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## PORT PHILLIP SURVEY 1957–1963.

### OPISTHOBRANCHIA.

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#### SUMMARY.

Eighty-eight species of Opisthobranchia are reported from Port Phillip Bay. The greatest concentration of species is in the Port Phillip Heads area south of the Nepean Bay Bar. North of the Bar, few suitable environments and dissipated currents severely restrict opisthobranch colonization.

#### INTRODUCTION.

Eighty-eight species of Opisthobranchia are reported here from the area covered by the Port Phillip Survey 1957–1963. Of these species, nineteen have been collected by the persons responsible for the Survey. However, in order to make this report as comprehensive as possible, two other sources of material have been utilized to their fullest extent.

The spirit collection of the National Museum of Victoria, Melbourne (NMV in text) contains specimens collected prior to the commencement of the Survey in 1957 and from sources other than the Survey during the years 1957–1963. This material includes nine species which were otherwise absent from this report and many locality records.

The writer's collection contains both the greatest number of species and specimens. Fifty-four species originated from this source, and most of these from Point Lonsdale where some of the best collecting grounds of the whole Victorian coastline are found. Many of the Point Lonsdale species, and a few from other localities, are new to science and have not yet been described. Wherever possible these new species have been listed under their correct genus, thus—16. *Elysia* sp. Where there is some doubt regarding the generic placement, the genus is listed with a question-mark in parenthesis, thus—21. *Hermaea* (?) sp.

The species are correspondingly numbered in both the text and Table 1 for the convenience of easy reference between the two.

Localities are recorded as Area and either place name or station number (if Port Phillip Survey material). Position of areas and stations are shown on Charts 1 and 2 (back of volume).

Chart 1 is a bathymetric chart plotted from Admiralty Chart 1171 Port Phillip with the numbered Area grid superimposed. Chart 2 shows position of the stations numbered 1—317 with the same grid super-imposed to aid in location of the stations and for correlation with depth &c. Localities in the text are shown as area number followed immediately by the station number in brackets. Table A (back of volume) records station number, date, area, method of collecting (dive or dredge) and depth in fathoms.

The classification used is basically that of Odhner (1926, 1939) except in the order Sacoglossa where that of Boettger (1963) is used with some alterations by the writer.

## SYSTEMATIC LIST OF SPECIES.

## Subclass OPISTHOBRANCHIA.

## Order CEPHALASPIDEA.

## Suborder Bullacea.

## Family BULLIDAE.

1. *Bulla botanica* Hedley.

*Bulla botanica* Hedley, 1918, *J. Roy. Soc. N.S.W.*, 51, Suppl. M. 104.

*Quibulla botanica* Iredale, 1929, *Aust. Zool.*, 5: 349, pl. 38, fig. 4.

*Bullaria botanica* Macpherson and Gabriel, 1962, *Mar. Moll. Vict.*; 242, fig. 281.

MATERIAL: Port Phillip Survey; Area 37 (40); 37 (295); 37 (297). N.M.V. coll. Rye (Area 68), 1 spec., intertidal.

REMARKS: This fairly common large species inhabits the quieter and deeper parts of the Bay where muddy sands predominate.

## Suborder Scaphandracea.

## Family ATYIDAE.

2. *Haminoea brevis* (Quoy and Gaimard).

*Bulla brevis* Quoy and Gaimard, 1832, *Voy. Astrolabe, Zool.*, 2: 358., pl. 26, fig. 36-37.

*Haminoea brevis* Macpherson and Gabriel, 1962, *Mar. Moll. Vict.*; 242, fig. 282.

MATERIAL: Port Phillip Survey; Area 55 (39); Burn coll. Rosebud, (Area 69), 100 + spec., intertidal. Off Dromana (Area 63), 2 spec., dredged 5 fathoms.

REMARKS: This species is localized to the sandy-mud flats and deeper parts of south-eastern Port Phillip Bay. It is very abundant intertidally. The animal is creamy-yellow with minute purple-brown specks in the shell mantle. A terminally orange yellow periostracum is present on nearly all Bay specimens.

3. *Haminoea tenera* (A. Adams).

*Bulla tenera* A. Adams, 1850, *Thes. Conch.*, 2: 583, pl. 124, fig. 103.

*Haminoea tenera* Macpherson and Gabriel, 1962, *Mar. Moll. Vict.*; 243, fig. 283.

MATERIAL: Burn coll.; Point Lonsdale (Area 58), 3 spec., intertidal; Portarlington, (Area 29), 20 + spec., intertidal.

REMARKS: Unlike its congener *H. brevis*, this species browses on the minute epiphytic growths on brown algae and the strapweed, *Zostera*, and on the slimy green alga, *Chaetomorpha*. The animal is dull grey or darker with orange or pale spots; the shell is hyaline and without periostracum.

## Suborder Philinacea.

## Family PHILINIDAE.

4. *Philine angasi* (Crosse and Fischer).

*Bullaea angasi* Crosse and Fischer, 1864, *J. Conchyliol.*, 13: 38, pl. 2, fig. 8.

*Philine angasi* Macpherson and Gabriel, 1962, *Mar. Moll. Vict.*; 246, fig. 286.

MATERIAL: Port Phillip Survey; Areas 5 (169); 7 (208); 9 (178-9); 11 (190); 12 (113); 13 (92); 18 (307-8); 19 (181); 23 (2); 27 (48); 31 (132); 38 (127); 39 (314); 42 (289); 61 (37); 64 (164); 6 (64; 65; 67); 26 (—); 42 ((38). N.M.V. coll.; Davy Bay

(Area 48), 3 spec., intertidal; Aspendale (Area 24), 5 spec., intertidal; Cheltenham Beach (Area 14), 2 spec., intertidal; St. Kilda (Area 7), 4 spec., intertidal; South Melbourne (Area 3), 10 + spec., intertidal; Port Melbourne (Area 2), 3 spec., intertidal; Newport (Area 2), 10 + spec., intertidal; Eastern Beach, Corio Bay (Area 37), 2 spec., intertidal; Corio Bay (Area 25), 10 + spec., dredged 3 fathoms; Seaholme (Area 5), 1 spec., intertidal; Mornington (Area 55), eggs, intertidal; Rosebud (Area 69), 4 spec., intertidal.

REMARKS: *P. angasi* is the most common species of the whole of Port Phillip Bay, occurring abundantly both intertidally and in deeper waters where sandy-mud predominates. It is of note that the species is found only in the Inner Basin, that is north of the Nepean Bay Bar. The fragile whitish shell is often found cast up upon Bay-side beaches. The animal is easily recognized by its creamy-white colour and oval shape.

#### Family DORIDIIDAE.

5.

#### *Doridium queritor* (Burn).

*Aglaia queritor* Burn, 1957, *Vict. Nat.*, **74** : 117, fig. 1.

MATERIAL: Port Phillip Survey; Area 26 (—). Burn coll.; Portarlington (Area 29); 3 spec., intertidal; Portsea Ocean Beach (Area 59), 1 spec., intertidal; Point Lonsdale (Area 58), 1 spec., intertidal.

REMARKS: This species is not particular in its habitat; it has been found crawling through sand, under stones, on brown alga and crawling through short algal growths on rock platforms. *D. queritor* is easily recognized by its uniform velvet black colour and small size.

6.

#### *Doridium taronga* (Allan).

*Aglaia taronga* Allan, 1933, *Rec. Aust. Mus.*, **18** : 444, pl. 56, fig. 1-3.

*Aglaia taronga*. Burn, 1957, *Vict. Nat.*, **74** : 117, fig. 2.

MATERIAL: Burn coll.; Swan Bay (Area 58), 1 spec., intertidal; Rosebud (Area 69), 1 spec., intertidal.

REMARKS: Found crawling through mud and sand. The body-colour is mottled brown with orange submarginal spots and a median pale stripe on the head. The species is very rare; besides the two specimens recorded above, the writer knows of only two others, respectively from New South Wales and southern Queensland.

7.

#### *Doridium cyaneum* Martens.

*Doridium cyaneum* Martens, 1880, *Monatsb. K. Akad. Wiss. Berlin*, **1879** : 738.

*Aglaia cyaneus*. Allan, 1950, *Aust. Shells*; 217, fig. 3-5.

MATERIAL: Port Phillip Survey; Area 37 (296-297).

REMARKS: The only specimen was dredged in  $1\frac{1}{4}$ —2 fathoms on sandy-mud. The species has not previously been recorded from Victoria but is rather common in New South Wales and Queensland. Probably *Aglaia troubridgensis* Verco (1909, *Trans. Roy. Soc. S. Aust.*, **33** : 276, pl. 20, fig. 4-5) from South Australia is identical with this large species. The animal is velvety-black in colour, generally with spots, blotches, lines or stipples of yellow on the dorsal surface.

Suborder **Runcinacea.**

## Family RUNCINIDAE.

8. *Ilbia ilbi* Burn.

*Ilbia ilbi* Burn, 1963, *Aust. Zool.*, **13** : 15, fig. 12-20.

MATERIAL: Burn coll.; Point Lonsdale, Area 58 2 spec., intertidal.

REMARKS: Found crawling among the green alga *Enteromorpha* and on coralline algae; very rare. This species is less than 4 mm. long in life; it has a yellow patterned purple body and no gills.

Order **Anaspidea.**

## Family APLYSIIDAE.

9. *Aplysia parvula* Mörch.

*Aplysia parvula* Mörch, 1863, *J. Conchyliol.*, **11** : 22.

*Aplysia norfolkensis* Sowerby. Allan, 1950, *Aust. Shells*; 212, fig. 3.

*Aplysia parvula*. Macpherson and Gabriel, 1962, *Mar. Moll. Vict.*; 247, fig. 288.

MATERIAL: Port Phillip Survey; Area 50 (230); N.M.V. coll.; Sorrento Back Beach, Area 66, 3 spec., intertidal; Point Lonsdale (Area 58), 10 + spec., intertidal.

REMARKS: Rather uncommon in the Bay; usually found among heavy algal growths on reefs and rocks. *A. parvula* is easily recognized by the black margins of the parapodia, tentacles and rhinophores.

10. *Aplysia sydneyensis* Sowerby.

*Aplysia sydneyensis* Sowerby, 1869, *Conch. Icon.*, 17, *Aplysia*: pl. 7, fig. 31.

*Aplysia sydneyensis*. Eales, 1960, *Bull. Brit. Mus. (N.H.)*, *Zool.*, **5** : 348, fig. 37.

*Aplysia sydneyensis*. Macpherson and Gabriel, 1962, *Mar. Moll. Vict.*; 247, fig. 289.

MATERIAL: N.M.V. coll.; Rosebud (Area 69), 2 spec., intertidal; Dromana (Area 63), 1 spec., intertidal; Melbourne (Area 2), 2 spec., intertidal; Burn coll.; Swan Bay (Area 58), 30 + spec., intertidal; Rosebud (Area 69), 2 spec., intertidal.

REMARKS: Common intertidally on *Zostera* beds during April–May–June when copulation and egg-laying take place. The living animals are up to eight inches in length and vary in colour from pale yellow to dark brown with darker veining and patches on the outer surfaces of the body. This species was identified with *A. hyalina* Sowerby 1869 in a previous paper (Burn, 1958, *J. Malac. Soc. Aust.*, **2** : 21, fig. 1).

Order **Sacoglossa.**Suborder **Juliacea.**

## Superfamily JULIOIDEA.

## Family BERTHELINIIDAE.

11. *Tamanovalva babai* Burn.

*Tamanovalva babai* Burn, 1965, *Nature*, vol. 206, No. 4985, 735–736, fig.,  
*Berthelinia typica* Burn, 1960, non Gatliff and Gabriel, 1911.

MATERIAL: Burn coll.; Portarlington (Area 29), 20 + spec., intertidal.

REMARKS: Found on the green algae, *Caulerpa sedoides*, *scalpelliformis* and *simpliciuscula*. The living slugs are uniformly green, the shells ovate-trigonal. This species has been identified (Burn, 1960, *Nature*, 187: 44) with the next species but is both specifically and generically distinct.



12. *Edenttellina typica* Gatliff and Gabriel.

*Edenttellina typica* Gatliff and Gabriel, 1911, *Proc. Roy. Soc. Vict.*, pl. 46, fig. 5-6.

MATERIAL: N.M.V. coll.; Point Lonsdale (Area 58), 20 + spec., intertidal; Burn coll.; Point Lonsdale (Area 58), 30 + spec., intertidal; Portsea Ocean Beach (Area 59), 5 spec., intertidal.

REMARKS: Found on the green alga, *Caulerpa brownii*. The animal is pale green with black lines on the shell mantles; the shell is ovate.

Suborder **Oxynoacea.**

## Superfamily OXYNOIDEA.

## Family OXYNOIDAE.

13. *Oxynoe viridis* Pease.

*Oxynoe viridis* Pease, 1861, *Proc. Zool. Soc.*; 246.

MATERIAL: Burn coll.; Point Lonsdale (Area 58), 1 spec., intertidal; Portsea Ocean Beach (Area 59), 2 spec., intertidal.

REMARKS: Found on a number of different species of the green alga, *Caulerpa*. The small opaque shell is bulla-form, the much larger long-tailed animal is green with yellow and blue spots. The tail is often cast off like that of a lizard when handled.

## Family ELYSIIDAE.

14. *Elysia furvacauda* Burn.

*Elysia furvacauda* Burn, 1958, *J. Malac. Soc. Aust.*, **2** : 22, pl. 1, fig. 1.

MATERIAL: Burn coll.; Point Lonsdale (Area 58), 1 spec., intertidal.

REMARKS: Found crawling over brown alga and stones; very rare. The animal is a dull pinkish brown colour with small blue patches.

15. *Elysia australis* (Quoy and Gaimard).

*Acteon australis* Quoy and Gaimard, 1832, *Voy. Astrolabe*, *Zool.*, **2** : 317, pl. 24, fig. 18-20.

*Elysia coodgensis* Angas, 1864, *J. Conchylol.*, **12** : 69, pl. 6, fig. 4.

MATERIAL: Burn coll.; Point Lonsdale (Area 58), 1 spec., intertidal.

REMARKS: Found on the small green alga, *Enteromorpha*. The animal is pale green in colour with black tips to the head parts and tail. This is the first record of this species from Victoria; it is very common in New South Wales.

16. *Elysia* sp.

MATERIAL: N.M.V. coll.; Mordialloc (Area 24), 2 spec., dive 2 fathoms; Mornington Jetty (Area 55), 3 spec., dive 2 fathoms.

REMARKS: Found on a species of green alga; known only from Port Phillip Bay. The animal is yellowish green in colour with black tips to the rhinophores.

## Superfamily POLYBRANCHIOIDEA.

## Family LOBIGERIDAE.

17. *Lobiger wilsoni* Tate.

*Lobiger wilsoni* Tate, 1889, *Trans. Roy. Soc. S. Aust.*, **11** : 66, pl. 11, fig. 12.

MATERIAL: Burn coll.; Portsea Ocean Beach (Area 59), 1 spec., intertidal.

REMARKS: Found on the green alga, *Caulerpa*. The yellowish shell is elongate bulla-form, the animal green, yellow and mauve with two smooth spatulate flaps on each side of the body.

## Family POLYBRANCHIDAE.

18. *Polybranchia pallens* (Burn).

*Cyerce nigra pallens* Burns, 1957, *J. Malac. Soc. Aust.*, **1** : 14, pl. 3, fig. 8-11.

*Branchophyllum pallens*. Burn, 1960, *Ibid.*, **4** : 70.

MATERIAL: Burn coll.; Queenscliff (Area 58), 7 spec., intertidal.

REMARKS: Found under stones and on the green alga, *Caulerpa brownii*. The species grows to 50 mm. in length and is pink and green on the body with brownish leaf-like cerata all round the body. Some uncertainty remains about the correct generic placement of this species.

19. *Polybranchia* sp.

MATERIAL: Burn coll.; Point Lonsdale (Area 58), 1 spec., intertidal.

REMARKS: Found crawling on brown alga. Much smaller than the above species, yellowish in colour and with pustulose cerata.

## Family HERMAEIDAE.

20. *Hermaea (Placida)* sp.

MATERIAL: Burn coll.; Point Lonsdale (Area 58), 1 spec., intertidal.

REMARKS: Found crawling on brown alga. This is an all green species with long cerata on each side of the body. The genus is a new record for Australia.

21. *Hermaea* (?) sp.

MATERIAL: Burn coll.; Point Lonsdale (Area 58), 1 spec., intertidal.

REMARKS: Found crawling on brown alga. This is a distinctive species with white body and flat red cerata.

22. *Hermaea* (?) sp.

MATERIAL: N.M.V. coll.; Two Sisters, Sorrento (Area 67), 1 spec., intertidal.

REMARKS: Found crawling on brown alga. A 50 mm. long green species with gill lamellae on the ceratal stalks.

## Superfamily STILIGEROIDEA.

## Family STILIGERIDAE.

23. *Stiliger* sp.

MATERIAL: N.M.V. coll.; Rosebud Pier (Area 69), 2 spec., on *Zostera*; Burn coll.; Point Lonsdale (Area 58), 100 + spec., intertidal.

REMARKS: Point Lonsdale specimens feed on a small *Enteromorpha*-like green alga growing on the shore-platform; Rosebud specimens feed on epiphytic algal growths on the *Zostera*. This species is very common annually at Point Lonsdale during the months of July to September. In an area of 50 yards by 20 yards of the shore-platform, the density of specimens per square yard varied from twelve to 50, the minimum number of specimens thus being 12,000 (date of count, 13 August 1961). Yet prior to 1961, the species had not been observed in Victoria.

Order **Notaspidae**.

Suborder **Umbraculacea**.

Family TYLODINIDAE.

24. *Tylodina corticalis* (Tate).

*Umbrella corticalis* Tate, 1889, *Trans. Roy. Soc. Aust.*, **11** : 65, pl. 11, fig. 11.

*Tylodina corticalis*. Burn, 1960, *J. Malac. Soc. Aust.*, **4** : 64, fig. 1-9.

MATERIAL: N.M.V. coll.; Portsea Ocean Beach (Area 59), 1 spec., intertidal.

REMARKS: Found on alga at low tide level; the type locality is South Channel, Port Phillip Bay, 7-16 fathoms, on sand and weed. The living animal is bright yellow. The shell is fragile and covered in life by a thick ribbed periostracum.

Suborder **Pleurobranchacea**.

Family PLEUROBRANCHIDAE.

25. *Oscanius hilli* Hedley.

*Oscanius hilli* Hedley 1896, *Proc. Linn. Soc. N.S.W.*, **19** : 127, pl. 7.

MATERIAL: N.M.V. coll.; Portsea Pier (Area 59), 1 spec., shallow water.

REMARKS: In shallow water and dredged among *Zostera*. This is the first record of this large plum-coloured species from Port Phillip Bay. There is no shell in this species.

26. *Berthella mediatas* Burn.

*Berthella mediatas* Burn, 1962, *Mem. Nat. Mus. Melb.*, **25** : 142, pl. 2, fig. 7-8.

MATERIAL: Burn coll.; Portarlington (Area 29), 13 spec., intertidal; Point Lonsdale (Area 58), 2 spec., intertidal.

REMARKS: Generally found in numbers under stones. The animal is palest yellow in colour and has an internal shell of nearly 12 mm. length.

Family PLEUROBRANCHAEIDAE.

27. *Pleurobranchaea maculata* (Quoy and Gaimard).

*Pleurobranchidium maculatus* Quoy and Gaimard, 1832, *Voy. Astrolabe, Zool.*, **2** : 301, pl. 31, fig. 11-14.

*Pleurobranchaea maculatus*. Allan, 1950, *Aust. Shells*; 208, fig. 1.

MATERIAL: Port Phillip Survey; Areas 11 (—); 13 (92). N.M.V. coll.; Mordialloc (Area 24), 3 spec., intertidal; Portsea Pier (Area 59), 3 spec., shallow water; Sorrento Ocean Beach (Area 66), 1 spec., intertidal.

REMARKS: Inhabits sandy-rocky positions within a fast flow of water. The species is a voracious predator of smaller shell-less opisthobranchs.

Order **Nudibranchia.**Suborder **Doridacea.**

## Section Eudorididacea.

## Tribe Cryptobranchia.

## Family DORIDIDAE.

28. *Chromodoris alternata* (Burn).

*Glossodoris alternata* Burn, 1957, *J. Malac. Soc. Aust.*, **1**: 17, pl. 1, fig. 10-11.

MATERIAL: Burn coll.; Portarlington (Area 29), 10 spec., intertidal; Point Lonsdale (Area 58), 1 spec., intertidal.

REMARKS: Found both under stones and crawling on weed. The middle part of the back is red, the marginal area is alternately white and blue.

29. *Chromodoris haliclona* (Burn).

*Glossodoris haliclona* Burn, 1957, *Ibid.*; 17, pl. 3, fig. 2.

MATERIAL: N.M.V. coll.; Seaholme (Area 5), 10 spec., intertidal; Burn coll.; Portarlington (Area 29), 7 spec., intertidal.

REMARKS: Found living on and in association with the pink encrusting sponge, *Haliclona*. The animal is identical in colour with the sponge except for a marginal series of white patches.

30. *Chromodoris perplexa* (Burn).

*Glossodoris perplexa* Burn, 1957, *Ibid.*; 17, pl. 3, fig. 1.

MATERIAL: Burn coll.; Point Lonsdale (Area 58), 1 spec., intertidal.

REMARKS: Found both under stones and crawling on weed. The slender body is white with a purple dorsal margin and orange spots on the sides and back.

31. *Chromodoris tasmaniensis* Bergh.

*Chromodoris tasmaniensis* Bergh, 1904, *Malac. Unters.*, **6** (2): 69, pl. 5, fig. 12-15.

*Glossodoris tasmaniensis*. Burn, 1957, *J. Malac. Soc. Aust.*, **1**: 17, pl. 2, fig. 10.

MATERIAL: Burn coll.; Point Lonsdale (Area 58), 1 spec., intertidal.

REMARKS: Found both under stones and crawling on weed. This species has a creamy-white body with a double row of red spots on the dorsal margin and red spots on the sides and back. Large specimens attain 50 mm. in length.

32. *Chromodoris victoriae* (Burn).

*Glossodoris victoriae* Burn, 1957, *Ibid.*; 16, pl. 3, fig. 4.

MATERIAL: Burn coll.; Portarlington (Area 29), 2 spec., intertidal.

REMARKS: Found both under stones and crawling on weed. The body is white with a single row of red spots around the back and pale blue lines on the middle-part of the back. Large specimens grow to 30 mm. in length.



33. *Chromodoris* sp.

MATERIAL: Burn coll.; Point Lonsdale (Area 58), 1 spec., intertidal.

REMARKS: Found both under stones and crawling on weed. This species is similar to *C. perplexa* (Burn) except that the dorsal margin has a double row of purple spots.

34. *Hypselodoris* sp.

MATERIAL: Burn coll.; Point Lonsdale (Area 58), 1 spec., intertidal.

REMARKS: Found crawling on weed. This species is pure white except for a yellow margin to the back and foot.

35. *Noumea* sp.

MATERIAL: N.M.V. coll.; Portsea Pier (Area 59), 3 spec., intertidal; Burn coll.; Point Lonsdale (Area 58), 2 spec., intertidal.

REMARKS: Found crawling on weed. The animal grows to 10 mm. in length and is pale pink in colour with red or orange spots on the back.

36. *Hallaxa indecora* (Bergh).

*Halla indecora* Bergh, 1905, *Siboga-Exped.*, 50 : 116, pl. 15, fig. 3-6.

MATERIAL: Burn coll.; Point Lonsdale (Area 58), 1 spec., intertidal.

REMARKS: Found both under stones and crawling on weed. A velvety appearance, a sinuate anterior edge of the foot and pale yellow or orange colouration distinguish this species.

37. *Rostanga arbusta* (Angas).

*Doris arbutus* angas 1864, *J. Conchylol.*, 12 : 47, pl. 4, fig. 4.

MATERIAL: Port Phillip Survey; Area 59 (213); Burn coll.; South Channel (near Hovell Light) (Area 60), 1 spec., dredged 8 fathoms.

REMARKS: Found under and crawling over stones; dredged. The animal is easily recognized by its bright red colour. In deeper water, the species associates with and lives on an orange sponge.

38. *Ceratosoma brevicaudatum* Abraham.

*Ceratosoma brevicaudatum* Abraham, 1876, *Ann. Mag. Nat. Hist.*, (4), 18 : 142, pl. 8, fig. 6.

*Ceratosoma brevicaudatum*. Allan, 1950, *Aust. Shells*; 222, pl. 28, fig. 14.

MATERIAL: Port Phillip Survey: Areas 5 (53); 26 (—); 27 (138); 40 (101); 42 (38); 55 (39); 61 (37). N.M.V. coll.; Davy Bay (Area 55), 1 spec., intertidal; Mordialloc Area 24), 2 spec., intertidal; Cheltenham (Area 14), 10 + spec., intertidal; Hobson's Bay (Area 2), 1 spec., intertidal; Burn coll.; Portarlington (Area 29), 12 spec., intertidal; Queenscliff (Area 58), 1 spec., intertidal; Point Lonsdale (Area 58), 2 spec., intertidal.

REMARKS: Found under stones and crawling about rock pools. It is one of the largest Victorian species, growing to 150 mm. in length. The body is high and slender, bright pink in colour with blue, green and red spots. The short tail of the back is purple-brown. This is the dominant nudibranch of the Victorian coastline (Burn, 1961, *Vict. Nat.*, 77 : 316).

39. *Austrodoris peculiaris* (Abraham).

*Doris peculiaris* Abraham, 1877, *Proc. Zool. Soc.*; 211, pl. 29, fig. 15–17.

MATERIAL: Port Phillip Survey; Areas 12 (196), 27 (48), 58 (88); N.M.V. coll.; Mornington (Area 55), 1 spec., intertidal; Rickett's Point (Area 23), 1 spec., intertidal; Point Lonsdale (Area 58), 1 spec., intertidal; Burn coll.; Queenscliff (Area 58), 6 spec., intertidal; Point Lonsdale (Area 58), 3 spec., intertidal.

REMARKS: Found both under stones and crawling on weed. This is a dull yellow species with numerous capstan-like papillae all over the back. Large specimens grow to 30 mm. in length and are very convex.

40. *Neodoris chrysoderma* (Angas).

*Doris chrysoderma* Angas, 1864, *J. Conchyliol.*, **12** : 46, pl. 4, fig. 3.

*Praegliscita chrysoderma*. Burn, 1957, *J. Malac. Soc. Aust.*, **1** : 19, pl. 1, fig. 1–5.

MATERIAL: Burn coll.; Queenscliff (Area 58), 1 spec., intertidal.

REMARKS: Found both under stones and crawling on weed. This species is bright yellow with a number of large white pustules on the back. It grows to 40 mm. in length. The genus *Praegliscita* (Burn, 1957) is identical with the genus *Neodoris* (Baba, 1938) from Japan and South America.

41. *Alloiiodoris nivosus* Burn.

*Alloiiodoris nivosus* Burn, 1958, *Ibid.*, **2** : 29, pl. 2, fig. 14.

*Alloiiodoris marmorata*. Basedow and Hedley, 1905, *Trans. Roy. Soc. S. Aust.*, **29** : 152, pl. 8, fig. 1–2.

MATERIAL: Port Phillip Survey; Areas 12 (196), 18 (61), 26 (—), 36 (—); Burn coll.; Portarlington (Area 29), 5 spec., intertidal.

REMARKS: Found under stones intertidally and in sponges in deeper water. The animal is either grey or white with dark grey and brown rosettes on the back. Brown spots pattern the underside.

42. *Doris pustulata* Abraham.

*Doris pustulata* Abraham, 1877, *Proc. Zool. Soc.*; 256, pl. 29, fig. 18–19.

*Staurodoris pustulata*. Allan, 1947, *Rec. Aust. Mus.*, **21** : 446, pl. 42, fig. 1–2.

MATERIAL: N.M.V. coll.; Portsea Pier (Area 59), 1 spec., shallow water.

REMARKS: Found under stones. This is an orange-yellow species with numerous large high pustules all over the back. It is a much flatter species than *Austrodoris peculiaris*.

43. *Trippa albata* Burn.

*Trippa albata* Burn, 1962, *Mem. nat. Mus. Melb.*, **25** : 101, fig. 5.

MATERIAL: Port Phillip Survey; Areas 10 (11); Burn coll.; Point Lonsdale (Area 58), 2 spec., intertidal.

REMARKS: Found both under stones and crawling on weed; dredged. This is a 10 mm. long pure white species with a furry back. Only five specimens are known, three from Port Phillip and two from Westernport.

44. *Thordisa sabulosa* Burn.

*Thordisa sabulosa* Burn, 1957, *J. Malac. Soc. Aust.*, **1** : 20, pl. I, fig. 6-9.

MATERIAL: Burn coll.; Queenscliff (Area 58), 1 spec., intertidal.

REMARKS: Found under stones and crawling on weed. The animal is dark yellow with numerous spike-like papillae on the back; brown spots mark the underside. This is a rare species.

46. *Kentrodoris* (?) sp.

MATERIAL: N.M.V. coll.; Point Lonsdale (Area 58), 2 spec., intertidal; Burn coll.; Point Lonsdale (Area 58), 1 spec., intertidal.

REMARKS: Found crawling on weed in tide pool. This species is creamy-white with dark brown spots scattered over the back.

47. *Doris* (?) sp.

MATERIAL: Burn coll.; Point Lonsdale (Area 58), 1 spec., intertidal.

REMARKS: Found crawling on weed in tide channel. This is a dusky-yellow flat species with faint reticulate patterning on the back.

## Section Porostomata.

## Family DENDRODORIDIDAE.

48. *Dendrodoris nigra* (Stimpson).

*Doris nigra* Stimpson, 1855, *Proc. Acad. Nat. Sci. Philad.*, **7** : 380.

*Dendrodoris nigra*. Allan, 1947, *Rec. Aust. Mus.*, **21** : 458.

MATERIAL: Port Phillip Survey; Area 42 (38); N.M.V. coll.; Altona (Area 5), 1 spec., intertidal; Burn coll.; Portarlington (Area 29), 2 spec., intertidal

REMARKS: Found under stones. This handsome velvet-black species often has a narrow carmine margin to the back and foot; it grows to 50 mm. in length.

49. *Dendrodoris vadisi* Burn.

*Dendrodoris vadisi* Burn, 1962 *Mem. nat. Mus. Melb.*, **25** : 166.

MATERIAL: Burn coll.; Portarlington (Area 29), 10 spec., intertidal.

REMARKS: Found under stones. This is a greenish-yellow species with low wart-like postules all over the back; it grows to 10 mm. in length.

50. *Doriopsisilla aurea* (Quoy and Gaimard).

*Doris aurea* Quoy and Gaimard, 1832, *Voy. Astrolabe, Zool.*, **2** : 265, pl. 19, fig. 4-7.

*Doriopsis aurea*. Basedow and Hedley, 1905, *Trans. Roy. Soc. S. Aust.*; **29** : 157, pl. 7, fig. 4.

MATERIAL: Port Phillip Survey; Areas 30 (—), 59 (36); Burn coll.; Portarlington (Area 29), 4 spec., intertidal.

REMARKS: Found under stones. This species is wholly orange or shades thereof with white punctae on the back. It is somewhat larger (50 mm. long) and smoother than either of the next two species.

51. *Doriopsilla carneola* (Angas).

*Doris carneola* Angas, 1864, *J. Conchylol.*, **12** : 48, pl. 4, fig. 7.

*Doriopsis carneola*. Basedow and Hedley, 1905, *Trans. Roy. Soc. S. Aust.*, **29** : 157, pl. 6, fig. 1-2.

MATERIAL: Port Phillip Survey; Areas 11 (—), 42 (38), 13 (—); N.M.V. coll.; Altona, (Area 5), 3 spec., intertidal; Drysdale (Area 40), 2 spec., intertidal; Mount Eliza (Area 47), 2 spec., intertidal. Burn coll.; Portarlington (Area 29), 3 spec., intertidal; Queenscliff (Area 58), 1 spec., intertidal.

REMARKS: Found under stones. The back of *D. carneola* is reddish brown often with white punctae and the sole of the foot is yellow or white. The back is finely granulate.

52. *Doriopsilla staminea* (Basedow and Hedley).

*Archidoris staminea* Basedow and Hedley, 1905, *Ibid.*, **29** : 151, pl. 6, fig. 3-4.

MATERIAL: Port Phillip Survey; Areas 56 (295), 37 (296-7), 36 (—); N.M.V. coll.; Seaholme (Area 5), 1 spec., intertidal; Burn coll.; Portarlington (Area 29), 5 spec., intertidal.

REMARKS: Found under stones and dredged. This species is wholly yellow or white with numerous large granulations on the back.

Tribe Phanerobranchia.

Superfamily NONSUCTORIA.

Family POLYCERIDAE.

53. *Crimora multidigitalis* (Burn).

*Euphurus multidigitalis* Burn, 1957, *J. Malac. Soc. Aust.*, **1** : 15, pl. 2, fig. 1-6.

MATERIAL: Burn coll.; Point Lonsdale (Area 58), 6 spec., intertidal.

REMARKS: Found under stones and crawling on weed. This little yellow species has a fringe of very short branching black papillae around the back. An examination of the radula indicates that this species should be placed in *Crimora* (Alder and Hancock, 1862). The teeth are shaped as usual in this genus, the formula being  $38 \times 10-8.6-7 \ 2.0 \ 2.6-7.10-8$ .

54. *Polycera parvula* (Burn).

*Palio parvula* Burn, 1958, *Ibid.*, **2** : 23, pl. 1, fig. 2-3.

MATERIAL: N.M.V. coll.; Point Lonsdale (Area 58), 1 spec. intertidal.

REMARKS: Found both under stones and crawling on weed. This species is blood-red in colour and not more than 10 mm. long.

55. *Polycera janjukia* Burn.

*Polycera janjukia* Burn, 1962, *Mem. Nat. Mus. Melb.*, **25** : 99, fig. 31-4.

MATERIAL: N.M.V. coll.; Point Lonsdale (Area 58), 1 spec., intertidal; Burn coll.; Point Lonsdale (Area 58), 1 spec., intertidal.

REMARKS: Found under stones and crawling on weed. This species is smaller than the last, bright pink in colour with yellow spots on the sides and back.

56. *Tambja verconis* (Basedow and Hedley).

*Nembrotha* (?) *verconis* Basedow and Hedley, 1905, *Trans. Roy. Soc. S. Aust.*,  
**29** : 158, pl. 2, fig. 1-2.

MATERIAL: Port Phillip Survey; Area 61 (37).

REMARKS: Taken by skin-divers in 2 fathoms (above specimen) and dredged to 20 fathoms. *T. verconis* is a large 60-70 mm. long primrose coloured species with blue edgings to the foot and head.

## Superfamily SUCTORIA.

## Family GONIODORIDIDAE.

57. *Okenia* sp.

MATERIAL: Burn coll.; Point Lonsdale (Area 58), 1 spec., intertidal.

REMARKS: Found crawling on brown alga. A very small species, at most 4.5 mm. in length, with elongate papillae on the edges and in the middle of the back; colour pale brown.

58. *Eucrairia mapae* (Burn).

*Drepaniella mapae* Burn, 1961, *Veliger*, **3** : 102, fig. 1-2.

MATERIAL: Burn coll.; Point Lonsdale (Area 58), 2 spec., intertidal.

REMARKS: Found crawling on weed. *E. mapae* is a little brown and white species with a pair of bifid horns on the head and a pair of elongate papilla beside the gills.

59. *Goniodoris meraculus* Burn.

*Goniodoris meraculus* Burn, 1958, *J. Malac. Soc. Aust.*, **2** : 27, pl. 2, fig. 10-11.

MATERIAL: N.M.V. coll.; Portsea Pier (Area 59), 1 spec., shallow water.

REMARKS: Found both under stones and crawling on weed. This pale fawn species has a narrow upstanding rim all around the back.

## Suborder Arminacea.

## Section Metarminacea.

## Tribe Pachygnatha.

## Family MADRELLIDAE.

60. *Madrella sanguinea* (Angas).

*Janus sanguineus* Angas, 1864, *J. Conchylol.*, **12** : 63, pl. 6, fig. 5.

MATERIAL: Burn coll.; Point Lonsdale (Area 58), 1 spec., intertidal; Portarlington (Area 29), 2 spec., intertidal.

REMARKS: Found crawling on rocks and weed in tide pools; *M. sanguinea* lives on a bright red Bryozoan that is common beneath stones in the lower intertidal zone. When picked up or irritated, specimens discharge a red staining fluid from the fringe of cerata around the back.

## Family ANTIOPELLIDAE.

61. *Antiopella* sp.

MATERIAL: Burn coll.; Point Lonsdale (Area 58), 1 spec., intertidal.

REMARKS: Found both under stones and crawling on weed. This new species has smooth cerata pigmented with various hues of blue, orange and yellow.



62. *Janolus* sp.

MATERIAL: Burn coll., Point Lonsdale (Area 58), 1 spec., intertidal.

REMARKS: Found both under stones and crawling on weed. This species is rather like *Antiopella* sp. in shape but the cerata are rugose and the body brown.

63. *Proctonotus affinis* Burn.

*Proctonotus affinis* Burn, 1958, *J. Malac. Soc. Aust.*, **2**: 32, pl. 2, fig. 15.

MATERIAL: Burn coll.; Point Lonsdale (Area 58), 3 spec., intertidal.

REMARKS: Found both under stones and crawling on weed; fairly common. Like the preceding two species in shape but pale brown, orange and yellow in colour.

Suborder **Dendronotacea.**

## Family TRITONIIDAE.

64. *Paratritonia lutea* Baba.

*Paratritonia lutea* Baba, 1949, *Opisthobranchia of Sagami Bay*: 166, pl. 34, fig. 123.

MATERIAL: Port Phillip Survey; Area 61 (37)

REMARKS: Skin-divers collected the only specimen taken, living on the gorgonian coral, *Mopsella*, in 2 fathoms. The species is pink and has branched gills along each side of the body. *P. lutea* was originally described from Japan.

65. *Tritonia* (?) sp.

MATERIAL: Burn coll.; Point Lonsdale (Area 58), 5 spec., intertidal.

REMARKS: Found crawling on weed in a tide pool. Similar in shape to the above species but smaller and mauve with silver patterning.

66. *Tritonia* (?) sp.

MATERIAL: Burn coll.; Point Lonsdale (Area 58), 4 spec., intertidal.

REMARKS: Found crawling on weed in a tide pool. This is larger than the above species and bright red and yellow in colour.

## Family TETHYIDAE.

67. *Melibe australis* (Angas).

*Melibaea australis* Angas 1864, *J. Conchylol.*, **12**: 62, pl. 6, fig. 2.

*Melibe australis*. Allan, 1947, *Rec. Aust. Mus.*, **47**: 459, pl. 43, fig. 8-9.

*Melibe australis*. Burn, 1957, *J. Malac. Soc. Aust.*, **1**: 23, pl. 1, fig. 12.

MATERIAL: Burn coll.; Queenscliff (Area 58), 10 spec., intertidal; Point Lonsdale (Area 58), 1 spec., intertidal.

REMARKS: Found both under stones and crawling on weed. *M. australis* is a creamy-white species with a bell-like mouth and four pairs of bulbous cerata along the back.

68.

*Melibe maugeana* Burn.*Melibe maugeana* Burn, 1960, *J. Malac. Soc. Aust.*, **4** : 70.*Melibe pellucida* Burn, 1957, *Ibid.*, **1** : 24, pl. 3, fig. 5-7, (non Bergh 1902).

MATERIAL: Burn coll.; Point Lonsdale (Area 58), 1 spec., intertidal.

REMARKS: Found both under stones and crawling on weed. Similar to the above species in shape but with six pairs of fusiform cerata along the back. This species swims with a peculiar head-to-tail sideways movement.

## Family DOTONIDAE.

69.

*Doto ostenta* Burn.*Doto ostenta* Burn, 1958, *J. Malac. Soc. Aust.*, **2** : 33, pl. 1, fig. 5.

MATERIAL: Burn coll.; Point Lonsdale (Area 58), 2 spec., intertidal.

REMARKS: Found under stones and crawling on weed. Somewhat like the preceding two species but without the bell-like mouth. There are seven pairs of pink to grey to brown cerata along the back.

70.

*Doto* sp.

MATERIAL: Burn coll.; Point Lonsdale (Area 58), 1 spec., intertidal.

REMARKS: Found crawling on weed in tide pool. Similar in shape to the above species but smaller and with only four pairs of fawn cerata along the back.

## Suborder Eolidacea.

## Tribe Pleuroprocta.

## Family CORYPHELLIDAE.

71.

*Coryphella* sp.

MATERIAL: Port Phillip Survey; Area 31 (—); Burn coll.; Point Lonsdale (Area 58), 1 spec., intertidal.

REMARKS: Respectively the two specimens were collected by skin divers and found crawling on weed in a tide pool. This new species has a pale mauve body and small orange cerata.

72.

*Coryphellina peonicia* (Burn).*Hervia poenicia* Burn, 1957, *J. Malac. Soc. Aust.*, **1** : 25, pl. 2, fig. 7-10.*Coryphellina poenicia*. Burn, 1962, *Mem. Nat. Mus. Melb.*, **25** : 107, fig. 9-10.

MATERIAL: Burn coll.; Portarlington (Area 29), 18 spec., intertidal; Point Lonsdale, (Area 58), 1 spec., intertidal.

REMARKS: Found both under stones and crawling on weed. This species has a slender white body and elongate red cerata.

## Tribe Acleioprocta.

## Family EUBRANCHIDAE.

73.

*Eubranchus rubeolus* Burn.*Eubranchus rubeolus* Burn, 1964, *J. Malac. Soc. Aust.*, **8** : 13, fig. 6-10.

MATERIAL: Burn coll.; Point Lonsdale (Area 58), 1 spec. intertidal.

REMARKS: Found crawling on weed in tide pool. *E. rubeolus* is a small species with large blood-red patches along the sides and back and blood-red cerata.

74. *Capellinia* sp.

MATERIAL: Burn coll.; Point Lonsdale (Area 58), 1 spec. intertidal.

REMARKS: Found crawling on weed in tide pool. This is a very small species which grows to no more than 5 mm. in length. It is brown in colour with knobbed cerata.

## Family CUTHONIDAE.

75. *Trinchesia viridiana* (Burn).

*Catriona viridiana* Burn, 1962, *Mem. nat. Mus. Melb.*, **25** : 111, fig. 13.

*Trinchesia viridiana*. Burn, 1963, *J. Malac. Soc. Aust.*, **7** : 17, fig. 7-10.

MATERIAL: Burn coll.; Point Lonsdale (Area 58), 1 spec. intertidal.

REMARKS: Found both under stones and crawling on weed. This little species has a greenish yellow and dark green cerata.

76. *Trinchesia catachroma* (Burn).

*Catriona catachroma* Burn, 1963, *Ibid.*, **7** : 15, fig. 1-6.

MATERIAL: Burn coll.; Point Lonsdale (Area 58), 3 spec., intertidal.

REMARKS: Found crawling on weed in tide pools. *T. catachroma* is a small slender pinkish cream species with yellow-banded grey cerata.

77. *Trinchesia sororum* Burn.

*Trinchesia sororum* Burn, 1964, *Ibid.*, **8** : 17, fig. 11-15.

MATERIAL: Burn coll.; Point Lonsdale (Area 58), 1 spec. intertidal.

REMARKS: Found crawling on weed in a tide pool. This is a small white species with purple bands on the tentacles and rhinophores, and maroon cerata.

78. *Toorna thelmae* Burn.

*Toorna thelmae* Burn, 1964, *Ibid.*, **8** : 19, fig. 16-21.

MATERIAL: Burn coll.; Point Lonsdale (Area 58), 1 spec. intertidal.

REMARKS: Found crawling on weed in a tide pool. This species has a pale pink and white body with yellow-banded orange cerata.

79. *Tergipes pauculas* Burn.

*Tergipes pauculas* Burn, 1962, *Mem. nat. Mus. Melb.*, **25** : 113, fig. 14.

MATERIAL: Burn coll.; Portarlinton (Area 29), 1 spec., intertidal.

REMARKS: Found on weed under a stone; a unique specimen. *T. pauculas* is a pale orange 5 mm. long species with only three cerata along each side of the back.

## Tribe Cleioprocta.

## Family FACELINIDAE.

80. *Facelina newcombi* (Angas).*Flabellina newcombi* Angas, 1864, *J. Conchylol.*, **12** : 68, pl. 6, fig. 8.*Facelina newcombi*. Burn, 1962, *Mem. nat. Mus. Melb.*, **25** : 114, figs. 15-16.

MATERIAL: Burn coll.; Point Lonsdale (Area 58), 2 spec., intertidal; Portarlington (Area 29), 1 spec., intertidal.

REMARKS: Found both under stones and crawling on weed. This species has an elongate orange-yellow body with numerous brown cerata along the sides.

81. *Facelina hartleyi* Burn.*Facelina hartleyi* Burn, 1962, *Ibid.*, **25** : 116, fig. 17.

MATERIAL: Burn coll.; Point Lonsdale (Area 58), 2 spec., intertidal.

REMARKS: Found both under stones and crawling on weed. Similar in shape to the preceding species but much smaller, with a white body and red cerata.

82. *Facelina* sp.

MATERIAL: Burn coll.; Point Lonsdale (Area 58), 2 spec., intertidal.

REMARKS: Found crawling on weed in a tide pool. This species has a bright pink body and yellow and white banded pink cerata.

83. *Palisa* sp.

MATERIAL: Burn coll.; Point Lonsdale (Area 58), 1 spec., intertidal.

REMARKS: Found crawling on weed in a tide pool. This new species is uniformly opaque white except for a silver tracery on the body and cerata.

## Family FAVORINIDAE.

84. *Cratena serrata* (Baba).*Hervia serrata* Baba, 1949, *Opisthobranchia of Sagami Bay*; 179, pl. 46, fig. 156-157.*Cratena serrata*. Burn, 1962, *Mem. nat. Mus. Melb.*, **25** : 119.

MATERIAL: Burn coll.; Point Lonsdale (Area 58), 5 spec., intertidal.

REMARKS: Found both under stones and crawling on weed. *C. serrata* has a white body and slender flesh-pink cerata. The species was originally described from Japan.85. *Austreaolis ornata* (Angas).*Flabellina ornata* Angas, 1864, *J. Conchylol.*, **12** : 67, pl. 6, fig. 7.*Flabellina ornata* Allan, 1950, *Aust. Shells*; 224, pl. 28, fig. 1.*Flabellina ornata* Dakin, Bennett and Pope, 1952, *Aust. Seashores*; 270, pl. 62.*Austreaolis ornata* Burn, 1962, *Mem. nat. Mus. Melb.*, **25** : 121, fig. 21-22.

MATERIAL: Burn coll.; Point Lonsdale (Area 58), 1 spec., intertidal.

REMARKS: Found both under stones and crawling on weed; this is the commonest Eolid species of eastern Australia. *A. ornata* is a large species of up to 35 mm. length with an orange and blue body and dark brown cerata variously spotted with blue, yellow, green, red, orange and brown.

86.

*Austracolis fucia* Burn.*Austracolis fucia* Burn, 1962, *Mem. Nat. Mus. Melb.*, **25** : 122, fig. 23-24.

MATERIAL: Burn coll.; Queenscliff (Area 58), 1 spec., intertidal.

REMARKS: Found crawling on weed in tide channel; unique. Like the above species in shape but with a white body and red cerata.

87.

*Echinopsole breviceratae* Burn.*Echinopsole breviceratae* Burn, 1962, *Ibid.*, **25** : 124, fig. 25-26.

MATERIAL: Burn coll.; Point Lonsdale (Area 58), 1 spec., intertidal.

REMARKS: Found both under stones and crawling on weed. This species has a bright pink body with three rows of red spots along each side and short yellowish cerata.

## Family AEOLIDIIDAE.

88.

*Aeolidiella macleayi* (Angas).*Eolis macleayi* Angas, 1864, *J. Conchylol.*, **12** : 65, pl. 6, fig. 4.*Aeolidiella macleayi*. Burn, 1962, *Mem. Nat. Mus. Melb.*, **25** : 127.

MATERIAL: N.M.V. coll.; Mount Eliza (Area 47), 1 spec., intertidal.

REMARKS: Found both under stones and crawling on weed. This is a dull green and orange species with yellow maculated cerata.

## DISTRIBUTION.

Eighty-eight species of Opisthobranchia occur within the confined area of Port Phillip Bay. The species can be divided into three groups according to their habitat; (i) five species (5.7 per cent.) are confined to sand and mud areas where they burrow through the soft substratum; *Bulla botanica*, *Haminoea brevis*, *Philine angasi*, *Doridium taronga* and *D. cyaneum*; (ii) three species (3.4 per cent.) live on or among *Zostera* beds; *Haminoea tenera*, *Aplysia sydneyensis* and *Oscanius hilli*; and (iii) 80 species (90.9 per cent.) depend upon a rock substratum either upon which to live and breed or to find the algal and epiphytic growths on which to feed.

The first group lives in the Inner Basin (Kebble, 1946: 72, fig. 2, 6), a large area with a sand and mud bottom and weak sea currents. This expanse of the same habitat at once explains the occurrence of the species in both shallow and deeper waters.

The alga *Zostera* prefers a somewhat sandy position if it is to thrive, therefore its occurrence is rather limited in Port Phillip Bay. Consequently the species of the second group have restricted habitats and with the exception of *Aplysia sydneyensis* are rarely found alive.

The third and by far the largest group of species contains three assemblages, defined both by their known distribution and the physiography of Port Phillip Bay. Assemblage (i) is a large group of 58 species confined to the coastlines of Point Nepean to Sorrento and Point Lonsdale to



Queenscliff, and the intermediate insular South Channel Fort. This coastline is compatible with that part of the Bay south of the Nepean Bay Bar (Keble, loc. cit.). Rocky localities abound where species can colonize and survive.

Assemblage (ii) is governed by a sharp decrease in suitable rocky environments to the north and west of the Nepean Bay Bar. Where they do occur, quite strong colonies of species exist. Thus from the localities of Mount Martha to Frankston and Indented Head and Portarlington, 24 species are listed. Two of these, *Elysia* sp. from Mornington and Mordialloc and *Tergipes pauculus* from Portarlington are at present unique to Port Phillip Bay.

Assemblage (iii) is confined to the isolated rocky environments of the inner reaches of the Bay such as occur at Ricketts Point, Altona and Limeburners Point. Seven species are listed from these localities but all occur elsewhere in the Bay also.

It is presumed that the strong tidal currents entering Port Phillip through the Heads disperse widely and lose speed as they precipitate over the Nepean Bay Bar. Consequently, unless the free-swimming larvae or veliger stages of the opisthobranch species transported by these currents find a suitable rocky substratum upon which to settle, their chances of survival are negligible upon the muddy bottom of the Inner Basin. It would also seem that the species living in the inner reaches of the Inner Basin have either a better chance of survival by means of a longer veliger stage or have established themselves in colonies over successive generations by a progressive south to north movement.

Zoogeographically, the species of Port Phillip are compatible with the large cool-temperate eurythermal subfauna of south-eastern Australia (Burn, 1965: in press). An admixture of species of the small cool-temperate stenothermal subfauna of western Victoria and eastern South Australia also prevails but to what extent cannot yet be assessed.

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TABLE 1.—LOCALITIES OF OPISTHOBRANCH SPECIES IN PORT PHILIP BAY.

S Material collected during Port Phillip Survey. M Material in National Museum of Victoria. B Material in collection of the writer.

Species.	Localities.												
	Barwon Heads (Area 6).	Sorrento and Portsea Ocean Beaches (Area 66).	Portsea Pier (Area 59).	Two Sisters, Sorrento (Area 67).	Point Lonsdale (Area 58).	Queenscliffe (Area 58).	South Channel Port (Area 61).	Swan Bay (Areas 50, 58).	Rye (Area 68).	Keshbud (Area 69).	Dromana (Area 63).	Martha Cliff (Area 63-64).	Mornington (Area 55).
1. <i>Bulla botanica</i> ..	..	..	..	..	..	..	..	..	..	..	..	..	..
2. <i>Haminoea brevis</i> ..	..	..	..	..	..	..	..	..	..	..	..	..	..
3. " <i>tenera</i> ..	..	..	..	..	..	..	..	..	..	..	..	..	..
4. <i>Philine angasi</i> ..	..	..	..	..	..	..	..	..	..	..	..	..	..
5. <i>Doridium queritor</i> ..	..	..	..	..	..	..	..	..	..	..	..	..	..
6. " <i>taronga</i> ..	..	..	..	..	..	..	..	..	..	..	..	..	..
7. " <i>cyaneum</i> ..	..	..	..	..	..	..	..	..	..	..	..	..	..
8. <i>Irbia ilbi</i> ..	..	..	..	..	..	..	..	..	..	..	..	..	..
9. <i>Aplysia parvula</i> ..	..	..	..	..	..	..	..	..	..	..	..	..	..
10. " <i>sydneyensis</i> ..	..	..	..	..	..	..	..	..	..	..	..	..	..
11. <i>Tanmanovadva babai</i> ..	..	..	..	..	..	..	..	..	..	..	..	..	..
12. <i>Edentellina typica</i> ..	..	..	..	..	..	..	..	..	..	..	..	..	..
13. <i>Oxynoe viridis</i> ..	..	..	..	..	..	..	..	..	..	..	..	..	..

Localities.

Barwon Heads (Area 6).  
 Sorrento and Portsea Ocean Beaches (Area 66).  
 Portsea Pier (Area 59).  
 Two Sisters, Sorrento (Area 67).  
 Point Lonsdale (Area 58).  
 Queenscliffe (Area 58).  
 South Channel Port (Area 61).  
 Swan Bay (Areas 50, 58).  
 Rye (Area 68).  
 Keshbud (Area 69).  
 Dromana (Area 63).  
 Martha Cliff (Area 63-64).  
 Mornington (Area 55).  
 Mt. Jura (Area 47).  
 Day Bay (Area 48).  
 Indented Head (Area 42).  
 Portarlington (Area 29).  
 St. George Light (Area 31).  
 Appledale (Area 24, 36).  
 Morlaillie (Area 24).  
 Ricketts Point (Area 23).  
 Cheltenham Black Rock (Area 14).  
 St. Kilda (Area 7).  
 South Melbourne (Area 3).  
 Port Melbourne New Port (Area 2).  
 Altona Seashore (Area 5).  
 Oll Altona (Area 5).  
 Point Cook (Areas 4, 5).  
 Oll Werribee (Areas 9, 18, 19).  
 (Oll Bay (Areas 25, 28, 37, 40).  
 Eastern Beach (Area 37).



TABLE 1.—LOCALITIES OF OPISTHOBRANCH SPECIES IN PORI PHILIP BAY—continued.

[illegible]

	B	S	M	S	M	S
51. .. <i>carniola</i> ..	B					
52. .. <i>staminea</i> .. S						
53. <i>Crinora multiguttalis</i> ..	B					
54. <i>Polycera parvula</i> ..	M					
55. .. <i>jankia</i> ..	M B					
56. <i>Tambja verconis</i> ..		S				
57. <i>Okenia</i> sp. ..	B					
58. <i>Encratria mapae</i> ..	B					
59. <i>Gonioloris meraculus</i> ..			M			
60. <i>Machrella sanguinea</i> ..	B					
61. <i>Autiopella</i> sp. ..	B					
62. <i>Janolus</i> sp. ..	B					
63. <i>Proctonotus affinis</i> ..	B					
64. <i>Paratritonia lutea</i> ..		S				
65. <i>Tritonia</i> (?) sp. ..	B					
66. .. (?) sp. ..	B					
67. <i>Melibe australis</i> ..	B B					
68. .. <i>mangeana</i> ..	B					
69. <i>Doto ostenta</i> ..	B					
70. .. sp. ..	B					
71. <i>Coryphella</i> sp. ..	B			S		
72. <i>Coryphellina poenicia</i> ..	B				B	
73. <i>Eubranchius rubeolus</i> ..	B					



TABLE 1.—LOCALITIES OF OPISTHOBRANCH SPECIES IN PORT PHILLIP BAY—continued.

Species.	Localities.
74. <i>Capellinia</i> sp. . . . .	Barwon Heads (Area 56).
75. <i>Trinchesia viridiana</i> . . . . .	Sorrento and Portsea Ocean Beaches (Area 66).
76. " <i>catachroma</i> . . . . .	Portsea Pier (Area 59).
77. " <i>serorum</i> . . . . .	Two Sisters, Sorrento (Area 67).
78. <i>Taornia thelnae</i> . . . . .	Point Lonsdale (Area 58).
79. <i>Tergipes panchulus</i> . . . . .	Queenscliffe (Area 58).
80. <i>Facellina newcombi</i> . . . . .	South Channel Port (Area 61).
81. " <i>hartleyi</i> . . . . .	Swan Bay (Areas 50, 58).
82. " sp. . . . .	Rye (Area 68).
83. <i>Palisa</i> sp. . . . .	Rosebud (Area 69).
84. <i>Cratena serrata</i> . . . . .	Dromana (Area 63).
85. <i>Austracolis ornata</i> . . . . .	Martha Cliff (Area 63 64).
86. " <i>fucia</i> . . . . .	Mornington (Area 55).
87. <i>Echinopsile brevicirrata</i> . . . . .	Mt. Eliza (Area 47).
88. <i>Aeolidiella macleayi</i> . . . . .	Day's Bay (Area 48).
	Indented Head (Area 42).
	Portarlington (Area 29).
	St. George Light (Area 31).
	Aspendale (Area 24, 36).
	Mordialloc (Area 24).
	Ricketts Point (Area 23).
	Cheltenham Black Rock (Area 14).
	St. Kilda (Area 7).
	South Melbourne (Area 3).
	Port Melbourne Newport (Area 2).
	Altona Seaholme (Area 5).
	Off Altona (Area 5).
	Point Cook (Areas 4, 5, 10 11).
	Off Werribee (Areas 9, 18-19).
	Cortis Bay (Areas 25 28, 37 40).
	Eastern Beach (Area 37).