CSIRO Publishing
www.publish.csiro.au/journals/rs

The Royal Society of Victoria, 132, 12–41, 2020
10.1071/RS20002

THE HETEROBRANCH SEA SLUGS OF LORD HOWE ISLAND, NSW, AUSTRALIA (MOLLUSCA: GASTROPODA)

Matt J. Nimbs[1,2], Ian Hutton[3], Tom R. Davis[1,4], Meryl F. Larkin[1,2] and Stephen D.A. Smith[1,2]

[1]National Marine Science Centre, Southern Cross University, Bay Drive, Coffs Harbour, NSW 2450, Australia
[2]Marine Ecology Research Centre, Southern Cross University, Lismore, NSW 2480, Australia
[3]Lord Howe Island Museum, Lagoon Rd & Middle Beach Rd, Lord Howe Island, NSW 2898, Australia
[4]Fisheries Research, NSW Department of Primary Industries, PO Box 4321, Coffs Harbour, NSW 2450, Australia

Correspondence: Matt J. Nimbs, matt.nimbs@gmail.com

ABSTRACT: The distribution of heterobranch sea slugs is generally poorly documented at a regional scale. Thus, it is currently difficult to quantify biodiversity, identify endemic and invasive species, and track range shifts at scales relevant to conservation management. For Lord Howe Island, which lies ~600 km east of the New South Wales (NSW) mid-north coast, data from a range of taxa indicate high biodiversity and endemism, but this has not been examined for heterobranch sea slugs. To address this deficit, we collated occurrence data on sea slugs from both private and public sources, including museum records, scientific literature, field guides and citizen science activities. A total of 186 nominal (formally described) species in 82 genera and 31 families were identified from intertidal and subtidal habitats. Of these, two species are endemic to Lord Howe Island, two have not been recorded elsewhere in Australia, and 28 have not been recorded on the mainland coast of NSW. These results support studies of other taxa suggesting that the relative isolation of the island has facilitated the development of diverse and unique assemblages. However, this isolation is moderated by larval transport from surrounding regions, resulting in considerable overlap of the species pool with the mainland coast of NSW and tropical areas to the north.

Keywords: nudibranch, Tasman Sea, biogeography, East Australia Current

INTRODUCTION

An analysis of the distribution of heterobranch sea slug species on the mainland coast of eastern Australia allowed the preparation of an annotated list of nominal taxa for New South Wales (NSW), Australia, entitled *An Illustrated Inventory of the Sea Slugs of New South Wales (Gastropoda: Heterobranchia)* (Nimbs & Smith 2016a). That publication listed 382 sea slug species, 260 of which were illustrated photographically. However, data were spatially limited to observations from mainland NSW and therefore did not include records from Lord Howe Island (LHI).

There is a good reason for dealing with LHI separately. Relative to mainland marine habitats in NSW, there is limited information on the marine biodiversity of LHI. Some of the work conducted, however, indicates a high level of endemism across marine taxa mediated by genetic isolation (Ayre & Hughes 2004; Noreen et al. 2009). For example, there are nine species of endemic fish (Francis 1993), 47 species of endemic algae (Allender & Kraft 1983; Kraft 2000; Edgar et al. 2010) and a range of shelled gastropods with distributions that are restricted to LHI and nearby Elizabeth and Middleton Reefs (Ponder et al. 2000). Recent genetic investigations of coral taxa (Baird et al. 2017) and sacoglossan sea slugs (Krug et al. 2018) have also identified a suite of taxa that is endemic to the island.

Lord Howe Island (Figure 1) is politically managed as part of NSW, but is geographically isolated, situated in the Tasman Sea some 600 km east of the NSW coast (Edgar et al. 2010). The crescent-shaped island protects the southernmost coral reef in the world (Veron & Done 1979) and this, in conjunction with high terrestrial fauna and flora endemism, contributed to the island being included on the World Heritage List in 1982 (IUCN 1982).

The unique marine ecosystems at LHI are strongly influenced by the Tasman Front, a boundary between the warm, southward-flowing, tropical waters of the Coral Sea and the cool temperate waters of the Tasman Sea. The front forms by separation of the East Australian Current (EAC) from the Australian coast at around 32°S (Figure 1) and meanders eastward across the Tasman Sea towards New Zealand (Baird et al. 2008; Mulhearn 1987) transporting tropical marine larvae from the Great Barrier Reef to LHI (Hobbs 2010). Larvae of temperate species may also be entrained from the Australian mainland (Edgar et al. 2010; Francis 1993; Harriott et al. 1995; Waters & Roy 2003). The combination of warm and cool waters, with associated larval transport, has created a mix of tropical

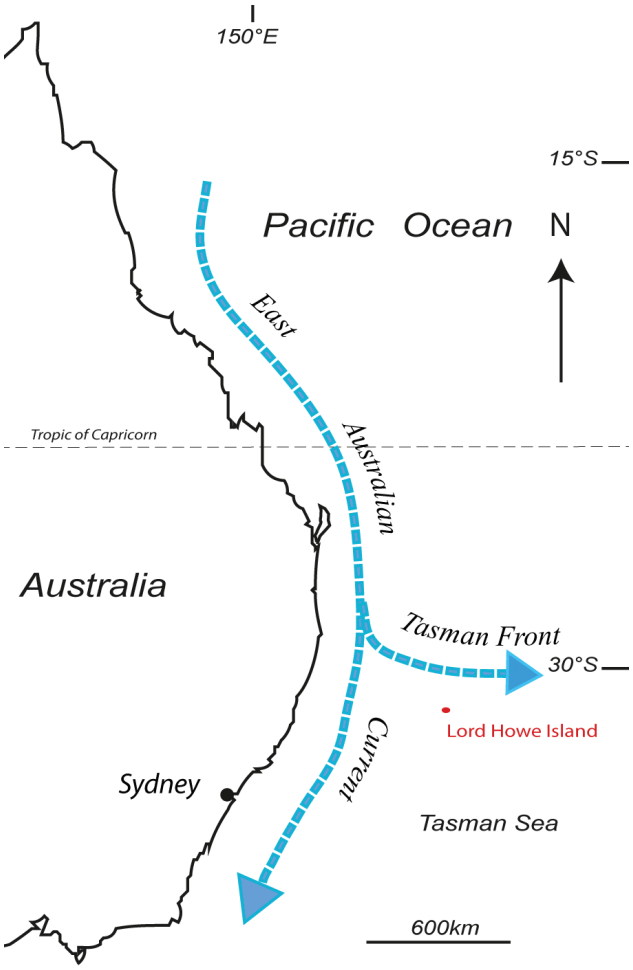

Figure 1: Location of Lord Howe Island, the East Australian Current (EAC) and the Tasman Front. EAC flow data modified from Hassler et al. (2014).

and temperate marine species, resulting in diverse benthic habitats containing a wide variety of coral (Harriott et al. 1995; Veron & Done 1979) and algal species (Kraft 2000).

Isolated oceanic islands often develop their own unique flora and fauna with consequent high levels of endemism (MacArthur & Wilson 2001; Kier et al. 2009). Many island ecosystems are, however, facing increased anthropogenic threats that generate an elevated risk of extinction for endemic species (Paulay 1994; Edgar et al. 2010; Hobbs et al. 2009). In addition, changing oceanographic conditions under a warming climate are likely to alter connectivity among locations, and this has already putatively led to substantial poleward shifts in the distribution of some tropical taxa (e.g. Booth et al. 2018; Nimbs et al. 2016; Nimbs & Smith 2016b, 2018). These may interact with local species and potentially alter the ecology at the receiving locations. It is vitally important, therefore, to obtain detailed information on the species that inhabit isolated islands in order to effectively monitor introductions and changing ecological patterns: this will inform targeted management of species deemed to be at risk. Given that changes are already occurring, it is timely to establish a baseline of species present by compiling historic and contemporary occurrence data held in the public realm (museum records and published papers) as well as in private and personal collections of photographic records (Nimbs & Smith 2018).

There are several shallow-water habitat classes surrounding LHI: dense clumping corals, grooved reef fore-slope, smooth reef fore-slope, rheophilic reef, fringing reef and algae-dominated reef (Lindsay et al. 2008). Benthic habitat diversity has been linked to high species richness among molluscs, including heterobranch sea slugs (Bouchet et al. 2002; Davis et al. 2017). Therefore, LHI is likely to support high diversity among sea slug taxa (Edgar et al. 2010).

The objective of this study was therefore to collate historical observations of sea slugs from disparate sources and to supplement these with contemporary field observations, using *in situ* photography, across a range of habitats. The purpose of this paper is twofold: to document the diversity of the sea slug taxa at LHI, and to provide an annexe to the illustrated inventory of sea slugs from mainlaind NSW (Nimbs & Smith 2016a).

MATERIALS AND METHODS

The taxonomic structure of this inventory follows WoRMS (2018) at the time of writing and is restricted to those taxa that are the primary focus of photographers and amateurs — the predominantly epibenthic slugs previously assigned to 'Opisthobranchia'. It therefore includes animals in the orders Aplysiida, Cephalaspidea, Nudibranchia, Pleurobramchomorpha, Sacoglossa and Umbraculida, but not the wholly planktonic orders Gymnosomata and Thecosomata, or the predominantly infaunal Acochlidiacea. However, the pelagic genera *Fiona* and *Glaucus*, which are occasionally observed and photographed by land-based observers, have been included.

Historic and contemporary occurrence data were sourced from museum records (through databases linked to the Atlas of Living Australia), scientific literature, unpublished regional checklists, field guides and reports authored by experienced molluscan workers. No restriction was placed on the age of data (e.g. historic museum records), and we included all available records up to April 2018. Many of the species in the list were photographically documented by Neville Coleman in his range of marine guides (Coleman 2001, 2002, 2008, 2015). These records were supplemented by an exhaustive search of his archived slide library, which is held at the Queensland Museum, Brisbane. Additional data sources included public observations shared on web pages and social media, and inventories maintained by Ian Hutton at the Lord Howe Island Museum (Table 1).

While many of the field observations collated for this list were made opportunistically, some were also made during organised citizen science activities including the Reef Life Survey program (since 2006 – Edgar et al. 2010) and the Sea Slug Census (since 2017 – Smith & Davis 2019).

In addition to listing each nominal species reliably recorded from LHI, we include basic ecological information and Australian distribution by state, abbreviated as follows: Northern Territory (NT), Queensland (QLD), New South Wales (NSW), Victoria (Vic), Tasmania (Tas), South Australia (SA) and Western Australia (WA). In a few cases, observations from LHI represent the only Australian observation of that taxon and this is noted in the distribution data. The inclusion of 'NSW' in the distribution data indicates distribution on the mainland NSW coast. Where 'NSW' is absent, the record at LHI represents the only observation for that taxon in NSW waters.

Only taxa that could be identified without doubt were included (Dayrat 2011). Therefore, any undescribed taxa are not listed. Photographic records from sources were checked to verify identifications. However, some historic records were not accompanied by photographs, therefore identifications could not be verified; accordingly, we only accepted non-photographic records from reputable sources, such as the Australian Museum (Table 1). *In situ* photographs of living animals taken at LHI were included, where possible, for species that were not available when the illustrated inventory of sea slugs from mainland NSW was produced (Nimbs & Smith 2016a). While the majority of images were taken by the authors (MN used a housed Olympus TG-3, IH used an Olympus TG-3, ML and TRD used a housed Olympus TG-4, SDAS used a housed Olympus TG-5 and TG-3), some were also sourced from archives of the late Neville Coleman by permission of the Queensland Museum; others were used with permission from individual photographers and researchers (who are acknowledged).

RESULTS

SYSTEMATICS

Class Gastropoda Cuvier, 1795
Subclass Heterobranchia Burmeister, 1837
Infraclass Opisthobranchia Milne-Edwards, 1848
Order Aplysiida
Family Aplysiidae Lamarck, 1809
Genus *Aplysia* Linnaeus, 1767

***Aplysia argus* Rüppell & Leuckart, 1830**
(Nimbs & Smith 2016a, fig. **2A**)
Ecology: Intertidal to shallow subtidal, rocky reef. Consumes chlorophyte and rhodophyte algae (Eales 1960; Marshall & Willan 1999; Nimbs et al. 2017a).
Australian distribution: QLD, NSW, Vic, Tas, SA, WA (Nimbs et al. 2017b).

***Aplysia extraordinaria* (Allan, 1932)**
(Nimbs & Smith 2016a, fig. **2B**)
Ecology: Intertidal to shallow subtidal, rocky reef. Consumes chlorophyte algae (Allan 1932; Eales 1960; Nimbs et al. 2017b).
Australian distribution: QLD, NSW, WA (Nimbs et al. 2017a).

***Aplysia juliana* Quoy & Gaimard, 1832**
(Nimbs & Smith 2016a fig. **2C**)
Ecology: Intertidal to shallow subtidal, rocky reef. Consumes ochrophyte, chlorophyte and rhodophyte algae (Burn 2015; Eales 1960; Nimbs et al. 2017b).
Australian distribution: QLD, NSW, Vic, Tas (Nimbs et al. 2017a).

Aplysia* aff. *parvula
(Nimbs & Smith 2016a, fig. **2E**)
Ecology: Intertidal to shallow subtidal, rocky reef. Consumes cholorophyte and rhodophyte algae (Burn 2015; Eales 1960; Marshall & Willan 1999; Nimbs et al. 2017b).
Australian distribution: QLD, NSW, Vic, Tas, SA, WA (Nimbs et al. 2017a).
Remarks: Recent work by Golestani et al. (2019) restricts the name *A. parvula* to animals from the Atlantic. Specimens from the south-west Pacific were not analysed and thus their nomenclature is unknown. Although we have avoided including undescribed animals, or those with doubtful identification, we include observations of the well-known *Aplysia* aff. *parvula* here for completeness.

***Aplysia sydneyensis* G. B. Sowerby I, 1869**
(Nimbs & Smith 2016a, fig. **2F**)
Ecology: Intertidal to shallow subtidal, rocky reef. Consumes cholorophyte and rhodophyte algae (Burn 2015; Eales 1960; Nimbs et al. 2017b).
Australian distribution: QLD, NSW, Vic, Tas (Nimbs et al. 2017b and sources therein).

Genus *Dolabella* Lamarck, 1801
***Dolabella auricularia* ([Lightfoot], 1786)**
(Nimbs & Smith 2016a, fig. **2H**)
Ecology: Intertidal to shallow subtidal, rocky reef, occasionally under rocks (Nimbs et al. 2017a). Consumes chlorophyte and ochrophyte algae (Nimbs et al. 2017b).
Australian distribution: NT, QLD, NSW, WA (Nimbs et al. 2017).

Genus *Dolabrifera* J. E. Gray, 1847
***Dolabrifera brazieri* G. B. Sowerby II, 1870**
(Nimbs & Smith 2016a, fig. **2I**)
Ecology: Intertidal to shallow subtidal, rocky reef, occasionally under rocks. Consumes chlorophyte algae (Burn 2015; Nimbs et al. 2017a and sources therein).
Australian distribution: QLD, NSW, Vic (Nimbs et al. 2017b and sources therein).

***Dolabrifera dolabrifera* (Rang, 1828)**
(Nimbs & Smith 2016a, fig. **2J**)
Ecology: Intertidal to shallow subtidal, rocky reef. Consumes chlorophyte algae (Marshall & Willan 1999; Nimbs et al. 2017b and sources therein).
Australian distribution: QLD, NSW, WA (Nimbs et al. 2017a and sources therein).

Genus *Petalifera* J. E. Gray, 1847
***Petalifera ramosa* Baba, 1959**
(Nimbs & Smith 2016a, fig. **2L**)
Ecology: Intertidal to shallow subtidal, rocky reef. Consumes algae (Nimbs et al. 2017a and sources therein).
Australian distribution: QLD, NSW (Nimbs et al. 2017b and sources therein).

Genus *Phyllaplysia* P. Fischer, 1872
***Phyllaplysia viridis* (Bergh, 1905)**
(Nimbs, Wilson, Limmon, & Smith, in press, fig. 2).
Ecology: Intertidal to shallow subtidal areas with seagrass. Found on *Zostera* sp. seagrass (Nimbs, Wilson, Limmon, & Smith, in press).
Australian distribution: NSW (Nimbs, Wilson, Limmon, & Smith, in press).

Genus *Stylocheilus* Gould, 1852
***Stylocheilus striatus* Quoy & Gaimard, 1832**
(Nimbs & Smith 2016a, fig. **2N**).
Ecology: Intertidal to shallow subtidal, rocky reef. Consumes cyanobacteria (Nimbs et al. 2017b and sources therein).
Australian distribution: QLD, NSW, WA (Nimbs et al. 2017a and sources therein).

Genus *Syphonota* H. & A. Adams, 1858
***Syphonota geographica* (A. Adams & Reeve, 1850)**
(Nimbs & Smith 2016a, fig. **2O**).
Ecology: Intertidal to shallow subtidal, sandy sediments. Consumes *Halophila* sp. seagrass (Nimbs & Smith, 2017).
Australian distribution: QLD, NSW, WA (Nimbs & Smith, 2017).

Order Cephalaspidea P. Fischer, 1883
Family Cylichnidae H. & A. Adams, 1854
Genus *Cylichna* Lovén, 1846
***Cylichna thetidis* Hedley, 1903**
Ecology: Subtidal to 100 m, in sand and muddy sediments (Grove 2015b).
Australian distribution: QLD, NSW, Vic, Tas, SA, WA (Burn 2015; Burn 2006; Grove 2015).

Genus *Decorifer* Iredale, 1937
***Decorifer elisa* Iredale, 1937**
Ecology: Inhabits reef flats where, at times, it may be abundant (Phillips et al. 2006).
Australian distribution: Middleton and Elizabeth Reefs (Tasman Sea), and Lord Howe Island only (GBIF 2016; Phillips et al. 2006).

Family Philinidae Gray, 1850 (1815)
Genus *Philine* Ascanius, 1772
***Philine trapezia* Hedley, 1902**
(Nimbs & Smith 2016a, fig. **3B**)
Ecology: Intertidal, on algal turf (Rudman 1998e) or under rocks (MN pers. obs.).
Australian distribution: NSW, QLD (Nimbs & Smith 2016a and sources therein; Cobb & Mullins 2003).

Family Aglajidae Pilsbry, 1895 (1847)
Genus *Biuve* Zamora-Silva & Malaquias, 2017
***Biuve fulvipunctata* (Baba, 1938)**
(Nimbs & Smith 2016a, fig. **3D**, as *Chelidonura fulvipunctata*)
Ecology: Intertidal to shallow subtidal, in sandy areas interspersed with turf algae (Marshall & Willan 1999). Populations often seasonal (Rudman 1998d). Consumes polychaete worms (Marshall & Willan 1999).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

Genus *Chelidonura* A. Adams, 1850
***Chelidonura hirundinina* (Quoy & Gaimard, 1833)**
(Nimbs & Smith 2016a, fig. **3E**)
Ecology: On rocky or sandy substrate, consumes acoel flatworms (Gosliner et al. 2015).
Australian distribution: NT, QLD, NSW, Vic, WA (Nimbs & Smith 2016a and sources therein).
Remarks: This species is likely to be part of a species complex (Camacho-Garcia et al. 2014) presently recognised to have a circumtropical distribution.

***Chelidonura varians* Eliot, 1903**
Figure 2A
Ecology: Shallow subtidal on sand, presumed to eat acoel flatworms (Gosliner et al. 2015).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

Genus *Mariaglaja* Zamora-Silva & Malaquias, 2017
***Mariaglaja inornata* (Baba, 1949)**
(Nimbs & Smith 2016a, fig. **3F**, as *Chelidonura inornata*)
Ecology: Intertidal to shallow subtidal, on sands and rocky reef, consumes polychaetes (Gosliner et al. 2015; Marshall & Willan 1999).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

***Mariaglaja tsurugensis* (Baba & Abe, 1959)**
Figure 2B
Ecology: On sandy substrate and rocky reef (Rudman 1998a).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a – as *Chelidonura sandrana*, synonymy in Zamora-Silva & Malaquias (2017).

Genus *Niparaya* Zamora-Silva & Malaquias, 2017
***Niparaya regiscorona* (Bertsch, 1972)**
Figure 2C
Ecology: On rocky reef among algae.
Australian distribution: NSW (pers. obs.), QLD (Zamora-Silva & Malaquias 2017).

Genus *Philinopsis* Pease, 1860
***Philinopsis speciosa* Pease, 1860**
(Nimbs & Smith 2016a, fig. **3H**)
Ecology: Intertidal to shallow subtidal on sand, silt and mud sediments. Consumes bubble shells and other sea slugs (Burn 2015; Rudman 1972; Yonow 2008).
Australian distribution: QLD, NSW, Vic, SA, WA (Nimbs & Smith 2016a and sources therein).
Family Gastropteridae Swainson, 1840

Genus *Sagaminopteron* Tokioka & Baba, 1964
***Sagaminopteron ornatum* Tokioka & Baba, 1964**
(Nimbs & Smith 2016a, fig. **3I**)
Ecology: Intertidal to shallow subtidal, consumes encrusting sponge in the genus *Dysidea* Johnston, 1842 (Gosliner et al. 2015) on rocky reef (Marshall & Willan 1999).
Australian distribution: QLD, NSW, Vic, SA, WA (Nimbs & Smith 2016a and sources therein).

***Sagaminopteron psychedelicum* Carlson & Hoff, 1974**
Figure 2D
Ecology: Shallow subtidal on rocky and coral reefs, consumes *Dysidea* sponge (Gosliner et al. 2015; Yonow 2008).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

Genus *Siphopteron* Gosliner, 1989
***Siphopteron makisig* Ong, Hallas & Gosliner, 2017**
Figure 2E
Ecology: Shallow reefs (Gosliner et al. 2015).
Australian distribution: QLD (Cobb & Mullins 2003), NSW (SDAS unpublished report).

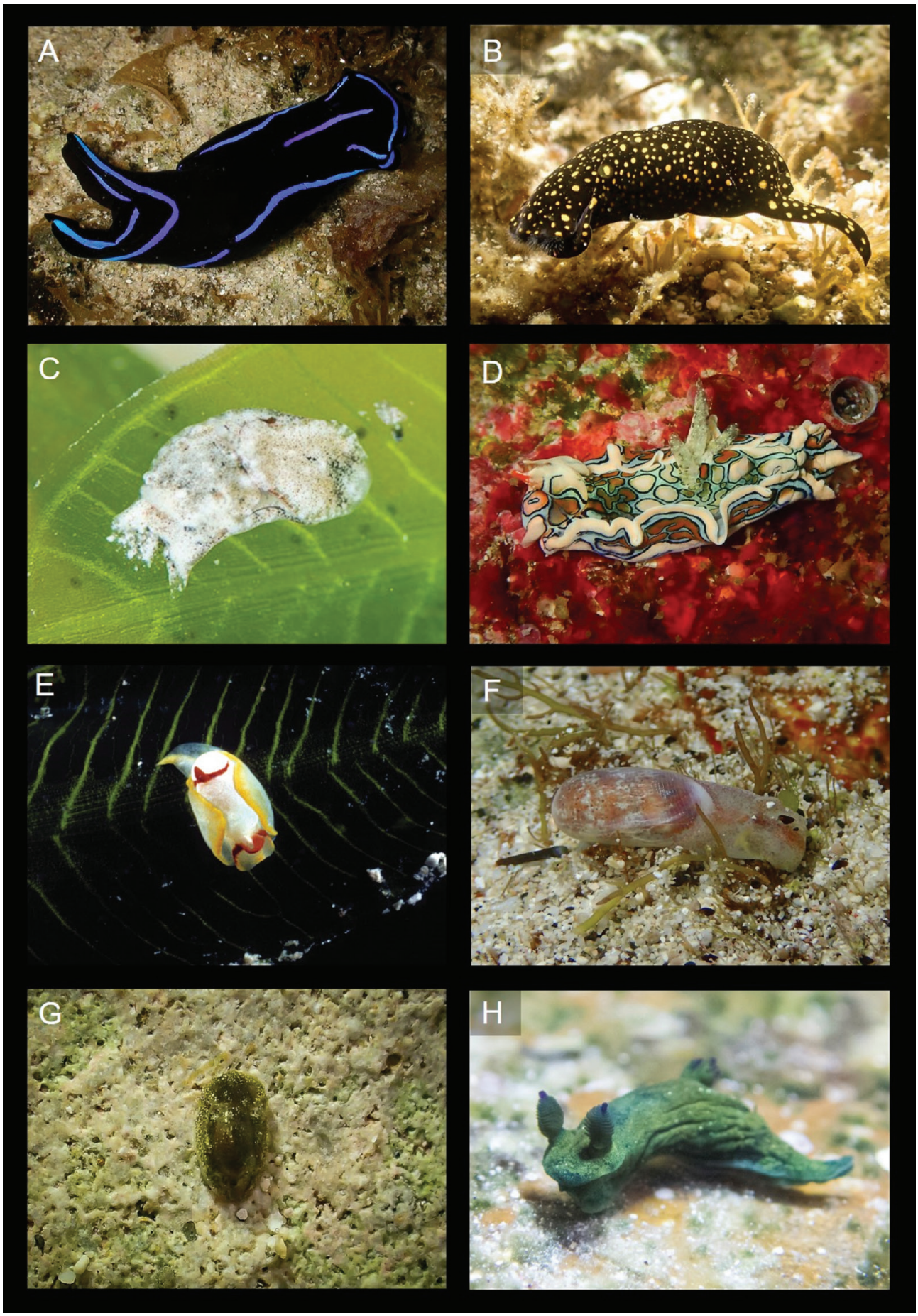

Figure 2: (A) *Chelidonura varians*; (B) *Mariaglaja tsurugensis*; (C) *Niparaya regiscorona*; (D) *Sagaminopteron psychedelicum*; (E) *Siphopteron makisig*; (F) *Liloa mongii*; (G) *Smaragdinella calyculata*; (H) *Martadoris amakusana*. Photographs: A, Ian Hutton; B, F, G, Matt Nimbs; C, Richard Smith; D, H, Steve Smith; E, Queensland Museum (photographer Neville Coleman).

Family Bullidae Gray, 1827
Genus *Bulla* Linnaeus, 1758
For records of *Bulla*, we follow Beechey (2018), and note the presence of two species at LHI:
***Bulla angasi* Pilsbry, 1893**
Ecology: Intertidal to shallow subtidal sediments, often among seagrass and green algae, nocturnally active (Beechey 2018).
Australian distribution: QLD, NSW, WA (Beechey 2018; ALA 2018).

***Bulla quoyii* J. E. Gray, 1843**
Ecology: Intertidal to shallow subtidal muddy sands, among seagrass and green algae (Beechey 2018).
Australian distribution: QLD, NSW, Vic, Tas, SA, WA (Beechey 2018).

Family Haminoeidae Pilsbry, 1895
Genus *Liloa* Pilsbry, 1901
***Liloa mongii* (Audouin, 1826)**
Figure 2F
Ecology: Nocturnally active. Intertidal to shallow subtidal sand or silt sediment among seagrass (Pittman & Fiene 2004; T. Oskars, pers. comm.).
Australian distribution: NT, QLD, WA (GBIF 2016).

Genus *Smaragdinella* A. Adams, 1848
S*maragdinella calyculata* (Broderip & Sowerby, 1829)
Figure 2G
Ecology: Exposed intertidal rocky reef (Rudman 2004).
Australian distribution: QLD, WA (GBIF 2016).

Order Nudibranchia Cuvier, 1817
Family Hexabranchidae Bergh, 1891
Genus *Hexabranchus* Ehrenberg, 1828
***Hexabranchus sanguineus* (Rüppell & Leuckart, 1830)**
(Nimbs & Smith 2016a, fig. **3N**)
Ecology: Intertidal to subtidal, on rocky reef, occasionally on sand. Feeds on encrusting sponges and ascidians (Marshall & Willan 1999; Wells & Bryce 1993; Yonow 2008).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

Family Polyceridae Alder & Hancock, 1845
Genus *Kaloplocamus* Bergh, 1879
***Kaloplocamus acutus* Baba, 1949**
(Nimbs & Smith 2016a, fig. **4B**)
Ecology: Intertidal to shallow subtidal, occasionally under rocks, consumes bryozoans (Marshall & Willan 1999).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

Genus *Martadoris* Willan & Chang, 2017
***Martadoris amakusana* (Baba, 1987)**
Figure 2H
Ecology: Intertidal to shallow subtidal reef (pers. obs.).
Australian distribution: QLD (GBIF 2016).

Genus *Plocamopherus* Rüppell & Leuckart, 1828
***Plocamopherus imperialis* Angas, 1864**
(Nimbs & Smith 2016a, fig. **4D**)
Ecology: Intertidal to shallow subtidal, occasionally under rocks, consumes bryozoans (Grove2015b; Marshall & Willan 1999).
Australian distribution: NT, QLD, NSW, Vic, Tas (Nimbs & Smith 2016a and sources therein).

Genus *Nembrotha* Bergh, 1877
***Nembrotha kubaryana* Bergh, 1877**
Ecology: Subtidal rocky reef, consumes solitary ascidians (Gosliner et al. 2015).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

***Nembrotha livingstonei* Allan, 1933**
(Nimbs & Smith 2016a, fig. **4F**)
Ecology: Intertidal and subtidal rocky reef (Nimbs & Smith 2016a and sources therein).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

Genus *Polycera* Cuvier, 1816
***Polycera risbeci* Odhner, 1941**
(Nimbs & Smith 2016a, fig. **4K**)
Ecology: Intertidal and subtidal rocky reef (Marshall & Willan 1999: 53). Consumes arborescent bryozoans (Nimbs & Smith 2016a and sources therein).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

Genus *Roboastra* Bergh, 1877
***Roboastra gracilis* (Bergh, 1877)**
(Nimbs & Smith 2016a, fig. **4L**)
Ecology: Intertidal to subtidal, rocky reef, sandy sediments, consumes polycerid sea slugs (Gosliner et al. 2015).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

Genus *Tambja* Burn, 1962
***Tambja caeruleocirrus* Willan & Chang, 2017**
Ecology: Shallow subtidal rocky reef. Consumes arborescent bryozoans (Cobb & Willan, 2006).
Australian distribution: QLD (Willan & Chang 2017).

***Tambja morosa* (Bergh, 1877)**
(Nimbs & Smith 2016a, fig. **4N**)
Ecology: Subtidal, rocky reef, consumes arborescent bryozoans (Marshall & Willan 1999).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

***Tambja tenuilineata* M.C. Miller & Haagh, 2005**
(Nimbs & Smith 2016a, fig. **4O**)
Ecology: Subtidal, rocky reef, consumes arborescent bryozoans (Marshall & Willan 1999; Pola et al. 2006).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

Genus *Tyrannodoris* Willan & Chang, 2017
***Tyrannodoris luteolineata* (Baba, 1936)**
(Nimbs & Smith 2016a, fig. **4M**, as *Roboastra luteolineata*)
Ecology: Subtidal, rocky reef, consumes polycerid sea slugs (Pola et al. 2005).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

Family Goniodorididae H. & A. Adams, 1854
Genus *Trapania* Pruvot-Fol, 1931
***Trapania brunnea* Rudman, 1987**
(Nimbs & Smith 2016a, fig. **5N**)
Ecology: Intertidal and shallow subtidal, rocky reef, on sponges (Burn 2015; Rudman 1987).
Australian distribution: QLD, NSW, Vic, Tas (Nimbs & Smith 2016a and sources therein).

***Trapania vitta* Gosliner & Fahey, 2008**
Figure 3A
Ecology: Rocky reefs. Consumes sponge dwelling entoprocts (Rudman 2008).
Australian distribution: QLD (Rudman 2008).

Family Calycidorididae Roginskaya, 1972
Genus *Diaphorodoris* Iredale & O'Donoghue, 1923
***Diaphorodoris mitsuii* (Baba, 1938)**
Figure 3B
Ecology: Rocky reefs. Probably consumes encrusting colonial bryozoans (Rudman 2001b).
Australian distribution: QLD, NSW, Tas (Rudman 2001b).

Family Gymnodorididae Odhner, 1941
Genus *Gymnodoris* Stimpson, 1855
***Gymnodoris bicolor* (Alder & Hancock, 1864)**
(Nimbs & Smith 2016b, fig. **2(6)**; Nimbs & Smith 2016a, fig. **6A**)
Ecology: Intertidal to shallow subtidal, sand and rocky reef. Consumes sea slugs (Cobb & Willan, 2006; Nimbs & Smith 2016b).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

***Gymnodoris ceylonica* (Kelaart, 1858)**
Figure 3C
Ecology: Shallow subtidal areas, frequently in seagrass beds. (Rudman 1999i; pers. obs.).
Australian distribution: QLD, NSW, WA (GBIF 2016).

***Gymnodoris citrina* (Bergh, 1877)**
Figure 3D
Ecology: Shallow, subtidal rocky reef. Consumes other *Gymnodoris* sp. sea slugs and can be cannibalistic (Rudman, 1999).
Australian distribution: QLD, NSW, WA (GBIF 2016).

***Gymnodoris inornata* Bergh, 1880**
(Nimbs & Smith 2016a, fig. **6B**)
Ecology: Subtidal, rocky reef. Consumes sea slugs (Coleman 2015).
Australian distribution: NSW, WA (Nimbs & Smith 2016a and sources therein).

***Gymnodoris okinawae* Baba, 1936**
(Nimbs & Smith 2016a, fig. **6C**)
Ecology: Intertidal, subtidal, rocky reef. Consumes sea slugs (Marshall & Willan 1999; pers. obs.).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

Family Aegiridae P. Fischer, 1883
Genus *Aegires* Lovén, 1844
***Aegires citrinus* Pruvot-Fol, 1930**
(Nimbs & Smith 2016a, fig. **6D**)
Ecology: Intertidal to shallow subtidal, rocky reef, frequently under rocks (Nimbs & Smith 2016a and sources therein). Consumes encrusting sponge *Leucetta* sp. (Coleman 2015).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

***Aegires flores* Fahey & Gosliner, 2004**
Figure 3E
Ecology: Shallow, subtidal rocky reef (Rudman 2005b).
Australian distribution: QLD (GBIF 2016).

Genus *Notodoris* Bergh, 1875
***Notodoris gardineri* Eliot, 1906**
Figure 3F
Ecology: Intertidal to shallow subtidal, rocky reef. Consumes sponges in the genus *Pericharax* and *Leucetta* (Marshall & Willan 1999).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

Family Actinocyclidae O'Donoghue, 1929
Genus *Actinocyclus* Ehrenberg, 1831
***Actinocyclus verrucosus* Ehrenberg, 1831**
(Nimbs & Smith 2016a, fig. **6F**)
Ecology: Intertidal to shallow subtidal, rocky reef. Consumes encrusting sponges (Nimbs & Smith 2016a and sources therein).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

Genus *Hallaxa* Eliot, 1909
***Hallaxa iju* Gosliner & S. Johnson, 1994**
(Nimbs & Smith 2016a, fig. **6G**)
Ecology: Intertidal to shallow subtidal (Gosliner et al. 2015).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

Family Chromodorididae Bergh, 1891
Genus *Ardeadoris* Rudman, 1984
***Ardeadoris averni* (Rudman, 1985)**
(Nimbs & Smith 2016a, fig. **6I**)
Ecology: Subtidal, rocky reef (Gosliner et al. 2015). Consumes sponges (Marshall & Willan 1999).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

***Ardeadoris rubroannulata* Rudman, 1986**
(Nimbs & Smith 2016a, fig. **6J**)
Ecology: Subtidal, rocky reef (Coleman, 2015). Consumes sponges (Nimbs & Smith 2016a and sources therein).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

***Ardeadoris tomsmithi* (Bertsch & Gosliner, 1989)**
Figure 3G
Ecology: Shallow coral reefs, often in overhangs (Rudman 1999a).
Australian distribution: WA (Rudman 1999a).

Genus *Cadlinella* Thiele, 1931
***Cadlinella ornatissima* Risbec, 1928**
(Nimbs & Smith 2016a, fig. **6K**)
Ecology: Subtidal, rocky reef. Consumes the sponge *Halisarca metabola* (Coleman 2015).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

Genus *Ceratosoma* A. Adams & Reeve, 1850
***Ceratosoma amoenum* (Cheeseman, 1886)**
(Nimbs & Smith 2016a, fig. **6L**)
Ecology: Subtidal rocky reef. Consumes sponges (Nimbs & Smith 2016a and sources therein).
Australian distribution: QLD, NSW, Vic, Tas, SA, WA (GBIF 2016).

***Ceratosoma tenue* Abraham, 1876**
(Nimbs & Smith 2016a, fig. **6N**)
Ecology: Subtidal rocky reef. Consumes sponges (Nimbs & Smith 2016a and sources therein).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

Genus *Chromodoris* Alder & Hancock, 1855
***Chromodoris aspersa* (Gould, 1852)**
(Nimbs & Smith 2016a, fig. **6O**)
Ecology: Intertidal to shallow subtidal, rocky reef, occasionally under rocks (Yonow 2008).
Australian distribution: NT, QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

***Chromodoris elisabethina* Bergh, 1877**
(Nimbs & Smith 2016a, fig. **7A**)
Ecology: Subtidal, rocky reef. Consumes *Dysidea* sp. sponge (Coleman, 2015).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

***Chromodoris kuiteri* Rudman, 1982**
(Nimbs & Smith 2016a, fig. **7B**)
Ecology: Intertidal to subtidal, rocky reef (Marshall & Willan 1999). Consumes *Dysidea* sp. sponge (Rudman 2003d).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

***Chromodoris magnifica* (Quoy & Gaimard, 1832)**
Figure 3H
Ecology: Intertidal to shallow subtidal, rocky reef. Consumes sponges (Marshall & Willan 1999).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

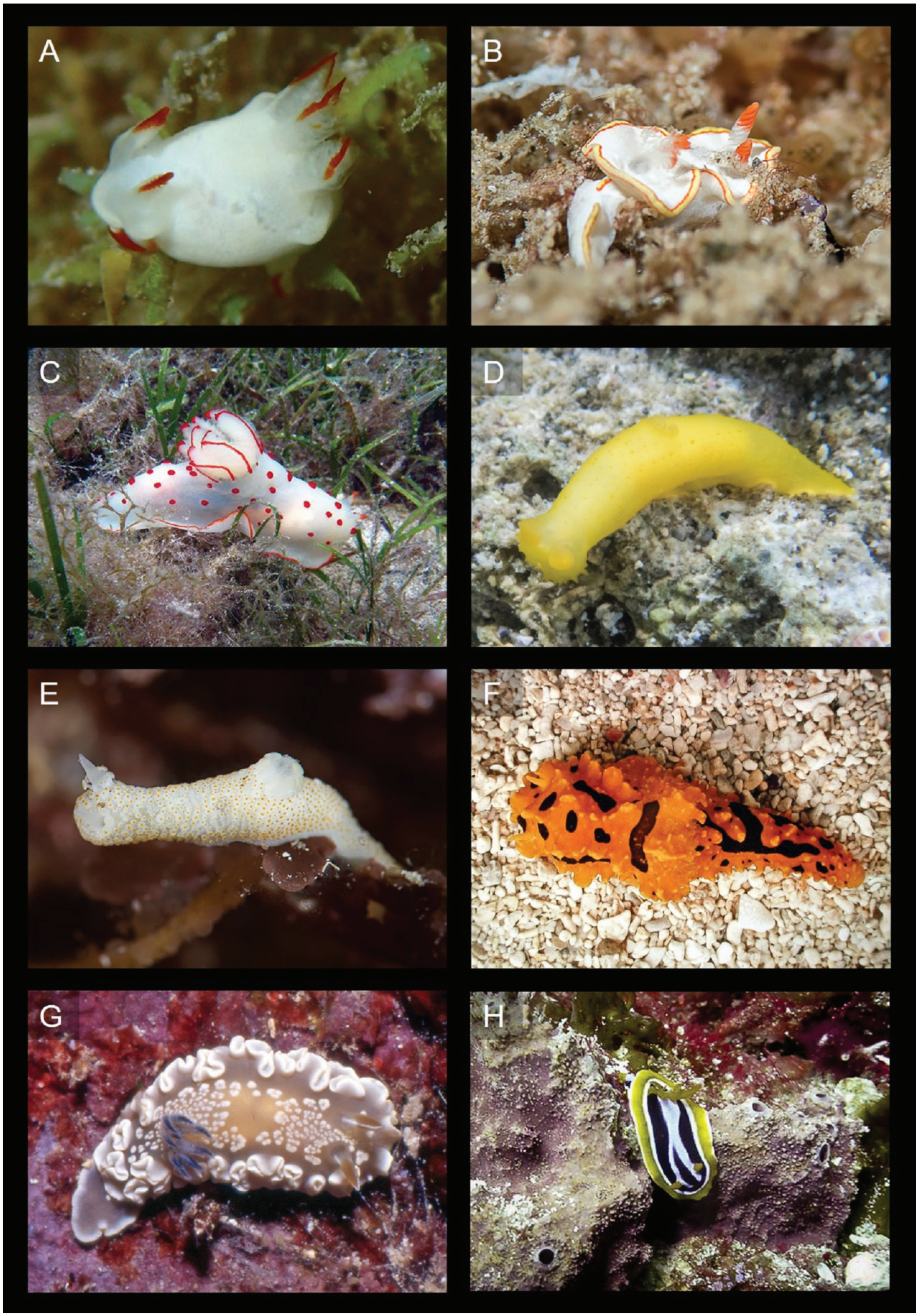

Figure 3: (A) *Trapania vitta*; (B) *Diaphorodoris mitsuii*; (C) *Gymnodoris ceylonica*; (D) *Gymnodoris citrina*; (E) *Aegires flores*; (F) *Notodoris gardineri*; (G) *Ardeadoris tomsmithi*; (H) *Chromodoris magnifica*. Photographs: A, Meryl Larkin; B, E, Richard Smith; C, F, Ian Hutton; D, Steve Smith; G, Queensland Museum (photographer Neville Coleman); H, Jasmin Freya.

Genus *Diversidoris* Rudman, 1987
***Diversidoris aurantionodulosa* Rudman, 1987**
(Nimbs & Smith 2016a, fig. **7E**)
Ecology: Subtidal, rocky reef. Consumes *Darwinella* sp. sponge (Rudman 2001).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

***Diversidoris flava* (Eliot, 1904)**
Figure 4A
Ecology: Subtidal, rocky reef (Coleman 2015).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

Genus *Doriprismatica* d'Orbigny, 1839
***Doriprismatica atromarginata* (Cuvier, 1804)**
(Nimbs & Smith 2016a, fig. **7G**)
Ecology: Intertidal to shallow subtidal, rocky reef. Consumes sponges: *Spongia* sp., *Fasciospongia* sp. and *Luffariella* sp. (Marshall & Willan 1999).
Australian distribution: NT, QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

***Doriprismatica dendrobranchia* (Rudman, 1990)**
Figure 4B
Ecology: Shallow subtidal rocky reef (Rudman 1999).
Australian distribution: QLD (GBIF 2016; Nimbs & Smith 2018).

Genus *Glossodoris* Ehrenberg, 1831
***Glossodoris buko* Matsuda & Gosliner, 2018**
Figure 4C
Ecology: Shallow subtidal rocky reef. Consumes sponges (Rudman, 1999b).
Australian distribution: QLD (GBIF 2016).
Remarks: Until recently, animals from eastern Australia were known as *Glossodoris pallida*. While *G. buko* is difficult to identify from *G. pallida* based on external morphology, they may be separated geographically. Animals from the western Pacific are now known as *G. buko* with *G. pallida* now confined to the Indian Ocean (Matsuda & Gosliner 2018).

***Glossodoris hikuerensis* (Pruvot-Fol, 1954)**
Figure 4D
Ecology: Shallow coral reefs (Marshall & Willan 1999).
Australian distribution: QLD, NT (Marshall & Willan 1999).

***Glossodoris rufomarginata* (Bergh, 1890)**
(Nimbs & Smith 2016a, fig. **7I**)
Ecology: Subtidal, rocky reef. Consumes the sponge *Spongia* (*Spongia*) *oceanica* de Laubenfels, 1950 (Marshall & Willan 1999).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

Genus *Goniobranchus* Pease, 1866
***Goniobranchus albopunctatus* (Garrett, 1879)**
Ecology: Rocky Reef (Coleman 2015).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

***Goniobranchus collingwoodi* (Rudman, 1987)**
(Nimbs & Smith 2016a, fig. **7K**).
Ecology: Subtidal, rocky reef. Consumes *Dictyodendrilla* sp. sponge (Nimbs & Smith 2016a and sources therein).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

***Goniobranchus fidelis* (Kelaart, 1858)**
Ecology: Subtidal, rocky reef (Nimbs & Smith 2016a and sources therein).
Australian distribution: NT, QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

***Goniobranchus geometricus* (Risbec, 1928)**
(Nimbs & Smith 2016a, fig. **7M**)
Ecology: Intertidal to shallow subtidal, rocky reef. Consumes *Chelonaplysilla violacea* sponge (Marshall & Willan 1999).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

***Goniobranchus kuniei* (Pruvot-Fol, 1930)**
Ecology: Subtidal, rocky reef. Consumes sponges (Marshall & Willan 1999).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

***Goniobranchus roboi* (Gosliner & Behrens, 1998)**
(Nimbs & Smith 2016a, fig. **7O**)
Ecology: Subtidal, rocky reef. Consumes sponges (Coleman 2015).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

***Goniobranchus setoensis* (Baba, 1938)**
(Nimbs & Smith 2016a, fig. **8A**)
Ecology: Intertidal to subtidal, rocky reef (Nimbs & Smith 2016a and sources therein).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

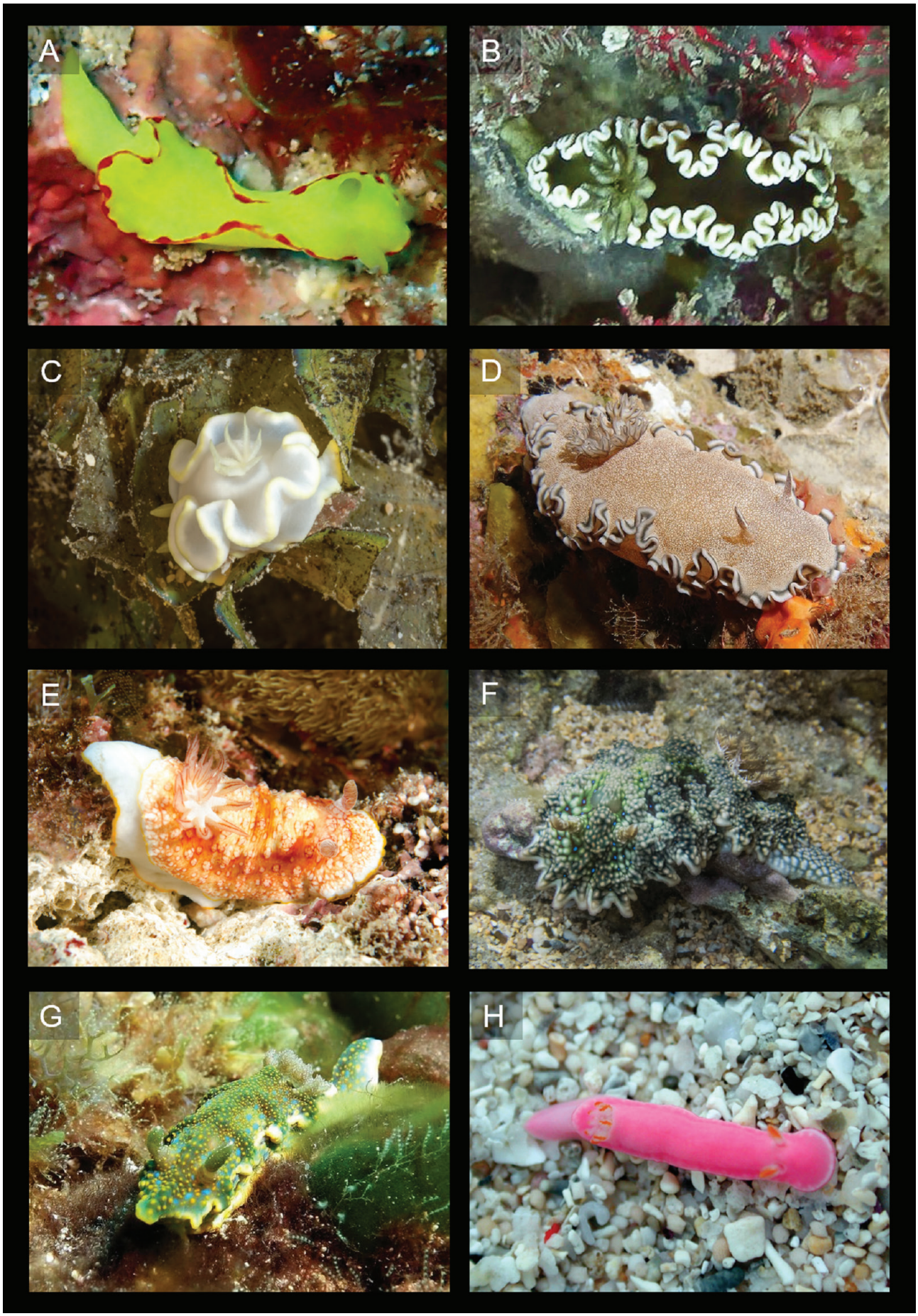

Figure 4: (A) *Diversidoris flava*; (B) *Doriprismatica dendrobranchia*; (C) *Glossodoris buko*; (D) *Glossodoris hikuerensis*; (E) *Goniobranchus tinctorius* group; (F) *Miamira miamirana*; (G) *Miamira sinuata*; (H) *Verconia romeri*. Photographs: A, Tom & Nicola Davis; B, Jasmin Freya; C, David Rolla; D, John Turnbull; E, Ian Shaw; F, G, Steve Smith; H, Ian Hutton.

***Goniobranchus tinctorius* group (Rüppell & Leuckart, 1830)**
Figure 4E
Ecology: Intertidal to shallow subtidal, rocky reef, occasionally under rocks (Marshall & Willan 1999).
Australian distribution: QLD, NSW, SA, WA (Nimbs & Smith 2016a and sources therein).
Remarks: Although Gosliner et al. (2018) treat each of the various colour forms of this group as distinct taxa, they list them under the heading *Goniobranchus tinctorius* group. With their taxonomic status currently unresolved (Sekizawa et al. 2018) we group animals with similar colour patterns under the same heading.

Genus *Hypselodoris* Stimpson, 1855
***Hypselodoris jacksoni* N. G. Wilson & Willan, 2007**
(Nimbs & Smith 2016a, fig. **8F**)
Ecology: Intertidal to shallow subtidal, rocky reef (Nimbs & Smith 2016a and sources therein).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

***Hypselodoris maculosa* (Pease, 1871)**
(Nimbs & Smith 2016a, fig. **8G**)
Ecology: Subtidal, rocky reef (Marshall & Willan 1999).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

***Hypselodoris obscura* (Stimpson, 1855)**
(Nimbs & Smith 2016a, fig. **8I**)
Ecology: Intertidal to shallow subtidal, rocky reef (Nimbs & Smith 2016a and sources therein).
Australian distribution: NSW, Vic, Tas, WA, SA (Johnson & Valdés 2001).
Remarks: We include historic observation records of *Hypselodoris infucata* (Rüppell & Leuckart, 1830) here. Johnson & Valdés (2001) noted that high variability in colour pattern is not reliable for separating these species and, although they suggested that *H. obscura* is restricted to temperate Australia, later molecular work by Epstein et al. (2018) confirms its presence in subtropical eastern Australian.

***Hypselodoris tryoni* (Garrett, 1873)**
(Nimbs & Smith 2016a, fig. **8J**)
Ecology: Intertidal to shallow subtidal, rocky reef. Consumes *Dysidea* sp. sponge (Marshall & Willan 1999).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

***Hypselodoris whitei* (A. Adams & Reeve, 1850)**
(Nimbs & Smith 2016a, fig. **8K**)
Ecology: Intertidal to shallow subtidal. Consumes *Dysidea* sp. sponges (Marshall & Willan 1999).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

***Hypselodoris zephyra* Gosliner & R. F. Johnson, 1999**
(Nimbs & Smith 2016a, fig. **8L**)
Ecology: Subtidal, rocky reef. Consumes *Dysidea* sp. sponge (Coleman 2015).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

Genus *Mexichromis* Bertsch, 1977
***Mexichromis festiva* (Angas, 1864)**
(Nimbs & Smith 2016a, fig. **8M**)
Ecology: Intertidal to shallow subtidal, rocky reef. Consumes encrusting sponges (Nimbs & Smith 2016a and sources therein; Rudman 1999f).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

***Mexichromis mariei* (Crosse, 1872)**
Ecology: Subtidal, rocky reef (Coleman 2015).
Australian distribution: NT, QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

Genus *Miamira* Bergh, 1875
***Miamira magnifica* Eliot, 1904**
(Nimbs & Smith 2016a, fig. **8O**)
Ecology: Subtidal, rocky reef (Nimbs & Smith 2016a and sources therein).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

***Miamira miamirana* (Bergh, 1875)**
Figure 4F
Ecology: Shallow subtidal rocky and coral reef. Consumes sponges (Rudman 2000e).
Australian distribution: QLD, WA (GBIF 2016).

***Miamira sinuata* (Van Hasselt, 1824)**
Figure 4G
Ecology: Subtidal, rocky reef (Coleman 2015).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

Genus *Thorunna* Bergh, 1878
***Thorunna daniellae* (Kay & Young, 1969)**
(Nimbs & Smith 2016a, fig. **9C**)
Ecology: Subtidal, rocky reef (Coleman 2015).

Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

***Thorunna furtiva* Bergh, 1878**
Ecology: Intertidal to shallow subtidal, rocky reef. Consumes sponges (Marshall & Willan 1999).
Australian distribution: NT, QLD, NSW (Nimbs & Smith 2016a and sources therein).

***Thorunna halourga* R.F. Johnson & Gosliner, 2001**
Ecology: Shallow subtidal rocky reef (Rudman 2002).
Australian distribution: QLD (Rudman 2002).

Genus *Verconia* Pruvot-Fol, 1931
***Verconia norba* (Er. Marcus & Ev. Marcus, 1970)**
(Nimbs & Smith 2016a, fig. **9I**)
Ecology: Subtidal, rocky reef (Nimbs & Smith 2016a and sources therein).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

***Verconia romeri* (Risbec, 1928)**
Figure 4H
Ecology: Intertidal to shallow subtidal, rocky reef (Coleman 2015). Consumes encrusting sponges, occasionally under rocks (Marshall & Willan 1999).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

***Verconia simplex* (Pease, 1871)**
(Nimbs & Smith 2016a, fig. **9J**)
Ecology: Intertidal to shallow subtidal, rocky reef, occasionally under rocks (Nimbs & Smith 2016a and sources therein). Consumes encrusting sponge *Darwinella* sp. (Rudman 2000b).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

Family Doridiidae Rafinesque, 1815
Genus *Doris* Linnaeus, 1758
***Doris cameroni* (Allan, 1947)**
(Nimbs & Smith 2016a, fig. **9L**)
Ecology: Intertidal to shallow subtidal, rocky reef (Rudman 2000a).
Australian distribution: NSW, Vic, Tas, SA, WA (Nimbs & Smith 2016a and sources therein).

***Doris granulosa* (Pease, 1860)**
(Nimbs & Smith 2016a, fig. **9N**)
Ecology: Intertidal to subtidal, rocky reef, on encrusting sponge [possibly *Haliclona* (*Reniera*) *phlox* (de Laubenfels, 1954) (Rudman 2003)], under rocks (Nimbs & Smith 2016a and sources therein).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).
Family Discodorididae Bergh, 1891

Genus *Asteronotus* Ehrenberg, 1831
***Asteronotus cespitosus* (van Hasselt, 1824)**
Figure 5A
Ecology: Shallow coral reefs (Rudman 2001a).
Australian distribution: QLD, NSW, WA, NT (GBIF 2016).

Genus *Atagema* Gray, 1850
***Atagema intecta* (Kelaart, 1858)**
(Nimbs & Smith 2016a, fig. **10A**)
Ecology: Intertidal to shallow subtidal, rocky reef. Consumes *Iotrochota* sp. sponge (Coleman 2015).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

***Atagema spongiosa* (Kelaart, 1858)**
(Nimbs & Smith 2016a, fig. **10C**)
Ecology: Intertidal to shallow subtidal, rocky reef, occasionally under rocks (Coleman 2015). Consumes sponges (Marshall & Willan 1998).
Australian distribution: NT, QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

Genus *Halgerda* Bergh, 1880
***Halgerda aurantiomaculata* (Allan, 1932)**
Figure 5B
Ecology: Shallow rock and coral reefs (Rudman 1998b).
Australian distribution: QLD (GBIF 2016)
***Halgerda brunneomaculata* (Carlson & Hoff, 1993)**
Ecology: Shallow rock and coral reefs (Rudman 2006)
Australian distribution: QLD (GBIF 2016).

***Halgerda onna* Fahey & Gosliner, 2001**
Figure 5C
Ecology: Shallow water reefs (Gosliner et al. 2018). Found on exposed coral reef platform at LHI during the 2018 Sea Slug Census.
Australian distribution: Lord Howe Island only.

Halgerda tessellata (Bergh, 1880)
Figure 5D
Ecology: Shallow rock and coral reefs (Gosliner et al. 2015).
Australian distribution: QLD, WA (GBIF 2016).

***Halgerda willeyi* Eliot, 1904**
(Nimbs & Smith 2016a, fig. **10D**)
Ecology: Intertidal to shallow subtidal, rocky reef (Marshall & Willan 1999).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

Genus *Carminodoris* Bergh, 1889
***Carminodoris grandiflora* (Pease, 1860)**
(Nimbs & Smith 2016a, fig. **10E**)
Ecology: Subtidal, rocky reef and sandy sediments (Nimbs & Smith 2016a and sources therein).
Australian distribution: NSW, WA (Nimbs & Smith 2016a and sources therein).

***Carminodoris nodulosa* (Angas, 1864)**
(Nimbs & Smith 2016a, fig. **10F** as *Hoplodoris nodulosa*)
Ecology: Intertidal to subtidal, occasionally under rocks (Burn 2015).
Australian distribution: QLD, NSW, Vic, Tas, SA, WA (Nimbs & Smith 2016a and sources therein).

Genus *Jorunna* Bergh, 1876
***Jorunna funebris* (Kelaart, 1858)**
(Nimbs & Smith 2016a, fig. **10G**)
Ecology: Intertidal to subtidal, rocky reef. Consumes the sponges *Callyspongia (Euplacella)* sp. Lendenfeld, 1887, *Haliclona* sp. Grant, 1836, *Xenospongia* sp. Gray, 1858 (Coleman 2015) and *Ianthella flabelliformis* (Pallas, 1766) (Marshall & Willan 1999).
Australian distribution: NT, QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

***Jorunna parva* (Baba, 1938)**
(Nimbs & Smith 2016a, fig. **10I**)
Ecology: Intertidal to subtidal, rocky reef (Nimbs & Smith 2016a and sources therein).
Australian distribution: QLD, NSW, Vic (Nimbs & Smith 2016a and sources therein).

Genus *Peltodoris* Bergh, 1880
***Peltodoris murrea* (Abraham, 1877)**
(Nimbs & Smith 2016a, fig. **10K**)
Ecology: Intertidal to shallow subtidal, rocky reef, under rocks (Nimbs & Smith 2016a and sources therein).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

Genus *Platydoris* Bergh, 1877
***Platydoris formosa* (Alder & Hancock, 1864)**
Ecology: Subtidal, rocky reef and sandy sediments (Coleman 2015).
Australian distribution: NT, QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

Genus *Sebadoris* Er. Marcus & Ev. Marcus, 1960
***Sebadoris fragilis* (Alder & Hancock, 1864)**
Figure 5E
Ecology: Intertidal to shallow subtidal, rocky reef (IH pers. obs.).
Australian distribution: QLD, NSW, WA (ALA 2018).

***Sebadoris nubilosa* (Pease, 1871)**
Ecology: Intertidal to shallow subtidal, rocky reef, sandy sediment, under rocks (Marshall & Willan 1999).
Australian distribution: NT, QLD, WA (Nimbs & Smith 2016a and sources therein).

Genus *Tayuva* Er. Marcus & Ev. Marcus, 1967
***Tayuva lilacina* (Gould, 1852)**
(Nimbs & Smith 2016a, fig. **11C**)
Ecology: Intertidal to shallow subtidal, rocky reef, often under rocks (Nimbs & Smith 2016a and sources therein).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

Family Dendrodorididae O'Donoghue, 1924 (1864)
Genus *Dendrodoris* Ehrenberg, 1831
***Dendrodoris fumata* (Rüppell & Leuckart, 1830)**
(Nimbs & Smith 2016a, fig. **11G**)
Ecology: Intertidal to shallow subtidal, rocky reef, sandy sediments (Nimbs & Smith 2016a and sources therein).
Australian distribution: NT, QLD, NSW, SA, WA (Nimbs & Smith 2016a and sources therein).

***Dendrodoris krusensternii* (Gray, 1850)**
(Nimbs & Smith 2016a, fig. **11J**)
Ecology: Intertidal to shallow subtidal, rocky reef (Coleman 2015).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

***Dendrodoris nigra* (Stimpson, 1855)**
(Nimbs & Smith 2016a, fig. **11K**)
Ecology: Intertidal, rocky reef and sandy sediments (Nimbs & Smith 2016a and sources therein). Consumes *Tedania* sp. Gray, 1867 sponge (Burn 2015).
Australian distribution: NT, QLD, NSW, Vic, Tas, SA, WA (Nimbs & Smith 2016a and sources therein).

Figure 5: (A) *Asteronotus cespitosus*; (B) *Halgerda aurantiomaculata*; (C) *Halgerda onna*; (D) *Halgerda tessellata*;(E) *Sebadoris fragilis*; (F) *Phyllidia elegans* (dorsal) — inset (ventral); (G) *Phyllidiopsis fissurata*; (H) *Dermatobranchus primus*. Photographs: A, E, Ian Hutton; B, G, Meryl Larkin; C, H, Steve Smith; D, Andrew Green; F, Matt Nimbs.

***Dendrodoris tuberculosa* (Quoy & Gaimard, 1832)**
(Nimbs & Smith 2016a, fig. **11L**)
Ecology: Intertidal to shallow subtidal, rocky reef, sandy sediments (Coleman 2015).
Australian distribution: NT, QLD, NSW (Nimbs & Smith 2016a and sources therein).

Family Phyllidiidae Rafinesque, 1814
Genus *Phyllidia* Cuvier, 1797
***Phyllidia elegans* Bergh, 1869**
Figure 5F
Ecology: Intertidal to shallow subtidal, rocky reef (Marshall & Willan 1999).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

***Phyllidia ocellata* Cuvier, 1804**
(Nimbs & Smith 2016a, fig. **12A**)
Ecology: Shallow subtidal, rocky reef (Marshall & Willan 1999).
Australian distribution: NT, QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

Genus *Phyllidiella* Bergh, 1869
***Phyllidiella pustulosa* (Cuvier, 1804)**
(Nimbs & Smith 2016a, fig. **12B**)
Ecology: Intertidal to shallow subtidal, rocky reef. Consumes *Halichondria* sp. Fleming, 1828, *Tetilla* sp. Schmidt, 1868 and *Hymeniacidon* sp. Bowerbank, 1858 sponges (Marshall & Willan 1999).
Australian distribution: NT, QLD, NSW, SA, WA (Nimbs & Smith 2016a and sources therein).
Remarks: This species is likely to be part of a species complex presently recognised to have a broad Indo-West Pacific distribution (Stoffels et al. 2016).

Genus *Phyllidiopsis* Bergh, 1876
***Phyllidiopsis fissurata* Brunckhorst, 1993**
Figure 5G
Ecology: Shallow subtidal coral reefs (Rudman 1998c)
Australian distribution: QLD (Rudman 1998c).

Family Arminidae Iredale & O'Donoghue, 1923 (1841)
Genus *Dermatobranchus* van Hasselt, 1824
***Dermatobranchus primus* Baba, 1976**
Figure 5H
Ecology: Intertidal to shallow subtidal, rocky reef and sandy sediments (Nimbs & Smith 2016a and sources therein).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

Family Madrellidae Preston, 1911
Genus *Madrella* Alder& Hancock, 1864
***Madrella ferruginosa* Alder & Hancock, 1864**
(Nimbs & Smith 2016a, fig. **12E**)
Ecology: Intertidal to shallow subtidal, rocky reef, occasionally under boulders or among foliose algae (Nimbs & Smith 2016a and sources therein). Consumes encrusting bryozoans such as *Mucropetraliella* sp. Stach, 1936 (Burn 2015).
Australian distribution: QLD, NSW, Vic, WA (Nimbs & Smith 2016a and sources therein).

Family Tritoniidae Lamarck, 1809
Genus *Marianina* Pruvot-Fol, 1931
***Marianina rosea* (Pruvot-Fol, 1930)**
(Nimbs & Smith 2016a, fig. **12H**)
Ecology: Intertidal to shallow subtidal, rocky reef. Consumes arborescent bryozoans (Gosliner et al. 2015).
Australian distribution: QLD, NSW, Vic, SA, WA (Nimbs & Smith 2016a and sources therein).

Genus *Marionia* Vayssière, 1877
***Marionia cyanobranchiata* (Rüppell & Leuckart, 1828)**
(Nimbs & Smith 2016a, fig. **12I**)
Ecology: Intertidal to shallow subtidal, rocky reef, often under rocks. Consumes *Xenia* sp. Lamarck, 1816 soft corals (Nimbs & Smith 2016a and sources therein).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

***Marionia pustulosa* Odhner, 1936**
(Nimbs & Smith 2016a, fig. **12J**)
Ecology: Subtidal, rocky reef. Consumes *Sinularia* sp. May, 1898 soft corals (Nimbs & Smith 2016a and sources therein).
Australian distribution: QLD, NSW, WA (Marshall & Willan 1999; Coleman 2015; Thompson 1972).

Genus *Tritoniopsis* Eliot, 1905
***Tritoniopsis elegans* (Audouin, 1826)**
Figure 6A
Ecology: Shallow subtidal rocky reefs. Consumes the soft coral *Lobophyton* sp. (Rudman 1999f).
Australian distribution: QLD, NSW, WA (GBIF 2016).

Family Bornellidae Bergh, 1874
Genus *Bornella* Gray, 1850
***Bornella hermanni* Angas, 1864**
(Nimbs & Smith 2016a, fig. **12L**)
Ecology: Intertidal to subtidal, rocky reef (Nimbs & Smith 2016a and sources therein).
Australian distribution: NSW (Nimbs & Smith 2016a and sources therein).

***Bornella stellifera* (Adams & Reeve (in A. Adams), 1848)**
Figure 6B
Ecology: Intertidal to shallow subtidal, under rocks (Marshall & Willan 1999).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

Family Dotidae Gray, 1853
Genus *Doto* Oken, 1815
***Doto ostenta* Burn, 1958**
Ecology: Shallow subtidal and intertidal rocky reefs (Grove 2017).
Australian distribution: NSW, Vic, Tas, SA (Grove 2017).

***Doto racemosa* Risbec, 1828**
Ecology: Shallow subtidal rocky reefs. Consumes plumularid hydroids (Gosliner et al. 2015).
Australian distribution: QLD (GBIF 2016).

Family Tethydidae Rafinesque, 1815
Genus *Melibe* Rang, 1829
***Melibe viridis* (Kelaart, 1858)**
Figure 6C
Ecology: Shallow subtidal rocky reef (MN pers. obs.) and sea grass beds. Consumes small crustaceans (Rudman, 1999).
Australian distribution: QLD, NSW, WA, NT (GBIF 2016).

Family Flabellinidae Bergh, 1889
Genus *Coryphellina* O'Donoghue, 1929
***Coryphellina rubrolineata* O'Donoghue, 1929**
(Nimbs & Smith 2016a, fig. **13D**, as *Flabellina rubrolineata*).
Ecology: Intertidal to shallow subtidal, rocky reef. Consumes thecate hydroids (Marshall & Willan 1999).
Australian distribution: NT, QLD, NSW, Vic, WA (Burn 2006).

Genus *Phestilla* Bergh, 1874
***Phestilla sibogae* (Bergh, 1905)**
(Nimbs & Smith 2016a, fig. **13J**, as *Cuthona sibogae*).
Ecology: Subtidal, rocky reef. Consumes the hydroid *Solanderia fusca* (Gray, 1868) (Marshall & Willan 1999).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

Family Samlidae Korshunova, Martynov, Bakken, Evertsen, Fletcher, Mudianta, Saito, Lundin, Schrödl & Picton, 2017
Genus *Samla* Bergh, 1900
***Samla bicolor* (Kelaart, 1858)**
(Nimbs & Smith 2016a, fig. **13B** as *Flabellina bicolor*)
Ecology: Intertidal to shallow subtidal, rocky reef, occasionally under rocks. Consumes thecate hydroids (Marshall & Willan 1999).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

Family Trinchesiidae F. Nordsieck, 1972
Genus *Trinchesia* Ihering, 1879
***Trinchesia anulata* (Baba, 1949)**
Figure 6D
Ecology: Shallow reef. Consumes hydroids (Rudman 2002a).
Australian distribution: Vic (GBIF 2016).

Family Aeolidiidae Gray, 1827
Genus *Anteaeolidiella* M. C. Miller, 2001
***Anteaeolidiella cacaotica* (Stimpson, 1855)**
(Nimbs & Smith 2016a, fig. **13N**)
Ecology: Intertidal to shallow subtidal, often under rocks (Nimbs & Smith 2016a and sources therein).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

Genus *Cerberilla* Bergh, 1873
***Cerberilla affinis* Bergh, 1888**
Figure 6E
Ecology: Intertidal to shallow subtidal, sandy sediments. Consumes sand-dwelling anemones (Marshall & Willan 1999).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

Genus *Spurilla* Bergh, 1864
***Spurilla braziliana* MacFarland, 1909**
(Nimbs & Smith 2016a, fig. **14C)**
Ecology: Intertidal, often under rocks. Consumes anemones (Nimbs & Smith 2016a and sources therein).
Australian distribution: QLD, NSW, SA (Bridle 2017; Nimbs & Smith 2016a and sources therein), Vic (R. Willan, pers. comm.).

Family Pleurolidiidae Burn, 1966
Genus *Pleurolidia* Burn, 1966
***Pleurolidia juliae* Burn, 1966**
(Nimbs & Smith 2016a, fig. **14D**)
Ecology: Subtidal, rocky reef. Consumes the hydroid *Solanderia fusca* (Gray, 1868) (Marshall & Willan 1999).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein). The type locality for this species is Lord Howe Island (Carmona et al. 2015).

Family Facelinidae Bergh, 1889
Genus *Caloria* Trinchese, 1888
***Caloria indica* (Bergh, 1896)**
(Nimbs & Smith 2016a, fig. **14F**)
Ecology: Intertidal to shallow subtidal, rocky reef. Consumes hydroids (Marshall & Willan 1999).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

Genus *Cratena* Bergh, 1864
***Cratena lineata* (Eliot, 1905)**
(Nimbs & Smith 2016a, fig. **14G**)
Ecology: Intertidal to shallow subtidal, rocky reef, occasionally under rocks (Marshall & Willan 1999).
Australian distribution: QLD, NSW, Vic, SA, WA (Nimbs & Smith 2016a and sources therein).

Genus *Favorinus* Gray, 1850
***Favorinus japonicus* Baba, 1949**
(Nimbs & Smith 2016a, fig. **14K**)
Ecology: Intertidal to shallow subtidal, rocky reef. Consumes opisthobranch eggs (Gosliner et al. 2015).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

Genus *Phyllodesmium* Ehrenberg, 1831
***Phyllodesmium briareum* (Bergh, 1896)**
Figure 6F
Ecology: Shallow subtidal reefs, consumes soft corals (Gosliner et al. 2015).
Australian distribution: QLD, NT (Marshall & Willan 1999; ALA 2018).

***Phyllodesmium colemani* Rudman, 1991**
Figure 6G
Ecology: Shallow subtidal reefs, consumes soft corals (Rudman 2003a).
Australian distribution: QLD (ALA 2018). The type locality for this species is Lord Howe Island (Rudman 1991).

***Phyllodesmium crypticum* Rudman, 1981**
(Nimbs & Smith 2016a, fig. **15B**)
Ecology: Intertidal to shallow subtidal, rocky reef. Consumes *Xenia* sp. soft corals (Coleman 2015).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

***Phyllodesmium lembehense* Burghardt, Schrödl & Wägele, 2008**
Figure 6H
Ecology: Shallow subtidal reef, consumes xeniid soft corals (Burghardt et al. 2008).
Australian distribution: First observation in Australian waters (H. Wägele, pers. comm.).

***Phyllodesmium macphersonae* (Burn, 1962)**
(Nimbs & Smith 2016a, fig. **15C**)
Ecology: Intertidal to shallow subtidal, rocky reef (Burn 2015).
Australian distribution: NT, QLD, NSW, Vic, Tas, SA, WA (Nimbs & Smith 2016a and sources therein).

Genus *Pteraeolidia* Bergh, 1875
***Pteraeolidia ianthina* (Angas, 1864)**
(Nimbs & Smith 2016a, fig. **15G**)
Ecology: Intertidal to shallow subtidal, rocky reef (pers. obs.).
Australian distribution: NSW (Wilson & Burghardt 2015).

Family Glaucidae Gray, 1827
Genus *Glaucus* Forster, 1777
***Glaucus atlanticus* Forster, 1777**
(Nimbs & Smith 2016a, fig. **15H**)
Ecology: Pelagic. Consumes siphonophores (Bieri 1966; Thompson & Bennett 1970).
Australian distribution: QLD, NSW, Vic, Tas (Burn 2015).

Family Fionidae Gray, 1857
Genus *Fiona* Alder & Hancock (in Forbes & Hanley), 1853
***Fiona pinnata* (Eschscholtz, 1831)**
(Nimbs & Smith 2016a, fig. **15J**)
Ecology: Pelagic, on floating objects. Consumes *Lepas* sp. Linnaeus, 1758 barnacles (Burn 2015; Willan 1979).
Australian distribution: NSW, Vic, Tas (Burn 2015).

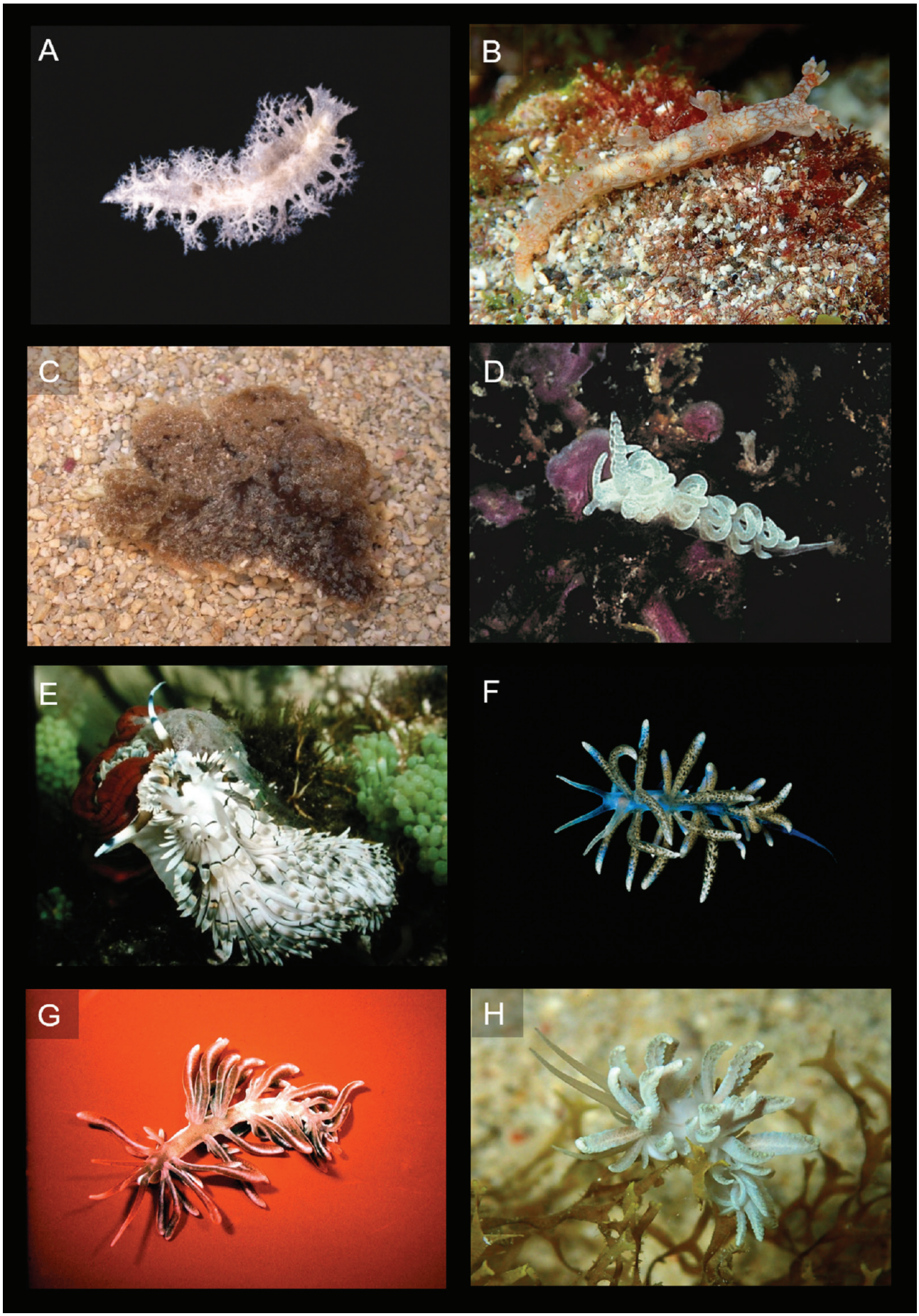

Figure 6: (A) *Tritoniopsis elegans*; (B) *Bornella stellifera*; (C) *Melibe viridis*; (D) *Trinchesia anulata*; (E) *Cerberilla affinis*; (F) *Phyllodesmium briareum*; (G) *Phyllodesmium colemani*; (H) *Phyllodesmium lembehense*. Photographs: A, F Queensland Museum (photographer Neville Coleman); B, Steve Smith; C, D, E, G, Ian Hutton; H, Meryl Larkin.

Order Pleurobranchomorpha Pelseneer, 1906
Family Pleurobranchaeidae Pilsbry, 1896
Genus *Euselenops* Pilsbry, 1896
***Euselenops luniceps* (Cuvier, 1816)**
(Nimbs & Smith 2016a, fig. **15K**)
Ecology: Subtidal, sandy sediments. Consumes brittle stars (Order Ophiurida) (Nimbs & Smith 2016a and sources therein).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

Family Pleurobranchidae Gray, 1827
Genus *Berthellina* Gardiner, 1936
***Berthellina citrina* (Rüppell & Leuckart, 1828)**
(Nimbs & Smith 2016a, fig. **15O**)
Ecology: Intertidal to subtidal, rocky reef, under rocks (Burn 2015). Consumes *Plakina* sp. sponges (Grove 2015a).
Australian distribution: QLD, NSW, Vic. Tas, SA, WA (Nimbs & Smith 2016a and sources therein).

Genus *Pleurobranchus* Cuvier, 1804
***Pleurobranchus albiguttatus* (Bergh, 1905)**
(Nimbs & Smith 2016a, fig. **16A**)
Ecology: Intertidal to shallow subtidal, rocky reef. Consumes compound ascidians (Marshall & Willan 1999).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

***Pleurobranchus forskalii* Rüppell & Leuckart, 1828**
(Nimbs & Smith 2016a, fig. **16B**)
Ecology: Intertidal to shallow subtidal, rocky reef. Consumes compound ascidians (Marshall & Willan 1999).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

***Pleurobranchus peronii* Cuvier, 1804**
(Nimbs & Smith 2016a and sources therein, fig. **16C**)
Ecology: Intertidal to shallow subtidal, rocky reef. Consumes *Ritterella* sp. Harant, 1931 ascidians (Coleman 2015).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

Order Sacoglossa Ihering, 1876
Family Oxynoidae Stoliczka, 1868 (1847)
Genus *Lobiger* Krohn, 1847
***Lobiger viridis* Pease, 1863**
(Nimbs & Smith 2016a, fig. **16G**)
Ecology: Intertidal to shallow subtidal, rocky reef. Consumes *Caulerpa* sp. J. V. Lamouroux, 1809 algae (Gosliner et al. 2015).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

Genus *Oxynoe* Rafinesque, 1814
O*xynoe jacksonii* Krug, Berriman & Valdés, 2018
Figure 7A
Ecology: Intertidal to shallow subtidal, rocky reef. Consumes *Caulerpa* sp. algae (Krug et al. 2018).
Australian distribution: QLD, NSW, Vic, Tas (Krug et al. 2018; GBIF 2016).

***Oxynoe jordani* Krug, Berriman & Valdés, 2018**
Figure 7B
Ecology: Intertidal to shallow subtidal, rocky reef. Lives on the host algae *Caulerpa cupressoides* (Krug et al. 2018).
Australian distribution: Lord Howe Island only (Krug et al. 2018). Recently found in south-east Asia (GBIF 2019).

***Oxynoe neridae* Krug, Berriman & Valdés, 2018**
Figure 7C
Ecology: Intertidal to shallow subtidal, rocky reef. Lives on the host algae *Caulerpa racemosa* (Krug et al. 2018).
Australian distribution: Lord Howe Island only (Krug et al. 2018).

***Oxynoe viridis* (Pease, 1861).**
(Nimbs & Smith 2016a, fig. **16H**)
Ecology: Intertidal to shallow subtidal, rocky reef. Consumes *Caulerpa* sp. algae (Burn 2015).
Australian distribution: NT, QLD, NSW, Vic, Tas, SA, WA (Nimbs & Smith 2016a and sources therein).

Family Juliidae E. A. Smith, 1885
Genus *Julia* Gould, 1862
***Julia exquisita* Gould, 1862**
Ecology: Among filamentous algae on coral reefs. Consumes chlorophyte algae (Marshall & Willan 1999).
Australian distribution: QLD (Marshall & Willan 1999).

Family Plakobranchidae Gray, 1840
Genus *Elysia* Risso, 1818
***Elysia bennettae* Thompson, 1973**
(Nimbs & Smith 2016a, fig. **16L**)
Ecology: Shallow subtidal, rocky reef. Consumes the filamentous green algae *Chlorodesmis fastigiata* (C. Agardh) S.C. Ducker, 1969 (Marshall & Willan 1999).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

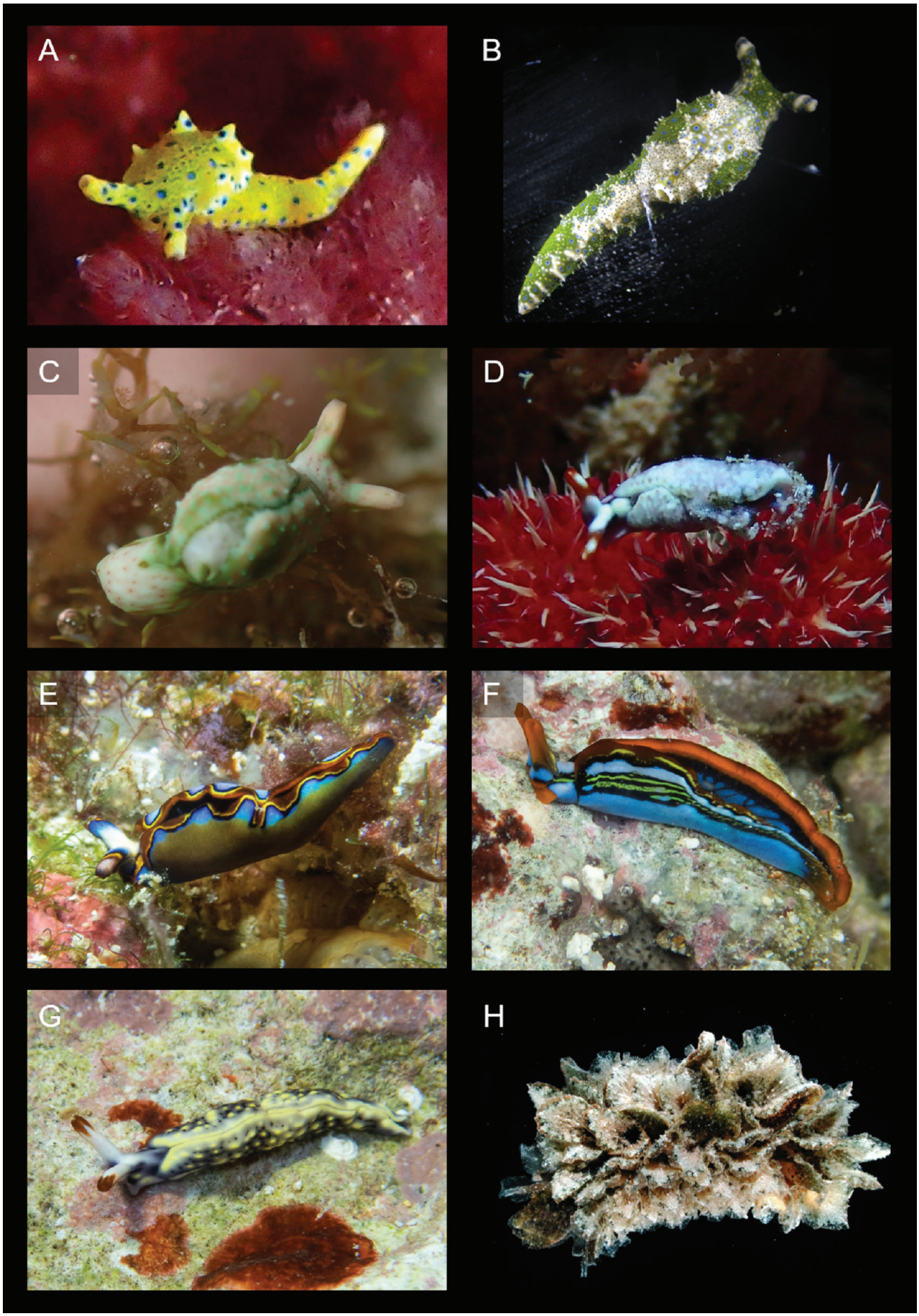

Figure 7: (A) *Oxynoe jacksoni*; (B) *Oxynoe jordani*; (C) *Oxynoe neridae*; (D) *Thuridilla albopustulosa*; (E) *Thuridilla neona*; (F) *Thuridilla splendens*; (G) *Thuridilla vataae*; (H) *Polybranchia burni*. Photographs: A, D, Meryl Larkin; B, Patrick Krug; C, Tom & Nicola Davis; E, F, G, Steve Smith; H, Ian Hutton.

***Elysia furvacauda* Burn, 1958**
(Nimbs & Smith 2016a, fig. **16M**)
Ecology: Intertidal to shallow subtidal, rocky reef (Burn 2015).
Australian distribution: NSW, Vic, SA (Nimbs & Smith 2016a and sources therein).

***Elysia marginata* (Pease, 1871)**
(Nimbs & Smith 2016a, fig. **16O**)
Ecology: Intertidal to shallow subtidal, rocky reef. Consumes algae (Nimbs & Smith 2016a and sources therein).
Australian distribution: NT, QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

***Elysia tomentosa* Jensen, 1997**
(Nimbs & Smith 2016a, fig. **17B**)
Ecology: Intertidal to shallow subtidal, rocky reef. Consumes algae (Marshall & Willan 1999).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

***Elysia yaeyamana* Baba, 1936**
(Nimbs & Smith 2016a, fig. **17C**)
Ecology: Shallow subtidal, rocky reef. Consumes algae (Nimbs & Smith 2016a and sources therein).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

Genus *Thuridilla* Bergh, 1872
***Thuridilla albopustulosa* Gosliner, 1995**
Figure 7D
Ecology: Shallow subtidal, rocky reef. Consumes algae (Rudman 2003c).
Australian distribution: QLD (Rudman 2003c; ALA 2018).
Remarks: This species may form part of a cryptic complex (P. Krug, pers. comm.).

***Thuridilla carlsoni* Gosliner, 1995**
(Nimbs & Smith 2016a, fig. **17D**)
Ecology: Intertidal to shallow subtidal, rocky reef. Consumes algae (Marshall & Willan 1999).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

***Thuridilla flavomaculata* Gosliner, 1995**
(Nimbs & Smith, 2018, fig. **2D,** p. 5)
Ecology: Intertidal, rocky reef (K. May, pers. comm.). Consumes algae (Gosliner 1995).
Australian distribution: Lord Howe Island only (Nimbs & Smith 2018).

***Thuridilla neona* Gosliner, 1995**
Figure 7E
Ecology: Intertidal to shallow subtidal, rocky reef (Rudman 2005a). Consumes algae (Gosliner 1995).
Australian distribution: QLD (ALA 2018).

Thuridilla splendens* (Baba, 1949*)
Figure 7F
Ecology: Intertidal to shallow subtidal, rocky reef (Rudman 2000c). Consumes algae (Gosliner 1995).
Australian distribution: QLD (Rudman 2000c).
Remarks: This colour form appears to be restricted to tropical Australia, however Gosliner et al. (2018) treat it as a separate, undescribed taxon, *Thuridilla* sp. 5.

***Thuridilla vataae* (Risbec, 1928)**
Figure 7G
Ecology: Intertidal to shallow subtidal, rocky reef (Rudman 2000d). Consumes algae (Gosliner 1995).
Australian distribution: WA (ALA 2018).
Remarks: We follow WoRMS (2018) and Yonow (2012) and spell the specific epithet *vataae.*

Family Limapontiidae Gray, 1847
Genus *Placida* Trinchese, 1876
***Placida dendritica* (Alder & Hancock, 1843)**
(Nimbs & Smith 2016a, fig. **17F**)
Ecology: Intertidal to shallow subtidal, rocky reef. Consumes *Codium* sp. algae (Burn 2015).
Australian distribution: NT, QLD, NSW, Vic, Tas, SA, WA (Nimbs & Smith 2016a and sources therein).

Genus *Stiliger* Ehrenberg, 1828
***Stiliger aureomarginatus* Jensen, 1993**
(Nimbs & Smith 2016a, fig. **17G**)
Ecology: Intertidal to shallow subtidal, rocky reef. Consumes *Codium* sp. algae (Coleman 2015).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

***Stiliger ornatus* Ehrenberg, 1828**
(Nimbs & Smith 2016a, fig. **17H**)
Ecology: Intertidal to shallow subtidal, rocky reef. Consumes *Codium* sp. algae (Marshall & Willan 1999).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

Family Calyphyllidae Tiberi, 1881
Genus *Cyerce* Bergh, 1870
***Cyerce nigricans* (Pease, 1866)**
(Nimbs & Smith 2016a, fig. **17K**)
Ecology: Shallow subtidal, rocky reef. Consumes *Chlorodesmis* sp. algae (Rudman 1999g).
Australian distribution: QLD, NSW, WA (Nimbs & Smith 2016a and sources therein).

Genus *Polybranchia* Pease, 1860
***Polybranchia burni* Medrano, Krug, Gosliner, Biju Kumar & Valdés, 2018**
Figure 7H
Ecology: Shallow subtidal, rocky reef, diurnally under rocks, nocturnally active (Medrano et al. 2018). Consumes algae (Medrano et al. 2018).
Australian distribution: QLD, WA (Medrano et al. 2018).

Family Volvatellidae Pilsbry, 1895
Genus *Ascobulla* Ev. Marcus, 1972
***Ascobulla fischeri* (A. Adams & Angas, 1864)**
Ecology: Intertidal to shallow subtidal reef among *Caulerpa* sp. algae (Grove 2011).
Australian distribution: QLD, NSW, Vic, SA and WA (Grove 2011).

Genus *Volvatella* Pease, 1860
***Volvatella angeliniana* Ichikawa, 1993**
(Nimbs & Smith 2016a, fig. **17M**)
Ecology: Intertidal to shallow subtidal, rocky reef (Nimbs & Smith 2016a and sources therein).
Australian distribution: QLD, NSW (Nimbs & Smith 2016a and sources therein).

Order Umbraculida Odhner, 1939
Family Tylodinidae Gray, 1847
Genus *Tylodina* Rafinesque, 1814
***Tylodina corticalis* (Tate, 1889)**
(Nimbs & Smith 2016a, fig. **17N**)
Ecology: Intertidal to subtidal, rocky reef. Consumes sponges (Burn 2015).
Australian distribution: QLD, NSW, Vic, SA, WA (Nimbs & Smith 2016a and sources therein).

Family Umbraculidae Dall, 1889 (1827)
Genus *Umbraculum* Schumacher, 1817
***Umbraculum umbraculum* (Lightfoot, 1786)**
(Nimbs & Smith 2016a, fig. **17O**)
Ecology: Intertidal to shallow subtidal, rocky reef. Consumes *Tethya* sp. Lamarck, 1815 and *Plakina* sp. Schulze, 1880 sponges (Burn 2015).
Australian distribution: NT, QLD, NSW, Vic, Tas, SA, WA (Nimbs & Smith 2016a and sources therein).

Table 1: Summary of data sources.

Source type	Contributor	Reference
Published literature	Krug, Berriman & Valdés	Krug, Berriman & Valdés (2018)
	Coleman, N.	Coleman (2001, 2002, 2008, 2015)
	Hutton, I & Harrison, P.	Hutton & Harrison (2004)
Unpublished	Australian Museum Checklist	Unpublished data
Electronic sources	*Atlas of Living Australia*	ALA (2018)
	Sea Slug Forum	Rudman (2010)
	Slugs of Paradise	Hutton & Woods (2017)
Photo collections	Coleman, N. (deceased)	Queensland Museum archives

Table 2: Sea slug species that are found on Lord Howe Island and nearby reefs but not on the mainland coast of New South Wales. A = Indo-Pacific species not found elsewhere in Australian waters; B = Species endemic to LHI.

Species	Order	A	B
Aegires flores	Nudibranchia		
Ardeadoris tomsmithi	Nudibranchia		
Costasiella kuroshimae	Sacoglossa		
Costasiella usagi	Sacoglossa		
Decorifer elisa	Cephalaspidea		x
Doriprismatica dendrobranchia	Nudibranchia		
Doto racemosa	Nudibranchia		
Glossodoris buko	Nudibranchia		
Glossodoris hikuerensis	Nudibranchia		
Halgerda aurantiomaculata	Nudibranchia		
Halgerda brunneomaculata	Nudibranchia		
Halgerda onna	Nudibranchia	x	
Halgerda tessellata	Nudibranchia		
Julia exquisita	Sacoglossa		
Martadoris amakusana	Nudibranchia		
Miamira miamirana	Nudibranchia		
Oxynoe jordani	Sacoglossa		
Oxynoe neridae	Sacoglossa		x
Tambja caeruleocirrus	Nudibranchia		
Phyllidiopsis fissurata	Nudibranchia		
Phyllodesmium briareum	Nudibranchia		
Phyllodesmium colemani	Nudibranchia		
Phyllodesmium lembehense	Nudibranchia		
Polybranchia burni	Sacoglossa		
Smaragdinella calyculata	Cephalaspidea		
Thuridilla albopustulosa	Sacoglossa		
Thuridilla flavomaculata	Sacoglossa	x	
Thuridilla neona	Sacoglossa		
Thuridilla splendens	Sacoglossa		
Thuridilla vataae	Sacoglossa		
Thorunna halourga	Nudibranchia		
Trinchesia anulata	Nudibranchia		

DISTRIBUTIONS

To date, a total of 186 described species have been recorded from LHI and are listed in this inventory. Of those, two are only found at LHI (*Decorifer elisa* and *Oxynoe neridae*), two have not been recorded elsewhere in Australian waters (the non-endemic *Thuridilla flavomaculata* and *Halgerda onna*) and another 28 have not been found on mainland NSW (Table 2).

Unsurprisingly, the majority of species not recorded from elsewhere in NSW are tropically affiliated Indo-Pacific taxa, e.g. some chromodorids, discodorids (genus *Halgerda*) and plakobranchids (genus *Thuridilla*). The isolated oceanic location of LHI, and its unique and varied habitats that include extensive algal beds and extensive coral reef, suggests that observations of novel tropical taxa are likely to continue (Baird et al. 2008) and may increase in frequency as the EAC strengthens (Mulhearn 1987; Wilson et al. 2016). This scenario is already evident for coastal habitats with an ever-growing list of species that have recently extended their range (Nimbs & Smith 2018). The effects of range-shifting species are, as yet, unclear, but monitoring is vital for evaluating changes at this World Heritage Listed site. Given the popularity of sea slugs with photograpers, combined with their relative visibility, programs such as the *Sea Slug Census* (Smith & Davis 2019) may be effective in gaining early indications of species introductions and changing assemblage patterns. As such, a *Sea Slug Census* is currently conducted every year at Lord Howe Island (since 2017) attracting participation from visiting and local volunteers as well as professional marine scientists.

Acknowledgements

We would like to thank the following people for assistance with identification of some species: Dr Marta Pola (*Martadoris amakusana*); Dr Patrick Krug (sacoglossans); Dr Nathalie Yonow; Prof. Heike Wägele (*Phyllodesmium lembehense*); Prof. Michael Shrödl; Dr Manuel Malaquias; Dr Trond Oskars. Additional photographs were supplied by: David Rolla (iNaturalist) (*Glossodoris buko*); Richard Smith; Nicola Davis; Ian and Kate Shaw; Lord Howe Island Marine Park; Andrew Green; Jasmine Freya; and all participants in the *Sea Slug Census* program. Darryl Potter (Queensland Museum) facilitated access to Neville Coleman's slide collection. Surveys were undertaken under Lord Howe Island Marine Park Permit LHIMP/R/18002/29012018.

References

ALA., 2018. Atlas of Living Australia. Available from: http://www.ala.org.au. (accessed 31 March 2019).

Allan, J.K. 1932. A new genus and species of sea-slug, and two new species of sea-hares from Australia. *Records of the Australian Museum*, 18: 314–320. https://doi.org/10.3853/j.0067-1975.18.1932.736.

Allender, B.M. & Kraft, G.T., 1983. The marine algae of Lord Howe Island (NSW): The dictyotales and Cutleriales (Phaeophyta). *Brunonia* 6: 73–130.

Ayre, D.J. & Hughes, T.P., 2004. Climate change, genotypic diversity and gene flow in reef-building corals. *Ecology Letters* 7: 273–278.

Baird, A.H., Hoogenboom, M.O. & Huang, D., 2017. *Cyphastrea salae*, a new species of hard coral from Lord Howe Island, Australia (Scleractinia, Merulinidae). *ZooKeys* 662: 49.

Baird, M.E., Timko, P.G., Middleton, J.H., Mullaney, T.J., Cox, D.R. & Suthers, I.M., 2008. Biological properties across the Tasman Front off southeast Australia. *Deep Sea Research Part I: Oceanographic Research Papers* 55*:* 1438–1455.

Beechey, D., 2009. The seashells of New South Wales. Available from: https://seashellsofnsw.org.au/index.htm (accessed 2 February 2019).

Bieri, R., 1966. Feeding preferences and rates of the snail, *Ianthina prolongata*, the barnacle, *Lepas anserifera*, the nudibranchs, *Glaucus atlanticus* and *Fiona pinnata*, and the food web in the marine neuston. *Publications of the Seto Marine Biological Laboratory* 14: 161–170.

Booth, D.J., Beretta, G.A., Brown, L. & Figueira, W.F., 2018. Predicting success of range-expanding coral reef fish in temperate habitats using temperature-abundance relationships. *Frontiers in Marine Science* 5: 1–7.

Bouchet, P., Lozouet, P., Maestrati, P. & Heros, V., 2002. Assessing the magnitude of species richness in tropical marine environments: exceptionally high numbers of molluscs at a New Caledonia site. *Biological Journal of the Linnean Society* 75: 421–436.

Bridle, T., 2017. *Spurilla braziliana* – a new sea slug in South Australia. *The South Australian Naturalist* 91: 29–33.

Burghardt, I., Schrödl, M. & Wägele, H., 2008. Three new solar-powered species of the genus *Phyllodesmiu*m Ehrenberg, 1831 (Mollusca: Nudibranchia: Aeolidioidea) from the tropical Indo-Pacific, with analysis of their photosynthetic activity and notes on biology. *Journal of Molluscan Studies* 74: 277–292.

Burn, R., 2015. *Nudibranchs and related molluscs*. *Museum Victoria Field Guides*. Melbourne: Museum Victoria.

Burn, R.F., 2006. A checklist and bibliography of the Opisthobranchia (Mollusca: Gastropoda) of Victoria and the Bass Strait area, south-eastern Australia. *Museum Victoria Science Reports,* 42: 1–42.

Camacho-Garcia, Y.E., Ornelas-Gatdula, E., Gosliner, T.M. & Valdes, A., 2014. Phylogeny of the family Aglajidae (Pilsbry, 1895)(Heterobranchia: Cephalaspidea) inferred from mtDNA and nDNA. *Molecular Phylogenetics and Evolution* 71: 113–126.

Carmona, L., Pola, M., Gosliner, T.M. & Cervera, J L., 2015. *Protaeolidiella atra* Baba, 1955 versus *Pleurolidia juliae* Burn, 1966: One or two species? *Helgoland Marine Research*, 137–145. https://doi.org/10.1007/s10152-014-0422-3.

Cobb, G. & Mullins, D., 2003. Nudibranchs: Sunshine Coast, Qld & Tasmania, Australia. Available from: http://www.nudibranch.com.au/colour_white.htm (accessed 14 November 2019).

Cobb, G. & Willan, R.C., 2006. *Undersea Jewels: A Colour Guide to Nudibranchs*. Canberra: ABRS.

Coleman, N., 2001. *1001 Nudibranchs: Catalogue of Indo-Pacific Sea Slugs*. Springwood, Qld: Neville Coleman's Underwater Geographic Pty Ltd.

Coleman, N., 2002. *Lord Howe Island Marine Park: Sea Shore to Sea Floor.* Springwood, Qld: Neville Coleman's Underwater Geographic Pty Ltd.

Coleman, N., 2008. *Nudibranchs Encyclopedia*. Springwood, Qld: Neville Coleman's Underwater Geographic.

Coleman, N., 2015. *Nudibranchs Encyclopedia — Catalogue of Asia/Indo Pacific Sea Slugs*. Second edition. Springwood, Qld: Neville Coleman's Underwater Geographic.

Davis, T.R., Harasti, D., Kelaher, B. & Smith, S.D.A., 2017. Spatial and temporal variation in subtidal molluscan diversity amongst temperate estuarine habitats. *Marine Ecology* 38: e12428.

Dayrat, B., 2011. A warning for ecologists and conservation biologists using species checklists: How the European marine fauna 'lost' all of its 16 Discodoris species (Mollusca: Gastropoda). *Organisms Diversity & Evolution* 11: 75–82.

Eales, N.B., 1960. Revision of the world species of *Aplysia* (Gastropoda, Opisthobranchia). *Bulletin of the British Musem, Zoology* 5: 267–404.

Edgar, G.J., Davey, A., Kelly, G., Mawbey, R.B. & Parsons, K., 2010. Biogeographical and ecological context for managing threats to coral and rocky reef communities in the Lord Howe Island Marine Park, south-western Pacific. *Aquatic Conservation: Marine and Freshwater Ecosystems* 20: 378–396.

Epstein, H.E., Hallas, J.M., Johnson, R.F., Lopez, A. & Gosliner, T.M., 2018. Reading between the lines: Revealing cryptic species diversity and colour patterns in *Hypselodoris* nudibranchs (Mollusca: Heterobranchia: Chromodorididae). *Zoological Journal of the Linnean Society* 186: 116–189.

Francis, M.P., 1993. Checklist of the coastal fishes of Lord Howe, Norfolk, and Kermadec Islands, southwest Pacific Ocean. *Pacific Science* 47: 136–170.

GBIF, 2016. Global Biodiversity Information Facility. Available from: http://www.gbif.org (accessed 14 November 2019).

GBIF, 2019. GBIF Backbone Taxonomy. *Oxynoe jordani* Krug, Berriman & Valdés, 2018. Available from: https://doi.org/10.15468/39omei (accessed 14 November 2019).

Golestani, H., Crocetta, F., Padula, V., Camacho-García, Y., Langeneck, J., Poursanidis, D., Pola, M., Yokeş, M.B., Cervera, J.L., Jung, D.W. & Gosliner, T.M., 2019. The little *Aplysia* coming of age: from one species to a complex of species complexes in *Aplysia parvula* (Mollusca: Gastropoda: Heterobranchia). *Zoological Journal of the Linnean Society* 187: 279–330.

Gosliner, T.M., Valdés, Á. & Behrens, D.W., 2015. *Nudibranch and Sea Slug Identification: Indo-pacific*. Jacksonville, Florida, USA: New World Publications.

Gosliner, T.M., Valdés, Á. & Behrens, D.W., 2018. *Nudibranch and Sea Slug Identification: Indo-pacific*. Second edition. Jacksonville, Florida, USA: New World Publications.

Gosliner, Terrence M., 1995. The genus *Thuridilla* (Opisthobranchia: Elysiidae) from the tropical Indo-Pacific, with a revision of the phylogeny and systematics of the Elysiidae. *Proceedings of the California Academy of Sciences* 49: 1–54.

Gosliner, Terrence M., 1989. Revision of the Gastropteridae (Opisthobranchia: Cephalaspidea) with descriptions of a new genus and six new species. *The Veliger* 32: 333–381.

Grove, S., 2015a. A Guide to the Seashells and Other Marine Molluscs of Tasmania: *Berthellina citrina*. Available from: http://www.molluscsoftasmania.net/Species pages/Berthellina citrina.html (accessed 19 May 2019).

Grove, S., 2015b. A Guide to the Seashells and Other Marine Molluscs of Tasmania: *Umbraculum umbraculum* Available from: http://www.molluscsoftasmania.net/Species pages/Umbraculum umbraculum.html (accessed 19 May 2019).

Grove, S.J., 2011. A Guide to the Seashells and Other Marine Molluscs of Tasmania: *Ascobulla fischeri*. Available from https://molluscsoftasmania.org.au/project/ascobulla-fischeri/ (accessed 22 May 2019).

Grove, S.J., 2017. A Guide to the Seashells and Other Marine Molluscs of Tasmania: *Doto ostenta*. Available from: http://www.molluscsoftasmania.net/Species pages/Doto ostenta.html (accessed 16 June 2019).

Harriott, V.J., Harrison, P.L. & Banks, S.A., 1995. The coral communities of Lord Howe Island. *Marine and Freshwater Research* 46: 457–465.

Hassler, C.S., Ridgway K.R., Bowie A.R., Butler, E.C.V., Clementson L.A., Doblin, M.A., Davies, D.M., Law, C., Ralph, P.J., van der Merwe, P., Watson, R. & Ellwood, M.J., 2014. Primary productivity induced by iron and nitrogen in the Tasman Sea: an overview of the PINTS expedition. *Marine and Freshwater Research* 65: 517–537.

Hobbs, J.P.A., Neilson, J. & Gilligan, J.J., 2009. Distribution, abundance, habitat association and extinction risk of marine fishes endemic to the Lord Howe Island region. *Report to Lord Howe Island Marine Park* 37.

Hobbs, J.P.A., 2010. Poleward range expansion of a tropical coral reef fish (Centropyge flavissima) to Lord Howe Island, Australia. *Marine Biodiversity Records* 3: e118.

Hutton, I. & Harrison, P., 2004. *A Field Guide to the Marine Life of Lord Howe Island*. Lord Howe Island, NSW: Ian Hutton.

Hutton, I. & Woods, C., 2017. Slugs of Paradise. Available from: https://www.facebook.com/groups/220189691773560/ (accessed 16 March 2019).

IUCN, 1982. *World Heritage Nomination - IUCN Technical Review - Lord Howe Island Group*. Available from: https://www.worldheritageoutlook.iucn.org/explore-sites/wdpaid/5001 (accessed 5 May 2019).

Johnson, R.F. & Valdés, Á., 2001. The *Hypselodoris infucata*, *H. obscura* and *H. saintvincentius* species complex (Mollusca, Nudibranchia, Chromodorididae), with remarks on the genus *Brachychlanis* Ehrenberg, 1831. *Journal of Natural History* 35: 1371–1398.

Kier, G., Kreft, H., Lee, T.M., Jetz, W., Ibisch, P.L., Nowicki, C., Mutke, J. & Barthlott, W., 2009. A global assessment of endemism and species richness across island and mainland regions. *Proceedings of the National Academy of Sciences* 106: 9322–9327.

Kraft, G.T., 2000. Marine and estuarine benthic green algae (Chlorophyta) of Lord Howe Island, South-western Pacific. *Australian Systematic Botany* 13: 509–648.

Krug, P.J., Berriman, J.S. & Valdés, Á., 2018. Phylogenetic systematics of the shelled sea slug genus O*xynoe* Rafinesque, 1814 (Heterobranchia: Sacoglossa), with integrative descriptions of seven new species. *Invertebrate Systematics* 32: 950–1003.

Lindsay, M.J., Patterson, H.M. & Swearer, S.E., 2008. Habitat as a surrogate measure of reef fish diversity in the zoning of the Lord Howe Island Marine Park, Australia. *Marine Ecology Progress Series* 353: 265–273.

Marshall, J.G. & Willan, R.C., 1999. *Nudibranchs of Heron Island, Great Barrier Reef: A Survey of the Opisthobranchia (Sea Slugs) of Heron and Wistari Reefs*. Leiden: Backhuys.

MacArthur, R.H. & Wilson, E.O., 2001. *The Theory of Island Biogeography*. Princeton University Press: Princeton USA.

Matsuda, S.B. & Gosliner, T.M., 2018. Glossing over cryptic species: Descriptions of four new species of *Glossodoris* and three new species of *Doriprismatica* (Nudibranchia: Chromodorididae). *Zootaxa* 4444: 501–529.

Medrano, S., Krug, P.J., Gosliner, T.M., Kumar, A.B. & Valdés, Á., 2018. Systematics of *Polybranchia* Pease, 1860 (Mollusca: Gastropoda: Sacoglossa) based on molecular and morphological data, *Zoological Journal of the Linnean Society* 186: 76–115.

Mulhearn, P.J., 1987. The Tasman Front: a study using satellite infrared imagery. *Journal of Physical Oceanography*, 17: 1148–1155.

Nimbs, M.J., Larkin, M., Davis, T.R., Harasti, D., Willan, R.C. & Smith, S.D.A., 2016. Southern range extensions for twelve heterobranch sea slugs (Gastropoda: Heterobranchia) on the eastern coast of Australia. *Marine Biodiversity Records* 9: 27.

Nimbs, M.J., Willan, R.C. & Smith, S.D.A., 2017a. Is Port Stephens, eastern Australia, a global hotspot for biodiversity of Aplysiidae (Gastropoda: heterobranchia)? *Molluscan Research* 37: 45–65.

Nimbs, M.J, Willan, R.C. & Smith, S.D.A., 2017b. An historical summary of the distribution and diet of the Australian sea hares (Gastropoda: Heterobranchia: Aplysiidae). *Zoological Studies* 56: 1–15.

Nimbs, M.J. & Smith, S.D.A., 2016a. An illustrated inventory of the sea slugs of New South Wales, Australia (Gastropoda: Heterobranchia). *Proceedings of the Royal Society of Victoria* 128: 44–113.

Nimbs, M.J. & Smith, S.D.A., 2016b. Welcome strangers: southern range extensions for seven heterobranch sea slugs (Mollusca: Gastropoda) on the subtropical east Australian coast, a climate change hot spot. *Regional Studies in Marine Science* 8: 27–32.

Nimbs, M.J. & Smith, S D.A., 2017. Revision of the southern distribution limit for the tropical marine herbivore *Syphonota geographica* (A. Adams & Reeve, 1850)(Heterobranchia: Aplysiidae) in a global climate change hot-spot. *Australian Zoologist* 38: 582–589.

Nimbs, M.J. & Smith, S.D.A., 2018. Beyond Capricornia: tropical sea slugs (Gastropoda, Heterobranchia) extend their distributions into the Tasman Sea. *Diversity* 10: 99.

Nimbs, M J., Wilson, N.G., Limmon, G.V. & Smith, S.D.A., in press. Redescription of the sea hare *Phyllaplysia viridis* (Bergh, 1905) (Gastropoda: Heterobranchia: Aplysiida). *Malacologia*.

Noreen, A.M.E., Harrison, P.L. & Van Oppen, M.J.H., 2009. Genetic diversity and connectivity in a brooding reef coral at the limit of its distribution. *Proceedings of the Royal Society B: Biological Sciences* 276: 3927–3935

Paulay, G., 1994. Biodiversity on oceanic islands: its origin and extinction: 1. *American Zoologist* 34: 134–144.

Phillips, B., Hale, J. & Maliel, M., 2006. *Ecological character of the Elizabeth and Middleton Reefs Marine National Nature Reserve Wetland of International Importance*. Prepared for the Department of Environment and Heritage. Canberra, Australia: Mainstream Environmental Consulting.

Pittman, C. & Fiene, P., 2004. *Sea Slugs of Hawaii: Liloa curta*. Available from: http://seaslugsofhawaii.com/species/Liloa-curta-a.html (accessed 16 February 2019).

Pola, M., Cervera, J.L. & Gosliner, T.M., 2005. Review of the systematics of the genus *Roboastra* Bergh, 1877 (Nudibranchia, Polyceridae, Nembrothinae) with the description of a new species from the Galapagos Islands. *Zoological Journal of the Linnean Society* 144: 167–189.

Pola, M., Cervera, J. L. & Gosliner, T.M., 2006. Taxonomic revision and phylogenetic analysis of the genus *Tambja* Burn, 1962 (Mollusca, Nudibranchia, Polyceridae). *Zoologica Scripta* 35: 491–530.

Ponder, W. F., Loch, I., & Berents, P., 2000. An assessment of the marine invertebrate fauna of the Lord Howe Island shelf. Sydney: Report prepared for Environment Australia. Australian Museum.

Rudman, W.B., 1972. A comparative study of the genus *Philinopsis* Pease, 1860 (Aglajidae, Opisthobranchia). *Pacific Science* 26: 381–399.

Rudman, W.B., 1987. The genus *Trapania* (Nudibranchia: Goniodorididae) in the Indo-West Pacific. *Journal of Molluscan Studies* 53: 189–212.

Rudman, W.B., 1991. Further studies on the taxonomy and biology of the octocoral-feeding genus *Phyllodesmium* Ehrenberg, 1831 (Nudibranchia: Aeolidoidea). *Journal of Molluscan Studies* 57: 167–203.

Rudman, W.B., 1998a. *Sea Slug Forum: Chelidonura sandrana*. Available from: http://www.seaslugforum.net/find/chelsand (accessed 27 March 2019).

Rudman, W.B., 1998b. *Sea Slug Forum: Halgerda aurantiomaculata*. Available from: http://www.seaslugforum.net/showall/halgaura (accessed 16 March 2019).

Rudman, W.B., 1998c. *Sea Slug Forum: Phyllidiopsis fissuratus*. Available from: http://www.seaslugforum.net/find/phylfiss (accessed 14 March 2019).

Rudman, W.B., 1998d. *Sea Slug Forum: Chelidonura fulvipunctata*. Available from: http://www.seaslugforum.net/find/chelfulv (accessed 14 January 2019).

Rudman, W.B., 1998e. *Sea Slug Forum: Philine trapezia.* Available from: http://www.seaslugforum.net/find/philtrap (accessed 9 March 2019).

Rudman, W.B,. 1999a. *Sea Slug Forum: Glossodoris dendrobranchia*. Available from: http://www.seaslugforum.net/factsheet/glosdend (accessed 14 March 2019).

Rudman, W.B., 1999b. *Sea Slug Forum: Glossodoris pallida*. Available from: http://www.seaslugforum.net/showall/glospall (accessed 10 March 2019).

Rudman, W.B., 1999c. *Sea Slug Forum: Glossodoris tomsmithi*. Available from: http://www.seaslugforum.net/showall/glostoms (accessed 9 March 2019).

Rudman, W.B., 1999d. *Sea Slug Forum: Gymnodoris citrina*. Available from: http://www.seaslugforum.net/showall/gymncitr (accessed 27 March 2019).

Rudman, W.B., 1999e. *Sea Slug Forum: Melibe viridis*. Available from: http://www.seaslugforum.net/showall/meliviri (accessed 16 April 2019).

Rudman, W.B., 1999f. *Sea Slug Forum: Mexichromis festiva*. Available from: http://www.seaslugforum.net/find/mexifest (accessed 2 April 2019).

Rudman, W.B., 1999g. *Sea Slug Forum: Cyerce nigricans*. Available from: http://www.seaslugforum.net/cyernigr.htm (accessed 2 June 2019).

Rudman, W.B., 1999h. *Sea Slug Forum: Tritoniopsis elegans*. Available from: http://www.seaslugforum.net/factsheet/triteleg (accessed 22 March 2019).

Rudman, W.B., 1999i. *Sea Slug Forum: Gymnodoris ceylonica*. Available from: http://www.seaslugforum.net/showall/gymnceyl (accessed 3 March 2019).

Rudman, W.B., 2000a. *Sea Slug Forum: Doris cameroni*. Available from: http://www.seaslugforum.net/find/doricame (accessed 2 March 2019).

Rudman, W.B., 2000b. *Sea Slug Forum: Noumea simplex*. Available from: http://www.seaslugforum.net/find/noumsim (accessed 27 February 2019).

Rudman, W.B., 2000c. *Sea Slug Forum: Thuridilla splendens* Available from: http://www.seaslugforum.net/find/thursple (accessed 19 March 2019).

Rudman, W.B., 2000d. *Sea Slug Forum: Thuridilla vatae*. Available from: http://www.seaslugforum.net/showall/thurvata (accessed 19 March 2019).

Rudman, W.B., 2000e. *Sea Slug Forum: Ceratosoma miamiranum*. Available from: http://www.seaslugforum.net/showall/ceramiam (accessed 16 March 2019).

Rudman, W.B., 2001a. *Sea Slug Forum: Asteronotus cespitosus*. Available from: http://www.seaslugforum.net/showall/astecesp (accessed 27 April 2019).

Rudman, W.B., 2001b. *Sea Slug Forum: Diaphorodoris mitsuii*. Available from: http://www.seaslugforum.net/find/diapmits (accessed 10 March 2019).

Rudman, W.B., 2001c. *Sea Slug Forum: Diversidoris aurantionodulosa.* Available from: http://www.seaslugforum.net/factsheet/diveaura (accessed 15 March 2019).

Rudman, W.B., 2002a. *Sea Slug Forum: Cuthona anulata*. Available from: http://www.seaslugforum.net/showall/cuthanul (accessed 19 March 2019).

Rudman, W.B., 2002b. *Sea Slug Forum: Thorunna halourga*. Available from: http://www.seaslugforum.net/showall/thorhalo (accessed 26 April 2019).

Rudman, W.B., 2003a. *Sea Slug Forum: Phyllodesmium colemani*. Available from: http://www.seaslugforum.net/find/phylcole (accessed 13 April 2019).

Rudman, W.B., 2003b. *Sea Slug Forum: Doriopsis granulosa*. Available from: http://www.seaslugforum.net/find/dorigran (accessed 7 April 2019).

Rudman, W.B., 2003c. *Sea Slug Forum: Thuridilla albopustulosa*. Available from: http://www.seaslugforum.net/find/thuralbo (accessed 9 May 2019).

Rudman, W.B., 2003d. *Sea Slug Forum: Chromodoris kuiteri*. Available from: http://www.seaslugforum.net/factsheet/chrkuit (accessed 27 March 2019).

Rudman, W.B., 2004. *Sea Slug Forum: Smaragdinella calyculata.* Available from: http://www.seaslugforum.net/showall/smarcaly (accessed 19 April 2019).

Rudman, W.B., 2005a. *Sea Slug Forum: Thuridilla neona*. Available from: http://www.seaslugforum.net/find/thurneon (accessed 12 March 2019).

Rudman, W.B., 2005b. *Sea Slug Forum: Aegires flores*. Available from: http://www.seaslugforum.net/showall/aegiflor (accessed 26 March 2019).

Rudman, W.B., 2006. *Sea Slug Forum: Halgerda brunneomaculata*. Available from: http://www.seaslugforum.net/showall/halgbrun (accessed 12 April 2019).

Rudman, W.B., 2008. *Sea Slug Forum: Trapania vitta*. Available from: http://www.seaslugforum.net/showall/trapvitt (accessed 27 March 2019).

Sekizawa, A., Yama, R. & Nakashima, Y., 2018. Biological Differences between *Chromodoris reticulata* and *Chromodoris tinctoria* (Opisthobranchia: Nudibranchia), *Venus* 76: 45–52.

Smith, S.D.A. & Davis, T.R., 2019. Slugging it out for science: volunteers provide valuable data on the diversity and distribution of heterobranch sea slugs. *Molluscan Research* 39: 214–223.

Stoffels, B.E.M.W., Van Der Meij, S.E.T., Hoeksema, B., van Alphen, J., van Alen, T., Meyers-Muñoz, M.A., De Voogd, N.J., Tuti, Y. & van der Velde, G., 2016. Phylogenetic relationships within the Phyllidiidae (Opisthobranchia, Nudibranchia). *ZooKeys* 605: 1–35.

Thompson, T.E., 1972. Eastern Australian Dendronotoidea (Gastropoda: Opisthobranchia). *Zoological Journal of the Linnean Society* 51: 63–77.

Thompson, T.E. & Bennett, I., 1970. Observations on Australian Glaucidae (Mollusca: Opisthobranchia). *Zoological Journal of the Linnean Society* 49: 187–197.

Veron, J. & Done, T., 1979. Corals and coral communities of Lord Howe Island. *Marine and Freshwater Research* 30: 203–236.

Waters, J.M. & Roy, M.S., 2003. Marine biogeography of southern Australia: phylogeographical structure in a temperate sea-star. *Journal of Biogeography* 30: 1787–1796.

Wells, F.E. & Bryce, C.W., 1993. *Sea Slugs and Their Relatives of Western Australia*. Perth: Western Australian Museum.

Willan, R.C., 1979. New Zealand locality records for the aeolid nudibranch *Fiona pinnata* (Eschscholtz), *Tane* 25: 141–147.

Willan, R.C. & Chang, Y.-W., 2017. Description of three new species of *Tambja* (Gastropoda, Nudibranchia, Polyceridae) from the western Pacific Ocean reveals morphological characters with taxonomic and phylogenetic significance for traditional Polyceridae and related 'phaneorobranch' nudibr. *Basteria* 81: 1–23.

Wilson, L.J., Fulton, C.J., Hogg, A.M., Joyce, K.E., Radford, B.T.M. & Fraser, C.I., 2016. Climate-driven changes to ocean circulation and their inferred impacts on marine dispersal patterns. *Global Ecology and Biogeography* 25: 923–939.

Wilson, N.G. & Burghardt, I., 2015. Here be dragons — phylogeography of *Pteraeolidia ianthina* (Angas, 1864) reveals multiple species of photosynthetic nudibranchs (Aeolidina: Nudibranchia). *Zoological Journal of the Linnean Society* 175: 119–133.

WoRMS Editorial Board, 2018. World Register of Marine Species. Available from http://www.marinespecies.org/ (accessed 17 March 2019).

Yonow, N., 2008. *Sea Slugs of the Red Sea*. Sofia, Bulgaria: Pensoft Publishing.

Yonow, N., 2012. Opisthobranchs from the western Indian Ocean, with descriptions of two new species and ten new records (Mollusca, Gastropoda), *Zookeys* 129: 1–129.

Zamora-Silva, A. & Malaquias, M.A.E., 2017. Molecular phylogeny of the Aglajidae head-shield sea slugs (Heterobranchia: Cephalaspidea): new evolutionary lineages revealed and proposal of a new classification. *Zoological Journal of the Linnean Society* 183: 1–51.