

factory, and although the synonyms of the two species are indiscriminately adduced, (thus, *e. g.*, *Larus parasitica*, Linn. and *Catharacta parasitica*, Brünn., with *Stercorarius longicaudatus*, Briss., &c.,) yet in his further description he says of it, "21 pollices longus." The common Jäger never attains to this dimension.

Latham commits the error of giving *Stercorarius longicaudatus*, Briss., as the *male*, and *Stercorarius* ———, Briss., (without a specific name,) as the *female* of his species; whereas, these two citations really refer to the two distinct species.

The specific name "*longicaudata*" of Brisson (1760) being untenable for obvious reasons,—"*cephus*" of Brünnich (1764) being too indefinite to warrant its employment,—"*parasitica*" of Brünnich (1764) being used for the common Jäger,—the first definite distinctive name for the long-tailed species appears to be "*Buffoni*" of Boie, (1819.) This specific appellation we accordingly adopt.

NOTE.—The present paper completes a series of brief reviews of the three most important of the four subfamilies of the Laridæ,—viz.: the Larinæ, Sterninæ and Lestridinæ. In conducting an investigation into the characters and the bibliography of these groups, with special reference to North American forms, it has been thought expedient to issue in advance a brief prodromus, so to speak, of each subfamily as soon as its examination was completed. Combining the results arrived at in the investigation of each of these groups, and making whatever additions or modifications future research may dictate, the writer hopes before long to present a more complete and elaborate Monograph of the North American forms of the Laridæ. It is contemplated to present the anatomical as well as the external characters, both of the higher groups and of the more marked species; the changes of plumage, dependent upon either age, season, sex, or pure accident, which examination of very extensive series may show; together with the bibliography of each species, and a discussion of doubtful points of nomenclature and relationship. The Monograph will be illustrated by colored plates of the bills, wings, feet, &c. of most of the species, showing exactly wherein one differs from another; and no pains will be spared to render it a complete exposition of the present state of our knowledge of this family of birds.

**Synopsis of the MARINE INVERTEBRATA collected by the late Arctic Expedition, under Dr. I. I. Hayes.**

BY WM. STIMPSON, M. D.

The collections of Dr. Hayes, as might be expected from the thorough search to which the Arctic regions have lately been subjected, and the characteristic paucity of forms existing there, embrace few novelties. They possess, however, great interest, from having been found in great part at localities much nearer the Pole than any previous expeditions have succeeded in reaching on the American side of the Arctic circle. They include some species hitherto found only on the European side. And, we may add, the number of species collected by Dr. Hayes is greater than that brought back by any single expedition which has yet visited those seas, as far as can be judged by published accounts.

Of the localities mentioned below, *Port Foulke* and *Littleton I.* are on the eastern or Greenland shore of Smith's Straits, in lat. 78½°. *Cape Faraday* is on the west shore of the same Straits, in lat. 79° 45'. *Godhavn* is at the southern end of Disco Island, in lat. 69° nearly.

[May,

## CRUSTACEA.

1. EUPAGURUS PUBESCENS Brandt. *Pagurus pubescens* Kroyer, Naturhist. Tidsskrift, ii., 251; Voy. de la Recherche, Crust. pl. ii., f. 1. Godhavn.

2. CRANGON BOREAS J. C. Fabr. *Cancer boreas* Phipps, Voy. towards the North Pole, 190, pl. xii., f. 1; 1773. *Cancer homaroides* O. Fabr., Fauna Groenlandica, p. 241. Godhavn; Port Foulke; Littleton I.

3. HIPPOLYTE GAIMARDII M. Edw., Hist. Nat. des Crust. ii., 378. Kroyer, Monografisk Fremstilling af Slaegten Hippolytès Nordiske Arter, p. 74, pl. i. f. 21-29. Port Foulke.

4. HIPPOLYTE GIBBA Kroyer, Monog. 80, pl. i., f. 30, 31, et pl. ii. f. 32, 37. *H. Belcheri* Bell, in Belcher's Arctic Voyage, ii., 402, pl. xxiv. f. 1. Port Foulke.

5. HIPPOLYTE TURGIDA Kroyer, Monog. 100, pl. ii., f. 57, 58, et pl. iii., f. 59-63. Godhavn; Port Foulke.

6. HIPPOLYTE PHIPPSII Kroyer, Monog. 106, pl. iii., f. 64-68. Port Foulke.

7. HIPPOLYTE POLARIS Owen, Appendix to Ross' Voyage, p. 85. Kroyer, Monog. 116, pl. iii., f. 78-81, et pl. iv., f. 82. *Alpheus polaris* Sabine, App. to Parry's Voyage, p. 238; pl. ii., f. 5-7. Port Foulke; Littleton I.

8. HIPPOLYTE BOREALIS Owen, Appendix to Ross' Voyage, p. 84, pl. i., f. 3. Kroyer, Monog. pl. 122, pl. iii., f. 74-77. Littleton I.

9. HIPPOLYTE ACULEATA M. Edw., Hist. Nat. des Crust., ii., 380. Kroyer, Monog., 126, pl. iv., f. 83-98, et pl. v., f. 99-104. *Cancer aculeatus* O. Fabr., Fauna Groenl. p. 239. *Alpheus aculeatus* Sabine, Appendix to Parry's Voyage, p. 237, pl. ii., f. 9. Godhavn.

10. MYSIS OCLATA Kroyer, Groenlands Amfipoder, p. 88. *Cancer oculatus* O. Fabr., Fauna Groenl., p. 245. Port Foulke.

11. ANONYX AMPULLA Kroyer, Naturhistorisk Tidsskrift, Anden Raekke, i., 578. Voyage de la Recherche, pl. xiii., f. 2. *Cancer ampulla* Phipp's Voyage towards the North Pole, 1773, p. 191, pl. xii., f. 2. *Gammarus ampulla* Sabine. *Anonyx lajona* et *A. appendiculosus* Kroyer, Groenl. Amph., pl. 1. Dr. Hayes' specimens were obtained at "Gale Point," which I am unable to find on the chart. They differ somewhat from authentic specimens of the species, received from the Scandinavian Naturalists, in being larger, and in having the upper lobe of the eye broader.

12. PHERUSA TRICUSPIS nov. sp. Near *P. bicuspis* (*Amphitoe bicuspis* Kroyer, Groenland's Amfipoder, p. 45, pl. ii., f. 10) but has a dorsal spine, of lesser size, on the last thoracic segment, as well as on the first and second abdominal ones. The gnathopoda are slender and weak, the hands being no broader than the preceding joints. The antennæ are very slender and nearly as long as the body. The latero-posterior margin of the third abdominal segment is armed with two small teeth, one situated at the inferior angle, (which is a right angle,) the other at some little distance above and hook-shaped, the point curving upward. The upper pair of uropoda or caudal stylets is shorter than the other two pairs. Length nearly one inch. Littleton Island.

13. GAMMARUS LOCUSTA J. C. Fabr., Ent. Syst. ii., 516. Kroyer, Groenl. Amfip., 27. Bate and Westwood, Hist. of British sessile-eyed Crustacea, i. 378, wood-cut. *Cancer locusta* Linn. Fauna Suecica, 2d ed. 497. *Oniscus pulex* O. Fabr., Fauna Groenl. p. 254. *Gammarus pulex* Stimpson, Mar. Invert. of Grand Manan, p. 55. Port Foulke.

14. THEMISTO ARCTICA Kroyer, Groenland's Amfipoder, p. 63, pl. iv. f. 16, (?) In stomach of seal taken at Cape Faraday.

1862.]

15. *BOPYRUS HIPPOLYTES* Kroyer, Groenl. Amfip. p. 78, pl. iv. f. 22. Voy. de la Recherche, pl. xxviii. f. 2. Port Foulke.

16. *APUS GLACIALIS* Kroyer, Naturhistorisk Tidsskrift, 2 R. ii. 431. Fresh waters of Greenland.

17. *BRANCHIPUS PALUDOSUS* Müll. *Cancer stagnalis* O. Fabr., Fauna Groenl. p. 247. With the last.

18. *LERNÆOPODA ELONGATA* Grant, Edinburg Journal of Science, 1827, No. 12. Kroyer, Naturhist. Tidsskrift, i. p. 259. Steenstrup and Lütken, Danske Vid. Selsk. Skrifter, 5te Række, Nat. Math. Afd. 5te Bind, 1861, p. 422, pl. xv. f. 37. Port Foulke.

19. *HÆMOBAPHES CYCLOPTERINA*, Steenstrup & Lutken, Danske Vid. Selsk. Skrifter, etc., 5te Bind, 1861, p. 405, pl. xiii., f. 30. *Lernæa cyclopteryna* O. Fabr., Fauna Groenl. p. 337. This very curious Lernæan, which has its ovigerous tubes arranged in two regular and closely-twisted spires, was found attached to the gills of a *Gymnelis viridis* taken at Littleton Island.

20. *BALANUS PORCATUS* Costa. *Lepas balanus* O. Fabr., Fauna Groenl. p. 423. West coast of Greenland.

21. *BALANUS BALANOIDES* Darwin. *Lepas balanoides* O. Fabr., Fauna Groenl. p. 422. Port Foulke.

22. *CORONULA DIADEMA* Blainville, Dict. des Sc. Nat. 1824, tab. 117, f. 4. *Lepas diadema* Lin. *Lepas balenaris* O. Fabr., Fauna Groenl. p. 425. On Whales, Baffin's Bay.

#### ANNELIDA.

23. *LEPIDONOTE CIRRATA* Oersted, Groenland's Annulata Dorsibranchiata, p. 14, figs. 1, 5, 6, 11, 14, 15. *Aphrodita cirrata* O. Fabr., Fauna Groenl. p. 308. Port Foulke.

24. *LEPIDONOTE PUNCTATA* Oersted, l. c. p. 16. *Aphrodita punctata* O. Fabr., Fauna Groenl. p. 312. Port Foulke and Littleton Island.

25. *ONUPHIS CONCHILEGA* Sars, Beskr. og Jagttagelser, etc., p. 61. *O. Eschrichtii* Oersted, l. c. p. 20, f. 33-41, 45. Godhavn.

26. *NEREIS PELAGICA* Lin., Oersted, l. c. p. 23, figs. 52, 53, 55, 58, 59. *N. verrucosa* O. Fabr. Godhavn.

27. *NEPHTHYS CÆCA* Oersted, l. c., p. 41, figs. 73, etc. *Nereis cæca* O. Fabr. Godhavn.

28. *PHYLLODOCE GROENLANDICA* Oersted, l. c., p. 40, figs. 19, 20, etc. Port Foulke.

29. *SCOLOPLOS QUADRICUSPIDA* Oersted, l. c., p. 48, figs. 106-110. *Nais quadricuspida* O. Fabr. Godhavn.

30. *CIRRATULUS BOREALIS* Lam'k, Oersted, l. c., p. 54, figs. 98, 102. *Lumbricus cirratus* O. Fabr., Fauna Groenl. p. 281. Godhavn; Littleton I.

31. *AMMOTRYPANE LIMACINA* Rathke, Beitrage zur Fauna Norwegens, p. 202, pl. x. f. 4-8. Godhavn.

32. *SIPHONOSTOMUM PLUMOSUM* Rathke. *Amphitrite plumosa* O. Fabr., Fauna Groenl. p. 288. An. Müller, Zool. Dan. Prodr. No. 2521? Port Foulke. Dr. Hayes' specimen has a much rougher surface than occurs in the Norwegian examples, if we may judge of the latter by Rathke's figures.

33. *TECTURELLA FLACCIDA* Stimpson, Mar. Invert. of Gr. Manan, p. 32. *Siphonostomum vaginiferum* Rathke, Beiträge zur Fauna Norwegens, 211, pl. xi., f. 3-10? Port Foulke.

34. *BRADA INHABILIS*. *Siphonostomum inhabile* Rathke, Beiträge zur Fauna [May,

Norwegens, in Nov. Act. Acad. Cæs. Leop. Carol. Nat. Curiosorum, Vol. xx. p. 218, pl. xi., f. 13. Gale Point. We cannot be quite certain that the Greenland specimens, which are somewhat imperfect, are specifically identical with those of Norway. But they agree in size and all characters which can be clearly made out from the specimens received. Rathke's *Siphonostomum inhabile* evidently belongs to our genus *Brada*, Mar. Invert. of Gr. Manan, p. 32.

35. TEREBELLA CININNATA Reinhardt. *Amphitrite cincinnata* O. Fabr., F. G., p. 286. Godhavn.

36. TEREBELLA CIRRATA Cuv., Rathke, l. c., p. 230. *Amphitrite cirrata* Müll., O. Fabr., F. G. p. 285. Godhavn.

37. PECTINARIA ESCHRICHTII Rathke, l. c., p. 219. *Amphitrite auricoma* Müll., O. Fabr., F. G., p. 289. *Pectinaria groenlandica* Grube, Familien der Anneliden, p. 82. Godhavn; Port Foulke.

38. SPIROBIS NAUTILOIDES Lam., An. s. vert., v. 613. *Serpula spirobis* Lin. O. Fabr., F. G., p. 337. Port Foulke.

39. PRIAPULUS CAUDATUS Lam. *Holothuria priapus* O. Fabr., F. G., p. 355. Port Foulke. Found in the stomach of a walrus.

40. COSMOCEPHALA ANGULATA. *Planaria angulata* Müll., O. Fabr., F. G., p. 323. Godhavn.

## MOLLUSCA.

41. CLIONE LIMACINA Phipps. *Clio retusa* Müll.; O. Fabr., F. G., p. 334. *Clio borealis* Brug. Port Foulke.

42. BUCCINUM SCALARIFORME Beck, in Möller's Index Molluscorum Groenlandiæ, p. 11. Godhavn.

43. BUCCINUM CYANEUM Beck, in Möller's Index Moll. Groenl. p. 11. Port Foulke.

44. TROPHON CLATHRATUM Möller, Index Moll. Groenl., 14. *Murex clathratus* Lin. *Fusus bamjius* Gould, Inv. Mass., p. 289, f. 193. West coast of Greenland.

45. TROPHON CRATICULATUM Moersch. *Tritonium craticulatum* O. Fabr. *Trophon Fabricii* Beck. N. W. coast of Greenland.

46. NATICA CLAUSA Sow. N. W. coast of Greenland.

47. MARGARITA CINEREA Conthouy, Gould, Inv. Mass., p. 252. N. W. coast of Greenland.

48. MARGARITA HELICINA Möller, Index Moll. Groenl., p. 3. *Turbo helicinus* O. Fabr., F. G., p. 393. *Margarita arctica* Gould, Inv. Mass., p. 255, f. 173. The specimens brought home by Dr. Hayes from the N. W. coast of Greenland are of a much larger size than those found on the coast of New England. One of them measured 0.57 inch in diameter.

49. MYA TRUNCATA Lin. Port Foulke, very abundant. Nearly all the specimens are of the short, broadly and obliquely truncated form, with the beak near the posterior end, called *Uddevallensis* by Forbes, which is characteristic of the glacial deposits of Europe and America, and is now found living, for the most part, only in high northern latitudes. The siphons of this bivalve were found in great numbers in the stomach of a walrus.

50. SAXICAVA ARCTICA Desh. *Mya arctica* Lin., O. Fabr. *Mya byssifera* O. Fabr. *Saxicava rugosa* Lam. *Saxicava distorta* Gould non Say. Port Foulke, large and very abundant. Among Dr. Hayes' specimens, the form *arctica* appears in much greater numbers than that called *rugosa* or *pholadis*. The siphons of this species also were found in a walrus' stomach.

51. MACOMA SABULOSA Moersch, in Rink's Greenland, App. p. 90. *Tellina sabu-*  
1863.]



*losa* Spengler. *T. proxima* Brown. *Sanguinolaria sordida* Gould, Inv. Mass. p. 67. N. W. coast of Greenland.

52. ASTARTE ELLIPTICA Macgillivray, Moll. Aberd. 259. *Crassina elliptica* Brown, Illust. Conch. G. B., pl. xviii., f. 3. N. W. coast of Greenland.

53. ASTARTE PLANA J. Sow., Min. Conch. pl. clxvix., f. 2, 1817. *Venus borealis* Chemn. (non Lin.) = *Crassina corrugata* Brown. *Astarte lactea* Brod. & Sow., Gray, App. to Beechey's Voy., Zool., 152, pl. xlv., f. 19. Port Foulke.

54. ASTARTE STRIATA Gray, Beechey's Voy., Zool., p. 152, pl. xlv. f. 9. *Nicania striata* Leach. West coast of Greenland.

55. CARDIUM (SERRIPES) GROENLANDICUM Chemn. West coast of Greenland.

56. CARDIUM HAYESI, nov. sp. Near *C. islandicum*. Shell rather thick, elevated; beaks prominent; ribs acute, 33 to 35. Within yellowish; teeth strong; ligamental fulcrum short, so that the little notch indicating its posterior extremity is situated about the middle of the distance between the cardinal and the posterior lateral teeth. Inner margin strongly crenated throughout, as well on the posterior margin as on the inferior and anterior ones.

In this short description we have given only the characters which distinguish the species from its nearest allies, all of which inhabit the same seas. *C. islandicum* has more numerous ribs, a thinner shell, less prominent beaks, and a weaker hinge. *C. arcticum* Sow. has less numerous ribs. *C. Dawsoni* is more oblique, with a much thinner shell and weaker teeth. *Cardium interruptum* of the English crag is less tumid, less oblique, and more pointed behind. *C. Hayesii* also differs from all these species in the shortness of the ligamental fulcrum.

Of this shell two specimens were taken by Dr. Hayes at Disco Island. One measures 0.88 inch in height by 0.9 inch in length; the other 1.6 x 1.75. With age it shows a tendency to become more compressed and expanded about the margins. I have received the same shell from Nova Scotia.

57. LEDA MINUTA Müll. *Arca minuta*, Müll., O. Fabr., etc. West coast of Greenland.

58. MODIOLARIA LÆVIGATA Lovén. *Modiola lævigata* Gray, App. to Parry's 1st Voy., p. 244. *Mytilus discors* O. Fabr., non L. West coast of Greenland.

59. CRENELLA FABA. *Mytilus faba* O. Fabr., F. G., p. 419. *Modiola pectinula* Gould. N. W. coast of Greenland.

60. MYTILUS EDULIS Lin. Godhavn.

61. PECTEN ISLANDICUS Müll. West coast of Greenland.

#### ECHINODERMATA.

62. PENTACTA FRONDOSA. *Holothuria frondosa* Gunner. Godhavn.

63. CHIRIDOTA LAEVE Grube. *Holothuria lævis* O. Fabr. Godhavn.

64. MYRIOTROCHUS RINKII, Steenstrup, Vidensk. Meddel. fra den Naturh. For-ening, 1851, 55, tab. iii., f. 7-10. Port Foulke.

65. ASTERIAS GROENLANDICA. *Asteracanthion groenlandicus* Steenstrup. Port Foulke.

66. ASTERIAS ALBULA. *Asteracanthion albulus*. Stimpson *Asteracanthion pro-blema* Steenstrup. Port Foulke, Godhavn.

67. OPHIOGLYPHA SQUAMOSA. *Ophiura squamosa* Lüt. Port Foulke, Godhavn.

68. OPHIOPHOLIS ACULEATA Lütken. *Ophiura aculeata* Müll. Godhavn.

#### ACALEPHÆ.

69. LUCERNARIA AURICULA O. Fabr., Fauna Groenl., p. 341. Godhavn.

Besides the above, Dr. Hayes brought home a considerable number of Nudi-branchiata, Actiniæ, etc., which are very difficult to determine from alcoholic specimens.

[May,