

Diversity of land snail tribe Helicini (Gastropoda: Stylommatophora: Helicidae):  
where do we stand after 20 years of sequencing mitochondrial markers?

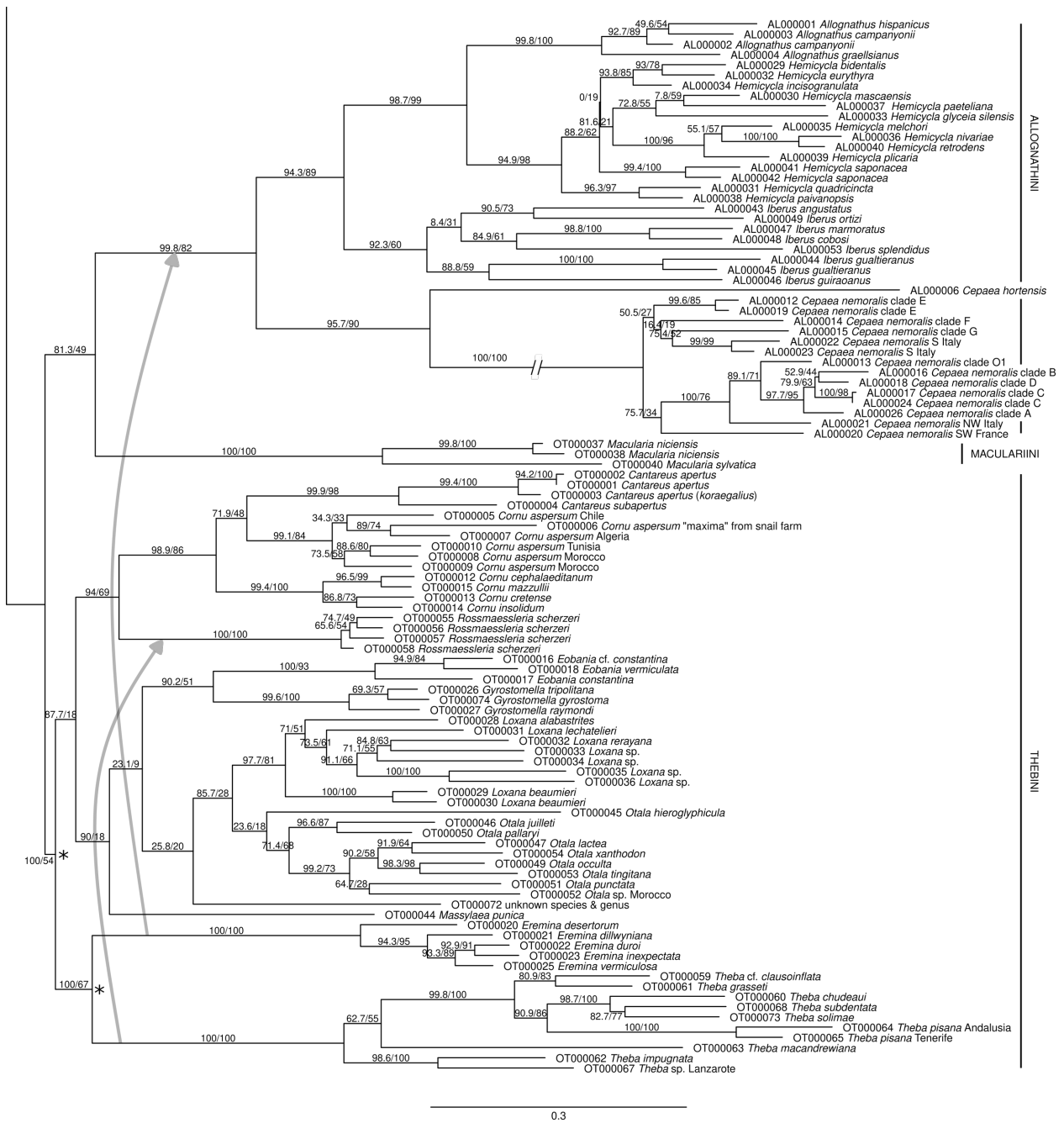
Ondřej Korábek, Lucie Juříčková, Adam Petrusek

Figures S1-S62

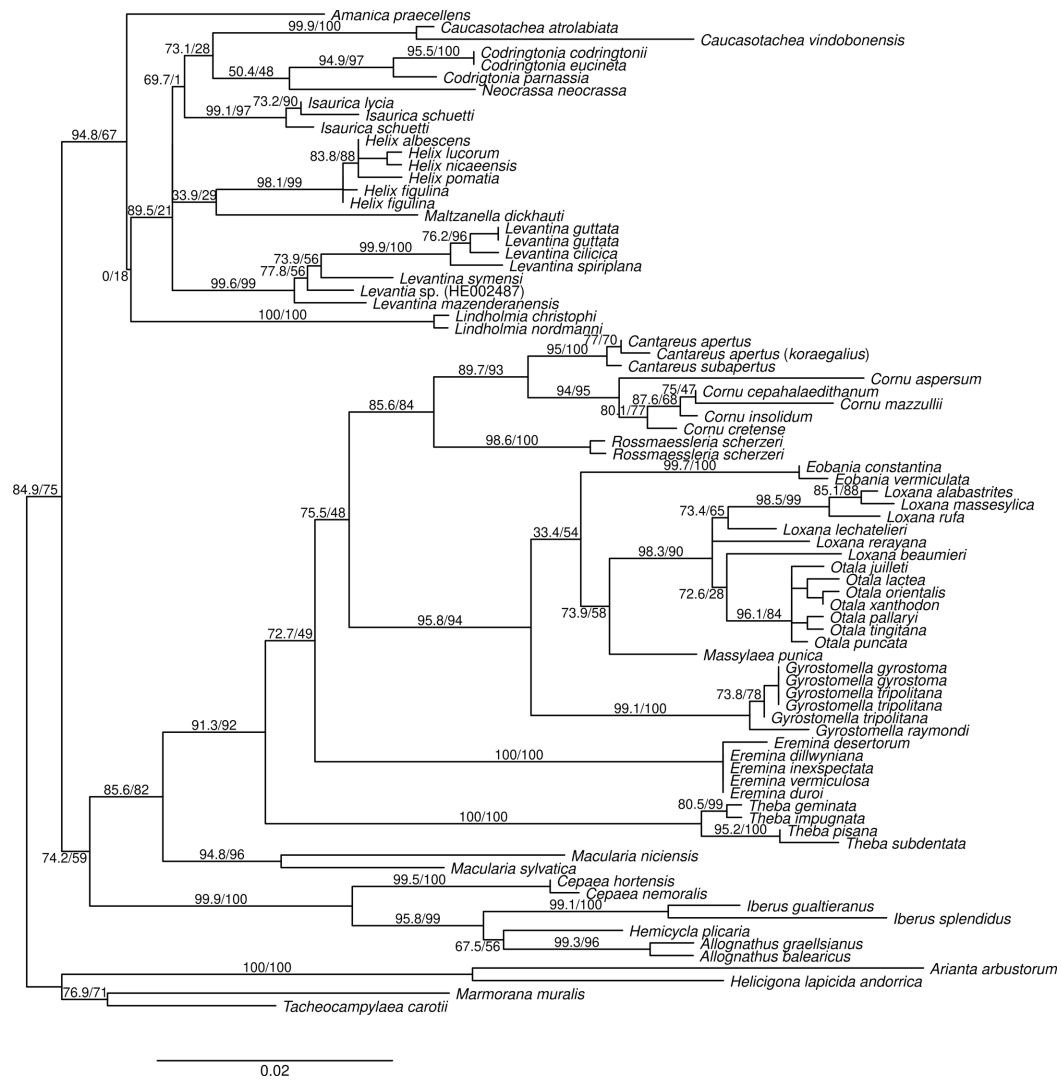


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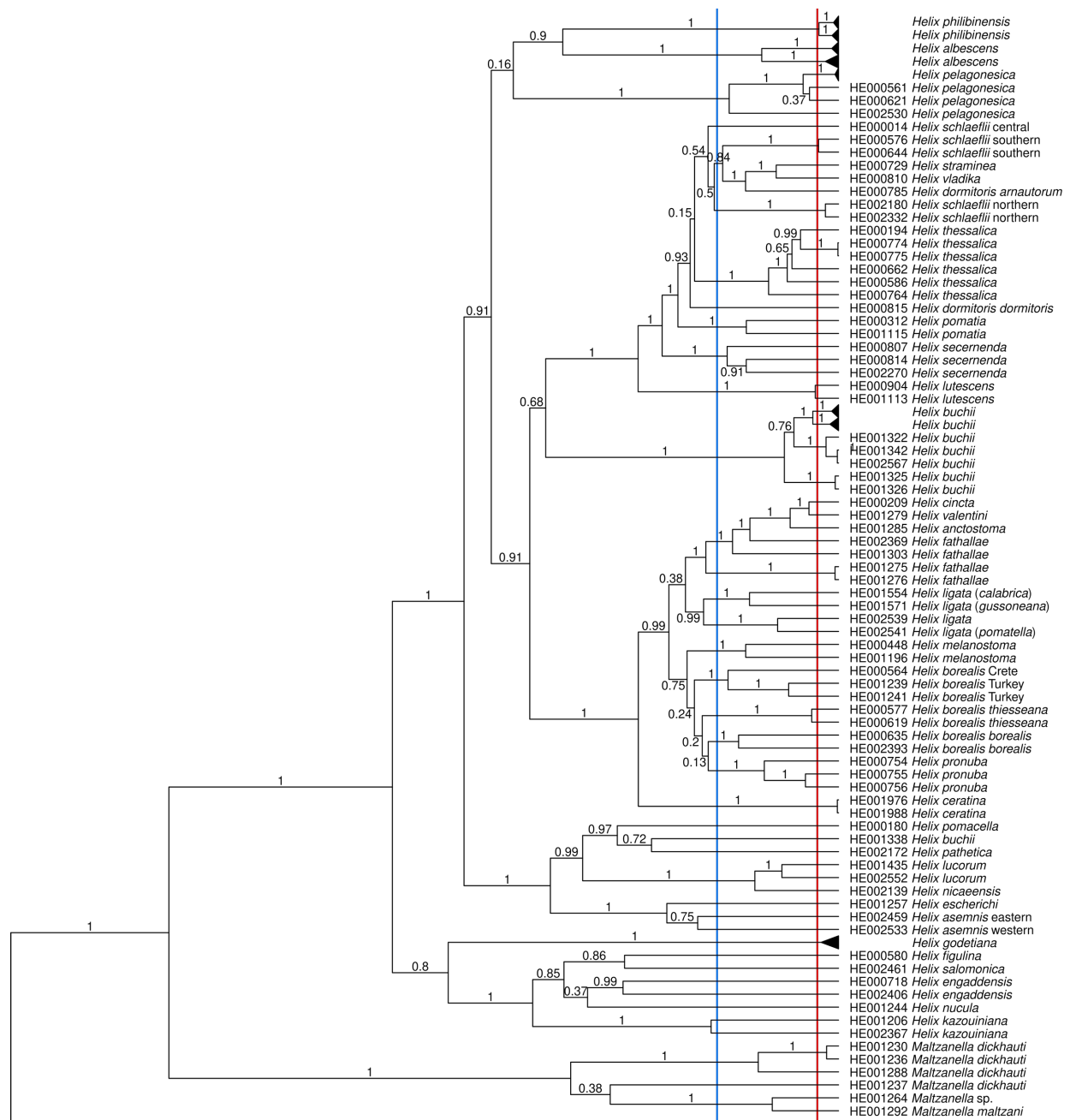




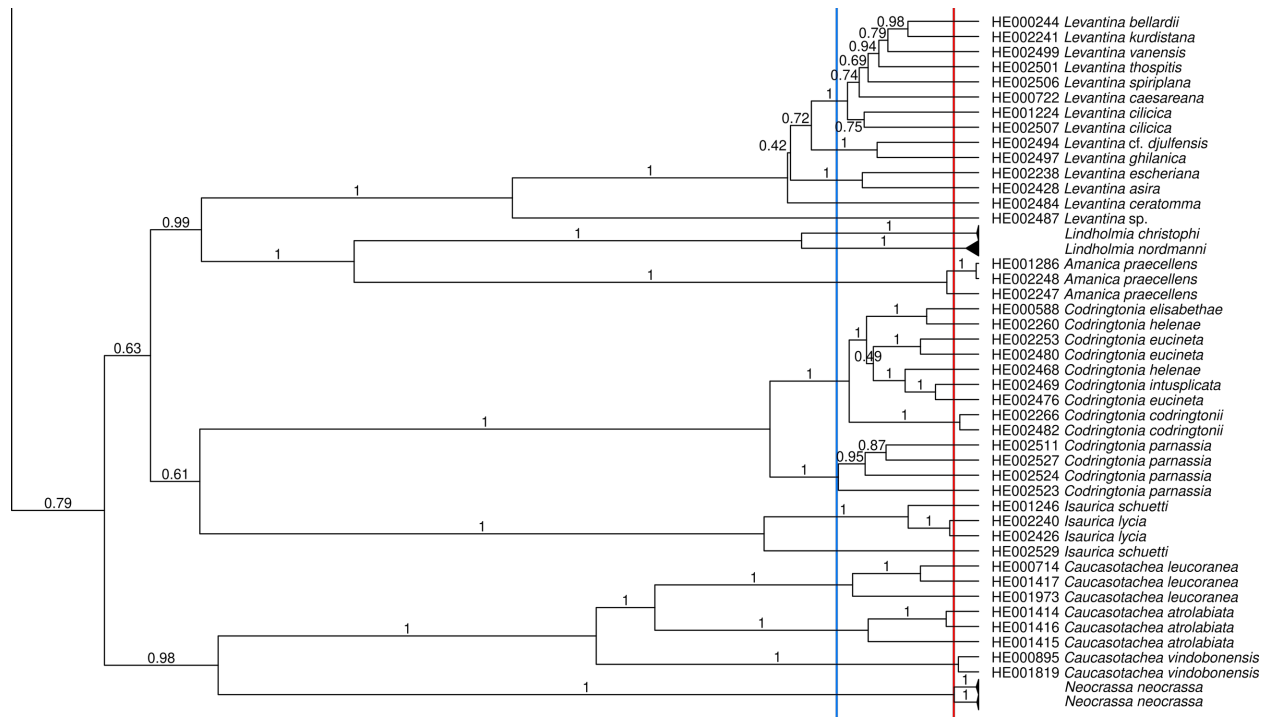
**Fig. S1.** Maximum likelihood phylogeny of the tribe Helicini (previous page) based on concatenated partial *cox1* and 16S sequences and rooted with Thebini, Maculariini and Allognathini (this page). Support values are given as SH-aLRT/bootstrap percentage. The monophyly of the two clades marked with an asterisk clades has been enforced for the analysis; the problematic position of *Theba* and *Eremia* in the unconstrained analysis is indicated by arrows.



**Fig. S2.** Maximum likelihood phylogeny of the subfamily Helicinae based on complete ITS2 and partial 5.8S and 28S rRNA sequences and rooted with representatives of the subfamilies Ariantinae and Murellinae. Support values are given as SH-aLRT/bootstraps percentage.



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**Fig. S3.** Backbone ultrametric phylogeny of the tribe Helicini from analysis in BEAST2 on concatenated partial *cox1*, 16S and 12S rRNA sequences. Maximum clade credibility tree with posterior probabilities is shown. The approximate position of the thresholds used to define the “species-level” clades (blue) and intraspecific lineages (red) for plotting (Fig. S4-S61) is indicated. The estimated depth of nodes in respect to the thresholds differed in the full phylogeny used as basis for the plotting in two cases: the intraspecific split in *Helix lutescens* was shallower, the splits within *Caucasotachea vindobonensis* and between *Helix schlaeflii* and *H. straminea* were deeper.

**Figs. S4-S65.** Intraspecific phylogenies and distribution maps of intraspecific mitochondrial clades plotted by species or by clades exceeding the level of divergence usually seen within species (see Materials and Methods for details). The “species-level” clades were defined by setting a threshold corresponding to the crown age of currently accepted species with deep intraspecific divergence that are monophyletic in the mitochondrial tree and where there is no strong evidence of cryptic species diversity. Intraspecific clades were defined by a threshold compatible with clades recognized in earlier phylogeographic studies. Sampling sites are shown as points whose size is proportional to the number of sampled individuals. Those outside the native range of the given species are marked with an oblique cross (x), sampling sites where the native status is doubtful are marked with a black dot in the middle. Support values are shown for branches with posterior probability  $\geq 0.80$ , values  $\geq 0.96$  are interpreted as significant support. The species are illustrated by photos of live or preserved individuals where available, or by figures from Kobelt’s *Conchylien-Cabinet* (Kobelt 1893-1897, 1902-1906; the latter publication is a comprehensive compendium showing much of the conchological diversity of Helicini). The snails are not to scale.

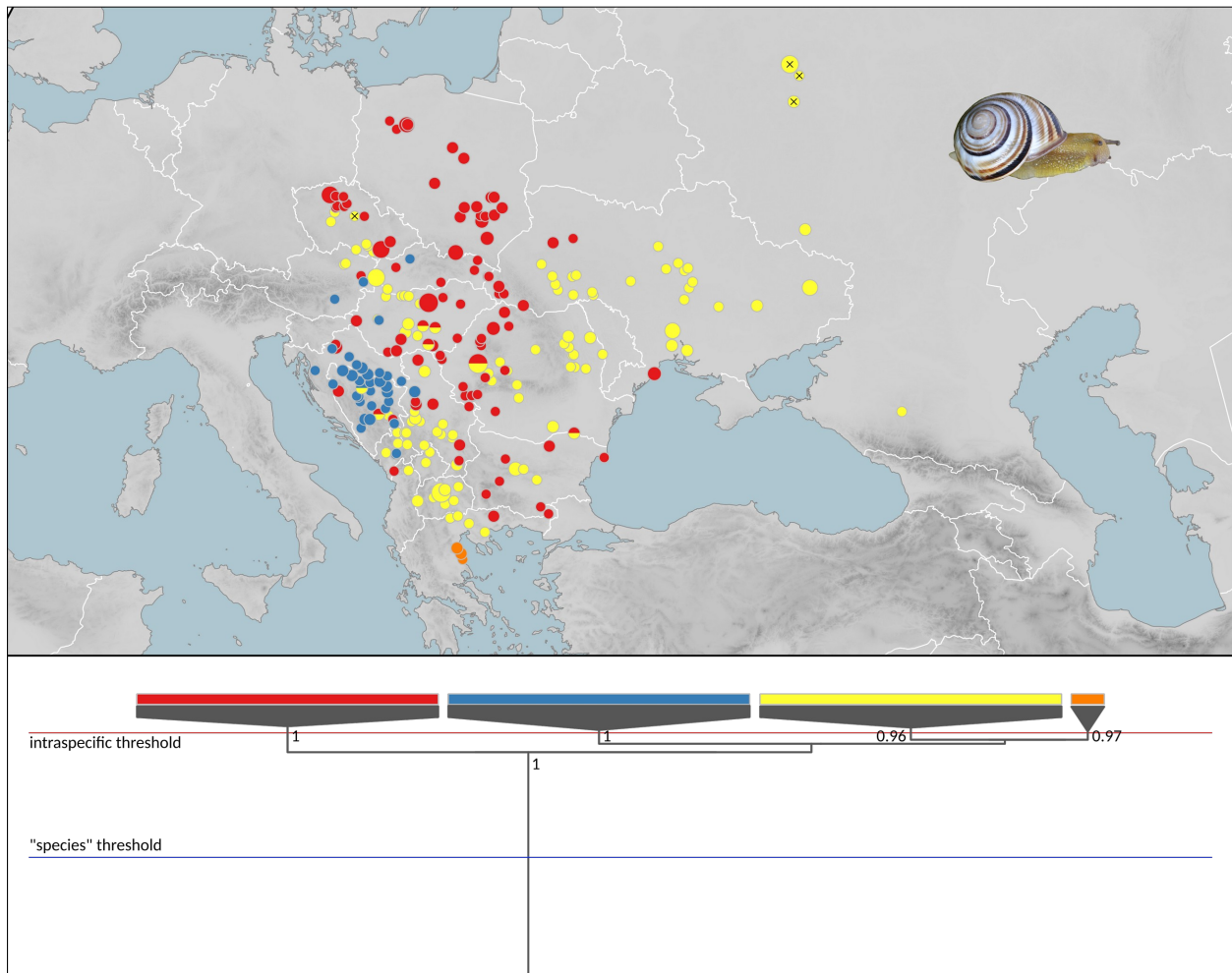
#### References:

Kobelt W. (1893-1897). Die Familie der Heliceen. Die Schnirkelschnecken nebst den zunächst verwandten Gattungen. *Systematisches Conchylien-Cabinet von Martini und Chemnitz*, Bandes 1 Abtheilung 12, Theil 4: 627-650, pls. 183-188 (1893); 651-674, pls. 189-194 (1894); 675-698, pls. 195-200 (1894); 699-730, pls. 201-206 (1894); 731-762, pls. 207-212 (1895); 763-794, pls. 213-218 (1895); 795-826, pls. 219-224 (1895); 827-859 (1897). Nürnberg: Bauer & Raspe.

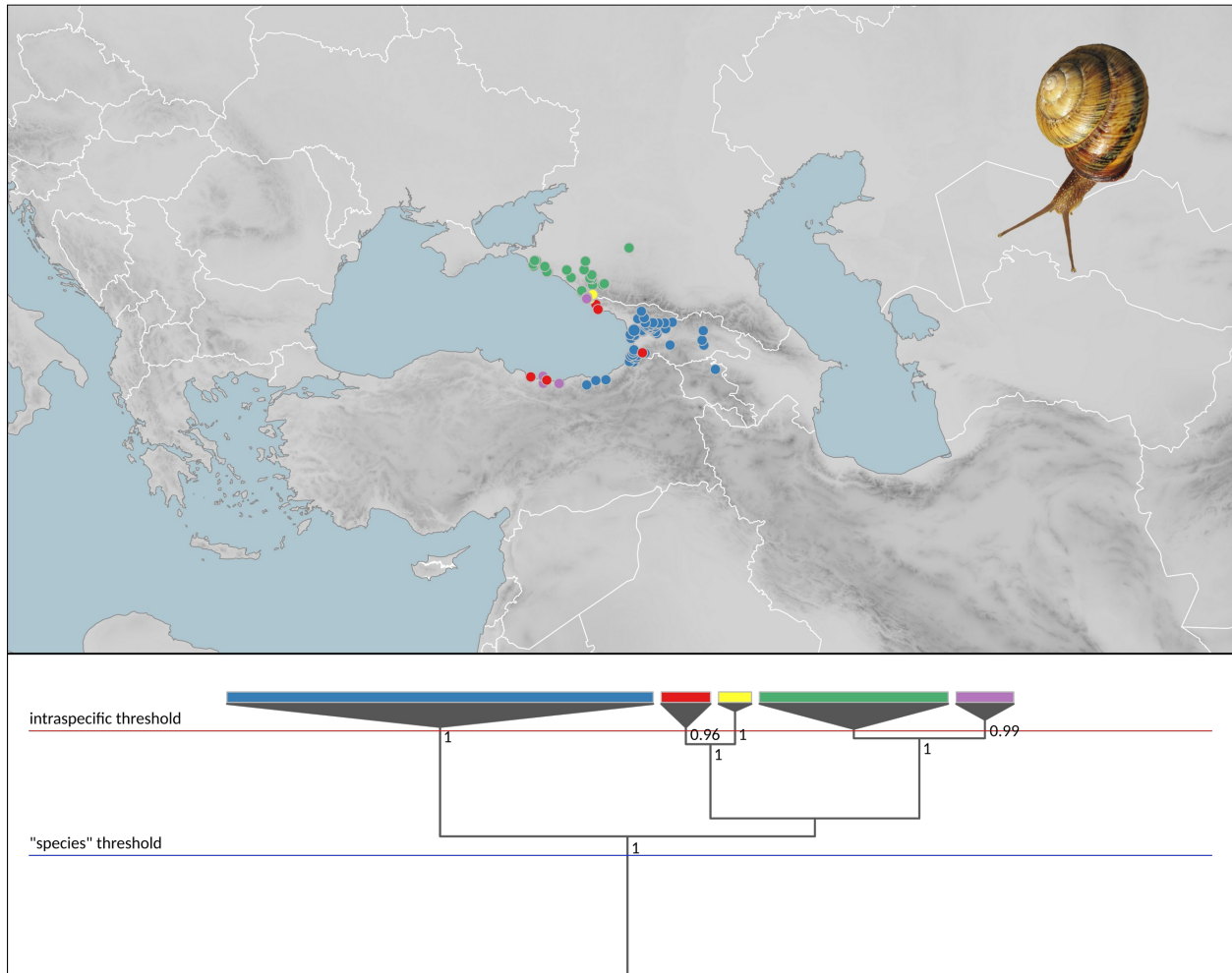
<https://www.biodiversitylibrary.org/item/107053#page/9/mode/1up>

Kobelt W. (1902-1906). Die Familie der Heliceen. Gattung *Helix* (L.) s. str. *Systematisches Conchylien-Cabinet von Martini und Chemnitz*, Bandes 1, Abtheilung 12, Theil 6: 1-24, pls. 300-305 (1902); 25-56, pls. 306-311 (1902); 57-88, pls. 312-317 (1903); 89-120, pls. 318-322, 320a (1903); 121-136, pls. 323-328 (1904); 137-152, pls. 329-334 (1904); 153-176, pls. 335-340 (1904); 177-200, pls. 341-346 (1904); 201-224, pls. 347-352 (1905); 225-240, pls. 353-358 (1905); 241-256, pls. 359-364 (1906); 257-272, pls. 365-370 (1906); 273-308, pls. 371-376 (1906). Nürnberg: Bauer & Raspe.

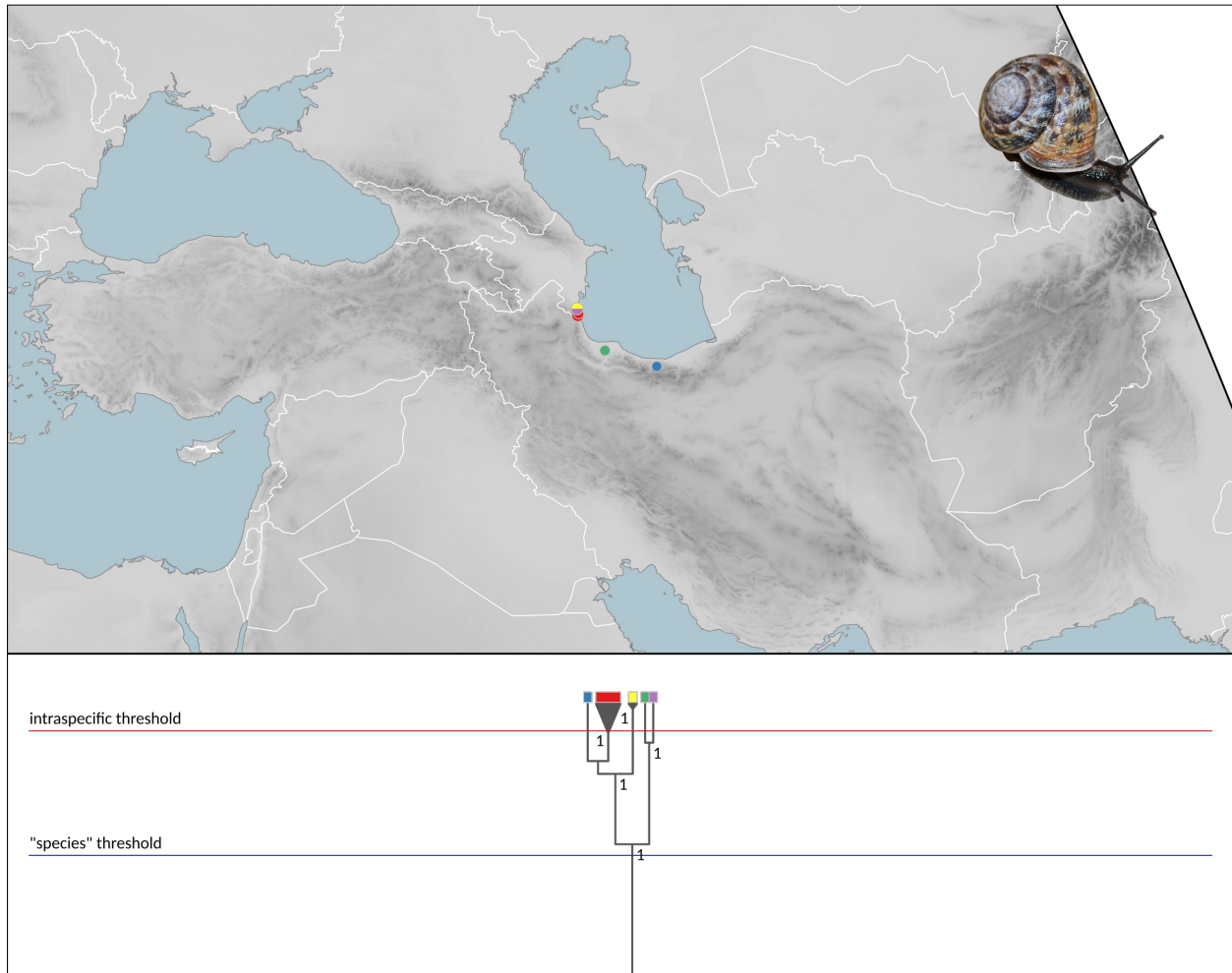
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**Fig. S4.** Distribution of intraspecific mitochondrial lineages of *Caucasotachea vindobonensis* (C. Pfeiffer, 1828). The extent of sampling largely coincides with the species range limits. An exception is its eastern part, where the natural distribution extends at least up to the river Volga and Dagestan in the east of the Greater Caucasus. In the west, Slovenia and Friuli-Venezia Giulia region of Italy are not covered. Interestingly, there are records on [www.inaturalist.org](http://www.inaturalist.org) also from low-lying places on the coast of south-western Albania. Note that *C. vindobonensis* often occurs in anthropogenic habitats where recent human-mediated dispersal is likely (e.g. along railways). Anthropogenic introductions appear to be a significant factor for the current distribution of *C. vindobonensis* in European Russia, exemplified here by samples from the vicinity of Moscow. The species is illustrated by an individual from Serbia (Vojvodina: between Čurug and Bačko Gradište).

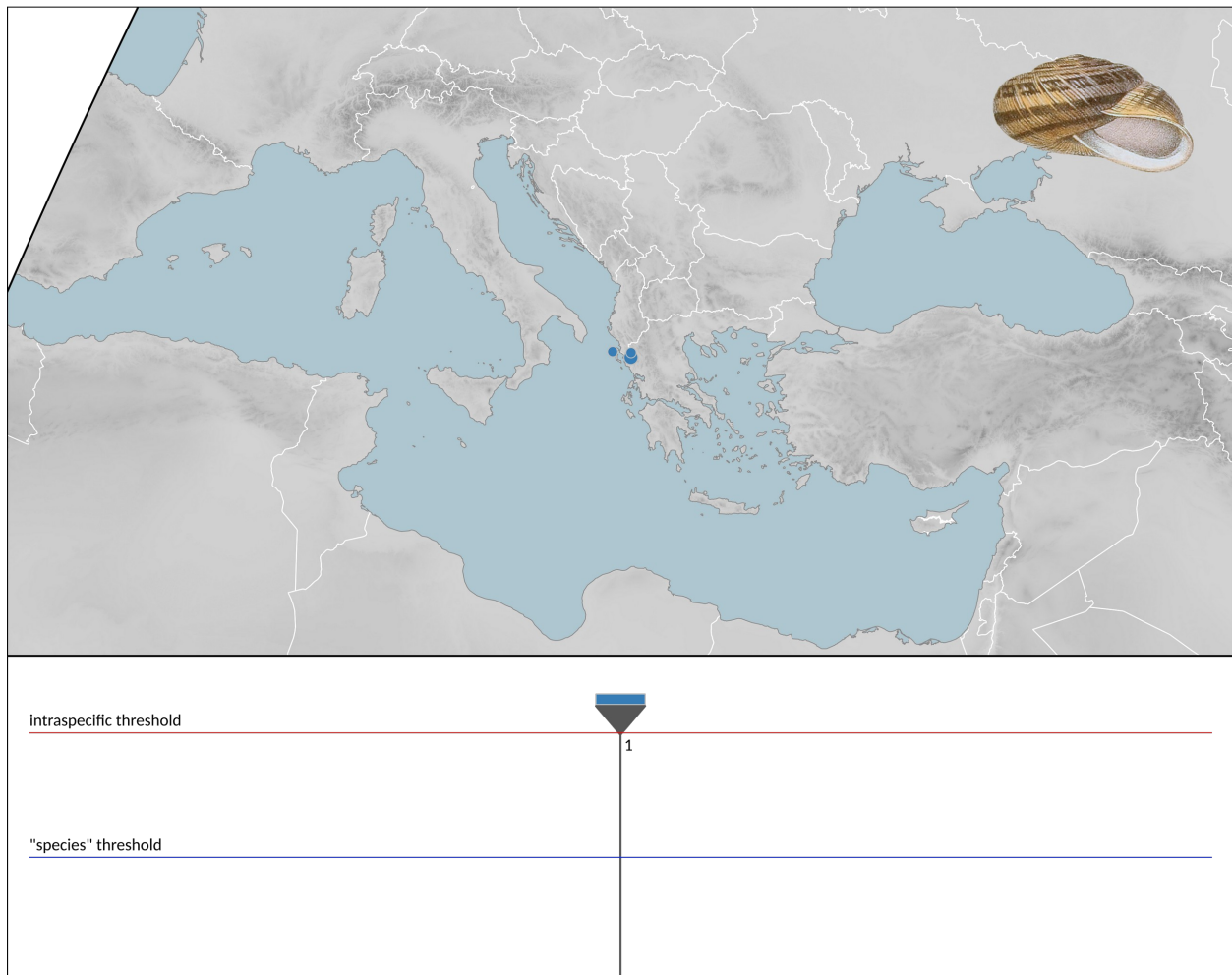


**Fig. S5.** Distribution of intraspecific mitochondrial lineages of *Caucasotachea atrolabiata* (Krynicky, 1833). The distribution range of the species extends more to the east into northern Azerbaijan. It is illustrated by an individual from Turkey (Ordu Province: Ünye castle).

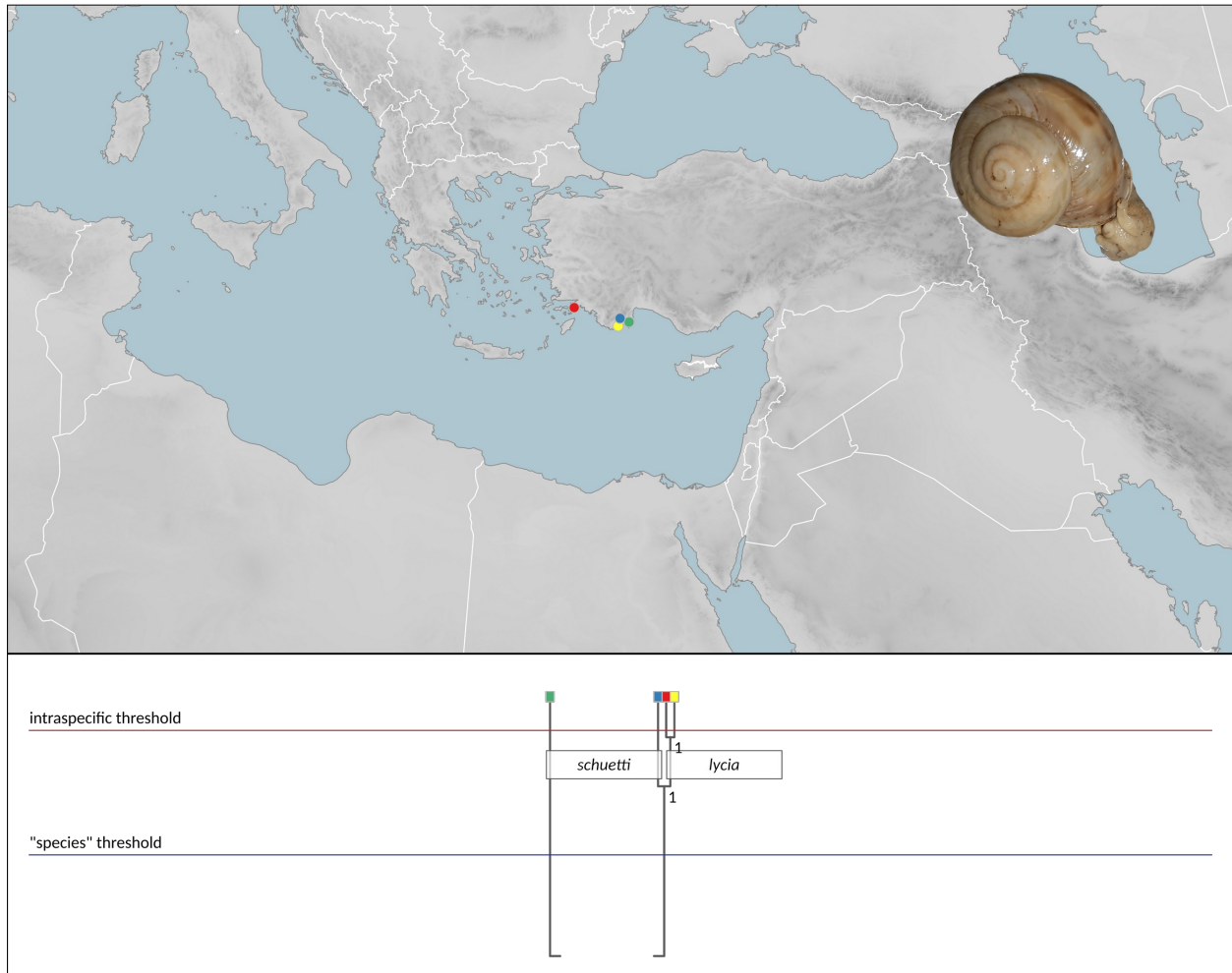


**Fig. S6.** Distribution of intraspecific mitochondrial lineages of *Caucasotachea leucoranea* (Mousson, 1863). The sampling is not representative and the distribution range of the species extends somewhat more to the east (Neubert & Bank 2006), although its limits are probably not sufficiently known. The species is illustrated by an individual from Iran (Ostān-e Māzandarān: Kinj).

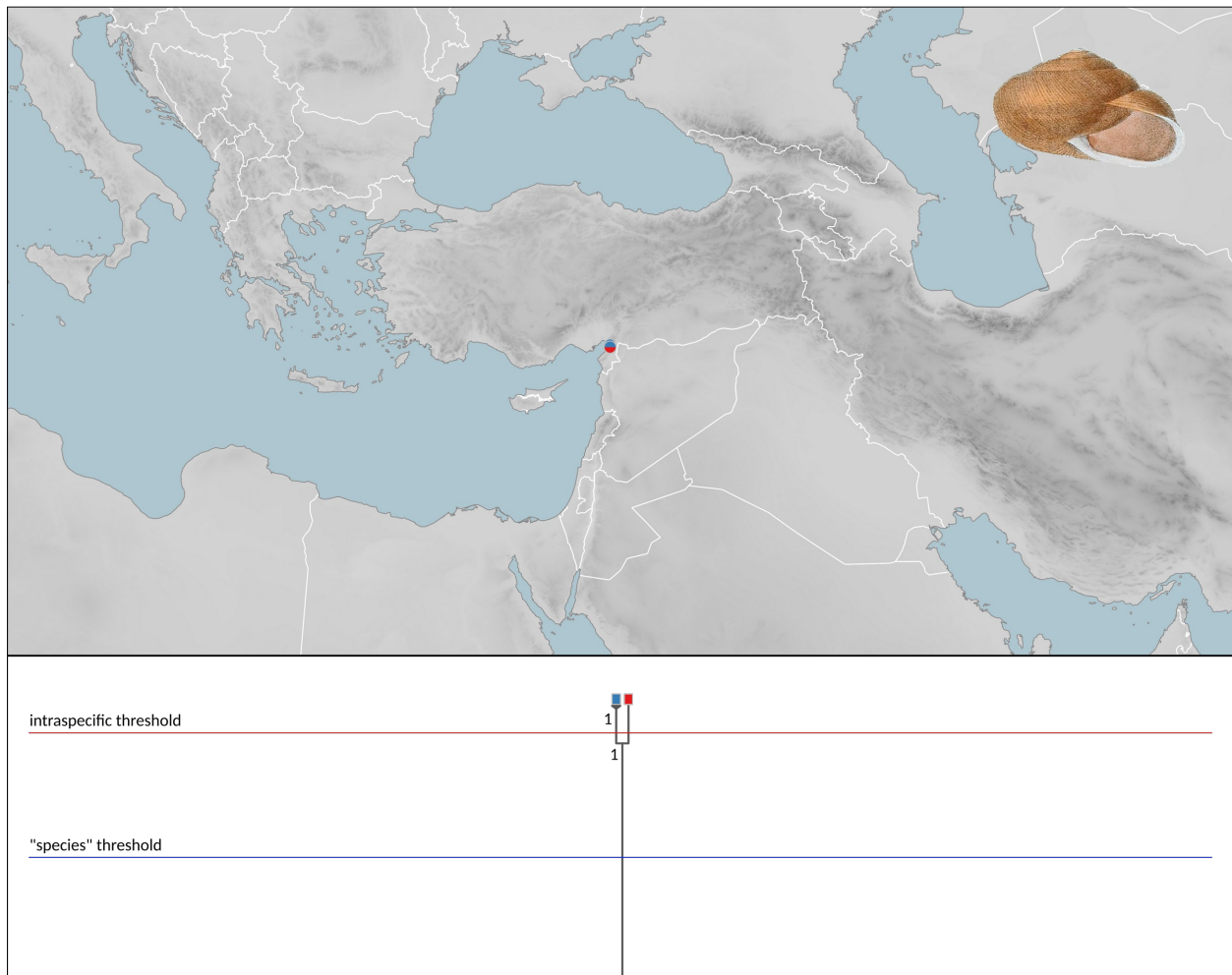




**Fig. S7.** Distribution of the mitochondrial clade of *Neocrassa neocrassa* (Zilch, 1952). The species is illustrated by a figure from Kobelt's Conchylien-Cabinet (Kobelt 1902–1906).

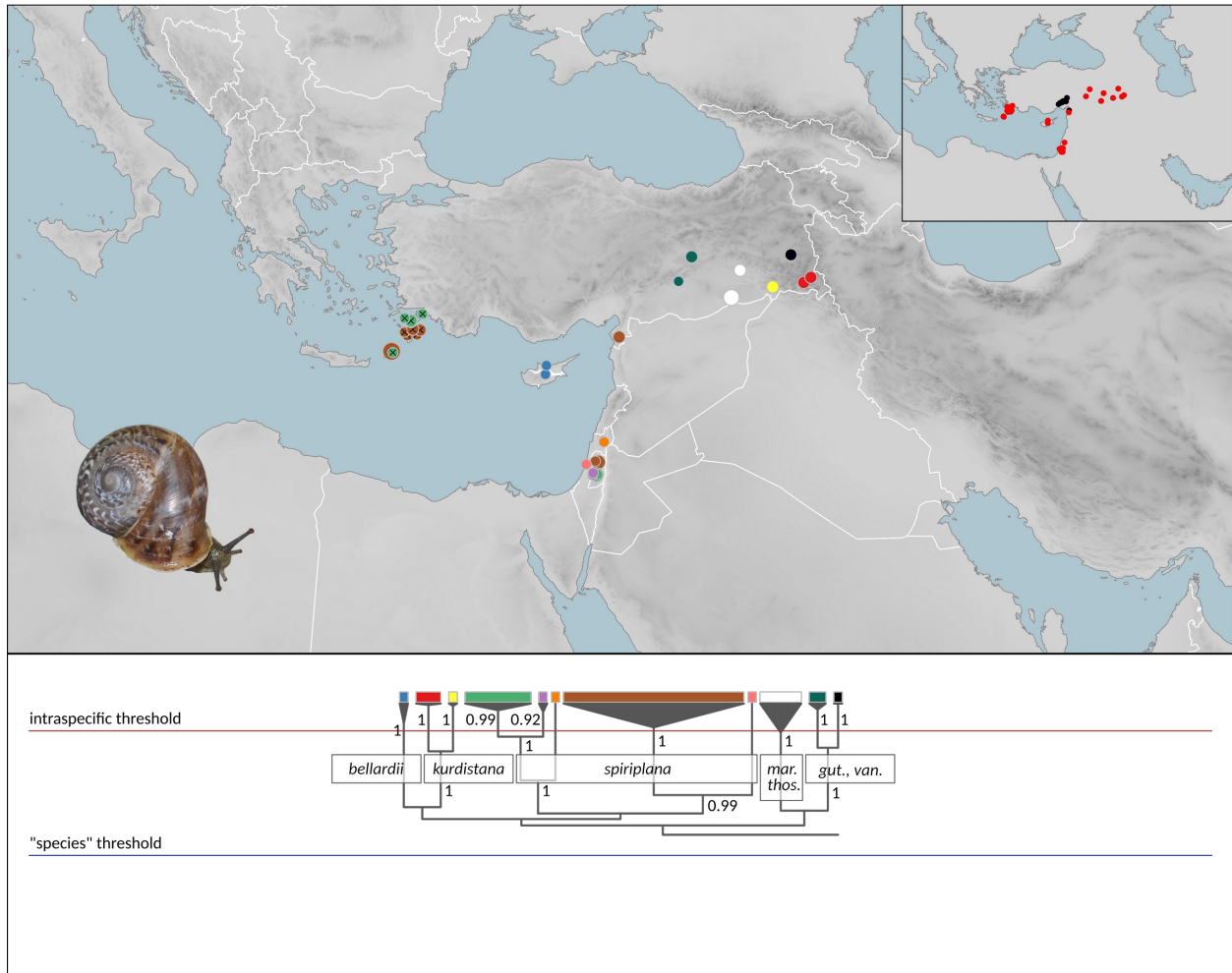


**Fig. S8.** Distribution of mitochondrial lineages found in *Isaurica lycia* (von Martens, 1889) and *Isaurica schuetti* Subai, 1994 (part). The sampling is not representative. *Isaurica lycia* is distributed between the two (red and yellow) sampling points shown here and somewhat into the inland, with additional occurrences known from an isolated area near Silifke further east on the southern Anatolian coast (Subai 1994). *Isaurica schuetti* extends north of its two sampling points. *Isaurica* is illustrated by a preserved *I. schuetti* individual from Turkey (Antalya Province: 1 km S of junction to Olympos, 12 road km from Phaselis).



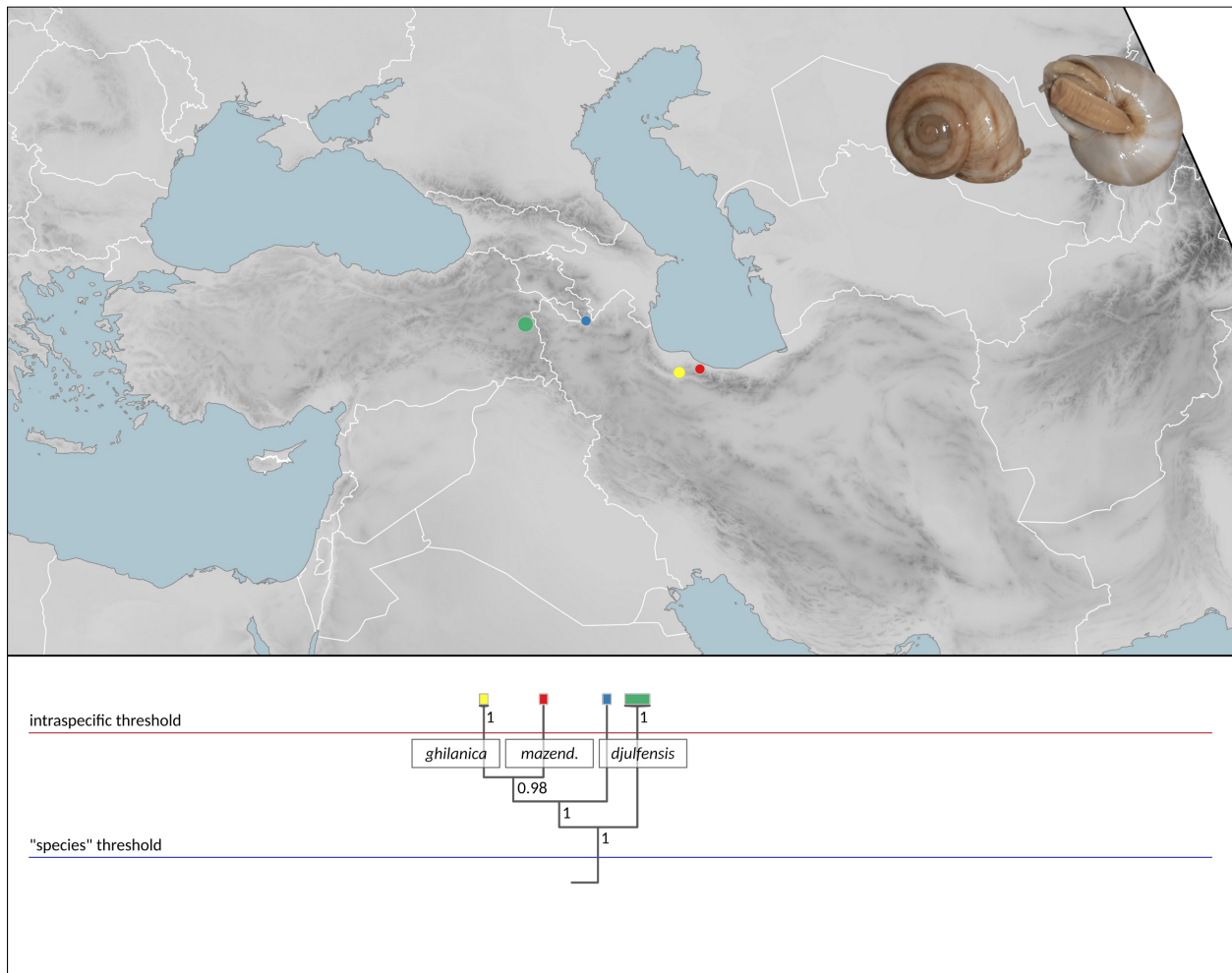
**Fig. S9.** Distribution of mitochondrial lineages found in *Amanica praezellens* (Nägele, 1901). The species is illustrated by a figure from Kobelt's Conchylien-Cabinet (Kobelt 1902–1906).

*Levantina* part A: *Levantina spiriplana* (Olivier, 1801); *Levantina bellardii* (Mousson, 1854); *Levantina guttata* (Olivier, 1804); *Levantina mardinensis* Kobelt, 1900; *Levantina kurdistan* (L. Pfeiffer, 1862)



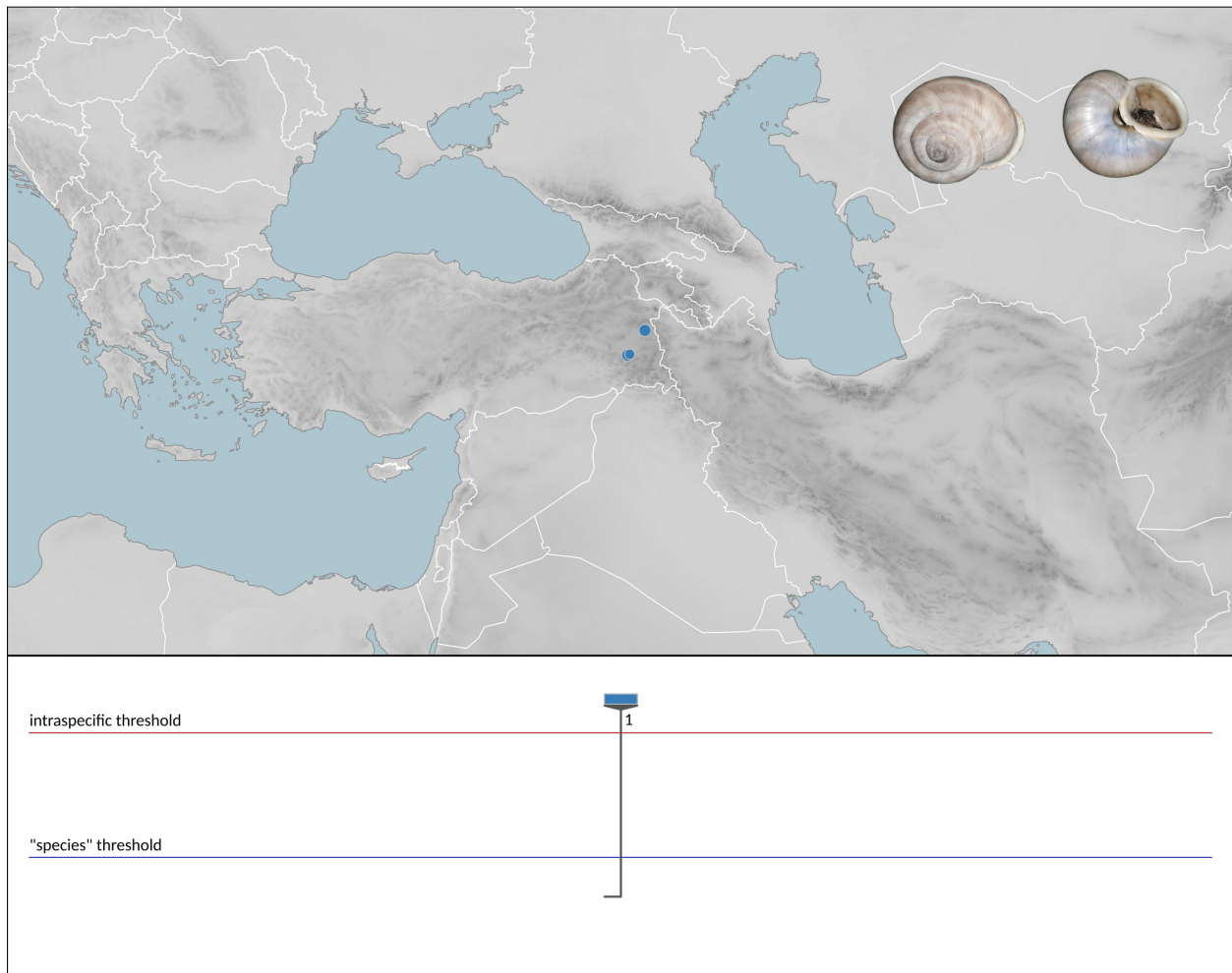
**Fig. S10.** Distribution of mitochondrial lineages found in the core clade of *Levantina* (first part, see the next figure for the remainder). Besides the type species *Levantina spiriplana* (Olivier, 1801), the following taxa recognized as valid species by Schütt & Subai (1996) are included: *Levantina bellardii* (Mousson, 1854), *Levantina guttata* (Olivier, 1804), *Levantina mardinensis* Kobelt, 1900, *Levantina thospitis* (Schütt & Subai, 1996), *Levantina vanensis* (Schütt & Subai, 1996), and *Levantina kurdistan* (L. Pfeiffer, 1862). Given the very low divergences, *L. thospitis* and *L. vanensis* are likely junior synonyms of *L. mardinensis* and *L. guttata*, respectively. Further species may belong here, in particular *Levantina mahanica* Kobelt 1910 from Iraqi Kurdistan and western Iran which may be closely related to *L. kurdistan*. The sampling of the included species is highly incomplete. The inset shows the distribution of all samples of the core clade of *Levantina* with those shown here in red. The group is illustrated by an individual of *L. bellardii* from Cyprus (south of Kyrenia/Girne, Hilarion Kalesi).

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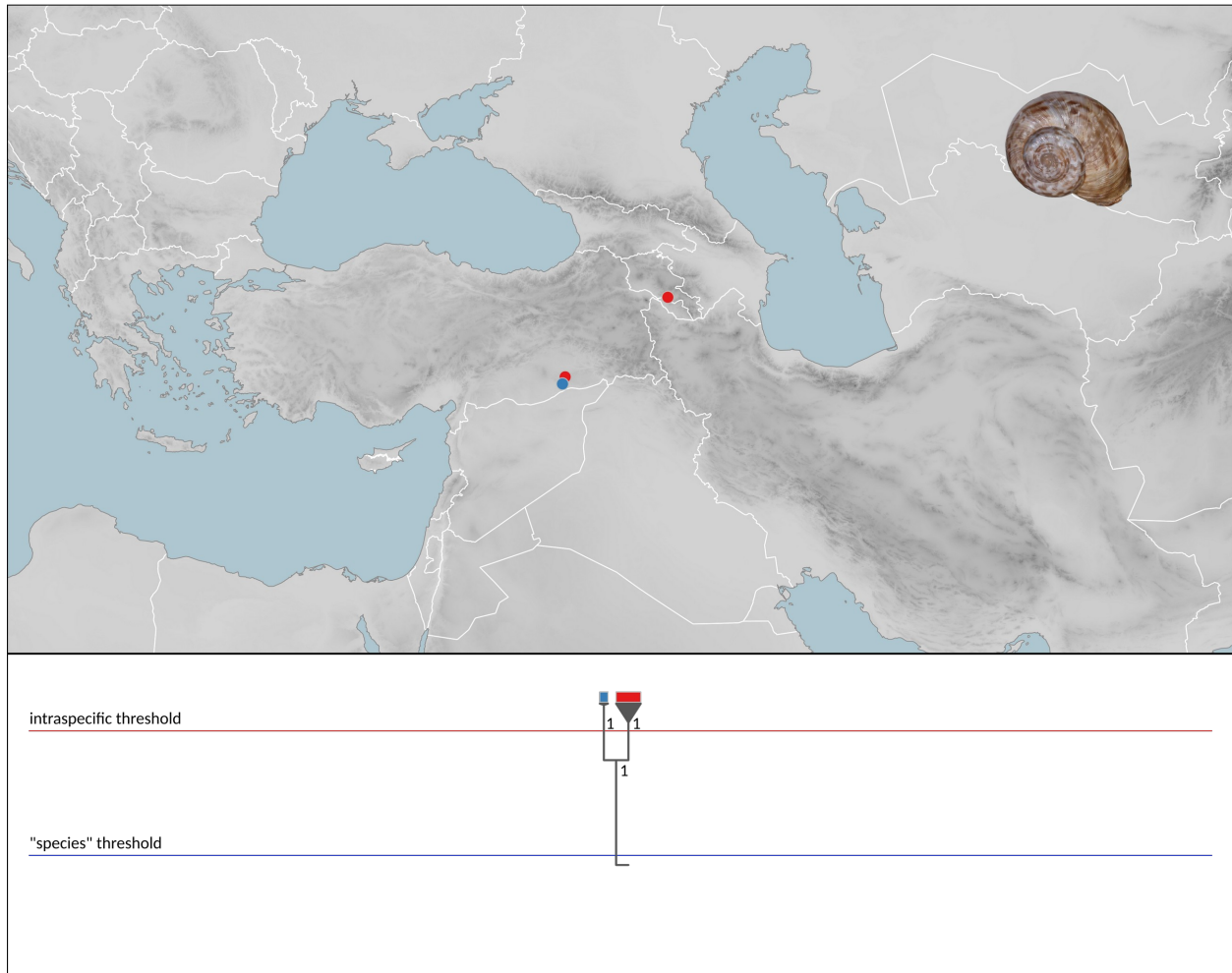


**Fig. S12.** Distribution of mitochondrial lineages found in *Levantina djulfensis* (Dubois de Montpéreux, 1840) (in blue) and related taxa recognized as valid species by Schütt & Subai (1996): *Levantina ghilanica* (Mousson, 1876) (in yellow) and *Levantina mazenderanensis* (Kobelt, 1883) (in red). The lineage in green comes from a population initially identified as *L. vanensis* by Hartwig Schütt. The sampling is highly incomplete, *L. djulfensis* has been reported also south-west of the green point. The group is illustrated by preserved individuals from Iran (Gilan Province: 13 km east of Tütkābon).



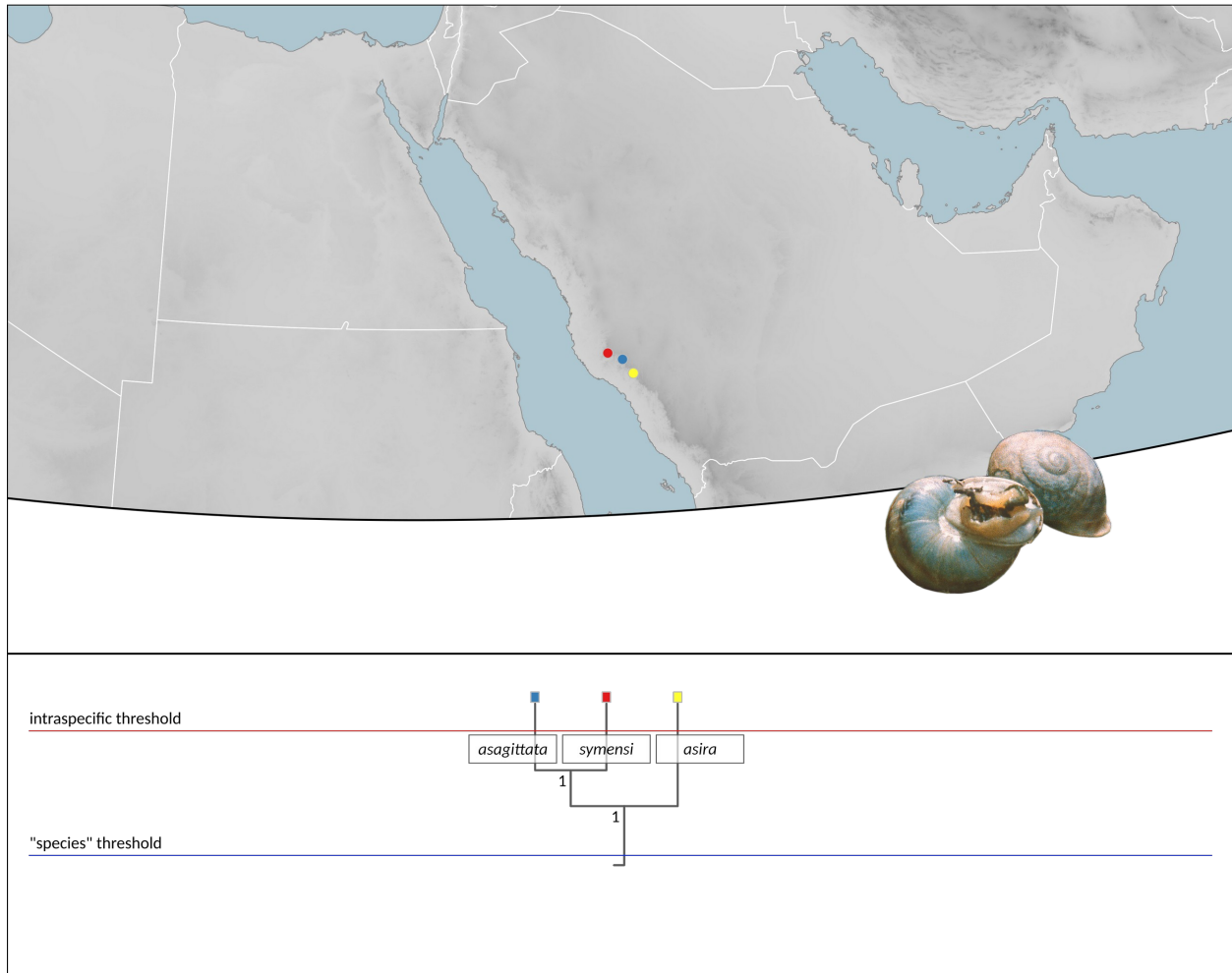


**Fig. S13.** Distribution of intraspecific mitochondrial lineages of *Levantina ceratomma* (L. Pfeiffer, 1856). The sampling is not representative, the known range includes the mountains along the border between Turkey and Iran (Schütt & Subai 1996). The species is illustrated by shells from Turkey (Van Province: Lake Van, Akdamar Island).



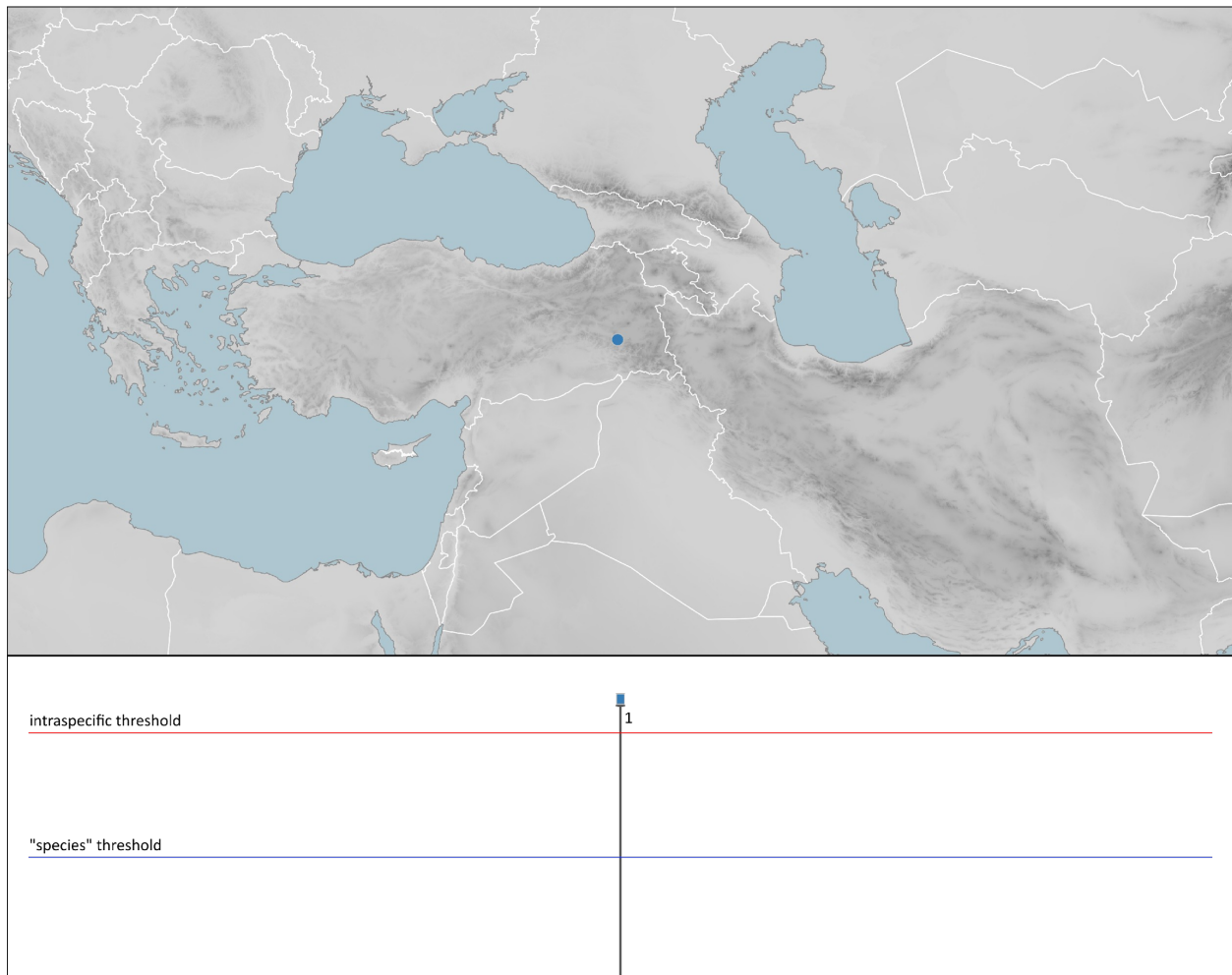
**Fig. S14.** Distribution of intraspecific mitochondrial lineages of *Levantina escheriana* (Bourguignat, 1856). The sampling is not representative; the known range lies between the sampling points shown here (Schütt & Subai 1996). One additional taxon recognized as valid by Schütt & Subai (1996) may belong here, namely *Levantina ninivita* (Galland, 1885) described from near Mosul in northern Iraq. *Levantina escheriana* is illustrated by a shell from Turkey (Mardin Province: Elmabahçe).



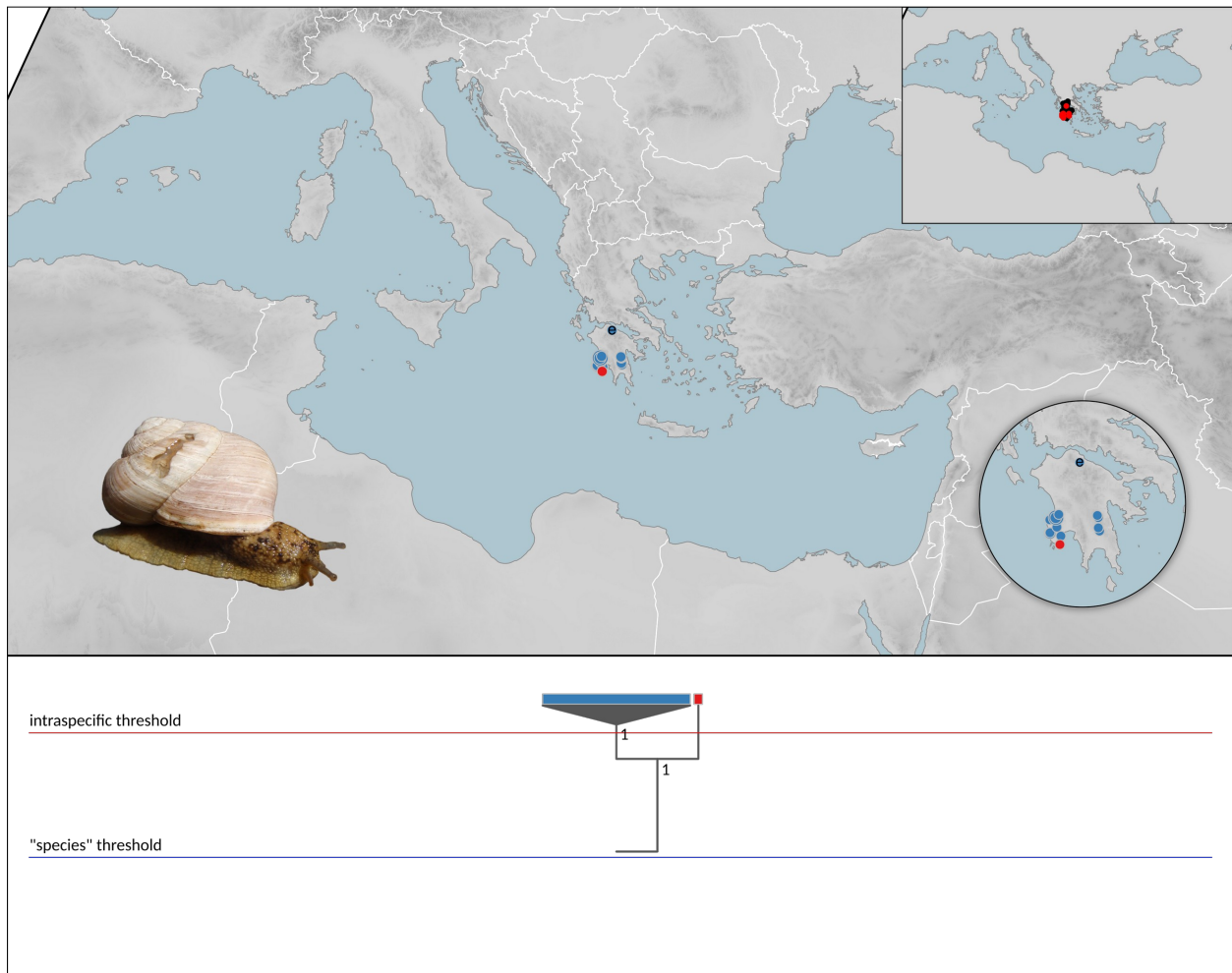


**Fig. S15.** Sampling sites of mitochondrial lineages found in *Levantina asagittata* Neubert, 1998 (blue), *Levantina symensi* Neubert, 1998 (red) and *Levantina asira* Neubert, 1998 (yellow). The group is illustrated by individuals of *L. symensi* from Saudi Arabia (Makkah Province, Jabal Dakah SW of Taif; photo E. Neubert).

*Levantina* sp.

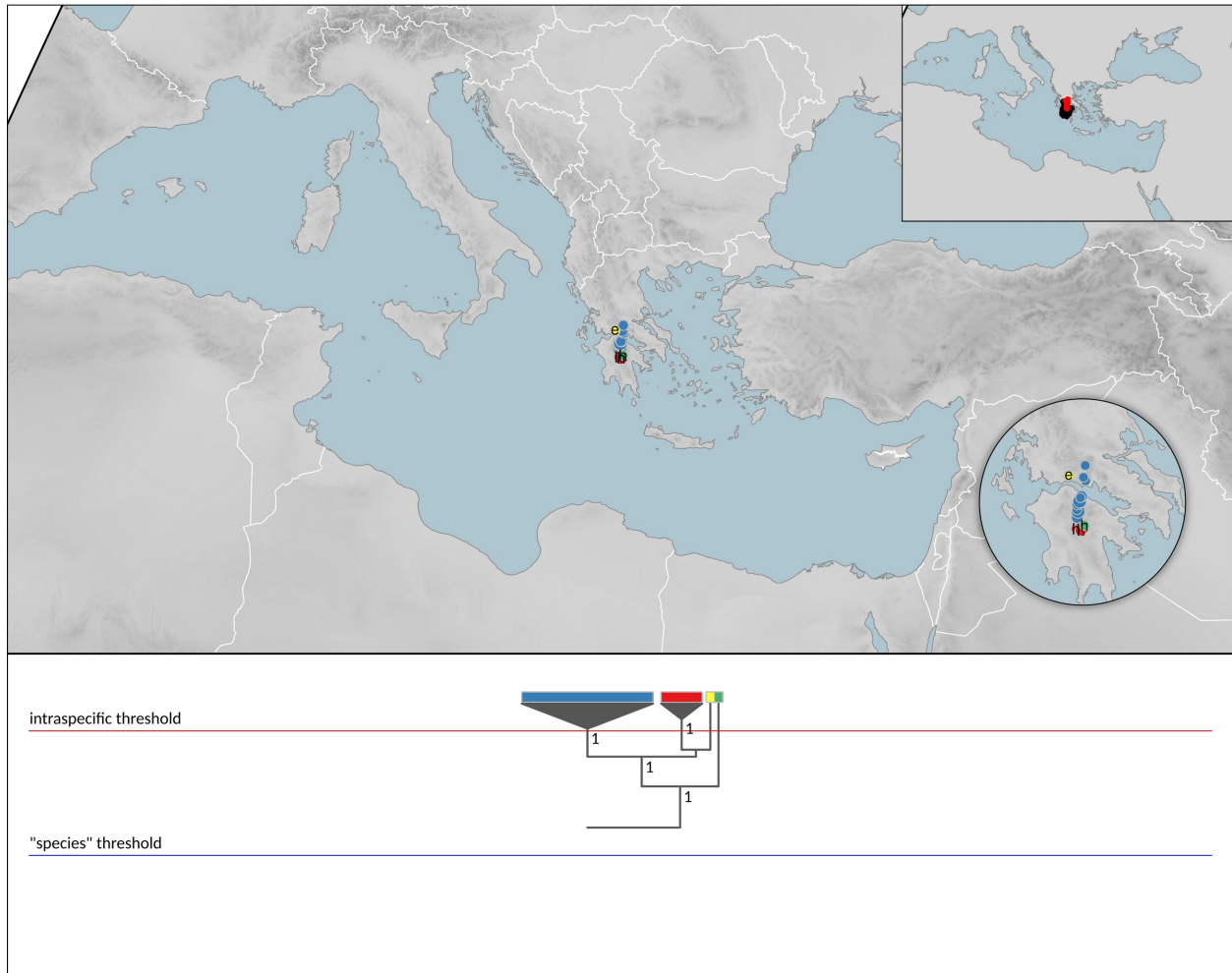


**Fig. S16.** Sampling site of the most basal mitochondrial clade of *Levantina*. It has been obtained from a population which we were unable to reliably identify with any of the currently accepted species.

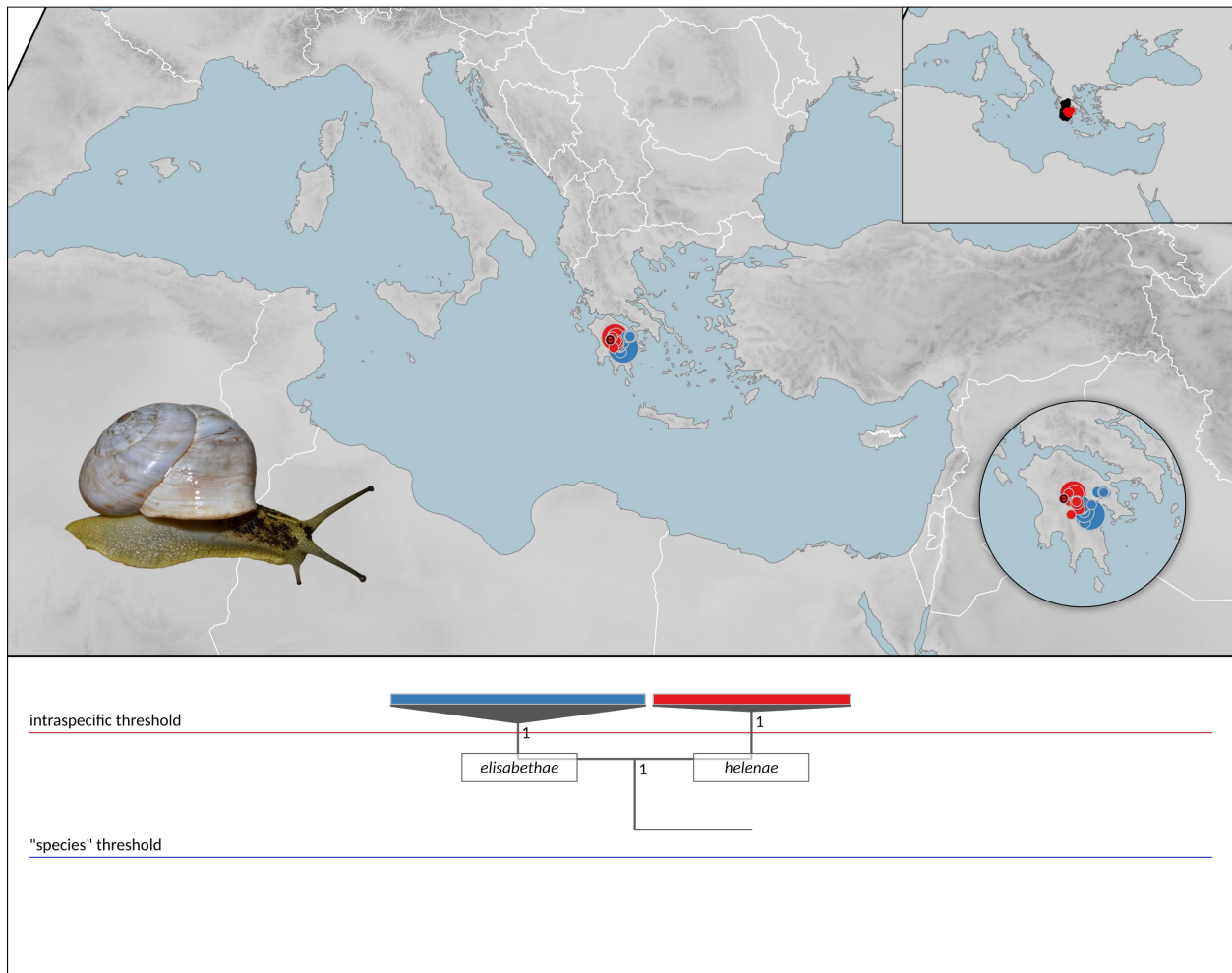


**Fig. S17.** Distribution of intraspecific mitochondrial lineages of *Codringtonia codringtonii* (Gray, 1834). The sample from northern Peloponnese marked with “e” has been identified as *Codringtonia eucineta* by Peter Subai, but the identification is uncertain due to conchological similarities to *C. codringtonii* (see text and Subai 2005 for details). The upper inset shows the distribution of the “species-level” clade comprising all *Codringtonia* samples except for the more distantly related *Codringtonia parnassia*; those shown here are in red. The species is illustrated by an individual from Greece (Peloponnese: Petrochori, Nestor’s cave).

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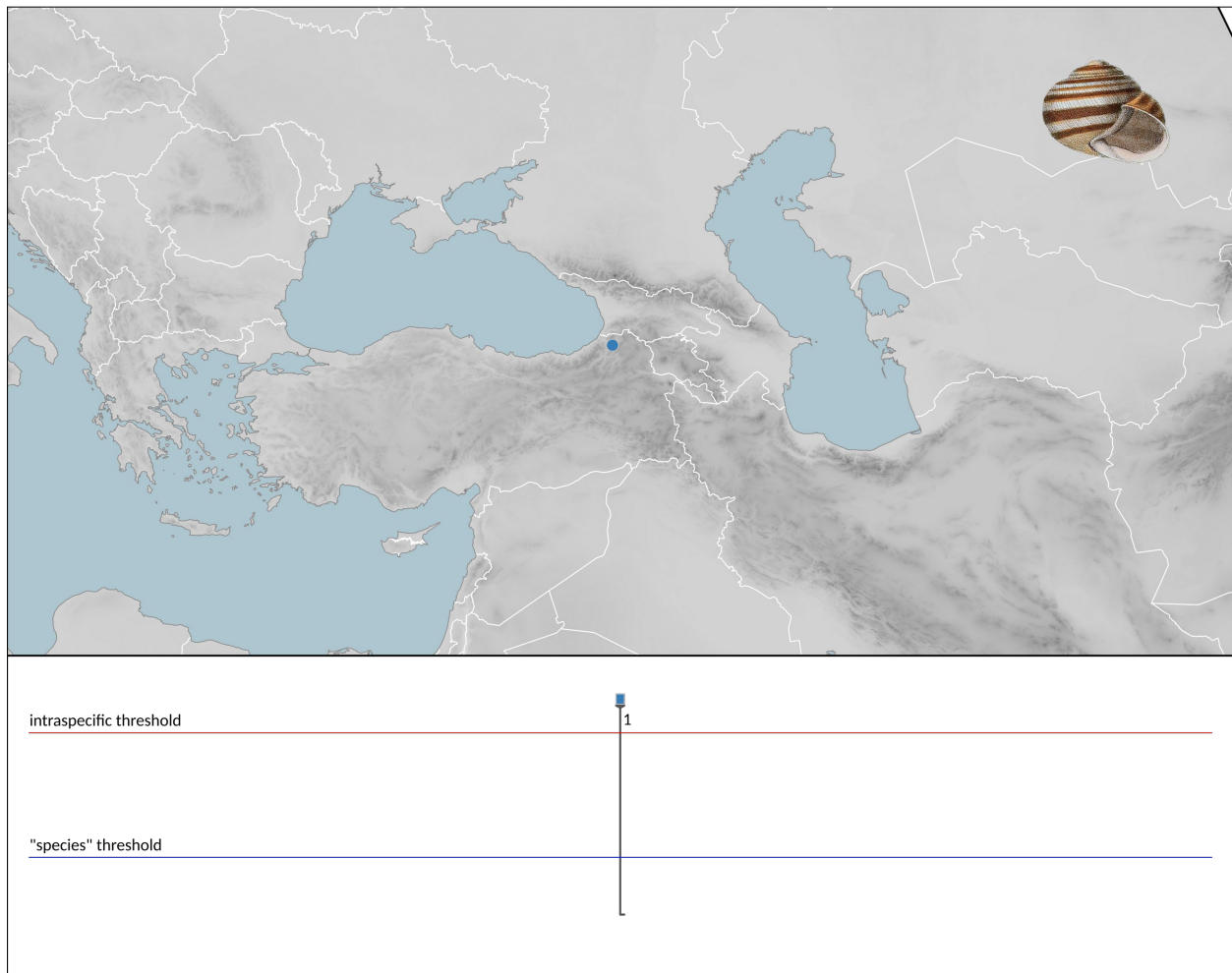
**Fig. S19.** Distribution of mitochondrial lineages found in a clade containing *Codringtonia intusplicata* (L Pfeiffer, 1851). At the sampling sites marked with "h" and "e" this clade has been found in populations identified as *Codringtonia helenae* and *Codringtonia eucineta*, respectively. The upper inset shows the distribution of the "species-level" clade comprising all *Codringtonia* samples except for *Codringtonia parnassia*; those shown here are in red.



**Fig. S20.** Distribution of mitochondrial lineages found in a clade containing *Codringtonia elisabethae* Subai, 2005 and most of *Codringtonia helenae* Subai, 2005. At the sampling site marked with "e" this clade has been found in a population identified as *Codringtonia eucineta*. The upper inset shows the distribution of the "species-level" clade comprising all *Codringtonia* samples except for *Codringtonia parnassia*; those shown here are in red. The clade is illustrated by *C. elisabethae* from Greece (Peloponnese: Mycenae).

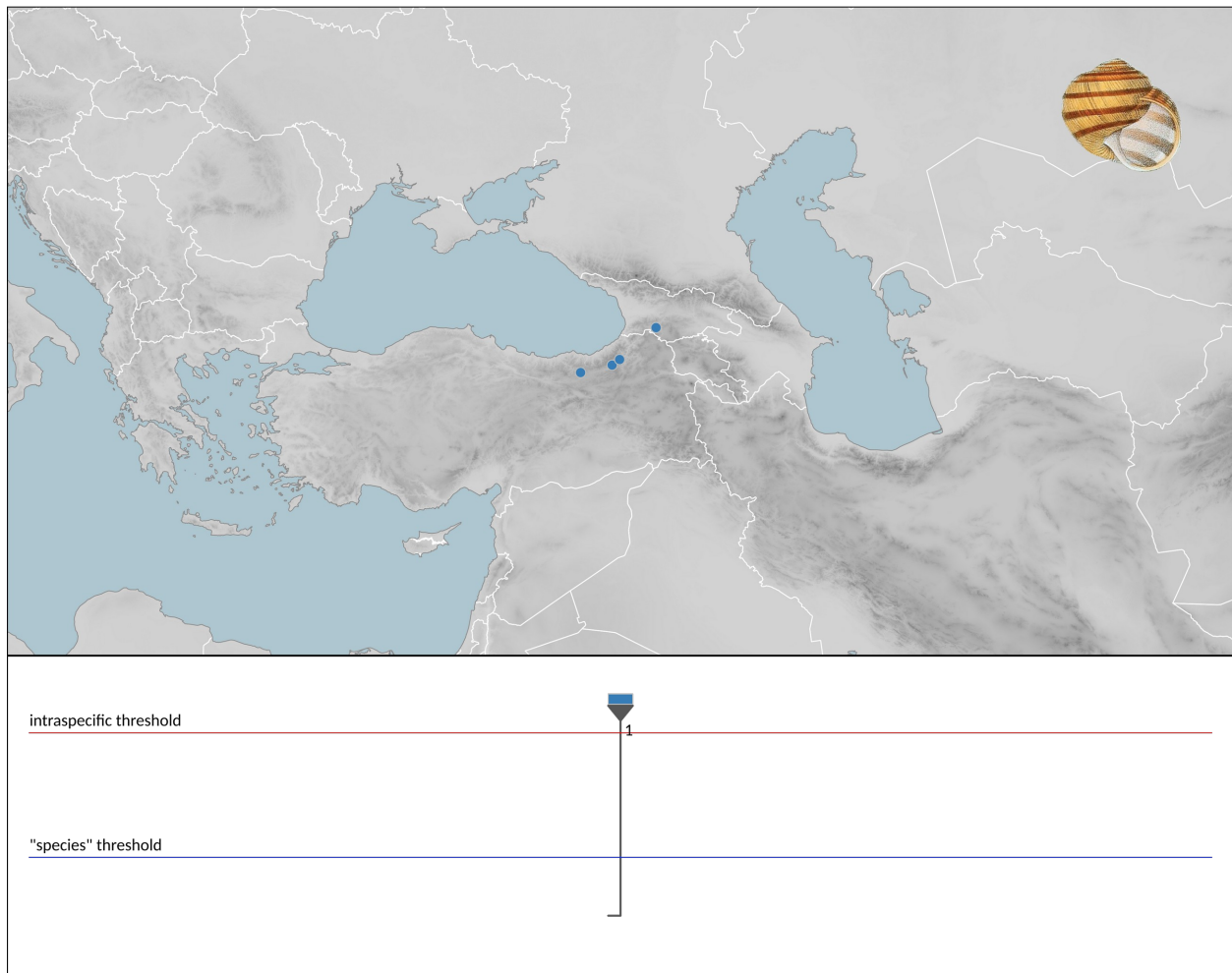


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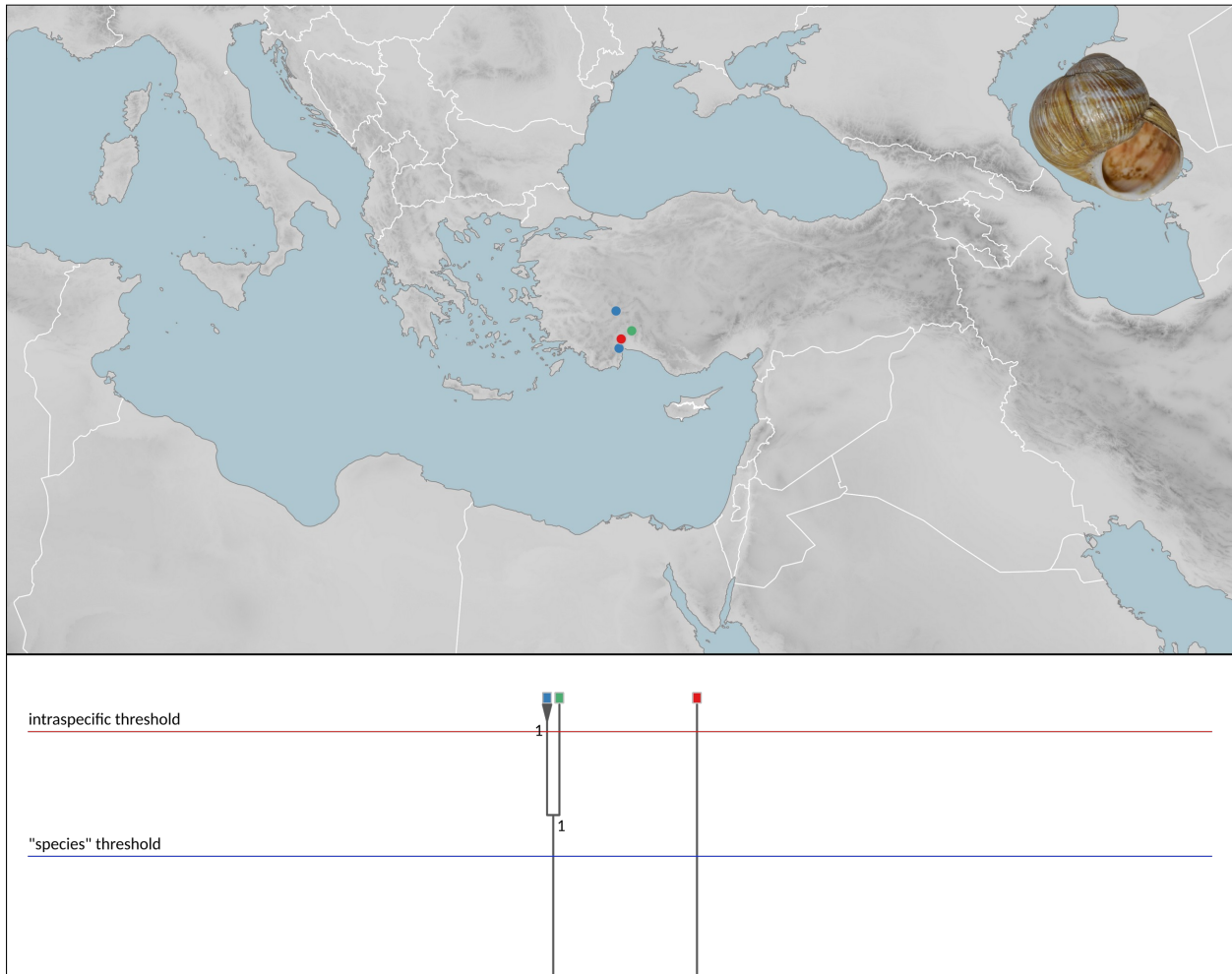


**Fig. S22.** Sampling site of a mitochondrial lineage found in *Lindholmia christophi* (O. Boettger, 1881). The species has an extremely narrow distribution range. It is illustrated by a figure from Kobelt's Conchylien-Cabinet (Kobelt 1893–1897).





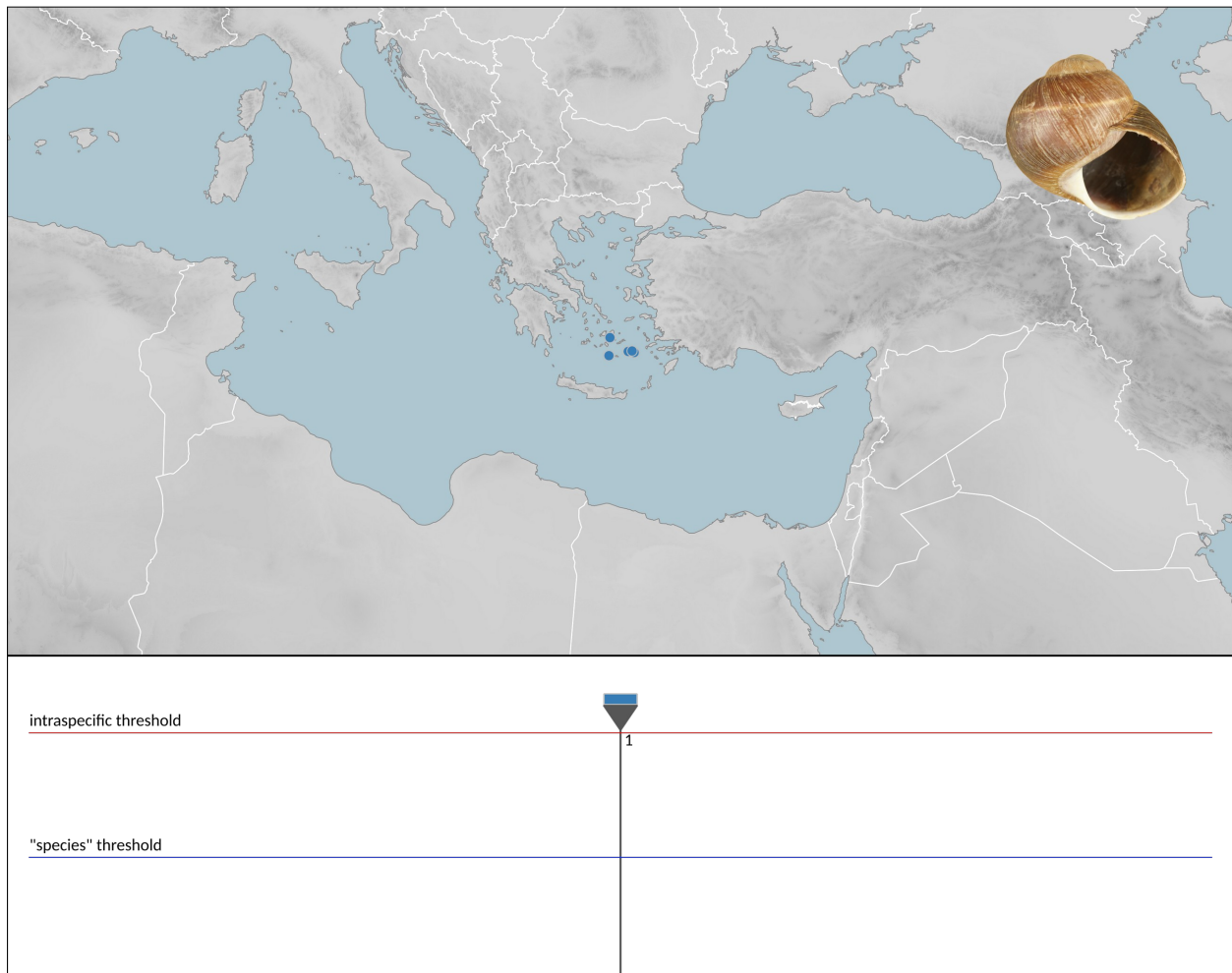
**Fig. S23.** Distribution of intraspecific mitochondrial lineages of *Lindholmia nordmanni* (Mousson, 1854). The sampling is not representative, the species range extends more to the west. The species is illustrated by a figure from Kobelt's Conchylien-Cabinet (Kobelt 1902–1906).



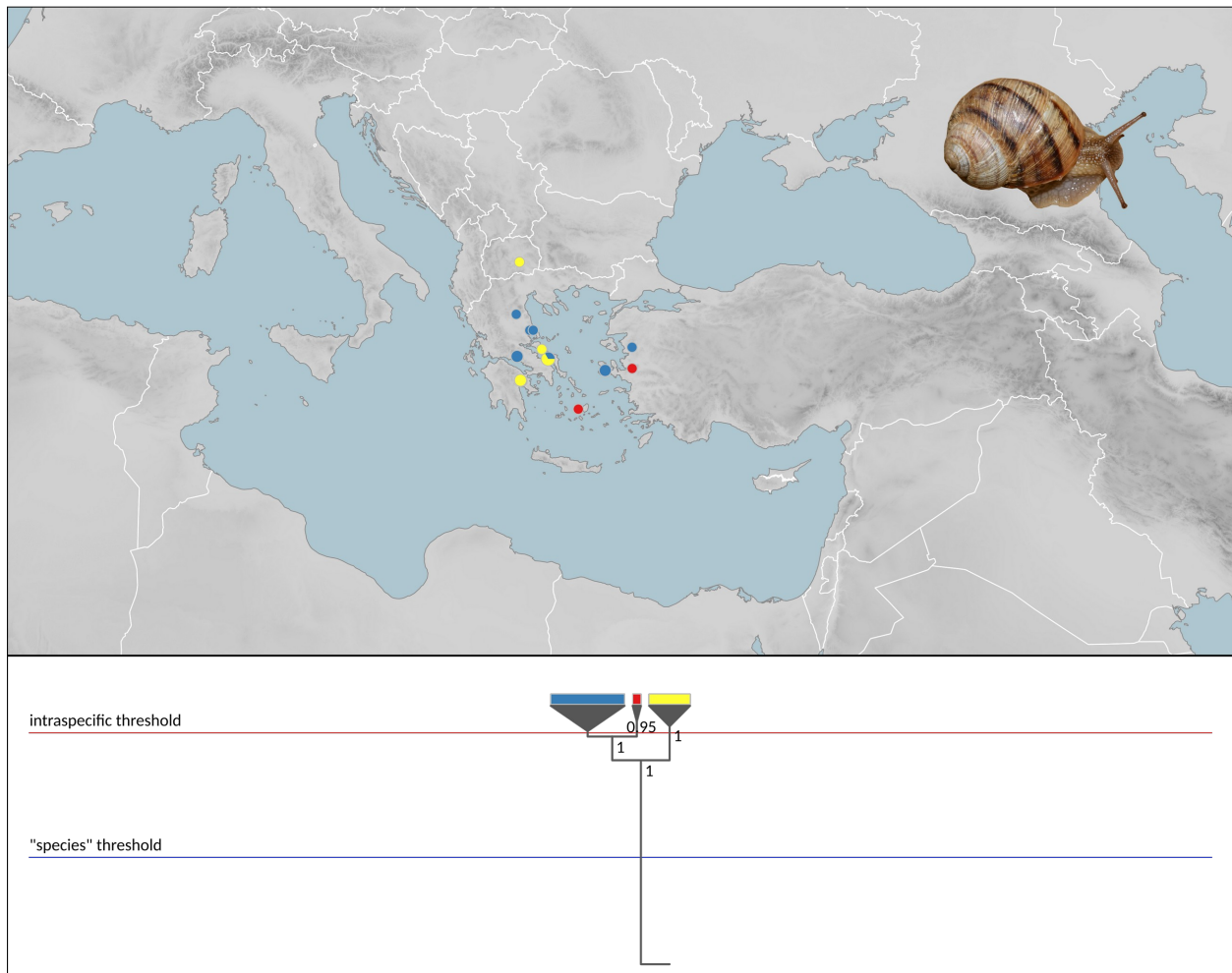
**Fig. S24.** Sampling sites of mitochondrial lineages found in *Maltzanella dickhauti* (Kobelt, 1903). The species is illustrated by a shell from Turkey (Burdur Province: a hill 8 km east of Burdur near Lake Burdur).



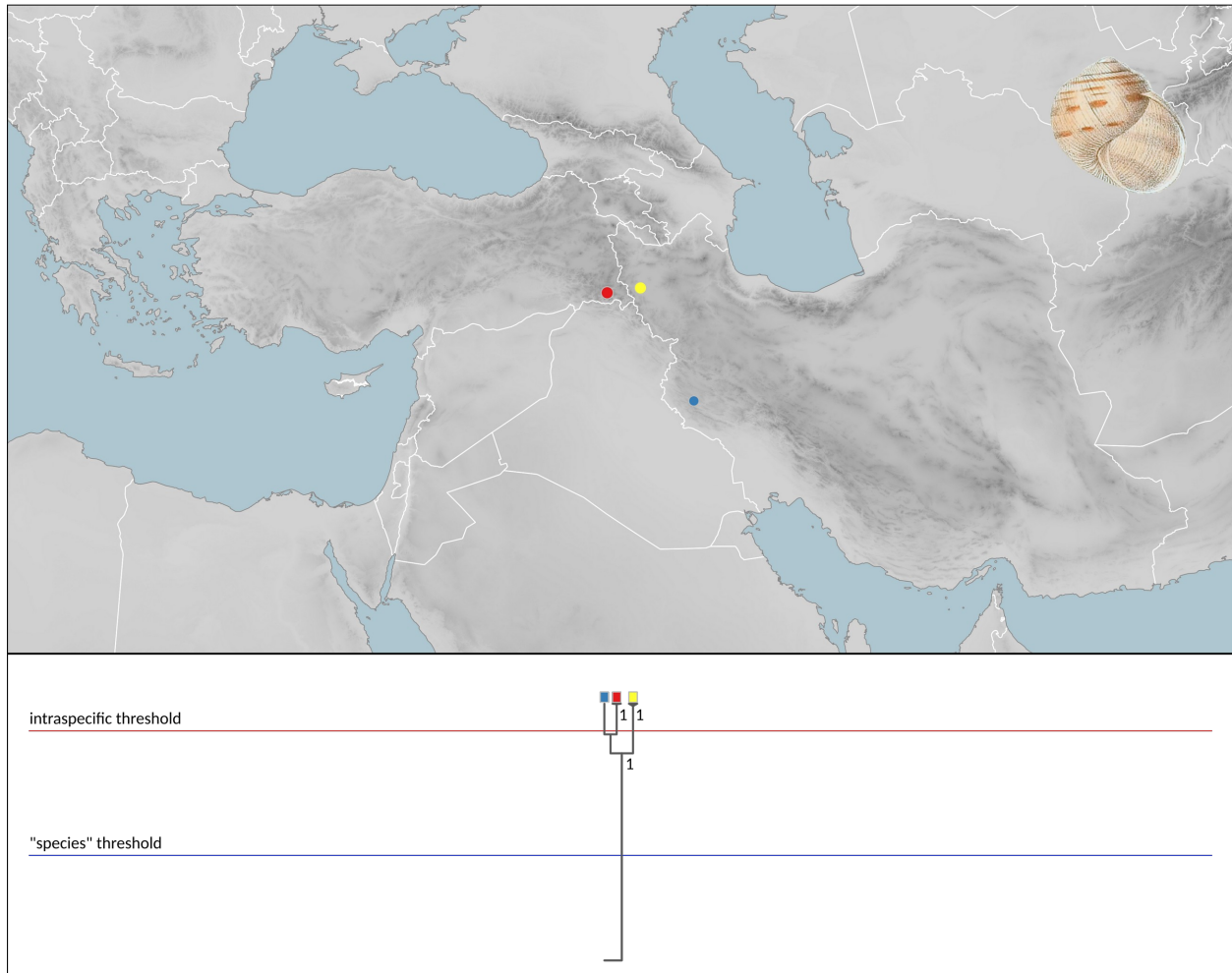
**Fig. S25.** Sampling sites of mitochondrial lineages found in *Maltzanella maltzani* (Kobelt, 1883) (red) and a related, but conchologically not identical population from European Turkey (blue). The species is illustrated by an individual from Turkey (surroundings of İzmir).



**Fig. S26.** Distribution of the mitochondrial clade of *Helix godetiana* Kobelt, 1878. The species is illustrated by a shell from Greece (Cyclades, Amorgos).

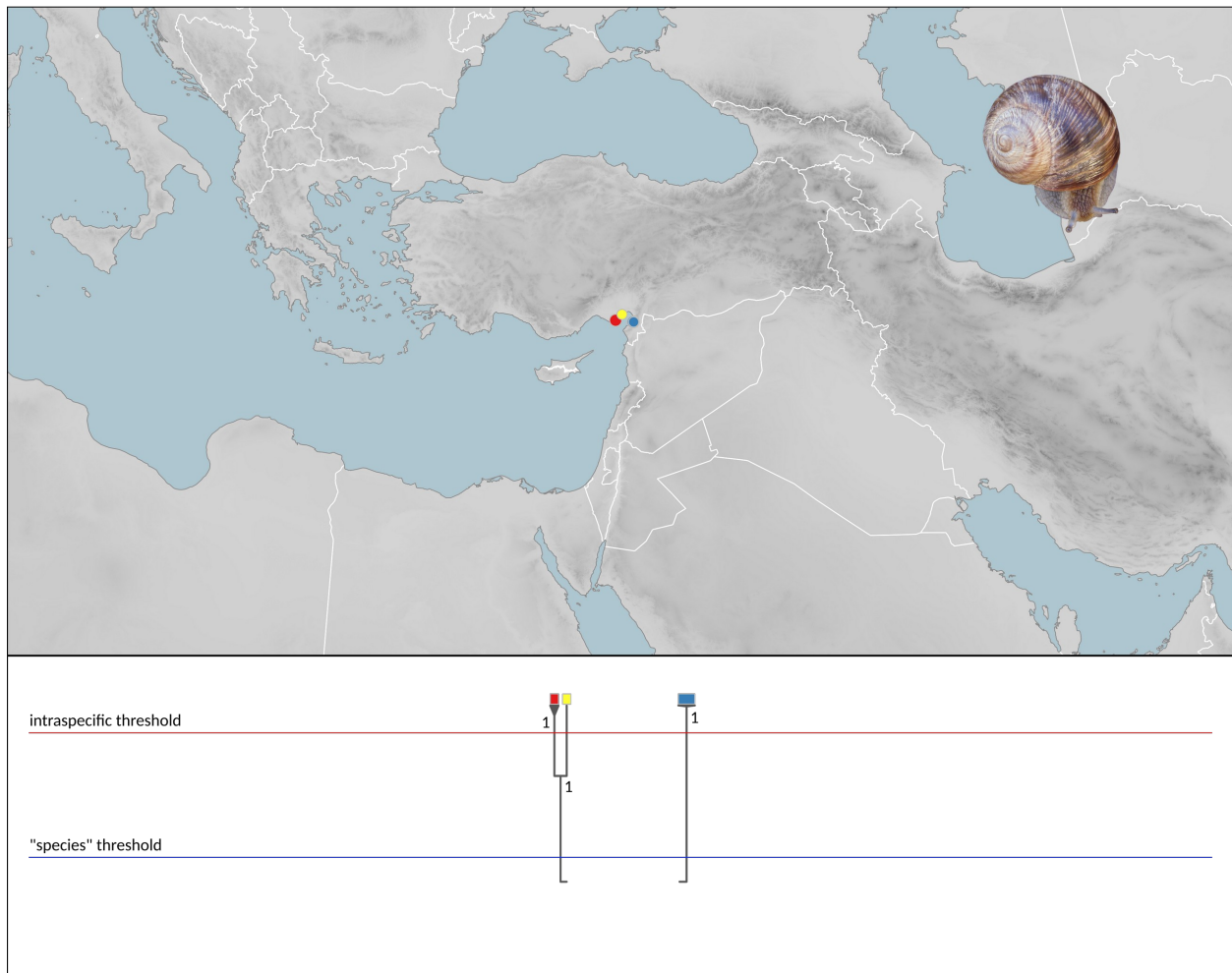


**Fig. S27.** Distribution of intraspecific mitochondrial lineages of *Helix figulina* Rossmässler, 1839. The sampling is not representative, the distribution range extends to up to south-eastern Bulgaria. The species is illustrated by an individual from Greece (Evvia: Pournos).

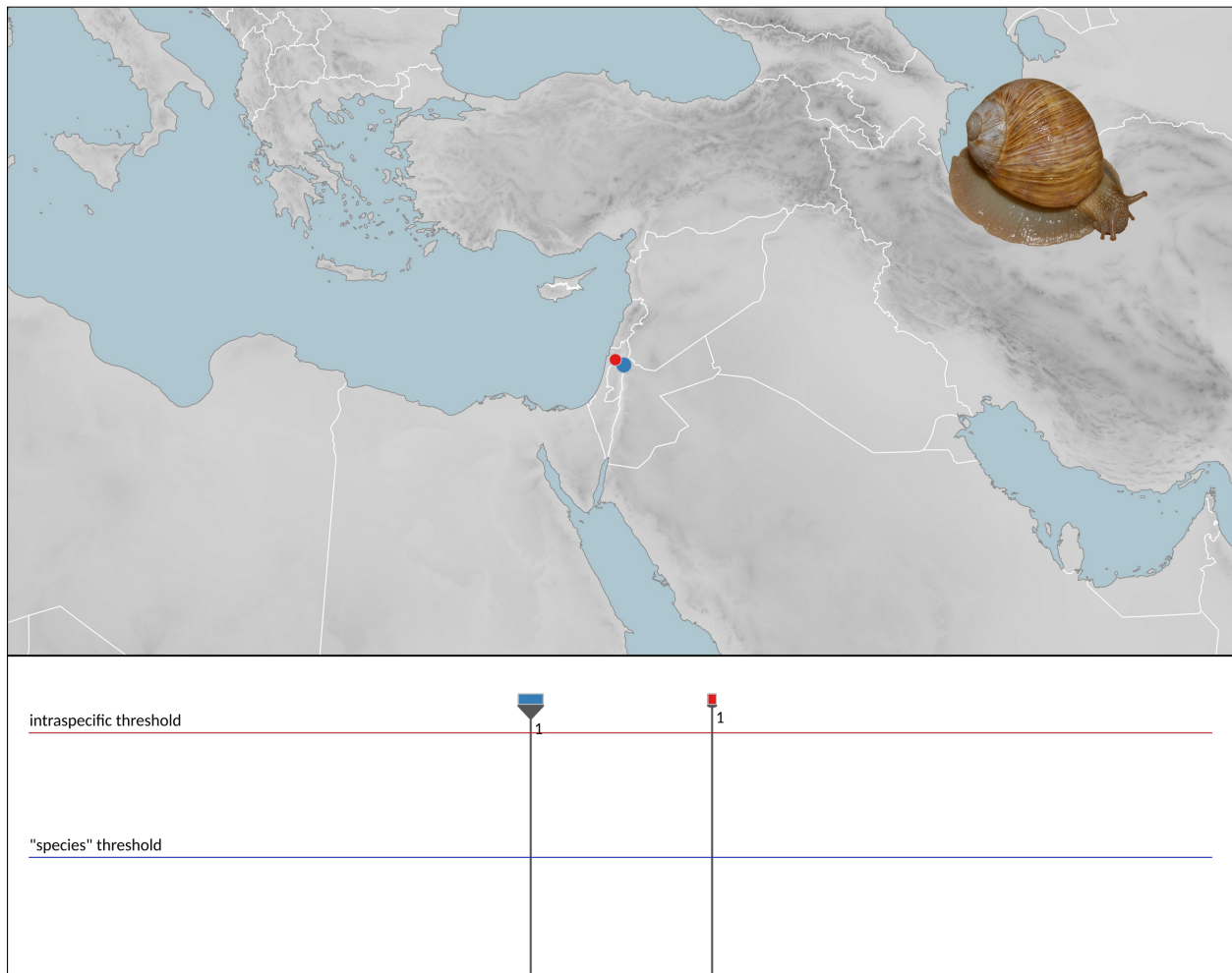


**Fig. S28.** Sampling sites of mitochondrial lineages found in *Helix salomonica* Nägele, 1899. The sampling is not representative. The distribution extends westwards up to Adiyaman Province of Turkey, includes Iraqi Kurdistan and is not well documented in Iran. The species is illustrated by a figure from Kobelt's Cochyliden-Cabinet (Kobelt 1902–1906).



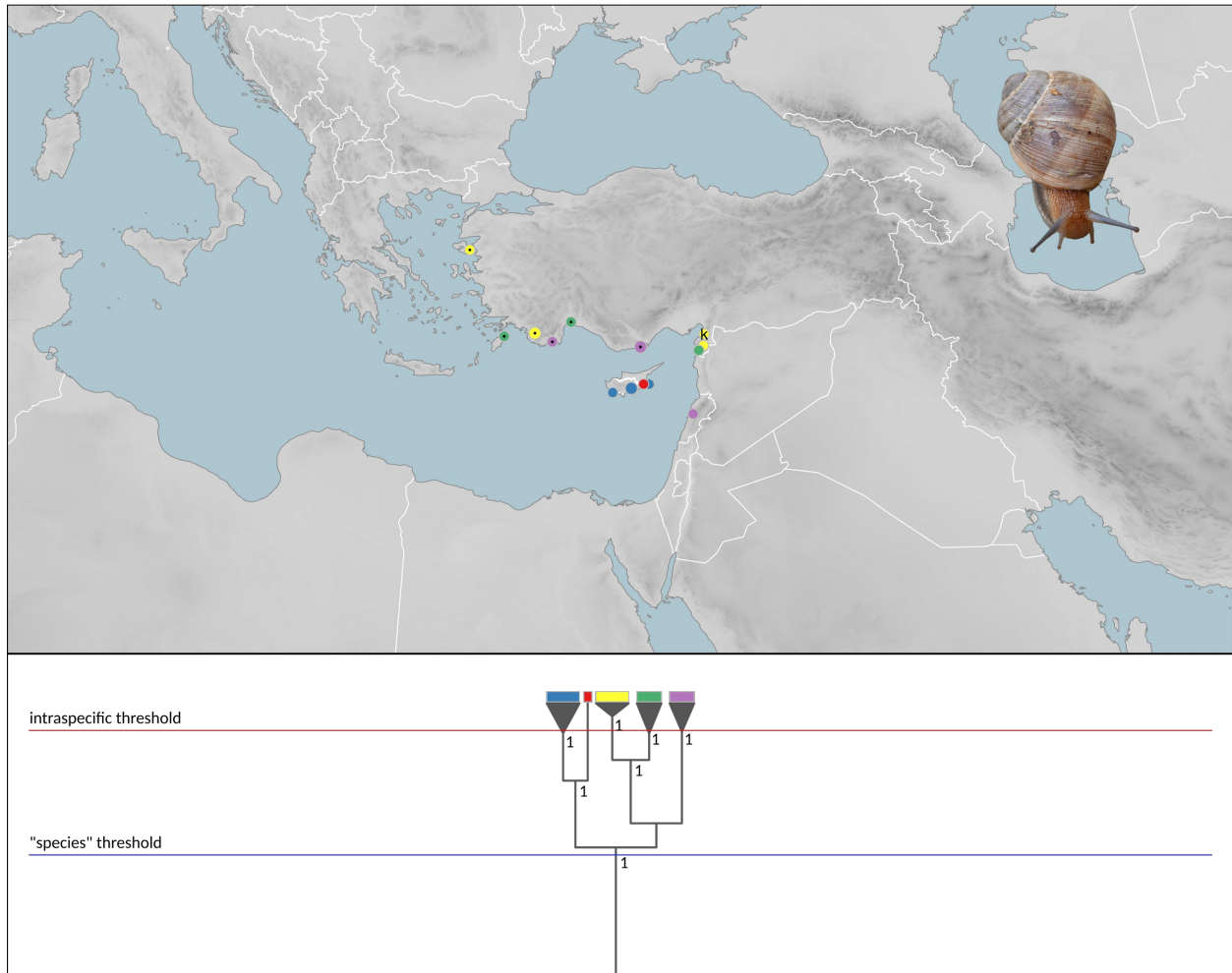


**Fig. S29.** Sampling sites of mitochondrial lineages found in *Helix kazouiniana* Pallary, 1939. The sampling is not representative (see Neubert 2014). The species is illustrated by a sample from Turkey (Adana Province: Bebeli env., bridge across Ceyhan river).

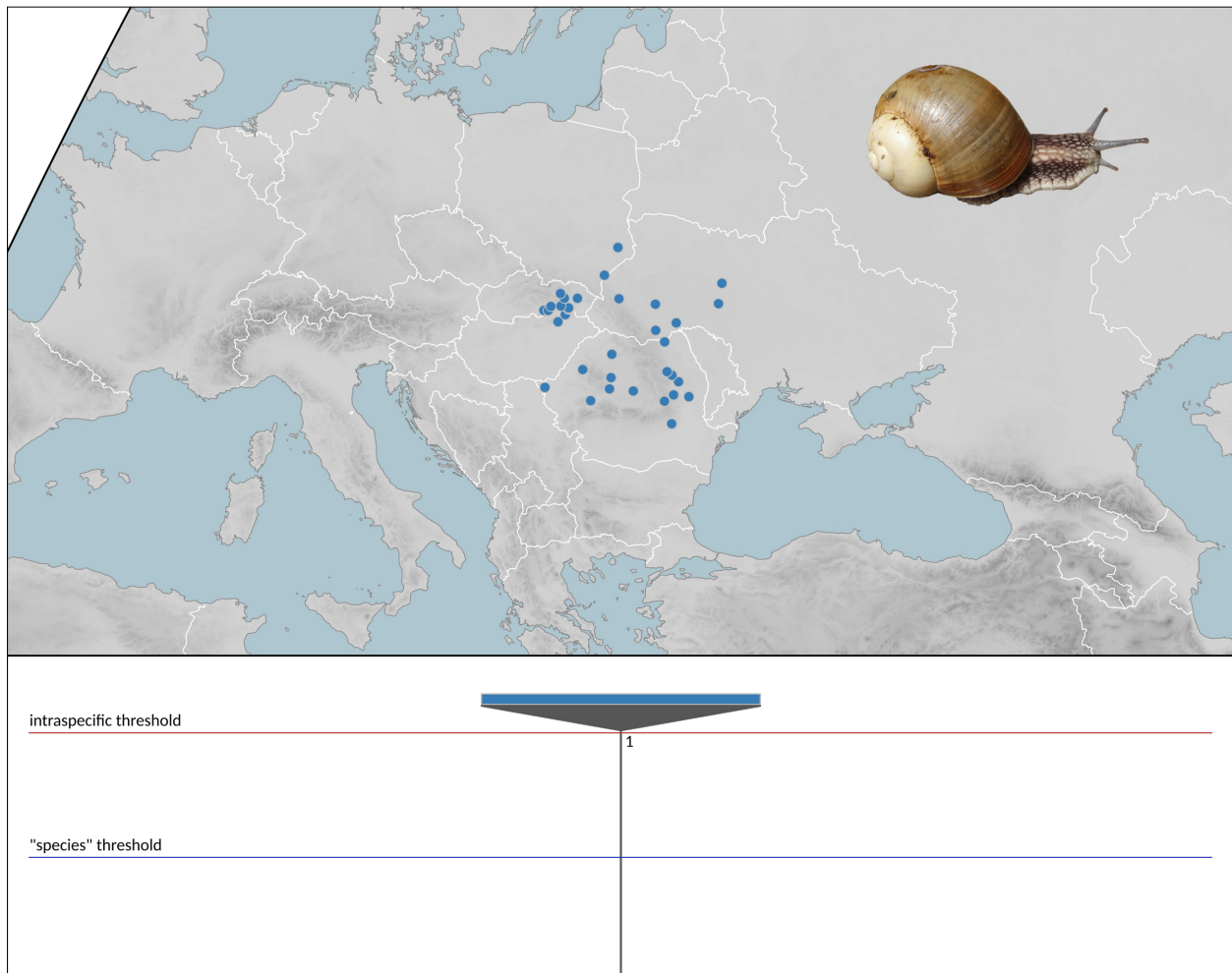


**Fig. S30.** Sampling site of mitochondrial lineages found in *Helix engaddensis* Bourguignat, 1852. The species is distributed in most of Israel, West Bank, western Jordan and southern Lebanon (Neubert 2014). The species is illustrated by an individual from Jordan (Sharhabil Bin Hasnah Ecopark near the Wadi Al Arab dam).

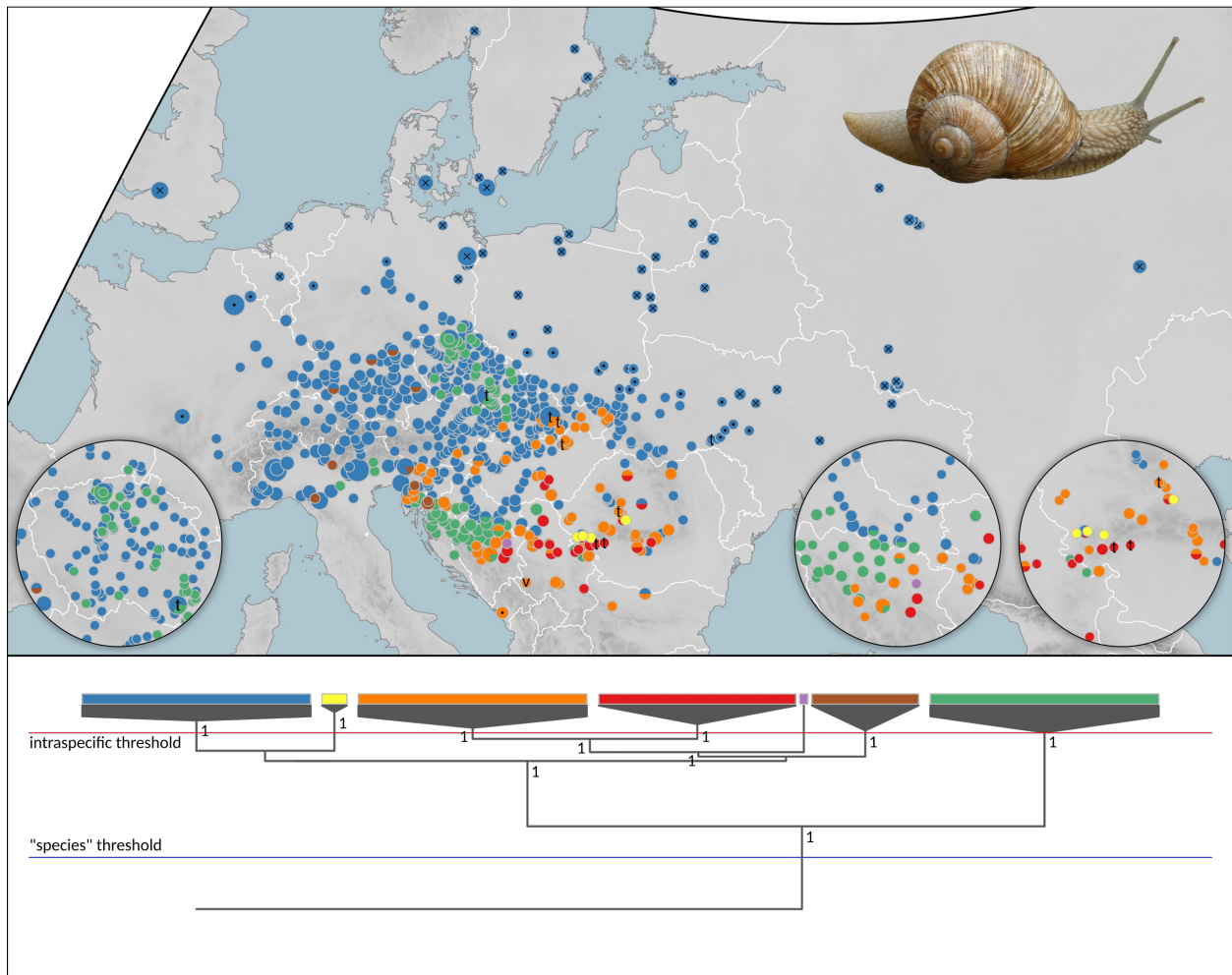




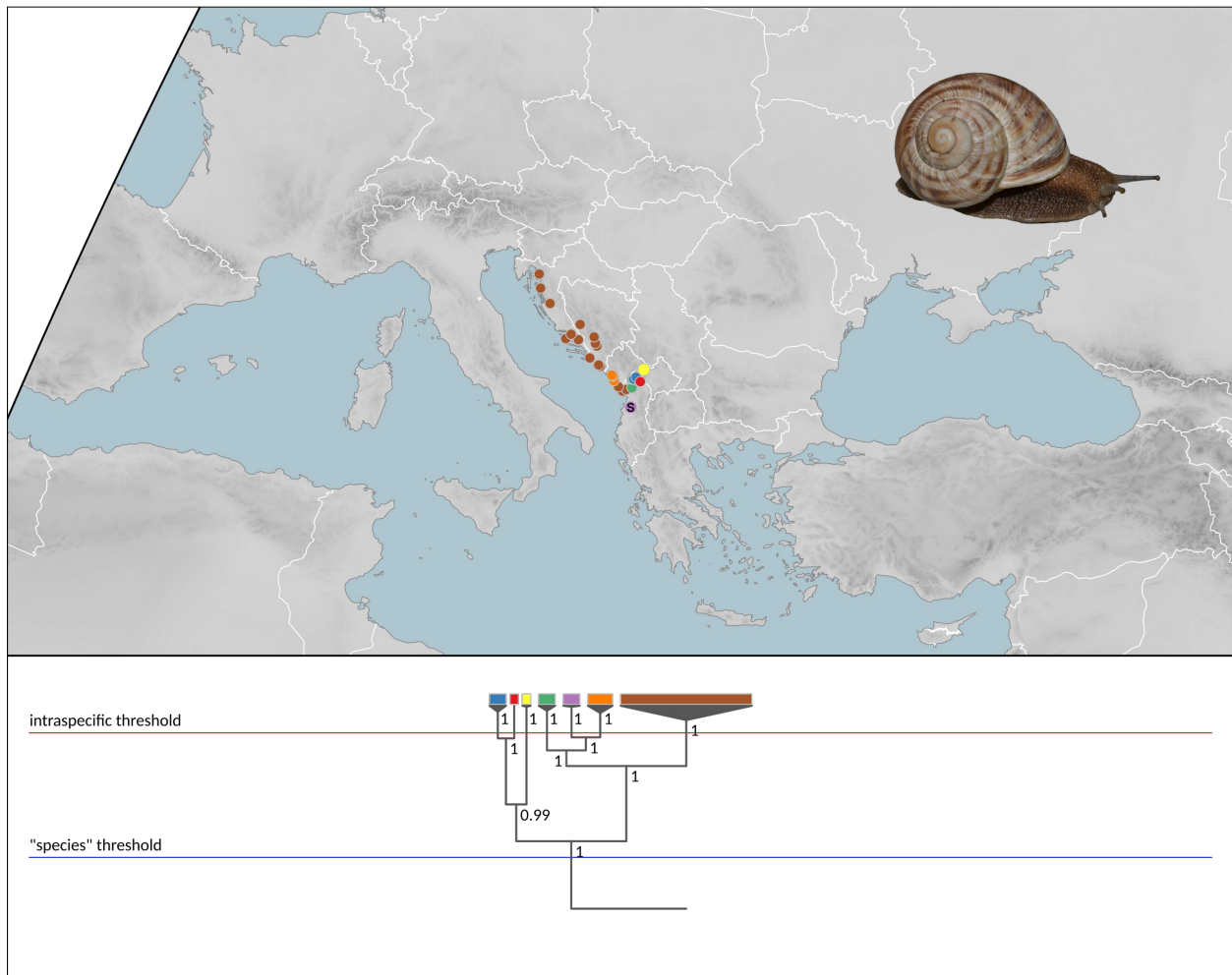
**Fig. S31.** Distribution of intraspecific mitochondrial lineages of *Helix nucula* Mousson, 1854. At the sampling site marked with “k” this clade has been found in a population identified as *Helix kazouiniana*. The sampling is not representative, the presumed native range lies in western Syria and Lebanon. The species is illustrated by an individual from Cyprus (Kato Drys).



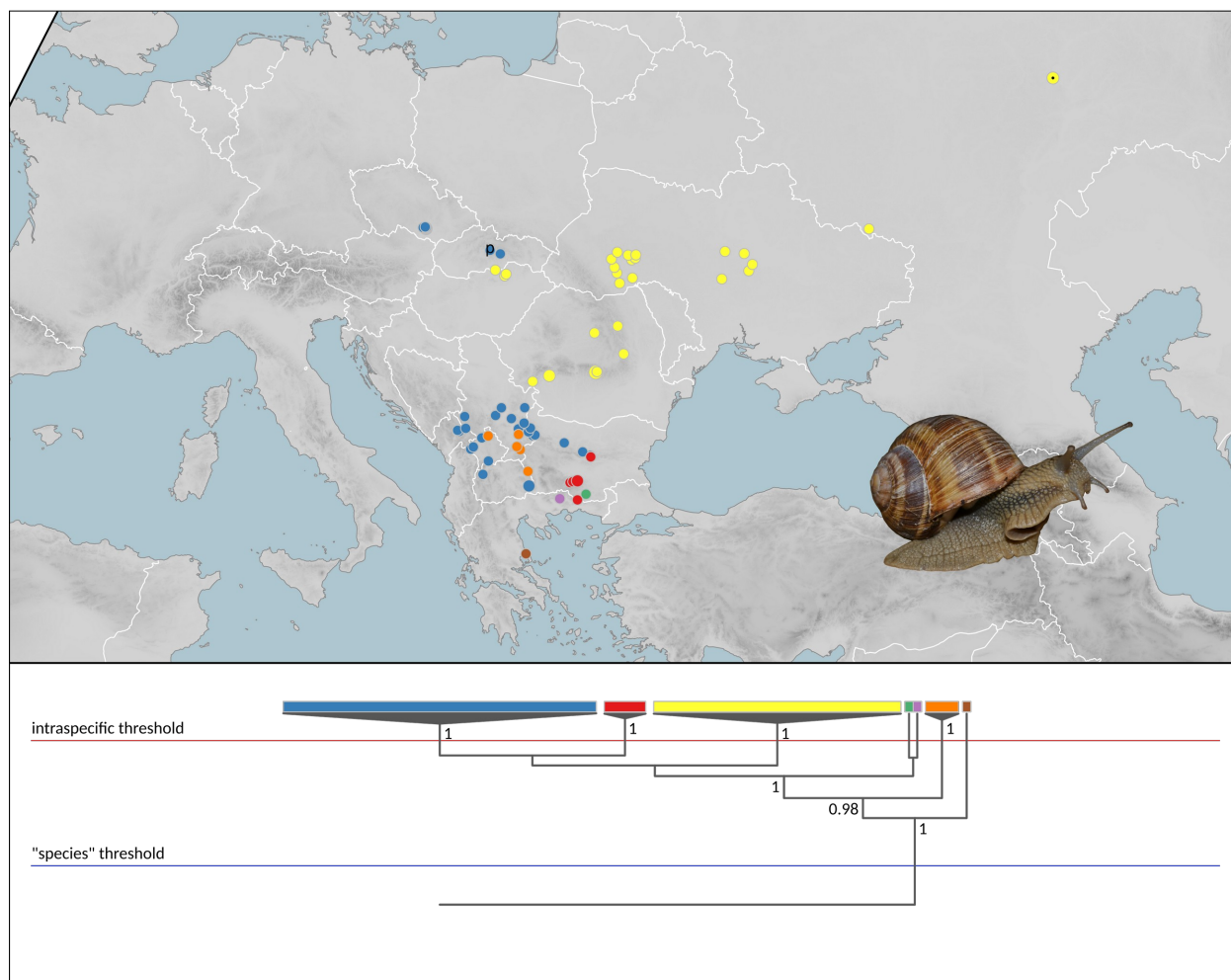
**Fig. S32.** Distribution of the mitochondrial clade of *Helix lutescens* Rossmässler, 1837. The species is illustrated by an individual from Slovakia (Košice region: Plešivec, near road to Rožňava).



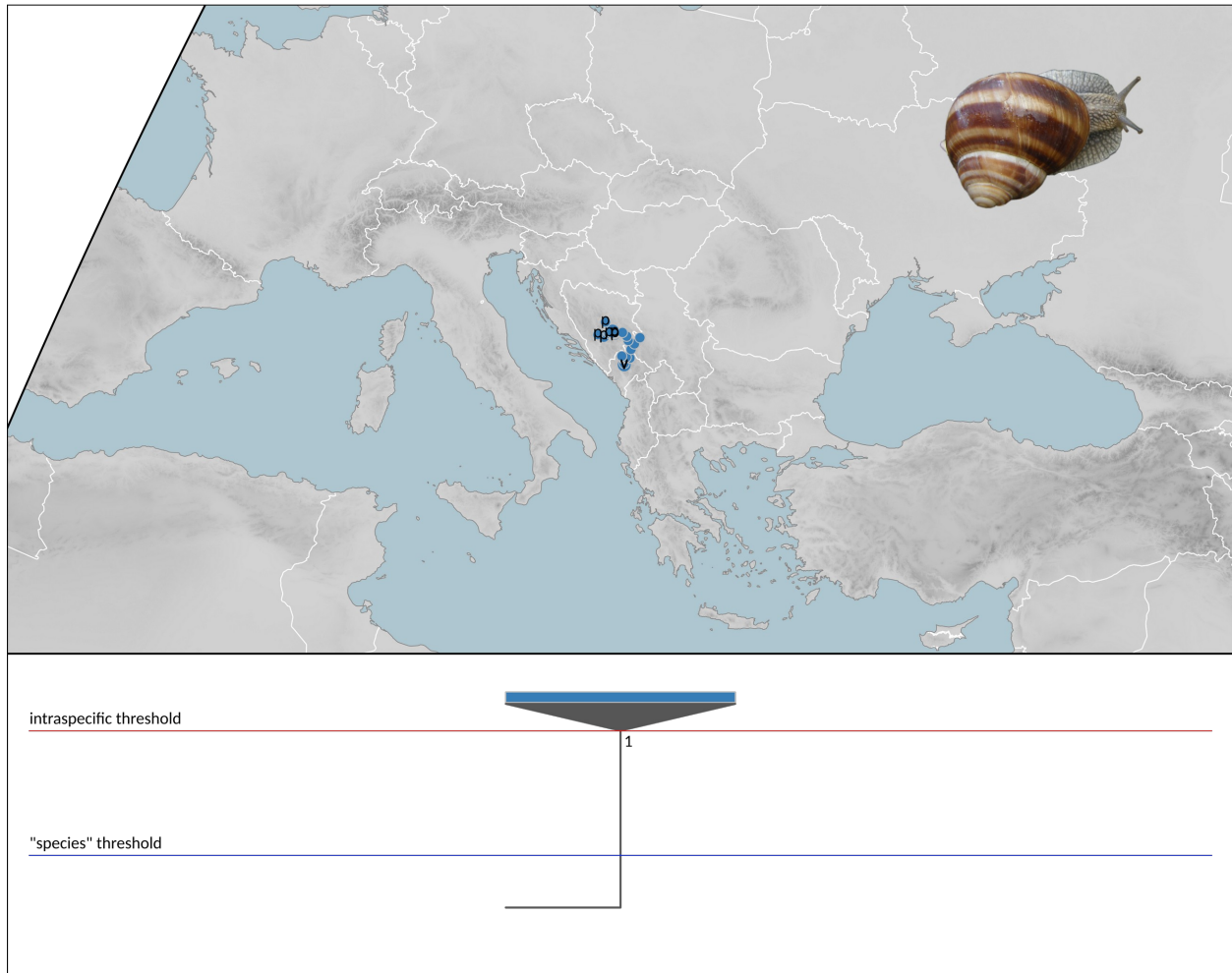
**Fig. S33.** Distribution of intraspecific mitochondrial lineages of *Helix pomatia* Linnaeus, 1758. At the sampling sites marked with “t” and “v”, this clade was found in populations identified as *Helix thessalica* and *Helix vladika*, respectively. The south-eastern range limits in Romania and Bulgaria are not well covered. Three areas with high sampling density are shown in detail (left to right): Czechia, northern Bosnia and eastern Croatia, and south-eastern Romania. The species is illustrated by an individual from Czechia (Čáslav).



**Fig. S34.** Distribution of intraspecific mitochondrial lineages of *Helix secernenda* Rossmässler, 1847. At the sampling site marked with “s”, this clade was found in a population identified as *Helix schlaeflii*. The species is illustrated by an individual from Croatia (Pelješac peninsula: Ston, town walls).

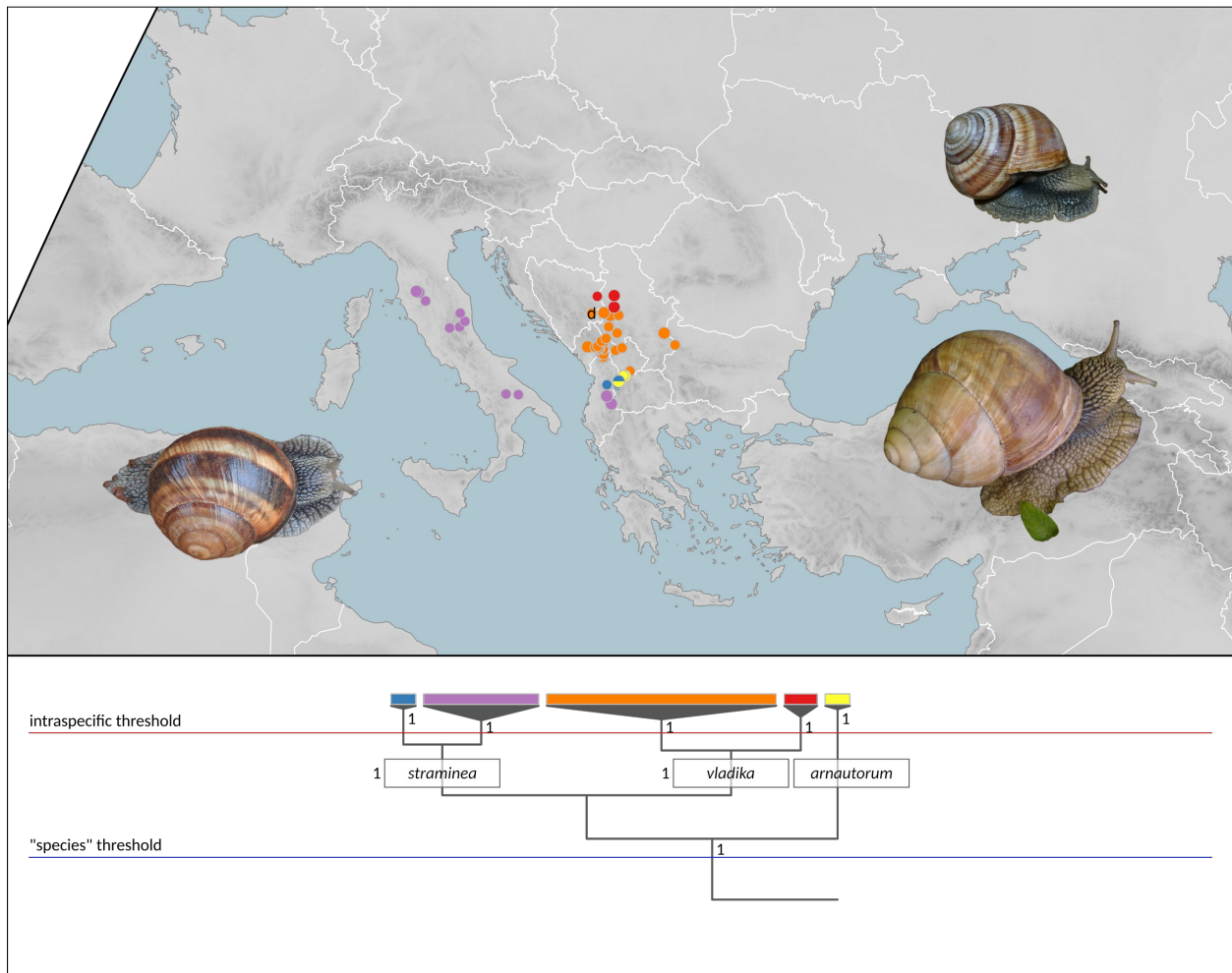


**Fig. S35.** Distribution of intraspecific mitochondrial lineages of *Helix thessalica* O. Boettger, 1886. At the sampling site marked with "p", this clade was found in an individual identified as *Helix pomatia*. The species is illustrated by an individual from Czechia (Jihomoravský kraj: Ivančice, Pekárka).

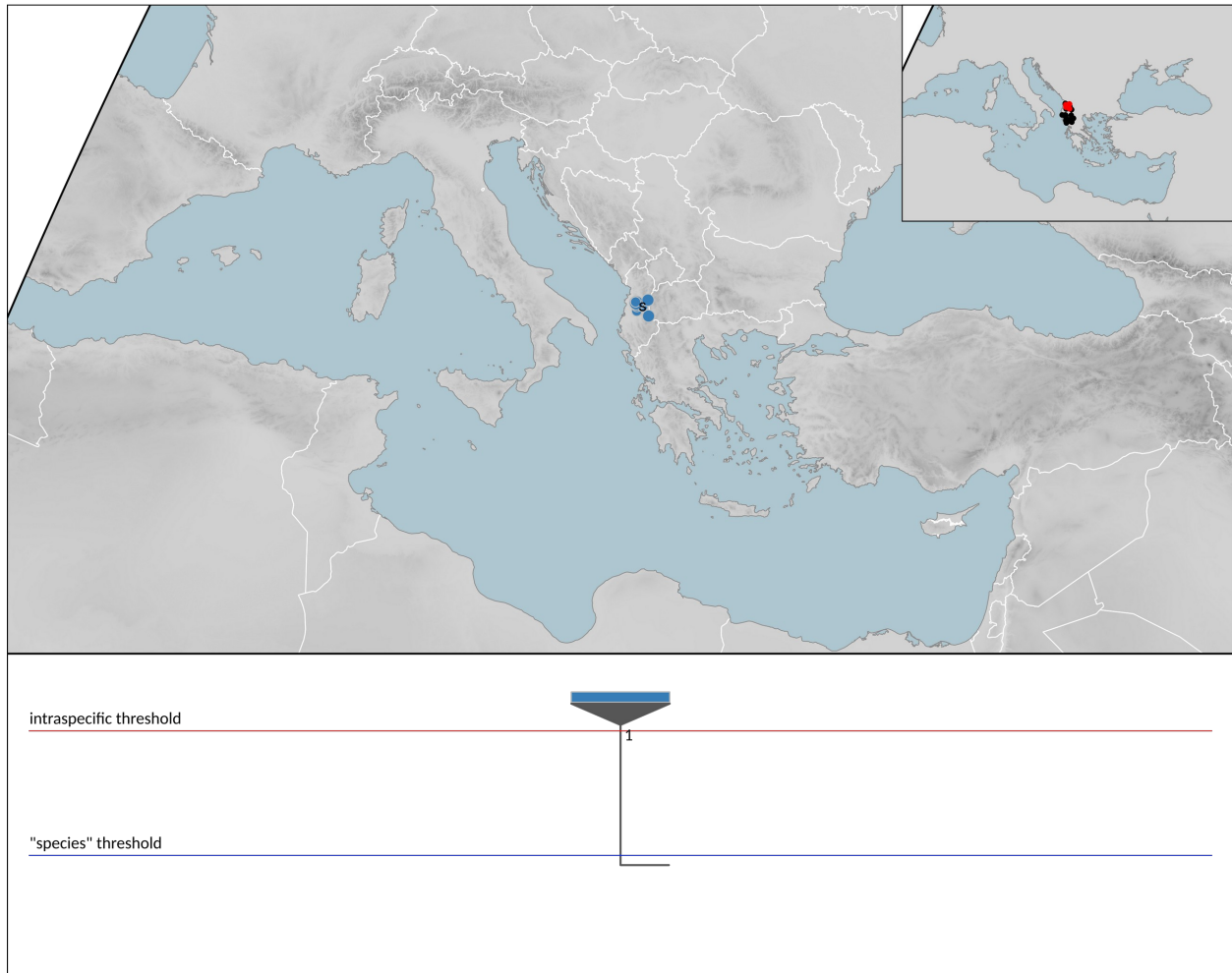


**Fig. S36.** Distribution of the mitochondrial clade of *Helix dormitoris dormitoris* Kobelt, 1898. At the sampling sites marked with “p” and “v”, this clade was found in populations identified as *Helix pomatia* and *Helix vladika*, respectively. *Helix dormitoris* is illustrated by an individual from Montenegro (Durmitor Mts, Katun Lokvice).



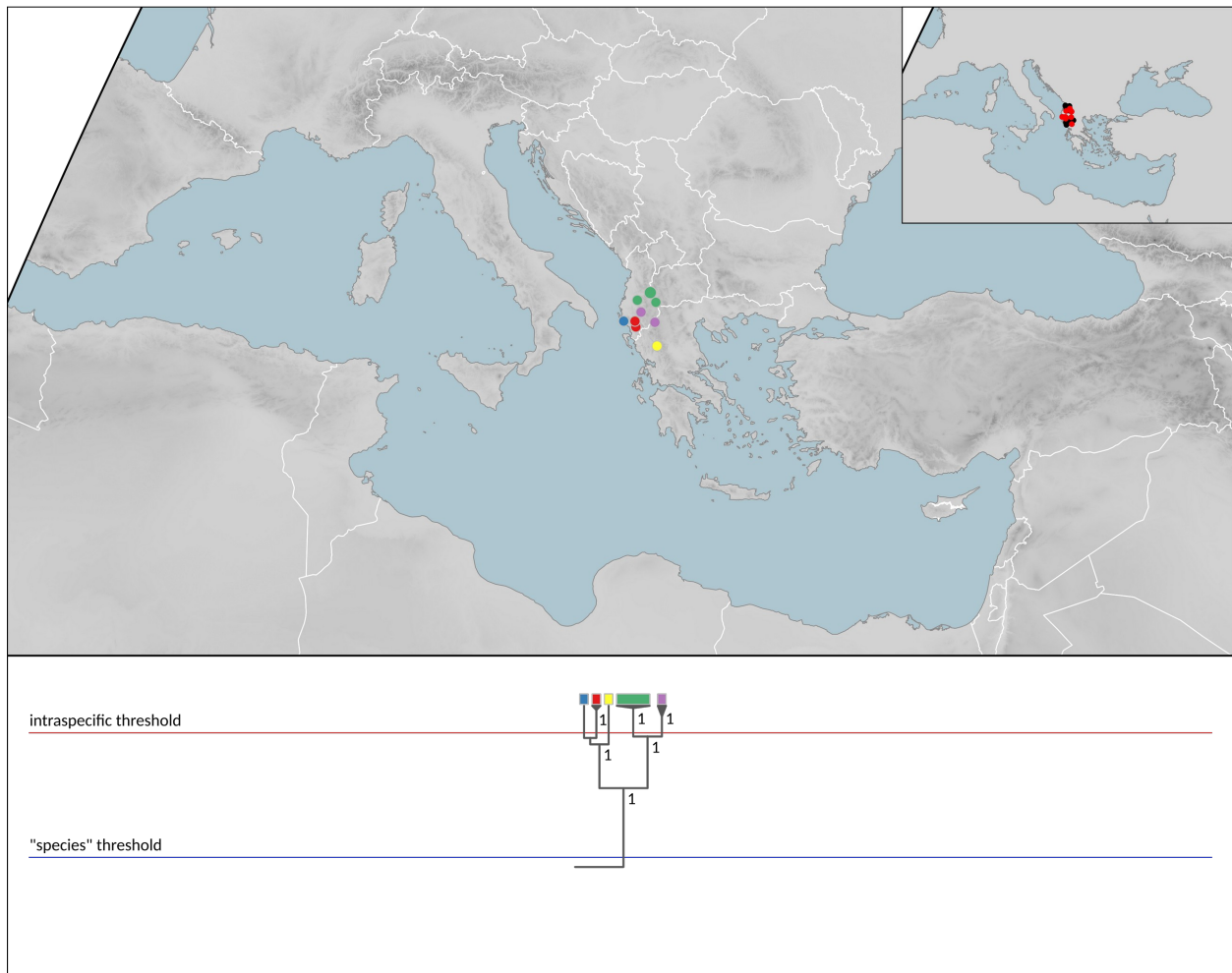


**Fig. S37.** Distribution of mitochondrial lineages found in a clade containing *Helix straminea* Briganti, 1825, *Helix vladika* Kobelt, 1898 and *Helix dormitoris arnautorum* Knipper, 1939. At the sampling site marked with “d”, this clade was found in an individual identified as *Helix dormitoris dormitoris*. The distribution range of *H. straminea* in Italy is in fact probably contiguous. The species are illustrated (counterclockwise from bottom left) by individuals of *H. straminea* from Albania (Bërzhtë W of Prrrenjas), *H. vladika* from Montenegro (Vusanje), and *H. dormitoris arnautorum* from North Macedonia (Šar Planina, Titov Vrv).

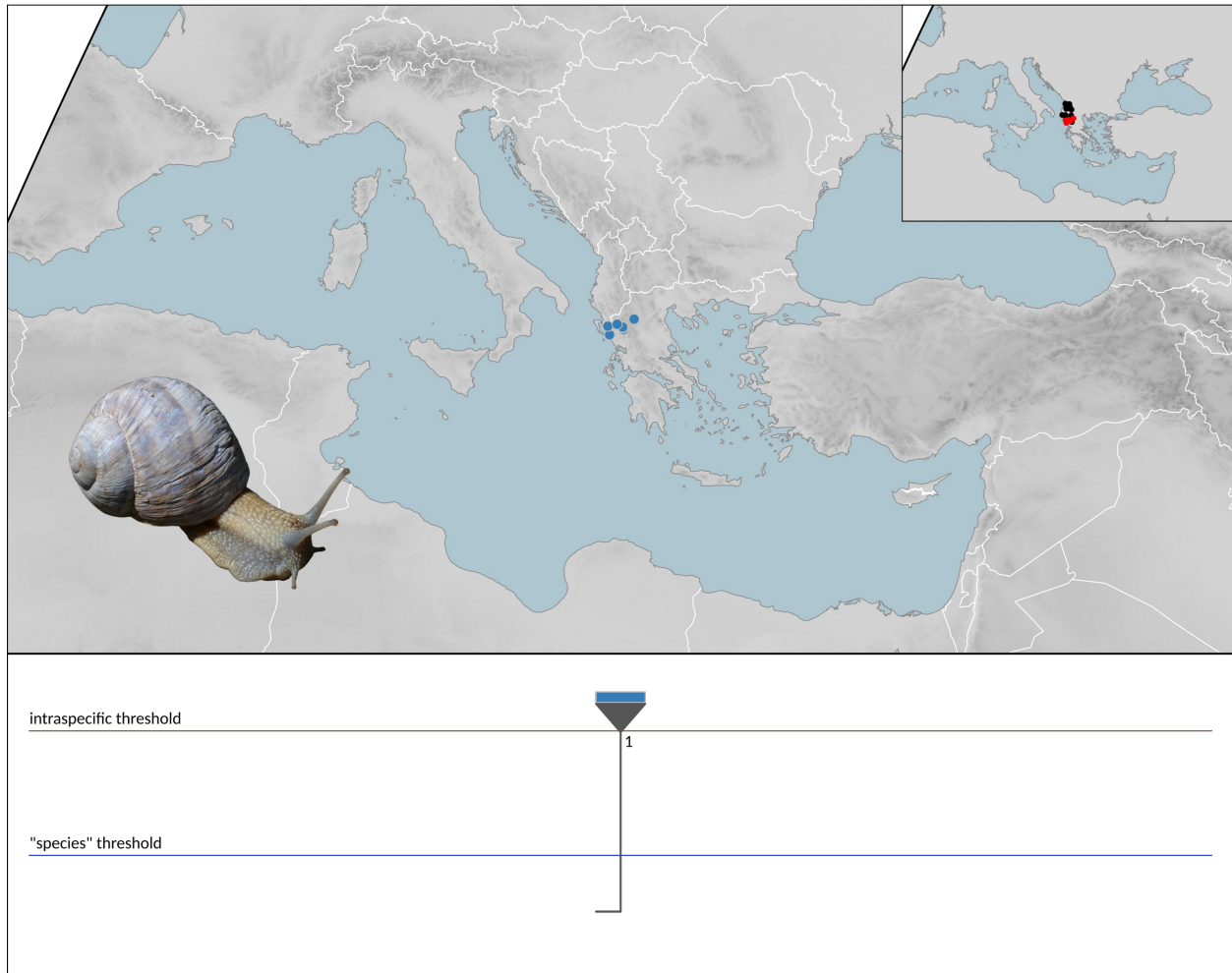


**Fig. S38.** Distribution of the northern mitochondrial clade of *Helix schlaeflii* Mousson, 1859. At the sampling site marked with “s”, this clade was found in an individual identified as *Helix straminea*. The inset shows the distribution of all *H. schlaeflii* samples with those shown here highlighted in red.

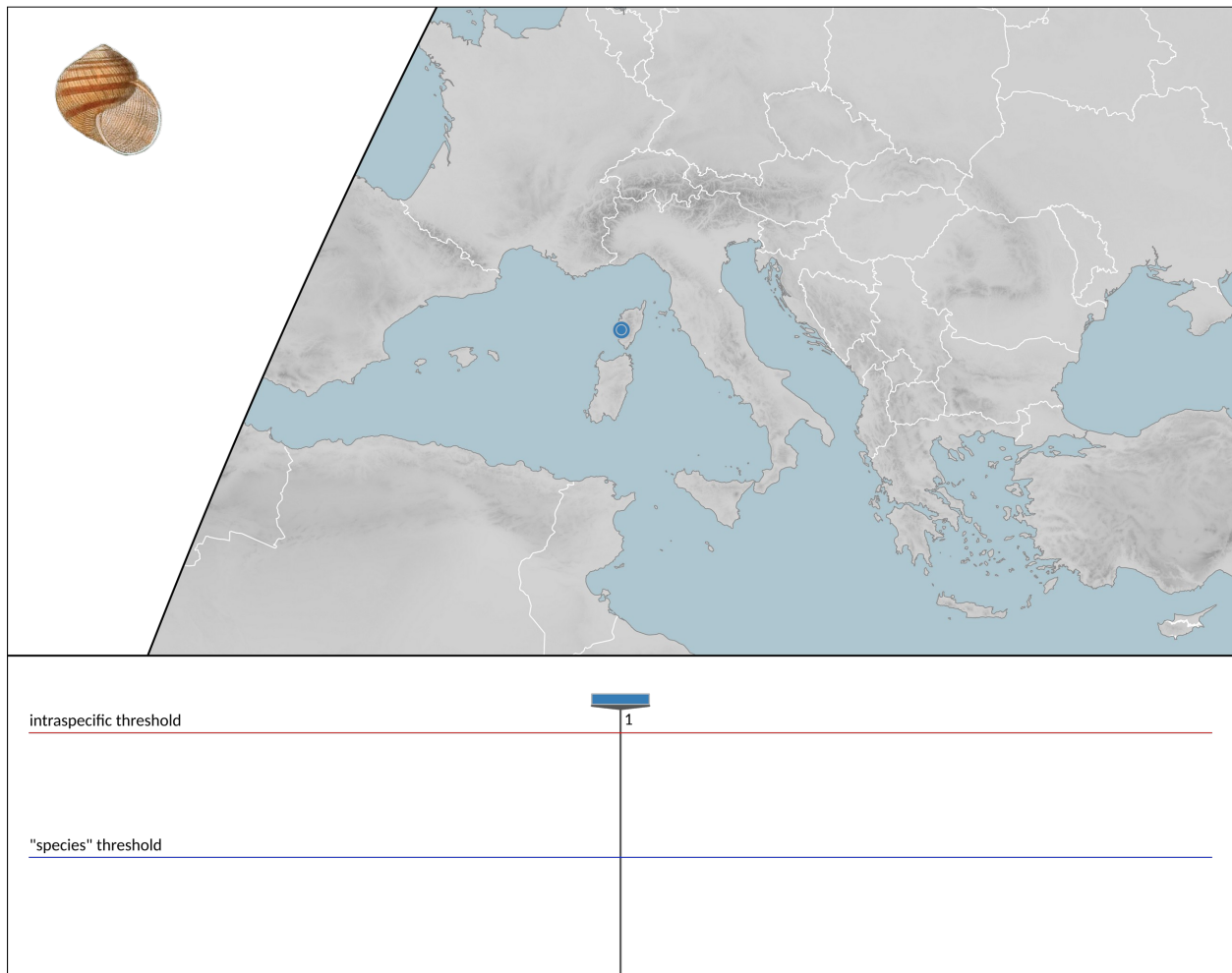




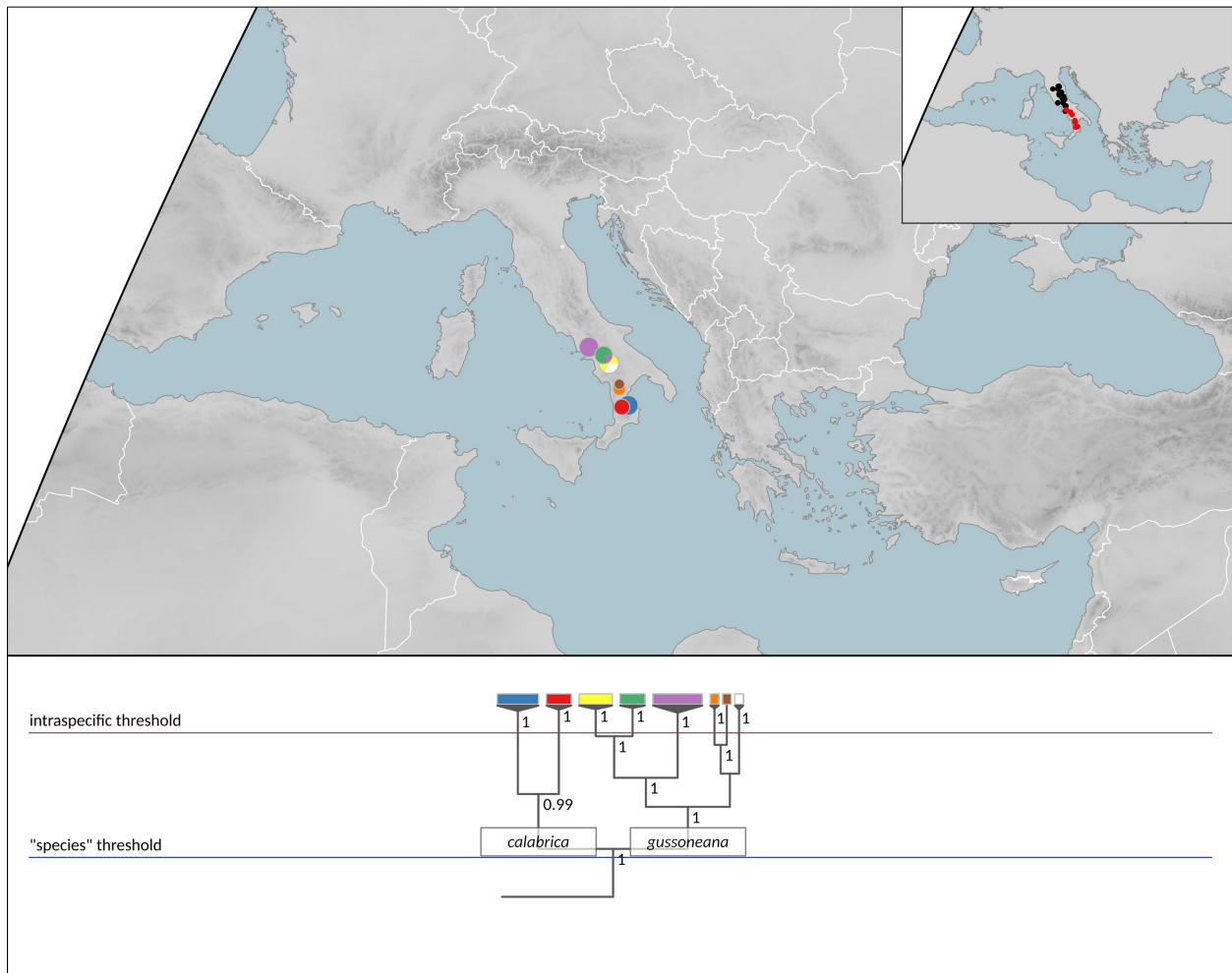
**Fig. S39.** Distribution of intraspecific mitochondrial lineages in the central clade of *Helix schlaeflii* Mousson, 1859. The inset shows the distribution of all *H. schlaeflii* samples with those shown here highlighted in red.



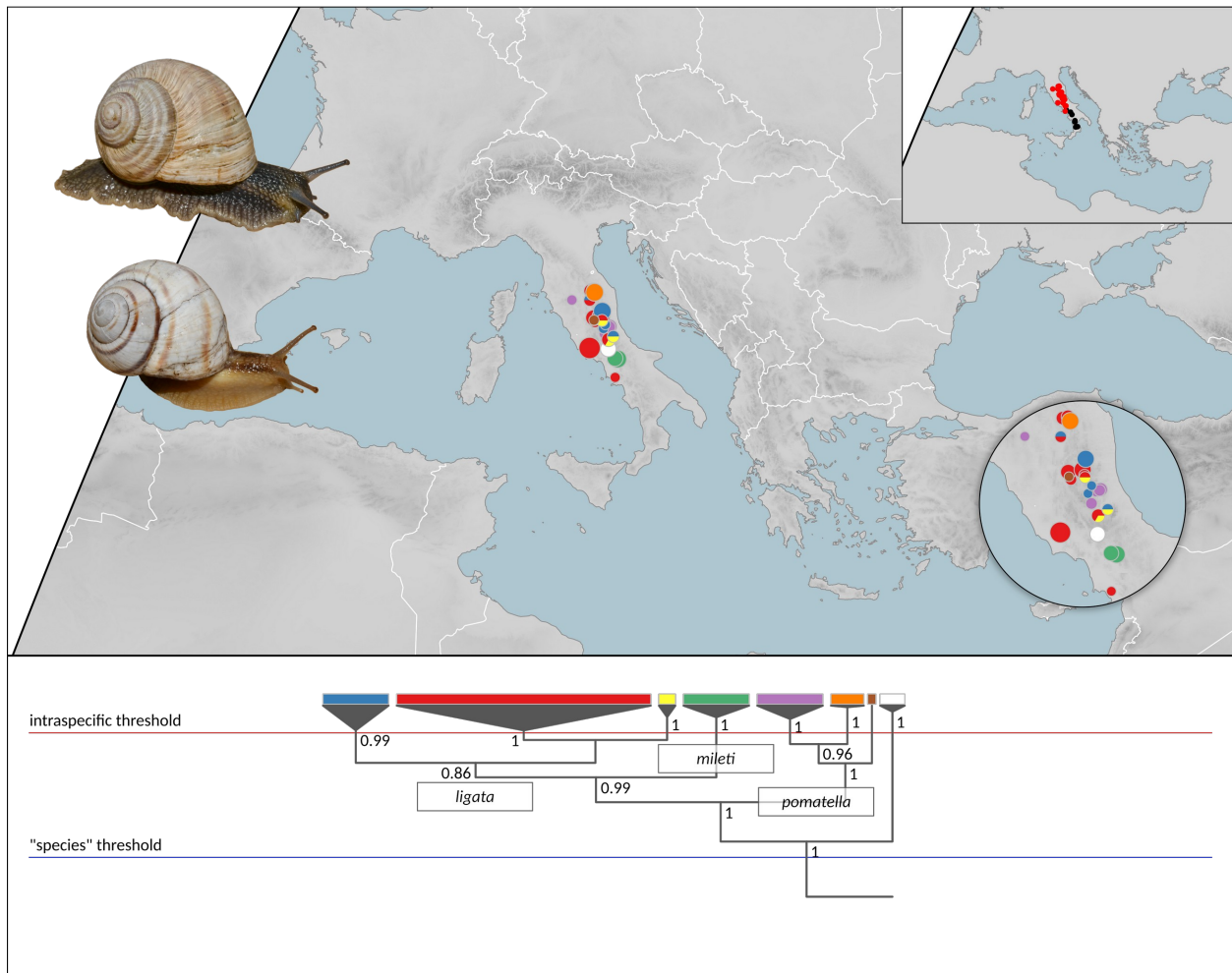
**Fig. S40.** Distribution of the southern mitochondrial clade of *Helix schlaeflii* Mousson, 1859. The inset shows the distribution of all *H. schlaeflii* samples with those shown here highlighted in red. The group is illustrated by an individual from Albania (Vlorë County: Mali i Cikës, Llogara pass).



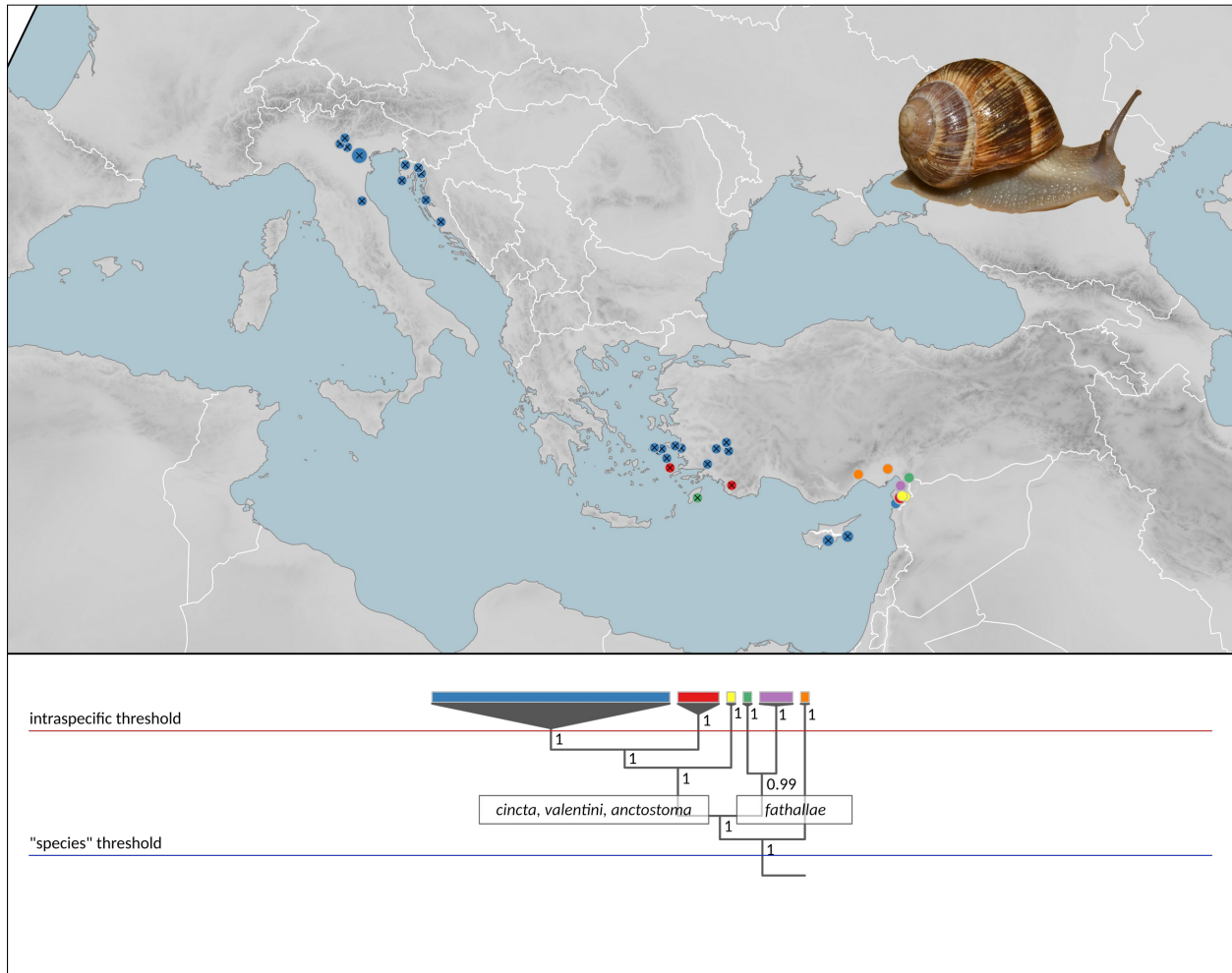
**Fig. S41.** Sampling site of the mitochondrial clade of *Helix ceratina* Shuttleworth, 1843. The species is illustrated by an individual from Kobelt's Conchylien-Cabinet (Kobelt 1902–1906).



**Fig. S42.** Distribution of mitochondrial lineages found in the southern clade of the complex of *Helix ligata* O. F. Müller, 1774. Subclades are labelled with names tentatively assigned to them by Fiorentino et al. (2016). The inset shows the distribution of all samples of the *H. ligata* complex with those shown here highlighted in red.

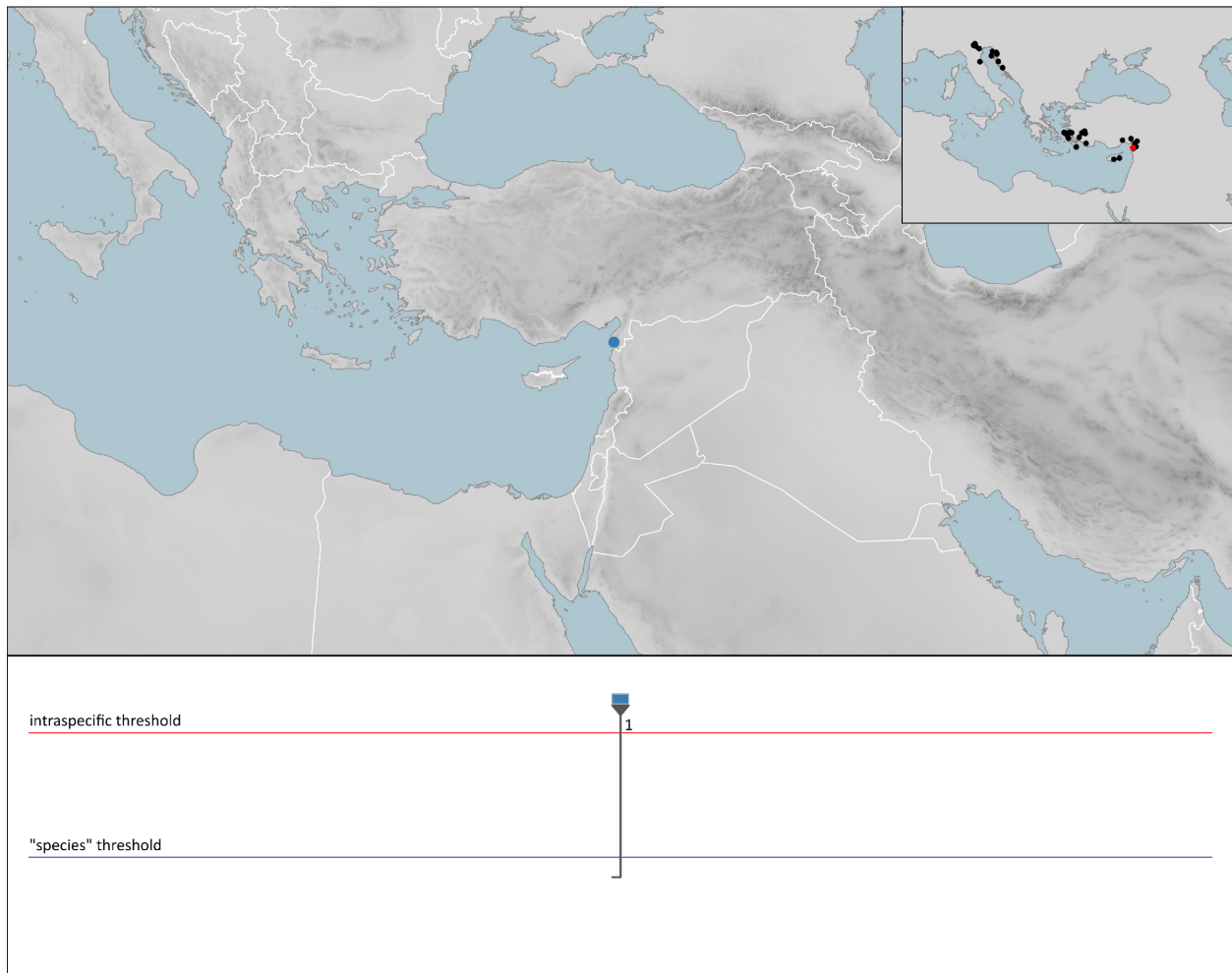


**Fig. S43.** Distribution of mitochondrial lineages found in the northern clade of the complex of *Helix ligata* O. F. Müller, 1774. Subclades are labelled with names tentatively assigned to them by Fiorentino et al. (2016). The upper inset shows the distribution of all samples of the *H. ligata* complex with those shown here highlighted in red. Diversity of the northern clade is illustrated by individuals from Italy (top: Abruzzo: L'Aquila Province: Mascioni; bottom: Abruzzo: L'Aquila Province: Gran Sasso, Monte Bolza).



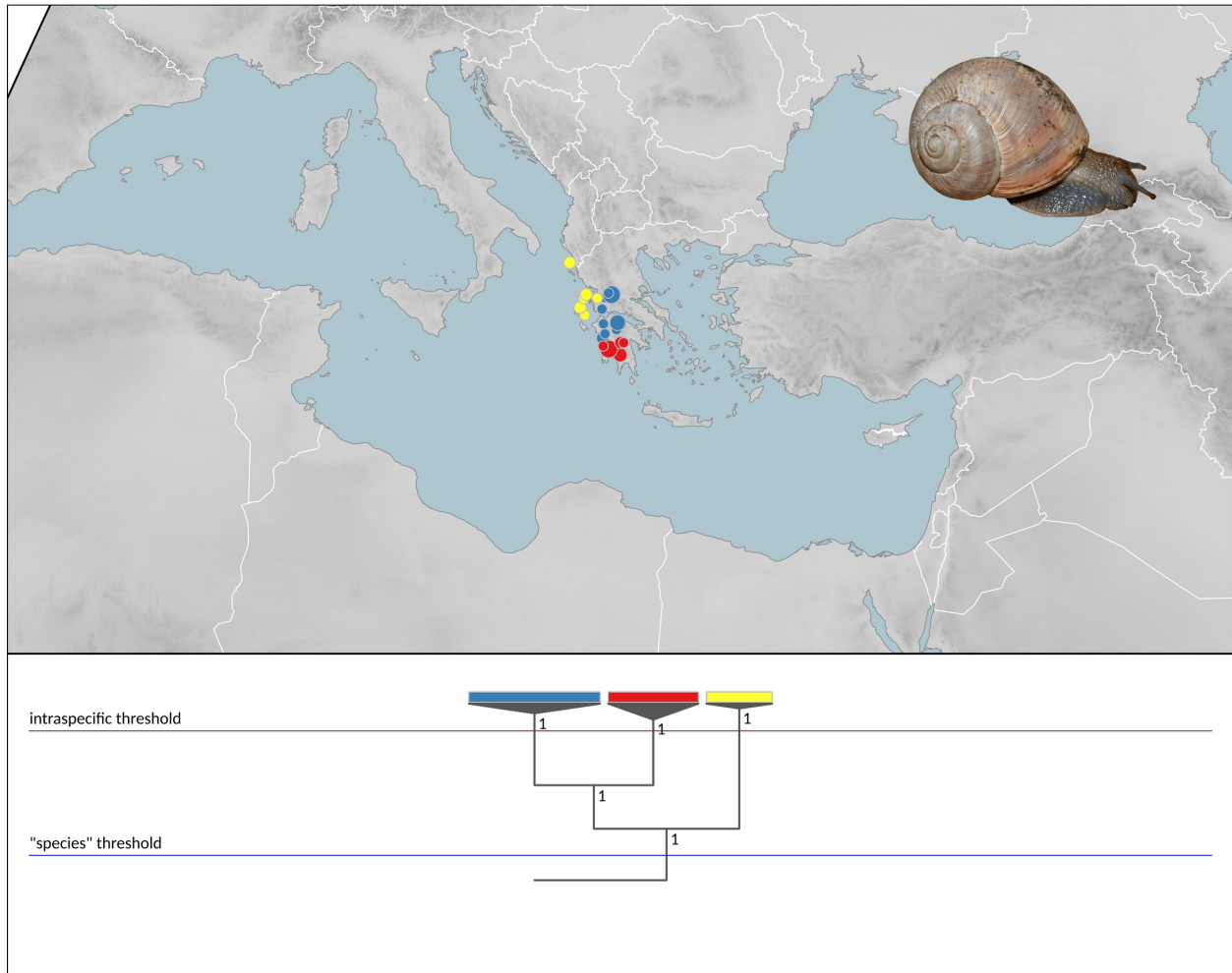
**Fig. 544.** Distribution of mitochondrial lineages found in a clade containing *Helix cincta* O. F. Müller, 1774 (blue), *Helix valentini* Kobelt, 1891 (red), *Helix ancstoma* von Martens, 1874 (yellow) and *Helix fathallae* Nägele, 1901 (other). The sampling is not representative, the ranges of *H. cincta*, *H. valentini* and *H. ancstoma* given by Neubert (2014) extend into north-western Syria. The group is illustrated by an individual of *H. cincta* from Croatia (Šibenik-Knin County: Skradin, Turina fortress).



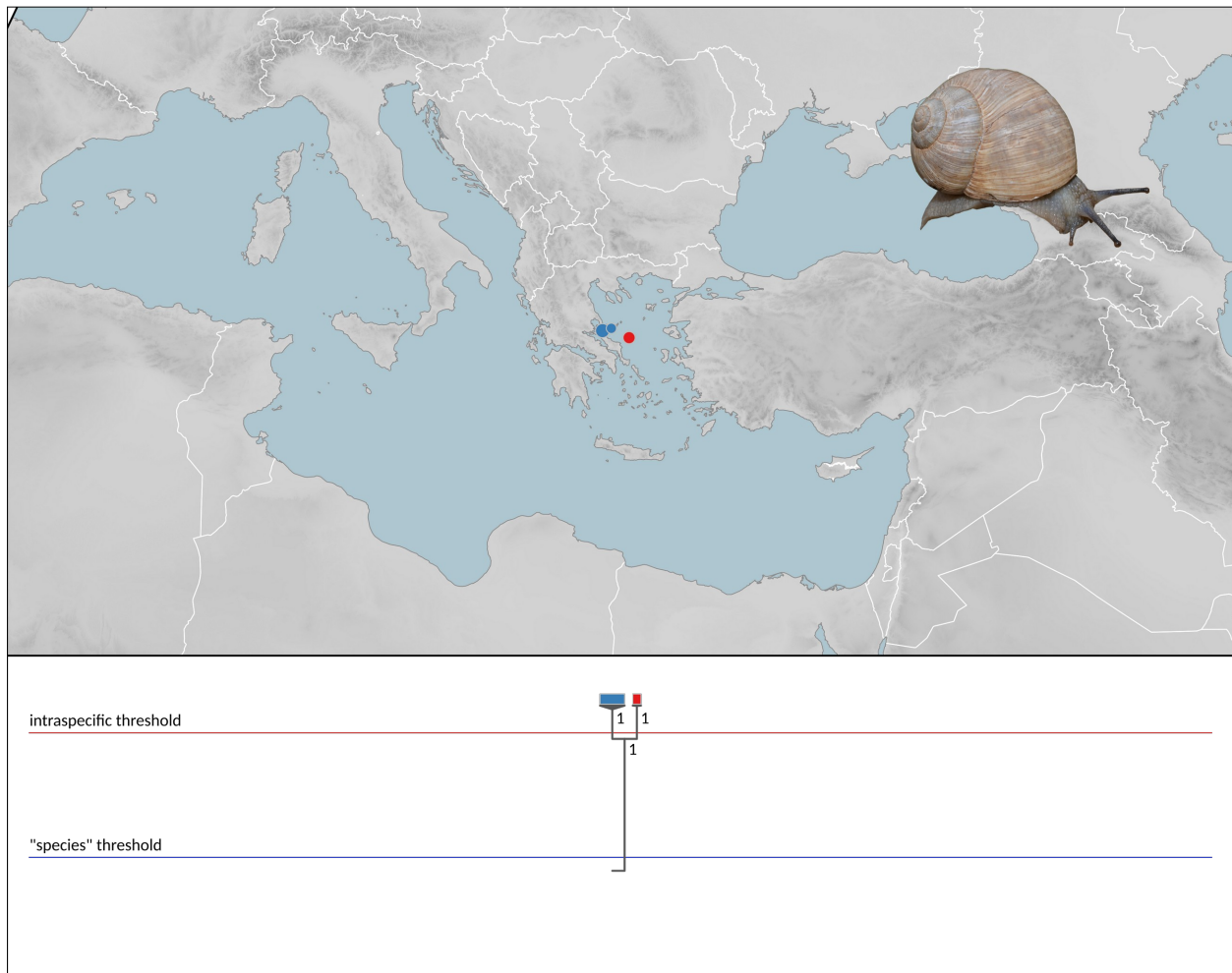


**Fig. S45.** Sampling site of the basal-most mitochondrial clade found in *Helix fathallae* Nägele 1901. The inset shows in red this sampling site in the context of the clade including *H. fathallae*, *Helix cincta*, *Helix valentini* and *Helix anctostoma*.

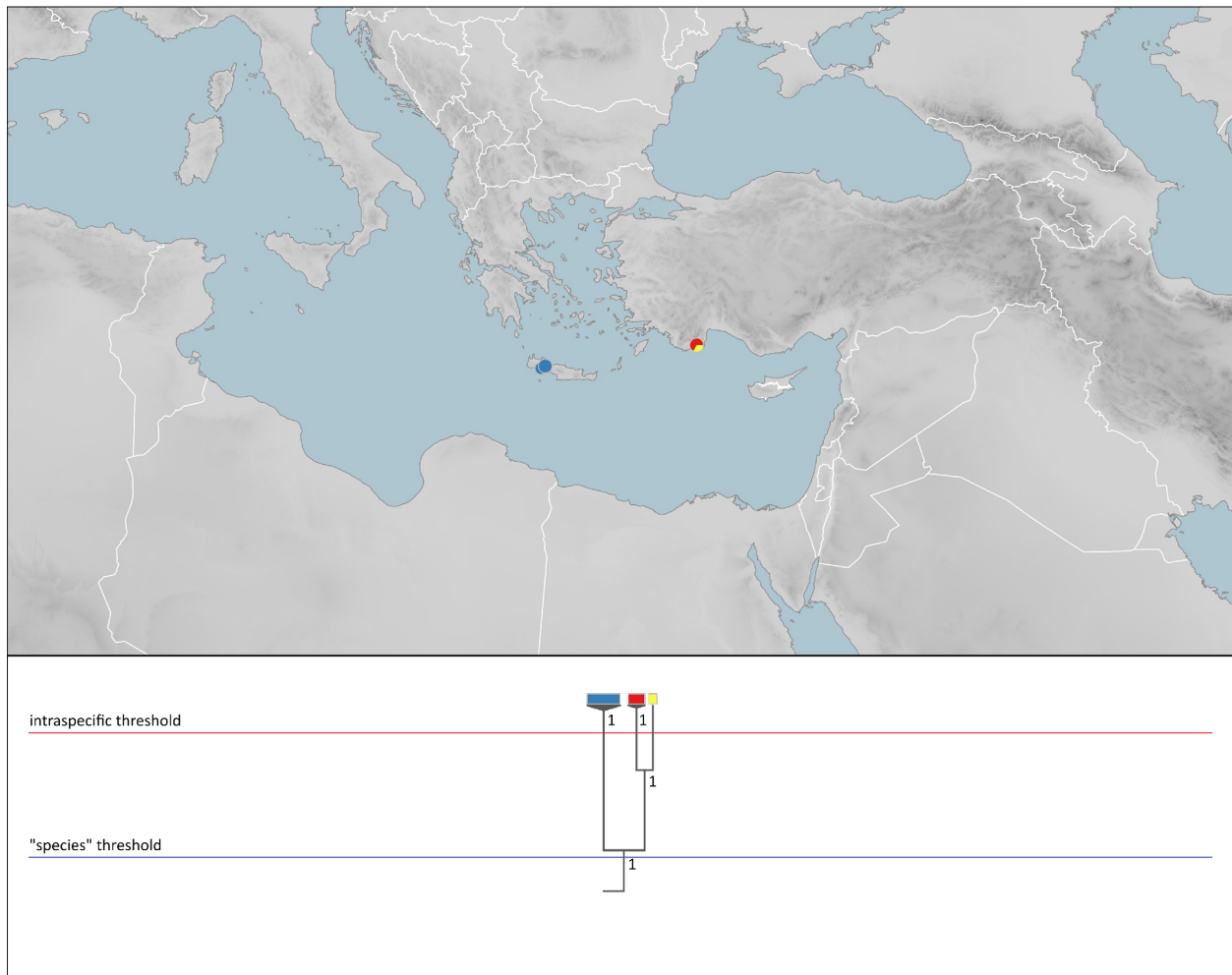




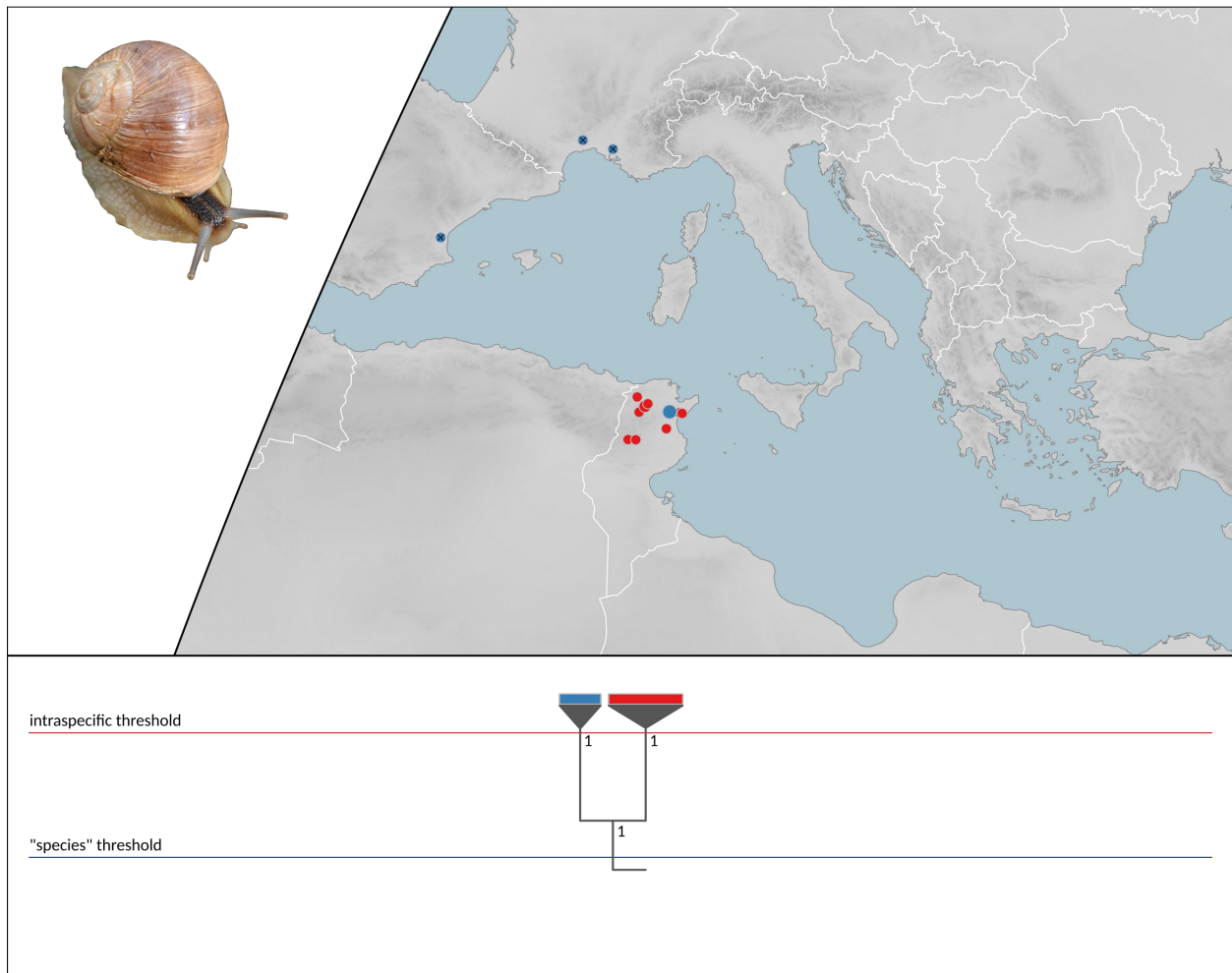
**Fig. S46.** Distribution of intraspecific mitochondrial lineages of *Helix borealis borealis* Mousson, 1859. The taxon is illustrated by an individual from Greece (Peloponnese: near Kalyvia, Zevgolatio, by the river Ladonas).



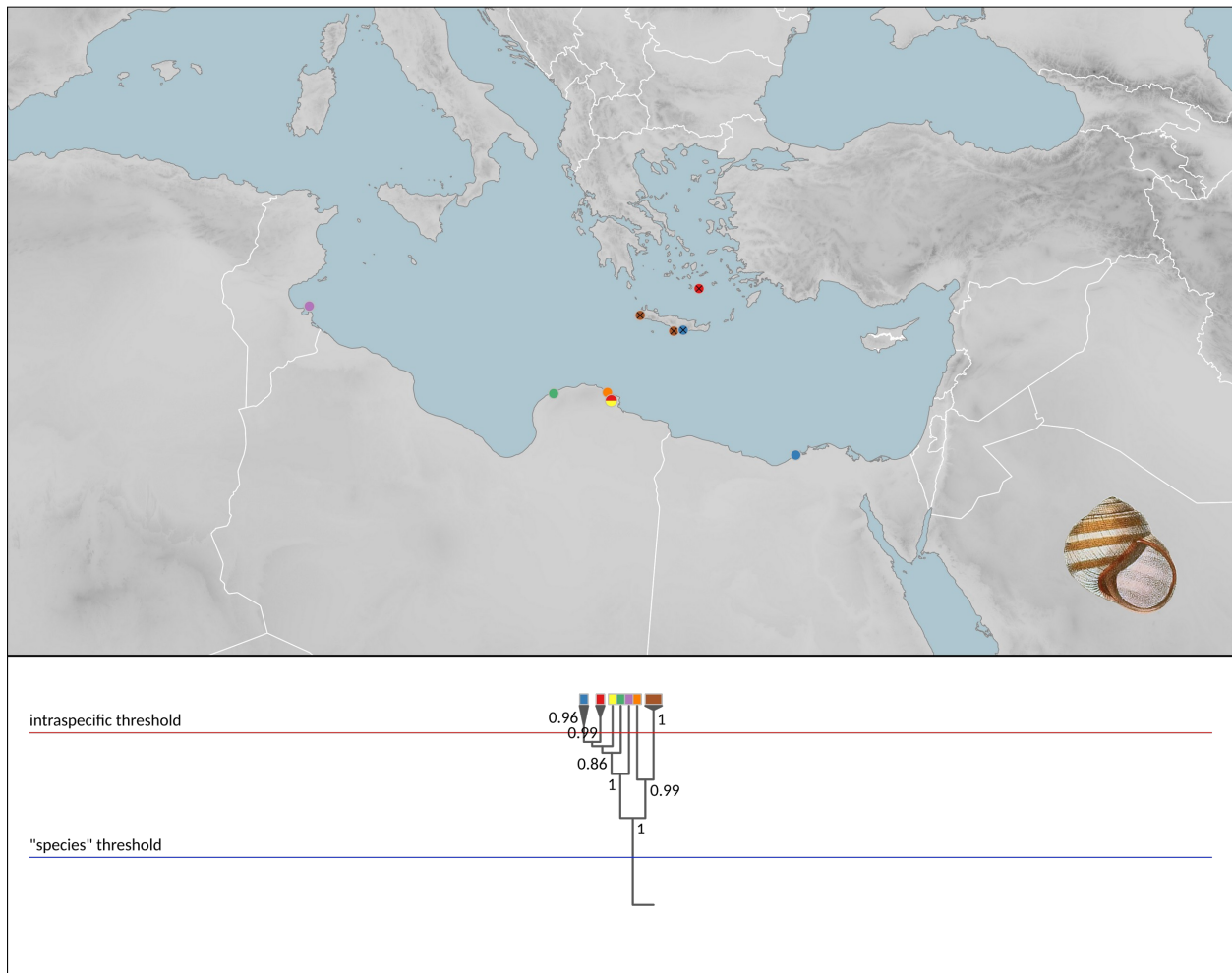
**Fig. S47.** Distribution of intraspecific mitochondrial lineages of *Helix borealis thiesseana* Kobelt, 1878. The taxon is illustrated by an individual from Greece (Evia: canyon between Vassilika and Ellinika).



**Fig. S48.** Distribution of intraspecific mitochondrial lineages of *Helix borealis* Mousson, 1859, clade from Crete and Anatolia.

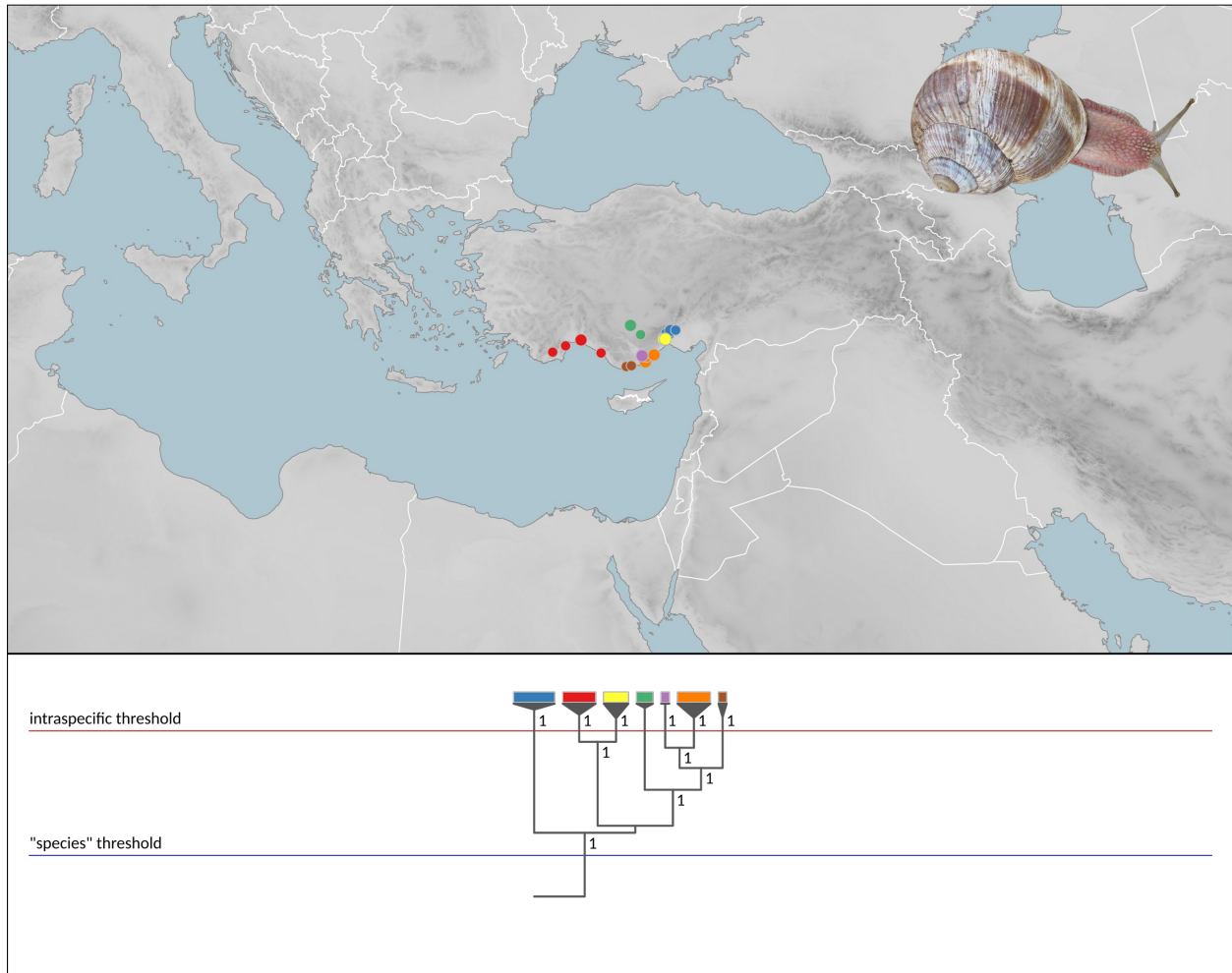


**Fig. S49.** Distribution of intraspecific mitochondrial lineages of *Helix melanostoma* Draparnaud, 1801. The sampling is not representative, the distribution range of the species extends westwards up to Oran, Algeria. The species is represented by an individual from Tunisia (Kef Governorate, near Sers).



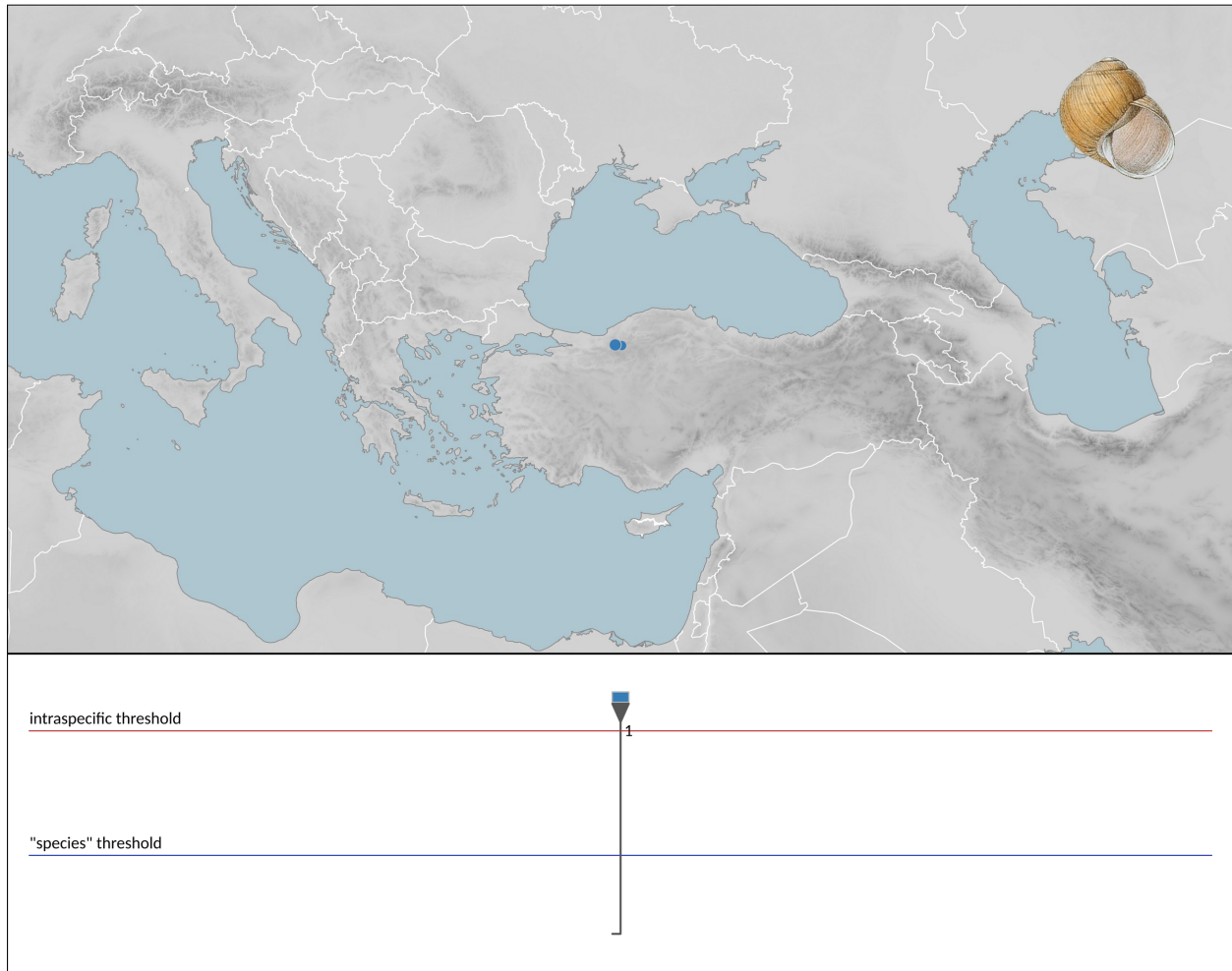
**Fig. S50.** Distribution of intraspecific mitochondrial lineages of *Helix pronuba* Westerlund & Blanc, 1879. The sampling is not representative, the distribution range of the species extends all the way along the coast between the sampling points in Tunisia and Egypt. The species is illustrated by a figure from Kobelt's Conchylien-Cabinet (Kobelt 1902–1906).

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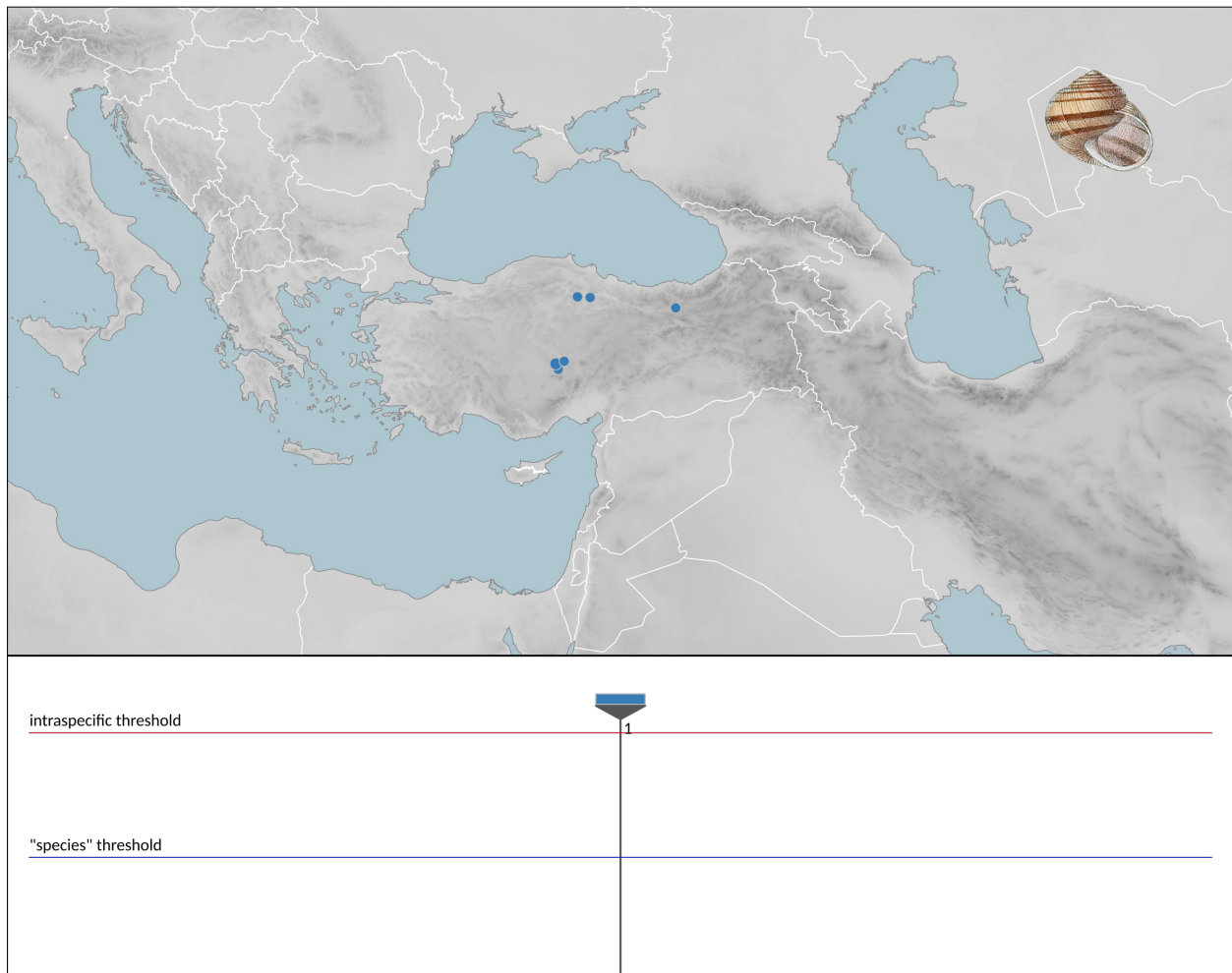


**Fig. S52.** Distribution of intraspecific mitochondrial lineages of the western clade of *Helix asemnis* Bourguignat, 1860. The present distribution extends up to the Aegean Sea. The group is illustrated by an individual from Turkey (Mersin Province: Gözne, castle).

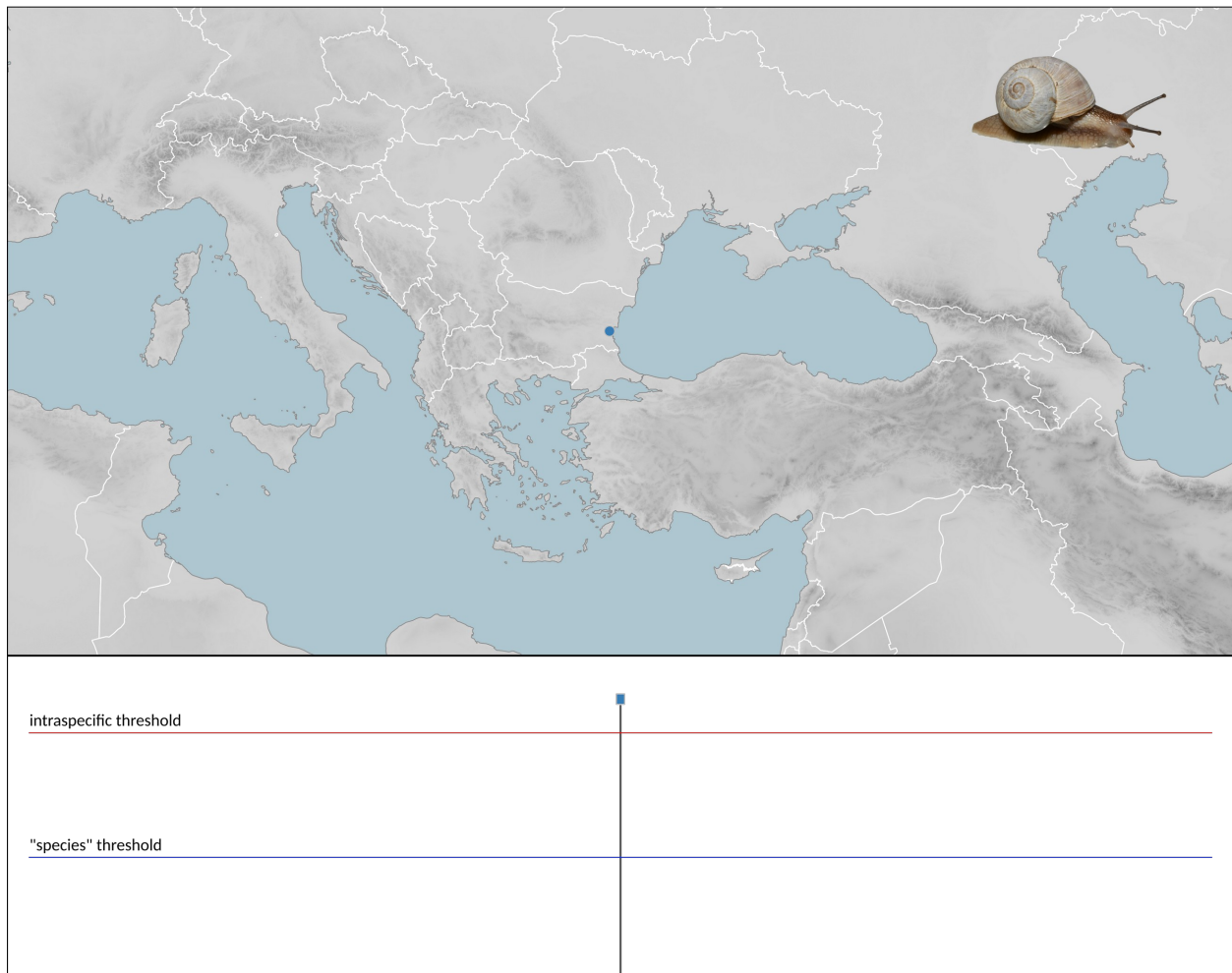




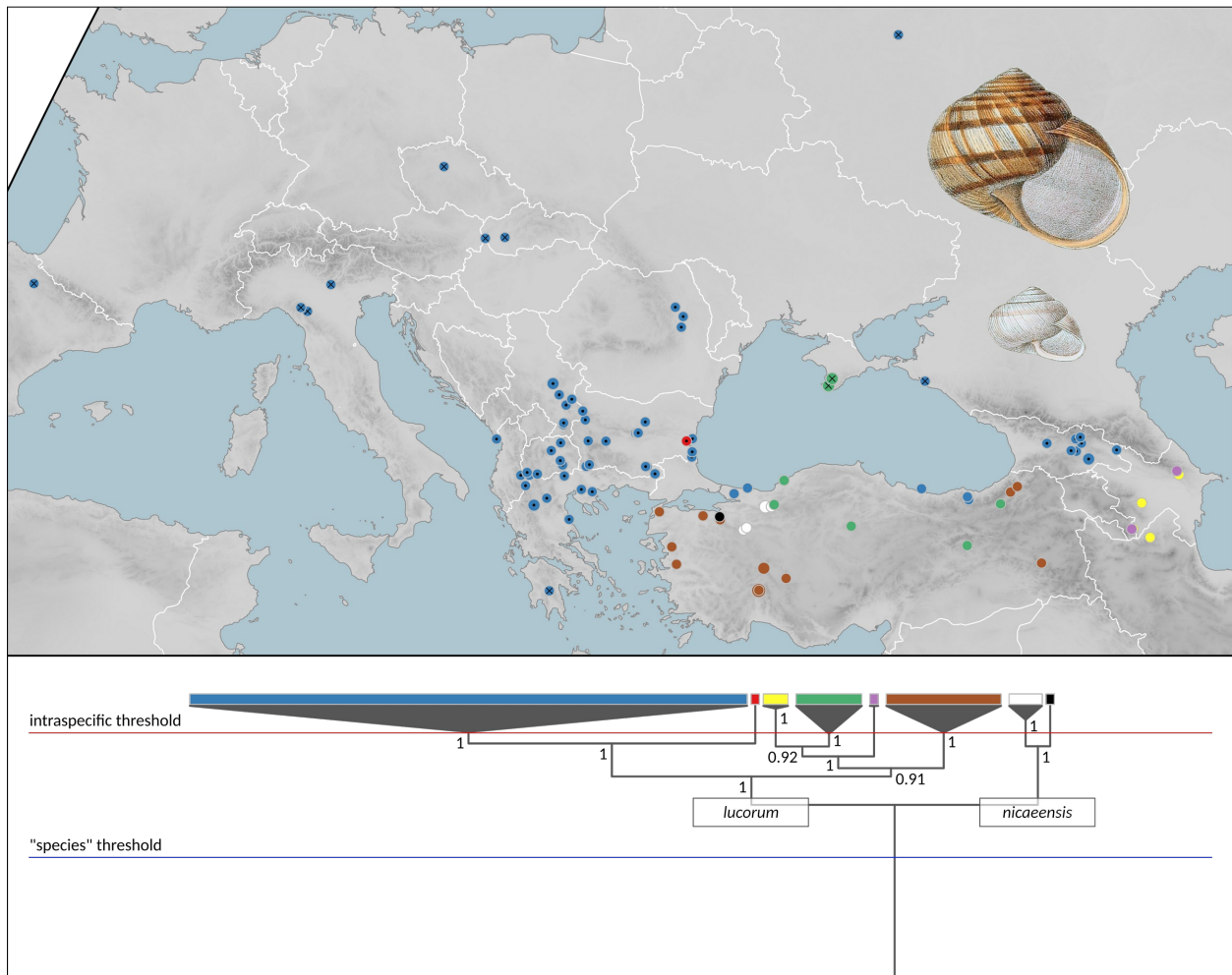
**Fig. S53.** Sampling sites of the mitochondrial clade of *Helix escherichi* O. Boettger, 1898. The sampling is not representative, the species has been reported from a broader area in the north and west of Anatolia (Neubert 2014). The species is illustrated by a figure from Kobelt's Conchylien-Cabinet (Kobelt 1902–1906).



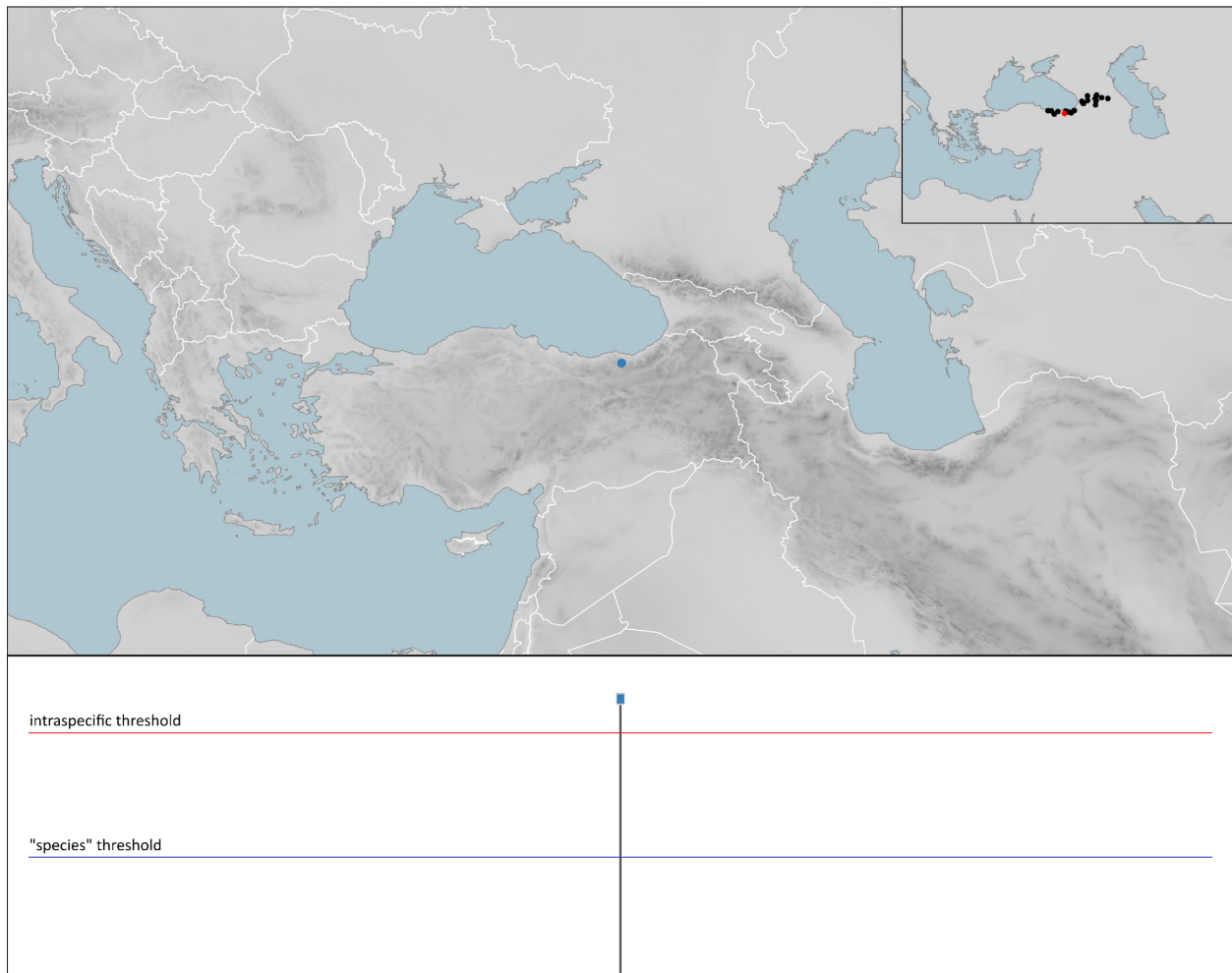
**Fig. S54.** Distribution of the mitochondrial clade of *Helix pathetica* Mousson, 1854. The sampling is not representative and the distribution range of the species extends more to the west of Anatolia. The species is illustrated by a figure from Kobelt's Conchylien-Cabinet (Kobelt 1902–1906).



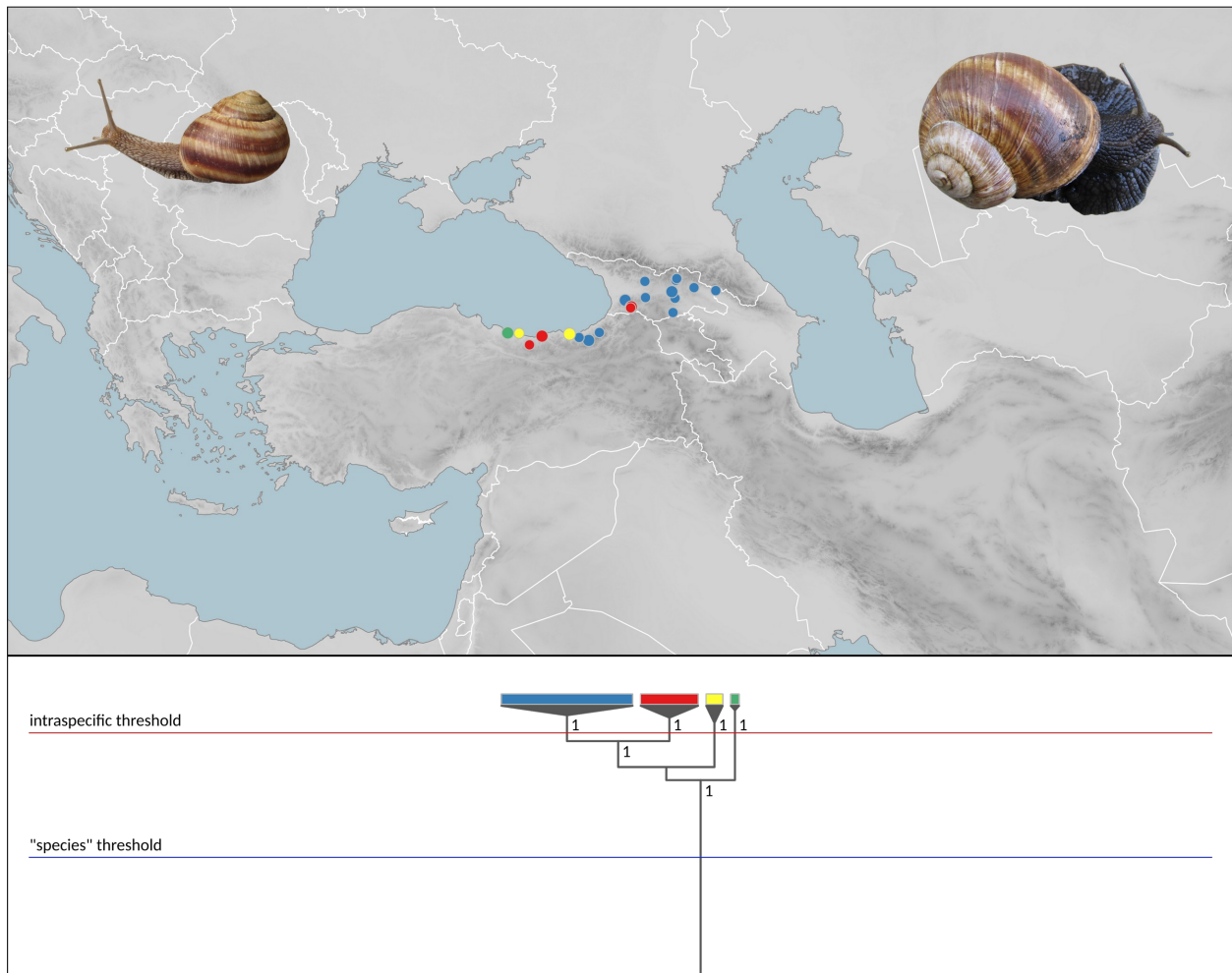
**Fig. S55.** Sampling site of the mitochondrial clade of *Helix pomacella* Mousson, 1854. The sampling is not representative; the species lives in the area encircling the Marmara Sea (Neubert 2014). The species is illustrated by an individual from Bulgaria (Yambol Province: north of Granitovo on road to Elhovo).



**Fig. S56.** Distribution of intraspecific mitochondrial lineages of *Helix lucorum* Linnaeus, 1758 and *Helix nicaeensis* Férussac, 1821. The current distribution of *H. lucorum* is influenced by human-mediated dispersal and its natural limits indicated here are speculative. The species (top: *H. lucorum*; bottom: *H. nicaeensis*) are illustrated by figures from Kobelt's Conchylien-Cabinet (Kobelt 1902–1906)

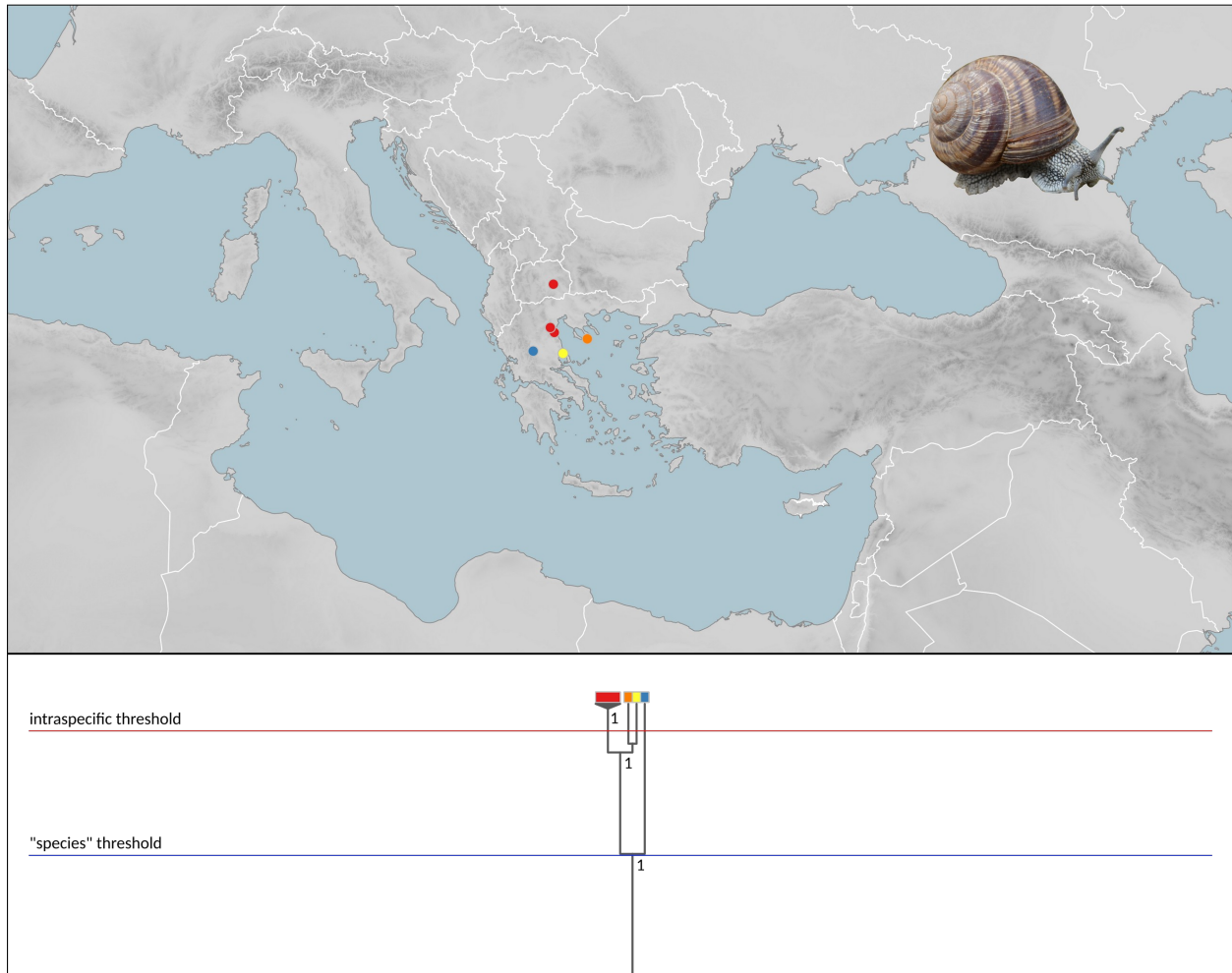


**Fig. S57.** Sampling site of the mitochondrial clade found in *Helix buchii* Dubois de Montpéreux, 1939, which belongs to the Anatolian clade of *Helix*. The inset shows the distribution of all *H. buchii* samples with the one shown here highlighted in red.



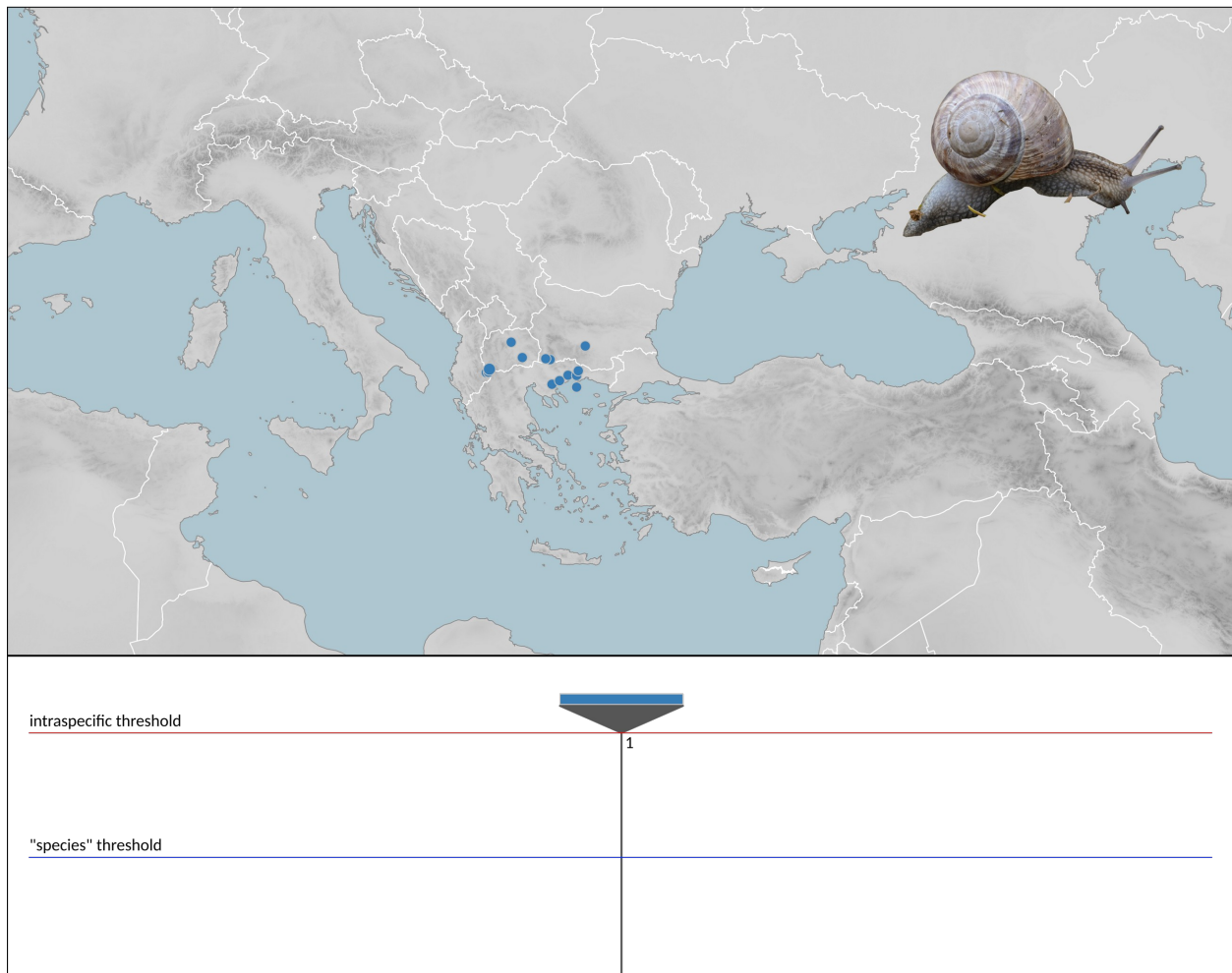
**Fig. S58.** Distribution of intraspecific mitochondrial lineages of *Helix buchii* Dubois de Montpéroux, 1939. The species is illustrated by individuals from Turkey (left: Giresun Province: Espiye, Andoz Kalesi; right: Rize Province: Çamlıkköy).





**Fig. S59.** Distribution of intraspecific mitochondrial lineages of *Helix pelagonesica* (Rolle, 1898). The species mainly distributed in the area between the red and orange points, but the type locality is an island east of the yellow point. The species is illustrated by an individual from Greece (Central Macedonia: Petra Olympou).





**Fig. S60.** Distribution of the mitochondrial clade of *Helix philibinensis* Rossmässler, 1839. The species is illustrated by an individual from North Macedonia (Demir Kapija, ravine between road tunnels).

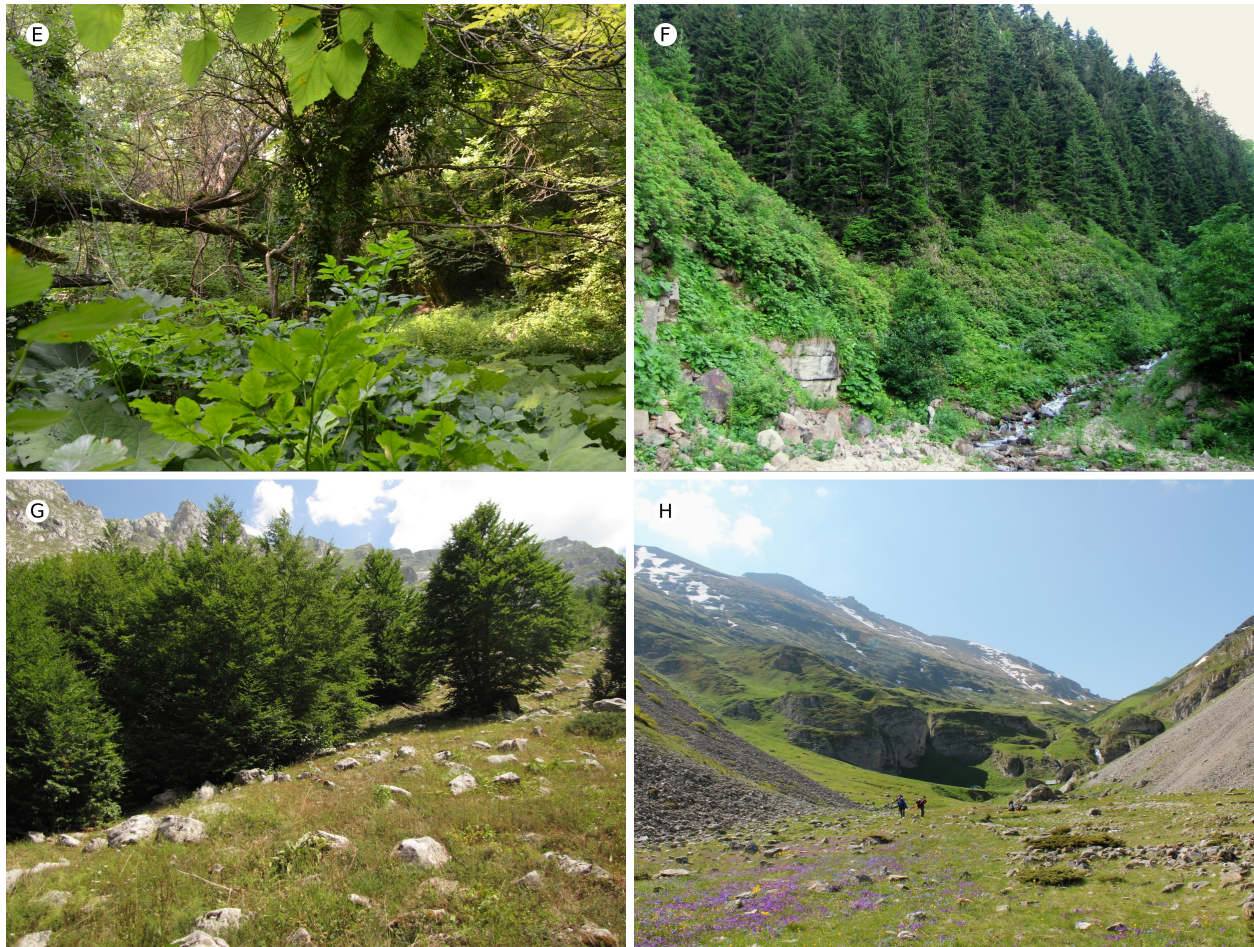


**Fig. S61.** Distribution of intraspecific mitochondrial lineages of *Helix albescens* Rossmässler, 1839. The sampling is not representative, the distribution range extends from Azerbaijan to southern Ukraine. The species is illustrated by an individual from Georgia (Dedoplis Tskaro).



*(continued on the next page)*





**Fig. S62.** Examples of habitats of selected Helicini species. **A:** type locality of *Levantina asagittata* in Saudi Arabia (Makkah Province, 15 km along the road S of Bani Sa'ad; photo E. Neubert 1995). **B:** locality of *Helix pathetica* in Turkey (Çorum Province, near Pınarbaşı; 2011). **C:** mediterranean shrubs at a locality of *Helix pelagonesica* in Greece (Central Macedonia, Leptokária; 2013). **D:** pine forest at a locality of *Maltzanella maltzani* in Turkey (İzmir Province, southern slope of Spil Dağı between Beşpinar and Yukarı Sütçüler; 2011). **E:** locality of *Helix lucorum* and *Caucasotachea vindobonensis* in Greece (Central Macedonia, Skrá; 2013); these two species inhabit a range of different habitats and are often synanthropic. **F:** locality of a large form of *Helix buchii* in Turkey (Rize Province, near Çamlıkköy; 2011). **G:** contact between habitats of *Helix vladika* (beech forest and its margins) and *Helix secernenda* (stony alpine meadow) in Montenegro (near Vusanje; 2012); contact between populations of the two species was not observed. **H:** alpine meadows, habitat of *Helix dormitoris arnautorum* in North Macedonia (Šar Planina, Titov Vrv; photo A. Holubová 2014).