(3) "A non-ancestor is always a non-ancestor of all ancestors, and an ancestor of none but non-ancestors."

(4) "A non-descendant is a descendant of none but non-descendants, and a non-descendant of all descendants."

(5) "Among non-ancestors are contained all descendants of non-ancestors, and all non-ancestors of descendants."

(6) "Among non-descendants arecontained all ancestors of non-descendants, and all non-descendants of ancestors."

XIII. *List of the Phanerogams of Key West, South Florida, mostly observed there in March,* 1872. By J. Cosmo Melvill, M.A., F.L.S.

Read before the Microscopical and Natural-History Section, February 13, 1882.

The flora of this small island is limited and, naturally, to a great extent, maritime. In the year 1875 I recorded, in the 'Journal of Botany,' a catalogue of the Algæ—it is by no means so rich, proportionately, in flowering plants or ferns.

Key West, which is entirely of coral formation, constitutes one of many small reefs or "keys" which extend from Biscayne Bay westward to the Tortugas. Of these islets, this, which measures some seven miles in length by one to one and a half in breadth, is the only one inhabited, and it is not likely that the others would present many botanical novelties, though but few of them have been explored. Boca Chica, the next island, is separated at low water by only a very narrow channel. It is densely

wooded, and the character of the vegetation is entirely the same.

The south-western portion of Key West is cultivated, and towards the south and south-east, between the town and the sea, there are numerous green lanes and shady natural avenues extending for a mile or two, which present a native flora of much beauty, though somewhat scanty in actual species.

The northern shores of the island are swampy and there are extensive mangrove flats. It is in this portion that the original "scrub"-forest still remains, and the north-eastern shores especially present a deserted appearance.

In the centre of the island are numerous salt-pans and a salt-marsh, which abound in some curious plants, mostly Asclepiads and Chenopodiaceæ.

Chapman, in his 'Flora of the Southern States,' gives some Key-West localities, mainly on the authority of the late Dr. Blodgett, and Grisebach ('Flora of the British West Indian Islands'), in his ample table of distribution of each species, occasionally does the same. Mr. W. T. Féay, of Savannah, Georgia, lived for a year or more on the island and collected several species I did not observe. These have been added to this list, on his authority, to make it more complete.

In the Shuttleworth Herbarium, now incorporated with that of the British Museum, there are several specimens of Key-West plants, mostly collected by Rügel.

Owing to Key West being a town of increasing importance, as it is a military as well as a naval station, and also a calling point for all the steamers plying between New Orleans and Cuba, it is quite probable that the whole place may in a few years be materially changed, and by the clearing away of the old original "bush" the flora may undergo complete alteration.

It will be observed that the flora is completely Caribbean, and presents hardly any connexion with that of the mainland of Florida, with the exception of that small portion south of the "Everglades."

[* denotes that the plant is not originally indigenous.]

PAPAVERACEÆ.

1. *Argemone Mexicana* (L.). Native, according to Chapman, and exceedingly abundant in most places.

CRUCIFERÆ.

2. *Lepidium Virginicum* (L.). A more slender form than the ordinary plant. Common.

3. *Cakile æqualis* (L'Her.). Shifting sands of the south coast, Key West. Differs from *C. maritima* (L.) in the shape of the upper fruit-joint.

CAPPARIDACEÆ.

4. **Gynandropsis pentaphylla* (DC.). Occasionally in waste places.

5. *Capparis Jamaicensis* (Jay). Rare (*Mr. Féay*).

6. *Capparis Cynophallophora* (L.). Occasional (*Mr. Féay*).

PORTULACACEÆ.

7. *Portulaca oleracea* (L.). Everywhere, especially on paths and clearings in the bush. Flower yellow.

8. *Portulaca pilosa* (L.). Rare. Flowers purple.

MALVACEÆ.

9. *Sida rhombifolia* (L.).
10. *Sida stipulata* (Cav.).

} Everywhere, in many forms.

[I did not observe *S. ciliaris* (Car.) and *S. Lindheimeri* (Gray), noted in Chapman's 'Flora,' p. 55, as occurring at Key West.]

11. *Abutilon crispum* (Gray). Not common.

12. *Hibiscus Floridanus* (Shuttl.).

13. **Hibiscus Rosa Sinensis* (L.). Escape from cultivation.

14. **Gossypium Barbadense* (L.). Large shrubs occur towards the Lighthouse, S.W. corner of Key West.

[*Ayenia pusilla* (W.), nat. ord. Byttneriaceæ, has occurred.]

Tiliaceæ.

15. *Corchorus siliquosus* (L.).

Olacaceæ.

16. *Ximenia Americana* (L.). (*Mr. W. T. Féay.*)

Aurantiaceæ.

17. **Citrus Aurantium* (L.). Very abundant in the S.W. quarter of the island, though, no doubt, originally imported.

Meliaceæ.

18. **Melia Azederach* (L.). The Pride of India is planted in nearly all villages and towns in Florida.

Oxalidaceæ.

19. *Oxalis stricta* (L.). Everywhere.

Zygophyllaceæ.

20. *Tribulus cistoïdes* (L.). Superficially resembling *Potentilla anserina* (L.).

[*Kallströmia maxima*, Torrey and Gray, was not observed, though it has occurred at Key West.]

21. *Guiacum sanctum* (L.). Southern portion of the island. Not common.

RUTACEÆ.

22. *Zanthoxylum Pterota* (H. B. & K.)—*Fagara lentiscifolia* (W.). One of the most abundant shrubs of the island; but impossible to preserve for herbarium purposes, as the joints of the petiole disintegrate immediately when dry.

SIMARUBACEÆ.

23. *Simaruba glauca* (DC.). One of the most conspicuous trees of the island, with large and handsome pinnate leaves and panicles of small green flowers.

BURSERACEÆ.

24. *Bursera gummifera* (Jay). A large tree (*Mr. Féay*).

25. *Amyris Floridana* (Nutt.).

ANACARDIACEÆ.

26. *Rhus Metopium* (L.). A good-sized tree; common.

VITACEÆ.

27. *Vitis (Cissus) acida* (L.). Not uncommon in the S.W. portion of the island. It disintegrates in drying, as *Z. Pterota*.

RHAMNACEÆ.

28. *Scutea ferrea* (Brong.). (*Mr. W. T. Féay.*) = *Condalia* (Cav.).

29. *Gouania Domingensis* (L.). Common.

Celastraceæ.

30. *Schœfferia frutescens* (Jacq.). Abundant.

31. *Maytenus phyllanthoides* (Benth.). Leaves very fleshy. Common in salt-marshes.

Leguminosæ.

32. *Indigofera leptosepala* (Nutt.). (*Mr. W. Féay.*)

33. *Galactia spiciformis* (Torr. and Gray). Common.

34. *Piscidia erythrina* (L.). The Jamaica Dogwood. Not common.

35. *Cassia occidentalis* (L.). Waste places.

36. *Cassia biflora* (L.).

37. **Parkinsonia aculeata* (L.). Not mentioned in Chapman's 'Flora,' and possibly a recent introduction; but I obtained it from a remote quarter of the island where there was no cultivation. It is a remarkably elegant tree with spikes of orange-yellow flowers.

37 A. **Tamarindus indicus* (L.). Quite naturalized and common.

38. **Poinciana pulcherrima* (L.). Near the town of Key West. Now referred by most authors to the genus *Cæsalpinia.*

39. *Pithecolobium Unguis Cati* (Benth.). Very abundant by the sea in the south portion of the island.

40. *Pithecolobium Guadalupense* (Desv.). Not so frequent as the last, of which it is probably a variety.

41. **Acacia* (*Albizzia*) *Julibrizzin* (W.). Not unfrequent; naturalized.

42. **Acacia* (*Vachellia*) *Farnesiana* (W.). This is the most abundant shrub in the western portion of the island. Not being mentioned in Chapman's 'Flora' must surely be an error.

43. *Desmanthus diffusus* (Willd.). North shore of Key West. A prostrate form.

44. *Guillandina Bonducella* (L.). Very abundant on sandy ground near the South Fort. Not recorded in Chapman's 'Flora,' though apparently wild.

MYRTACEÆ.

45. *Eugenia monticola* (DC.).
46. —— *buxifolia* (Willd.).
47. —— *procera* (Poir.).

} Abundant throughout the island.

48. *Calyptranthes Chytraculia* (Swartz). Not uncommon.

RHIZOPHORACEÆ.

49. *Rhizophora Mangle* (L.). Mangrove. With *Avicennia oblongifolia* on the north shore of Key West.

COMBRETACEÆ.

50. *Conocarpus erecta* (Jacq.). On sand by the south shore. Leaves remarkably white and silky.

51. *Terminalia Catappa* (L.). Very abundant.

52. *Laguncularia racemosa* (Gærtn.). North shore (*Mr. W. T. Féay*).

CACTACEÆ.

53. *Cereus monoclonos* (DC.). Very conspicuous from its tall, column-like stems, 10 to 12 feet high. It is used, with *Agave Americana* and *Opuntia polyantha*, for hedges, and the three form an impenetrable barrier.

54. *Opuntia vulgaris* (L.), var. *polyantha*. Abundant everywhere.

Passifloraceæ.

55. *Passiflora angustifolia* (Sw.). Not common (*Mr. Féay*).

Cucurbitaceæ.

56. *Sicyos angulatus* (L.).

Crassulaceæ.

57. **Bryophyllum calycinum* (L.). Very abundant. Not included in Chapman's 'Flora.'

Surianaceæ.

58. *Suriana maritima* (L.). Very abundant on the south shores of the island.

Rubiaceæ.

59. *Spermacoce tenuior* (L.). Common in waste places.

60. *Ernodea littoralis* (S. W.). Not uncommon; flowers sweet-scented.

61. *Morinda Roioc* (L.).

62. *Chiococca racemosa* (Jacq.).

63. *Hamelia patens* (Jacq.). A very handsome shrub, with scarlet flowers. Western shores of the island.

64. *Randia aculeata* (L.). (*Mr. W. T. Féay.*)

65. *Exostemma Caribbæum* (R. & S.). (*Mr. W. T. Féay.*)

[*Erithalis fruticosa* (L.) has been found also at Key West.]

[*Guettarda elliptica* (S. W.). Key West; Rügel, in Herb. Shuttleworth, Mus. Brit.]

Compositæ.

66. *Cœlestina maritima* (Torr. & Gray). [*Ageratum*, L.] South shores of Key West. Abundant.

67. *Parthenium Hysterophorus* (L.). By roadsides, very abundant.

68. *Iva imbricata* (Walt.). Sandy shores.

69. *Ambrosia crithmifolia* (DC.). Very abundant along the southern shores.

70. *Borrichia arborescens* (DC.). Salt-marshes; abundant.

70 a. *Borrichia frutescens* (DC.). Not so common as the last.

[*Cosmos caudatus* (Kunth) occurs at Key West; but was not observed.]

71. *Bidens leucantha* (Willd.). A common tropical weed.

72. *Pluchea purpurascens* (DC.). Very common.

73. **Verbesina* (*Ximenesia*) *encelioides* (DC.). Abundant. Not included in Chapman's 'Flora.'

74. *Flaveria linearis* (Jay). Common.

75. *Sonchus oleraceus* (L.). Southern shores of Key West.

Sapotaceæ.

76. *Mimusops Sieberi* (A. DC.). =*M. dissecta* (R. Br.). Very abundant; a handsome tree. South shores of Key West.

THEOPHRASTACEÆ.

77. *Jacquinia armillaris* (Jacq.). (*Mr. W. T. Féay.*)

MYRSINACEÆ.

78. *Ardisia Pickeringia* (Torr. and Gray). A fine shrub or small tree, flowering conspicuously in March.

PLUMBAGINACEÆ.

79. *Plumbago scandens* (L.). Amongst *Opuntia*, in dry stony places; very abundant. Flowers white.

BIGNONIACEÆ.

80. *Tecoma stans* (Jussieu). Rare. Flowers very large, golden yellow.

SCROPHULARIACEÆ.

81. *Herpestis peduncularis* (Benth.). Not uncommon. Flowers small, yellow. Turns quite black in drying, in common with most members of this family.

82. *Capraria biflora* (L.). Very common. Flowers varying from rose-pink to white.

ACANTHACEÆ.

83. *Dipteracanthus linearis* (Torr. and Gray).

84. *Dicliptera assurgens* (Juss.) = *D. sexangularis* (L.). S.W. of Key West, among cacti. Flowers scarlet.

VERBENACEÆ.

85. *Priva echinata* (Juss.).

86. *Stachytarpheta Jamaicensis* (Vahl). Exceedingly abundant all round the coast. The flowers bright blue, in linear spikes.

87. *Lippia* (*Zapania*) *nodiflora* (Michx.). Very common.

88. *Lantana involucrata* (L.)., var. *Floridana*. The most frequent shrub on the island. Chapman ('Flora S. States,' p. 308) queries the colour of the corolla; it is white with a purplish tinge in the tube.

89. *Citharexylum villosum* (L.).

90. *Avicennia oblongifolia* (Nutt.). Common with the mangrove in swamps.

LABIATÆ.

91. *Ocimum Campeachianum* (Mill.). Abundant; flowering in January and February.

92. *Salvia serotina* (L.). Abundant.

93. *Leonotis nepetæfolia* (R. Br.). Rare in the S.W. portion of the island.

BORRAGINACEÆ.

94. *Cordia bullata* (L.). Rare. (*Mr. W. T. Féay.*)

95. **Cordia Sebestena* (L.). Probably not native. Near the town of Key West.

96. *Ehretia Buerreria* (L.). In the north part of the island; but not common.

97. *Ehretia tomentosa* (G. Don), var. *Havanensis* (W.). Very rare; one bush only observed in the central part of the island. Not in Chapman's 'Flora,' though Grisebach mentions its occurrence.

98. *Tournefortia Gnaphalodes* (R. Br.). By the seashore; very abundant.

99. *Tournefortia volubilis* (L.). Climbing up trees in the north portion of the island.

100. *Heliotropium Curassavicum* (L.). Salt-marshes. Common.

101. *Heliotropium myosotoïdes* (Chapman). Peculiar, I believe, to this one locality.

102. *Heliophytum parviflorum* (DC.). Abundant.

Convolvulaceæ.

103. *Pharbitis hispida* (Chois.). Very abundant as a climber in the north portion of the island. Flowers deep purple-blue, very showy.

104. *Ipomæa Pes-Capræ* (Sweet). Western and southern shores of the island. Very common. Found in all tropical countries on the sand of the seashore.

105. *Ipomæa sagittifolia* (B. R.). (*Mr. W. T. Féay.*) Rare.

106. *Ipomæa triloba* (L.). Not frequent.

107. *Ipomæa Bona nox* (L.). Abundant but local; flowering in the evening. One of the most beautiful climbing plants known, its pure white corolla being salver-shaped and perfectly flat, the tube being extremely long and pale greenish white. The flower fades at dawn.

108. *Jacquemontia violacea* (Chois.). Flowers small, sky-blue. Twining over shrubs, principally *Lantana*. Common in the south portion of Key West.

109. *Dichondra repens* (Forst.).

Solanaceæ.

110. *Solanum nigrum* (L.). A small-leaved form.

111. *Solanum verbascifolium* (L.). A tall shrubby plant with felted leaves and white flowers. Very common in the S.W. region.

112. *Solanum Bahamense* (L.).

113. *Solanum Blodgettii* (Chapman).

114. **Solanum Lycopersicum* (L.). Tomato. Waste places.

115. *Capsicum frutescens* (L.). Not uncommon.

116. *Physalis pubescens* (L.).

117. *Physalis angulata* (L.).

118. *Lycium Carolinianum* (Michaux). Abundant in the salt marshes.

119. **Cestrum fastigiatum* (Jacq.). Very common all round the S.W. portion of the island. Not included in Chapman's 'Flora.'

120. *Datula Tatula* (W.). A weed.

GENTIANACEÆ.

121. *Eustoma exaltatum* (Griseb.). By the battery, north shore. Three feet high; flowers very dark blue. A very beautiful plant.

APOCYNACEÆ.

122. *Echites umbellata* (Jacq.). Not uncommon.

123. *Echites Andrewsii* (Chapman). (*Mr. W. T. Féay.*) Rare.

124. *Vinca rosea* (L.). All round the island; in waste places, with *Ricinus, Ambrosia,* and *Argemone Mexicana.*

125. *Vallesia chioccoïdes* (Kunth) = *V. glabra* (Cav.). Very rare; only one shrub observed.

126. **Thevetia neriifolia* (Juss.) = *Cerbera Thevetia* (L.). Naturalized near the town. Exceedingly poisonous (*cf.* Kingsley's 'At Last' for a description).

Asclepiadeæ.

127. *Asclepias Curassavica* (L.). Waste places.

128. *Metastelma Schlectendalii* (Dec.). A twining creeper.

129. *Seutera maritima* (Reich.). By the salt-pans. Very abundant in one place only.

130. *Cyncotonum scoparium* (Meyer).

131. *Sarcostemma crassifolium* (Dur.). (*Mr. W. T. Féay.*)

Nyctagineæ.

132. **Mirabilis Jalapa* (L.). In one place towards the north shore; very likely an outcast from cultivation.

133. *Boerhaavia viscosa* (Lag.). Common.

134. *Pisonia aculeata* (L.). Exceedingly abundant, its greenish flowers proving very attractive to insect-life. The thorns on the branches and the recurved spines of the fruit are great impediments to comfort in the "bush."

Phytolaccaceæ.

135. *Rivina humilis* (L.). Common, and striking from its scarlet fruit.

136. **Phytolacca decandra* (L.). Occasionally on waste ground. Migrated from the Southern States of America.

Chenopodiaceæ.

137. **Chenopodium Anthelminticum* (L.). Naturalized from the States; one plant.

138. *Obione arenaria* (Moquin).

139. *Chenopodina maritima* (Moquin).

140. *Salicornia ambigua* (Michaux). By the salt-pans, with the preceding.

AMARANTACEÆ.

141. *Celosia paniculata* (L.). West shore. Common.

142. **Amarantus hybridus* (L.). Migrated from U. S. A.

143. **Amarantus albus* (L.). Migrated from U. S. A.

144. *Amarantus spinosus* (L.).

145. *Iresine vermicularis* (Moquin).

146. *Alternanthera Achyrantha* (R. Br.).

147. *Telanthera Floridana* (Chapman).

POLYGONACEÆ.

148. *Coccoloba uvifera* (Jay). South shores. Common. "The Sea Grape."

EUPHORBIACEÆ.

149. *Euphorbia cyathophora* (Jay), var. *graminifolia* (Michx.) = *E. heterophylla* (L.). Abundant in many places. Easily recognized by the uppermost leaves being deep scarlet at the base, and bearing, therefore, some slight resemblance to a small and narrow-leaved *Poinsettia*.

150. *Euphorbia glabella* (Swartz).

151. *Euphorbia hypericifolia* (L.). Sea-shore, in sand; common.

152. *Euphorbia maculata* (L.). Abundant in paths and everywhere.

153. *Euphorbia inæquilatera* (Sond.).

154. *Hippomane Mancinella* (L.). (*Mr. W. T. Féay.*)

155. *Acalypha corchorifolia* (Willd.).

156. *Croton balsamiferum* (Willd.). Very common in the south portion of the island only.

157. *Aphora Blodgettii* (Torrey). (*Mr. W. T. Féay.*)

158. **Ricinus communis* (L.). Everywhere.

Batidaceæ.

159. *Batis maritima* (L.). Salt-marshes.

Urticaceæ.

160. *Pilea hernarioïdes* (Lindley). Very abundant. A very small fragile plant.

Palmæ.

161. **Cocos nucifera* (L.). Naturalized in the northern portion of the island; common. The True Cocoanut Palm.

Potomaceæ.

162. *Halophila ovalis* (Hook.), or allied species. Quite fresh specimens floating in sea, after gale, 15 March, 1872.

Alismaceæ.

162 a. *Echinocarpus radiatus* (L.). Around a small pond in the interior of the island.

Orchidaceæ.

163. *Epidendrum venosum* (Lindley). North part of the island, on trees (*Mr. W. T. Féay*).

Amaryllidaceæ.

164. **Agave Americana* (L.). Forming impenetrable hedges in the north portion of the island.

BROMELIACEÆ.

165. *Tillandsia bulbosa* (Hooker). (*Mr. W. T. Féay.*)

166. **Ananassa sativa* (Lindley). Occasionally escapes from cultivation.

MUSACEÆ.

167. **Musa sapientum* (L.). The Banana is extensively planted, and is sometimes found apparently naturalized.

168. **M. Paradisiaca* (L.). Ditto.

CYPERACEÆ.

Of this order I found 5 species of *Cyperus*, including *C. confertus* (S.W.) and *C. fuligineus* (Chapm.), the others not yet determined, as they are in fragmentary condition, and also an *Eleocharis*, sp. incert.

Of Gramineæ about 10 to 12 species, including *Eragrostis ciliaris* (Link.); *Panicum* 2 species; the abundant *Dactyloctenium Ægyptiacum* (Willd.) and *Eleusine Indica* (Gærtn.) and *Cenchrus tribuloïdes* (L.). The curious creeping *Monanthochlöe littoralis* (Engelmann) also occurred on the southern sandy shores.

Only one Fern, that being *Aspidium patens* (Sw.); but Mr. Féay noted *Acrostichum aureum* (L.) and *Anemia adiantifolia* (L.) as well.

A *Chara* occurred plentifully in a pond towards the south portion of the island.

The whole flora of the island may therefore be summed up as not containing less than two hundred to two hundred and twenty species, of which perhaps one hundred and ninety may be considered genuine notices.