

## THE TRANSDISCIPLINARY AND TRANSLINGUISTIC MANAGEMENT OF THE BIODIVERSITY: AN APPLICATION TO EARTHWORMS

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One of the major drawback in biology and ecology is the lack of true access to knowledge elements gathered by scientists. Classical publications, even registered by key words and accessible by Internet, are inefficient. Only 1 to 2% of the knowledge elements are accessible.

All the biological and ecological knowledge is related necessarily to taxa. The opportunity to describe taxa following international rules paves the way to use modern means allowing automatic translations and direct access to facts. Using three complementary means: Integrology, Informatics (hypermedia) and Internet every biological or ecological facts could be today accessible and at least the descriptions are understandable.

This paper deal with data proper to earthworm morphological features. It demonstrates our ability for every organisms (i) to make exhaustive descriptions, (ii) to standardise the terminology, (iii) to describe in an automatically translated manner (e.g. to describe in French and to read in Chinese pictographs) and (iv) to follow the international nomenclature rules with a flexible management of synonymies, homonymies, vernacular names,...

This is made easily by (i) the classical earthworm description using any available characteristics (i.e. at atomic, molecular, histological or individual scales), (ii) the relations of each Datum, initial and controlled (Dic, i.e. directly observed or measured) of this composition of each individual to space, time, protocol of analysis and the observer (who is registering and for who?), (iii) following these five 'referenders' of relations (composition, time, observer, protocol, space) every initial datum (Dic) from ecology, environmental studies, agronomy,... could be related to any individual, (iv) the use of a normalized explained terminology allows the codification of each term-meaning from any language and conversely this code gives access to each tabulated language, (v) hypermedia systems allow to link all data together to access to each term-meaning and to get any explanation, figure or video connecting to them.

The result is a biodiversity knowledge management with a conservative system of holotypes and original printed descriptions and a dynamic access to all knowledge (incl. additions) and interpretations of facts. About 300 taxa of Lumbricoidea are now available in this way. Among them 108 are new to science, doubling the Spanish fauna. Reasons for these discoveries are briefly given.