



Digging for Differences

What burrows reveal about *Gryllus campestris* populations

Gryllus and Acheta?

***Acheta domesticus* (Linnaeus, 1758)** **(House cricket)**

Yellowish-brown with darker bands on the head.
Has long hind legs adapted for jumping and well-developed wings.
Commonly found in human environments (houses, warehouses).



***Gryllus campestris* Linnaeus, 1758** **(Field cricket)**

Dark brown to black color.
Lives in natural habitats such as meadows and grasslands.
Digs burrows in the soil.
Active during the day and evening, known for its chirping.



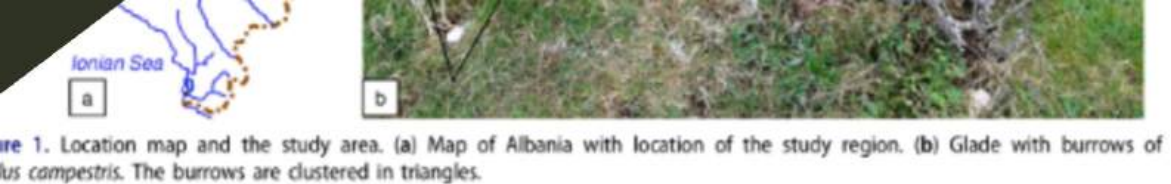


Figure 1. Location map and the study area. (a) Map of Albania with location of the study region. (b) Glade with burrows of *Gryllus campestris*. The burrows are clustered in triangles.



Figure 2. The tracemaker and production of the casts. (a) Nymph of *Gryllus campestris* inside the burrow filled with mixture of the white cement and water. (b) Production of the cast.

Inspiration for research

Research paper Burrows of the common field-cricket *Gryllus campestris* Linnaeus, 1758 (Orthoptera: Gryllidae) from Dajti Mountain, Albania

The aim of this research was to find cricket burrows, make plaster casts of their structure and study how they are built and used by *Acheta Domesticus* and *Gryllus campestris*. The crickets were also preserved in ethanol for observation. The results were compared with research from Dajti Mountain to see similarities in burrow structure and function.

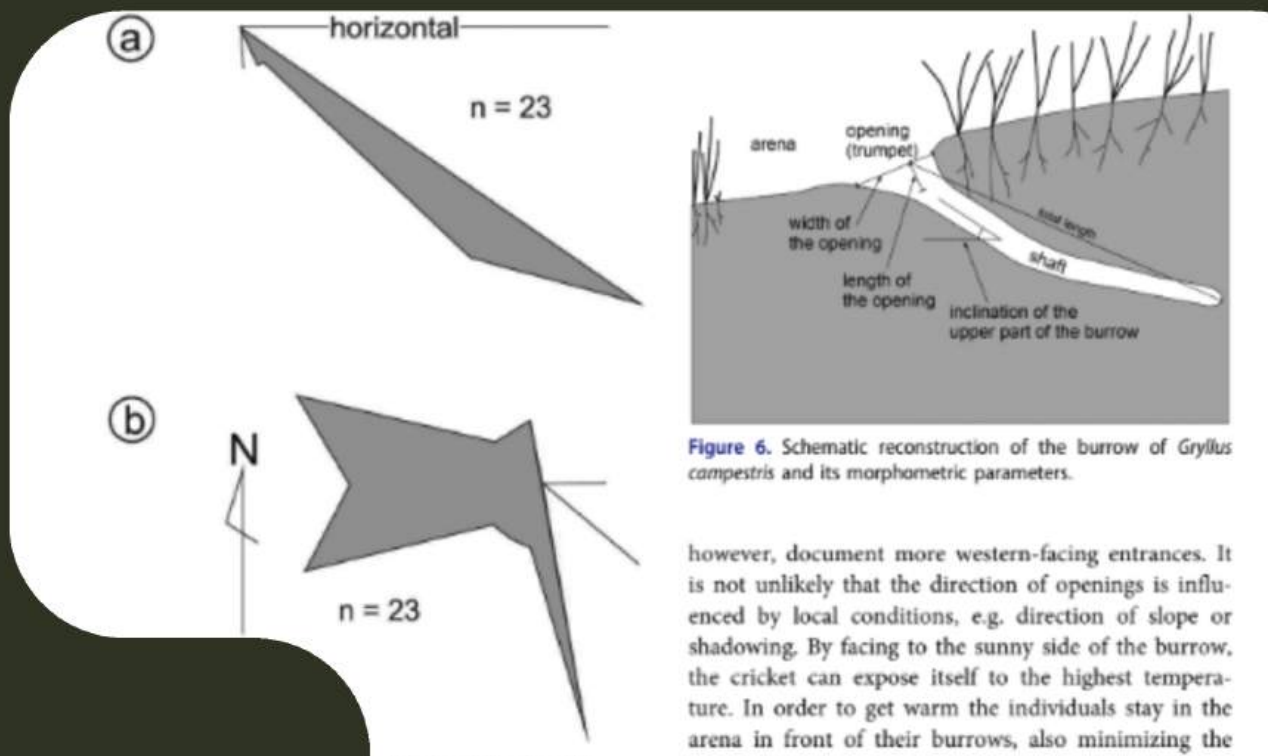


Figure 6. Schematic reconstruction of the burrow of *Gryllus campestris* and its morphometric parameters.

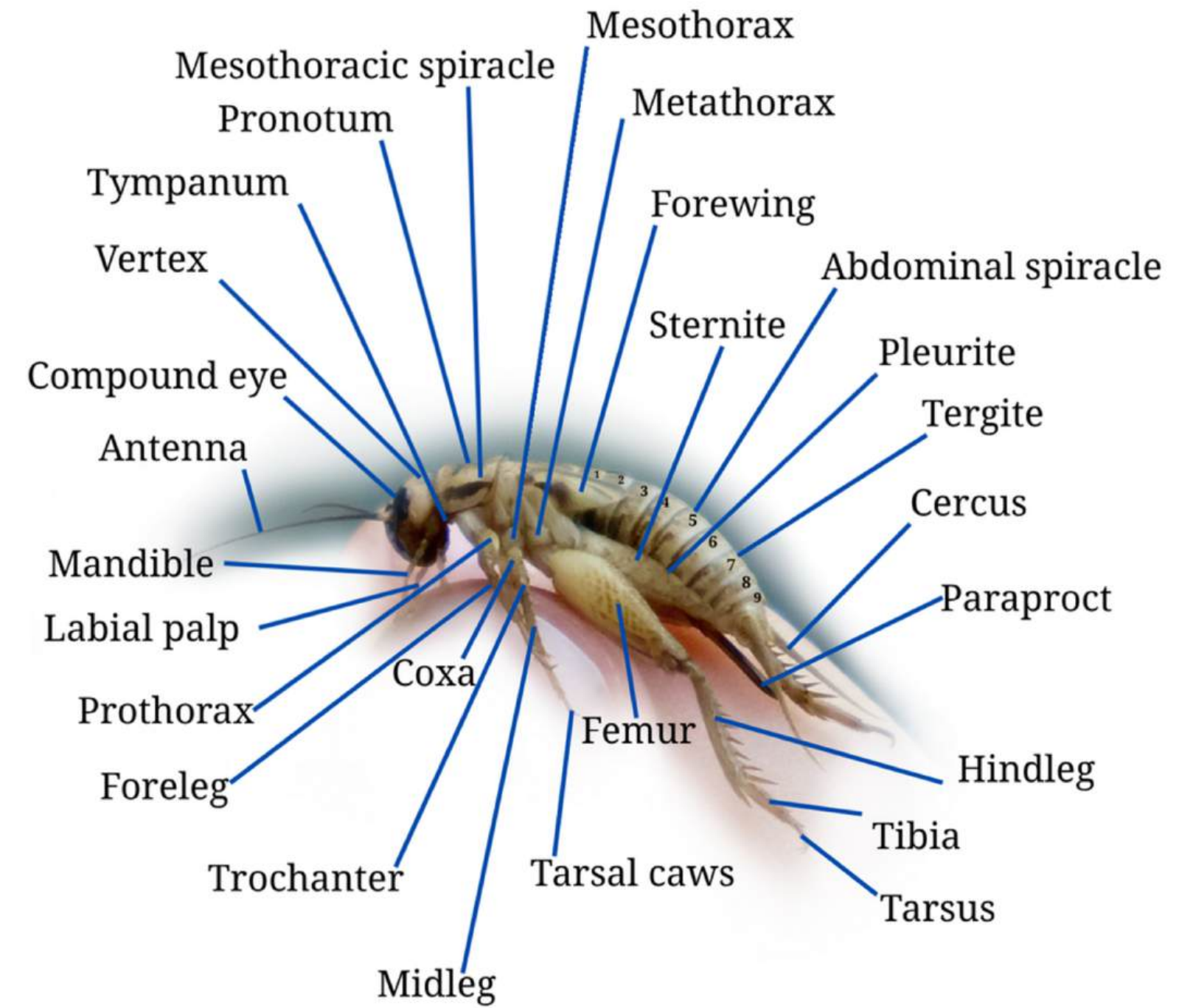
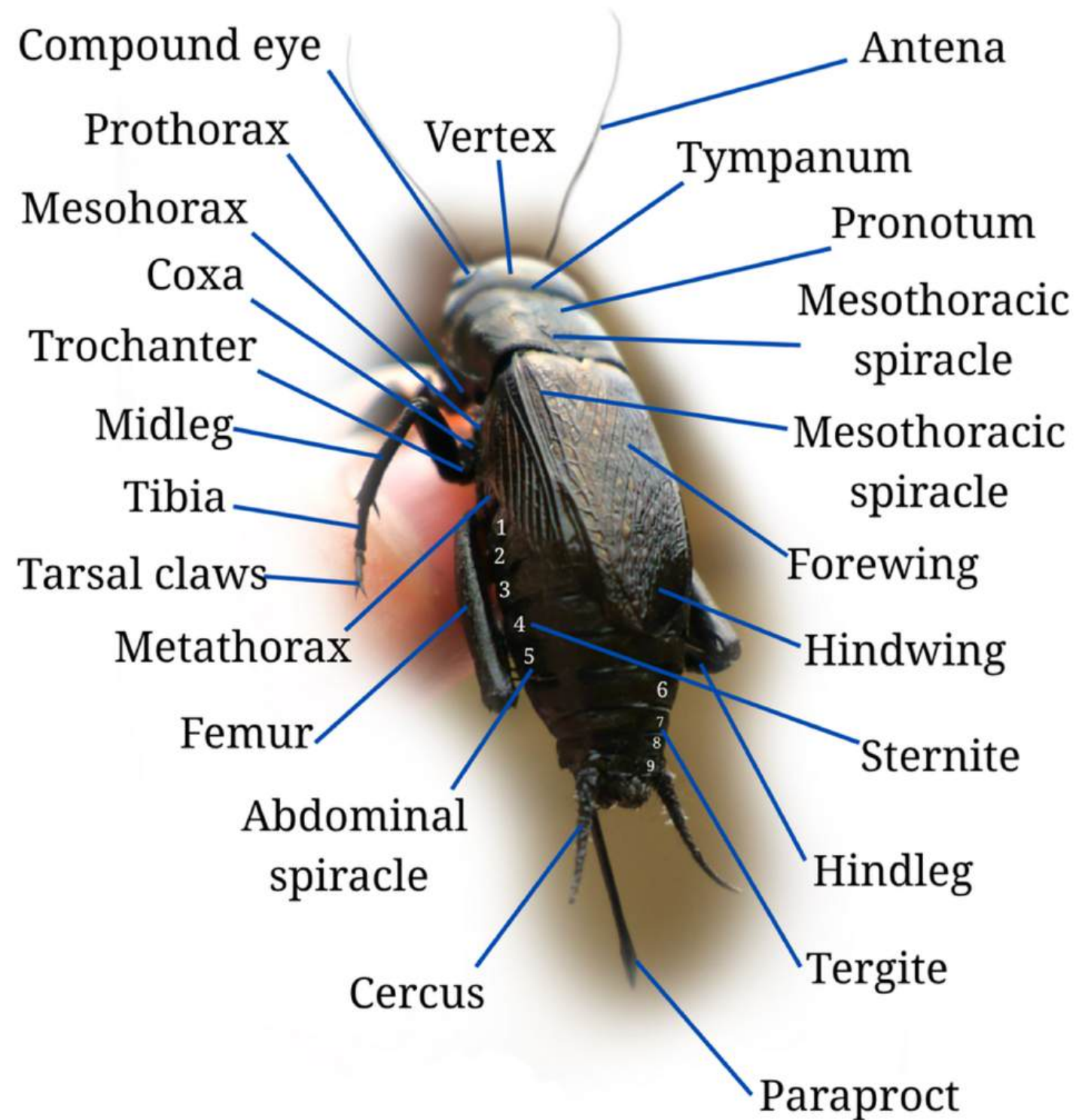
however, document more western-facing entrances. It is not unlikely that the direction of openings is influenced by local conditions, e.g. direction of slope or shadowing. By facing to the sunny side of the burrow, the cricket can expose itself to the highest temperature. In order to get warm the individuals stay in the arena in front of their burrows, also minimizing the potential of being attacked by predators by moving quickly into their burrows as a safe refuge.

The burrows of *Gryllus campestris* were close to the scattered burrows of the wolf spider *Geolycosa vulgata* (Vrenosi & Uchman, 2015). In less vegetated areas of the meadow, burrows of the other wolf spider *Trochosa hispanica* are present (Uchman et al., 2015). The co-occurrence of the larvae of *Scorpius* in proximity to the *G. campestris* burrows together with the presence of the larvae of *Scorpius* in the sympatric distribution of *G. campestris* and other arthropods.

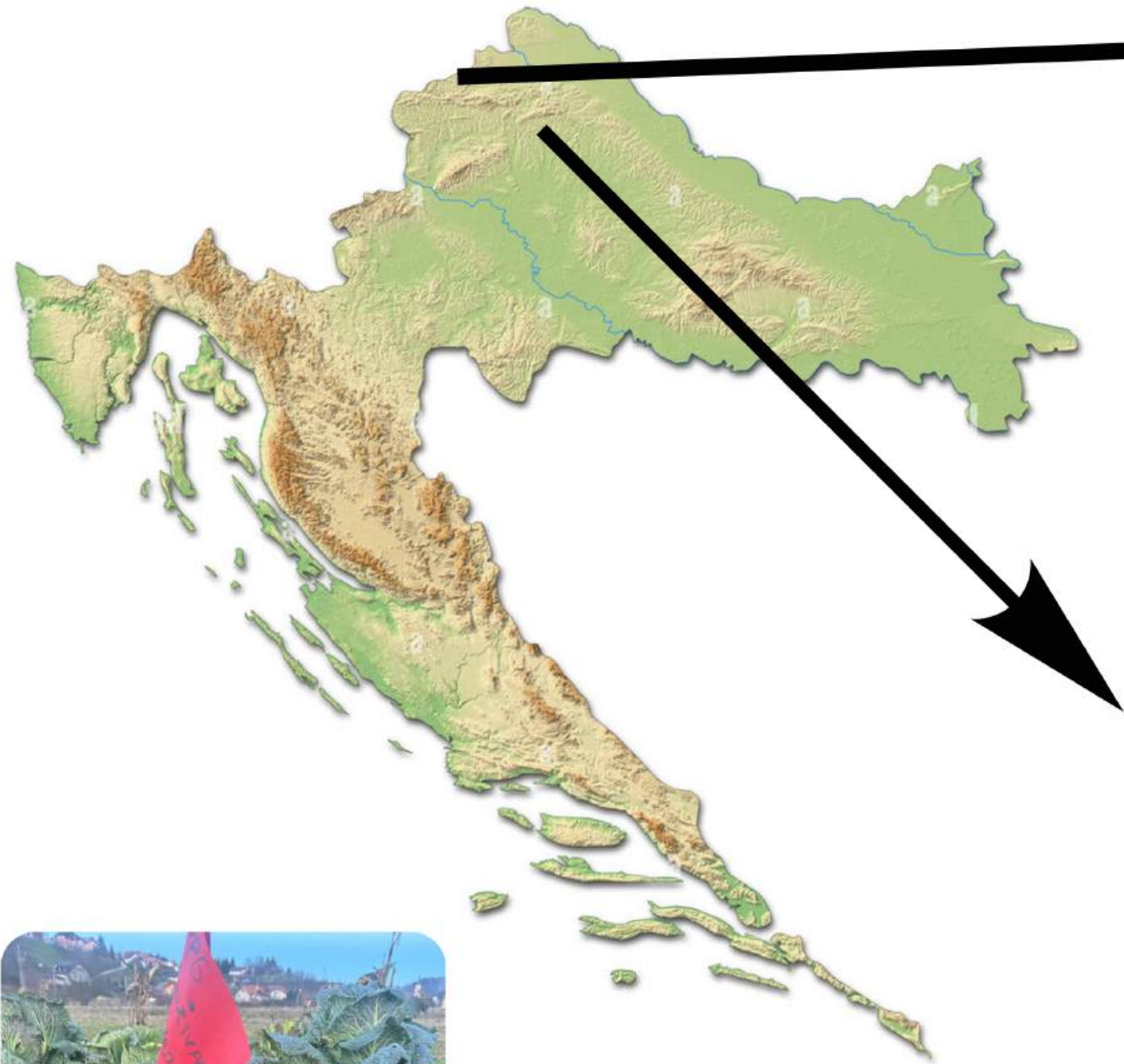
maximum was the dominant burrow type. Burrows have been found in the study area (Figure 5(b)). The opening width was only slightly correlated with the length ($r = 0.19$, $R^2 = 0.44$, $n = 27$) and the inclination of the casts (b).

From an ichnological

Morphology and physical characteristics



Field work



46.209733, 16.033452
Lepoglava

46.044304, 16.402343
Donji Fodrovec



Cricket holes



L1



L2



L3



L4



L5



L6



T1



T2



T3



T4



T5



T6



T7



T8



T9

Measurements



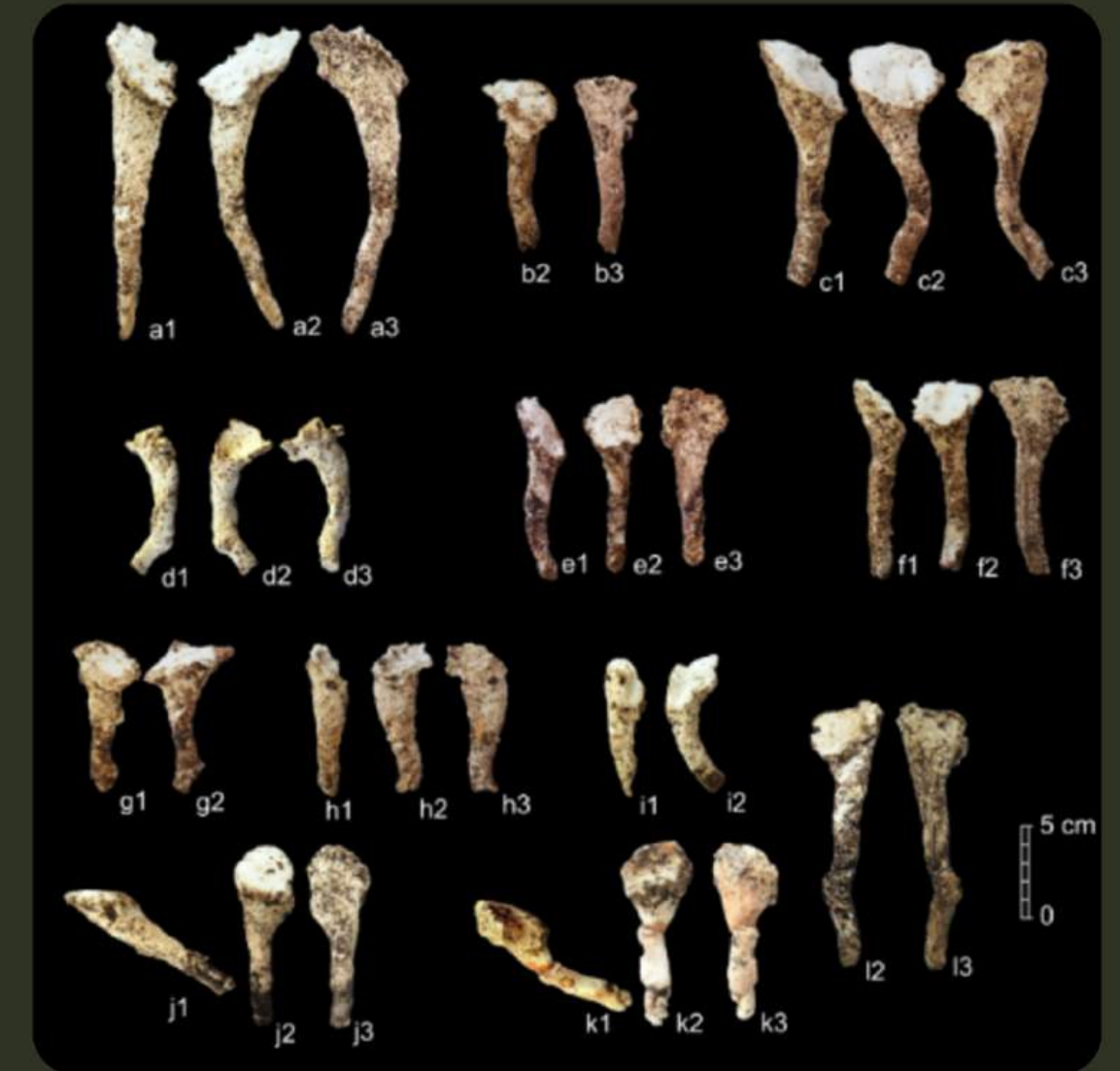
Table 1. Measurements of crickets burrows.

	T1	T2	T3			L1	L2	L3
LENGTH:	5 cm	4.5 cm	4 cm			6.65 cm	8 cm	2.65 cm
WIDTH:	3.5 cm	3 cm	2.5 cm			1, 7 cm	2.1 cm	1.1 cm
	T4	T5	T6			L4	L5	L6
LENGTH:	5 cm	5.5 cm	2 cm			7.5 cm	6.5 cm	3.65 cm
WIDTH:	2.5 cm	2.5 cm	1 cm			2.5 cm	1.25 cm	1.3 cm



Comparison of the research works

- many similarities and difference
- Cricket holes from **Albania**:
mostly longer and thinner
tilted at a certain angle
- Cricket holes from **Croatia**:
wider and shorter
funnel like shape



Conclusion

- **the cricket population in Croatia and its stability compared to the research work by Hochkirch et al. (2007)**
- **in comparison of the cricket burrow samples from Albania and Croatia, Albanian samples are mostly steeply inclined towards the surface at mostly 10-20 degrees**
- **even though one of the species is smaller, it makes bigger burrows in comparison to the larger one**



Literature

Cigliano, M.M., H. Braun, D.C. Eades & D. Otte. Orthoptera Species File [10.4.2026.]. < <http://orthoptera.speciesfile.org/> >

Hochkirch, A., Witzemberger, A., Teerling, A., Niemeyer, F. (2007). Translocation of an endangered insect species, the field cricket (*Gryllus campestris* Linnaeus, 1758) in northern Germany. *Biodiversity and Conservation*. 16. 3597-3607. 10.1007/s10531-006-9123-9.

Skejo, J. & Rebrina, F., Szövényi, G., Puskás, G., Tvrtković, N. (2018). The first annotated checklist of Croatian crickets and grasshoppers (Orthoptera: Ensifera, Caelifera). 10.11646/zootaxa.4533.1.1.

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**Thank you for
attention!**

