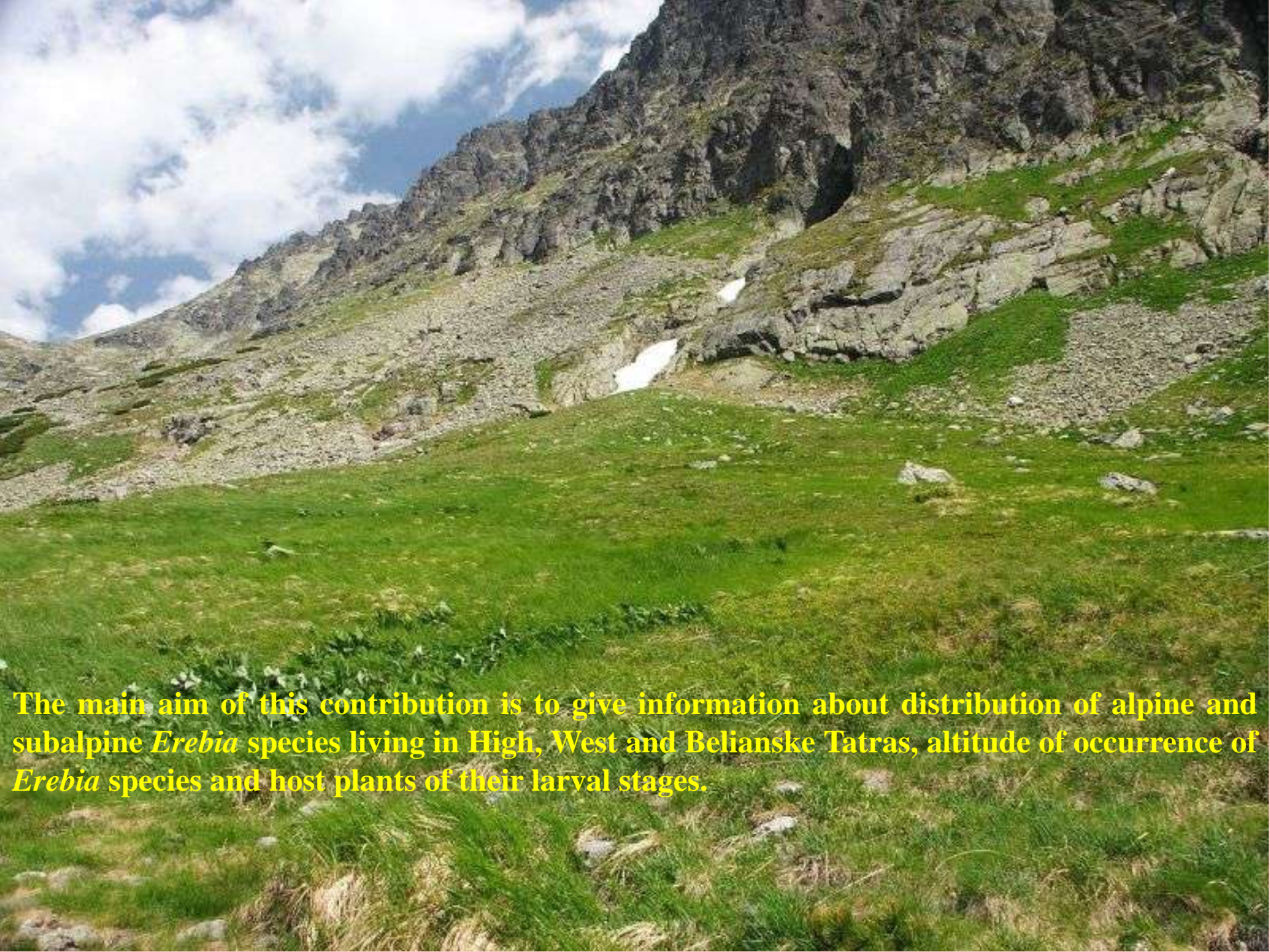




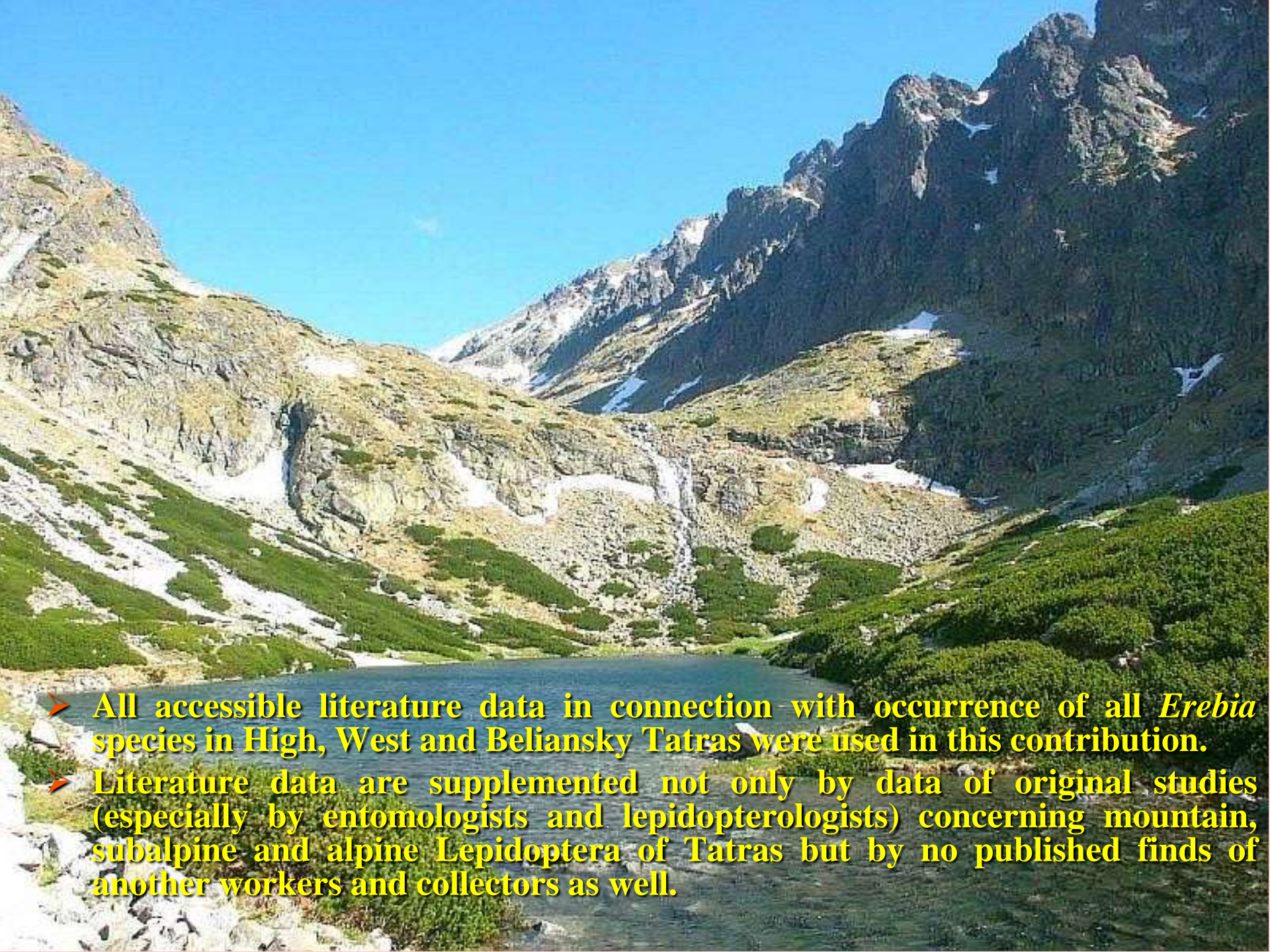
**A contribution to the knowledge of the *Erebia* fauna
in High, West and Belianske Tatras (Slovakia)**

Miroslav Kulfan, Ľubomír Panigaj, Henrik Kalivoda

**This work was supported by the Slovak Grant Agency for Science – Grant No. 1/3259/06:
Analysis of spatial and temporal distribution of selected lepidopteran species (Lepidoptera)
of alpine zone in Western Carpathians Mts.**



The main aim of this contribution is to give information about distribution of alpine and subalpine *Erebia* species living in High, West and Belianske Tatras, altitude of occurrence of *Erebia* species and host plants of their larval stages.



- All accessible literature data in connection with occurrence of all *Erebia* species in High, West and Beliansky Tatras were used in this contribution.
- Literature data are supplemented not only by data of original studies (especially by entomologists and lepidopterologists) concerning mountain, subalpine and alpine Lepidoptera of Tatras but by no published finds of another workers and collectors as well.

HRUBÝ, K. (1964): Prodomus Lepidopterorum Slovaciae. SAV, Bratislava, 962 pp.

- 32 authors (40 publications: period: 1875 - 1959)

Abafi-Eigner, L. (1895,1901,1907,1908)

Abafi-Eigner, L., Pável, J. a Uhryk, F. (1896)

Balogh, I. (1959)

Brčák, J. (1951,1952)

De Lesse, H. (1951)

Englisch, K. (1903)

Fruhstorfer, H. (1917a,b)

Fudakowski, J. (1951)

Galvagni, E. (1908)

Geyer, G. (1875)

Goltz, H. (1937)

Holik, O. (1939)

Hormuzaki, C. (1903)

Horváth, G. a Pável, J. (1876)

Hrubý, K. (1964)

Komárek, O. (1953)

Křížek, J. (1952)

Megyesi, E. (1935)

Michel, J. (1936)

Moucha, J. (1958,1959)

Niesielowski, W. (1926,1929)

Ružička, A. (1931)

Sheldon, W.G. (1909)

Schwarz, R. (1948)

Schwingenschusz, L. (1915)

Slabý, O. (1947,1955)

Szent-Ivány, J. (1938)

Vángel, J. (1885a,b)

Warren, B.C.S. (1936,1948)

Wehrli, E. (1919)


Wojtusiak, R.J. (1955)

Later publications (15 authors, 13 publications):

Bělín, V. (1999)
Janíková, E. (1998)
Jászay, J., Panigaj, L'. (1990)
Kalivoda, H. (2000, 2006)
Kulfan, M. (1983)
Kulfan, M. Kalivoda, H., Panigaj, L' (2004)
Mařík, M. (1982)
Moucha, J. (1961, 1974)
Moucha, J., Novák, I. (1960)
Panigaj, L'. , Kulfan, M. (2007)
Reiprich, A. (1989) - slide rock below Satan
Reiprich, A., Okáli, I. (1989)
Turčány, M., Liška, J., Skyva, J., Patočka J. (1999)

No published data:

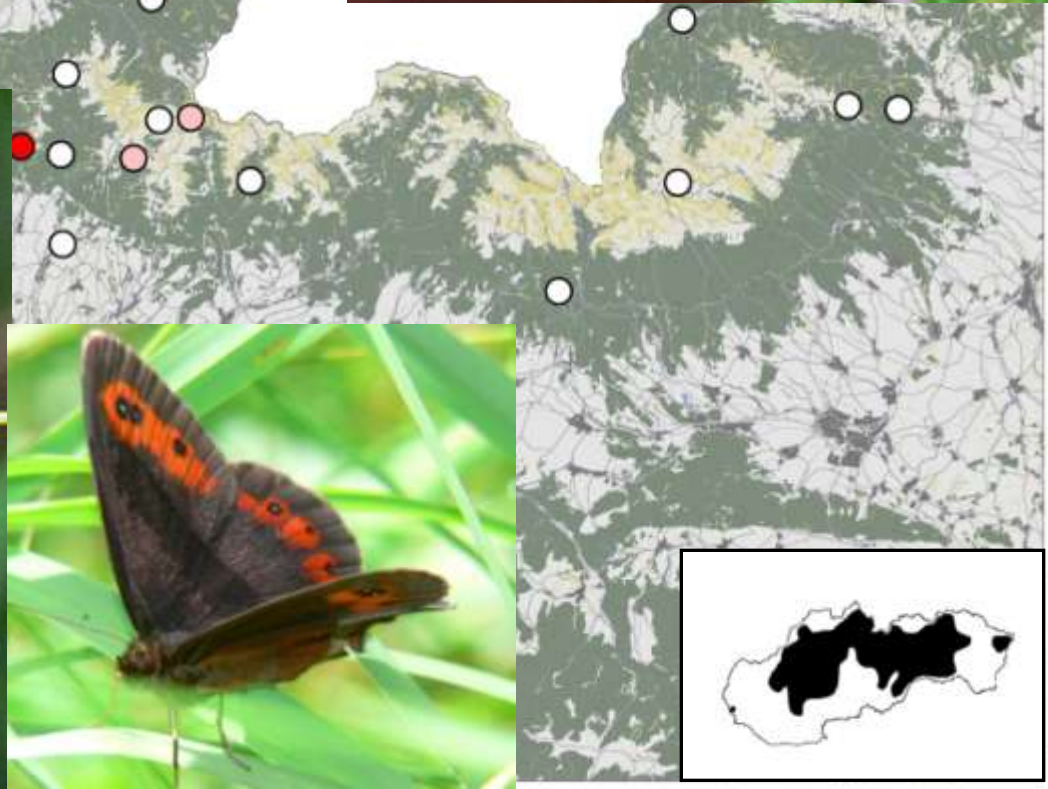
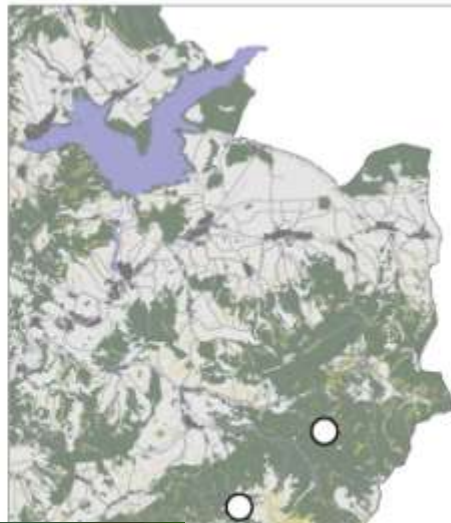
Čelechovský, A
Barančok, P.
Kalivoda, H.
Kopeček, F.
Kulfan, J.
Kulfan, M.
Kuras, T.
Panigaj, L'.
Sitek, J.
Skyva, J.
Stiova, L.
Vacula, D.
Vít'az, L.
Zelný, J.

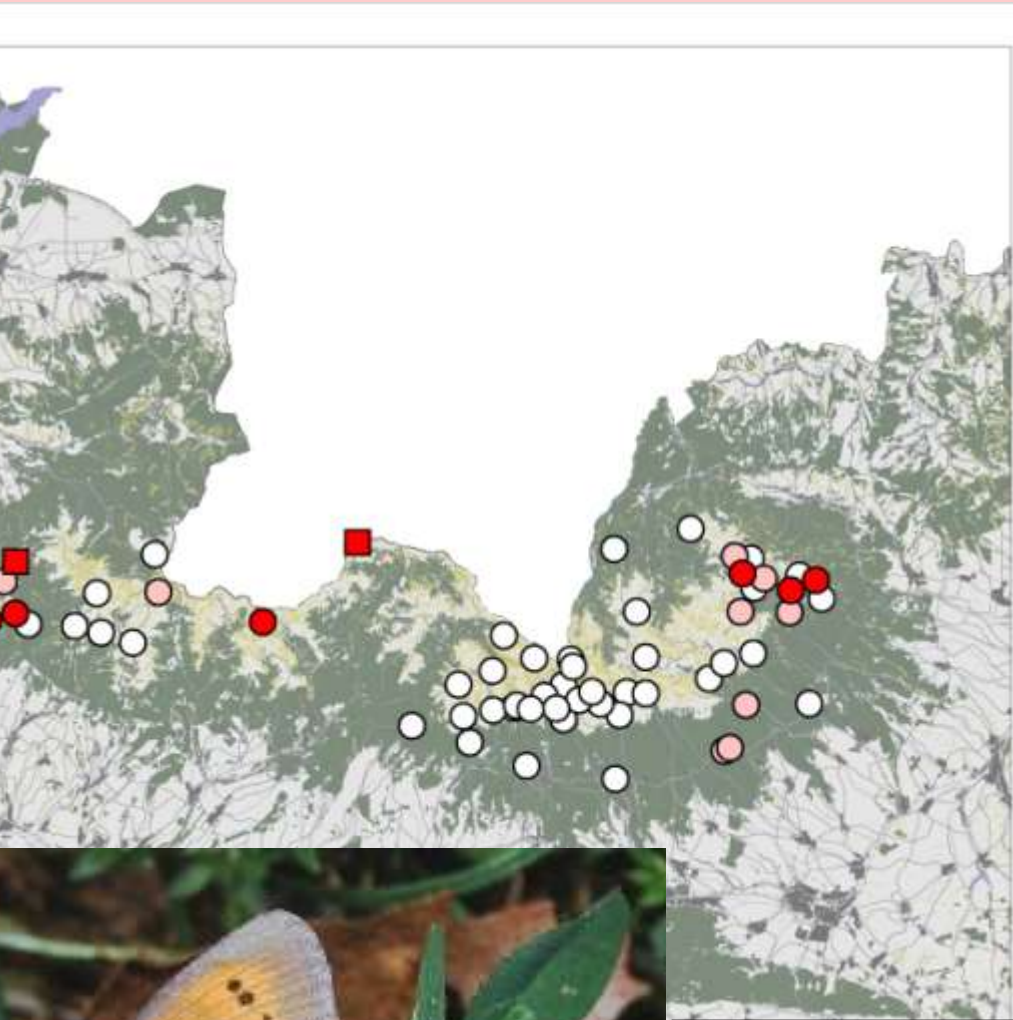
<i>Erebia ligea</i> (Linnaeus, 1758)	29	800-1500	<i>Milium effusum</i> , <i>Carex</i> , <i>Poa</i> <i>annua</i> , <i>Deschampsia</i> <i>caespitosa</i>		
<i>Erebia euryale</i> (Esper, 1805)	60	800-2000	<i>Carex</i> , <i>Festuca</i> , <i>Poa</i> , <i>Sesleria</i> , <i>Milium</i> , <i>Calamagrostis</i>		
<i>Erebia manto</i> (Denis & Schiffermüller, 1775)	34	1100-2000	<i>Festuca ovina</i> , <i>F. rubra</i>	PA	
<i>Erebia epiphron</i> (Knoch, 1783)	60	1200-2100	<i>Festuca ovina</i> , <i>Poa annua</i> , <i>Nardus stricta</i> , <i>Deschampsia</i> <i>caespitosa</i>	PA	
<i>Erebia pharte</i> (Hübner, 1804)	15	1300-1950	<i>Festuca ovina</i> , <i>Carex</i> , <i>Poa</i> , <i>Nardus stricta</i>	PA, §	
<i>Erebia aethiops</i> (Esper, 1777)	14	800-1600	<i>Poa annua</i> , <i>Carex</i> , <i>Brachypodium</i> , <i>Briza media</i> , <i>Dactylis</i> <i>glomerata</i> , <i>Sesleria varia</i> , <i>Agrostis</i> <i>canina</i> , <i>Molinia</i> <i>caerulea</i>		
<i>Erebia medusa</i> (Denis & Schiffermüller, 1775)	18	900-1900	<i>Festuca ovina</i> , <i>F. rubra</i> , <i>Poa</i> , <i>Milium effusum</i>		
<i>Erebia gorge</i> (Hübner, 1804)	50	1600-2400	<i>Festuca</i> , <i>Poa</i> , <i>Sesleria varia</i>	PA	
<i>Erebia pronoe</i> (Esper, 1780)	14	1300-1900	<i>Poa</i> , <i>Festuca</i> <i>ovina</i>	PA	
<i>Erebia pandrose</i> (Borkhausen, 1788)	67	1700-2400	<i>Festuca</i> , <i>Poa</i> , <i>Sesleria varia</i>	PA	
<i>Erebia tyndarus</i> (Esper, 1781)	2	1810	<i>Poa annua</i> , <i>Festuca ovina</i>		
<i>Erebia oeme</i> (Hübner, 1804)	4	?	<i>Luzula</i> , <i>Festuca</i> , <i>Holcus</i> , <i>Poa</i>		

Erebia aethiops

(ESPER, 1777)

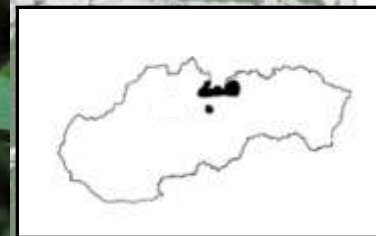
- < 1961
- ◐ 1961 – 1984
- 1985 – 1994





● 1985 – 1994

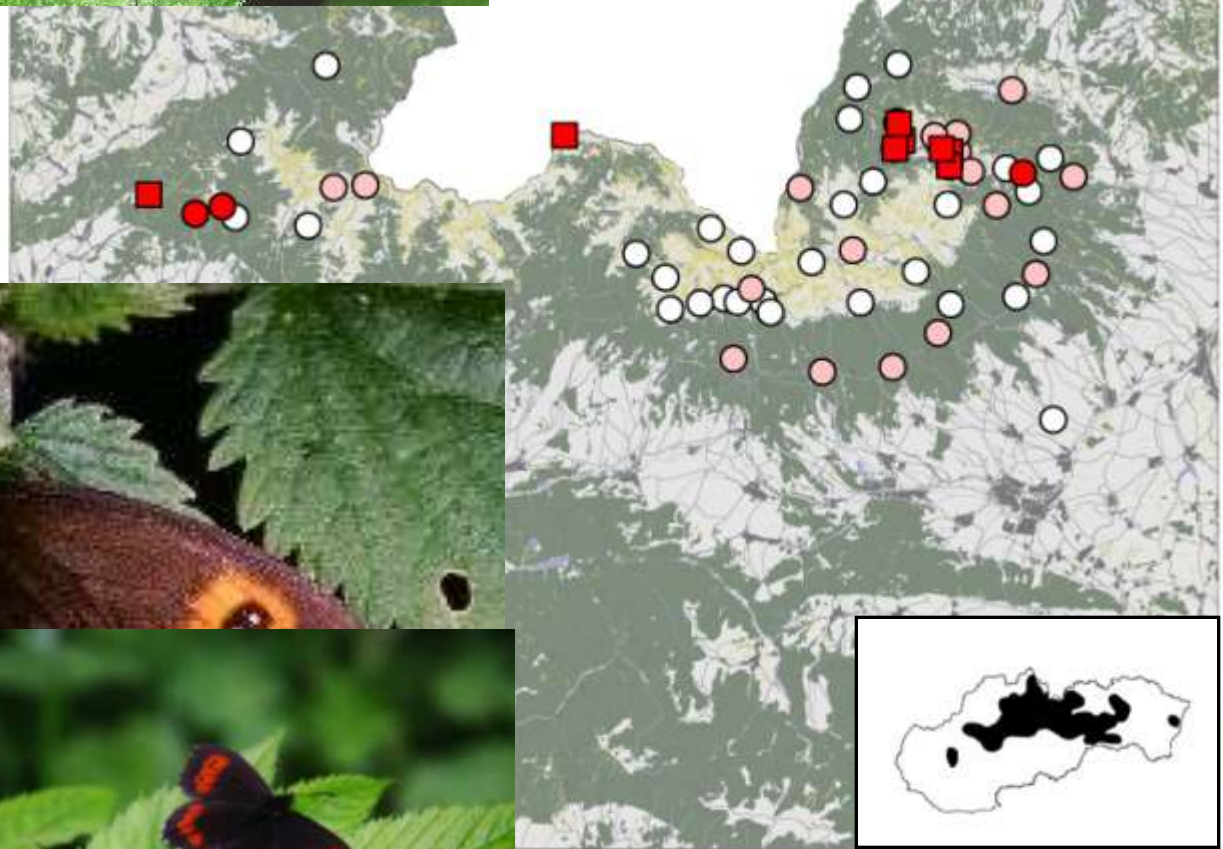
■ 1994 <



Erebia euryale
(Esper, 1805)



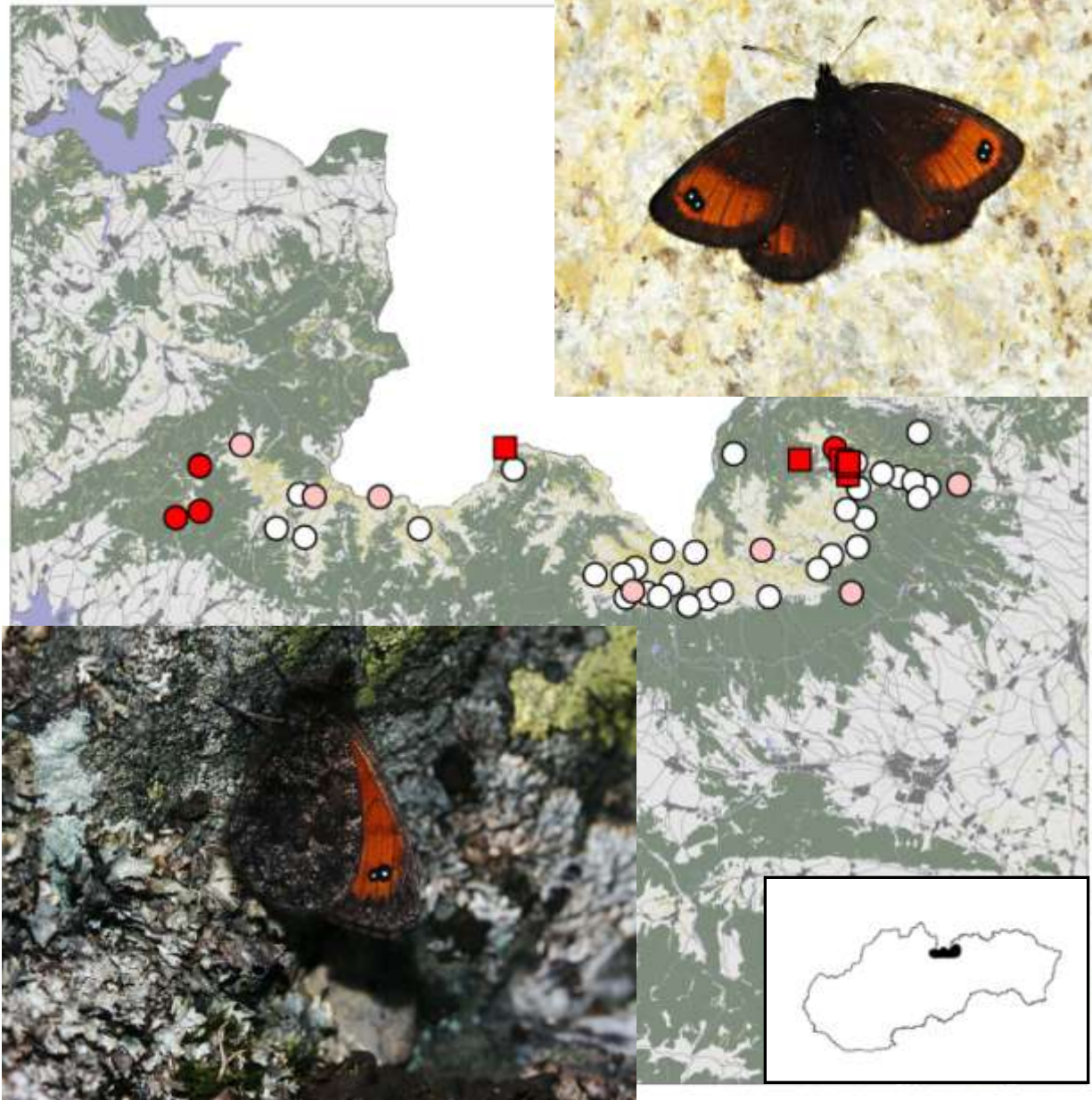
- < 1961
- 1961 – 1984
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- 1994 <



0 20 km

Erebia gorge (HÜBNER, 1804)

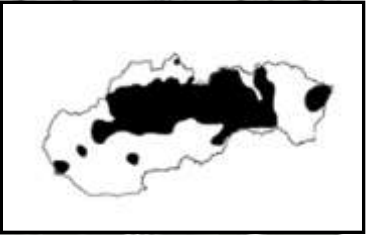
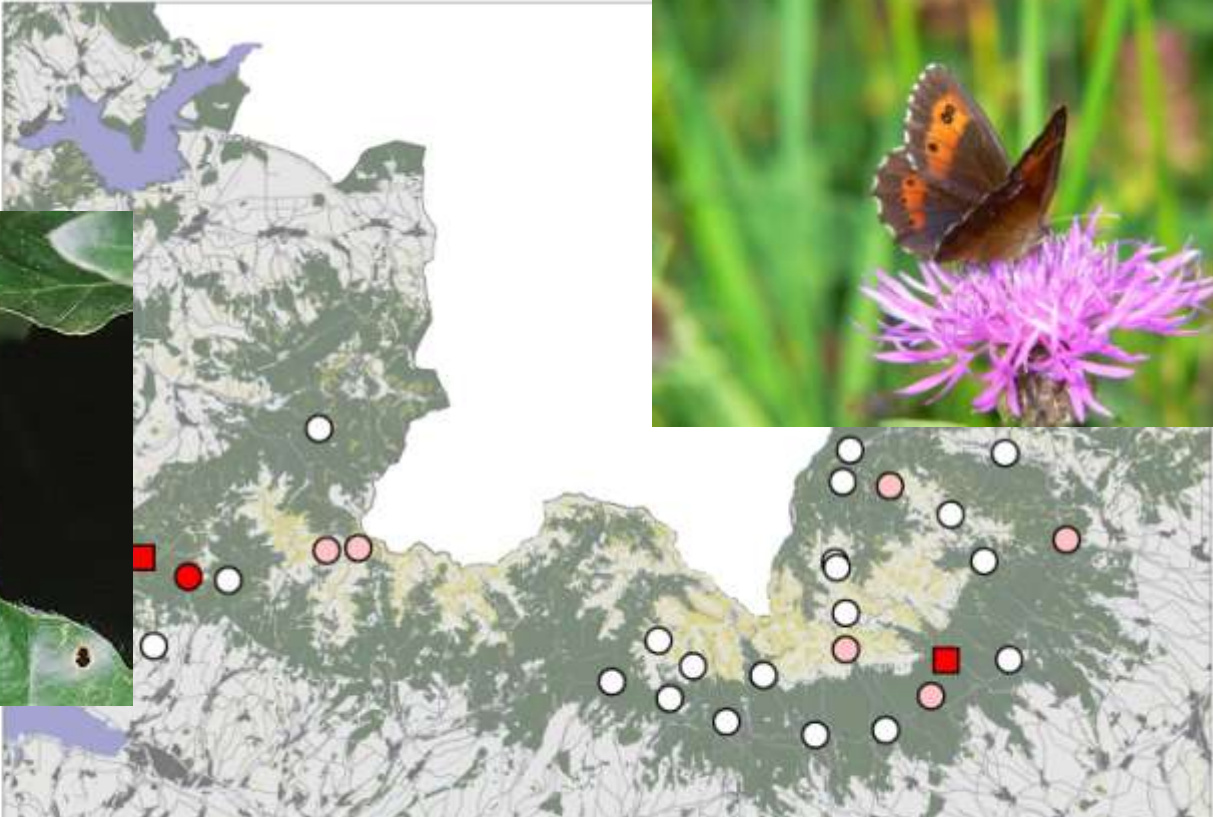
- < 1961
- 1961 – 1984
- 1985 – 1994
- 1994 <



10 0 10 20 km

Erebia ligea

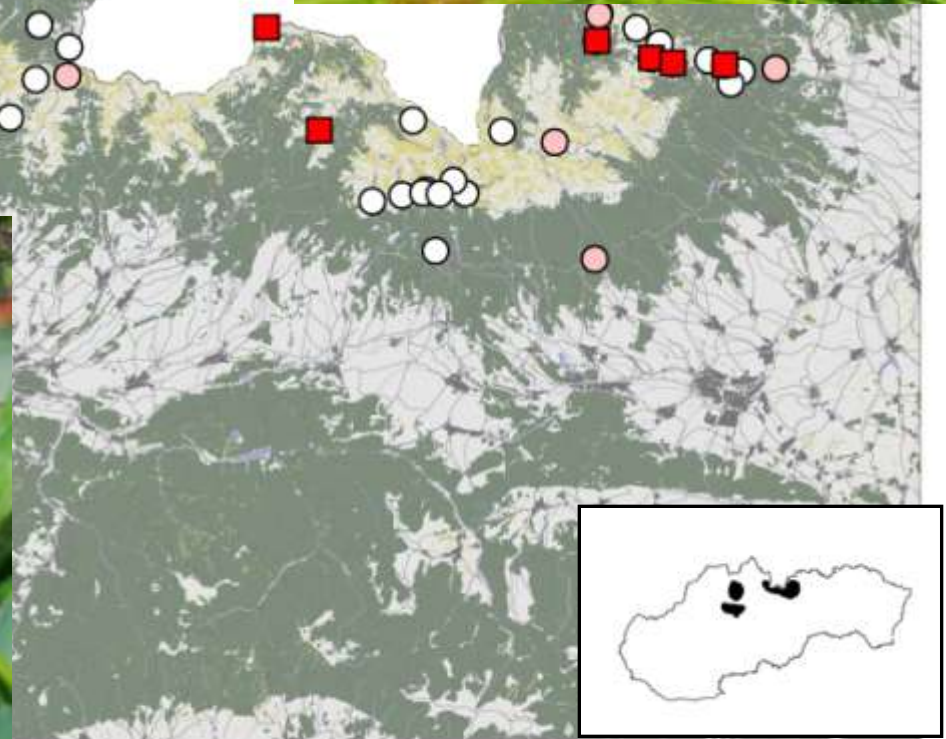
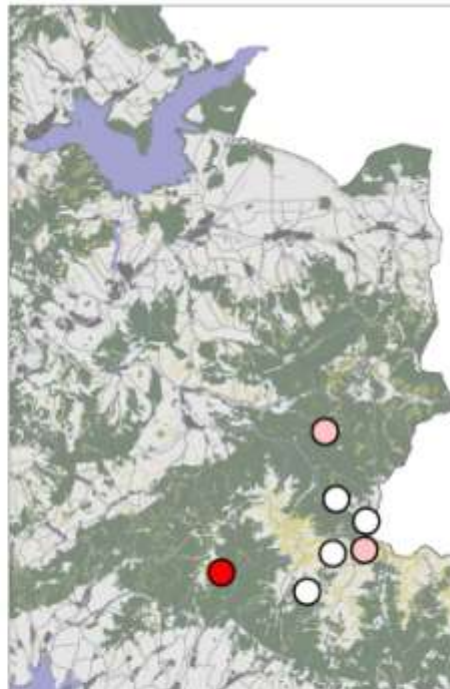
(LINNAEUS, 1758)



Erebia manto

(DENIS et
SCHIFFERMÜLLER, 1775)

- < 1961
- 1961 – 1984
- 1985 – 1994
- 1994 <



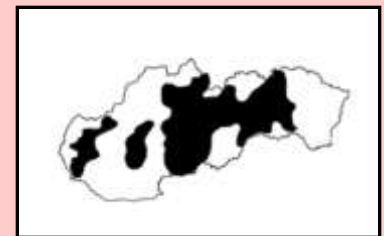
0 10 20 km

Erebia medusa

(DENIS et
SCHIFFERMÜLLER, 1775)



- < 1961
- 1961 – 1984
- 1985 – 1994
- 1994 <



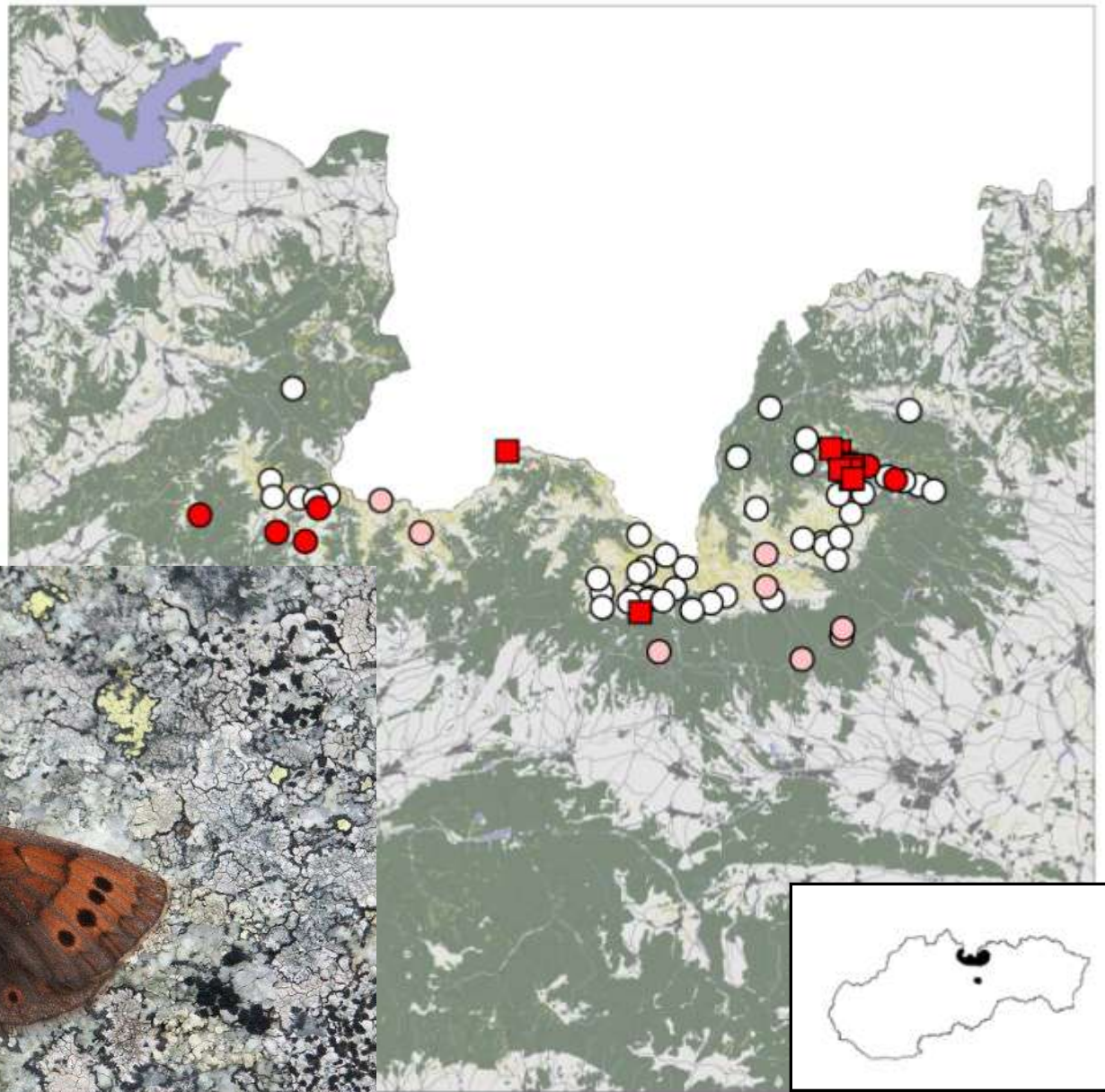
Erebia oeme
(HÜBNER, 1804)

- < 1961
- 1961 – 1984
- 1985 – 1994
- 1994 <



Erebia pandrose
(BORKHAUSEN, 1788)

- < 1961
- 1961 – 1984
- 1985 – 1994
- 1994 <

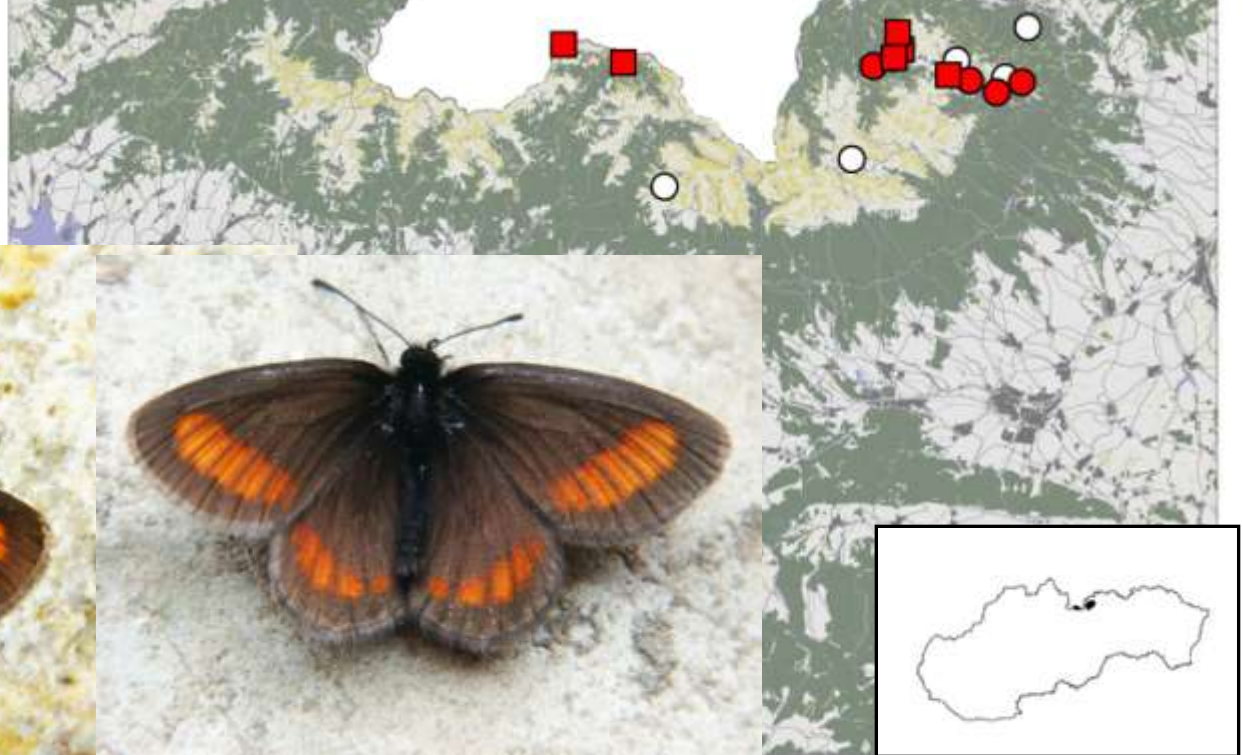


10 20 km

Erebia pharte

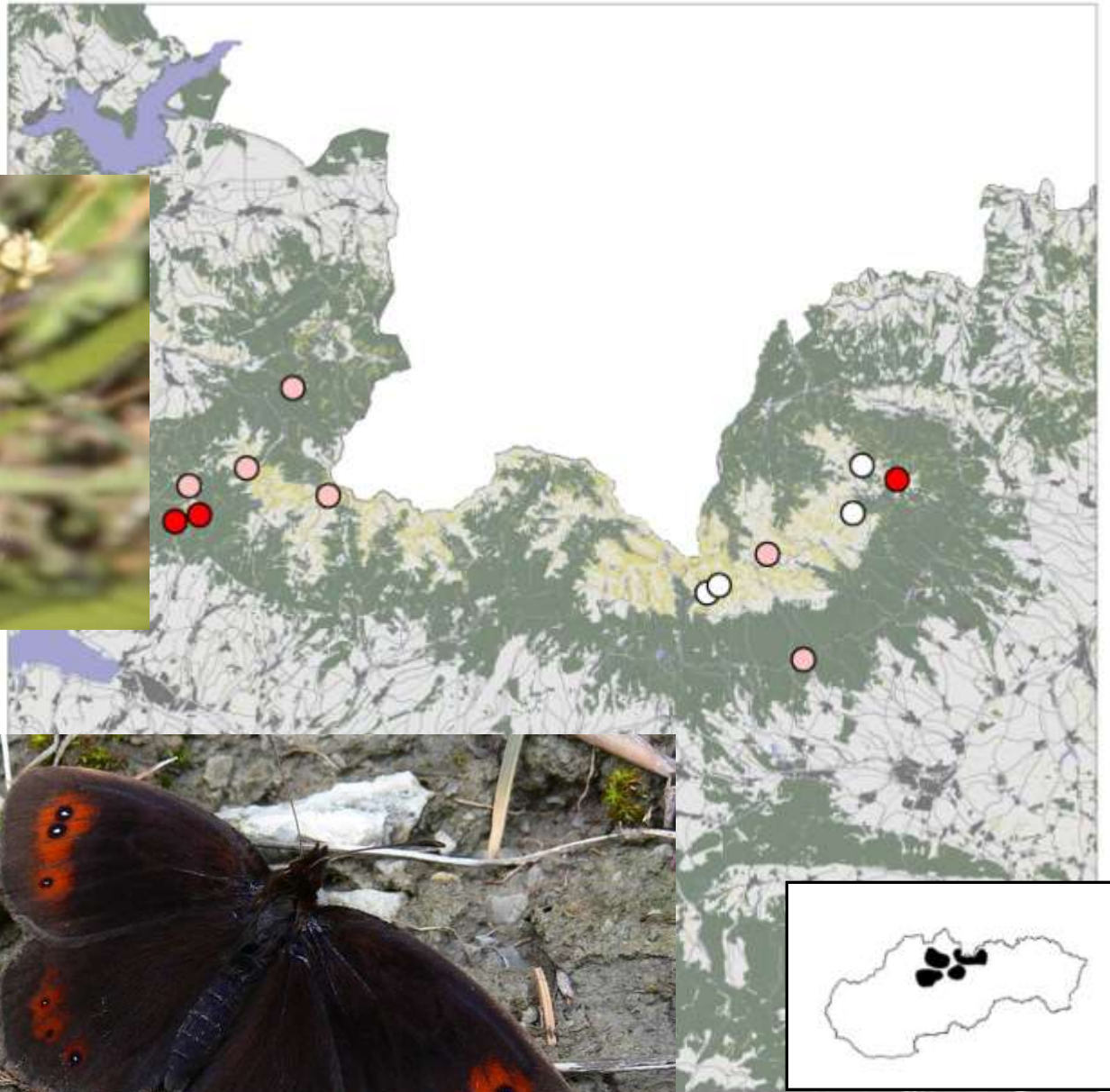
(HÜBNER, 1804)

- < 1961
- 1961 – 1984
- 1985 – 1994
- 1994 <

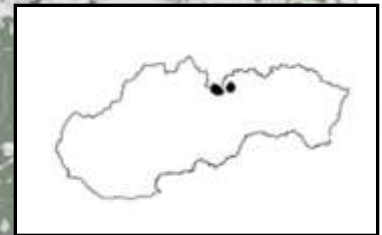
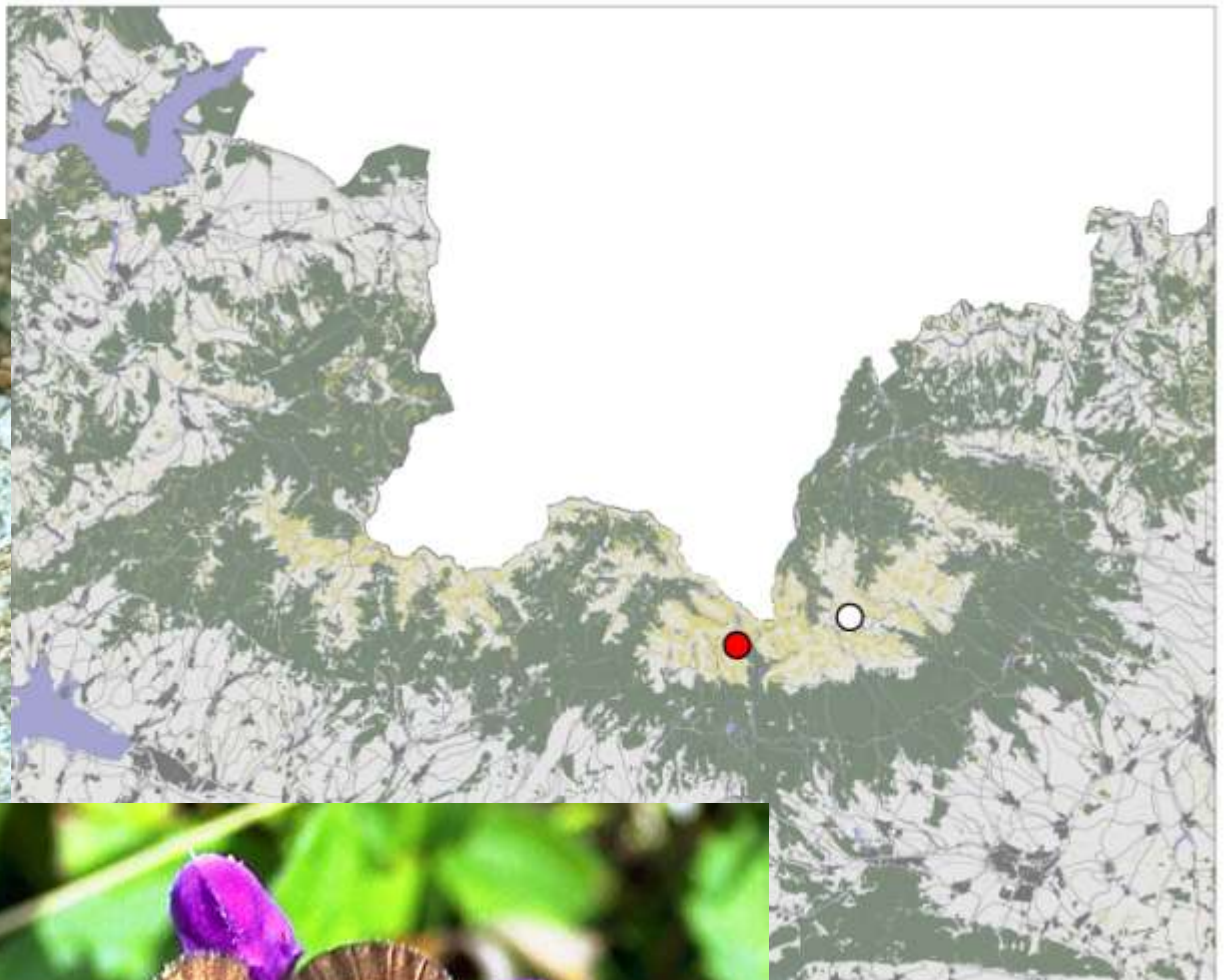


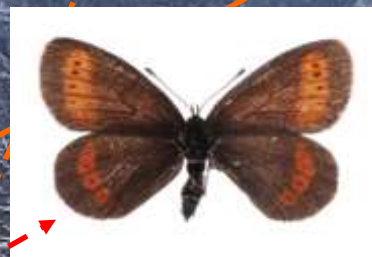
0 10 20 km

Erebia pronoe
(ESPER, 1780)



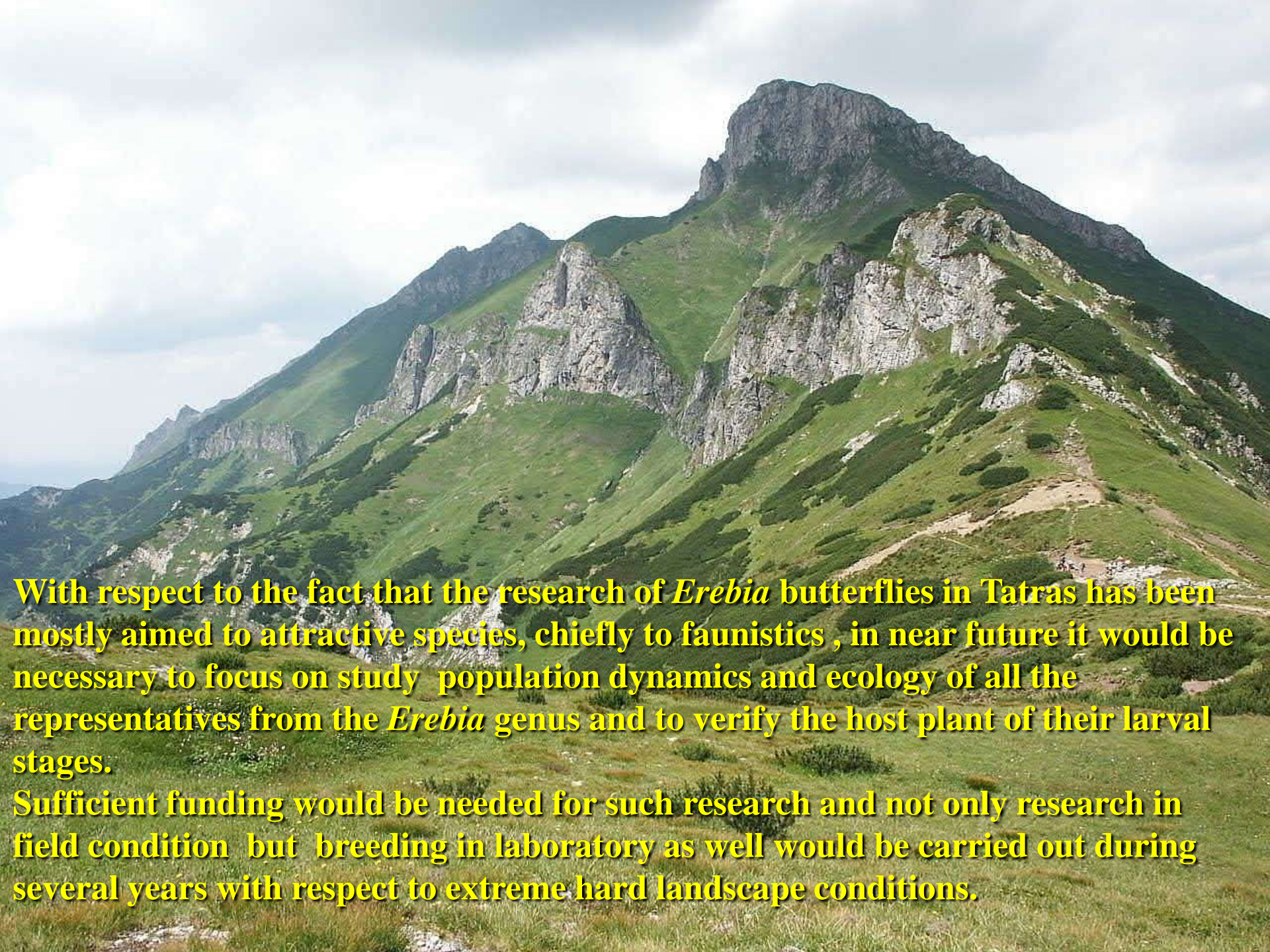
Erebia tyndarus
(ESPER, 1781)





Occurrence of two species in Tatras is problematic: *Erebia tyndarus* (Esper, 1781) and *Erebia oene* (Hübner, 1804) (Hrubý, 1964; Reiprich, 1989) and presence of *Erebia mnestra* (Hübner, 1804), *Erebia montana (goante)* (De Prunner, 1798) and *Erebia melampus* (Fuessli, 1775) in Tatras is very doubtful – evidently wrong determination.

Erebia sudetica (Staudinger, 1861) is also mentioned from Tatras, concretely Beliansky Tatras (Novák, 1963) but this species has not been mentioned from there since 1963. This species is and probably was in the past absent in Tatras. In this case confusion of locality labels probably came.



With respect to the fact that the research of *Erebia* butterflies in Tatras has been mostly aimed to attractive species, chiefly to faunistics , in near future it would be necessary to focus on study population dynamics and ecology of all the representatives from the *Erebia* genus and to verify the host plant of their larval stages.

Sufficient funding would be needed for such research and not only research in field condition but breeding in laboratory as well would be carried out during several years with respect to extreme hard landscape conditions.













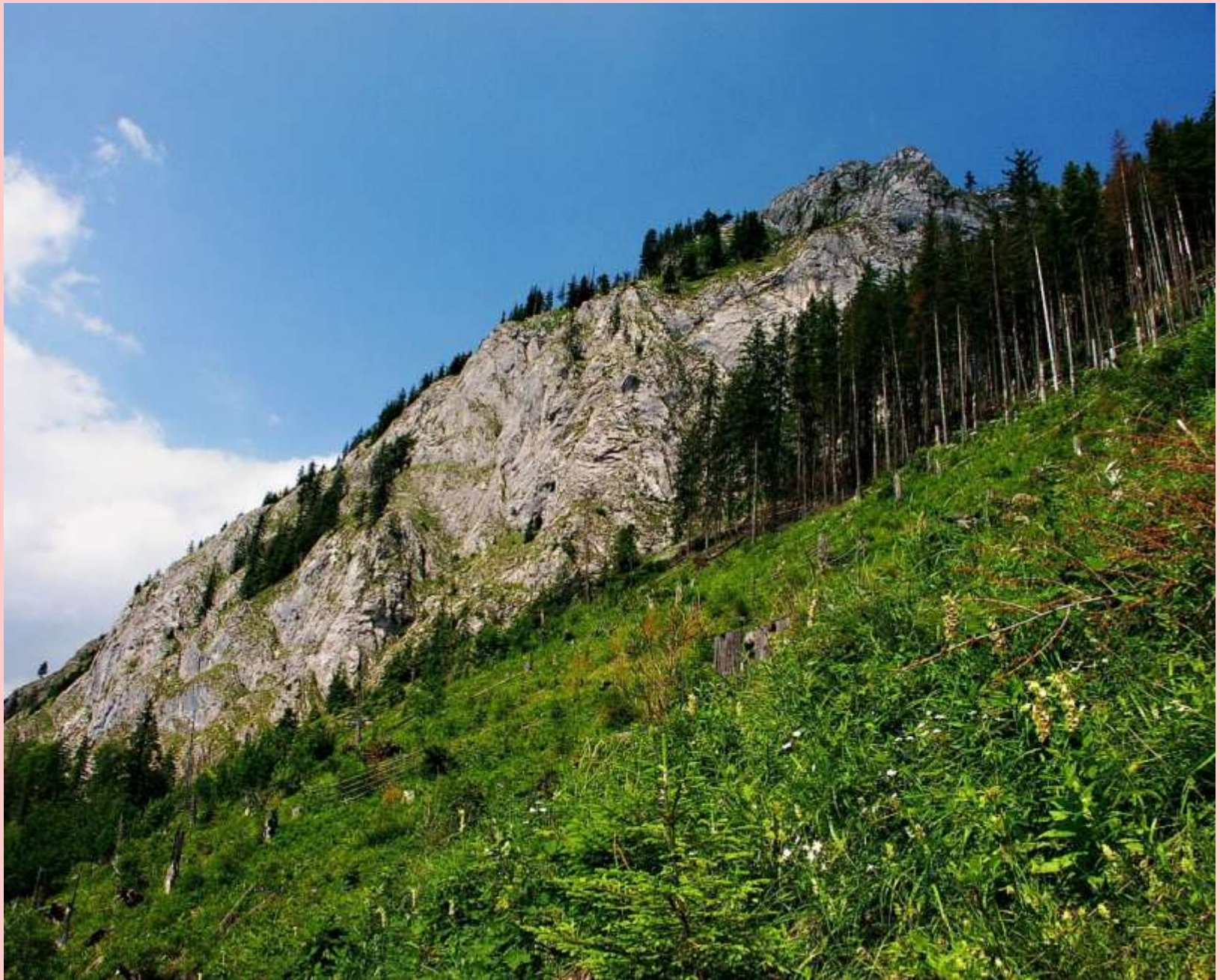










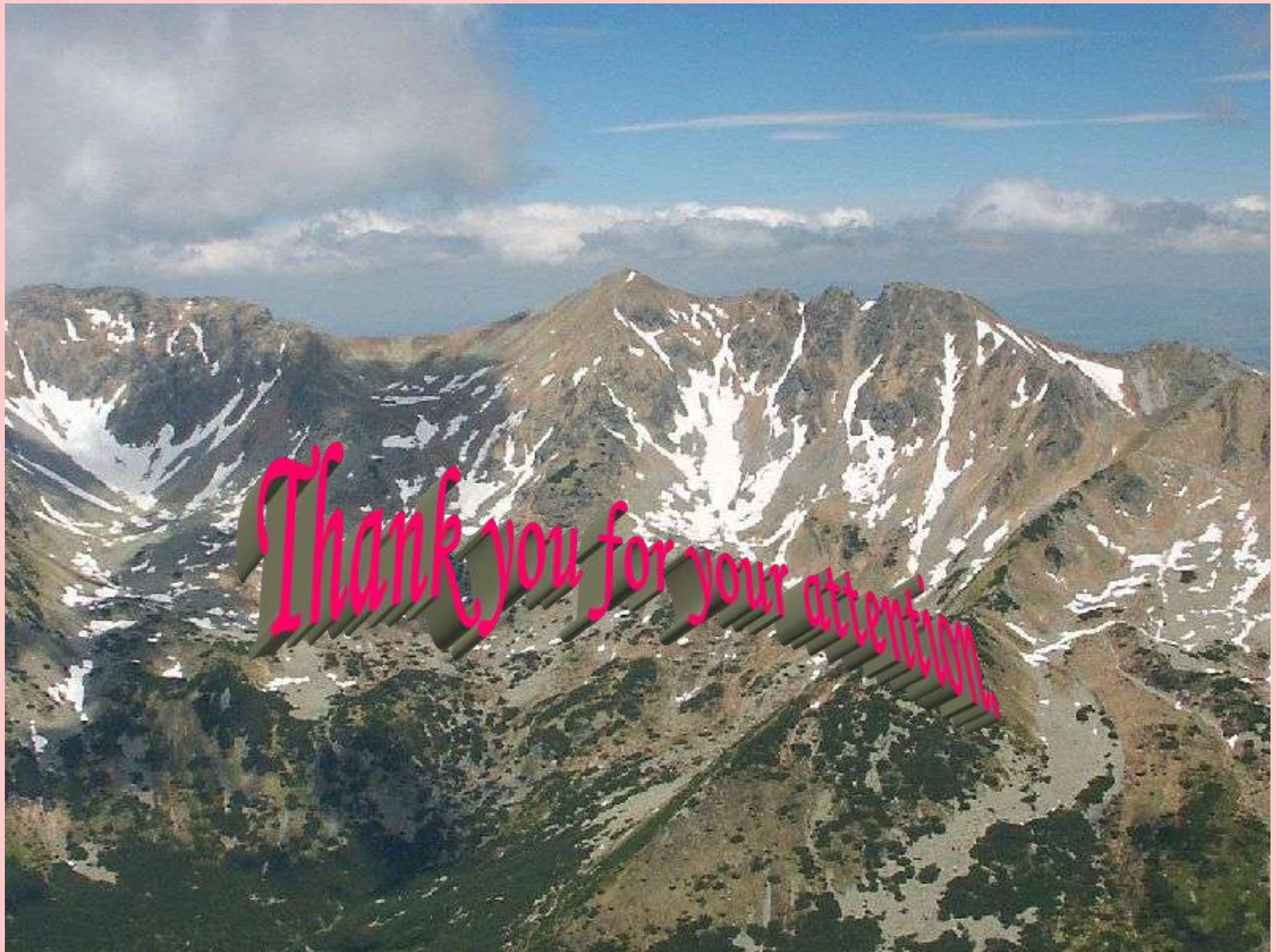












Thank you for your attention