of Priority. A revised diagnosis now accepts *Metaphire* spp from morphs having non-superficial male pores. Both *Amyntas tokioensis* (syns. ?*M. levis*; ?*A. paiki* syns. nov.) as a new record from USA and *A. agrestis* (Goto & Hatai, 1899) (syn. ?*A. minjae* Hong in Hong, Lee & Kim, 2001 syn. nov.) from Japan/Korea are reviewed. *Metaphire soulensis* (Kobayashi, 1938) and ?*M. koellikeri* (Michaelsen, 1928) are restored separately but the dubious *A. defectus* (Gates, 1930) (syn. *A. jacita*) is newly added to the group. Work is urgently needed to separate *Metaphire* Sims & Easton, 1972 from *Amyntas* Kinberg, 1867 and to sort degraded morphs under their respective types. More than a generation ago, Gates (1972) said naming intermediates is "*ridiculous*". Despite this, names continue to be added by workers in Japan or Korea who mutually ignore earlier work in either country: Dozens of 'nationalistic' Japanese '*Pheretima*' synonyms have been added as have Korean taxa with manicate caeca e.g., *A. yongshilensis*, *A. alveolatus*, *A. geomunensis*, *A. eastoni*, *A. boletiformis*, *A. odaesanensis*, *A. righii*, *A. fasciiformis*, *A. sanchongensis*, *A. songnisanensis*, *A. ephippiatus* and *A. multimaculatus*. A degraded digestive 'tube' from Korea named as *Amyntas dageletensis* Hong & Kim, 2005, plus *A. sonjaesiki* Hong & James, 2009 (syns. novae of *A. tokioensis*), have the lowest priority within this 118-year-old saga. Critical conditions of the intestinal caeca are briefly considered, and the emerging 117-year-old synonymy saga of *Pheretima urceolata* (Horst, 1893) is flagged as a new taxonomic 'housekeeping' concern. For all these issues, molecular resolution via DNA analysis of types is advocated.

**Key words.** earthworm eco-taxonomy, cosmopolitan species, pheretimoids, parthenogenesis, Oriental misdiagnosed megadriles.

## Introduction

German zoologist Herr Dr. Franz Hilgendorf, who first introduced Charles Darwin's evolutionary theory to Tokyo in 1873 (YAJIMA 2007), collected '*Vermes*' he sent to his colleague in Hamburg, Dr. Wilhelm Michaelsen. Today, the *Metaphire hilgendorfi* (Michaelsen, 1892) / *Amyntas tokioensis* (Beddard, 1892) parthenogenetic / clonal species-complex (BLAKEMORE 2003) has snowballed into over 60 names, and its resolution yet remains the hottest, most pressing and seemingly intractable problem in Oriental (and Cosmopolitan) earthworm systematics.