

Reference number of GTI application: *CBD/GTI-02/2013*
Date of reception:

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administration)*

REPORT

Taxonomic training & access to collections in Belgium

NOTICE

The present questionnaire must arrive with the Belgian National Focal Point to the Global Taxonomy Initiative within one month of the official closure of the capacity building visits. Electronic submission on the general e-mail address of the Belgian GTI NFP (cbd-gti@naturalsciences.be) is strongly encouraged. If electronic submission should however be impossible, paper copies may be sent by fax or ordinary mail. The Belgian GTI NFP will acknowledge receipt of all project reports.

If grantees have **relevant pictures** to illustrate their capacity building visit, these may be annexed to the report. The Belgian National Focal Point might use some of these pictures in one of its reporting activities, but only after the copyright holder has given his permission.

Contact and further information

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PART I – CANDIDATE INFORMATION

Family name:	BERRIO-CÁRDENAS
First name(s):	Claudia Isabel
Nationality:	Colombian
Date of arrival and departure in / from Belgium	28/09/2013-19/10/2013
Number of training days:	15
Type of visit	<input checked="" type="checkbox"/> Mainly training in taxonomy and collection management <input checked="" type="checkbox"/> Mainly access to collections <input checked="" type="checkbox"/> Other, <i>specify</i> Access to specialized literature. Training in taxonomic keys building computer program Xper2.
Location of training:	<input checked="" type="checkbox"/> Royal Belgian Institute of Natural Sciences, Brussels <input type="checkbox"/> Royal Museum for Central Africa, Tervuren <input type="checkbox"/> National Botanic Garden of Belgium, Meise <input type="checkbox"/> Other, <i>specify</i>

PART II - GENERAL INFORMATION

Describe concisely how you have learned about the Belgian GTI Project	In 2010 year, I learned about the Belgian GTI, when I was looking for grants or funding for taxonomists. I found in the web the news about the efforts and plans of the Convention on Biological Diversity CBD, and the network of partners (CHM, Clearing House Mechanism), which includes the Belgian GTI Project.
Describe concisely how you have learned about this specific call for proposals	By the end of the Year 2012, I received an email from RBINS, inviting me to send a research proposal in order to apply for a second training grant.
If this was your first study visit financed via the Belgian GTI National Focal Point, describe concisely why you needed capacity building in taxonomy and collection management	
If this was not your first study visit financed via the Belgian GTI National Focal Point, describe concisely why you needed further support	Needed to further deepen my training in taxonomy and management of oligochaeta collection.

Describe concisely what support (e.g. training, access to collections,...) you have received and how this training can be related to taxonomy and /or collection management	I received: 1) A deeper specialized training in fixation and preservation methods of specimens in different media. 2) The preparation of temporal and permanent slides and some methodologies to perform better observations of internal anatomy of freshwater Oligochaeta. 3) I had access to collections of groundwater Oligochaeta and specialized literature about taxonomy and bio-indication. 4) I learnt how to build a taxonomy base data by using the Xper2 computer program.
Describe concisely how your gained capacity will help you in your professional duties	The gained capacity with this second training, will allow me greatly improve the efficiency and the accuracy of the sampling, the processing and the preservation of specimens. The use of software tools for taxonomy will allow a more efficient management of the information related to the Oligochaeta taxa and their biology, thus making it easier for me to describe taxa.
Describe concisely how your gained capacity will be implemented in your institution	Universidad Nacional de Colombia in Medellín, plans to create a research team for the study of the neotropical freshwater Oligochaeta. Such team would be focused on the taxonomy, ecology and utility of these worms as indicators in ecotoxicity, both of superficial and subterranean freshwater. As a student of the Doctorate in Hydraulic Resources and as a researcher in this field, I will have the responsibility of training this team in the taxonomy of Oligochaeta.
Describe concisely what other support you eventually would need	Confirmation of taxonomic identification of Colombian Oligochaeta specimens by an expert based at the Royal Belgian Institute of Natural Sciences, Brussels.
Describe concisely what infrastructural and human resources you and your institution eventually still need to become fully functional	1) Groundwater Oligochaeta sampling equipment. 2) Infrastructural and human resources for the establishment of a collection and for its curatorial management. 3) A Differential Interference Contrast Nomarski Microscope.
Describe concisely how you think the Belgian GTI National Focal Point could further construct capacity for you and your institution	My doctoral research will study the use of the neotropical oligochaeta in the ecotoxicity of superficial and subterranean fresh water habitats. In light of the taxonomic component of this research and given the expertise of Dr. Martin on the subject, the Universidad Nacional would greatly appreciate his collaboration in my doctoral research, assuming that the project would be of interest to him. We would therefore enthusiastically welcome Dr Martin's visit to our University.

PART III – TAXON SPECIFIC INFORMATION

What is your taxon of interest	Phylum Annelida, Class Oligochaeta
Describe concisely the different methodologies for collecting your taxon.	<p>It depends on the objective of the survey, and the sampled habitat.</p> <p>1) Qualitative sampling: by hand, in littoral areas and shallow waters, can be performed using smalls nets, small aquarium nets, tea strainers, hand pumps, hand shovels, forceps, rinsing aquatic plants and debris in a large bucket.</p> <p>2)Quantitative sampling: include the use of different kinds of grabs, core samplers, Surber stream sampler, D-nets.</p> <p>3)Groundwater habitats: it is mandatory a Bou-Rouch Pump. Methods as "air-lift" and pneumatic piston pump are also useful. If it is necessary to transport back unprocessed samples to the lab, they must be packaged in sealed bags with water, debris and macrophytes of the habitat, putting them in containers with dry ice and taking care that the samples won't be smashed.</p>
Describe concisely how to best preserve collected specimens of your taxon for taxonomic purposes	<p>Specimenes intended for taxonomic purposes, should be allowed to relax prior to fixation in a solution of buffered formalin (7-10%). This must be done immediately after collection. For later fixation (at least 48 hours), specimens can be rinsed with water, drained and transferred to ethanol (70-80%) for long term storage in a cold environment. For permanent slides, specimens are stained in Paracarmine solution (Meyer), dehydrated in ethanol series: acidic ethanol 70%, ethanol 70%, ethanol 96%, ethanol absolute; cleared in xylol/toluol, then xylol; perform dissection if needed; mount in Canada Balsam; cover slip on the top; dry in oven 37 Celsius degrees, for some days. Keep in special boxes, slides must to be lettered: Date Collected (D/M/Y), Slide Number, Station ID., Country, Municipality, Habitat, Taxonomic group, Collector's name.</p> <p>Whole specimens or their fragments, intended for DNA extraction in order to perform bar coding methodology, must to be transferred after fixation in formalin to vials containing absolute ethanol (95-100%), for long term storage and must be kept at -20 Celsius degrees.</p>
Describe concisely how you intend to make your taxonomic data available to other colleagues	<p>1) I have been working for some months now on a paper about the state of knowledge of freshwater Oligochaeta of Colombia, South America, which will include an updated list of species, drawings of specimens, and which will be submitted to a journal in 2014. Dr. Patrick Martin reviewed the draft and made several valuable suggestions while I was visiting RBINS.</p> <p>2) As a student of the Doctorate in Hydraulic Resources, I will be responsible for training the members of the university's special research team in the taxonomy of Oligochaeta. I will also be responsible for training a undergraduate student in the taxonomy of freshwater Oligochaeta.</p>
Describe how your taxonomic work helps improving the status of biodiversity in your country	<p>The study of the taxonomy and of the ecological importance of Oligochaeta will be critical in the protection of superficial and subterranean water resources against toxicity. (The subject of my doctoral research dissertation).</p> <p>My research has yielded a number of three new species for Colombia; fourteen new species for the Province of Antioquia (Colombia) and the finding (not yet published) of a new habitat for <i>Pristina jenkiniae</i> (Oligochaeta) not registered before, as far as we know, in the literature. Because of this, at the present times some Colombian colleagues are interested in freshwater Oligochaeta and their taxonomy and ecology.</p>

<p>Describe how your project could help reduce poverty in your country</p>	<p>The Colombian government began by June 30, 2013, the integration process to the OECD (Organization of Economic Cooperation for the Development), which has a philosophy of good environmental practices and sustainable development).</p> <p>Colombia has huge water and soil pollution problems derived from mining and other anthropic stressors. It is mandatory and urgent for the country to fulfil the OECD's regulations. Freshwater Oligochaeta are included as very important benthic invertebrates in the guidelines of OECD (as indicators in bioaccumulation and sediment toxicity tests). In the near future, Colombia will need to make use of its underground water resources due to depletion and contamination of the superficial water resources. It will be necessary to determine with accuracy the species of fresh water Oligochaeta present in ground water in order to evaluate their condition, regulate their use and develop protocols for their treatment. However, in Colombia we don't know with accuracy the species, biogeography and ecology of freshwater Oligochaeta. There are currently no experts in Colombia: I am the only researcher with some knowledge on the taxa.</p> <p>The project "Taxonomy of Freshwater Oligochaeta (Annelida) in Phytelmata of North Andean and Caribbean Regions of Colombia, South America", yielded as a part of the preliminary results, the taxon <i>Dero (Aulophorus) superterrenus</i> and <i>Pristina jenkinsae</i> (this species indicates interchange between superficial and groundwater habitats). I have been strongly encouraged by Dr. Martin to do more sampling of freshwater Oligochaeta in phytotelmata. Hopefully, the findings and conclusions from this project will contribute to the formulation of hypotheses related to ecology, biogeography and the probable routes and mechanisms used by Oligochaeta to migrate from superficial waters to ground waters.</p> <p>The wise and sustainable management of aquatic resources is a key to reduce the poverty, and increase the progress and well-being of the people.</p>
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