4. List of the Land shells collected by Mr. Wallace in the Malay Archipelago, with Descriptions of the New Species by Mr. Henry Adams. By Alfred R. Wallace, F.Z.S., F.R.G.S.

(Plate XXI.)

The following list has been drawn up principally with the view of recording the localities of the various species collected by me, and thus furnishing materials towards a more accurate knowledge of the geographical distribution of these animals. Of the 125 species in the list, upwards of fifty were first obtained by myself; and of a considerable number of the others, accurate localities are now for the first time given. The restricted range so characteristic of land shells is well shown by my collection, no less than ninety species, or more than two-thirds of the whole, being confined each to a single island. The difference between the faunas of the Indo-Malayan and Austro-Malayan regions is also well marked, a number of characteristic genera and species of true *Helicidæ* being peculiar to the latter; while only four of this family were found by me in the former region. The true thick-lipped *Bulimi* are quite absent from the Moluccas and New Guinea, as they are from Australia; while they abound in the Indo-Malayan islands, and have extended thence into Celebes and through the islands east of Java as far as Timor.

The various species have been named by comparison with the type specimens in Mr. Cuming's collection; and to Mr. H. Adams's kind assistance are due the determination and arrangement of the genera and families. He has also described the eight species which are unique in the collection.

With a very few exceptions, all the shells comprised in this list now form part of the collection of William Wilson Saunders, Esq.

Stenopidæ.

1. Helicarion idæ.

Hab. Bouru (*Wall.*); Celebes (*Pfr.*).

2. Microcystis misella, Fér.

Hab. Aru Islands (*Wall.*); Moluccas; Marian Islands (*Albers*).
Remark.—Found on a rotten trunk.

3. Macrochlamys consul, Pfr.

Hab. Borneo; Bouru (*Wall.*).

4. Macrochlamys glutinosa, Met.

Hab. Borneo (*Wall.*).
Remark.—Found among fallen leaves.

5. Nanina citrina, Linn.

Hab. Aru Islands (*Wall.*): var., small, yellow, without bands.

Ceram (*Wall.*): var., large, variously coloured and banded. Gilolo (*Wall.*): var., small, yellow, with pale bands. Mysol (*Wall.*): var., small, white, with milky bands. Ké Islands (*Wall.*): var., large, cream-coloured, with brown bands. Sulla Islands (*Wall.*): var., various, purple-tinged.

Remark.—Found upon foliage and tree-trunks.

6. NANINA AULICA, Pfr.

Hab. New Guinea; Waigiou (*Wall.*).

Remark.—Found in swamps, among roots and foliage of Sago-palms.

7. NANINA CINCTA, Lea.

Hab. Menado (Celebes) (*Wall.*).

8. NANINA WALLACEI, Pfr.

Hab. Macassar (Celebes) (*Wall.*).

9. NANINA LUCTUOSA, Beck.

Hab. Ceram; Goram; Batchian (*Wall.*). Brown-black variety, Aru Islands (*Wall.*).

Remark.—On foliage.

10. NANINA IGNESCENS, Pfr.

Hab. Batchian (*Wall.*). Pale and brown varieties.

Remark.—Found on foliage.

11. NANINA TUMENS, Desh.

Hab. Timor (*Wall.*).

12. HEMIPLECTA HUMPHREYSIANA, Lea.

Hab. Singapore (*Wall.*).

13. HEMIPLECTA SCHUMACHERIANA, Pfr.

Hab. Borneo (*Wall.*).

14. HEMIPLECTA PEASEANA, Pfr.

Hab. Bouru; Timor (*Wall.*).

15. HEMIPLECTA DURA, Pfr.

Hab. Waigiou (*Wall.*).

Remark. Found on dead trunk of fallen tree.

16. HEMIPLECTA NANINOIDES, Bens.

Hab. Singapore (*Wall.*).

Remark.—On walls and roads near the town.

17. HEMIPLECTA CIDARIS, Lam.

Hab. Celebes (*Wall.*); Timor (*Lam.*).

18. Hemiplecta rareguttata, Mouss.

Hab. Solor (*Wall.*): var., pale brown, more or less tinged and irrorated with ashy. Flores (*Wall.*): var., pale or dark brown, immaculate.

19. Hemiplecta bella, Pfr.

Hab. Ceram (*Wall.*).

20. Hemiplecta circumpicta, Mouss.

Hab. Macassar (Celebes) (*Wall.*).

21. Hemiplecta sulphurea, Reeve.

Hab. Macassar (Celebes) (*Wall.*).

22. Hemiplecta nemorensis, Müll.

Hab. Lombock (*Wall.*).

23. Hemiplecta coffeæ, Pfr.

Hab. Lombock (*Wall.*).

24. Ryssota brookei, Ad. & Reeve.

Hab. Sarawak (Borneo) (*Wall.*).
Remark.—Among fallen leaves in the mountain forests.

25. ? Ryssota regalis, Bens.

Hab. Borneo (*Wall.*).
Remark.—Found in the swamps of *Nipa*-palm.

26. ? Ryssota janus, Chem.

Hab. Malacca (*Wall.*).

27. ? Ryssota nasuta, Met.

Hab. Borneo (*Wall.*).

Helicidæ.

Helicellinæ.

28. Trochomorpha lychnia, Bens.

Hab. Malacca (*Wall.*); Singapore (*Bens.*).
Remark.—Found on rotten trunks.

29. Trochomorpha conicoides, Met.

Hab. Borneo (*Wall.*).
Remark.—Found on rotten trunks.

30. Trochomorpha batchianensis, Pfr.

Hab. Batchian (*Wall.*).

31. TROCHOMORPHA PLANORBIS, Less.

Hab. Macassar; Batchian; Aru Islands (*Wall.*); New Guinea (*Less.*).

Remark.—Found on dead trees and rotten bark.

32. TROCHOMORPHA TROPIDOPHORA, Ad. & Reeve.

Hab. Borneo (*Wall.*).

Remark.—Found on and under rotten bark.

"From the observations of Mr. W. T. Blanford, the animal of *T. lychnia* is without a mucous pore at the extremity of the foot; and *Trochomorpha* therefore must be removed from the family *Stenopidæ*. The species *infula*, Bens., however, hitherto included in *Trochomorpha*, is, according to Mr. Blanford, furnished with one, and must remain in that family, where it may be considered the type of a group, under the name of *Sitala*."—*H. Ad.*

HELICINÆ.

33. DORCASIA ARGILLACEA, Fér.

Hab. Timor; Flores (*Wall.*).

Remark.—On rocks of coralline limestone.

34. DORCASIA FODIENS, Pfr.

Hab. Macassar (Celebes) (*Wall.*).

35. DORCASIA OCCULTA, Pfr.

Hab. Aru Islands (*Wall.*).

36. DORCASIA COMPTA, H. Ad. (n. s.).

Hab. Batchian (*Wall.*).

37. RHAGADA SOLORENSIS, Martens.

Hab. Solor Islands (*Wall.*).

38. PLECTOTROPIS GABATA, Gould.

Hab. Menado (Celebes) (*Wall.*); Birmah (*Gould*).

Remark.—On trunk of a tree in mountain forest.

39. PHANIA PYROSTOMA, Fér.

Hab. Gilolo (*Wall.*). Var. with yellowish lip, Batchian (*Wall.*).

Remark.—Found by the natives on trunks of large forest-trees.

40. OBBA PAPILLA, Müll.

Hab. Menado (Celebes) (*Wall.*).

41. PLANISPIRA KURRI, Pfr.

Hab. Batchian; Waigiou; Gagie Islands, and small islets near (*Wall.*).

Remark.—On shrubby foliage.

42. Planispira zonalis, Pfr.
Hab. Gilolo (*Wall.*).

43. Planispira atacta, Pfr.
Hab. Gilolo (*Wall.*).

44. Planispira expansa, Pfr.
Hab. Batchian (*Wall.*).

45. Planispira coluber, Beck.
Hab. Ceram (*Wall.*), var. white and banded. Amboyna (*Wall.*), var. mottled. Bouru (*Wall.*), var. dark and waved.
Remark. Found upon foliage of shrubs.

46. Planispira corniculum, Homb. & Jacq.
Hab. Batchian (*Wall.*).

47. Planispira latizona, Pfr.
Hab. Ceram (*Wall.*).

48. Planispira margaritis, Pfr.
Hab. Ceram (*Wall.*).

49. Planispira atro-fusca, Pfr.
Hab. Batchian (*Wall.*).

50. Planispira phryne, Pfr.
Hab. Gilolo (*Wall.*).
Remark.—Upon foliage.

51. Planispira aspasia, H. Ad. (n. s.).
Hab. Batchian (*Wall.*).
Remark.—Upon foliage.

52. Planispira loxotropis, Pfr.
Hab. Gilolo, var. (*Wall.*).

53. Planispira zebra, Pfr.
Hab. Ceram; Goram (*Wall.*).
Remark.—Upon foliage.

54. Planispira moluccensis, Pfr.
Hab. Mysol, var. (*Wall.*).

55. Planispira martensi, Pfr.
Hab. Ceram (*Wall.*).

56. Planispira tortilabia, Less.
Hab. Aru Islands; New Guinea: white, dark, and banded varieties (*Wall.*).
Remark.—Upon foliage.

57. PLANISPIRA SCHEEPMAKERI, Pfr.
Hab. Batchian (*Wall.*).

58. SEMICORNU UNGULINUM, Linn.
Hab. Ceram (*Wall.*); "Java" (*Albers*). Err. loc.

59. SEMICORNU GRUNERI, Pfr.
Hab. Bouru (*Wall.*).

60. SEMICORNU UNGUICULA, Fér.
Hab. Amboyna (*Wall.*); "Java" (*Albers*). Err. loc.

61. SEMICORNU CERAMENSE, Pfr.
Hab. Ceram (*Wall.*).

62. SEMICORNU BIOMPHALUM, Pfr.
Hab. Ceram (*Wall.*).

63. SEMICORNU ZONARIUM, Linn.
Hab. Ceram (*Wall.*).

64. SEMICORNU CIRCUMDATUM, Fér.
Hab. New Guinea; Waigiou; Aru Islands; Mysol (*Wall.*).

65. SEMICORNU MOLLISETUM, Pfr.
Hab. Mysol (*Wall.*).

66. SEMICORNU CONCISUM, Fér.
Hab. Waigiou (*Wall.*).

67. SEMICORNU QUOYI, Desh.
Hab. Menado (Celebes) (*Wall.*).

68. SEMICORNU SULCOSUM, Pfr.
Hab. Aru Islands (*Wall.*).

69. SEMICORNU MAMILLA, Fér.
Hab. Menado (Celebes) (*Wall.*).

70. SEMICORNU RUBRUM, Albers.
Hab. Aru Islands; Mysol (*Wall.*).

71. ALBERSIA GRANULATA, Quoy & Gaim.
Hab. Waigiou (*Wall.*).
"The species *granulata* appears to be the type of a distinct group allied to *Semicornu*, for which I would propose the name *Albersia*."
—*H. Ad.*

72. ALBERSIA ZONULATA, Fér.
Hab. New Guinea; Aru Islands; Waigiou; Gilolo; Batchian (*Wall.*).

73. Albersia najas, Pfr.

Hab. Goram ; Bouru (*Wall.*).

Remark.—When alive, this shell is of a pure delicate pea-green, the colour of the animal showing through its transparent texture. It is found on the foliage of shrubs of a similar colour.

74. Papuina labium, Fér.

Hab. Dorey (New Guinea) (*Wall.*). Varieties occur without bands, and with the lip white.

75. Papuina novæ-guineensis, Pfr.

Hab. New Guinea (*Wall.*).

76. Papuina waigiouensis, H. Ad. (n. s.).

Hab. Waigiou.

77. Papuina nodifera, Pfr.

Hab. Batchian (*Wall.*) (*Coll. Cum.*).

Remark.—I will not be answerable for this locality, as I seem to have overlooked the species.

78. Papuina mysolensis, Pfr.

Hab. Mysol (*Wall.*).

79. Papuina aurora, Pfr.

Hab. Waigiou (*Wall.*).

80. Papuina vitrea, Fér.

Hab. Gilolo (*Wall.*).

81. Papuina lanceolata, Pfr.

Hab. Gilolo (*Wall.*).

82. Papuina leucotropis, Pfr.

Hab. Aru Islands (*Wall.*).

83. Papuina aruensis, Le Guil.

Hab. Aru Islands (*Wall.*).

84. Geotrochus turris, H. Ad. (n. s.).

Hab. Waigiou (*Wall.*).

85. Geotrochus pileus, Müll.

Hab. Aru Islands (*Wall.*); Amboyna (*Müll.*, but prob. err. loc.).

Remark.—Found among decayed vegetation on coral rock near the coast.

86. Geotrochus gaertnerianus, Pfr.

Hab. Aru Islands (*Wall.*).

87. Geotrochus pileolus, Fér.

Hab. Batchian (*Wall.*). Var. much depressed, Batchian (*Wall.*).
Remark.—On foliage.

88. Geotrochus gaberti, Less.

Hab. Batchian (*Wall.*).
Remark.—On foliage.

89. Geotrochus rhynchostoma, Pfr.

Hab. Batchian (*Wall.*).

90. Geotrochus blanfordi, H. Ad. (n. s.).

Hab. New Guinea (*Wall.*).

91. Geotrochus férussaci, Less.

Hab. New Guinea (*Wall.*).

92. Corasia conformis, Fér.

Hab. New Guinea (*Wall.*).

Buliminæ.

93. Amphidromus interruptus, Müll.

Hab. Malacca (*Wall.*).

94. Amphidromus macassariensis, Homb. & Jacq.

Hab. Macassar (Celebes) (*Wall.*).

95. Amphidromus perversus, Linn.

Hab. Macassar (Celebes) (*Wall.*).
Var. *citrinus*, Brug.

96. Amphidromus inversus, Müll.

Hab. Malay peninsula (*Wall.*).

97. Amphidromus sinistralis, Reeve.

Hab. Menado (Celebes); Timor (*Wall.*).

98. Amphidromus contrarius, Müll.

Hab. Macassar (Celebes); Timor (*Wall.*).

99. Amphidromus sinensis, Bens.

Hab. Timor (*Wall.*).

Achatininæ.

100. Calycia crystallina, Reeve.

Hab. Waigiou (*Wall.*).
Remark.—Found on tree-trunks; the animal green.
"The *Bulimus crystallinus* of Reeve has been placed in *Orthalicus* by Pfeiffer, and in *Limicolaria* by Shuttleworth, but does not appear

to belong to either. It may be considered to form the type of a new group under the name of *Calycia*."—*H. Ad.*

101. Opeas achatinacea, Pfr.
Hab. Borneo (*Wall.*).

Cyclophoridæ.

Cyclotinæ.

102. Cyclotus guttatus, Pfr.
Hab. Aru Islands; Batchian (*Wall.*).

103. Opisthoporus birostris, Pfr.
Hab. Sarawak (Borneo) (*Wall.*).

104. Opisthoporus biciliatus, Mouss.
Hab. Sarawak (Borneo) (*Wall.*).

105. Opisthoporus rostellatus, Pfr.
Hab. Sarawak (Borneo) (*Wall.*).

106. Pterocyclos batchianensis, Pfr.
Hab. Batchian (*Wall.*).

Cyclophorinæ.

107. Cyclophorus tuba, Sow.
Hab. Malacca (*Wall.*).

108. Cyclophorus borneensis, Met.
Hab. Sarawak (Borneo) (*Wall.*).

109. Cyclophorus aquila, Sow.
Hab. Malay peninsula (*Wall.*).

110. Leptopoma undatum, Met.
Hab. Borneo (*Wall.*).

111. Leptopoma cinctellum, Pfr.
Hab. Gilolo; Gagie Islands (*Wall.*).
Remark.—On foliage.

112. Leptopoma papuanum, Dohrn.
Hab. New Guinea; Batchian; Ceram (*Wall.*).

113. Leptopoma wallacei, Pfr.
Hab. Aru Islands (*Wall.*).

114. Leptopoma decipiens, Pfr.
Hab. Mysol (*Wall.*).

115. Leptopoma lowei, Pfr.
Hab. Malacca (*Wall.*).

116. Leptopoma melanostoma, Petit.
Hab. Aru Islands (*Wall.*).

117. Leptopoma scalare, H. Ad. (n. s.).
Hab. Waigiou (*Wall.*).

118. Dermatocera vitrea, Less.
Hab. Aru Islands; Macassar (*Wall.*).

Pupininæ.

119. Pupina pfeifferi, H. Ad. (n. s.).
Hab. Batchian (*Wall.*).

120. Callia wallacei, Pfr.
Hab. Ceram (*Wall.*).

Pomatiasinæ.

121. Omphalotropis ceramensis, Pfr.
Hab. Gilolo (*Wall.*).

Helicinidæ.

122. Helicina aruana, Pfr.
Hab. Aru Islands (*Wall.*).

123. Helicina albocincta, Jacq.
Hab. Aru Islands (*Wall.*).

124. Helicina electrina, Pfr.
Hab. Batchian (*Wall.*).

Truncatellidæ.

125. Taheitia wallacei, H. Ad. (n. s.).
Hab. Waigiou (*Wall.*).
Remark.—On limestone-rocks.

Descriptions of the New Species. *By* Henry Adams, F.L.S.

Helix (Dorcasia) compta, H. Adams. (Pl. XXI. fig. 8.)

T. umbilicata, depressa, tenuis, cinnamomea; spira brevissime conoidea, apice obtuso; anfr. 5, *convexi, lente accrescentes, ultimus vix descendens, basi circa umbilicum infundibuliformem*

compressus; apertura obliqua, lunato-rotundata, intus pallidior, nitida; perist. albidum, reflexiusculum, marginibus conniventibus, basali arcuato, subreflexo.

Diam. maj. 14, min. 11, alt. $6\frac{1}{2}$ mill.

Hab. Batchian (*Coll. Saunders*).

HELIX (PLANISPIRA) ASPASIA, H. Adams. (Pl. XXI. figs. 2, 3.)

T. imperforata, globoso-depressa, tenuiscula, epidermide luteo-fulva, pallido-fusca, fascia nigricanti et unica latiore alba ad suturam ornata; spira parum elevata, vertice planata; anfr. $4\frac{1}{2}$, convexiusculi, celeriter accrescentes, ultimus breviter descendens; apertura obliqua, ovalis; perist. album, marginibus conniventibus, late expansum et reflexum, basali reflexo, intus tuberculo prominente instructo.

Diam. maj. 26, min. 20, alt. 15 mill.

Hab. Batchian (*Coll. Saunders*).

This species is nearly allied to *Helix phryne*, Pfr., which was collected by Mr. Wallace at Gilolo. It is, however, a rather more solid shell, is not so much depressed, and is furnished with a much stronger and more prominent tubercle within the aperture near the base. It also differs in the arrangement of the coloured spiral bands.

HELIX (GEOTROCHUS) WAIGIOUENSIS, H. Adams. (Pl. XXI. figs. 6, 7.)

T. subobtecte perforata, depresso-turbinata, tenuiscula, plicato-striata, pallido-fulva, ad suturam et peripheriam albo fasciata, et fasciis angustis fulvis ornata; spira conoidea, acutiuscula; anfr. 5, convexiusculi, ultimus depresso-rotundatus, antice descendens; apertura perobliqua, lunato-ovalis; perist. album, late expansum et reflexiusculum, cum margine columellari angulatim dilatato, supra perforationem reflexo, et intus tuberculo elongato munito.

Diam. maj. 40, min. 32, alt. 21 mill.

Hab. Waigiou (*Coll. Saunders*).

HELIX (GEOTROCHUS) TURRIS, H. Adams. (Pl. XXI. figs. 4, 5.)

T. subobtecte perforata, solida, conica, sulcato-striata, luteo-fulva; spira elongata, acutiuscula; anfr. 7, ad suturas convexiusculi, medio subconcavi, ultimus non descendens, angulatus, basi subplanatus; apertura diagonalis, triangularis; perist. simplex, late expansum, album, margine supero sinuoso, antrorsum arcuato, basali reflexo, cum columellari obliquo, triangulatim dilatato, supra perforationem reflexo, et intus subdentato.

Diam. maj. 36, min. 30, alt. 37 mill.

Hab. Waigiou (*Coll. Saunders*).

HELIX (GEOTROCHUS) BLANFORDI, H. Adams. (Pl. XXI. fig. 1.)

T. obtecte perforata, conoidea, tenuiscula, oblique striata, et striis minutis spiralibus ornata, nitida, corneo-alba; spira elongata,

acutiuscula ; sutura marginata ; anfr. 6, *convexiusculi, sensim accrescentes, ultimus non descendens, infra medium acute carinatus, basi parum convexus ; apertura diagonalis, subrhombeo-lunaris ; perist. album, breviter expansum, margine supero acuto, basali arcuato, reflexo, perforationem tegente.*

Diam. maj. 20, min. 16, alt. 17 mill.

Hab. New Guinea (*Coll. Saunders*).

LEPTOPOMA SCALARE, H. Adams. (Pl. XXI. figs. 9, 10.)

T. perforata, globoso-conica, solidula, spiraliter confertissime striata et liris 6 *filiformibus cincta, carnea, ad peripheriam pallidior ; spira conica, acuta ; anfr.* 5, *convexi, ultimus inflatus, plicis transversis, ad peripheriam fortioribus, munitus ; apertura obliqua, subcircularis ; perist. albidum, subinterruptum, marginibus callo junctis.*

Diam. maj. 11, min. 9, alt. $9\frac{1}{2}$ mill.

Hab. Waigiou (*Coll. Saunders*).

PUPINA PFEIFFERI, H. Adams. (Pl. XXI. figs. 11, 12.)

T. ovata, tenuiscula, lævigata, subpellucida, corneo-fulva ; spira obtuse conica ; anfr. 5, *summi convexiusculi, sequentes planiores, ultimus spiram superans, antice non descendens ; sutura simplex ; apertura subverticalis, circularis ; paries aperturalis lamella arcuata, tenui, margine dextro soluta munitus ; columella dissecta, processum linguiformem triangularem exhibens ; perist. incrassatum, breviter expansum, margine dextro subsinuato.*

Long. 9, diam. 5 mill.

Hab. Batchian (*Coll. Saunders*).

TRUNCATELLA (TAHEITIA) WALLACEI, H. Adams. (Pl. XXI. figs. 13, 14.)

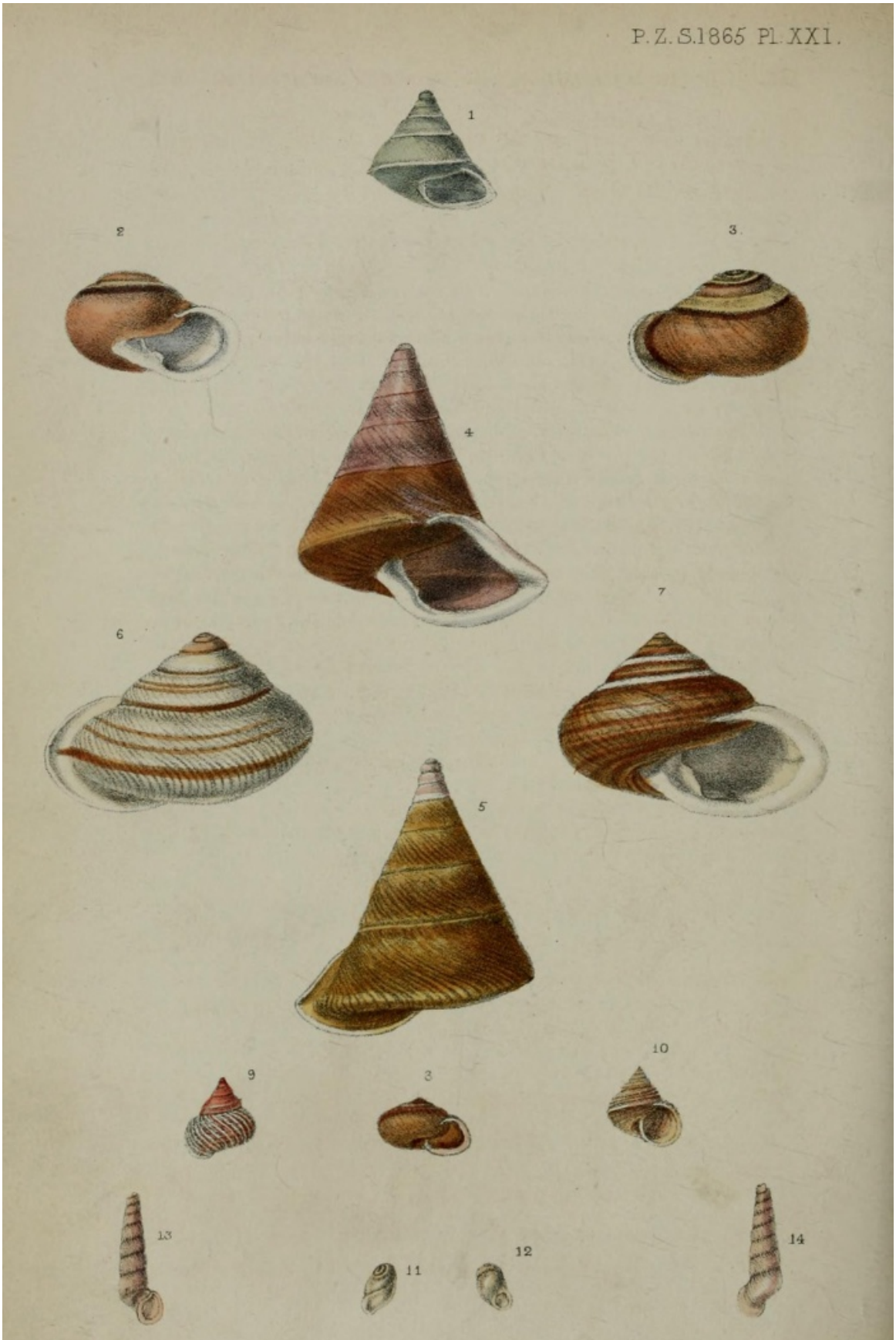
T. elongata, subulata, tenuis, decollata, albida, clathris acutis undulatis confertissime instructa ; anfr. superst. 8, *convexiusculi, ultimus penultimo late sejunctus ; apertura rotundato-lunaris ; perist. continuum, subincrassatum, undique reflexiusculum, extrorsum expansum.*

Long. 18, lat. 4 mill. ; ap. diam. 3 mill.

Hab. Waigiou (*Coll. Saunders*).

DESCRIPTION OF PLATE XXI.

Fig. 1. *Helix* (*Geotrochus*) *blanfordi.*
Figs. 2, 3. *Helix* (*Planispira*) *aspasia.*
Figs. 4, 5. *Helix* (*Geotrochus*) *turris.*
Figs. 6, 7. *Helix* (*Geotrochus*) *waigiouensis.*
Fig. 8. *Helix* (*Dorcasia*) *compta.*
Figs. 9, 10. *Leptopoma scalare.*
Figs. 11, 12. *Pupina pfeifferi.*
Figs. 13, 14. *Truncatella* (*Taheitia*) *wallacei.*



Sowerby lith.

M & N Hanhart imp

MR. WALLACE'S NEW LAND-SHELLS.