
[Read Friday Evening, April 27, 1860.]

Some of the Mollusca were obtained at Frederikshaab, Queen's College, Belfast; to Mr. Walker, of London, I am indebted for the names of some of the Insecta; I am indebted for the names of some of the Fishes and some of the Crustacea also to Dr. Dickie. I have to acknowledge the uniform and great assistance afforded me by Dr. Carter, the Director of the Natural History Museum connected with this Society.

At present I do not wish to enter completely into the subject of the distribution and selection of species, but would just point out to those interested in the question the fact that, with a very few exceptions, "none of the species of birds, fishes, mollusca, crustacea, and insects are strictly confined to the Arctic regions."

† Falco albicilla (Penn.). White-tailed Eagle.—Specimens of this bird were obtained at Frederikshaab, South Greenland, 66° N., at Fiskermaas, 65° N., in July, 1857. Only two specimens of the white-tailed eagle were shot during a period of twenty years at Upernavik, 73° N. This is the most northern locality in which they are found. They are seen occasionally at Lake Baikal, in Siberia; found in Iceland, but not in N. America; common in Norway, Sweden, and Denmark; breed in the Shetlands, Orkneys, and over the European continent generally.

† Falco Islandicus (Penn.). The Jerfalcon.—Several specimens of falcons were brought home from Greenland in different states of plumage; but I am inclined to class them all under "Islandicus," believing the differences of plumage only that of age, and not of species, F. islandicus being identical with F. gyrfalco. These specimens were obtained at Frederikshaab, 63° N. The jerfalcon is a true northern bird, and is found so high as 75° N. in Siberia, Iceland, Russia, Norway, and occasionally in the north of Germany, and very common in North America. They are rare in the British Isles.

† Falco peregrinus (Penn.). The Peregrine Falcon.—This bird was found in Greenland up to 69° N., and three specimens (two old and one young) were shot at Port Kennedy, 72° N., 94° W. It has been found in 78° N. in Greenland, Iceland, Kamchatka, Siberian Mountains, and the north of Europe; is common to North America and United States; has been found at Straits of Magellan and at Cape of Good Hope.

† Falco tinnunculus (Penn.). The Golden Plover.—Several specimens of this bird were shot at Port Kennedy, 72° N., in June and July, 1859; they are identical with Charadrius semipalmatus, with the exception that the inner web of outer tail-feather has a dusky spot, it being pure in the typical specimens, but in this respect only it agrees with Charadrius semipalmatus, according to Yarrell. In size, colour of the beak and legs and shafts of the quill-feathers, it is absolutely identical with the C. semipalmatus. This bird has been found on the east and west coasts of Greenland, and in Prince Regent's Inlet in Russia and Siberia, and even so far south as Malta, Asia Minor, and as far eastward as the Black and Caspian Seas.

† Charadrius pluvialis (Penn.). The Golden Plover.—Specimens of this bird were obtained in Greenland up to 73° N., and a few were noticed at Port Kennedy, 72° N., where some nests with eggs were found in June, 1859. This bird has an extensive range, being found up to Melville Island, and westward to Siberia and Kamchatka, south as far as Italy and the coasts of Africa, and as far eastward as the Black and Caspian Seas.

† Charadrius semipalmatus (Penn.). Ringed Plover.—Several specimens of this bird were shot at Port Kennedy, 72° N., in June and July, 1859; they are identical with Charadrius semipalmatus, with the exception that the inner web of outer tail-feather has a dusky spot, it being pure in the typical specimens, but in this respect only it agrees with Charadrius semipalmatus, according to Yarrell. In size, colour of the beak and legs and shafts of the quill-feathers, it is absolutely identical with the C. semipalmatus. This bird has been found on the east and west coasts of Greenland, and in Prince Regent's Inlet in Russia and Siberia, and even so far south as Malta, Asia Minor, and eastward to Japan.

* Grus Canadensis (Temm.). Brown Crane.—In July, 1858, two of these birds were seen on the north side of Pond's Bay, 72° N.; they were in adult summer plumage, and were most likely breeding, but time did not permit a search. I believe this crane has not been found so far north before. Richardson states that it reaches to the shores of the Arctic seas.

† Tringa alpina (Penn.). The American Dunlin.—A few specimens were obtained at Port Kennedy in July, 1859; none were obtained in Greenland. At Port Kennedy the birds were breeding, and some young specimens were brought home. This is a widely scattered bird, not found farther north than where we wintered, but common in Iceland, Faroe Islands, Russia, and Siberia; southward on all the shores of the European continent and in Africa; eastward to the Caucasus, Japan, and Timor.

† Tringa interpres (Penn.). The Turnstone.—This bird was obtained in Melville Bay at 74° N. in August, 1857, and at Godhavn in 1859. Scarcely any other bird in the collection is so cosmopolitan as this one: it ranges from Nova Zembla, Spitzbergen, Melville Island, coast of Siberia, Greenland, Iceland, United States, as far south in the New World as the Straits of Magellan, where it was found by Darwin. In Europe,
This bird was obtained at Godhavn, 69° N., and at Pond's Bay, 73° N.; several eggs from the latter place were brought home. The kitiwake gull has been found as far north as any expedition ever reached, 82° N.; is found along the Arctic sea-coasts of Europe, Asia, and America; it is not rare in the south of England.

†Larus minuta (Penn.). The Kittiwake Gull.—This is a common bird in Baffin’s Bay. It was found breeding at Whaleshead Island, 68° N., and at Pond’s Bay, 73° N.; several eggs from the latter place were brought home. The kitiwake gull has been found as far north as any expedition ever reached, 82° N.; is found along the Arctic sea-coasts of Europe, Asia, and America; it is not rare in the south of England.

†Larus ridgwayi (Penn.). The Kittiwake Gull.—This is a common bird in Baffin’s Bay. It was found breeding at Whaleshead Island, 68° N., and at Pond’s Bay, 73° N.; several eggs from the latter place were brought home. The kitiwake gull has been found as far north as any expedition ever reached, 82° N.; is found along the Arctic sea-coasts of Europe, Asia, and America; it is not rare in the south of England.

†Larus argentatus (Brummick). The Grey Phalarope.—This bird was obtained at Godhavn, but one specimen was found. The grey phalarope has been found at Melville Island, Melville Peninsula, Iceland, Greenland, North of Europe, is more frequent in the British Isles then the red phalarope, and is common in Denmark, Sweden, and Norway.

†Sterna hirundo (Tem.). The Arctic Tern.—The Arctic Tern was found in numbers along the coast of Greenland and the west coast of Baffin’s Bay. Numbers were seen breeding at Cape Warrender, 75° N., at the entrance to Lancaster Sound. This Tern has been found at Spitzbergen, 81° N., is common in Scotland, and occasionally in the south of England.

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tetailed duck was found at different places along the Greenland coast; numbers of them were shot, in the summer of 1859, in Bellot Straits, although no nests were found. This duck is found on the coast of Kamchatka, and part of the north of Europe; is found from Spitzbergen and Melville Island to Italy. A few eggs of this bird were obtained in Greenland.

† Anas histrio nica (Linn. sp.). Harlequin Duck.—Only four specimens of this duck were obtained—one at Fiskenaes, 63° N., and three at Godhavn, 69° N. It has been found in Russia and along the coasts of Siberia; it is rare in the south of England, and breeds in Iceland.

† Anas marilila (Forst.). The Scapu Duck.—Only one specimen of this bird was obtained in Greenland; it is found in Iceland, and is common to all the Arctic sea-coasts; is occasionally found in Switzerland and Italy.

† Somateria mollissima (Linn. sp.). The Eider Duck.—Great numbers of the eider duck were met with during the voyage, even so far north as 76° N. Although many specimens of the Anas glacialis and A. spectabilis were found at Bellot Straits, yet, very curiously, none of the eider duck. This bird also is common to all the Arctic sea-coasts, is found in Spitzbergen, and occasionally in the south of England and north of France.

† Somateria spectabilis (Linn. sp.). The King Duck.—Specimens of the king duck were obtained in Greenland up to 72° N., and at Bellot Straits. Although they were very numerous at this latter place, no eggs were found. It is common in Nova Zembla, Spitzbergen, and Melville Island; rare in the south of England.

*Colymbus arcticus* (Linn.). The Black-throated Diver.—A single specimen of the black-throated diver was seen at Port Kennedy in August, 1858. They are found in Spitzbergen, and not uncommon in Iceland, south of Greenland, Melville Peninsula. This black-throat is the most rare of the divers in this country.

*Colymbus glacialis* (Linn.). The Great Northern Diver.—One specimen of this diver was seen at Pond's Bay, and another at Port Kennedy, both in 72° N. The great northern diver is a rare bird north of 72° N., breeds up to 70° N., is found in Iceland, Greenland, north of Europe; is not common in British isles, and rare in Germany and Holland.

† Colymbus septentrionalis (Linn.). The Red-throated Diver.—Several specimens of the red-throated diver were shot at Port Kennedy, 72° N., where they were found breeding. They have been found at Melville Island, and at Spitzbergen, are common in Greenland and Iceland, and are constant winter visitors to Ireland and Scotland: not commonly found farther south.

† Uria lomchi (Sabine). Thick-billed Guilemot.—This bird abounds in Davis's Straits and Baffin's Bay, seen in lat. 75° N.; not seen farther west than 85° W. Numerous breeding-places found along the coast of Baffin's Bay and Lancaster Sound. A single egg laid on the bare rock, no two eggs being exactly alike in colour. Found in 81° N., and along the Asiatic Arctic sea-coast; met with in the south of Ireland. According to Temminck, one was shot at Naples.

*Uria atriola* (Linn. sp.). The Common Guilemot.—This guilemot was not so frequently met with as the former; it was found associated with Brunnick's guilemot at the different breeding-places in Baffin's Bay; it also lays but one egg. Found from Spitzbergen to the coasts of Holland, France, and Italy; extends from Lapmark to Kamchatka.

† † † Uria ygrile (Linn. sp.). The Black Guilemot.—Specimens in summer plumage were seen or obtained in Greenland from 63° N. to Cape York, 75° N. During the winter of 1857-8, several specimens were shot in winter plumage about 71° N.; they were seen at intervals throughout the winter in the lanes of water caused by the disruption of the ice. One solitary specimen was seen in winter plumage in the month of February, 1859, in Bellot's Straits, 72° N., 94° W.; this was the most western point at which the dovekie was found during the voyage. It has been found at 79° N., and along all the Arctic sea-coasts. This bird has been found on the coasts of Devonshire and Cornwall. On inquiry from the Eskimo, it seems this bird lays but one egg.

† † † Alca alle (Linn.). The Little Auk.—This bird was found along the coast of Greenland, from lat. 68° N. up to Cape York, lat. 75° N. In Melville Bay great numbers were shot. Breeding-places are met with at intervals from Whalefish Islands, lat. 68° N., to the Crimson Cliff, 75° 30' N. At this latter place, especially, many eggs were obtained; the single egg was found hidden among stones, the debris of the neighbouring cliffs, sufficiently far removed from the reach of gull or fox. One specimen in winter plumage was seen at Godhavn, where it had been shot in the winter of 1857. The little guilemots range between lat. 81° N., and the counties of Kent and Sussex; in these latter places a rare visitor. We did not obtain it farther west than the west coast of Baffin's Bay. It is not found on the coasts of the Asiatic Arctic sea.

† † † Alca torda (Linn.). The Razor Bill.—Only two specimens were obtained in Greenland, 68° N. The range of this bird is from Spitzbergen to Tangiers; found on the coasts of Labrador and the Asiatic and Arctic seas.

† † † Alca arctica (Linn.). The Puffin.—This bird was obtained at Godhavn, 69° N.; it ranges from Nova Zembla to the Scilly Isles and coast of Spain. Inhabits all the Arctic coasts of Europe, Asia, and America.

† † † Phalacorax carbo (Steph.).—Common or Great Cormorant.—Several specimens of this cormorant were obtained at Godhavn, 69° N.; this appears to be the most northern limit of the bird.

**Fishes.**

† † † Cottus polaris (Sav.).—A few specimens of this species were found at Port Kennedy; they were dredged up in fifteen to five fathoms.

† † † Salmo natalis (Richardson).—Port Kennedy, where a single specimen, partly mutilated, was obtained.

† † † Salmo Hoodii (Rich.).—A few specimens of this species were obtained from a fresh-water lake at the head of Port Kennedy; the specimens varied from three to eleven inches in length.
CRUSTACEA.

Decapoda.

††Ilyas coarctata (Leach).—A few specimens dredged in 20 fathoms at Godhavn, 69° N.
††Pagurus pubescens (Kroyer).—Also found at Godhavn.
††Hippolyte borealis (Owen).—Found at Port Kennedy, 10 to 15 fathoms.
††Hippolyte aculeata (Fabr.).—Melville Bay, 68 to 140 fathoms, and at Port Kennedy.
††Hippolyte polaris (Sab.).—Port Kennedy, 10 to 15 fathoms.
††Hippolyte Sowerbyi (Leach).—Near Cape York, 10 to 25 fathoms.
††Crangon boreas (Sab.).—A number of mature specimens were taken from the stomach of a bearded seal in Port Kennedy.
††Crangon septem-carinatus (Sab.).—Melville Bay, in 110 fathoms.

Stomatopoda.

††Mysis flexuosus (Lam.).—Two or three imperfect specimens from Port Kennedy.

Amphipoda.

††Gammarus loricatus (Sab.).—Numbers found swimming about in Port Kennedy.
††Gammarus locusta (Mont.).—Associated with the former and following species at Port Kennedy.
††Gammarus boreas (Sab.).—Ditto.
††Amphitoe Eduardssii (Sab.).—Near Cape York, 15 fathoms.
††Amphitoe Sabini (Leach).—Caught in a garbage net in numbers at Port Kennedy.
††Acanthosoma hystric (Owen).—Near Cape York, 15 fathoms.
††Lysianassa vahlii (Kr.).—Found at Port Kennedy.
††Lysianassa appendiculata (Owen).—Found at Port Kennedy.
††Stegocheilus ampulla (Kr.).—Two very fine specimens obtained at 10 fathoms in Port Kennedy.
††Themisto Arctic (Kr.).—Found in the stomach of a seal at Port Kennedy.

Isopoda.

††Arcturus Baffinii (Sab.).—Dredged in 15 fathoms near Cape York.
††Idotea entomos (Latreille).—Some beautiful specimens, both of old and young, were dredged in 10 fathoms at Port Kennedy.

Entomostraca.

††Cetochlilus Arcticus (Baird).—Found swimming in Melville Bay.

Pycnogonide.

††Nymphon grossipes (Fab.).—Specimens dredged at 20 fathoms near Cape York, and at 80 to 100 fathoms in Melville Bay.
††Nymphon hirtum (Fab.).—Newly discovered in 20 fathoms in Melville Bay.

Appended to this list is a comparative Table, showing the number of crustacean species brought home by the several expeditions under Parry, Ross, Penny, Belcher, and M'Clietock, and I am glad to say that the list of the latter is more numerous filled than that of any other expedition. A similar remark may be made in reference to the species of Mollusca.

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*Now usually referred to genus Lysianassa.
Echinoderma.

†*Alecto glacialis*.—Brought up in the dredge from 80-95 and 140 fathoms in Melville Bay.
††*Ophiura texturata*.—Godhavn, 15 fathoms; Crimson Cliffs, 140 fathoms; Melville Bay.
††*Ophiura alviera*.—Port Kennedy, 10 fathoms.
††*Ophiura fasciata*.—Port Kennedy, Crimson Cliffs.
†*Ophiocoma*.—New species. Port Kennedy, 10 fathoms.

Disk sub-pentangular, convex; scales mostly uniform in size, minutely granular, two short, slightly divergent, sub-triangular scales at the base of each ray; upper ray scales sub-triangular, lower almost similar, lateral having four spines, the three uppermost of the breadth of the ray, the lowest about one-third shorter than the upper; disk about one-fourth inch; arms about five times longer than the breadth of the disk; colour pale black.
†*Ophiocoma nigra*.—Crimson Cliffs.
†*Ophiura echinulata*.—Port Kennedy, 10 fathoms.
††*Ophiura violacea*. (Young).—Port Kennedy, 10 fathoms? Melville Bay, 80 fathoms?.

Upper surface with projections reticulately arranged, covered with short acute spines, the intervening spaces smooth.
††*Echinus neglectus*.—In Godhavn, 15 fathoms; Melville Bay, 100 fathoms; and at Port Kennedy, 8 fathoms.
††*Solaster endeca*.—Port Kennedy, 10 fathoms.
††*Solaster papposa*.—Reefkol, 20 fathoms.

Cirripedia.

††*Balanus porrectus*. (Da Costa).—Godhavn, Fiskermaes, Reefkol, and Port Kennedy.
††*Balanus scoticus*.—Godhavn.

Actinia.

†*Actinia candida*.—Fiskermaes, Godhavn, and Melville Bay.
†*Actinia digitata*.—Godhavn.

Mollusca.

†*Rossia palpebrosa*.—Several beaks, belonging probably to this species, were found in the stomach of a gull.
††*Fusus tortuosus*. (Reeve).—A few dead specimens were found at 100 fathoms in Melville Bay.
†*Buccinum Donocani*. (Gray).—Godhavn; 20 fathoms.
†*Buccinum eyanum*. (Chenn.).—Melville Bay, 140 fathoms, and Port Kennedy, 15 fathoms.
††*Buccinum undulatum*.—Godhavn, 15 fathoms, Port Kennedy.
†*Buccinum hydrophamum*. (Hancock), 15 fathoms, Port Kennedy.
†*Buccinum Greenlandicum*. (Hancock).—Same as last.
†*Buccinum tenebrosum*. (Hancock).—Godhavn; 10 to 20 fathoms.
†*Buccinum ciliatum*. (Hancock).—Port Kennedy; 10 fathoms.
††*Buccinum plicatum*. (Hancock).—Melville Bay; 100 fathoms.
† *Mytilus edulis*, var. *elegans*—Melville Bay.
† *Velutina levigata*—Melville Bay, 100 fathoms.
‡ *Nucula tenuis* (Mont.)—Godhavn and Melville Bay, 10 to 20 fathoms.
† *Nucula Portlandica*—Melville Bay, 80 fathoms.
† *Nucula truncata* (Br.)—Port Kennedy, 15 fathoms.
‡ *Nucula nitida* (Sow.)—Godhavn.
‡ *Leda canadensis* (Don.)—Godhavn and Melville Bay.
‡ *Leda minutula*—Godhavn.
† *Udea caudata* (Munster)—Godhavn.
† *Udea alba*—Melville Bay, 140 fathoms.
† *Udea nigra* (Gray)—Cape York and Port Kennedy.
† *Crenella discors* (L.)—Crimson Cliffs.
† *Crenella decussata* (Mont.)—Melville Bay.
† *Crenella glandula*—Melville Bay, 75 fathoms.
† *Pecten islandicus* (Mull.)—Godhavn, Reefkol, and Melville Bay.
† *Pecten Greenlandicus* (Sow.)—Cape York and Melville Bay.
† *Hypothyns psittacea* (Chem.)—Reefkol, Godhavn, and Melville Bay.

They were numerous at 140 fathoms in Melville Bay.

**Pteropoda.**
† *Clio borealis*.
† *Limacina Arctica*—Baffin’s Bay.
† *Hyalica tridentata*—North Atlantic.
† *Dedora pyramidalis*—North Atlantic.

**INSECTA.**

*Port Kennedy, June and July, 1859; lat. 72° N., long. 94° W.*

Order.—**COLEOPTERA.**
† *Platyderus nitidus* (Kirby).
Order.—**HYMENOPTERA.**
† *Nematus intercrus* (St. Farcy).
‡ *Lepidoptera* (Kirby).
*Bombus frigidus* (Smith).
† *Bombus terricola* (Kirby).
Order.—**LEPIDOPTERA.**
† *Melita Tarquinia* (Curtis).

**Dr. Walker on Arctic Zoology.**

Fam.—**Archiidæ** (Leach).
Gen.—*Arcticia* (Schrank).
‡ *Arcticia Americanus* (Harris). Larva.
Fam.—**Hadeneae** (Granby).
Gen.—*Hadena* (Schrank).
‡ *Hadena Richardi* (Curtis).
Fam.—**Laricinae** (Green).
Gen.—*Psychophora* (Steph.).
‡ *Psychophora Sabini* (Kirby).
Fam.—**Torticidæ** (Steph.).
Gen.—*Cheimatophila* (Steph.).
‡ *Cheimatophila* (n. s.).

The characters of this and several following species are too much obliterated to allow of their being satisfactorily described.

Order.—**DIPTERA.**
† *Chironomidae* (Hal.).
Gen.—*Chironomus* (Meig).
*Chironomus.*—Species?
‡ *Chironomus polaris* (Kirby).
‡ *Chironomus aterrinus*? (Meig).
† *Tipula Arctica* (Curtis).
Gen.—*Tipula* (Linn.).
† *Limmobla*—Species?
† *Limmobla Scoticana* (Curtis).
Fam.—**Tenebrionidae** (Leach).
Gen.—*Tenebrionis* (Leach).
† *Tenebrionis intercrus* (St. Farcy).
‡ *Aphid* (Leach).
Gen.—*Bombus* (Latr.).
*Bombus frigidus* (Smith).
‡ *Bombus terricola* (Kirby).
Order.—**LEPIDOPTERA.**
† *Melita Tarquinia* (Curtis).
In addition to the foregoing, the Society is indebted to Sir F. Leopold M'Clintock for the following specimens, presented by him upon his return from each of his expeditions to the Arctic regions:

**First Expedition.**

**Mammals.**

<table>
<thead>
<tr>
<th>Species</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arctic fox (Canis lagopus)</td>
<td>The skins of a cow and calf.</td>
</tr>
<tr>
<td>Musk ox (Ovibos moschatus)</td>
<td>Skeletons of male and female.</td>
</tr>
<tr>
<td>Arctic hare (Lepus glacialis)</td>
<td>Skull of male.</td>
</tr>
</tbody>
</table>

**Birds.**

<table>
<thead>
<tr>
<th>Species</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strix nyctea (Mont.)</td>
<td>Snowy owl.</td>
</tr>
<tr>
<td>Sylvia Cyantha (Penn.)</td>
<td>The wheat-ear.</td>
</tr>
<tr>
<td>Alauda pratincola (Penn.)</td>
<td>The meadow pipit.</td>
</tr>
</tbody>
</table>

**Second Expedition.**

**Mammals.**

<table>
<thead>
<tr>
<th>Species</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Myodes Hudsonius</td>
<td>The Hudson's Bay Lemming.</td>
</tr>
</tbody>
</table>

**Mollusca.**

<table>
<thead>
<tr>
<th>Species</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fucus Islandicus</td>
<td></td>
</tr>
</tbody>
</table>
Leda caudata (Don).  
Crenella decussata (Mont.).  
Hypothyris psittacea (Chem.).

THIRD EXPEDITION.

Birds.

Falco Islandicus (Penn.). The Jerfalcon.
Falco peregrinus (Penn.). The Peregrine Falcon.
Emberiza (Plectrophanes) nivalis (Myer). Snow Bunting.
Emberiza (Plectrophanes) Lapponica (Selby). The Lapland Bunting.
Tetrao, Disco, June, 1852.
Tetrao (lagopus) saliceti (Swain). The Willow Grouse.
Tringa interpres (Penn.). The Turnstone.
Tringa maritima (Brunn.). The Purple Sandpiper.
Sterna Arctica (Temm.). The Arctic Tern.
Anas glacialis (Linn., sp.). The Long-tailed Duck.
Somateria mollissima (Linn., sp.). The Eider Duck.
Uria aalge (Linn., sp.). The Little Auk.
Alca alle (Linn.). The Little Auk.
Alca arctica (Linn.). The Puffin.

FOURTH EXPEDITION.

Mammals.

Polar Bear (Ursus maritimus) (Linn.). Skin from Bellot Straits.
A young one from Pond's Bay.  
A Skeleton.
Ermine (Mustela erminea). Two specimens; one in its winter coat
from lat. 72° N., long. 94° W., killed October, 1858; and the other in
its summer coat, killed July 5, 1859.
Arctic Fox (Canis lagopus). Two skins.
Phoca barbata (Frbr.). 2 From Bellot Straits.
Young.
Hudson's Bay Lemming (Myodes Hudsonius). Two specimens killed
July 28, 1859.
Arctic Hare (Lepus glacialis). One specimen.
White Whale (Delphinapterus leucas) (Pall.). The Skull and Flippers.

Eggs.

Falco islandicus. The Jerfalcon. No. 2.
Falco peregrinus. The Peregrine Falcon. 2.
Motacilla alba. Wagtail. 5.
Tetrao — ? Parmigan. 1.
Charadrius pluripalpis. The Dotterel. 2.
Anas berniela. Brent Goose. 2.
Anas glacialis. Long-tailed Duck. 3.

Mr. Wonfor's Analyses of White Limestone.

Somateria mollissima. The Eider Duck. 4 from Frederickshaab,
July 18, 1857.
Mergus serrator. The Red-breasted Merganser. 2.
Columbus septentrionalis. Red-throated Diver. 1.
Alca alle. The Little Auk. 2.
Uria aalge. Common Guillemot. 2.
Alca Arctica. The Puffin. 1.
Larus marinus. The Great Black-backed Gull. 2.
Larus leucopterus. The Iceland Gull. 2.
Larus rissa. The Kittiwake Gull. 4.
Sterna Arctica. The Arctic Gull. 2.

XII.—Analyses of the White Limestone of the County of Antrim.
By William J. Wonfor, Student in the Laboratory of the
Museum of Irish Industry.

[Read Friday Evening, May 25, 1860.]
The specimen of chalk, or white limestone, which I analyzed, was
obtained from Cushendall, near Redbay, Co. Antrim.
A careful qualitative analysis revealed the presence of silica, organic
matter, peroxide of iron, oxide of manganese, phosphoric acid, mag-
nesia, potash, and soda, in addition to carbonate of lime.
The quantitative analysis was conducted in the following manner:
—About 100 grains of the limestone were employed, so that the sub-
stances occurring in small quantity could be estimated.
The limestone was dissolved in hydrochloric acid; the acid solution
was evaporated to dryness on a water-bath; the residue was moistened
with hydrochloric acid; water was subsequently added; and the solution
was then heated and filtered through a tared filter dried at 212° F. The
insoluble residue, which consisted of sand, silicious acid, and organic
matter, was washed, dried at 212° F., and weighed; the filter and in-
soluble residue were then ignited, and the inorganic matter weighed;
this gave, after deducting the ash of the filter, the quantity of sand and
silica; and the difference in weight between the total amount of in-
soluble matter and the silica and sand gave the amount of organic
matter. As the quantity of insoluble inorganic matter was so slight, it
was not further examined.
Chlorine water was added to the filtrate from the insoluble residue,
the solution was warmed, and ammonia added in slight excess; the mix-
ture was allowed to stand for a short time in a covered vessel before it
was filtered. The filtrate was collected in a graduated flask, capable of
holding 20,000 grms. of liquid. The precipitate produced by the am-
nomia was dissolved in hydrochloric acid. Chlorine water and ammonia
were again added, and the solution allowed to stand as before; it was

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