

scapulæ and the posterior surface of some of their muscles, it goes along them in descending, and turns backwards to envelope in part the upper surface of the pericardium, and above all, on each side and behind the pericardium, the upper surface of the two pairs of clavicles with their muscles. From thence it passes lastly on to the abdominal muscles. A very large fold of the peritoneum, proceeding from the dorsal side and the anterior side of the body, envelopes the intestine, causing it to form a very large mesentery, then the stomach, the liver, the viscera and the pancreas.

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XXXVI.—*A List of Shells dredged on the West Coast of Davis's Strait; with Notes and Descriptions of eight new species.* By ALBANY HANCOCK.

[With a Plate.]

IN 1841 I received the shells comprised in the following list; they were collected by my friends Messrs. Warham and Harrison, masters of whaling vessels belonging to the port of Newcastle. These gentlemen took with them dredges for the purpose of gathering marine productions during their Arctic voyage; and so effectually did they use these implements, that in one fortnight's dredging, the only opportunity that occurred, they procured, besides a considerable collection of *Crustacea*, thirty-four species of *Testaceous Mollusca*,—as many as were obtained by Captains Parry and Ross during their various northern expeditions.

The collection contains many of the novelties discovered by our Arctic navigators, and also eight species which appear to be undescribed. The whole, with the exception of one, a littoral species, which was obtained from the rocks in the same locality, were dredged in a small bay or harbour, in a deep inlet on the west coast of Davis's Strait (lat.  $66^{\circ} 30'$ , long.  $68^{\circ}$ ), on a bottom composed chiefly of a stiffish blue clay. At low tide there are from twelve to fifteen fathoms water in the bay; but during spring tides the rise is five fathoms, an unusual height for those latitudes. The prevailing rocks in the neighbourhood are trap and granite.

Though I might have confined myself to describing merely the new species, it seems preferable to give the list entire; as such lists are useful in forwarding our information on the geographical distribution of species; and besides, many of those already described are very little known. At present, too, the Arctic shells possess a peculiar interest derived from the recent theories respecting the early glacial period of Europe, to the full appreciation of which a critical knowledge of species is necessary.

There are four or five species in the list related to *Buccinum*



*undatum*, about which a few remarks may be desirable. The allies of this species appear to be little known, and it is, therefore, with some hesitation that I have ventured to describe what I conceive to be three or four new species of them: this I should scarcely have done, had they been from different localities and from various depths of water.

The three principal varieties of *B. undatum* are never found mingled together; so far as I know, they belong to distinct localities; and their difference of appearance is probably owing to this cause. The variety with a coloured mouth, flattish whorls, and short conical spire is always procured between tide-marks; the heavy, coarse and much-waved shell, without an epidermis, belongs to a hard gravelly bottom, in about twenty fathoms water; and the variety with a thin delicate shell and soft velvety epidermis is procured at the depth of forty fathoms or more, on a soft bottom. The new species here described are all, however, from the same locality, and from the same depth of water. The peculiarities, then, of these species can scarcely be the effect of external circumstances, and it would therefore seem probable that they are specifically distinct; but whether so or not, it is proper that forms apparently so permanent and so strongly marked should be known; and with this view I have sunk other considerations, feeling assured that a knowledge of varieties is essential to a correct discrimination of species.

*Littorina tenebrosa*, Montagu sp.

*Turbo tenebrosus*, Mont. Brit. Shells, p. 303.

A few specimens of a *Littorina* closely resembling this species were gathered on the rocks surrounding the bay where the collection was made; they are chiefly of a dark hue, tessellated with yellowish brown, and with the whorls much rounded.

*Margarita umbilicalis*, Brod. and Sowerby.

*Margarita umbilicalis*, Brod. and Sow., Zool. Journ. vol. iv. p. 371.

This fine species occurred in great abundance and of a large size, some measuring upwards of an inch in diameter.

They vary from a pale yellowish horn-colour to a dark purplish flesh-tint, and some have the spiral striæ nearly obsolete: these are always strongest on the spire. Several of the shells are covered with an exceedingly thin, glossy, horn-like, transparent epidermis; operculum horny.

*Margarita sordida*, mihi.

*Margarita striata*, Brod. and Sow., Zool. Journ. vol. iv. p. 371; Sowerby, Zool. Beechey's Voy. p. 143. pl. 37. fig. 11.

Not by any means so abundant as the former species. Oper-



culum horny: the largest shells are three-quarters of an inch in diameter.

Dr. Gould, in his 'Report on the Invertebrata of Massachusetts,' describes a species under the name of *Margarita cinerea* which comes very near to this; but he considers them distinct, and states that he has compared the two, which I have not had the opportunity of doing.

Many of the specimens brought by Messrs. Warham and Harrison show, however, that some of the characters which he considers peculiar are not so. The spiral lines frequently cover the whole base, and the whorls of several are angulated by them; and a few have a slight projecting angle at the aperture.

The name given to this species in the 'Zoological Journal' was pre-occupied by a shell described by Dr. Leach in the Appendix to Ross's Voyage, and which has been shown by Mr. J. E. Gray (Zool. Journ. vol. ii. p. 567) to be the same as the *Turbo carneus* of Lowe, who described from specimens got at Oban four or five years after the publication of the Appendix. I have therefore ventured to substitute the name proposed above, which is somewhat expressive of the peculiar, dull, soiled appearance of this species.

*Margarita Harrisoni*, n. s. Pl. V. figs. 4, 5.

Shell conical, smooth, thin, white, dull, with the spire considerably produced, the apex slightly depressed, and the sides somewhat bulged; whorls five or six, much rounded; sutures deep, with numerous minute, close, depressed, spiral striæ, crossed by very minute longitudinal lines of growth; body-whorl nearly half the length of the shell, well rounded beneath; mouth round, outer lip thin, entire; pillar-lip slightly reflected over the umbilicus, which is not very large; interior of a most brilliant nacreous green. Diameter  $\frac{3}{8}$ ths of an inch; height  $\frac{3}{8}$ ths of an inch.

The surface of this pretty and very distinct species has a soft, smooth, waxy appearance; it is occasionally of a livid hue, and is generally more or less tinged with greenish yellow, having a subdued pearly lustre. The spiral striæ are very regular, close, and so minute that they cannot be seen without the aid of a lens; and the lines of growth are still finer. The umbilicus is much smaller in proportion than in either of the preceding species. Several specimens occurred.

This species is named after Mr. Harrison, one of the gentlemen who collected the shells comprised in this list.

x *Buccinum hydrophanum*, n. s. Pl. V. fig. 7.

Shell oblong-ovate, very thin, smooth, somewhat glossy, of a soiled purplish or livid white, with fine longitudinal lines of



growth ; spire considerably produced, conical ; whorls seven or eight, ventricose, the last one about half as long as the shell, occasionally with a few distant obsolete spiral keels or ridges ; mouth roundish ovate, shorter than the spire, with the interior of a deep rich glossy chocolate-brown, extending for a considerable way over the columella, which is smooth and regularly arched ; outer lip thin and strongly lobed in front ; canal very short and wide ; epidermis pale yellow, thin, horny, smooth and shining. Length  $2\frac{3}{4}$  inches ; breadth  $1\frac{1}{2}$  inch.

This fine species resembles in general habit the delicate, elongated varieties of *B. undatum*, but is entirely destitute of longitudinal plaits and is quite smooth. But were other characters wanting, it might at once be distinguished from that, and from all the other species with which I am acquainted, by the wide spread of the enamel over the columella and body-whorl. It would therefore appear that the mantle on the right side of the animal of *B. hydrophanum* is considerably more expanded than in any of the allied species. The mouth, too, is broader than in *B. undatum*, particularly in front ; the canal is shorter and much wider, and the columella smoother and more regularly arched. It also seems nearly related to *B. Humphreysianum* and *B. fusiforme* of Kiener ; but differs from both in the character of the columella and in the more rounded mouth ; also in the absence of striæ.

The outer layer of shell in *B. hydrophanum* is very opaque, white and chalky, and is liable to be eroded : it is quite distinct from the layer beneath, which is vitreous and of a vinous colour. The keels or ridges on the body-whorl are irregular, and frequently interrupted ; they vary in number from one to nine, and are occasionally arranged in pairs : they are, however, frequently obliterated, and are never conspicuous, even in full-grown individuals. The epidermis is confined to the body-whorl and readily peels off.

The most striking feature however of this species is the extraordinary change in colour and appearance which take place on the shell being immersed in water, when in a short time it loses its opacity and becomes of a deep rich vinous hue. This ensues immediately on the outer coat becoming saturated, which in this, as in many of the Arctic shells, is very porous.

In young specimens the outer covering of shell is very thin, and the colour of the under layer is always more or less apparent : in this state they have a bluish bloom, and are very delicate and glossy. They are sometimes covered with minute spiral striæ ; and as the lines of growth are then very distinct, the whole surface is sharply and finely decussated. As the shell increases in size this appearance diminishes, and in half-grown individuals



no traces of it remain, for at an early stage the outer layer towards the apex becomes eroded, and the striæ consequently completely destroyed.

This well-marked species occurred in great abundance; nearly forty specimens were brought.

*Buccinum undulatum*, Möller.

*Buccinum undulatum*, Möller, Index Mollus. Grœnl. p. 11.

There are two specimens of a *Buccinum* in the collection, one much injured, the other immature, which I think must be referred to this species. They agree very well with the description in the 'Index Molluscorum Grœnlandiæ,' excepting that they want the waved ribs: the whorls are very much rounded, and have strong, raised spiral lines of a reddish brown colour interrupted with white. The larger shell is upwards of an inch and three-quarters in length.

This appears to be a very distinct species.

× *Buccinum tenebrosus*, n. s. Pl. V. figs. 1, 2.

Shell ovate, ventricose, very thin, glossy, of a dark obscure violet, clouded and spotted with grayish white and tawny, particularly at the sutures, where the spots are usually well-defined; whorls six or seven, much rounded, and covered with fine waved lines of growth, and a few minute, depressed spiral lines obsolete on the body-whorl; body-whorl one-third longer than the spire, with eight or nine strong, distant spiral ridges or keels, three or four of which are continued on to the third whorl; mouth as long as the spire, broadish oval, with the interior of a dark chocolate-brown extending over the columella; outer lip thin, entire; columella very dark, glossy, rather straight, with an obsolete plait or fold, which gives to it the appearance of being twice bent; the inner margin is well raised and considerably reflected; the canal short and rather wide; epidermis very strong, of a greenish horn-colour, glossy, with fine distant longitudinal laminae, bearing minute widely separated cilia. Length  $1\frac{1}{2}$  inch; breadth nearly 1 inch.

The dark colour, the fragile, horn-like texture, the short, thick form, much rounded whorls, and spiral ridges give to this species a very characteristic appearance. The ridges vary a little in number, but are nevertheless pretty regular, and seem constant. The lines of growth have a smooth, polished appearance, and are much more conspicuous than the depressed spiral lines, especially on the body-whorl, where in many specimens they are scarcely to be traced.

It would appear that this, like many of the allied species, is occasionally plaited at the sutures of the whorls, for out of eight



that were brought one was so plaited in a slight degree. The outer coat of the shell is generally eroded towards the apex.

This species is probably related to the *B. boreale* of Leach, but is undoubtedly distinct, for Mr. Gray states in the 'Appendix to Beechey's Voyage,' that that species has much the habit of the waved varieties of *B. undatum*, which is not the case with this shell. The *B. cyaneum* of Beck appears to come much nearer, though it also is probably distinct; the *B. undatum* of Fabricius being given as a synonym, and the description of it in the 'Fauna Groenlandica' differing widely from the specimens brought by Messrs. Warham and Harrison: be this, however, as it may, Beck's name cannot be retained, for it was pre-occupied by a very different shell described by Chemnitz.

× *Buccinum sericatum*, n. s. Pl. V. fig. 6.

Shell ovate, ventricose, very thin, of a pale chestnut-colour, irregularly varied with paler longitudinal belts; spire not much produced; whorls six, ventricose, somewhat abruptly rounded behind, with fine spiral striæ, and a few distant stronger ones crossed by minute lines of growth, giving the surface a wrinkled or shagreened appearance, visible only by the aid of a lens; body-whorl one-third longer than the spire; mouth roundish ovate, one-half longer than the spire; outer lip thin, sublobed in front; interior of a pale chestnut or fawn-colour; columella smooth, pellucid, short, glossy, much and regularly arched, the bend more forward than usual; epidermis of a greenish horn-colour with a delicate silky gloss when held to the light, caused by the minute cilia that clothe it, which through a lens are perceived to rise from fine longitudinal laminae; the cilia are regular and not much crowded. Length 1 inch; breadth  $\frac{1}{16}$  inch.

This is shorter and more ventricose than any of the preceding species, and is very delicate and horn-like. It differs from *B. tenebrosus* as well in size and colour as in having the mouth much longer in proportion to the spire: the whorls are also somewhat abruptly rounded above, which is not the case in that species; and the columella has the gloss spread further over, is quite smooth, and in some specimens is so transparent that the pillar can be seen through it; the bend also is simple and rather lower down; the surface of the shell is more strongly marked by the striæ, and the strong spiral ridges or keels are wanting.

*Buccinum cyaneum*, Chemnitz.

*Buccinum cyaneum*, Chemn. Conch. vol. x. p. 182. tab. 152. f. 1448.

A single specimen was dredged; it is quite young (measuring seven-eighths of an inch in length), but agrees pretty well in ge-



neral habit with the figure in Chemnitz: it is however of a pale greenish horn-colour, except towards the apex, where it is of a dingy bluish gray, and the spiral striæ appear to be more crowded. The columella in front is straight, and has a decided plait or fold. The epidermis is ciliated.

This is closely related to *B. Humphreysianum*, but may be distinguished from that species by its more ovate form, by the decided plait on the columella, and by the character of the surface, which is much more irregularly and strongly marked with the lines of growth, causing it to be slightly wrinkled longitudinally, as represented in Chemnitz's figure.

× *Buccinum Grænlanticum*, n. s. Pl. V. figs. 8, 9.

Shell ovate, thin, dull, of a pale reddish fawn-colour; spire well produced, conical; whorls six or seven, ventricose, somewhat angulated in the centre, with indistinct longitudinal plaits, and two strong distant noduliferous spiral ridges or keels on the centre of the body-whorl, one of which passes up the spire: the whole surface is divided by depressed spiral lines into broad flattened striæ, which are crowded with finer spiral striæ of a similar character crossed by minute lines of growth, giving the surface a shagreened appearance; mouth roundish oval, partaking of the colour of the shell; outer lip thin, slightly reflected; interior with two grooves corresponding to the spiral ridges; canal longer than usual, and rather broad; columella with an indistinct plait, well bent in the centre, straight in front, with the anterior extremity sloping to the left, pale, very thin and pellucid; epidermis inconspicuous, very delicate, smooth, greenish yellow and horn-like. Length  $1\frac{3}{8}$  inch; breadth  $\frac{3}{4}$  inch.

The surface of this shell is peculiar: it is smooth and entirely without gloss, and to the naked eye the broad flat striæ only are visible; a lens is required to show the minute shagreened appearance caused by the fine decussations. The longitudinal plaits are strongest on the spire, and are most conspicuous on the centre of the whorl; the nodules on the spiral ridges are at the points where they are crossed by the plaits.

This species has considerable resemblance in general form to the *B. glaciale* of Lamarck, but is much smaller and very much thinner, judging from Kiener's figure and from the figure in Chemnitz. It differs from that shell also in the greater length of the canal, in the shape of the columella, and in the character of the surface of the shell. It probably likewise resembles *B. polaris* of Gray, but the characters that distinguish it from *B. glaciale* will also distinguish it from this species.

Two specimens were procured; one appears to be adult.



*Cancellaria costellifera*, Sowerby sp.

*Murex costellifer*, Sowerby, Min. Conch. vol. ii. p. 225. tab. 199. f. 3.

*Cancellaria buccinoides*, Couthouy, Bost. Journ. Nat. Hist. vol. ii. p. 105. pl. 3. f. 3.

*Cancellaria Couthouyi*, Gould, Report on the Inverteb. of Massachusetts, p. 283. f. 190.

Two specimens were brought; one is three-fourths of an inch long and nearly half an inch broad. They differ from the general appearance of the shell by having no longitudinal folds, and by having the whorls rounded, and not flattened above; the columella too has only a single obsolete plait. There can be little doubt, however, that they belong to this species, which is stated to be very variable in form.

*Fusus Sabini*, Gray sp. Pl. V. fig. 10.

*Buccinum Sabinii*, Gray, Append. Parry's 1st Voy. p. 211.

A single specimen of a *Fusus* resembling *F. Islandicus* was procured; it is undoubtedly distinct from that species, but is probably the *Buccinum Sabinii* of Gray. It differs from it however in some respects, particularly in the canal, which in *B. Sabinii* is stated to be shorter than that of *F. Islandicus*, whilst in the shell brought by Messrs. Warham and Harrison, it is longer. It is much thinner than any of the varieties of that species with which I am acquainted; and the whorls, which are covered with rather strong, raised spiral lines, are more ventricose, and are decidedly flattened above at the sutures: the canal is not only longer but is more contracted at its commencement, and widens a little towards the front or apex; the mouth is therefore better defined, and is much more rounded; including the canal, it is considerably longer than the spire. The columella is pellucid, and the epidermis very pale, horn-coloured and delicate. Length upwards of  $1\frac{1}{2}$  inch; breadth  $\frac{1}{16}$  inch.

*Fusus pellucidus*, n. s. Pl. V. fig. 3.

Shell fusiform, elongated, thin, glossy, of a yellowish horn-colour, pellucid; spire much produced; whorls seven, well rounded; sutures deep, with rather distant, strong, but very slightly raised spiral striæ, and strong, smooth, longitudinal close-set ribs or plaits, most conspicuous on the second, third and fourth whorls, and becoming obsolete on the body-whorl and apex; mouth considerably shorter than the spire, elliptical, terminating in a short, wide canal, slightly recurved; columella smooth; outer lip thin, with the interior crenulated in conformity with the exterior striæ. Length  $\frac{3}{8}$  inch; breadth  $\frac{3}{16}$  inch.

This species, of which only one individual was procured, is very



thin and of a horny appearance; and small as it is has much the general habit of *Fusus Islandicus*, though very much shorter in the canal. Perhaps it is still a better miniature representation of *F. Koninckii* of Nyst, a tertiary fossil from Baesele.

*Fusus Fabricii*, Beck sp.

*Trophon Fabricii*, Beck, in Möller's Index Mollus. Grœnl. p. 14.

*Tritonium craticulatum*, O. Fabr. p. 400.

*Murex borealis*, Reeve, Conch. Icon., Murex, pl. 30. f. 145.

A single specimen of this delicate and beautiful species occurred. It agrees very accurately with the description in the 'Fauna Grœnlandica' excepting that it is considerably larger, measuring three-fourths of an inch in length; it is stated, however, in the 'Index Molluscorum Grœnlandiæ' to be fifteen lines long.

The *Murex borealis* of Reeve, as represented in the 'Conchologia Iconica,' is a very good portrait of the shell brought by Messrs. Warham and Harrison; if therefore I am right in placing it with the *F. Fabricii*, the *Murex borealis* must sink into a synonym.

*Fusus turricula*, Montagu sp.

*Murex turricula*, Mont. Test. Brit. p. 262. t. 9. f. 1.

The collection contains a single, dead, much eroded specimen of this species.

*Pleurotoma decussata*, Couthouy.

*Pleurotoma decussata*, Couth., Bost. Journ. Nat. Hist. vol. ii. p. 183. pl. 4. f. 8.

A single specimen was procured: it is three-eighths of an inch long and two-tenths of an inch broad. It agrees pretty accurately in general form with the *Pleur. decussata* of Couthouy, as figured and described in Gould's 'Report on the Invertebrata of Massachusetts'; but it is represented more turreted than the specimen from Davis's Strait, and also more reticulated. I think it probable, as suggested by Dr. Gould, that the *Pleur. reticulata* of Brown belongs to the same species.

*Velutina zonata*, Gould.

*Velutina zonata*, Gould, Report on the Inverteb. of Massachusetts, p. 242.

A fine large individual of this shell was obtained; it is five-eighths of an inch long and the same broad. It wants the zones spoken of by Dr. Gould, and differs slightly in other particulars from his description.

This is nearly related to the *V. undata* of Smith, a fossil species procured from the glacial beds of the Clyde, but is, I am inclined to believe, distinct. The shell from Davis's Strait is thinner,



much larger, and has the outer lip not so broadly reflected on the columella; the groove also on the pillar-lip is not by any means so broad, and it is gradually lost, revolving into the shell; whilst in the *V. undata* it commences behind with comparative abruptness; the inner edge of the columella of the former is therefore twisted as it runs up the pillar, but is nearly straight in the latter.

It is right, however, to observe that the surface of the two species is much more alike than would appear from the description in the 'Wernerian Transactions,' which is undoubtedly from worn specimens. In the Newcastle museum there are three or four shells from the Clyde district, which, I believe, were received from Mr. Smith. These specimens agree pretty accurately with the description given by that gentleman, but when closely examined with a glass small portions of the true surface are found adhering, and they are minutely spirally striated in the same manner as in *V. zonata*.

*Natica Grænlandica*, Beck.

*Natica Grænlandica*, Beck, in Möller's Index Mollus. Grænl. p. 7.

Only one specimen occurred: it is small, measuring no more than seven-sixteenths of an inch in length; and it is rather doubtful whether it belongs to this species or not; from which it differs likewise in being thinner, and in having the sutures of the whorls more deeply impressed. In this respect it agrees better with the *N. borealis* of Gray, to which, indeed, it seems closely related.

*Patella rubella*, Fabr.

*Patella rubella*, O. Fabr. p. 386.

A single specimen was taken adhering to a large *Psolus*, resembling the *Holothuria squamata* of Müller: the *Patella* agrees very accurately with the description given by Fabricius, though instead of being entirely red it has only the apex of that colour; the rest is of a tawny horn-colour.

*Pecten Islandicus*, Müller sp.

*Ostrea Islandica*, Müller, Zool. Dan. Prod. no. 2990.

Three or four specimens occurred: they have the valves more distinctly ribbed than in those brought from the coast of Newfoundland.

*Pecten Grænlandicus*, Sowerby.

*Pecten Grænlandicus*, Sow. Thesaur. Conchyl. vol. i. p. 56. pl. 13. f. 40.

*Pecten vitreus*, Gray, App. Parry's 1st Voy. p. 214.

There are three specimens of this delicate, diaphanous species in the collection: they agree pretty accurately with Mr. Gray's



description of *Pecten vitreus*, and I think are undoubtedly his species. The specimens brought by Parry, however, seem to have wanted the fine, numerous, slightly depressed radiating striæ on the right or lower valve; but these striæ are not by any means conspicuous; it is therefore possible that Mr. Gray may have overlooked them. They have also escaped the notice of Mr. G. B. Sowerby, jun., who figured and described from the specimens brought by Messrs. Warham and Harrison. It is probable likewise that this character may occasionally be wanting, for in one of the three specimens they are almost obliterated; and the right valve is always more or less eroded, having a thin, opaque chalky outer layer that readily falls off. The left valve has a few distant, broad, rounded, almost obsolete rays, which are only discernible with a side light.

Mr. Sowerby's name must have precedence, as the one given to this species by Mr. Gray was pre-occupied.

*Nucula inflata*, n. s. Pl. V. figs. 13, 14.

Shell subtriangular, a little oblique, ventricose, thin, smooth, covered with a shining greenish yellow epidermis, slightly concentrically wrinkled; umbones small, eroded, placed much to one side; posterior slope long, somewhat flattened, slightly convex; anterior slope rather short, straight, and with a shallow cordate depression; basal margin regularly rounded, entire, forming rather abrupt angles at its junction with the sides, particularly in front; hinge with twenty teeth on one side and twelve on the other. Length  $\frac{9}{16}$  inch; breadth  $\frac{10}{16}$  inch; depth  $\frac{6}{16}$  inch.

This species is not unlike *Nucula tenuis*; the greater size and more angulated form however of *N. inflata* will readily distinguish it; it is also much longer in proportion to its breadth, is very much more ventricose and less oblique; its teeth are also more numerous.

A single individual occurred; it was dead, but quite perfect.

*Leda rostrata*, Lamarck sp.

*Nucula rostrata*, Lam. 2nd ed. vol. vi. p. 504.

*Leda buccata*, Stp. in Möller's Index Mollus. Grœnl. p. 17.

This species differs considerably from the *Arca rostrata* of Montagu: it is larger and appears to be much more ventricose; the rostrated end is more abruptly truncated, and is scarcely at all bent.

Only one specimen was procured: it is  $\frac{13}{16}$  inch broad and nearly  $\frac{7}{16}$  inch long.

*Leda minuta*, Fabricius sp.

*Arca minuta*, O. Fabr. Fauna Grœnl. p. 414; Chemn. Conch. vol. x. p. 351. t. 170. f. 1657, 1658.

This nearly resembles the *Nucula minuta* of British authors,



but is I think distinct; it is about the same size and has the like strong, transverse ribs; the rostrated end, however, is not so long, is less arcuated, is more abruptly truncated, and the umbones are nearer the centre. Breadth  $\frac{9}{16}$  inch; length  $\frac{5}{16}$  inch.

Two specimens were dredged.

*Modiola nigra*, Gray.

*Modiola nigra*, Gray, App. Parry's 1st Voy. p. 244.

*Mytilus discrepans*, Mont. Brit. Shells, Supp. p. 65. t. 26. f. 4  
(not of the body of the work).

A fine series of specimens were brought, some of which are totally black, others are varied with olive-brown; and the young are of a pale greenish olive: the striæ are considerably coarser in some than in others, and the dorsal margin is occasionally more arched than usual. Some of the largest are  $1\frac{5}{8}$  inch long and  $\frac{7}{8}$  inch broad.

*Modiola lævigata*, Gray.

*Modiola lævigata*, Gray, App. Parry's 1st Voy. p. 244.

*Mytilus discors*, O. Fabr. Fauna Grœnl. p. 418?

An extensive suite of this fine *Modiola* was procured; many of them are much larger than those from which Mr. Gray described; some are  $1\frac{5}{8}$  inch long and  $1\frac{1}{8}$  inch broad.

There is, however, no doubt that they belong to this species: the surface being almost devoid of radiating striæ gives to it a very characteristic appearance.

Dr. Gould, in his 'Report on the Invertebrata of Massachusetts,' includes this species amongst the synonyms of his *Modiola discrepans*, which is quite distinct from the shell so named by British conchologists\*.

The *Modiola discrepans* of Gould is probably the *M. lævigata*, but there are several points of difference. The latter is less winged on the dorsal margin, and is more abruptly rounded at the posterior end; the radiating ribs on the anterior portion are not straight as in that species, but are regularly waved and are more numerous, there being sometimes as many as fifteen; but even on this portion of the shell, the ribs are generally more or less obliterated, and consequently it is difficult to ascertain their number. The posterior compartment is almost always smooth, but occasionally traces of very fine radiating striæ may be observed at the margin. The middle compartment has rarely a few distant, fine, depressed radiating lines; the whole surface is a good deal wrinkled concentrically, and the epidermis is very

\* The *Modiola discors* of Gould appears to be the true *M. discrepans* of Montagu (not of the Supplement), differing only by having a few ribs more on the anterior compartment: and the *M. nexa* of the same author is the *M. nigra*—the *discrepans* of Montagu's Supplement.



glossy except on the posterior portion, where the brightness is considerably subdued. Old specimens are almost entirely black; the young are varied with rich brown, black and pale yellowish green, or are wholly of the latter colour.

There can be no doubt that the variety *β. substriata*, which Mr. Gray thought might prove distinct, belongs to this species.

I think it probable that the *Mytilus discors* of Fabricius includes this species, though under that name he appears to have described more than one kind; for he states that whilst the young are striated at both ends, the old are smooth on the front portion. This is not the case with the suite brought by Messrs. Warham and Harrison; the young, and some of them are very small, are quite smooth on the posterior compartment.

*Tellina calcarea*, Gmelin.

*Tellina calcarea*, Gmelin, p. 3236. no. 38.

*Tellina proxima*, Brown, Wern. Mem. vol. viii. t. 1. f. 21; Sowerby, App. Beechey's Voy. p. 154. t. 44. f. 4.

This did not occur abundantly; only six or seven specimens were dredged. The epidermis occasionally covers almost the whole shell, and is generally more entire than in the specimens from which Mr. Sowerby described.

*Astarte semisulcata*, Leach sp.

*Crassina semisulcata*, Leach, App. Ross's 1st Voy. 8vo ed.

*Astarte lactea*, Brod. and Sow., Zool. Journ. vol. iv. p. 366; Sowerby, Zool. Beechey's Voy. p. 152. pl. 44. f. 12.

*Crassina corrugata*, Brown, Conch. of Great Brit. 2nd ed. p. 96. pl. 40. f. 24.

*Crassina Withami*, Smith, Wern. Mem. vol. viii. pl. 1. f. 24, 25.

This is rather a variable species, but may always be distinguished from *A. boreale*, with which some conchologists have confounded it. It is sometimes nearly smooth, or only obsoletely sulcated at the umbones; in this state it is Brown's *Crassina corrugata*; others are sulcated at least half-way down, and the young, as might be expected, are furrowed over the whole surface. Individuals occur nearly black, not much compressed, and of a roundish oval, but by far the greater number are of a yellowish brown colour, with the valves very flat and much produced transversely.

This species is frequently distorted, and is generally much eroded at the beaks. It is found fossil at Bridlington; I have seen very characteristic specimens from thence in the collection of Mr. Loftus of Newcastle, who received them from Mr. Bean under his manuscript name of *Astarte lata*. The description of *Crassina Withami* of Smith agrees very accurately with the smooth varieties of *A. semisulcata*, and the figures in the 'Wernerian Memoirs' put it beyond a doubt; the straight ventral margin and



deep visceral depression in the centre of the shell being sufficient to determine the species.

This shell was taken in great profusion.

*Astarte Warhami*, n. s. Pl. V. fig. 15, 16.

Shell thin, elliptical, ventricose, with about sixty fine, close, sharp, regular, concentric ribs; ends equally rounded; umbones rather prominent, nearly central; anterior end well-produced, with the slope concave; lunule not very deep, oblong-ovate; posterior end slightly convex with the depression lanceolate; basal margin entire, well and regularly arched; epidermis glossy, pale greenish yellow; inside bluish white. Length  $\frac{3}{4}$  inch; breadth nearly 1 inch; depth  $\frac{7}{16}$  inch.

It would appear that this, one of the prettiest and most delicate of the genus, is not at all common; only six specimens were obtained. It is paler and brighter than is usual with the *Astartes*, and is generally marked with a few irregular dark blotches or spots, probably caused by injuries sustained by the shell. In old specimens the ribs blend at the basal margin, where the epidermis is rather coarse and wrinkled.

This species is not likely to be confounded with any other, though it has some general resemblance to *Astarte elliptica*; it is however more regularly oval and more ventricose, the colour is brighter, and the surface more glossy. It is perhaps more closely allied to the *A. Laurentiana* of Lyell, a fossil species obtained from the glacial beds of Canada, but differs from it in having the ends more equally rounded, and in the position of the beaks, which in that species are placed considerably towards the anterior end; the prominent lateral teeth are also wanting in *A. Warhami*.

This species is named in honour of Mr. Warham, the gentleman to whom I am principally indebted for this interesting collection of Arctic shells.

*Cardium Grœnlandicum*, Chemnitz.

*Cardium Grœnlandicum*, Chemn. Conch. vol. vi. t. 19. f. 198.

*Venus Islandica*, O. Fabr. Fauna Grœnl. p. 411.

*Cardium edentulum*, Montagu, Brit. Shells, Supp. p. 29.

Two or three fine fresh specimens were brought, and several single valves occurred, some of which measure nearly three inches in breadth. A young individual was also procured; it is very delicate, is more distinctly ribbed than the mature shell, and is prettily marked with zigzag lines of a pale fawn-colour.

*Cardium Islandicum*, Chemnitz.

*Cardium Islandicum*, Chemn. vol. vi. p. 200. t. 19. f. 195, 196.

*Cardium ciliatum*, O. Fabr. Fauna Grœnl. p. 410.

Two specimens were dredged; one is in fine condition: it is a



little larger than the measurement given by Fabricius, but in all other respects agrees exactly with his very admirable description. The other is a single valve, and is nearly twice the size of those from which that naturalist described; it measures upwards of two inches and a half in breadth.

This species has somewhat the habit of *C. echinatum*, from which it may be readily distinguished by the absence of the testaceous spines of that species, and by having in their place the epidermis raised into a fringe of fine close cilia; the ribs are also more numerous.

*Mya Uddevallensis*, Forbes.

*Mya Uddevallensis*, Forbes, Mem. of the Geol. Survey, vol. i. p. 407.

Shell elliptical, with the posterior end much truncated obliquely towards the basal margin; ventricose, thickish, dirty white, calcareous, irregularly wrinkled concentrically, and covered with a strong rugged olivaceous epidermis; tooth of the hinge squarely truncated, entire; siphonal impression rather short, about one-third the length of the shell, not much arched forward. Length 2 inches; breadth  $2\frac{3}{8}$  inches.

This species was first noticed by Mr. Smith of Jordanhill, in his paper on "The last Changes in the Levels of Land and Sea in the British Islands," Wernerian Memoirs, vol. viii., as occurring fossil in the newer pliocene deposits at the mouth of the Clyde. It has since been observed at Uddevalla in Sweden by Mr. Lyell; and Capt. Bayfield has also found it both fossil and alive in the Gulf of St. Lawrence.

Some of our best naturalists consider this form a mere variety of *Mya truncata*; I am inclined, however, to dissent from this opinion, which I do with some hesitation.

Half a dozen specimens were brought in all stages of growth, and in all of them the siphonal impression is much shorter than in *Mya truncata*, in which it is full half the length of the shell; it is likewise not so much arched forward. The shell is also always much more truncated, and the posterior margin slopes towards the base of the shell, whereas in *Mya truncata* it inclines in the contrary direction; the form of the tooth also slightly differs.

*Saxicava pholadis*, Chemnitz sp.

*Mytilus pholadis*, Chemn. Conch. vol. viii. p. 154. t. 82. f. 735.

*Mya byssifera*, O. Fabr. Fauna Grœnl. p. 408.

Two specimens occurred: one is  $\frac{5}{8}$  inch long and  $1\frac{3}{8}$  inch broad; the other is much smaller, and differs in no respect from *Saxicava rugosa*.

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2 B



*Lyonsia gibbosa*, mihi. Pl. V. fig. 11, 12.

*Anatina striata*, Gray, App. Ross's Voy.

Shell ventricose, oblong-ovate, thin, dull, opaque white, slightly wrinkled concentrically and striated longitudinally, with a delicate olivaceous epidermis; umbones large, tumid, placed a little towards the anterior end, which has the dorsal margin concave, with a rather deep ovate depression immediately under the beaks; the posterior dorsal margin straight, with the end a little twisted, slightly gaping and obliquely truncated; from thence the ventral margin is arched pretty regularly to the anterior end, which is well rounded; interior white, approaching to a pearly lustre; ossiculum triangular, with the posterior end concave. Length upwards of 1 inch; breadth  $\frac{5}{8}$  inch; depth  $\frac{1}{2}$  inch.

Mr. Gray informs me that this is his *Anatina striata*, but I have not been able to find the original description.

The *Mya striata* of Montagu, to which probably Mr. Gray referred his shell, is certainly distinct from the specimens brought by Messrs. Warham and Harrison. The dull opaque white colour devoid of nacreous lustre, the tumid beaks and the concavity of the margin in front of them, with the ovate depression, are sufficient to distinguish it.

The *Mya striata* of Montagu, however, is most likely a variety of *L. norvegica*, as considered by Turton; but whether so or not, Mr. Gray's name having been used cannot be retained.

This species differs from *L. norvegica* by its whiteness, opacity and want of nacreous lustre; it is not so broad, is more gibbous, and has the beaks larger and more tumid; the posterior end is not so much produced, is less squarely truncated, and the longitudinal striæ are stronger and further apart.

#### EXPLANATION OF PLATE V.

Figs. 1, 2. Different views of *Buccinum tenebrosum*.

Fig. 3. *Fusus pellucidus*.

Figs. 4, 5. Different views of *Margarita Harrisoni*.

Fig. 6. *Buccinum sericatum*.

Fig. 7. *Buccinum hydrophanum*.

Figs. 8, 9. Different views of *Buccinum Grœnlandicum*.

Fig. 10. *Fusus Sabinii*.

Figs. 11, 12. Different views of *Lyonsia gibbosa*.

Figs. 13, 14. Different views of *Nucula inflata*.

Figs. 15, 16. Different views of *Astarte Warhami*.





Hancock, Albany. 1846. "XXXVI.—A list of shells dredged on the west coast of Davis's strait; with notes and descriptions of eight new species." *The Annals and magazine of natural history; zoology, botany, and geology* 18, 323–338.  
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