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THE FIRST FINDINGS OF NEW SPECIES OF AMPHIPODS IN THE SEA OF AZOV

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In 2022–2023, 8 species and 4 genera of Amphipoda new to the Sea of Azov were found near the Cape Kazantip (the Crimea; Golubniki, Russkaya, and Shirokaya bays). All specimens are stored in IBSS Collection of Hydrobionts of the World Ocean. The following species were recorded: *Ampelisca sevastopoliensis* Grintsov, 2011 (the family Ampeliscidae); *Apohyale crassipes* (Heller, 1866) (Hyalidae); *Microprotopus* cf. *maculatus* (Microprotopidae); *Monocorophium insidiosum* (Crawford, 1937) (Corophiidae); *Nototropis massiliensis* (Bellan-Santini, 1975) (Atylidae); *Orchestia mediterranea* A. Costa, 1853 (Talitridae); *Orchestia montagui* Audouin, 1856 (Talitridae); and *Pleonexes helleri* (Karaman, 1975) (Amphithoidae). New genera were registered: *Apohyale* Bousfield & Hendrycks, 2002; *Monocorophium* Bousfield & Hoover, 1997; *Nototropis* A. Costa, 1853; and *Pleonexes* Spence Bate, 1857. Seven species were represented by adult males and females, as well as juveniles. Two *Orchestia* species were identified by adult males. Individuals of species new to the Sea of Azov were found in the coastal zone in the following biotopes: supralittoral, macrophytes on the beach (*O. mediterranea* and *O. montagui*); detached macrophytes off the coast (*A. crassipes*); sand on the bottom at a depth of 0.2–1.5 m (*A. sevastopoliensis* and *N. massiliensis*); seagrass beds (*M. insidiosum* and *Microprotopus* cf. *maculatus*); and attached macrophytes on the bottom at a depth of 0.2–1.0 m (*P. helleri*). The occurrence of these species in the Sea of Azov may be associated with an increase in the salinity of its waters.

Keywords: Amphipoda, the first findings, Sea of Azov

New crustacean species periodically invade the Sea of Azov [Timofeev, Bondarenko, 2022; Timofeev et al., 2019], and the order Amphipoda is no exception. In recent years, we have recorded 9 species new for the Sea of Azov and 5 new genera. The material was sampled from various biotopes: pebble-sandy and rocky beaches (splash), sand on the bottom, algal associations, periphyton, and rocks on the bottom (Fig. 1). Qualitative samples were taken by hand or with a scraper (0.5-mm net mesh) or a frame with a net (0.5-mm net mesh). The samples were fixed with 96% ethanol. In the laboratory, amphipods were selected from the samples under an MBS-9 microscope at $\times 16$ or $\times 32$ magnification.

In the subcollection of amphipods of IBSS Collection of Hydrobionts of the World Ocean, the following species are stored:

- *Ampelisca sevastopoliensis* Grintsov, 2011 (No. IBSS.bent.567Amph.as. V10);
- *Apohyale crassipes* (Heller, 1866) (No. IBSS.bent.568Amph.ac. V200);
- *Microprotopus* cf. *maculatus* (No. IBSS.bent.569Amph.mm. V20);

- *Monocorophium insidiosum* (Crawford, 1937) (No. IBSS.bent.569Amph.mm. V20);
- *Nototropis massiliensis* (Bellan-Santini, 1975) (No. IBSS.bent.571Amph.nm. V1);
- *Orchestia mediterranea* A. Costa, 1853 (No. IBSS.bent.572Amph.omb. V1);
- *Orchestia montagui* Audouin, 1856 (No. IBSS.bent.573Amph.omb. V3);
- *Pleonexes helleri* (Karaman, 1975) (No. IBSS.bent.575Amph.ph. V5).



Fig. 1. Map of the sampling

The following species were recorded: *Ampelisca sevastopoliensis* Grintsov, 2011 (the family Ampelisidae) (Fig. 2A); *Apohyale crassipes* (Heller, 1866) (Hyalidae) (Fig. 2B); *Microprotopus* cf. *maculatus* (Microprotopidae) (Fig. 2C); *Monocorophium insidiosum* (Crawford, 1937) (Corophiidae) (Fig. 2D); *Nototropis massiliensis* (Bellan-Santini, 1975) (Atylidae) (Fig. 2E); *Orchestia mediterranea* A. Costa, 1853 (Talitridae) (Fig. 2F); *Orchestia montagui* Audouin, 1856 (Talitridae) (Fig. 2G); and *Pleonexes helleri* (Karaman, 1975) (Ampithoidae) (Fig. 2H).

The following new genera were registered: *Apohyale* Bousfield & Hendrycks, 2002; *Monocorophium* Bousfield & Hoover, 1997; *Nototropis* A. Costa, 1853; and *Pleonexes* Spence Bate, 1857. Seven Amphipoda species (with the exception of two *Orchestia* species) were represented by both adults and juveniles. Two *Orchestia* representatives were identified by adult males (*Orchestia* females and juveniles are morphologically similar). All taxa were previously reported for the Black Sea [Grintsov, 2022, 2023; Grintsov, Sezgin, 2011]. The appearance of these species in the Sea of Azov seems to be related to the recent increase in the salinity level of its waters [Kosenko et al., 2017].

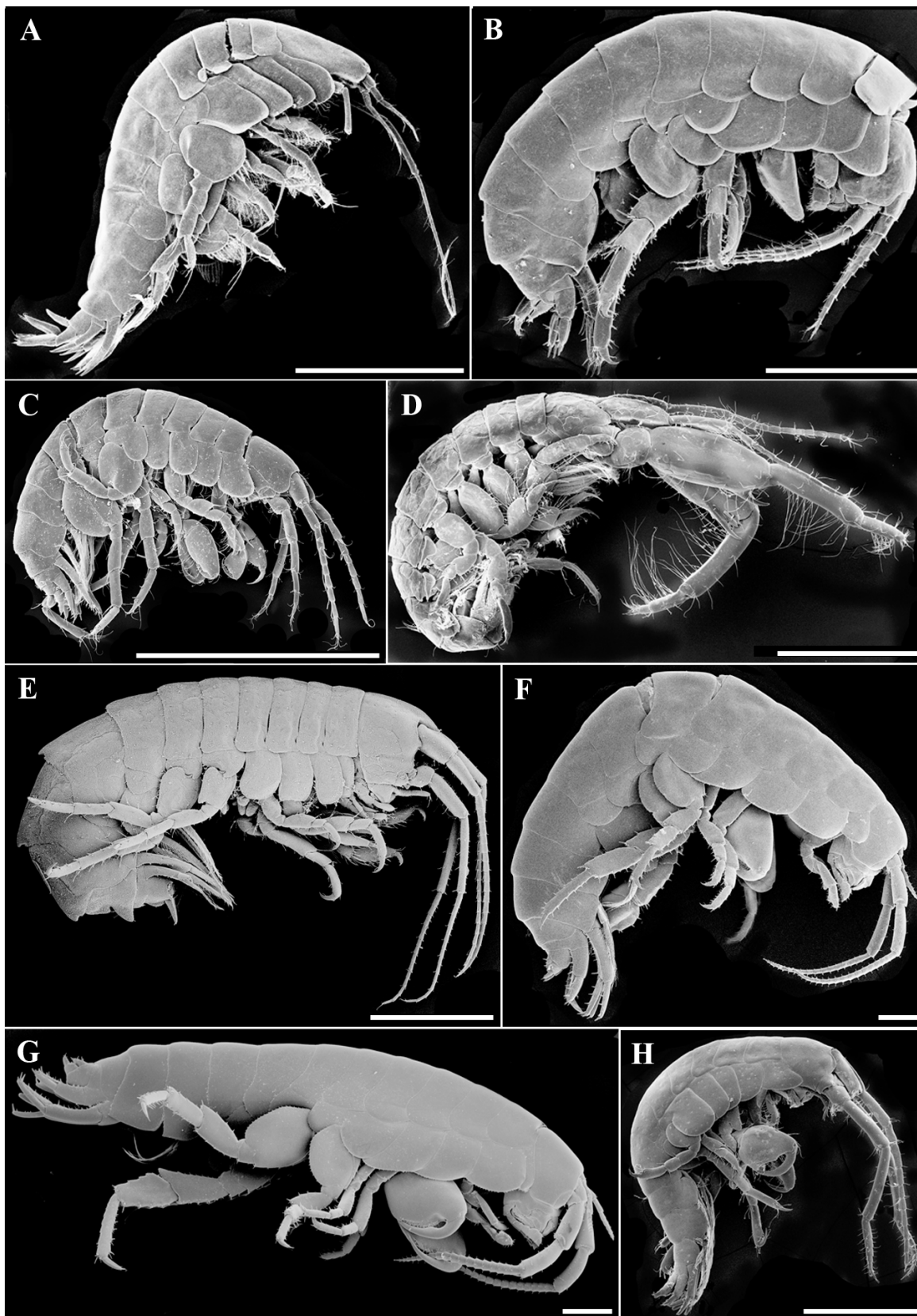


Fig. 2. Habitus of adult Amphipoda specimens not registered in the Sea of Azov earlier: A, *Ampelisca sevastopoliensis*, female; B, *Apohyale crassipes*, male; C, *Microprotopus* cf. *maculatus*, male; D, *Monocorophium insidiosum*, male; E, *Nototropis massiliensis*, male; F, *Orchestia mediterranea*, male; G, *Orchestia montagui*, male; H, *Pleonexes helleri*, male. Scale bars are 1 mm

All Amphipoda species were found in the coastal area of the Sea of Azov near the Cape Kazantip at depths of 0–1.5 m. *Orchestia* species were noted in supralittoral in algae discharge and under stones (the Shirokaya Bay, the Kazantip Nature Reserve). Few *A. sevastopoliensis* individuals were recorded on sand on the bottom at a depth of 0.2–1.5 m in the Russkaya Bay which borders the Kazantip Nature Reserve. *A. crassipes* was registered in mass in the Shirokaya Bay in aggregations of detached macrophytes. Numerous *Microprotopus* cf. *maculatus* individuals were found on seagrasses off the coast in the Russkaya Bay area which borders the Golubniki Bay belonging to the Cape Kazantip. *M. insidiosum* was noted there in mass as well. Few *N. massiliensis* individuals were recorded on sand on the bottom, in aggregations of detached macrophytes, and in bivalve aggregations in the Russkaya Bay at a depth of 0.5–1.5 m. *P. helleri* was registered in all the studied bays on macrophytes off the coast.

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ПЕРВЫЕ НАХОДКИ НОВЫХ ВИДОВ АМФИПОД В АЗОВСКОМ МОРЕ

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В 2022–2023 гг. у мыса Казантип (полуостров Крым, бухты Русская, Голубники и Широкая) обнаружены 8 видов и 4 рода амфипод, новых для Азовского моря. Все экземпляры хранятся в подколлекции амфипод Коллекции гидробионтов Мирового океана ФИЦ ИнБЮМ.

Зарегистрированы следующие виды: *Ampelisca sevastopoliensis* Grintsov, 2011 (семейство Ampeliscidae); *Apohyale crassipes* (Heller, 1866) (Hyalidae); *Microprotopus* cf. *maculatus* (Microprotopidae); *Monocorophium insidiosum* (Crawford, 1937) (Corophiidae); *Nototropis massiliensis* (Bellan-Santini, 1975) (Atylidae); *Orchestia mediterranea* A. Costa, 1853 (Talitridae); *Orchestia montagui* Audouin, 1856 (Talitridae) и *Pleonexes helleri* (Karaman, 1975) (Ampithoidae). Отмечены новые для Азовского моря роды: *Apohyale* Bousfield & Hendrycks, 2002; *Monocorophium* Bousfield & Hoover, 1997; *Nototropis* A. Costa, 1853 и *Pleonexes* Spence Bate, 1857. Семь видов представлены взрослыми самцами и самками, а также молодью. Два вида из рода *Orchestia* идентифицированы по взрослым самцам. Особи новых для Азовского моря видов обнаружены в прибрежной зоне в следующих биотопах: супралитораль, макрофиты на пляже (*O. mediterranea* и *O. montagui*); неприкрепленные макрофиты у берега (*A. crassipes*); песок на дне на глубине от 0,2 до 1,5 м (*A. sevastopoliensis* и *N. massiliensis*); заросли морской травы (*M. insidiosum* и *Microprotopus* cf. *maculatus*) и прикрепленные макрофиты на дне на глубине от 0,2 до 1,0 м (*P. helleri*). Появление этих видов в Азовском море может быть связано с повышением в нём солёности вод.

Ключевые слова: Amphipoda, первые находки, Азовское море