

## The Rufford Foundation

### Final Report

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Congratulations on the completion of your project that was supported by The Rufford Foundation.

We ask all grant recipients to complete a Final Report Form that helps us to gauge the success of our grant giving. The Final Report must be sent in **word format** and not PDF format or any other format. We understand that projects often do not follow the predicted course but knowledge of your experiences is valuable to us and others who may be undertaking similar work. Please be as honest as you can in answering the questions – remember that negative experiences are just as valuable as positive ones if they help others to learn from them.

Please complete the form in English and be as clear and concise as you can. Please note that the information may be edited for clarity. We will ask for further information if required. If you have any other materials produced by the project, particularly a few relevant photographs, please send these to us separately.

Please submit your final report to [jane@rufford.org](mailto:jane@rufford.org).

Thank you for your help.

**Josh Cole, Grants Director**

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Grant Recipient Details	
Your name	Alexander Varga
Project title	Diversity and Conservation of Ichneumon-wasps Communities as Indicators of the Condition of the Natural Carpathian Forest Ecosystems, Ukraine
RSG reference	15542-1
Reporting period	June 2014 – May 2015
Amount of grant	£5600
Your email address	<a href="mailto:Sancho.Varga@gmail.com">Sancho.Varga@gmail.com</a>
Date of this report	15 <sup>th</sup> September 2015

**1. Please indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.**

Objective	Not achieved	Partially achieved	Fully achieved	Comments
Scientific investigation of ichneumon wasp fauna			yes	An investigation of ichneumon wasp fauna was planned using both fieldwork and laboratory data processing. Samples in the field were collected permanently during warm seasons using malaise traps. In the 2014 season eight traps were placed in different high-altitude localities (300–1700 m a.s.l.) in the Carpathian Biosphere Reserve and Gorgany Nature Reserve. Additionally, two traps were used as spares in case any of the previous eight were destroyed. In the 2015 season six traps (some traps placed in subalpine zone were destroyed by strong winds) were placed in different localities (mainly covered with primeval beech forests) in the Carpathian Biosphere Reserve and in the pre-Carpathian mixed forest (a site with unusually high species richness). At the same time numerous short (2-3 days) field trips were organised for collecting data using free malaise traps, yellow pan traps, and entomological nets. During the two seasons more than two hundred samples (one sample contains thousands of ichneumon-wasps) were collected in the Ukrainian Carpathians. During September 2014 – April 2015 all samples collected in 2014 were processed: ichneumon wasps and other hymenopterans were sorted out, ichneumonids were sorted to subfamily/genus level. Most of specimens from some subfamilies (Acaenitinae, Ichneumoninae, Pimplinae, Poemeniinae, Rhyssinae, Xoridinae, etc) were identified to species level and results were prepared. All samples collected in 2015 will be processed during 2015-2016.
Training for staff of nature protection areas, foresters,			Yes	In parallel with the fieldwork in every locality, I try to organise training for staff and foresters working in this territory.

students				Field training was also organised for students from Vasyl Stefanyk Precarpathian National University in June and July every year in Gorgany Nature Reserve. In March 2015, a meeting with staff of the Carpathian Biosphere Reserve was also organised. After a presentation about my project and the wasps we then discussed possible ways of future cooperation and including ichneumon wasps under protection in this area.
Preparation of publicity and advisory materials		Yes		<p>Two types of publicity materials were planned to be prepared during the project.</p> <p>Research papers. Several revisions on some ichneumonid groups are almost ready now and one paper was published in spring 2015. Generally 25-30 % of collected species are new records for the Ukrainian fauna, showing that the Carpathians are a really unique and still understudied place and these samples were just a beginning of the process of understanding ichneumon wasp diversity in the region. Unfortunately, all samples collected during the 2015 season will be sorted in spring next year at the earliest, so it's too early now to say something about the final list of vulnerable species found in the Carpathians. So several research papers about the diversity of the region and proposals for including species in the Red Databook of Ukraine (next edition will be no earlier than 2018-2019) are still in preparation.</p> <p>Booklets (the number of copies is planned to be at least 50) will be prepared during winter-spring and will be distributed (together with some posters) among staff of the main nature protection areas, foresters, students and all interested stakeholders in the next field season (certainly, I will continue my work in future). Unfortunately, most of my time now is focused on the "scientific" part of this project as it is most important to process all collected data and try to understand ichneumonid</p>

				diversity in Carpathian forest ecosystems.
Monitoring network development		Yes		On meeting with the staff of the Carpathian Biosphere Reserve it was decided to include the most vulnerable species in the invertebrate monitoring programme. As a large part of the samples (especially collected in 2015) are still being processed, the final list of species, needing to be monitored, will be proposed and finalised at the next meeting (I have in my plans to organise another one next spring-summer).

**2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).**

The destruction of the Ukrainian economy due to Russian aggression in Eastern Ukraine causing an extreme increase in cost prices (e.g. the cost of food increased 2.5-3 times, compared to summer 2014).

The very cold and rainy summer of 2014, which caused some of the traps to be destroyed by strong wind and several field expeditions were therefore unsuccessful.

The terrible condition of Ukrainian roads in the Carpathians, which meant that our car had to be repaired several times (and of course we spent extra money).

**3. Briefly describe the three most important outcomes of your project.**

**1) Complex investigation ichneumon-wasps fauna in the Ukrainian Carpathians was made.** This project gave a unique opportunity to organise a large-scale collecting of ichneumon wasps samples in the Carpathian Mountains. Because of this now we are much more closer to a real understanding of the diversity and species richness on this insect group in this unstudied region.

**2) A real increasing of public awareness concerning the importance of parasitic wasps for natural ecosystems was noted.** Ichneumon wasp biology and the necessity of their protection caused high interest among people who participated in the training (staff and foresters of protected areas, students and stakeholders). Thanks to this work good and effective contacts were made with a range of specialists, who I hope in the nearest future will start to make phonological ichneumon wasp observations.

**3) Inclusion of ichneumon-wasp monitoring into the integrated monitoring program in the established network of the Carpathian Biosphere Reserve).** The main step, cooperation with the administration of the Reserve, was made and now the next step is to finish a list of species that need to be included in the monitoring of invertebrates. Between them, at least three species, *Rhyssa kriechebaumeri* Ozols, 1973, *Megarhyssa rixator* (Schellenberg, 1802), and *Coleocentrus heteropus* Thomson, 1894 are potential candidates for inclusion in the Red Databook of Ukraine.

**4. Briefly describe the involvement of local communities and how they have benefitted from the project (if relevant).**

The administration of the nature protected area (The Carpathian Biosphere Reserve) is engaged and they help me to organise research (to place some malaise traps and give access to all protected territories) and training, and participate in the work.

**5. Are there any plans to continue this work?**

Of course, I have in my plans to continue this work. This project was just the beginning of a long-term inventory of ichneumon wasps of the region to protect not only some species, but also their habitats, a unique Carpathian natural forests. I will continue to collect new data in all nature protection areas and not only, organise new training for foresters and students. I hope some of the students will be interested enough to start to study parasitic wasps and will help me to provide monitoring for these insects. I have in my plans to find some ways to organise a small local entomological reserve in Mochary forest (Bogorodchany district) as this place has an unusually high species richness (Varga, in prep.) and no doubt should be protected from 'clear-cutting'. But for this I need to find money and lots of patience.

**6. How do you plan to share the results of your work with others?**

The experience I obtained of carrying out training will, I hope, help me to more effectively provide new training in the other nature protection areas of Western Ukraine.

**7. Timescale: Over what period was The Rufford Foundation grant used? How does this compare to the anticipated or actual length of the project?**

The main costs were planned to be from June 2014 to May 2015. Unfortunately, I received the grant money at the end of July. In addition, due to the unexpected very cold and rainy season in 2014 we collected fewer samples than was expected. So it was decided to prolong the project and try to collect samples during the 2015 season also. Therefore this report has been made later than planned.

**8. Budget: Please provide a breakdown of budgeted versus actual expenditure and the reasons for any differences. All figures should be in £ sterling, indicating the local exchange rate used.**

Item	Budgeted Amount	Actual Amount	Difference	Comments
Field (travel) expenses	2900	3400	+500	As we decided to spend money for an additional field season the budget was not enough. To cover this we decided to relocate money planned for stationary costs. All contingencies were used to repair our car many times.
Equipment	2000	2000		
Stationary	500	200	-300	This under-spend was relocated to field expenses and partly towards

				repairing a car.
<b>Contingency</b>	200	0	-200	This under-spend was used to repair a car.
<b>Total</b>	5600	5600	0	

**9. Looking ahead, what do you feel are the important next steps?**

First of all, to finish processing all of the collected samples. It will give us a possibility of understanding approximately how many ichneumon wasp species can be found in the Carpathians and how many of them are really in need of protection. The next step will be cooperation with the other nature protection areas in Western Ukraine, especially those in the Carpathians and the organisation of training, seminars and of course collecting new data about the distribution of ichneumon wasps in the Carpathians.

**10. Did you use The Rufford Foundation logo in any materials produced in relation to this project? Did the RSGF receive any publicity during the course of your work?**

The RSGF support was acknowledged in a research paper published this spring. It will be also acknowledged in the further papers, which are now in preparation. The RSGF logo will be used in booklets and posters after the project realization.

**11. Any other comments?**

Thank you very much for support!