

Data on the distribution in Romania of *Onthophagus*
(*Paleonthophagus*) *vacca* (Linnaeus, 1767)

and

O. (P.) medius (Kugelann, 1792) from material the
Coleoptera collection of the

"Grigore Antipa"

National Museum of Natural History

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1"Grigore Antipa" National Museum of Natural History

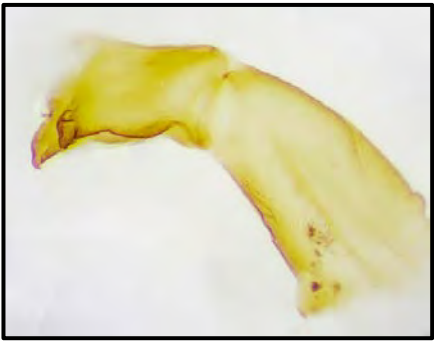
2 S.E.O.P.M.M. Oceanic-Club



***Onthophagus (Paleonthophagus) vacca* (Linnaeus, 1767)**

217 specimens (92♂ , 125♀), 11 of them without collecting data

(Photo: Ionuț Ștefan Iorgu)



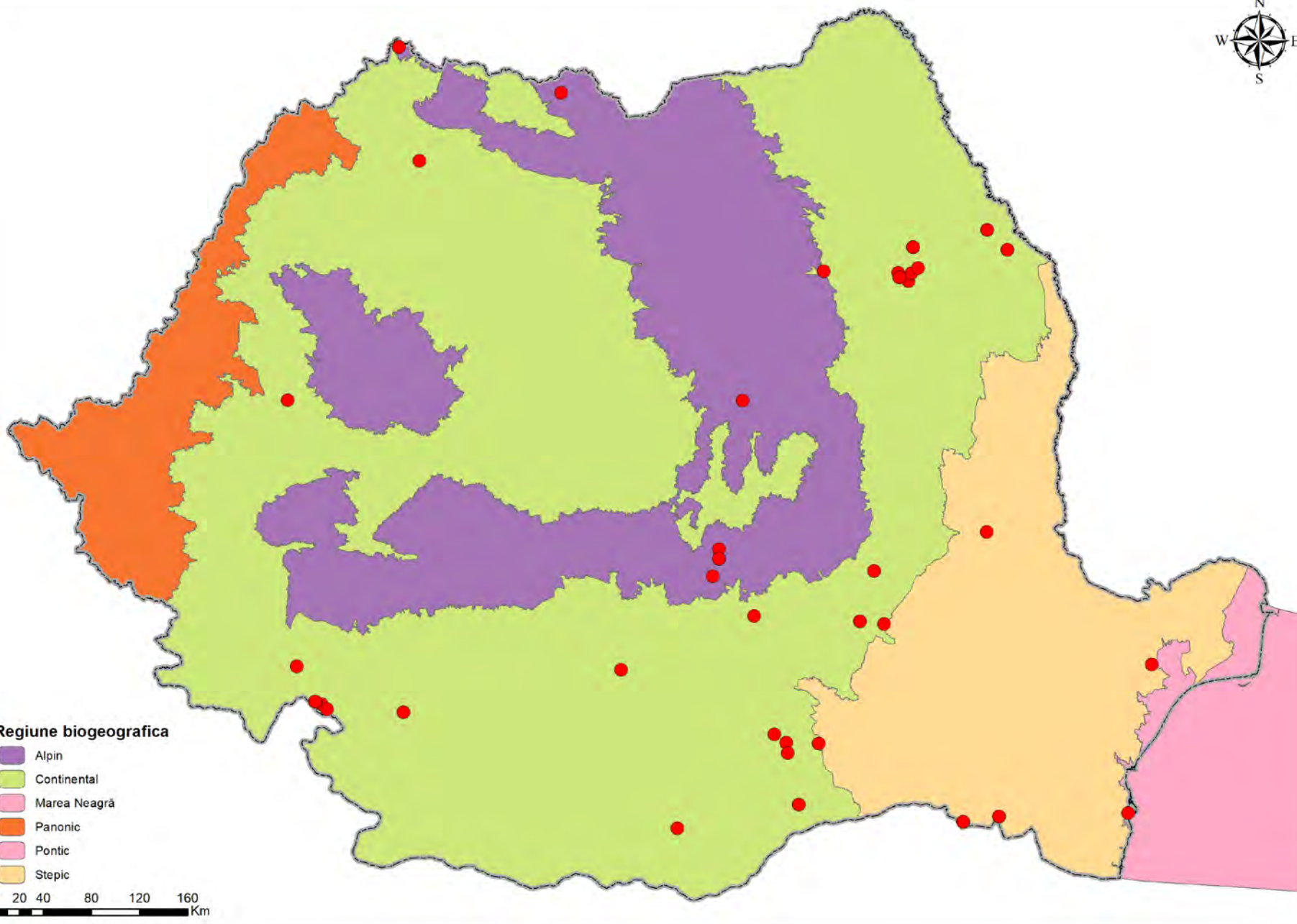
***O. (P.) medius* (Kugelann, 1792)**

22 specimens (7 ♂, 15 ♀)

(Photo: Ionuț Ștefan Iorgu)

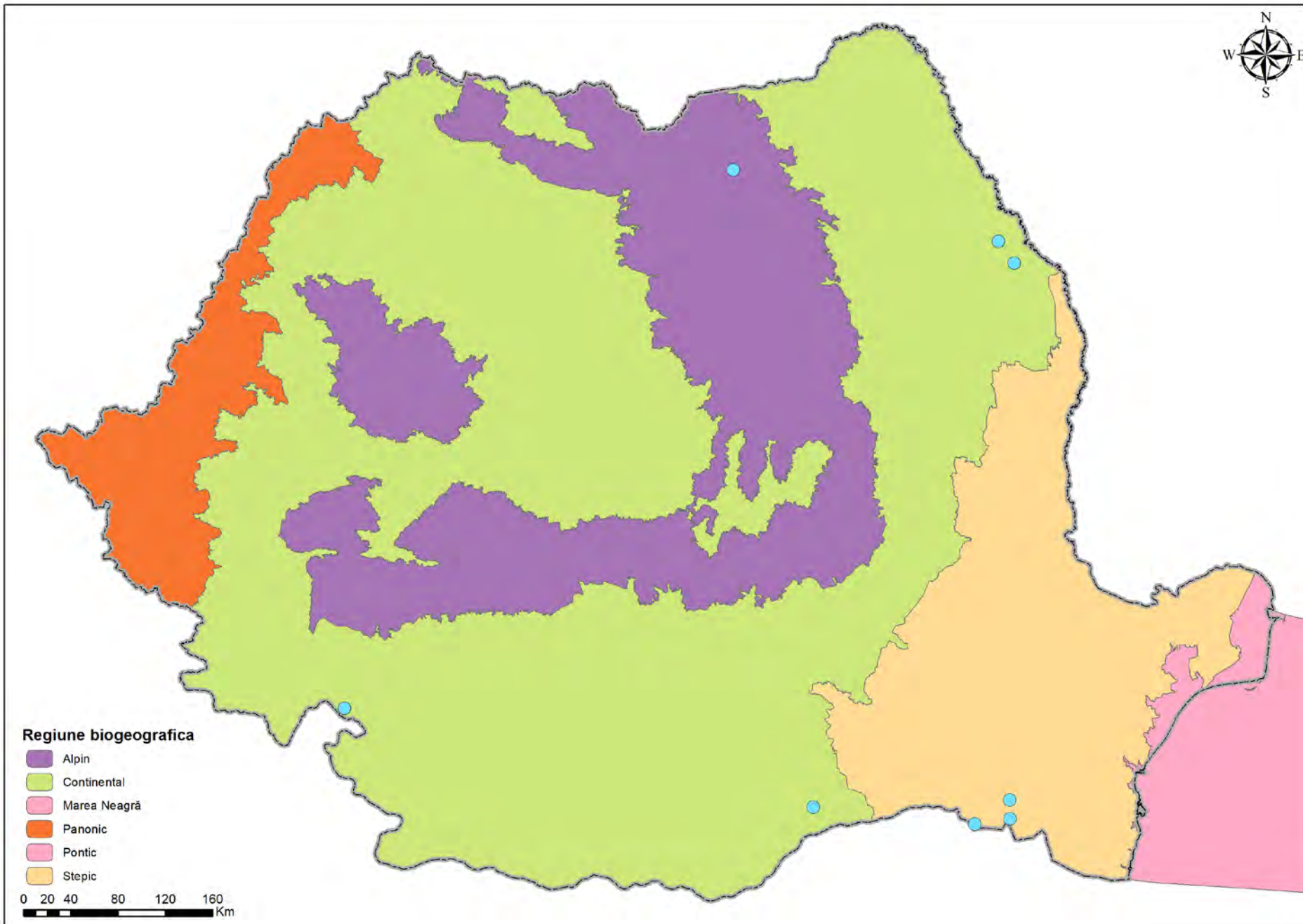
1. The morphological and molecular data indicate the existence of two separate species in Europe within the *O. vacca* complex that are widely sympatric (Rossner et al., 2010)
2. The ranges of *O. vacca* and *O. medius* overlap (Rössner et al., 2010)
3. No biological prezygotic barrier was shown under laboratory conditions (recurrent interspecific mates in mate choice tests), contrary to evident signs of postzygotic incompatibility. Indeed, the fitness was very low for the F1 hybrids and null for the F2 (no living F2 were obtained) (Roy et al., 2015)- **they are valid distinct species.**
4. *O. medius* showed lower abundance at 600 m than at 900 m in Manisa province, western Anatolia. (Anlaş et al., 2011).

The aim of the study was to identify altitude preference and biogeographic distribution for Romania.



	<i>Onthophagus vacca</i>
ALPINE	SM, MM(Repedea, Poiana Elma), NȚ(Piatra Neamț),BV, HG,PH
CONTINENT AL	MH,BZ(Beceni, Izvorul Dulce), NȚ(Horia, Roman, Ion Creangă),AR,MM(Mireșul Mare), București, AG, TR, IS,GR,CS,IF(Chitila),
PONTIC	CT(Agigea)
STEPPE	CT(Esechioi, Băneasa-Canaraua Fetei), BZ(Păd. Frasinu), TL,IF(Păd.Pasărea),GL

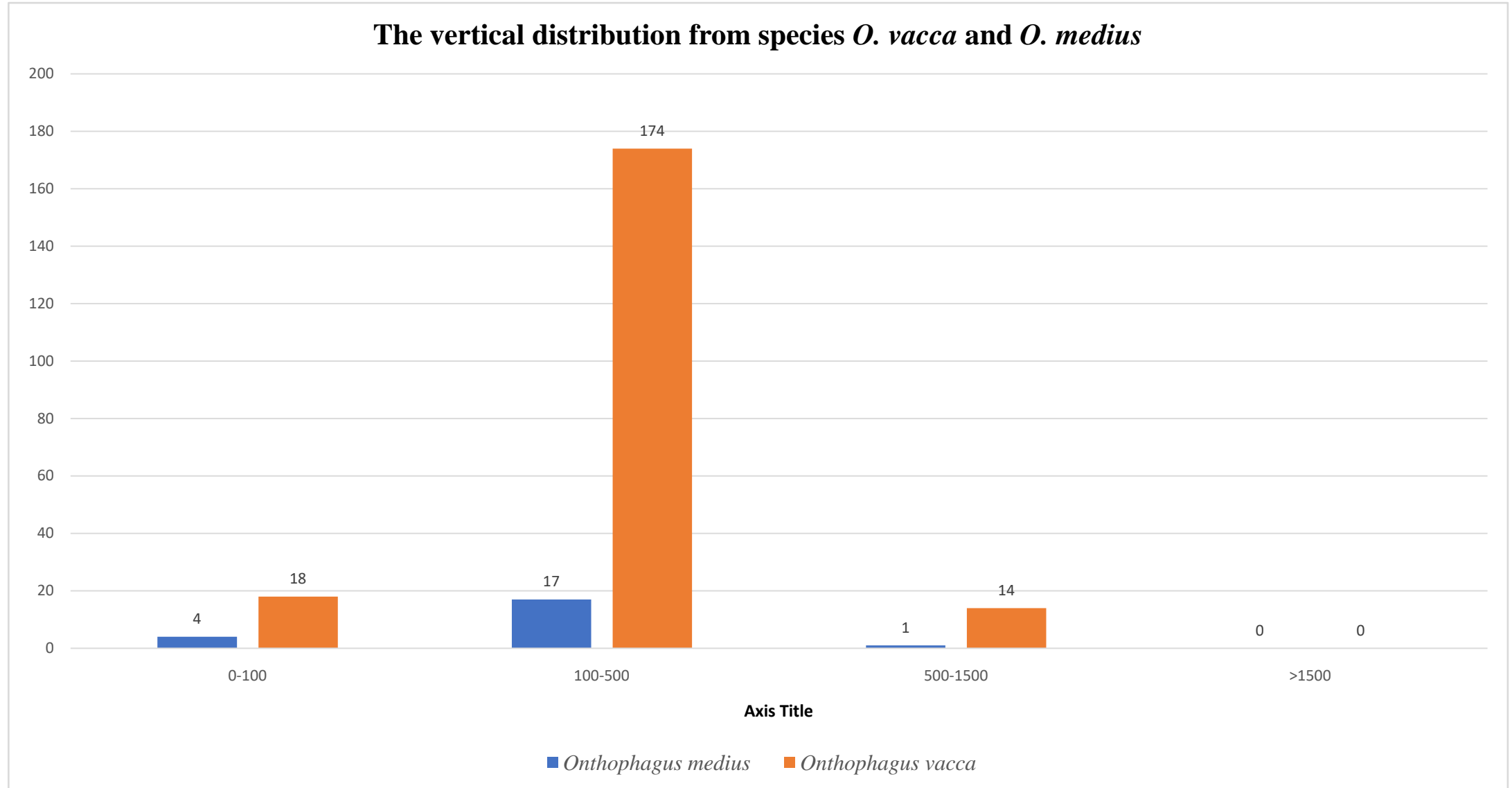
The distribution of the species *O. vacca* based on the studied material (ArcGIS 10.4)



	<i>Onthophagus medius</i>
ALPINE	SV
CONTINENTAL	MH, IS, GR
STEPPE	CT(Esechioi)

The distribution of the species *O. medius* based on the studied material (ArcGIS 10.4)

	0-100	100-500	500-1500	>1500
<i>Onthophagus medius</i>	4	17	1	0
<i>Onthophagus vacca</i>	18	174	14	0



Conclusions

- The melanism of the elytra, the major species-diagnostic character, varies greatly within the two species and makes identification difficult;
- *O. vacca* and *O. medius* have widely overlapping distribution range;
- Our study shows a high ecological plasticity in both species; but we could not highlight an altitude preferences.
- **Possible future research directions include: complete the distribution in Romania, differences in gallery pattern, food and climate preferences, biotic factors such as intraspecific and interspecific competition or anthropogenic factors may highlight differences between the two species. More data are necessary for more conclusive results.**

Acknowledgments

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