



An attempt to update a list of Lepidoptera of Georgia

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Introduction:

- ❑ The density of Lepidoptera and species presence around the world has declined markedly for many reasons;
- ❑ Populační hustota a přítomnost druhů motýlů po celém světě výrazně poklesla z mnoha důvodů
- ❑ Hotspot of rich biodiversity in Georgia so far without significant changes
- ❑ Centrum vysoké biodiverzity v Gruzii zatím zůstává bez výrazných změn
- ❑ Biogeography situation: included Siberian elements, middle Asia elements, partly European species
- ❑ Biogeografická situace: zahrnuje sibiřské prvky, prvky střední Asie, částečně evropské druhy
- ❑ Many species from Georgia are relics, endemic and sub endemic.
- ❑ Mnohé druhy z Gruzie jsou reliktů, endemické a subendemické.

Introduction (what is know):

- ❑ According to the available sources, slightly more than 200 diurnal butterfly species occur in Georgia.
- ❑ Gruzie má okolo 200 druhů denních motýlů
- ❑ For moths we are without complete check list, only partly results (for example Didmanidze et Yakovlev 2007, Didmanidze et al. 2013, Zolotuhin 1994, Zolotuhin et al. 2017)
- However, complete list of Georgia's Lepidoptera does not exist (!!!)**
- ❑ Noční motýli jsou zpracováni pouze částečně, seznam píďalek, můr a dalších čeledí neexistuje
- ❑ Therefore, regular targeted monitoring might reveal new species for Georgia (origin and non origin)
- ❑ Cílený průzkum by mohl pro Gruzii odhalit i další nové druhy, včetně nepůvodních

Objectives:

The main objectives are:

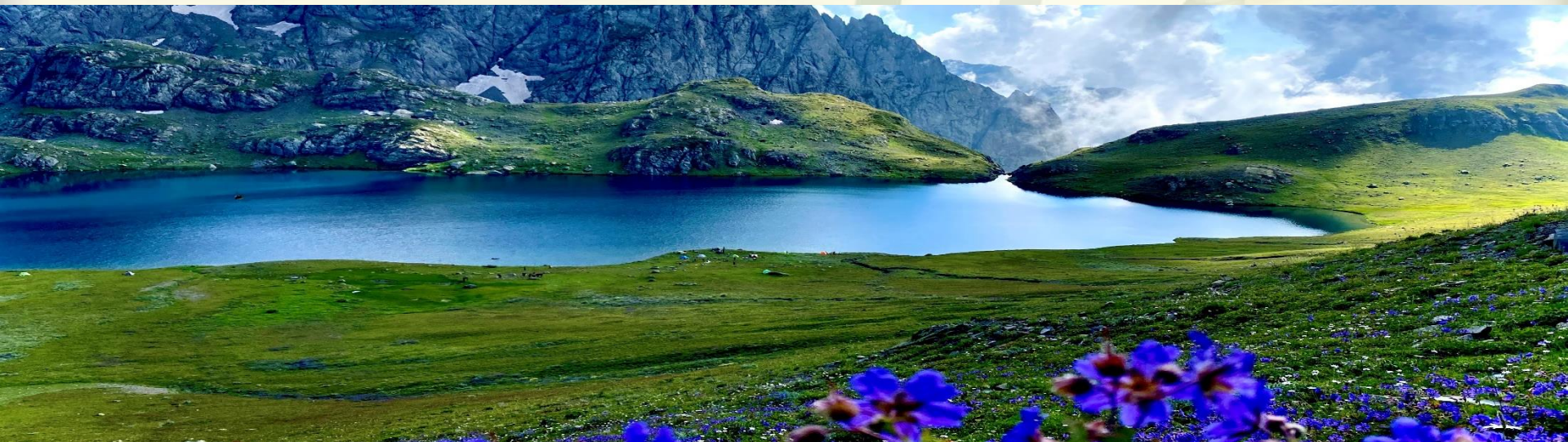
- ❑ To analyze the area of distribution of Georgian Lepidoptera with regard to the different occurrence in north and south of the Caucasus mountain ridge;
- ❑ Compile and during field work prepare list of species inhabiting each area;
- ❑ **Hlavní cíle jsou: Analyzovat areál rozšíření gruzínských Lepidopter s ohledem na rozdílný výskyt na severu a jihu horského hřebene Kavkazu; Sestavit a během terénních prací připravit seznam druhů obývajících každou oblast;**

What we do:

- ❑ Revision of Lepidoptera species for Georgia (present distribution, possibility of new species for Georgia, new species for science).

Co chceme:

- ❑ Revidovat druhy motýlů pro Gruzii (současné rozšíření, možnost nálezu nových druhů pro Gruzii, nové druhy pro vědu).



Methods:

1. The collection of the information are focused on some main activities closely related to translocation as stated below:

- Literature
- Light traps located at different altitudes for key diversity study (model locality in Svaneti region), partially all regions
- A detailed analysis will be carried out
- The material will be classified and defined with cooperation of specialists
- Sběr informací je zaměřen na některé hlavní činnosti: -
excerpce literatury
- Světelné pasti umístěné v různých nadmořských výškách (modelová lokalita v regionu Svaneti), částečně všechny regiony
- Bude provedena podrobná analýza
- Materiál bude zpracován ve spolupráci s odborníky



Outputs

2. Plan of results:

- Preliminary check list of all Georgian Lepidoptera fauna
- Faunistic notes about fauna of Georgian regions
- Study about ecology, distribution and morphology changings of species in mountains

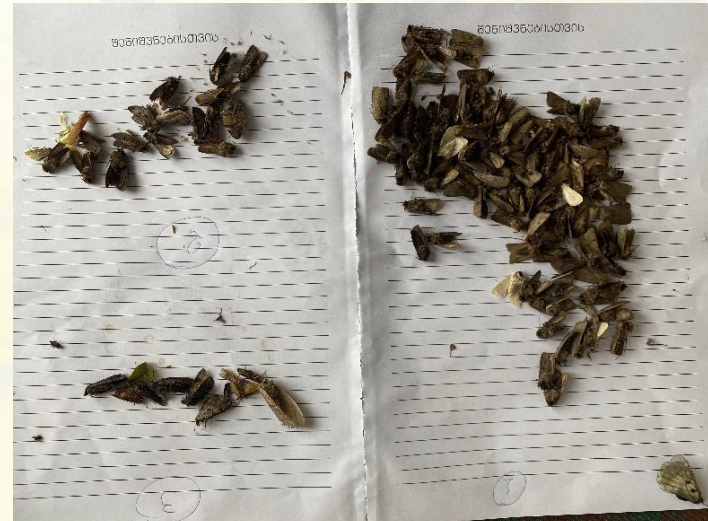
2. Plán výsledků:

- První (předběžný) seznam gruzínských Lepidopter
- Faunistické poznámky o fauně gruzínských oblastí
- Studium ekologie, rozšíření a morfologických změn druhů v horách

3. **Problems:** Covid epidemy (is not possible to travel), war situation (problems with some regions which are occupied by Russian: Abkhazia and Osetia)

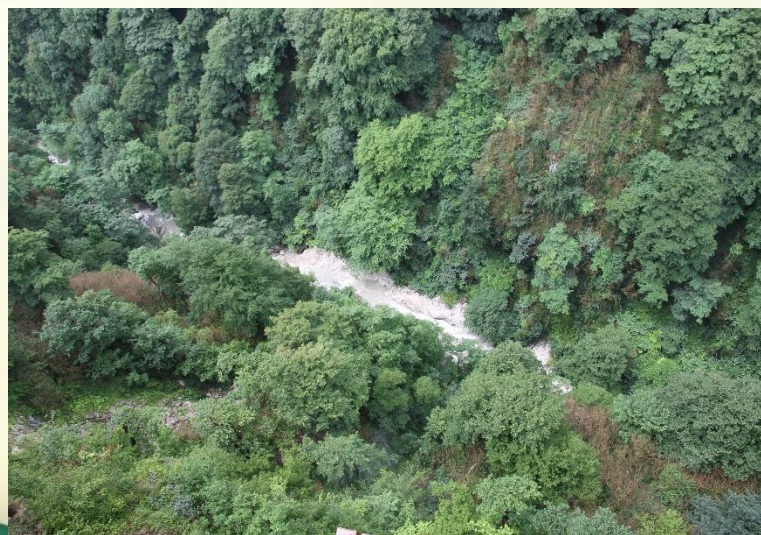
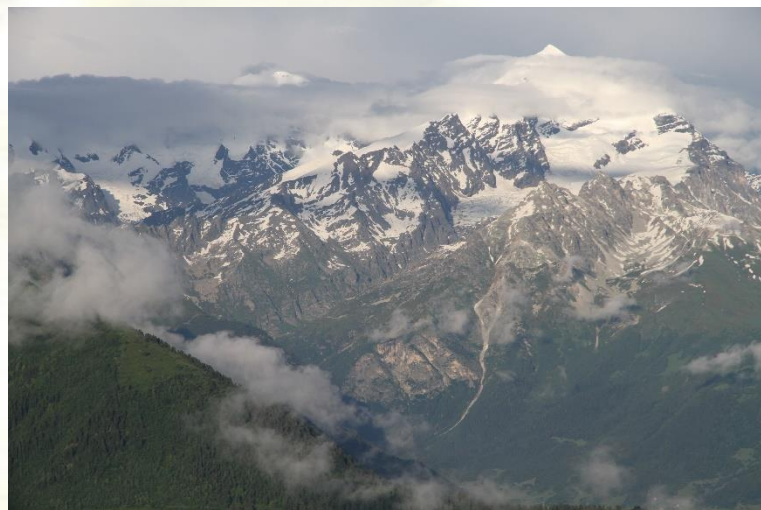
3. **Problémy:** epidemie covid (nelze cestovat), válka (okupace některých regionů Gruzie rusy)

Some photos during field work in Georgia



Students Standard work

Some photos during field work in Georgia



Some photos during field work in Georgia



First results:

We will conduct Lepidoptera research for checklist in all regions of Georgia

Chceme zkoumat všechny regiony Gruzie



Model mountain zonality will be study in Svaneti and Imereti

Abkhazia and South Ossetia are occupied by Russia



Format of the checklist

- We prepare check-list not for whole country only, but for Georgian regions too. **Připravujeme seznam nejen pro zemi jako celek, ale i pro jednotlivé regiony.**
- This list will grow out of independent efforts by the authors to compile current lists of Lepidoptera for some places (support for the publication of local faunistics). **Seznam poroste z nezávislé snahy autorů sestavit aktuální seznamy Lepidoptera pro některá místa (podpora publikace místní faunistiky).**
- We have endeavor to include information from all publications up to present day. We start compiled museum materials after (problem: Russian museums in war time). **Snažíme se zahrnout informace ze všech publikací až do současnosti. Muzejní materiály budou kompilovány poté (problém: ruská muzea v době války)**
- This list will be published like preliminary. **Tento seznam bude zveřejněn jako předběžný.**
- We suppose many citations and complementations of it and re-edition after 5 years. **Předpokládáme mnoho citací a doplnění a reedici po 5 letech.**
- Our pattern: Czech and Moravian check-lists. **Náš vzor: české a moravské seznamy**

The first results of our research (preliminary check list of Georgian Lepidoptera)

	A	B	C	D	E	F
1	Number	Family	Subfamily	Species	Subspecies	Author of description
32	31	Hesperiidae		<i>Erynnis marloys</i>		(Bousduval, [1834])
33	32	Hesperiidae		<i>Muschampia poggie (may be)</i>		(Leserer, 1858)
34	33	Hesperiidae		<i>Muschampia cribrellum</i>		(Eversmann, 1841)
35	34	Hesperiidae		<i>Muschampia tessellum</i>		(Hübner, [1803])
36	35	Hesperiidae		<i>Pyrgus melotis</i>		(Duponchel, [1834])
37	36	Hesperiidae		<i>Pyrgus carthami (mey be)</i>		(Hübner, [1813])
38	37	Hesperiidae		<i>Ochlodes sylvanus</i>		(Esper, [1779])
39	38	Hesperiidae		<i>Carterocephalus palaemon</i>		(Pallas, 1771)
40	39	Hesperiidae		<i>Heteropterus morpeus</i>		(Pallas, 1771)
41	40	Lycaenidae		<i>Thecla betulae</i>		(Linnaeus, 1758)
42	41	Lycaenidae		<i>Thecla quercus</i>		(Linnaeus, 1758)
43	42	Lycaenidae		<i>Fixsenia w-album</i>		(Knoch, 1782)
44	43	Lycaenidae		<i>Fixsenia spini</i>		(Fabricius, 1787)
45	44	Lycaenidae		<i>Fixsenia ilicis</i>		(Esper, [1779])
46	45	Lycaenidae		<i>Fixsenia acaciae</i>		(Fabricius, 1787)
47	46	Lycaenidae		<i>Fixsenia abdominalis</i>		(Gerhard, 1882)

Most probably it will be published during one year

	F	G	H	I	J	K	L	M	
1	Author of description	Georgia (all territory)	Abkhazia	Adjara	Guria	Imereti	KaKheti	Kvemo Kartli	Mts
32	(Bousduval, [1834])	Tsikolovets & Nekrutenko, 2012							
33	(Leserer, 1858)	Tsikolovets & Nekrutenko, 2012					TN 2012,		
34	(Eversmann, 1841)	Tsikolovets & Nekrutenko, 2012					TN 2012,		
35	(Hübner, [1803])	Tsikolovets & Nekrutenko, 2012		TN 2012,					
36	(Duponchel, [1834])	Tsikolovets & Nekrutenko, 2012	TN 2012,	TN 2012,	TN 2012,	TN 2012,	TN 2012,	TN 2012,	
37	(Hübner, [1813])	Tsikolovets & Nekrutenko, 2012					TN 2012,		
38	(Esper, [1779])	Tsikolovets & Nekrutenko, 2012	TN 2012,	TN 2012,	TN 2012,		TN 2012,	TN 2012,	
39	(Pallas, 1771)	Tsikolovets & Nekrutenko, 2012							
40	(Pallas, 1771)	Tsikolovets & Nekrutenko, 2012							
41	(Linnaeus, 1758)	Korb & Bolshakov, 2016							
42	(Linnaeus, 1758)	Korb & Bolshakov, 2016	TN 2012,				TN 2012,	TN 2012,	
43	(Knoch, 1782)	Korb & Bolshakov, 2016							



The first results of our research

- We started collect materials for research in mountains in Georgia by light traps. **Začali jsme sbírat materiál v horách Gruzie do světelných lapačů.**
- We prepare publication of some other result from this field work. **Připravujeme zveřejnění dílčích výstupů.**
- We start to cooperate with entomologist in Georgia: prof. George Japoshvili; Giorgi Berechikidze. **Byl navázán kontakt s entomology v Gruzii.**



Invasion of *Cydalima perspectalis* in Georgia: the case study of Marvili region

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Abstract

The box tree moth (*Cydalima perspectalis*) is phytophagous insect causing serious damage of *Buxus* spp. plants. In Georgia, unique native stands of *Buxus colchica* are currently seriously endangered by this pest. Our contribution aims to inform about infestation of colchic forests in Marvili region. Five sampling plots were monitored within the first half of May, 2019 and all of them were infested by *C. perspectalis*. The damage rate of trees ranged between 12 and 92 per cent. The monitoring proved that the control measures established at the region since 2016 were ineffective and the prognosis for these unique habitats is therefore not positive. On the other hand, conservation program based on seed bank and subsequent reforestation launched by Georgian National Forestry Agency in order to save this unique tree for future generations seems to be promising.

Keywords: biological invasions, phytophagous insects, *Buxus colchica*, nature conservation

1. Introduction

An invasive species is an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health (Beck et al., 2006). The box tree moth *Cydalima perspectalis* (Walker, 1859), whose rapid spreading with the trade of ornamental plants (Keris et al., 2011) from its origin in China, Korea, and Japan (Morayama and Shinkaji, 1987), causes severe damages in different plants species from the genus *Buxus* L. in Eastern and Central European countries, and so, it has become common invasive species. In the mainland of Europe, the invasion started in the southern part of Germany (Krieger, 2008) and later (in 2007) in the Netherlands. Then, over a period of less

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Observations on the composition of butterfly fauna in regions of Svaneti and Imereti, Georgia

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Abstract

The results of butterfly monitoring during the first entomological expedition (26. 6. – 2. 7. 2019) to Svaneti and Imereti regions in western Georgia is reported. Totally 33 species of butterflies and skippers were recorded in the vicinity of Mestia, Tsvinvi, Bogreshi, Ushguli, Kataisi and Sataplia. Among others, European near threatened species such as *Parnassius apollo*, *Parnassius mnemonix* and *Polymommatus eros* were observed.

Keywords: Distribution, faunistic, Rhopalocera, Hesperioidea, monitoring, Caucasus

1. Introduction

According to annotated check list of Georgian butterfly fauna published in 2004 there are 228 species recorded for Georgia (Didmanidze 2004). The later notes on species composition in this Caucasian country are also available from Korb & Bolshakov (2016), Tshkolovets (2011) and Tshkolovets & Nekrusenko (2012). According to these sources, 211 species of Rhopalocera and Hesperioidea are reported to be present in Georgia. In addition, there are 254 species listed by Christopher Jonko on his web page (Jonko 2019) with the dynamic (regularly updatable) distribution data mainly provided by citizen sciences framework. Based on only these reported species counts, it is immediately clear that Georgian butterfly fauna is still not well understood and several other species are expected to occur in there (for instance species inhabiting surrounding countries). Therefore, the authors are convinced that regular targeted monitoring might reveal new species for Georgia. Moreover, description of new species could not be excluded. The total number of Georgian

175

Thanks for your attention
Děkujeme za vaši pozornost

Selected references:

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