

## A NEW GENUS AND NEW SPECIES OF SPRINGSNAILS (GASTROPODA, HYDROBIIDAE) FROM NORTH-EAST MOROCCO

Abdelkhaleq F. Taybi<sup>1</sup>, Peter Glöer<sup>2</sup>, Youness Mabrouki<sup>3,\*</sup>

<sup>1</sup>Mohammed First University, Morocco

<sup>2</sup>Biodiversity Research Laboratory, Germany

<sup>3</sup>Sidi Mohamed Ben Abdellah University, Morocco

\*e-mail: [youness.mabrouki@usmba.ac.ma](mailto:youness.mabrouki@usmba.ac.ma)

Received: 28.03.2023. Revised: 24.06.2023. Accepted: 27.06.2023.

Recent field surveys on snails conducted in the oriental region of Morocco have led to the discovery of a new species belonging to a new genus, described here as *Znassela bnisnasensis* gen. et sp. nov. It can be distinguished from the other hydrobiid snails by the morphology of the shell and male anatomy. The new hydrobiid snail differs mainly by its elongated ovate shell with 4.5 whorls, slightly convex with a shallow suture, and by the penis showing a swelling near the penis tip; the latter has two penial appendices located on the same side. *Znassela bnisnasensis* has been found in the Béni-Snassen massif, considered a Protected Area in the north-eastern part of Morocco and which is a Site of Ecological and Biological Interest (known as SEBI or SIBE). Photographs of the holotype and paratypes are presented, with the penis morphology, habitat and information on its autecology.

**Key words:** Béni-Snassen massif, crenobiotic species, freshwater gastropod's endemism, North Africa, Protected Area, springsnail

### Introduction

The freshwater gastropod fauna of the world comprises more than 4000 validly described species. They occur on all continents except Antarctica and in almost all types of aquatic habitats (Strong et al., 2008). Many of the freshwater gastropods, especially hydrobiids, which are typically habitat specialists, have narrowly ranged and restricted geographic distribution areas, which make them more vulnerable to human-related threats (Ponder & Walker, 2003; Lydeard et al., 2004).

In North Africa, Morocco is recognised as a hotspot of freshwater gastropod diversity (Mabrouki et al., 2020, 2022a; Glöer, 2022). The main part of this high diversity concerns the springsnail family, Hydrobiidae Stimpson, 1865 (Mabrouki et al., 2022b; Taybi et al., 2022). Most of these hydrobiid snails inhabit the relatively well-watered parts of the Mediterranean-Northern part of Morocco and occupy very narrow ranges.

At present, the Hydrobiidae family is represented by 19 genera in Morocco, most of which have been described recently (Glöer et al., 2020a,b; Boulaassafar et al., 2021; Mabrouki et al., 2021; Taybi et al., 2023a). This paper is a direct continuation of this series of discoveries. This research, conducted in north-eastern Morocco, has revealed a new species belonging to a new genus. Therefore, the main aim was to describe it.

### Material and Methods

#### Sampling

Field surveys were conducted in 2014–2023, when several localities were prospected along the northern part of Morocco, with a special focus on Protected Areas. Most of these sampling sites were visited several times. Benthic invertebrate samples (including molluscs) were taken with «Surber» sampler (ENTOMO-SILEX, France). The quantitative samples (about eight) in various microhabitats presented on the site have been taken against the water current. The choice of selected microhabitats was based on their biogenic capacity suitable to aquatic life. The main part of qualitative benthic fauna samples were taken by nets, dip nets and forceps. The samples have been fixed in 75% ethanol.

The dissections and measurements of the genital organs and the shells were carried out using a stereomicroscope (Leica M205C) with a digital camera (Leica DMC5400). The type material is stored in the Zoological Museum of Hamburg, Germany (ZMH). Water parameters such as conductivity, pH, and dissolved oxygen were measured *in situ* with a multiparametric measuring device (WTW, Multi-Line P4). The other parameters, such as ammonium and biological oxygen demand (BOD<sub>5</sub>), were measured in the laboratory. Two replicates of water samples from each station were taken in 500-ml polyethylene bottles. Water

samples were preserved with 2 ml of concentrated hydrochloric acid (pH = 2). According to the ISO 5667-6 (1990), ISO 5667-2 (1991) and ISO 5667-3 (1994) standards, they were conveyed to a cooler at a low temperature ( $\pm 4^{\circ}\text{C}$ ) to stop the metabolic activities. The variables were determined according to AFNOR (1997) standards and Rodier et al. (1996).

**Study area**

The Béni-Snassen is a Protected Mountainous Area located in the province of Berkane (34.812111° N, 02.401371° W) in the oriental region of Morocco (Fig. 1). It covers an area of more than 61.50 km<sup>2</sup>, considered as a Site of Biological and Ecological Interest ([https://ma.chm-cbd.net/manag\\_cons/esp\\_prot/sibe\\_ma/sibe\\_cont\\_ter/beni-snassene-14/sibe\\_14](https://ma.chm-cbd.net/manag_cons/esp_prot/sibe_ma/sibe_cont_ter/beni-snassene-14/sibe_14)) and protected by the Moroccan government. The Béni-Snassen Mountains form mainly a limestone mountain range with the highest peak at 1535 m a.s.l. at Ras Foughal. They form a set of reliefs that run along the coast, delimited to the north by the Mediterranean Sea, to the south by the River Isly, to the west by the River Moulouya, and to the east by the River Kiss, which runs along the Algerian border about 12 km away. The bioclimatic floors

vary between the temperate semi-arid and the fresh sub-humid. Due to the increase in rainfall and humidity in the Béni-Snassen mountains, the study area is relatively well-watered in a semi-arid context (Agbani et al., 2003).

**Results**

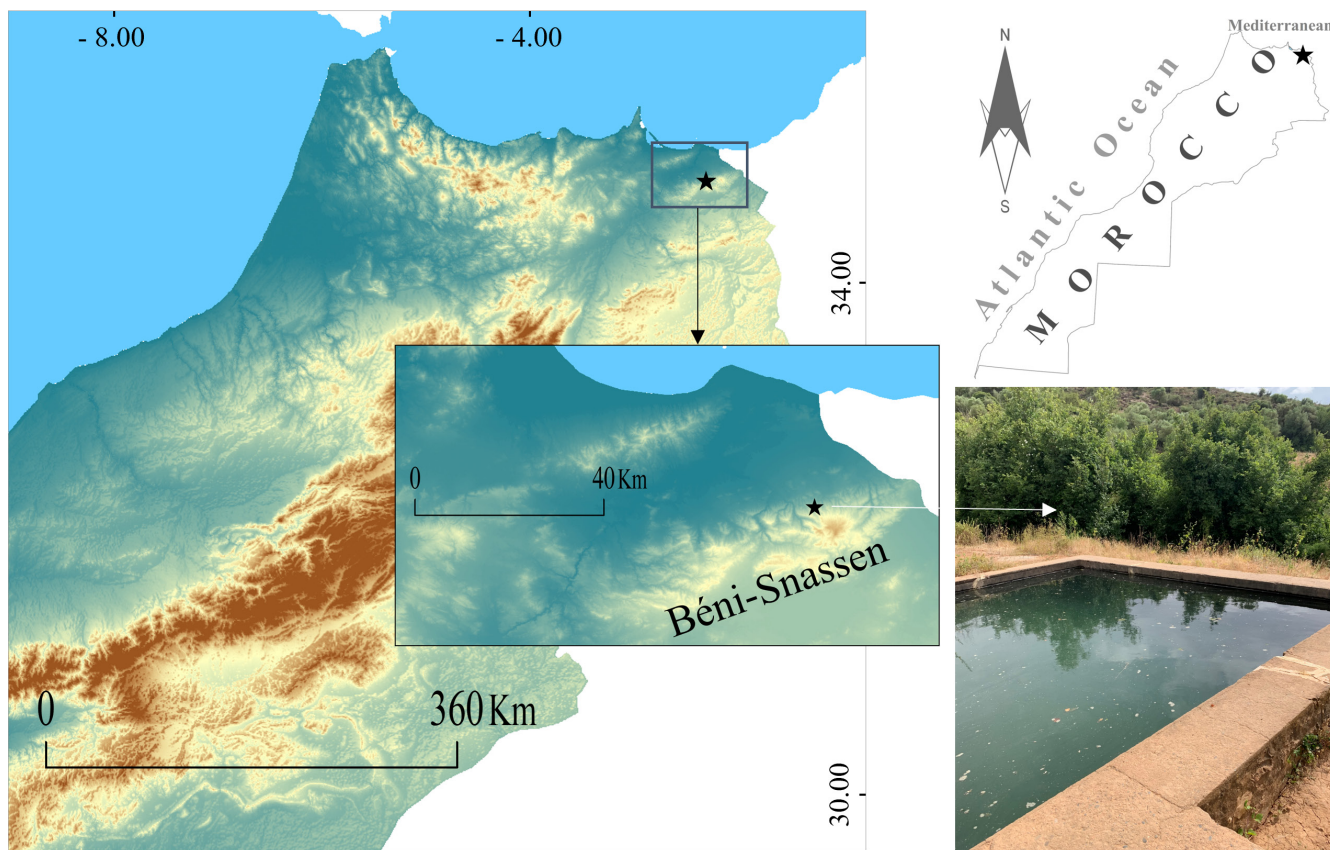
- Phylum Mollusca Cuvier, 1795
- Class Gastropoda Cuvier, 1795
- Superorder Caenogastropoda Cox, 1960
- Superfamily Truncatelloidea Gray, 1840
- Family Hydrobiidae Stimpson, 1865

**Description of the new genus**

*Znassela* Taybi, Glöer & Mabrouki gen. nov.

**Type species.** *Znassela bnissnasensis* Taybi, Glöer & Mabrouki sp. nov.

**Diagnosis.** The shell is elongated ovate, and the penis has two appendices attached on the same side. The penis morphology is a typical character for this species, not known in any other hydrobiid species. This feature justifies the description of a new genus, as it is known that hydrobiid genera can be identified by the shell shape in combination with the penis morphology (Radoman, 1983; Szarowska, 2006; Glöer, 2022).



**Fig. 1.** Location of the Béni-Snassen Protected Area, the type locality of *Znassela bnissnasensis* gen. et sp. nov., and its habitat.

**Differential diagnosis.** The new genus has an elongated ovate shell with 4.5 whorls, slightly convex with a shallow suture. The penis has a swelling near the penis tip and has two penial appendices. *Znassela* gen. nov. can be distinguished from the other elongated Hydrobiidae by shell morphology and male copulatory organ. The new genus is more similar to the genus, recently described from Morocco, *Aghbalia* Glöer, Mabrouki & Taybi, 2020. The latter has a smaller penis with two large appendices on each side; one of them is larger than the penis itself. Another similar genus from Tunisia, *Bullaregia* Khalloufi, Béjaoui & Delicado

2017, has a straight border of the aperture from lateral view; the penis is long and slim and has only one penial appendix. The genus *Corrosella* Boeters, 1970, which occurs in Morocco, Spain and France, has a triangular penis without penial appendices; the apex of the shells is often corroded in Moroccan specimens. Finally, in the genus, recently described from Morocco, *Gafaita* Taybi, Mabrouki & Glöer, 2023, the shell has a shallow suture, and the triangular penis has only one large triangular appendix.

**Etymology.** The new genus was named in honour to the Protected Area and the SIBE of Béni-Snassen.

**Key to the hydrobiid genera of Morocco with elongated shells**

- 1. Body is non-pigmented; eye spots are absent (stygobic) ..... 2
- Body is pigmented; eye spots are present (crenobiotic) ..... 4
- 2. Shell has more than five whorls ..... 3
- Shell has less than five whorls ..... *Mahrazia*
- 3. Shell is slim, and has regularly growing width ..... *Heideella*
- Shell is not slim, and has penultimate whorl slightly broader than the body whorl ..... *Atebbania*
- 4. Shell has convex whorls and a deep suture ..... 5
- Suture is not deep ..... *Gafaita*
- 5. Penis has no appendix ..... *Corrosella*
- Penis has appendix ..... 6
- 6. Penis has two appendices, one on each side ..... *Aghbalia*
- Penis has two appendices on the same side ..... *Znassela* gen. nov.

**Description of the new species**

*Znassela bnisnasensis* Taybi, Glöer & Mabrouki sp. nov.

**Type material.** One holotype (Fig. 2) and 28 paratypes (Fig. 3) were collected on the type locality and preserved in ethanol. Holotype: shell is 1.97 mm in height and 1.11 mm in width, collect-

ed in the type locality and stored in the Zoological Museum of Hamburg (ZMH 141469). Paratypes: ten paratypes are stored in the Zoological Museum of Hamburg (ZMH 141470), eight in the personal collection of Peter Glöer, and ten specimens in the personal collection of Youness Mabrouki and Abdelkhaleq Taybi.

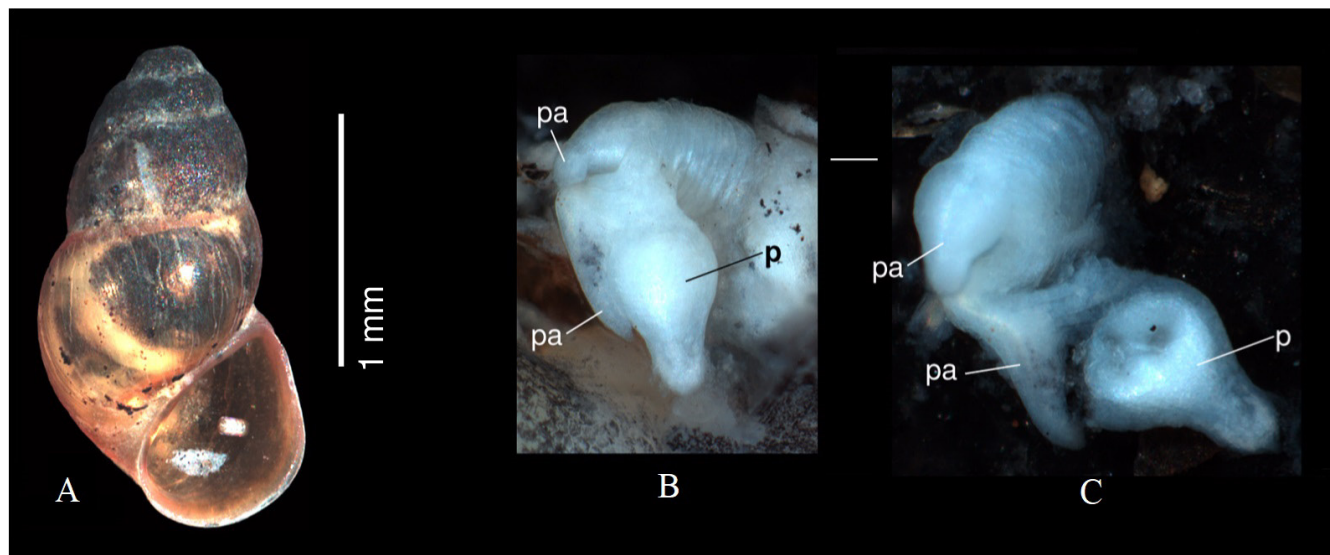


Fig. 2. *Znassela bnisnasensis* gen. et sp. nov. Designations: A – shell of the holotype; B, C – penis (p), with penial appendices (pa).

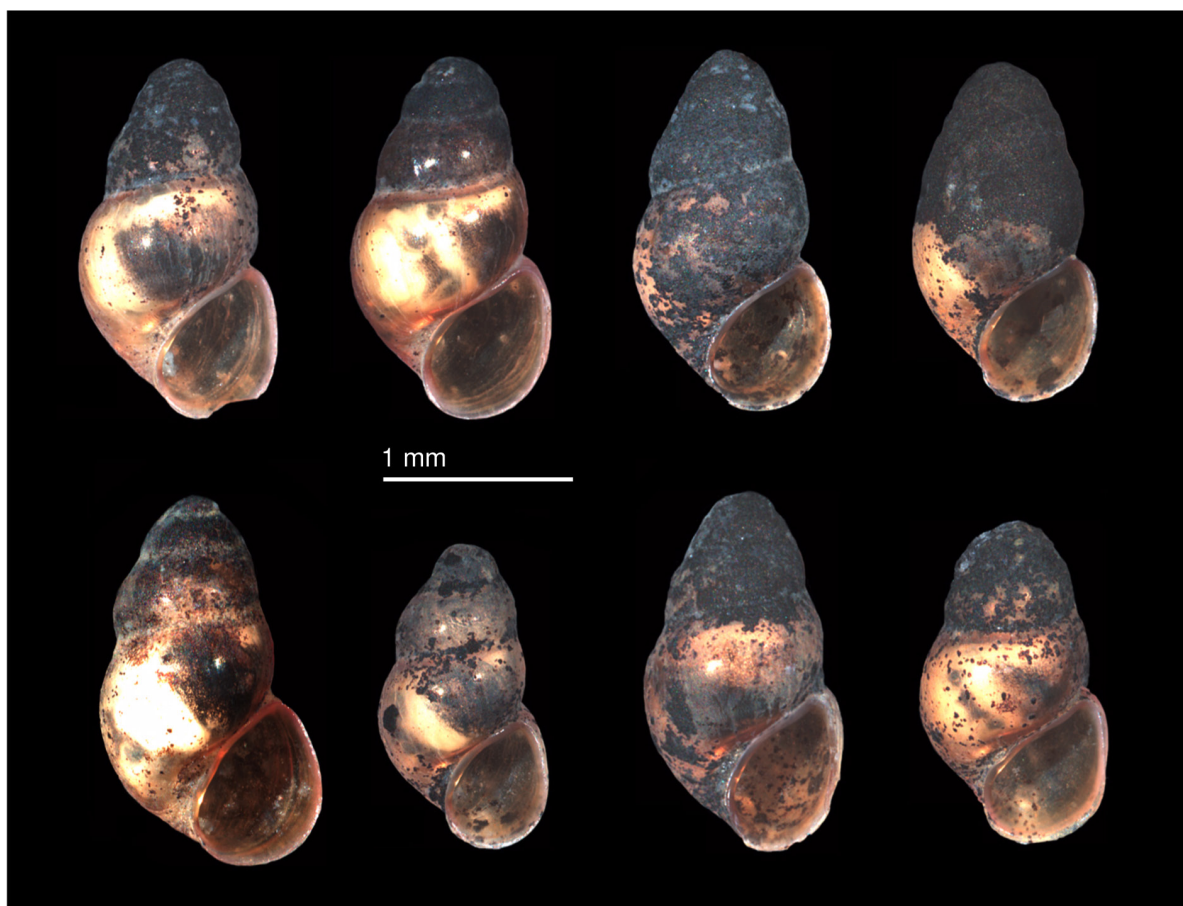


Fig. 3. Paratypes of *Znassela bnisnasensis* gen. et sp. nov.

**Type locality.** It is the Béni-Snassen SIBE, Ain Bni Mahfoud spring (34.891389° N, 02.213333° W), Berkane province, oriental region of Morocco. It was collected on 02.06.2022.

### Description

**Conchological features.** The elongated ovate shell has 4.5 whorls, slightly convex with a shallow suture. The aperture is ovate, tapered at the top and rounded to angled (Fig. 2A, Fig. 3). The umbilicus is closed. The shell is 1.68–1.97 mm in height and 1.02–1.11 mm in width. Shell measurements are presented in Table 1. The corneous operculum is ovate, with a rounded angle at the top, smooth and thin, and brown in colour.

**Soft body.** The penis has two appendices (Fig. 2B, C), which has a swelling near the tip. The penis itself is larger than the appendices; the penial appendices are located on the same right side of the penis, one after the other. Penis is attached well behind right eye.

**Etymology.** The new species was named in honour of the Béni-Snassen massif.

**Habitat.** Ain Bni Mahfoud is a permanent rheocrenous spring, located in the Béni-Snassen massif at altitude of 472 m a.s.l. The water of the

spring is routed through concrete pipes to a small retention basin before being redistributed again. The slope of the flow and the speed of the current velocity are important. The ground substrate is made up by pebbles and gravel with plant debris. The banks are naturally covered by dense shore vegetation consisting mainly of *Rubus camptotachys* G.Braun and *Smilax aspera* L. The vegetation of this forest area is composed by typically Mediterranean scrubland species, such as *Pistacia lentiscus* L., *Tetraclinis articulata* (Vahl) Mast., and *Ulex parviflorus* Pourr. The analysis of the physicochemical parameters of the water, sampled in the habitat of *Znassela bnisnasensis* gen. et sp. nov. at Ain Bni Mahfoud spring, revealed a good hydrological quality (Table 2), according to the Moroccan Surface Water Guidelines (MSWG) of good quality.

**Nomenclatural acts.** This study and its nomenclatural acts have been registered in the ZooBank. The ZooBank Life Science Identifiers (LSID) for this publication are <https://zoo-bank.org/NomenclaturalActs/c145a344-caab-4dae-b68f-1b0894a77f39>, and <https://zoobank.org/NomenclaturalActs/E1A6E04F-DC34-4EFB-8438-CE15231B16A8>.

**Table 1.** Shell measurements (N = 20; the measurement accuracy is 0.05) of *Znassela bnisnasensis* sp. nov.

Shell measurements	Minimum	Maximum	Mean	Standard deviation
Shell height, mm	1.69	2.02	1.89	0.12
Aperture height, mm	0.70	0.84	0.79	0.05
Spire height, mm	0.99	1.18	1.10	0.07
Shell width, mm	0.92	1.10	1.04	0.06
Aperture width, mm	0.38	0.45	0.43	0.02

**Table 2.** Mean values for the physical and chemical water parameters measured at the sampling locality of *Znassela bnisnasensis* gen. et sp. nov., and their values (according to Moroccan Surface Water Guidelines)

Factor	pH	Conductivity	Dissolved oxygen	BOD <sub>5</sub>	Ammonium
Mean	7.2	245 μS × cm <sup>-1</sup>	6.3 mg × l <sup>-1</sup>	4.5 mg × l <sup>-1</sup>	0.01 mg × l <sup>-1</sup>
MSWG	6.5–8.5	100–1300 μS × cm <sup>-1</sup>	> 7–5 mg × l <sup>-1</sup>	< 3–5 mg × l <sup>-1</sup>	< 0.1–0.5 mg × l <sup>-1</sup>

Note: MSWG – Moroccan Surface Water Guidelines, BOD<sub>5</sub> – biological oxygen demand.

**Associated species.** The new taxon was found with other aquatic Gastropods, such as *Physella acuta* (Draparnaud, 1805), *Ancylus* sp., *Melanopsis* spp., and various aquatic invertebrates, including annelids (*Helobdella stagnalis* (Linnaeus, 1758)), crustaceans (*Potamon algeriense* Bott, 1967), Ephemeroptera larvae (*Caelis luctuosa* (Burmeister, 1839), *Baetis* spp.), Odonata larvae (*Trithemis* sp., *Sympetrum* sp., *Orthetrum* sp.). In addition, some Diptera larvae were found on the type locality (e.g. Chironomidae and Culicidae). Two aquatic vertebrate species were found in the Ain Bni Mahfoud spring, *Discoglossus pictus* Otth, 1837 and *Pelophylax saharicus* (Boulenger, 1913).

### Discussion

Previous findings has raised the known biodiversity of the family Hydrobiidae s.str. in Morocco to 20 genera (Mabrouki et al., 2022c,d; Taybi et al., 2023a). To date, the new genus and species are restricted to their type locality in the Béni-Snassen. This geographical barrier is also known as a habitat for other endemic hydrobiid species, such as *Aghbalia aghbalensis* Glöer, Mabrouki & Taybi, 2020, *Pseudamnicola tafoughaltensis* Taybi, Glöer & Mabrouki, 2022, *Mercuria midarensis* Boulaassafer, Ghamizi & Delicado, 2018, and *M. gauthieri* Glöer, Bouzid & Boeters, 2010 (Mabrouki et al., 2020, 2021; Taybi et al., 2022).

The Béni-Snassen massif is a cornerstone of biodiversity conservation in northern Morocco. This mountain range represents an enclave of rich biodiversity, where many forest and mountain species occur, including mammals, birds, reptiles, and amphibians (Aulagnier et al., 2015; Mediani et al., 2015; Mabrouki et al., 2019). In addition,

due to the permanent mountain stream, River Zegzel, the massif also has a particular hydrological value due to its functional role in supplying the River Moulouya and the Béni-Snassen aquifer, corresponding to the largest underground water reservoir in the north-eastern Morocco.

In Morocco, a major management concern of the Protected Areas, such as Ramsar Sites and SIBE, is the impact of alien species, which can prey on or, perhaps, outcompete native biodiversity, including freshwater mollusc species (Taybi et al., 2021, 2023b,c). These areas are a home to 41 alien animal species belonging to various taxonomic groups (Taybi et al., 2023b). Management priorities must include the reduction or elimination of alien species spread in Moroccan freshwater Protected Areas.

### Conclusions

In the last years, the hydrobiid springsnail fauna of Morocco has received a considerable attention in terms of species discoveries. It is more likely that the number of springsnail diversity, known to occur in Morocco, will increase with further intensified studies and collecting expeditions, which are urgently needed. Indeed, invasive species are not the only problem facing the freshwater biodiversity in the Eastern Morocco. In addition to the considerable anthropogenic pressures, many springs in the Béni-Snassen massif have dried up due to years of water withdrawals and dry weather because of climate change; this can be a serious problem facing the crenobiotic species of North Africa in general. More efforts are needed for better understanding and knowing more about this invertebrate group, which receives less conservation concerns compared to the vertebrates.

## Acknowledgements

We sincerely thank the Editor-in-Chief and two anonymous reviewers, who have greatly improved this paper at the initial stage.

## References

- AFNOR. 1997. *Qualité de l'eau. Recueil des normes Françaises Environnement*. Vol. 1–4. Paris. 1372 p.
- Agbani M.A., Qninba A., Hamidi S., Maamri A. 2003. *Diagnostique Ornithologique. Massif des Béni Snassen*. Programme MedW et Coast-Maroc «Conservation des Zones Humides et des Systèmes côtiers dans la Région Méditerranéenne». Rapport final. 42 p.
- Aulagnier S., Bayed A., Cuzin F., Thevenot M. 2015. Mammals of Morocco: extinctions and declines during the XXth century. *Travaux de l'Institut Scientifique, Série Générale* 8: 53–67.
- Boulaassaf K., Ghamizi M., Machordom A., Albrecht C., Delicado D. 2021. Hidden species diversity of *Corrosella* Boeters, 1970 (Caenogastropoda: Truncatelloidea) in the Moroccan Atlas reveals the ancient biogeographic link between North Africa and Iberia. *Organisms, Diversity and Evolution* 2: 393–420. DOI: 10.1007/s13127-021-00490-3
- Glöer P. 2022. *The freshwater gastropods of the West-Palaearctis*. Vol. 3. Hydrobiidae, Identification key, anatomy, ecology, distribution. Hetlingen, Germany. 596 p.
- Glöer P., Mabrouki Y., Taybi A.F. 2020a. A new genus and two new species (Gastropoda, Hydrobiidae) from Morocco. *Ecologica Montenegrina* 28: 1–6. DOI: 10.37828/em.2020.28.1
- Glöer P., Mabrouki Y., Taybi A.F. 2020b. Two new valvatoid genera (Gastropoda, Hydrobiidae) from Morocco. *Ecologica Montenegrina* 30: 124–128. DOI: 10.37828/em.2020.30.12
- ISO. 1990. *International Organization for Standardisation. Water quality sampling. Part 6: Guidelines for sampling of rivers and streams. International Standard ISO 5667-6*. Geneva: International Standards Organisation, Switzerland. Available from <https://www.iso.org/standard/11769.html>
- ISO. 1991. *International Organization for Standardisation. Water Quality Sampling. Part 2: Guidelines for sampling of rivers and streams. International Standard ISO 5667-2*. Geneva: International Standards Organisation, Switzerland. Available from <https://www.iso.org/ru/standard/11764.html>
- ISO. 1994. *International Organization for Standardisation. Water quality sampling. Part 3: Guidance on the preservation and handling of samples. International Standard ISO 5667-3*. Geneva: International Standards Organisation, Switzerland. Available from <https://www.iso.org/standard/11766.html>
- Lydeard C., Cowie R.H., Ponder W.F., Bogan A.E., Bouchet P., Clark S.A., Cummings K.S., Frest T.J., Gargominy O., Herbert D.G., Hershler R., Perez K.E., Roth B., Seddon M., Strong E.E., Thompson F.G. 2004. The global decline of nonmarine mollusks. *BioScience* 54(4): 321–330. DOI: 10.1641/0006-3568(2004)054[0321:TGDONM]2.0.CO;2
- Mabrouki Y., Taybi A.F., Skalli A., Sánchez-Vialas A. 2019. Amphibians of the Oriental Region and the Moulouya River Basin of Morocco: distribution and conservation notes. *Basic and Applied Herpetology* 33: 19–32. DOI: 10.11160/bah.134
- Mabrouki Y., Taybi A.F., Glöer P. 2020. New additions to the freshwater gastropod fauna (Gastropoda: Hydrobiidae, Lymnaeidae) of Morocco. *Ecologica Montenegrina* 31: 40–44. DOI: 10.37828/em.2020.31.8
- Mabrouki Y., Taybi A.F., Glöer P. 2021. Further records of freshwater Gastropods (Mollusca: Hydrobiidae, Lymnaeidae, Planorbidae) from Morocco. *Bonn Zoological Bulletin* 70(2): 273–279. DOI: 10.20363/BZB-2021.70.2.273
- Mabrouki Y., Glöer P., Taybi A.F. 2022a. *Gyraulus marocana* sp. nov., a new freshwater snail species (Mollusca, Gastropoda, Planorbidae) from Morocco. *Nature Conservation Research* 7(1): 96–100. DOI: 10.24189/ncr.2022.007
- Mabrouki Y., Glöer P., Taybi A.F. 2022b. *Mahrazia benlemlhi* gen. et sp. nov., a new subterranean snail (Gastropoda: Hydrobiidae) from Morocco. *Bonn Zoological Bulletin* 71(2): 204–208. DOI: 10.20363/BZB-2022.71.2.204
- Mabrouki Y., Taybi A.F., Glöer P. 2022c. *Idrisiella bourkaiensis* gen. et sp. n., a new valvatoid snail (Gastropoda, Hydrobiidae) from Morocco. *Invertebrate Zoology* 19(1): 18–23. DOI: 10.15298/invertzool.19.1.03
- Mabrouki Y., Glöer P., Taybi A.F. 2022d. *Ifrania bahhouensis* sp. n. a new valvatiform snail (Gastropoda, Hydrobiidae) from Morocco. *Acta Zoologica Academiae Scientiarum Hungaricae* 68(4): 313–319. DOI: 10.17109/AZH.68.4.313.2022
- Mediani M., Brito J.C., Fahd S. 2015. Atlas of the amphibians and reptiles of northern Morocco: updated distribution and patterns of habitat selection. *Basic and Applied Herpetology* 29: 81–107.
- Ponder W.F., Walker K.F. 2003. From mound springs to mighty rivers: the conservation status of freshwater molluscs in Australia. *Aquatic Ecosystem Health and Management* 6(1): 19–28. DOI: 10.1080/14634980301482
- Radoman P. 1983. Hydrobioidea a superfamily of Probranchia (Gastropoda). I. Systematics. In: *Monographs Serbian Academy of Sciences and Arts, DXLVII, Department of Sciences*. Vol. 57. 256 p.
- Rodier J., Bazin C., Broutin J.P., Chambon P., Champsaur H., Rodi L. 1996. *L'analyse de l'eau, 8<sup>th</sup> ed.* Ed Dunod, Paris, France. 1526 p.
- Szarowska M. 2006. Molecular Phylogeny, Systematics and Morphological Character Evolution in the Balkan Risssooidea (Caenogastropoda). *Folia Malacologica* 14(3): 99–168.
- Strong E.E., Gargominy O., Ponder W.F., Bouchet P. 2008. Global diversity of gastropods (Gastropoda; Mollusca) in freshwater. *Hydrobiologia* 595(1): 149–166. DOI: 10.1007/s10750-007-9012-6
- Taybi A.F., Mabrouki Y., Glöer P. 2021. First record of the New Zealand Mudsnail *Potamopyrgus antipodarum* (J.E.

- Gray, 1843) (Tateidae, Mollusca) in Africa. *Graellsia* 77(2): e140. DOI: 10.3989/graellsia.2021.v77.303
- Taybi A.F., Glöer P., Mabrouki Y. 2022. Four new species of the genus *Pseudamnicola* Paulucci, 1878 from Morocco (Gastropoda: Hydrobiidae). *Invertebrate Zoology* 19(2): 191–198. DOI: 10.15298/invertzool.19.2.07
- Taybi A.F., Glöer P., Mabrouki Y. 2023a. *Gafaita gafaitensis* gen. et sp. nov. a new hydrobiid snail (Gastropoda, Hydrobiidae) from Morocco. *Invertebrate Zoology* 20(3). In Press.
- Taybi A.F., Mabrouki Y., Piscart C. 2023b. Distribution of Freshwater Alien Animal Species in Morocco: Current Knowledge and Management Issues. *Diversity* 15(2): 169. DOI: 10.3390/d15020169
- Taybi A.F., Mabrouki Y., Glöer P. 2023c. First record of the exotic seminoles rams-horn *Helisoma duryi* (Wetherby, 1879), (Gastropoda: Planorbidae) in Morocco. *Graellsia* 79(1): e181. DOI: 10.3989/graellsia.2023.v79.362

## НОВЫЙ РОД И ВИД УЛИТОК (GASTROPODA, HYDROBIIDAE) ИЗ СЕВЕРО-ВОСТОКА МАРОККО

А. Ф. Тайби<sup>1</sup> , П. Глёр<sup>2</sup> , Ю. Мабруки<sup>3</sup> 

<sup>1</sup>Первый университет Мохаммеда, Марокко

<sup>2</sup>Лаборатория исследования биоразнообразия, Германия

<sup>3</sup>Университет Сиди Мохаммеда бен Абдаллы, Марокко

\*e-mail: [youness.mabrouki@usmba.ac.ma](mailto:youness.mabrouki@usmba.ac.ma)

Полевые исследования, проведенные на востоке Марокко, привели к описанию нового вида, принадлежащего к новому роду, описанному здесь, как *Znassela bnisnasensis* gen. et sp. nov. От других гидробиид его отличает морфология раковины и анатомические признаки самцов. *Znassela bnisnasensis* отличается преимущественно удлинённо-яйцевидной раковинкой с 4.5 оборотами, слегка выпуклой, с неглубоким швом, и пенисом с припухлостью у кончика пениса; последний имеет два пениальных отростка, расположенных на одной стороне. *Znassela bnisnasensis* была обнаружена в массиве Бени-Снассен, который является особо охраняемой природной территорией в северо-восточной части Марокко и представляет собой объект экологического и биологического интереса (известный как SEBI или SIBE). В статье представлены фотографии голотипа и паратипов, морфология полового члена, среда обитания и информация о его аутоэкологии.

**Ключевые слова:** кренобиотический вид, массив Бени Снассен, особо охраняемая природная территория, Северная Африка, улитка, эндемизм пресноводных брюхоногих