

# Press release WoRMS



## Ten remarkable new marine species from 2018

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*Please contact authors of individual species for information on these, and Tammy Horton or Leen Vandepitte for information on the top-ten list and the World Register of Marine Species.*

*High-resolution photos available online. See section "Image available at:" with each individual species.*

- [Ten remarkable new marine species from 2018](#)

This year we have released our list of the top-ten marine species of 2018 to coincide with World Taxonomist Appreciation day - March 19th!

If you were unaware of this celebration of all the work that taxonomists do, you can find more here: <https://twitter.com/hashtag/taxonomistappreciationday>, and here <https://smallpondscience.com/2014/03/19/today-is-taxonomist-appreciation-day/> and here <https://cetaf.org/news/19th-march-taxonomist-appreciation-day>.

Every day in labs, museums, out on fieldwork, taxonomists are busy collecting, cataloguing, identifying, comparing, describing and naming species new to science. Some 300 taxonomists globally also contribute their valuable time to keeping the World Register of Marine Species up to date. Today is a chance for us at WoRMS to thank our taxonomic editors for this important task. And we celebrate the work of taxonomists now with the WoRMS list of the top-ten marine species described in 2018 as nominated and voted for by taxonomists!

This top-ten list is just a small highlight of almost 2,000 fascinating new marine species discovered every year.

## How were the species chosen?

All editors of WoRMS were given the opportunity to nominate their favourite marine species from the last year (2018). Nominated species must have been described between January 1<sup>st</sup> and December 31<sup>st</sup>, 2018, and have come from the marine environment (including fossil taxa but excluding freshwater or terrestrial taxa). A small committee (including both taxonomists and data managers) was brought together to decide upon the final candidates. The list is in no hierarchical order.

The final decisions reflect the immense diversity of animal groups in the marine environment (including fish, crustaceans, molluscs, corals, sponges, jellies, worms) and highlight some of the challenges facing the marine environment today (e.g. invasive species, ecosystems threatened by climate change, deep-sea environments impacted by resource extraction). The final candidates also feature particularly astonishing marine creatures, notable for their interest to both science and the public.

Each of these marine animals has a story. From the bizarre blanket hermit crab which uses an anemone 'blanket' instead of a shell for a home, the Hong Kong Sea Dragon, a species which is only the second to be described in its phylum, to a 'walking' deep-sea leech!

## About the WoRMS top-ten list of Marine Species

After 250 years of describing, naming and cataloguing the species we share our planet with, we are still some way off achieving a complete census. However, we do know that at least 247,000 marine species have been described because their names are managed in WoRMS by almost 300 scientists located all over the world.

In 2018, to celebrate a decade of WoRMS' existence, we compiled a list of our top marine species, both for 2017 and for the previous decade in order to highlight the fascinating discoveries of the numerous new marine species being made every year (see <http://www.lifewatch.be/en/2018.04.23-WoRMS-LifeWatch-press-release>).

A list of the 'Top Ten Species' described from ALL habitats and taxa has been announced annually since 2008 (<http://www.esf.edu/top10/>). The oceans cover over 70% of the surface of our planet, and yet they still include the least explored regions (<http://theconversation.com/how-many-undiscovered-creatures-are-there-in-the-ocean-86705>). Although the ESF list often contains one or two marine species, we decided to pay homage to the '[largest habitat on earth](#)' by producing our own list of the top marine species.

We hope some of our favourites will make it to global list.

## Ten remarkable new marine species from 2018

- [Okinawan's Octocoral Reef Flowers, \*Hana hanagasa\*](#)
- [The Stromatolite Tanaid, \*Sinelobus stromatoliticus\*](#)
- [The Antarctic Legged-Leech, \*Ambulobdella shandikovi\*](#)
- [The Hawaiian Spurdog, \*Squalus hawaiiensis\*](#)
- [The Hong Kong Sea Dragon, \*Hoilungia hongkongensis\*](#)
- [The Confusing Blanket Hermit Crab, \*Paguroopsis confusa\*](#)
- [The 'Japan-pig' pygmy seahorse, \*Hippocampus japapigu\*](#)
- [The hairy-footed 'Baggins' shrimp, \*Odontonia bagginsi\*](#)
- [The Sponge-loving Red Alga, \*Ptilophora spongiophila\*](#)
- [The Southern Tough-guy Worm, \*Parallelolebes virilis\*](#)

### Okinawan's Octocoral Reef Flowers

*Hana hanagasa* Lau, Stokvis, Van Ofwegen & Reimer, 2018

<http://www.marinespecies.org/aphia.php?p=taxdetails&id=1304878>

Octocorals are often seen as beautiful sea fans that grow conspicuously on coral reefs, but they actually come in many shapes and colours; many are much more cryptic and remain hidden from science. This new species, on the other hand, is one of those hidden in plain sight cases. *Hana hanagasa* is not only very beautiful, but stands out for the flower-like resemblance of their conspicuous bright polyps. For this reason, the new genus was named “Hana”, which means flower in the Japanese language. *Hana hanagasa* was found in Okinawa only, and is named after the traditional Okinawan headpiece worn by female dancers, “hanagasa”. This headpiece symbolises the flower of Okinawa, the hibiscus, and has shades of blue that represent waves of the Okinawan Ocean. Research on octocorals is far from finished and new discoveries are still being made. This new species belongs to a larger group of octocorals called Stolonifera, which is one of the lesser-studied octocoral groups. This new discovery emphasizes the need for octocoral taxonomy, as it sheds more light on our understanding of this group and ultimately coral reef biodiversity.



#### Original source

- Lau, Y. W.; Stokvis, F. R.; Van Ofwegen, L. P.; Reimer, J. D. (2018). Stolonifera from shallow waters in the north-western Pacific: a description of a new genus and two new species within the Arulidae (Anthozoa, Octocorallia). ZooKeys. 790: 1-19.  
<https://doi.org/10.3897/zookeys.790.28875>

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#### Image available at:

- <http://www.marinespecies.org/aphia.php?p=image&tid=1304878&pic=136426>

### **The Stromatolite Tanaid**

*Sinelobus stromatoliticus* Rishworth, Perissinotto & Błazewicz, 2018

<http://www.marinespecies.org/aphia.php?p=taxdetails&id=1054905>

In sludgy tidal pools along the South African coastline, stromatolite habitats have been discovered in the past two decades. What is remarkable about this is that these pools closely resemble the earliest and most extensive ecosystems known from the fossil record, some of which date as far back as 3.5 billion years. Stromatolites, or layered rocks, are sedimentary deposits that are precipitated by microalgae. Living examples are rare today because modern seawater conditions have changed and because most microbial mats which can potentially form stromatolites are now extensively grazed or bioturbated by metazoans. It is therefore surprising that a diverse metazoan community dwells within the South African stromatolites without destroying this layered deposit. Amongst these species lives a tube-dwelling tanaid, which was previously unknown to science, the so-called Stromatolite Tanaid (*Sinelobus stromatoliticus*). Interestingly, the Stromatolite Tanaid eats very little of the microalgae which builds its stromatolite home. Instead, these small (less than 3 mm) grazers use the stromatolite matrix as a refuge to escape some of the harsh conditions of the intertidal zone. This tanaid also comprises part of the *Sinelobus* consortium, which was once considered globally cosmopolitan but recently we have realised, is diversified amongst unique, geographically distinct ecosystems (seven *Sinelobus* species have been described so far). Scientists are eagerly searching within these ancient analogue stromatolite ecosystems for other unique treasures, but so far, the charismatic Stromatolite Tanaid is the “posterchild” of its home and has been an exciting local discovery in South Africa and for the tanaid taxonomy community during 2018.



Original source:

- Rishworth, G. M.; Perissinotto, R.; Błażewicz, M. (2018). *Sinelobus stromatoliticus* sp. nov. (Peracarida: Tanaidacea) found within extant peritidal stromatolites. Marine Biodiversity. 1-12. <https://doi.org/10.1007/s12526-018-0851-3>

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Image available at:

- <http://www.marinespecies.org/aphia.php?p=image&tid=1054905&pic=136439>

### **The Antarctic ‘Legged’ Leech**

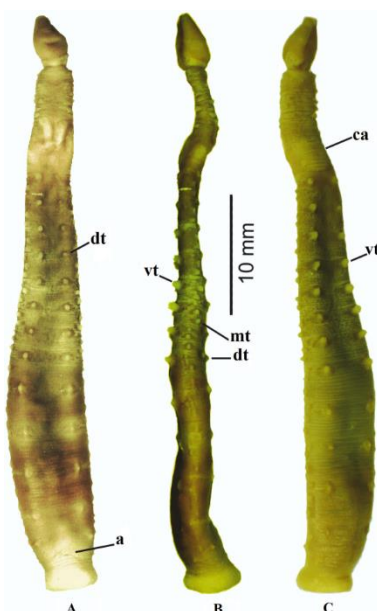
*Ambulobdella shandikovi* A. Utevsky & S. Utevsky, 2018

<http://www.marinespecies.org/aphia.php?p=taxdetails&id=1324277>

Leeches (Annelida: Hirudinea) are usually thought to be bloodsucking ectoparasites associated with freshwater ecosystems. However, this generally accepted point of view is rather wrong. Fish leeches (Piscicolidae) occur in the sea including the cold waters of the Antarctic. Moreover, a few of them have been recorded from deep-sea habitats. Many deep-sea animals (e.g. fishes) are known for their unusual appearance. The same may be expected from fish leeches.

In 2018, the deep-sea fish leech *Ambulobdella shandikovi* was described from the Antarctic deep sea at depths of 1221–1,433 m, attached to Whitson's grenadier *Macrourus whitsoni* (Regan). The leech is unusual both because of its habitat and because of weird morphology. *Ambulobdella shandikovi* bears segmentally arranged limb-like projections. The name of the new genus alludes to this, coming from a combination of '*ambulare*' meaning 'to walk' in Latin and '*bdella*' meaning 'a leech' in Greek.

Most known leeches do not have external appendages. Although plesiomorphic limbs (parapodia), antennae and palps were lost in the ancestors of leeches, the prominent paired segmentally arranged ventrolateral tubercles of *A. shandikovi* are reminiscent of polychaete parapodia or onychophoran limbs. *A. shandikovi* is a unique marine species in respect of both its weird appearance and its extreme habitat.



Original source:

- Utevsky, A.; Utevsky, S. (2018). New Antarctic deep-sea weird leech (Hirudinida: Piscicolidae): morphological features and phylogenetic relationships. Systematic Parasitology. 95(8-9): 849-861. <https://doi.org/10.1007/s11230-018-9816-y>

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Image available at:

- <http://www.marinespecies.org/aphia.php?p=image&tid=1324277&pic=136433>

## The Hawaiian Spurdog

*Squalus hawaiiensis* Daly-Engel, Koch, Anderson, Cotton & Grubbs, 2018

<http://www.marinespecies.org/aphia.php?p=taxdetails&id=1320613>

Seemingly impossible to tell apart from its Japanese siblings, the only spurdog population inhabiting the Hawaiian Archipelago eventually turned out to be a species new to science, after scientists conducted an elaborate identification approach, simultaneously involving physical measurements, standard DNA markers and an additional fast-evolving mitochondrial gene.

Deep-water sharks are often subject to high fishing pressure as bycatch and they are known to have long reproductive intervals (12–24 months) and slow growth rates, compounding the depleting effect of fishing. Unfortunately, apart from being depleted as bycatch, this new endemic species of deep-water dogfish also shows the lowest rate of genetic diversity known in a shark population to date.



### Original source:

- Daly-Engel, T. S.; Koch, A.; Anderson, J. M.; Cotton, C. F.; Grubbs, R. D. (2018). Description of a new deep-water dogfish shark from Hawaii, with comments on the *Squalus mitsukurii* species complex in the West Pacific. ZooKeys. 798: 135-157. <https://doi.org/10.3897/zookeys.798.28375>

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### Image available at:

- <http://www.marinespecies.org/aphia.php?p=image&tid=1320613&pic=136430>



## The Hong Kong Sea Dragon

*Hoilungia hongkongensis* Eitel, Schierwater & Wörheide, 2018

<http://www.marinespecies.org/aphia.php?p=taxdetails&id=1316502>

*Hoilungia hongkongensis*, the 'Hong Kong Sea Dragon', is only the second species formally described in 135 years in the so far monotypic marine phylum Placozoa, where *Trichoplax adhaerens* has been the only described species until 2018.

Although numerous placozoans that were found worldwide were morphologically assigned to *T. adhaerens* in the past, only in recent years, single gene-based characterization identified a large genetic diversity in the Placozoa. Formally describing deeply diverging lineages as new species was so far hampered by a lack of diagnostic morphological characters. This deficiency was calling for a new approach to delineate putatively distinct placozoan species without diagnostic morphological characteristics.

The authors of the first description of *H. hongkongensis* used purely comparative genomics, a so-called 'taxogenomics' approach, to define this new placozoan species. Based on the comparison of the genome of the name-giving placozoan strain from Hong Kong and the genome of *T. adhaerens*, it was concluded that genomic differences on various levels (genome structure, reproductive isolation, genetic distances) support the distinction and description of a new species. When compared to genetic distances within other non-bilaterian animal phyla (Porifera, Cnidaria, Ctenophora) as well as with Chordata, the genetic distances between the placozoan genomes indicated differences at least on the genus level. Consequently, the new placozoan species was assigned to a new genus.

The description of a new placozoan species and a new genus marks the beginning of the establishment of a long missing systematics in the Placozoa and the new 'taxogenomics' approach is promising to help other taxonomists dealing with cryptic groups.





Original source:

- Eitel, M., W.R. Francis, F. Varoqueaux, J. Daraspe, H.J. Osigus, S. Krebs, S. Vargas, H. Blum, G.A. Williams, B. Schierwater & G. Worheide. (2018). Comparative genomics and the nature of placozoan species. Plos Biology, 16(7). <https://doi.org/10.1371/journal.pbio.2005359>

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Image available at:

- <http://www.marinespecies.org/aphia.php?p=image&tid=1316502&pic=135471>

## The Confusing Blanket Hermit Crab

*Paguropsis confusa* Lemaitre, Rahayu & Komai, 2018

<http://www.marinespecies.org/aphia.php?p=taxdetails&id=1249809>

Unlike 'ordinary' hermit crabs, blanket-hermit crabs do not seek an empty shell to shelter their soft, unprotected bodies, which is later swapped for a larger one as the crustacean grows in size. Instead, species like the recently discovered *Paguropsis confusa* use their specialised chelate fourth legs to grab and stretch the thin-walled body of a sea anemone to cover themselves. In this cosy symbiosis, the two animals grow together, allowing for the anemone's spreading zoophytes to form a blanket, which the crustacean could easily draw to completely cover its head, if need be. While the study describes four newly identified species, including *Paguropsis confusa*, previously there had only been one known blanket-hermit crab in existence, discovered back in the 19th century.

The species name comes from the latin '*confuso*', meaning confusion or disorder, refers to the morphological confusion that had prevented the unmasking of this and other new blanket hermit crabs, hidden under the name *P. typica*.



Original source:

- Lemaitre, R.; Rahayu, D. L.; Komai, T. (2018). A revision of “blanket-hermit crabs” of the genus *Paguropsis* Henderson, 1888, with the description of a new genus and five new species (Crustacea, Anomura, Diogenidae). ZooKeys.752: 17-97.  
<https://doi.org/10.3897/zookeys.752.23712>

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Press release:

- [https://www.eurekalert.org/pub\\_releases/2018-04/pp-fnb042318.php](https://www.eurekalert.org/pub_releases/2018-04/pp-fnb042318.php)

Image available at:

- <http://www.marinespecies.org/aphia.php?p=image&tid=1249809&pic=136427>

### The ‘Japan-pig’ Pygmy Seahorse

*Hippocampus japapigu* Short, Smith, Motomura, Harasti & Hamilton, 2018

<http://www.marinespecies.org/aphia.php?p=taxdetails&id=1288522>

The size of a grain rice, this recently discovered species of strikingly coloured pygmy seahorse blends in successfully with the algae-covered rocks in the shallow waters, which it inhabits near Hachijo-jima Island, Japan. Interestingly, even before the species was officially described, the local divers had already likened the creature to a “tiny baby pig”, which prompted the authors to come up with a species name, which translates to “Japan Pig”. Another interesting fact about the species is that it has only one gill positioned on the upper back, rather than two below each side of the head.



Original source:

- Short, G.; Smith, R.; Motomura, H.; Harasti, D.; Hamilton, H. (2018). *Hippocampus japapigu*, a new species of pygmy seahorse from Japan, with a redescription of *H. pontohi* (Teleostei, Syngnathidae). ZooKeys. 779: 27-49. <https://doi.org/10.3897/zookeys.779.24799>

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(Additional) image(s) available at:

- <http://www.marinespecies.org/aphia.php?p=image&tid=1288522&pic=136431>

### **The Hairy-footed ‘Baggins’ Shrimp**

*Odontonia bagginsi* de Gier & Fransen, 2018

<http://www.marinespecies.org/aphia.php?p=taxdetails&id=1258692>

Having amazed its discoverer with its distinctively hairy feet, this new species of shrimp, discovered at the Indonesian islands of Tidore and Ternate, quite understandably received the name of Middle Earth's greatest Halfling family, ‘Baggins’, known from the famous works of J. R. R. Tolkien, *The Hobbit* and *The Lord of the Rings*. The new species was described along with another in the same genus during the first author's first degree. Werner de Gier says: “Being able to describe, draw and even name two new species in my bachelor years was a huge honour. Hopefully, we can show the world that there are many new species just waiting to be discovered, if you simply look close enough!”



Original source:

- De Gier, W.; Fransen, C. H. (2018). *Odontonia plurellicola* sp. n. and *Odontonia bagginsi* sp. n., two new ascidian-associated shrimp from Ternate and Tidore, Indonesia, with a phylogenetic reconstruction of the genus (Crustacea, Decapoda, Palaemonidae). ZooKeys. 765: 123-160. <https://doi.org/10.3897/zookeys.765.25277>

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Press release:

- [https://www.eurekalert.org/pub\\_releases/2018-06/pp-iah060718.php](https://www.eurekalert.org/pub_releases/2018-06/pp-iah060718.php)

(Additional) image(s) available at:

- <http://www.marinespecies.org/aphia.php?p=image&tid=1258692&pic=136428>

## **The Sponge-loving Red Alga**

*Ptilophora spongiophila* G.H.Boo, L.Le Gall, I.K.Hwang, K.A.Miller & S.M.Boo, 2018

<http://www.marinespecies.org/aphia.php?p=taxdetails&id=1325046>

Madagascar is one of the world's biodiversity hotspots due to its diverse, endemic, and highly threatened biota. However, the Malagasy marine algal flora is one of the least studied in the Indian Ocean. Endemism has received little attention because of the limited number of taxonomic studies on seaweeds from Madagascar. *Ptilophora* is an agar-producing red algal genus occurring mostly in subtidal habitats in the Indo-Pacific Ocean. Most species are rarely encountered, occurring in subtidal habitats down to a depth of 100 m. *Ptilophora spongiophila*, up to 26 cm tall, is heavily coated with sponges (hence its specific name). It appears to be common in southeastern Madagascar at depths of 5-30 m.



Original source:

- Boo, G. H.; Gall, L. L.; Hwang, I. K.; Miller, K. A.; Boo, S. M. (2018). Phylogenetic relationships and biogeography of *Ptilophora* (Gelidiales, Rhodophyta) with descriptions of *P. aureolusa*, *P. malagasya*, and *P. spongiophila* from Madagascar. *Journal of Phycology*. 54(2): 249-263. <https://doi.org/10.1111/jpy.12617>

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Image available at:

- <http://www.marinespecies.org/aphia.php?p=image&tid=1325046&pic=136434>

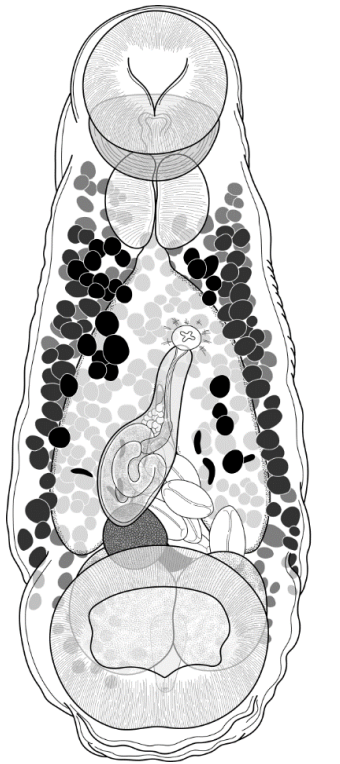
## The Southern Tough-guy Worm

*Parallelolebes virilis* Martin, Ribu, Cutmore & Cribb, 2018

<http://www.marinespecies.org/aphia.php?p=taxdetails&id=1305964>

This species, for which a new genus was proposed, was described in a survey of the endoparasitic trematodes (flukes) of the subfamily Opistholebetinae (family Opecoelidae) occurring in pufferfishes, globefishes, toadfishes and porcupinefishes (families Tetraodontidae and Diodontidae) in Australian waters. *Parallelolebes virilis* is the first species in this group to be found in a different, but related, family

of fishes, the leatherjackets (family Monacanthidae). It is known only from the horseshoe leatherjacket, *Meuschenia hippocrepis*, which is endemic to southern Australian waters. The host specimen was line-fished from the jetty at Stanley, Tasmania in 1999 and the worm remained preserved but undescribed for almost two decades. Relative to other opoecolids, these opistholebetines are usually large, fleshy, chunky worms. *Parallelolebes virilis* is easily the smallest of this group, obtaining a maximum length of just over 1 millimetre. Despite its diminutive size, it was named the tough-guy worm, the species name 'virilis' meaning 'manly' in Latin, because it is the only species in the group that gets about in leatherjackets.



Original source:

- Martin, S. B.; Ribu, D.; Cutmore, S. C.; Cribb, T. H. (2018). Opistholebetines (Digenea: Opoecolidae) in Australian tetraodontiform fishes. Systematic Parasitology. <https://doi.org/10.1007/s11230-018-9826-9>

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Image available at:

- <http://www.marinespecies.org/aphia.php?p=image&tid=1305964&pic=136432>