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édgar A. Inearne.

## ARCTIC ZOOLOGY.

## V O L. I.

 I NTRODUCTION.CLASSI. QUADRUPEDS.


L O N D O N:

PRINTEDETHENRY HUGHS.
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## ADVERTISEMENT.

THIS Work was begun a great number of years paft, when the empire of Great Britain was entire, and poffeffed the northern part of the New World with envied fplendor. At that period I formed a defign of collecting materials for a partial Hiftory of its Animals; and with true pains, by various correfpondencies, made far greater progrefs in my plan than my moft fanguine expectations had framed. Above a century ago, an illuftrious predeceffor in the line of Natural Hiftory, who as greatly exceeded me in abilities as he did in zeal, meditated a voyage to the New World, in purfuance of a fimilar defign. The gentleman alluded to was Francis Willughby, Efq; who died in 1672, on the point of putting his defign in execution. Emulous of fo illuftrious an example, I took up the object of his purfuit; but my many relative duties forbade me from carrying it to the length conceived by that great and good man. What he would have performed, from an actual infpection in the native country of the feveral fubjects under confideration, I muft content myfelf to do, in a lefs perfect manner, from preferved fpecimens tranfmitted to me; and offer to the world their Natural Hiftory, taken from gentlemen or writers who have paid no finall attention to their manners.

Let me repeat, that this Work was defigned as a 1 ketch of the Zoology of North America. I thought I had a right to A the

## A DVERTISEMENT.

the attempt, at a time I had the honor of calling myfelf a fel-low-fubject with that refpectable part of our former great empire; but when the fatal and humiliating hour arrived, which deprived Britain of power, ftrength, and glory, I felt the mortification which muft frike every feeling individual at lofing his. little hhare in the boaft of ruling over half of the New.World. I could no longer fupport my clame of entitling r:yfelf its humble Zoologift : yet, unwilling to fling away all my labors, do now deliver them to the Public under the title of the Arctic Zoology. I added to them a defcription of the Quadrupeds and Birds of the north of Europe and of AJFa, from latitude 60 to the fartheft known parts of the Arctic World, together with thofe of Kamt $\int c b a t k a$, and the parts of America vifited in the laft voyage of the illuftrious Cook. Thefe additional parts I have flung into the form of an Appendix to each genus, and diftinguifhed by a feur de lis; and the fpecies by literal inftead of numeral marks, which diftinguifh thofe of North America. There will, in a great meafure, fhew the dilatation of Quadrupeds and Birds, and the migrations of the feathered tribe, within part of the northern hemifphere.

I have, whenever I could get information, given their refpective refidences, as well as migrations to far more northern parts, to Chew to what very remote places the Author of Nature hath impelled them to retire, to breed in fecurity. This wife provifion preferves the fpecies entire, and enables them to return by myriads, to contribute to the food or luxuries of fouthern climates. Whatever is wanting in the American part, I may forefee, will in time be amply fupplied. The powers of literature will foon arife, with the other ftrengths of the new empire, and fome native Naturalift give perfection to that

## A DVERTISEMENT.

part of the undertaking, by obfervations formed on the fpot, in the ufes, manners; and migrations. Should, at prefent, no one be inclined to take the pen out of my hand, remarks from the other fide of the Atlantic, from any gentlemen of congenial ftudies, will add peculiar pleafure to a favorite purfuit, and be gratefully received.

I muft reckon among my moft valued correfpondents on the New Continent, Doctor Alexander Garden *, who, by his long refidence in South Carolina, was enabled to communicate to me variety of curious remarks and fubjects, as will appear in the following pages.

To the rich mufeum of American Birds, preferved by Mrs. Anna Blackburn, of Orford, near Warrington, I am indebted for the opportunity of defcribing almoft every one known in the provinces of Ferfey, New York, and Connecticut. 'They were fent over to that Lady by her brother, the late Mr. A/bton Blackburn; who added to the 1 kill and zeal of a fportfman, the moft pertinent remarks on the fpecimens he collected for his worthy and philofophical fifter.

In the foremoft rank of the philofophers of the Old Continent, from whofe correfpondence I have benefited, I muft place Doctor Peter Sim. Pallas, at prefent Profeffor of Natural Hiftory in the fervice of the illuftrious Empress of Rulfia: he not only favored me with the fulleft remarks on the Zoological part of that vaft empire, moft of which he formed from actual travel and obfervation, but collected for my ufe various other remarks from the manufcripts of his predeceffors; efpecially what related to Kamtfcbatka from thofe

[^0]
## 'A D V ERTIS E M"E N'T.

of Steller; which have affifted me in the hiftory of parts hitherto but very flightly underftood.

From the correfpondency and labors of Mr. Eberh. Aug. William Zimmerman, Profeffor of Mathematics at Brunfwic, I have collected moft uncommon-inftruction. His Specimen Zoologice Geograpbica 2uadrupedum* is a work which gives a. full view of the clafs of Quadrupeds, and the progrefs they have made in fpreading over the face of the earth, according to climates and latitudes. Their limits are defcribed, in general, with uncommon accuracy. Much-is faid of the climates themfelves; of the varieties of mankind; of the effects of heat and cold on them and: other animals. A moft curious map is joined to the work, in which is given the name of every animal in its proper climate ; fo that a view of the whole Quadruped creation is placed before one's eyes, in a manner perfectly new and inftructive $\dagger$.

To the following foreigners, diftinguifhed for their literary knowlege, I muft pay my beft acknowlegement for variety of moft ufeful communications:: Doctor Anders Sparman, of Stockbolm; Doctor Charles. P. Thunberg; of Uffal; Mr. And. J. Retzius, Profeffor of Natural Hiftory at Lund; Mr. Martin Thrane Brunnich, Profeffor of Natural Hiftory, and Mr. Otho Muller, Author of the Zoologia Danica, both. of Copenhagen: and let me add my great obligations to the labors of the Reverend Mr. Otto Fabricius, for his moft finimed Fauna of Greenland.

[^1]
## A D. V E R TISEMENT.

To many of my countrymen my beft thanks are due for literary affiftances. Sir Joseph Banks, Baronet, will, I hope, accept my thanks for the free admittance to thofe parts of his cabinet which more immediately related to the fubject of the following fheets.

To Sir Ashton Lever, Knight, I am highly indebted, for the more intimate and clofer examination of his treafures than was allowed to the cominon vifitors of his moft magnificent mufeum.

To Mr. Samuel Hearn, the great explorer by land of the Icy Sea, I cannot but fend my moft particular thanks, for his liberal communication of many zoological remarks, made by him on the bold and fatiguing adventure he undertook from Hudfon's Bay to the ne-plus. ultra of the north on that fide.

Mr. Andrew Graham, long a refident in Hudfon's Bay, obliged me with numbers of obfervations on the country, and the ufe of multitudes of fpecimens of animals tranfinitted by him to the late mufeum of the Royal Society, at the inftance of that liberal patron of fcience, my refpected friend the Honorable Daines Barrington.

Let me clofe the lift with acknowleging the great affiftance I have found in the Synopfis of Birds by Mr. John Latham; a work now brought almoft to a conclufion, and which contains a far greater number of defcriptions than any which has gone before. This is owing not only to the affiduity of the Author, but alfo to the peculiar fpirit of the Englifb nation, which has, in its voyages to the moft remote and moft oppofite parts of the globe, payed attention to every branch of fcience. The advantages are pointed out by the able pen of the Reverend Doctor Douglas, in his Introduction to the laft Voyage of

## A DVERTISEMENT.

our great navigator, publifhed (under the aufpices of the Lords of the Admiralty) in a manner which reflects honor on our country in general, and will prove a moft lafting monument to the memory of the great Officer who fo unfortunately perihed by favage hands, and his two able conforts, who at length funk beneath the preffure of fatigue, in carrying the glory of difcovery far beyond the attempts of every preceding adventurer.

Dówninc, Fibruary $1,1785$.

THOMAS PENNANT.

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## V O L. I.

$\mathrm{H}^{\text {RONTISPIECE, a winter feene in Lapland, with Aurora }}$ Borealis: the Arctic Fox, $\mathrm{N}^{\circ}$ 10: Ermine, $\mathrm{N}^{\circ} 26$ : Snowy Owl, $\mathrm{N}^{\circ} 121$ : and White Grous, $\mathrm{N}^{\circ} 183$.
Title-page, with the head of the Elk, $\mathrm{N}^{\circ} 3$, before it was arrived at full age.
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III. The Dorebolm, a fmall ine, one of the Schetlands, per-
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II. The Burgh of $C_{u} / f_{\text {wick }}$ in Schelland, and a fetion of the wall.
III. The Burgh of Burrowfrth on Helinfa Voe, a holme or fmall ine among the Scbetlands. It contains eleven cells.
IV. Burgh of Snaburg in Unf, one of the Schetlands.
V. Burgh of Hog feter.
VI. Roman camp in Feltber.
$\bar{F}$ For the drawings from which thefe Antiquities were engraven, I am indebted to the Reverend Mr. Low, Minifter of Birfa in Orkney, who, at my requeft, made the voyage of the Orkney and Scbetland inles in 1778. He hath prepared his journal for the prefs: it is to be hoped, that the liberality of the public will enable him to give this addition to my labors, which will complete the account of the northern part of the Britijs dominions.
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P L A $\quad$ I $\quad$ I
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The Bookbinder is defired to obferve, that the Second Volume begins at p. 187, Class II. Birds.

## I NTROD U CTION.

OFTHE

## $\therefore \quad A \quad R \quad C \quad T \quad I \quad C \quad W \quad O \quad R \quad L \quad D$.

AKNOWLEGE of the geography, climate, and foil, and a general view of the productions of the countries, whofe Zoologic Hillory is to be treated of, are points fo neceffary, that no apology need be made for introducing them into a prefatory difcourfe.

It is worthy human curiofity to trace the gradual increafe of the animal world, from the fcanty pittance given to the rocks of Spitzbergen, to the fwarms of beings which enliven the vegetating plains of Senegal: to point out the caufes of the local niggardnefs of certain places, and the prodigious plenty in others. The Botanift fhould attend the fancied voyage I am about to take, to explain the fcanty herbage of the Arctic regions; or, fhould I at any time hereafter defcend into the lower latitudes, to inveftigate the luxuriancy of plants in the warmer climates.

The Fofflift fhould join company, and point the variations of primæval creation, from the folid rock of Spitzbergen through all the degrees of terreftrial matter: the fteps it makes to perfection, from the vileft earth to the precious diamond of Golconda. The changes in the face of the globe fhould be attended to ; the defiructions by vulcanoes; the ravages of the fea on fome coafts, and the recompence it may have made to others, by the retreat of its waters.

The purfuit of thefe enquiries will alfo have a farther and more important object. Hiftory fhould be called in, and a brief account given of the population of the more remote countries-the motives which induced mankind to feek retreats in climates feemingly deftitute of incitements to migration. Particular attention fhould be paid to the means of peopling the new world, and of ftocking it with animals, to contribute to the fupport of mankind, after the firf coloniza-tion-the increafe of thofe animals, and their ceffation, and giving place in a certain latitude to genera entirely different.

Here the finc ftudy of Geography fhould ftep in' to our afintance. The outline of the terrefrial globe fhould be traced; the feveral approximations between part and part fhould be attended to; the nature of the oceans obferved; the various iflands pointed out, as the fleps, the baiting-places where mankind might have relled in its paffage from an overcharged continent.

The manners of the people ought not lefs to be attended to ; and their changes, both mental and corporeal, by comparifon of the prefent ftate of remote people with nations with whom they had common anceftors, and who may have been difcovered ftill to retain their primæval feats. Some leading cuftoms may fill have been preferved in both; or fome monuments of antiquiity, proofs of congenial habitudes, poffibly no longer extant in the favage than in the cultivated branches of the common fock.
Streichts of Let me take my departure northward, from the narrow ftreights of Dover, the Dover.

Chrlky Strata. fite of the ifthmus of the once peninfulated Britain. No certain caufe can be given for the mighty convullion which tore us from the continent: whether it was rent by an earthquake, or whether it'was worn through by the continual dafhing of the waters, no Pytbagoras is left to folve the Fortuna locorum:

> Vidi ego, quod fuerat quondam folidifluna tellus. Effe fretum

But it is moft probable, that the great philofopher alluded to the partial deftruction of the Atlantica infula, mentioned by Plato as a diftant tradition in his days*. It was effected by an earthquake and a deluge, which might have rent afunder the nariow ifthmus in queftion, and left Britain, large as it feems at prefent, the mere wreck of its original fize $\dagger$. The Scilly ifles, the Hebrides, Orknies, SchetJands, and perhaps the Feroe illands, may poffibly be no more than fragments of the once far-extended region. I have no quarrel about the word ifland. The little ifthmus, compared to the whole, might have been a junction never attended to in the limited navigations of very early times. The peninfula had never been wholly explored, and it paffed with the antients for a genuine inland. The correfpondency of ftata on part of the oppofite fhores of Britain and France, leaves no room to doubt but that they were once united. The chalky cliffs of Blanc-nez, between Calais and Bologne, and thofe to the weftward of Dover, exactly tally : the laft are vaft and continued; the former fhort, and the termination of the immenfe bed. Between Bologne and Folkfone (about fix miles from

[^2]the latter) is another memorial of the junction of the two countries; a narrow fubmarine hill, called the Rip-raps, about a quarter of a mile broad, and ten miles long, extending eaftwards towards the Goodwin Sands. Its materials are boulder-ftones, adventitious to many Atrata. The depth of water on it, in very low fpring-tides, is only fourteen feet. The fifhermen from FolfRene have often touched it with a fifteen feet oar ; fo that it is juftly the dread of navigators. Many a tall hip has perifhed on it, and funk inftantly into twenty-one fathoms water. In fuiy 1782, the Belleifl of fixty-four guns ftruck, and lay on it during three hours; but, by ftarting her beer and water, got clear off.

Thefe celebrated ftreights are only twenty-one miles wide in the narroweft part. Widtu of the From the pier at Dover to that at Calais is twenty-four. It is conjectured, that Streights. their breadth leffens, and that they are two miles narrower than they were in antient times. An accurate obferver of fifty years, remarks to me, that the encreafed height of water, from a decreafe of breadth, has been apparent even in that fpace. The depth of the channel, at a medium, in highen fpring-tides, is about twent.y-five fathoms. The bottom, either coarfe fand or rugged fears, which, have for ages unknown refifted the attrition of the currents. From the ftreights, both eaftiward and weftward, is a gradual increafe of depth thorough the channel to a hundred fathoms, till foundings are totally loft or unattended to.

The fpring-tides in the ftreights rife, on an average, twenty-four feet; the neap-tides fifteen. The tide flows from the German fea, paffes'the ftreights', and meets, with a great rippling, the weftern tide from the ocean, between Fairleigh, near Hofings, and Bologne *; a proof, that if the feparation of the land was effected by the feas, it mult have been by the overpowering weight of thofe of the north.

It is mof certain, that Britain was peopled from Gaul. Similar culloms, as Brifain, wheme far as can be collected, evince this fact. The period is beyond the reach of hiftory.

[^3]If, after the event by which our ifland was torn from the continent, the migration over fo narrow a ftreight might, in the earlier ages, have been very readily effected in the vitilia navigia or coracles, or the monoxyla or canoes in ufe in the remote periods; but the numerous fpecies of Quadrupeds never could have fwam into our illand, even over fuch a contragted water, which at all times muft have been poffeffed by tides fo rapid, as to baffle their utmoft efforts: their paffage, therefore, muft have been over the antient ifthmus ; for it is contrary to common fenfe to fuppofe, that our anceftors would have been at the trouble of tranfporting fuch guefts as wolves and bears, and the numerous train of leffer rapacious animals, even had it been practicable for them to have introduced the domeftic and ufeful fpecies.

> Would they on board or Bears or Lynxes take, Feed the She-adder, and the brooding Snake?

Prior.

Quadrupeds. Men and heafts found their way into Great Britain from the fame quarter. We have no Quadrupeds but what are alfo found in France; and among our loft animals may be reckoned the Urus, p. 2; Wolf, $\mathrm{N}^{\circ} 9$; Bear, $\mathrm{N}^{\circ}{ }^{\circ} 20$; Wild Boar; and the Beaver, $\mathrm{N}^{\circ} 40$ : all which were once common to both countries. The $U_{\text {rus }}$ continued among us in a ftate, of nature as late at left as the year 1466*: and I have feen fome of their defcendants, fcarcely to be called tame, in confinement in the parks of Drumlanrig and Cbillingbam $\dagger$. The Caledonian Bears were exported to Rome, and efteemed for their fiercenefs $\ddagger$. They continued in Scotland till the year 1057. They exifted in Wales, perhaps, till the fame period; for our antient laws ranked them among the beafts of chace $\S$. Wolves infefted even the middle counties of England as late as the year 1281, and continued their ravages in North Britain in the reign of Queen Elizabeth; nor were they wholly extirpated till the year 1680. The Wild

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## $\begin{array}{lllllll}\mathrm{E} & \mathrm{N} & \mathrm{G} & \mathrm{L} & \mathrm{A} & \mathrm{N} & \mathrm{D} .\end{array}$

Boars were common in the neighborhood of London in the reign of Henry II. and continued in our kingdom, in a wild ftate, till 1577 : they were then only to be found in the woods of Lord Latimer, who, we are informed by Doctor Moufet, took great delight in their chace *. Let me add, from the fame authority, that Roebucks were found at the fame period in Wales, and among the Cheviot bills; they are now confined'to the Highlands of Scotland. Finally, Beavers inhabited Wales in 1188, when our hiftorian, Giraldils, made his progrefs through the principality. Every one of thefe animals are at this time to be found in France, the Urus excepted. Theodebert, king of France, perinhed in the chace of one about the year $548+$; but it is probable that the fpecies muft have exified in that valt kingdom long after that event.

The Elk, $\mathrm{N}^{\circ} 3$; Genet, Hif. 2uad. $\mathrm{N}^{\circ} 224$; Lynx, $\mathrm{N}^{\circ} 150$; Fat Dormoufe, Hift. Quad. No 287; Garden Dormoure, Hif. Quad. No 288; and the Bats Serotiné, Pipiftelle, and Barbafelle, Hif. Quad. Nris 408, 409, 410, either never reached our ifland, or if they did, perifhed fo early, that even their very names in the Britifb tongue, have perifhed with them. The Ibex, Hif. Quad. $\mathrm{N}^{\circ}{ }^{\circ} 13$, and the Cbamois, Hif. Quad. $\mathrm{N}^{\circ}$ 17, inhabitants only of the remote Gaulifh Alps and Pyreneans, probatly never reached us. France, therefore, poffeffes forty-nine fpecies of Quadrupeds; we only thirty-nine. I exclude two fpecies of Seals $\ddagger$ in both reckonings; being animals which had at all times powers of making themfelves inhabitants of the coafts of each kingdom.

Birds, which have the ready means of wafting themfelves from place to place, have notwithftanding, in numbers of inftances, their limits. Climate confines fome within certain bounds, and particular forts of food induce others to remain within countries not very remote from us ; yet, by wonderful inftinct, birds will follow cultivation, and make themfelves denizens of new regions. The Crossbill has followed the apple into England. Glenco, in the Highlands of Scotland, never knew the Partridge, till its farmers of late years introduced corn into their lands: nor did Sparrows ever appear in Sibiria, till after the Ruffians had made arable the vaft waftes of thofe parts of their dominions. Finally, the Rice Buntings, p. 360, natives of Cuba, after the planting of rice in the Carolinas, annually quit the ifland in myriads, and fly over fea and land, to partake of a harveft introduced there from the diffant India.

[^5]France, as it exceeds in variation of climate, fo it exceeds us in the number of species of birds. We can boalt of only one hundred and thirty-one kinds of landbirds, and one hundred and twenty-one of water-fowl. France, on the contrary, has one hundred and fifty-fix of the firft, and one handred and thirteen of the laft. This computation may not be quite accurate; for no one has as yet attempted its Fauna, which muft be very numerous, in a kingdom which extends from Calais, in about lat. 5 I , to Coilioure in the fouth of Roufillon, on the Mediterranean fea, in about lat. 42. The northern parts poffers the birds in common with England: and in all probability the provinces in the Mediterranean annually are vifited by various fpecies from northern Africa.

Stupendous and precipitous ranges of chalky cliffs attend the coaf, from Dover eaftward, and, from their color, gave the name of Albion to our inand. Beneath one of them anchored Cefar, fifty-five years before Christ, and fo near as to be capable of being annoyed by the darts of the Britons. After weighing anchor, he failed up a bay, now occupied by meadows, and landed at Rutupium, Riclborough, oppofite to the prefent Sandwich. The wails of the former ftill evince its antient ftrength; and, the veftiges of a quay, now bounded by a ditch, points out the anchorage of the Raman commerce. The adjacent Thanet, the Thanatos of the antients, at prefent indiftinguifhable from the main land, was in old times an ifland, feparated by a deep channel, from a mile and a half to four miles in width, the fite of Roman fettlements; and, in 449 , celebrated for having been the firft landing-place of the invading Saxons; to whom it was affigned as a place of fecurity by the imprudent Vortigern. But fuch a change has time effected, that Thanet no more exifts as an inland; and the Britanniarum Portus, in which rode the Roman navies, is now filled with marky meads.

After paffing the lofty chalky promontory, the North Foreland, opens the eftuary of the Thames, bounded on each fide by low thores, and its channels divided by numerous fand-banks; fecurely paffed, by reafon of the perfection of navigation, by thoufands of lhips frequenting annually London, our emporium, envied nearly to impending decline.

On the projecting coafts of Suffolk and Norfolk, arife, in certain intervals, eminences of different matter. Loamy cliffs appear about Leofoffe, Dunwich, \&c. The Crag-pits about Woodlriage, are prodigious pits of fea-hells, many of them perfect and quite folid; an inexhauftible fund of manure for arable lands. About Tarmouth, and from thence beyond Wintertonefs, the coaft is low, flat, and compofed of fhingle, backed by fand. From Hapfourgh to Cromer are a range of lofty clayey precipices, rifing from the height of forty to a hundred feet perpendicular; a prey to the ocean, which has effected great changes in thefe parts. About Sherringham and Cley, it rifes into pretty and gentle hills, пoping down into 2

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Grimefby, which in the time of Edward III. furnighed him with eleven Mips, is now totally choaked with fand.

The Great Level, which comprehends Holland in this county, with part of Northamptonfire, Norfolk, Suffolk, Cambridge, and Huntingdon, a tract of fixty computed miles in length, and forty in breadth, had been originally a wooded country. Whole forefts of firs and oaks have been found in digging, far beneath the moor, on the folid ground; oaks fifteen feet in girth, and fixteen yards long, moftly burnt at the bottoms, the antient method of falling.them : multitudes of others entirely, rooted up, as appears, by the force of the fea burfting in and overwhelming this whole tract, and covering it with filt, or the mud which it carried with it from time to time. Ovid's beautiful account of the deluge was here verified; for under Conington Down, in Huntingdonßire, was found the fkeleton of a whale near twenty feet long, which had once fwam fecure to this diftance from its native refidence.

> | Et modó quâ graciles gramen carpfere capellex, |
| :--- |
| Nunc ibi defornes' ponunt fua corpora phocx. |
| Incurfant ramis, agitataque _robora pulfant. |

In procefs of time this tract underwent another revolution. The filt or mud gained $f_{0}$ confiderably as to leave vaft fpaces dry, and other parts fo fhallow as to encourage the Romans to regain thefe fertilized countries from the fea. Thofe fenfible and indefatigable people firt taught us the art of embanking, and recovered the valuable lands we now poffers: It was the complaint of Galgacus, that they exhaufted the ftrength of the Britons, in fylvis et paludibus emuniendis *, ' in clearing woods and draining marihes.' After the Romans deferted our illand, another change took place. Negle $\mathcal{E}$ t of their labors fucceeded: the drains were neglected, and the whole became fen and Challow lake, refembling the prefent eaft fen; the hāunt of myriads of water-fowl, or the retreat of banditti. Ely and many little tracts which had the advantage of elcvation, were at that period literally inands. Several of thefe in early times became the retreat of religious. Ely, Thorney, Ramfey, Spiney, and others, rofe into celebrated abbies, and by the induftry of their inhabitants firfe began to reftore the works of the Romans. The country above Thorney is reprefented by an old hiftorian $\dagger$ as a paradife. Conftant vifitations, founded on wholefome laws, preferved this vaft recovered country: but on the rapid and rapacious diffolution, the removal of numbers of the inhabitants, and the negledi of the laws of the Servers, the drains were filled, the cultivated land overflowed, and
*Vita Agricola. $\quad$ Malmfury, lib. iv. 294.
the country again reduced to a ufelefs morafs*. In the twentieth of Elizabetb the ftate of the country was taken into confideration $\dagger$; no great matters were done till the time of Francis, and William his fon, earls of Bedford, who attempted this Herculean work, and reclamed this vaft tract of more than three hundred thoufand acres; and the laft received, under fanction of parlement, the juft reward of ninety thoufand acres. I feeak not of the reliques of the antient banks which I have feen in Holland, Lincolnhire, now remote from the fea, nor yet of the Roman tumuli, the coins, and other evidences of the refidence of that nation in thefe parts; they would fwell a mere preface to too great a length : and, it is to be hoped, will be undertaken by the pen of fome native, who will perform it from his actual furvey.

The vaft fenny tracts of thefe counties were in old times the haunts of multitudes of water-fowl ; but the happy change, by attention to draining, has fubftituted in their place thoufands of fheep; or, inftead of reeds, made thofe tracts laugh with corn. The Crane, which once abounded in thefe parts, has even deferted our ifland. The Common Wild Duck ftill breeds in multitudes in the unreclamed parts; and thoufands are fent annually to the London markets, from the numerous decoys. The Grey Lag Goofe, Br. Zool. ii. $\mathrm{N}^{\circ} 266$, the origin of the Tame, breeds here, and is refident the whole year: a few others of the Duck kind breed here. Ruffs, Redfhanks, Lapwings, Red-breafted Godwits, and Whimbrels, are found here during fummer; but, with their young, in autumn, difperfe about the inland. The Short-eared Owl migrates here with the Woodcock, and is a welcome gueft to the farmer, by clearing the fields of mice. Knots fwarm on the coafts in winter: are taken in numbers in nets : yet none are feen during fummer $\ddagger$. The moft diftant north is probably the retreat of the multitude of water-fowl of each order which ftock our fhores, driven fouthward by the extreme cold: moft of thein regularly, others, whofe nature enables them to brave the ufual winters of the frigid zone, are with us only accidental guefts, and in feafons when the frof rages in their native land with unufual feverity.

From Clea Ne/s, the land retires weftward, and, with the oppofite fhore of Yorkjbire, bounds the great eftuary of the Humber, which, winding deep into the country, is the receptacle of the Trent, and all the confiderable rivers of that vaft province; fome of which arife in its molt remote parts. All thefe coafts of Lincolnfaire are flat, and have been gained from the fea. Barton and Barrow have not at prefent the leaft appearance of ports; yet by Holinfhed were ftyled good ones $\S$. Similar

[^6]
## $\begin{array}{lllllll}\mathrm{E} & \mathbf{N} & \mathbf{G} & \mathbf{L} & \mathrm{A} & \mathrm{N} & \mathrm{D} .\end{array}$

## Spurn Head.

Bridlington
Bay.
accidents have befallen the upper part of the low tract of Holderne/s, which faces the congruent thores. Hedon, a few miles below Hull, feveral hundred years ago a port of great commerce, is now a mile and a half from the watter, and has long given way to the rifing fortune of the latter (a creation of Edward I. in 1296) on account of the excellency of its port. But in return, the fea has made moft ample reprifals on the lands of this hundred : the fite, and even the very names of feveral places, once towns of note upon the Humber, are now only recorded in hiftory: and Ravenfper was at one time a rival to Hull *; and a port fo very confiderable in 1332, that Edward Baliol and the confederated Englifs barons failed from hence with a great fleet to invade Scotland; and Henry IV. in I 399, made choice of this port to land at, to effect the depofal of Ricbard II. yet the whole of it has long fince been devoured by the mercilefs-ocean: extenfive fands, dry at low water, are to be feen in their fead; except Sunk Ifand; which, till about the year 1666, appeared among them like an elevated fhoal, at which period it was regained, by embankments, from the fea; and now forms a confiderable eftate, probably reftored to its priftine condition.

Spurn Head, the Ocelum Promontorium of Ptolemy, terminates this fide of the Humber, at prefent in form of a fickle, near which the wind-bound Ghips anchor fecurely. The place on which the lighthoufes ftand is a vaft beach near two miles long, mixed with fand-hills flung up by the fea within the laft feventy years.

The land from hence for fome miles is compofed of very lofty cliffs of brown clay, perpetually preyed on by the fury of the German fea, which devours whole acres at a time, and expofes on the fhores confiderable quantities of beautiful amber. Fine wheat grows on the clay, even to the edge of the cliffs. A country of the fame fertility reaches from Kilnfey, near this place, as far as the village of Sprottly, extending, in a waved form, for numbers of miles; and, when I faw it, richly cloathed with wheat and beans.

From near Kilnfey the land bends very gently inward, as far as the great promontory of Flamborough; and is a continuance of high clayey cliff, till about the village of Hornfey. Near it is a mere, noted for its Eels and Pikes, at prefent feparated from the fea by fo fmall a fpace as to render its fpeedy deftruction very probable. A ftreet, called Hornjey Beck, has long fince been fwallowed : and of Hide, a neighboring town, only the tradition is left.
The country grows confiderably lower; and, near the bafe of the promona tory, retires fo far in as to form Bridlington bay, antiently called Gabrantovicorum Sinus, to which the Geographer adds Eval $\mu \varepsilon \boldsymbol{\theta} \boldsymbol{\theta}$, on account of the excellency and
fafety of its port, where veffels ride in full fecurity under the fhelter of the lofty head-land. Smithie fand, the only one between Flamborougb and Spurn Head, ftretches acrofs the entrance into Bridlington bay, and, in hardgales from the north and northeaft, adds to the fecurity of that noble afylum for the coafting veffels. Sureby, an adjacent village, feems no more than a tranflation from the old appellation. The Romans, in all probability, had a naval ftation here; for here ends the road, vifible in many places between this place and Kork, $^{\text {, and named, from its founders, the Roman }}$ ridge.

The head is formed of lime-ftone, of a fnowy whitenefs *, of a fupendous height, and vaft magnificence, vifible far at fea. If we may depend on Richard of

Flamborough

[^7]Rocky Coasts begin.
fpecies which refort hither. The notes of all fea-fowl are moft harfh and inharmonious. I have often refted under rocks like thefe, attentive to the various founds over my head; which, mixed with the deep roar of the waves flowly fwelling; and retiring from the vaft caverns beneath, have produced a fine effect. The fharp voice of the Gulls, the frequent chatter of the Guillemots, the loud notes of the Auks, the fcream'of the Herons, together with the deep periodical croak of the Corvorants, which ferves as a hafs to the reft, have often furnifhed me with a concert, which, joined to the wild fcenery furrounding me, afforded in an high degree that fpecies of pleafure which refults from the novelty and the gloomy majefty of the entertainment.
At Flamborough head commence the hard or rock̀y coafts of this fide of Great Britain, which continue, with the interruption of a few fandy bays and low land, to the extremity of the kingdom. It often happens, that the bottom of the fea partakes of the nature of the neighboring element : thus, about the head, and a few miles to the northward (in places) the thores are rocky, and the haunts of lobfters and other cruftaceous animals. From thefe ftrata a tract of fine fand, from one to five miles in breadth, extends floping eaftward, and from its edge to that of the Dogger-bank is a deep bottom, rugged, rocky, and cavernous, and in moft parts overgrown with corallines and fubmarine plants.

This difpofition of fhore gives to the inhabitants of this coaft the advantageous fithery which they poffefs; for the thore on one hand, and the edges of the Dogger-bank on the other, like the fides of a decoy, give a direction to the immenfe thoals of the Cod genus, which annually migrate from the northern ocean, to vifit, refide, and $f_{p a w n}$, in the parts adjacent to our coafts. They find plenty of food from the plants of the rocks, and the worms of the fand, and fecure Shelter for their fpawn in the cavernous part of the fcarry bottom. It is in the channel between the banks and the fhores, in which the Cod are taken, or in the hollows between the Doggers and Well-bank; for they do not like the agitation of the water on the fhallows. On the contrary, the Skates, the Holibuts, Flounders, and other flat filh, bury themfelves in the fand, and fecure themfelves from the turbulence of the waves.

An amazing thoal of Hàddocks vifit this coalt periodically, generally about the tenth of December, and extend from the fhore near three miles in breadth, and in length from Flamborough head to Tinmouth cafle, perhaps further north. An army of a fmall fpecies of Shark, the Picked, Br. Zool. iii. $\mathrm{N}^{\circ} 40$, flanks the outfide of this dhoal to prey upon it; for when the filhermen caft their lines beyond
beyond the diffance of three miles from land, they never catch any but thofe voraclous fin *.

Between Flamborough head and Scarborough projects Filey Brig, a ledge of rocks running far into the fea, the caufe of frequent hipwrecks. Scarboroug/ caftle, feated on a vall rock projecting into the water, fucceeds. The fpring-tides, at the time of the equinoxés, rife here twenty-four feet; but at other times only twenty: the neap-tides from twelve to fixteen. Then Whitby, noted for its neighboring allum-works, and more for its fine harbour, the only one on the whole coalt : the admittance into which is a narrow channel between two high hills : it expands largely within, and is kept clean by the river Efk. From hence to the mouth of the Tres, the boundary between this county and that of Durbam, is a high' and rude coaft, indented with many bays, and varied with. little fifhing villages, built Atrangely among the cliffs, filling every projecting ledge, in the fame manner with thofe of the peafants in the picturefque and rocky parts of Cbina.

The Tees, the northern limit of this great county, opens with a wide mouth and mudded bottom into the fea. This was the Dunum Efuarium of Ptolemy; and ferves as a brief entrance for navigators into the country. Almoft all the northern rivers defcend with a rapid courfe, from their mountanous rife and fupply; and afford but a fhort navigation. From hence the lead of the mineral parts of Durham, and the corn of its more level parts, are imported. In the mud of this eftuary, more particularly, abounds the Myxine Glutinofa of Linneus, the Hag of the neighboring fifhermen; a worm, which enters the mouths of the filh taken on hooks, that remain a tide under water, and devours the whole, leaving only the fkin and bones. This alfo is the-worm which converts water into a fort of glue.

From Seaton Snook, in the bihoprick of Durbam, to Hartlepool, is a feries of fand-banks, and the fhore a long-continued fandy fhallow. From the Nefs Point of Hartlepool to Blackballs is a rocky lime-ftone coaft, with frequent intervals of fand-bank, and a ftony beach; but Sebam and Hartlepool is fo very rugged, that no enemy could land, or even ftand off the fhore, without the moft imminent danger : in particular, the coafts about Hawthorn Hive are bold, excavated, and formed into grotefque figures, for feveral miles, and the fhores rough with a broken' and heavy fea, by reafon of the hidden rocks and fits of fands which run out far

* Confult vol. iii. of the Br. Zoology for an account of the fin on.this coaft : alfo the Tour in Scotland, 3769. To Mr. Travis, Surgeon in Scarborough, I am indebted for the molt curious articles.
are high and rocky, in many places run far into the fea, and at low tides hew their heads above water.

Bamborough caftle ftands on the laft of the range of rocky cliffs. This fortrefs was founded by the Saxon monarch Ida. After various fortunes it, has proved in its difmantled fate of more ufe to mankind than when it boafted fome potent lord and fierce warders. A charitable prelate of the fee of Durbam purchafed the eftate, and left it for the ufe of the diftreffed feamen who might fuffer fhipwreck on this dangerous coaft, and to unconfined charitable purpofes, at the difcretion of certain truftees. The poor are, in the deareft feafons, fupplied with corn at a cheap rate; the wrecked, found fenfelefs and benumbed with cold, are taken inftantly into thefe hofpitable walls, and reftored to life by the affiftance of food; medicine, and warm beds; and if the hip is capable of relief, that alfo is faved, by means of machines always ready for the purpofe *.

The Farn iflands, or rather rocks, form a group at no great diftance from fhore ; the neareft a mile and fixty-eight chains; the fartheft about feven. Thefe probably, at fome remote period, have been convulfed from the land, but now divided from it by a furious tide, rufbing through a channel from five to twelve fathoms in depth; The original fea, to the eaft of the Staples, the remoteft rocks, fuddenly deepens to forty or fifty $t$. St. Cuthbert firft made thefe rocks of note : he occafionally made the largeft of them the feat of his devotion and feclufion from the world; expelling, fays fuperfition, the malignant fpirits, the pre-oc. cupants. Some remains of a chapel are ftill to be feen on it. For ages paft, the fole tenants are a few cows, wafted over from the main land in the little cobles, or boats of the country; and the Eider Ducks, Arct. Zool. ii. N ${ }^{\circ} 480$, Atill diftinguißed here by the name of the Saint. Numberlefs fea-fowls, and of great variety of kinds, poffefs the remoter rocks, on which they find a more fecure retreat than on the low-cliffed fhores. To the marine feathered tribe the whole coaft from Flamborough head to that of St. Ebb's is inhofpitable. They feek the loftieft promontories Where you hear of the haunts of the Razor-bills and Guillemots, Corvorants and Shags, you may be well aflured, that

[^8]
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porium, Leith, beneath, where the fpring-tides fometimes rife fifteen and fixteen feet, and to feventeen or eighteen when the water, is forced up the firth by a violent wind from the north-eaft. Almoft every league of this great, eftuary is terminated with towns or villages, the effects of trade and induftry. The elegant defcription of the coaft of Fife, left us by $\mathcal{F}$ ohnfon ${ }^{*}$, is far from being exaggerated; and may, with equal juttice, be applied to each fhore.

Fifeshire, bounded by the firths of Forth and Tay, projects far into the fea; a country flourihing by its induftry, and happy in numbers of ports, natural, artificial, or improved. Coal and lime, the native productions of the county, are exported in vaft quantities. .Excepting the unimportant colliery in Sutherland, thofe at Largo Wood, midway between the bay and St. Andrews, are the laft on this fide of North Britain. ${ }^{1}$. The coafts in general of this valt province are rocky and precipitous; but far from being lofty. The bays, particularly the beautiful one of Largo, are finely bounded by gravelly or fandy fhores; and the land, in moft parts, rifes high to the middle of the county. Towards the northern end, the river Edin, and its little bay, by fimilarity of found point out the Tinna of the old geographer.
Firth of Tay. The eftuary of the Tay limits the north of Fife/hire. Before the mouth extends the fand retaining the Britifh name of Aber-tay, or the place where the Tay difcharges itfelf into the fea. The Romans preferved the antient name, and Latinized it into Tava. The entrance, at Brough-tay caftle, is about three quarters of a mile wide; after which it expands, and goes about fourteen miles up the coun. try before it aflumes the form of a river. At the recefs of the tides there ap. pears a vaft extent of fands, and. a very fhallow channel; but the high tides waft, even as high as Perth, veffels of a hündred and twenty tons. The fhores are low, and the ground rifes gently inland on the fouthern fide: on the north it continues low, till it arrives at the foot of the Grampian hills, many miles diftant. In fome remote age the fea extended on the north fide far beyond its prefent bounds. At a confiderable diftance above the flourifhing-port of Dundee, and remote inland, anchors have been found deep in the foil $\dagger$. When thefe parts were deferted by the fea, it is probable that fome oppofite country was devoured by an inundation, which occafioned this partial defertion.

From thence to Rberbrothic, in the Thire of Angus, noted for the venerable re, mains of its abbey, is a low and fandy fhore. From Aberbrotbic almof to Montrofe, arifes a bold rocky coaft, lofty and precipitous, except where interrupted by the beautiful femicircular bay of Lunan. Several of the cliffs are penetrated by

[^9]moft amazing caverns; fome open into the fea with a narrow èntrance, anä internally inftantly rife into high and fpacious vaults, and fo extenfively meandring, that no one as yet has had the courage to explore the end. The entrance of others thame the work of art in the nobleft of the Gothic cathedrals. A magnificent portal appears divided in the middle by a-great column, the bafis of which finks deep in the water. Thus the voyager may pafs on one fide in his - boat, furvey the wonders within, and return by the oppofite fide.

The cavern called the Geylit-pot, almoft realifes in form a fable in the Perfian Tales. The hardy adventurer may make a long fubterraneous voyage, with a picturefque fcenery of rock above and on every fide. He may be rowed in this folemn fcene till he finds himfelf fuddenly reftored to the fight of the heavens: hè finds himfelf in a circular chafm, open to the day, with a narrow bottom and extenfive top, widening at the margin to the diameter of two hundred feet. On attaining the fummit, he finds himfelf at a diftance from the fea, amidft cornfields or verdant paftures, with a fine view of the country, and a gentleman's feat near to the place from which he had emerged. Such may be the amufement of the curious in fummer calms !-but when the ftorms are directed from the eaft, the view from the edge of this hollow is tremendous; for, from the height of above three hundred feet, they may look down on the furious waves, whitened with foam, and fwelling from their confined paffage.

Peninfulated rocks often jut from the face of the cliffs, precipitous on their fides, and wathed by a great depth of water. The ifthmus which joins them to the land, is often fo extremely narrow as to render it impaffable for more than two or three perfons a-breaft; but the tops fpread into verdant areas, containing veftiges of rude fortifications, in antient and barbarous times the retreat of the neighboring inhabitants from the rage of a potent invader *.

Montrofe, peninfulated by the fea, and the bafon its beautiful harbour, ftands
Montrose. on a bed of fand and gravel. The tide ruhing furioully through a narrow entrance twice in twenty-four hours, fills the port with a depth of water fufficient to bring in veffels of large burden. Unfortunately, at the ebb they muft lie dry; for mone exceeding fixty tons can at that period float, and thofe only in the channel of the South $E /$, which, near Montrofe, difcharges itfelf into the fea.

A fandy coaft is continued for a fmall diftance from Montrofe. Rude rocky cliffs re-commence in the county of Merns, and front the ocean. Among the bigheft is Fowls-heugh, noted for the reiort of multitudes of fea-birds. Bervis and Stonebive are two fmall ports.overhung with rocks; and on the fummit of a

* Thefe defreiptions borrowed from my own Tours.
molt exalted one, are the valt ruins of Dunnoter, once the property of the warlikefamily of the Keiths. The rocks adjacent to it, like the preceding, aflume various. and grotefque forms.

A little farther the antient Deva, or Dee, opens into the fea, after forminga harbour to the fine and flourifhing town of Aberdeen. A fandy.coaft continues for numbers of miles, part of which is fo moveable as almoft totally to have overwhelmed the parifh of Furvie: two farms only exift, out of an eftate, in 1600 , valued at five hundred pounds a year.

Bulzers of Buchan.

Peterhead.

Caverns and singular Rocks:

HOW FORMED.

A majeftic rocky coalt appears again. - The Builers of Buctian, and the noble arched rock, fo finely reprefented by the pencil of the Reverend Mr. Cordiner ${ }^{*}$, are juflly effeemed the wonders of this country. The former, is an amazing harbour, with án entrance through a moft auguift arch of great heighit and length. The infide is a fecure bafon, environed on every fide by mural rocks: the wholeprojects far from the main land, and is bounded on each fide by deep creeks; fo that the traveller who chufes to walk round the narrow battlements, ought firft: to be well affured of the flrength of his head.

A little farther is Peterhead, the moft eaftern port of Siotland; the common' retreat of wind-bound fhips; and a port which fully merits the attention of go-vernmènt, to render it more fécure. Kinnaird-head; the Taizalum promontorium, lies: a little farther north, and, with the north-eaftern extremity of Cathinefs', forms the firth of Murray, the Tua'Efuarium, a bay of vaft' extent. Troup-head is another waft cape, to the weft of the former. The caverns and rocks of that promontory yield to none in magnificence and fingularity of fhape: of the latter,fome emulate the form of lofty towers, others of inclining pyramids with central ${ }^{1}$ arches, pervious to boats. The figures of thefe are the effect of chance, and owing to the collifion of the waves, which wearing away the earth and crumblyparts, leave them the juft fubjeCts of our admiration. Sea-plants, Mhells, and various forts of marine exfanguious animals, cloath their bafes, wafhed by a deep and' clear fea; and their fummits refound with the various clang of the feathered tribe.

From hence the bay is bounded on the fouth by the extenlive and rich plains. of Murray. The Chore wants not its wild beauties. The view of the noble cavern, called the rocks of Caufle, on the fhore between Burgh-head and Lo $\sqrt{72 e}$ mouth, drawn by Mr. Cordiner, fully evinces the affertion.' The bottom of the bay clofes with the firth of Invernefs, from whence to the Atlantic ocean is a chain of rivers, lakes, and' bays, with the interruption only of two miles of land between Loch-oich and Lochlochy. Unite thofe two lakes by a canal, and the reft of North Britain would de completely infulated.

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## Depths.

fumns of fimilar matorials, fome hollowed into, arches; others, pillar-like, afpire in heights equal to the land ${ }^{*}$. . Thefe are animated with birds. All their œeconomy may be viewed with eafe from the neighboring cliffs; their loves, incubation, exclufion, and nutrition.
Dung fy-bead'; the antient Berubium, terminates the eaftern fide of this kingdom, as Far-out-beact, the old Tarvedum, does the weftern. Strathy-bead; the Verve: drum of Ptolemy, lies intermediate. The whole tract faces the north, and confints of various noted headlands, giving thelter to numerous bays, many of which penetrate deep into the country. Let me-make this general remark,- that nature hath, with a niggardly hand, dealt out her harbours to the eaftern coafrs of the Briti/b ifles; but fhewn a profufion on their weftern fides. What numberlefs lochs, with great depth of water, wind into the weftern counties of $S$ cotland, over-fhadowed and theltered by lofty mountains! and what multitudes of noble harbours do the weftern provinces of Ireland open into the immenfe Atlantic ocean 1

The fea which wafhes the Chores of Britain, which have paffed under my re$\dot{v i e w}$, was originally called, by one of the antients $t$, Oceanus Britannicus, forming part of that vaft expanfe which furrounds our iflards. Pliny confined that title to the fpace between the mouth of the Rbine and that of the Scine; and beftowed on this fea the name of Septentrionalis. $\ddagger$; and Ptolemy called it Germanicus: both which it ftill retains. Its northern extremity lies between Dungfoybead, in lat. 58,35 north, and the fame latitude in the fouth of Norway. Before the feparation of Britain. from Gaul it could only be confidered as a vaft bay; but that period is beyond the commencement of record. The tides flow into it from the north-eaft to the fouth-weft, according to the direction of the coalt ; but in mid-fea the reflux fets to the north, to difcharge itfolf through the great channel between the Scbetland illes and Norsuay §. The depth of. water, at higheft fpring-tides, in the ftreights of $D_{\text {over, }}$ is twenty-five fathoms: it deepens to thirty-one, between Lowfoff and the mouth of the Maes: between the Wells-bank and Doggers-bank gains, in one place only, a few fathoms. Beyond the Dogger it deepens from forty-eight to feventy-two: between Buchan-ne/s and Schutnefs in Norway, within the Buchare deeps, it has from eighty-fix to a. hundred fathoms; then decreafes, towards the Orkney and Schetland ifles, from feventy-five to forty; but between the Schetlands and. Bergen, the northenn end of this fea, the depth is from a hundred and twenty to a hundred and fifty. fathoms.

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EXd

$\mathbb{R}$ (DCIKA meat SANTD SITDIF。

The coaft from Dung By-bead to Flamborcugh-bead are bold and higlt, and may bee feen at fea from feven to fourteen leagies: from the laft to Spurn-beall is. alfo. a clear coaft; but the reft of the coaft of Norfolk and. Sufjolk is, low, vifible at fnail difance, and rendered dangerous by the number of fand-banks projecting far to fea. After pithing the Sturn-bead, navigators feer between the inner and outer Doufings, for the floating lightikcot on board a fmall veffel (conftrucied for that purpofe)' always anchored at the inner edge of a fand called Dog hon's Shoal, about eight leagues from, the coaft of Lincoln/bire, in about fiftcen fathom water. From thence they make for Cromer in Norfolk; and from that point, till they arrive at the Nore, their track is all the way through a number of narrow chane nels near the moft dangerous fands: to which, if we add foggy weather, dark nights, florms, contrary winds, and very near adjacent lee-fhores, it may be very fairly reckoned the molt dangerous, of the much-frequented, navigations in the world.

But fortunately, to the north of thefe, this fea is much more remarkable for fand-banks of utility than of danger, and would never have been obferved but for the multitudes of fifhes which, at different feafons, according to their fpecies, refort to their fides, from the great northern deeps, either for the fake of variety of food whictis they yield, or to depofe their fpawn in fecurity. The firft to be taken notice of daes not come within the defcription, yet fhould not be palfed over in filence, as it comes within the natural hiftory of the North fea. An anonymous fand runs acrofs the channel between Buchan-nipss and the north end of futs-riff: the left depth of water over it is forty fathoms; fo that it would fcarcely be thought of, did not the water fuddenly deepen again, and form that place which is fyled the Buchan deeps.

The Long Bank, of the Long Fortys, bears E. S. E. from Buchan-nefs, about forty-five miles diftant, and extends fouthward as far as oppofite to Newcafle; is about fifty leagues in fength, and reven in breadth; and has on it from thirty-two to forty-five fathoms of water. The ground is a coarle gravel, mixed with marine plants, and is efteemed a good fifhing bank.

The Mar Bank lies between the former and the fhore oppofite to Berwick; is oval, about fifteen miles long, and has about twenty-fix fathom of water, and round it about forty.

The bank called Montrofe Pits lies a little to the eaft of the middle of the Long Montross Pits. Far̈tys. It is about fifty miles long, and mof remarkable for five great pits or hollows, from three to four miles in diameter: on their edges is only forty fathom water; yet they fuddenly deepen to feventy, and even a hundred fathom, on a foft muddy bottom : the margins on the contrary are gravelly. I enquired whether the

Long Fortys.
Navigation.

Sand-benks.
furface of this wondèrful bank appeared in any way agitated, as. I had fufpicion that the pits might have been productive of whirlpools; but was informed, that the fea there exhibited no uncommon appearance.

The noted Doggers Bank next fucceeds. It commences-at the diftance of twelve. leagues from Flamborough $H_{e a d}$, and extends acrofs the fea, nearly eaft, above feventy-two leagues, joining Horn-riff; a very narrow ftrip of fand which ends on the coaft of Futland. The greateft breadth is twenty leagues; and in parts it has only on it ten or eleven fathoms of water, in others twenty-four or five. To the fouth of the Dogger is a vaft extent of fand-bank, named, in different parts, the Well Bank, the Swart Bank, and the Brown Bank, all covered with fufficient depth of water; but between them and the Britifh coafts are the Ower and the Lemon, dreaded by mariners, and numbers of others infamous for fhipwrecks. The channel between the Dogger Bank and the Well Bank deepens even to forty fathoms. This hollow is called the Silver Pits, and is noted for the cod-fifhery which fupplies the London markets. The cod-finh love the deeps: the flat-fifh the flallows. I will not repeat what I have, in another place, fo amply treated of ${ }^{*}$. I muft only lament, that the fifheries of this bank are only fubfervient to the purpofes of luxury. . Was (according to the plan of my humane friend, Mr. Travis of Scarborough) a canal formed from any part of the neighboring coaft to that at Leeds, thoufands of manufacturers would receive a cheap and wholefome food; infurrections in times of fcarcity of grain be prevented; our manufactures worked at an eafy rate; our rivals in trade thereby underfold; and, in defiance of the probably approaching decreafe of the Newufoundland fimery (fince the lofs of America) contribute to form a nurfery of feamen fufficient to preferve the fmall remnant we have left of refpect from foreign nations.

I have, to the beft of my abilities, enumerated the Britifh fifh, in the third volume of the Britifl Zoology. The Faunula which I have prefixed to Mr. Light. foot's Flora Scotica, cantains thofe which frequent the northern coafts of Great Britain; in which will be found wanting many of thofe of South Britain. The Reverend Mr. Lightfoot, in that work, hath given a molt elaborate account of the fubmarine plants of our northern fea.

I will now purfue my voyage from the extreme bores of North Britain through a new'ocean. Here commences the Oceanus Caledonius, or Deucaledonius, of Ptolemy;
Calebonian Ocean. a vaft expanfe, extending to the weft as far as Greenland, and northward to the ex. treme north. This I fhould call the Northern Ocean, diftinguifhing its parts by other names fuitable to the coalls. From Dungfby Head the Orkney illands
*. See Br. Zool, iii, Articles Haddock, Ling, and Turbot.

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does not extend far beyond the cavity: a boat may pafs within twenty yards of there whirlpools with fafety. Fihermen who happen to find themfelves within a dangerous diftance, fling in an oar, or any bulky body, which breaks the continuity of the furface, and interrupts the vertiginous motion, and forces the water to rufh fuddenly in on all frdes and fill up the cavity. In formy weather, the waves themfelves deftroy this phænomenon. A funk rock near the concourfe of thefe rapid tides occafions a moft dreadful appearance. The fream meeting with an interruption, falls over with great violence, reaches the bottom, and brings up with it fand, fhells, fifhes, or whatfoever elfe it meets with; which, with boats, or whatfoever it happens to meet, is whirled from the centre of the eruption towards the circumference with amazing velocity, and the troubled furface boils and bubbles like a great cauldron, then darts off with a fuccefion of whirlpools from Lousts. fucceffive ebullitions. Thefe are called Roufts, and are attended with the utmoft danger tofmall boats, which are agitated to fuch a degree, that (even. fhould they not be overfet) the men are flung out of them, to perifh without any chance of redemption. It is during the ebb that they are tremendous, and moft fo in that of a fpring-tide with a weft wind, and that in the calmeft weather; for daring flood they are pafied with the-greateft fafety. Vefiels in a calm are never in danger of touching on an inand or vifible rock, when they get into a current, but are always carried fafe from all danger.

SWONA.

Depth or Water.

Tides.

Swona, a little iflánd, the moft fouthern of the Orknies, is about four miles beyond Stroma, and is, noted for its tremendous flreams, and in particular the whirlpools called the Wells of Swona, which in a higher degree exbibit all the appearances of the former. What contributes to encreafe the rage of the tides, befides their confinement between fo many illands, is the irregular pofition of the founds, and their little depth of water. The fame fhallownefs extends to every fide of the Orknies; an evidence that they had once been part of the mother ille, rent from it by fome mighty convulfion. The middle of the channel, between Stroma and the main land, has only ten fathom water: the greateft depth around that ifland is only eighteen. 'The founds are from three to forty-fix fathom deep: the greater depths are between South Ronaldba and South Wales; for in general the other founds are only from three to thirteen; and the circumambient depth of the whole group very rarely exceeds twenty-five.

About thefe illands commences a decreafe of the tides. They lie in a great ocean, in which the waters have room to expand;'therefore never experience that height of flood which is conftant in the contracted feas. Here ordinary fpringtides do not exceed eight feet; and very extraordinary fpring-tides fourteen, ever when acted on by the violence of the winds *.

The time of the difcovery and population of the Orknies is unknown. Probably it was very early; for we are told that they owe their name to the Greeks.

Orcades has memorant ditas a nomine Graco *.
Mela and Pliny take notice of them ; and the laf defcribes their number and cluftered form with much accuracy $t$. The fleet of Agricola failed round them, and made à conqueft of them; but the Romans probably never retained any part of Caledonia. I found no marks of them beyond Orrea or Inchtutbel $\ddagger$, excepting at Fortingal $\|$ in Breadalline, where there is a fmall camp, poffibly no more than a temporary-advanced poft. Notwithftanding this, they muft have had, by means of fhipping, a communicated knowlege of the coalts of North Britain even to the Orcades. Ptolemy hath, from information collected by thofe means, given the names of every nation, confiderable river, and head-land, on the eaftern, northern, and weftern coaft. But the Romans had forgotten the navigation of thefe feas, otherwife the poet would never have celebrated the courage of his countrymen, in failing in purfuit of the plundering Saxons through unknown fireights, and a naval victory obtained off thefe iflands, by the forces fent to the relief of the diftreffed Britons by Honorius.

> Quid Sidera profunt?
> Ignotumque fretum? Maduerunt Saxone fufo Orcades 9.

The Orkney illes in after times became poffeffed by the Picts; and again hy the Scots. The latter gave way to the Norwegian pirates, who were fubdued by Harold Harfargre about the year 875 m , and the inlands united to the crown of Norway.' They remained under the Norwegians till the year 1263, accepted their laws, and ufed their language. The Norfe, or Norwegian language was generally ufed in the Orkney and Schetland illands even to the laft century: but, except in Foula, where a few words are ftill known by the aged people, it is quite loft. The Englijh tongue, with a Norwegian accent, is that of the illands; but the appearance of the people, their manners and genius, evidently fhew their northern origin. The inlands vary in their form and height. Great part of Hiy is mountanous and lofty. The noted land-mark, the hill of $H_{o y}$, is faid to be five hundred and

Línguage.

Rocks of the Orxies. forty yards high. The fides of all thefe hills are covered with long heath, in which breed multitudes of Curlews, Green Plovers, RedManks, and other Waders. The Short-eared Owl is alfo very frequent here, and neftles in the ground. It is

[^11]probable that it is from hence, as well as from Norway, that it migrates, in the beginning of winter, to the more fouthern parts of Britain. Moft of the Waders migrate; but they mult receive confiderable reinforcements from the moft diftant parts of the north, to fill the numbers which cover our fhores. The cliffs are of a moft ftupendous height, and quite mural to the very fea. The Berry Head is an

Birds.

Pair Isla. exalted precipice, with an auguft cave at the bottom, opening into the fea. The Ern Eagles poffefs, by diftant pairs, the upper part of the rocks: neither thefe nor: any other Falcons will bear fociety; but, as Pliny elegantly expreffes it, Adultos perfequitur parens et longè fugat, amulos fcilicet rapina. Et alioquin unum par aquilarum magno ad populandum tractu, ut fatietur, indiget *. Auks, Corvorants, and all the tribes which love exalted fituations, breed by thoufands in the other parts. The Tyfte, or Black Guillemot, $\mathrm{N}^{\circ} 236$, fecures itfelf in a crack in the rock, or by fcraping a burrow in the little earth it may find; there it lays a fingle egg, of a dirty olive blotched with a darker. This feecies never migrates from the Orknies. The Foolifh Guillemot, $\mathrm{N}^{\circ} 436$, continues till November. The Little Auk, $\mathrm{N}^{\circ} 429$, a rare bird in other parts of Britain, breeds in the holes of the lofty precipices. And the Lyre, or the Sheerwater, $\mathrm{N}^{\circ} 462$, burrows in the earth among the rocks of $H_{o y}$ and $E d a$, and forms an article of commerce with its feathers, and of food with its fefh, which is falted and kept for the provifion of the winter. In that feafon they are feen fkimming the ocean at moft furprizing diftances from land. The Stormy Petrel, $\mathrm{N}^{\circ}{ }_{464}$, breeds frequently among the loofe ftones; then takes to fea and affrights the fuperfitious. failor with its appearance. Woodcocks fcarcely ever appear here. Fieldfares make this a fhort baiting-place : and the Snow Bunting, $\mathrm{N}^{\circ}$ 122,often alights and covers whole tracts of country, driven by the froft from the fartheft north.

A few Wild Swans breed in fome lochs in Mainland; but the greateft part of thefe birds, all the-Bernacles, -Brent Geefe, and feveral other palmated birds, retire in the fpring to more northern latitudes. But to the Swallow-tailed Duck, the Pintail, and a few others, this is a warm climate; for they retire here to pafs their winters in the fheltered bays. Any other remarks may be intermixed with thofe on Schetland; for there is great fimiliarity of fubje ©ts in both the groups.

The laft lie about fixty miles to the north-eaft of the moft northern Orkney. Midway is Fair Ifand, a fpot about three miles long, with high and rocky fhores, in.habited by about a hundred and feventy people: an induftrious race; the men fifhers; the women knitters and fpinners. The depth of water round varies to twenty-fix fathoms.' The tide divides at the north end, runs with great velocity, and forms on the eaft fide a confiderable eddy.


GLow punx




 fecure put, calfad, to a cond prodental uifentoton in a to which






 Fwaty



 ${ }^{6}$ the mind with dread and harror ; and fuch monitron precipices and hidecoss rocks




 mery danars, which fifead a broad glariag appearance over the whole wroter hemifphere?
Ther a the gatant attendats of the clear evonings in sh chefe porboris ifinds, and prove great reftefi amidet the gloom of the lony winter nighes. Tey

 afte which they breat git into freans facher light, preating interofumas, ard altering Aowly into ten theufad diferent hapes, varying theicolors from at
 and then make the mull brilliant appearmee Their motions th the fiose arx




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brifkly along the heavens: are fuddenly extinguifhed, and leave behind an uniform dufky tract. This again is brilliantly illuminated in the fame manner, and as fuddenly left a dull blank. In certain nights they affume the appearance of vaft columns, on one fide of the deepeft yellow, on the other declining away till it becomes undiftinguifhed from the $\mathbb{1 k y}$. They have generally a ftrong tremulous motion from end to end, which continues till the whole vanifhes. In'a word, we, who only fee the extremities of thefe northern phœnomena, have but a faint idea of their fplendor, and their motions. According to the ftate of the atmofphere they differ in colors. They often put on the color of blood, and make a moft dreadful appearance. The ruftic fages become prophetic, and terrify the gazing fpectators with the dread of war, peftilence, and famine. This fuperfition was not peculiar to the northern inands; nor are thefe appearances of recent date. The antients called them Chafinata, and Trabes, and Bolides, according to their forms or colors*. In old times they were extremely rare, and on that account were the more taken notice of. From the days of Plutarch to thofe of our fage hiftorian Sir Richard Baker, they were fuppofed to have been portentous of great events: and timid imagination dhaped them into aerial conflics.

> Eierce fiery warriors fight upon the clouds
> In ranks and fquadrons and right form of war.

After, I fuppofe, a very long intermiffion, they appeared with great brilliancy is England, on March 6rh, 1715-16. The philofophers paid a proper attention t. $_{\text {. }}$ The vulgar confidered them as marking the introduction of a foreign race of princes. The novelty is now ceafed, and their caufe perhaps properly attributed to the greater abundance of eleciricat matter.

Storms.

YIERRings.

The tempefts which reign over thefe iIands during winter is aftonifhing. The cold is moderate; the fogs great and frequent; but the forms agitate the water even to the bottom of thefe comparatively fhallow feas. The fifh feek the bottom of the great deeps: and the Herrings, which appear off the Schetlands in amazing. columns in Fune, perform the circuit of our ifland, and retire beyond the knowlege of man. When the main body of thefe filh approaches from the north, it alters the very appearance of the ocean. It is divided into columns of five or fix miles in length, and three or four in breadth, and they drive the water before them. with a fort of rippling current. Sometimes they fink for a fmall fpace, then rife again; and in bright weather reflect a variety of fplendid colors, like a field of molt

- Arifol. Meteorolig. lib. i. c. 5. Plin. Nat. Hif. lib. ii.-c. 26.
t See vatious accounts of them in the Pbll. Tranf. abr. jv. part ii. 138 .
precious gems. Birds and fifh of prey attend and mark their progrefs. The Whales of feveral kinds keep on the outfide, and; deliberately opening their vaft mouths, take them in by hundreds. Gannets and Gulls dart down upon them; and the diving tribe aid their perfecution, with the cetaceous fifhes*. Mankind joins in the chace; for this ufeful fpecies gives food to millions, mediately and immediately. Dutch, French, Flemings, Danes, and Englifh, rendezvous in Brafa found to meet thefe treafures of the ocean: and return to diftribute their booty even to the diftant Antilles.

Cod, Ling, and Tor $k \dot{\dagger}$, furnifh eargoes to other adventurers. I wifh I could fpeak with the fame fatisfaction of this as of the free filhery of the Herring; but in thefe diftant iflands, the hand of oppreffion reigns uncontrolled. The poor vaffals (in defiance of laws ftill kept in bondage) are compelled to llave, and hazard their lives in the capture, to deliver their fith to their lords for a trifling fum, who fell them to adventurers from different parts at a high price.

Among other fearcer fifhes the $\mathrm{Opah}, \mathrm{Br}$. |Zool. iii. No IoI. is found in abundance. It feems a finh of the north as well as the Tor $k$; the laft is not found fouth of the Orknies; the former extends even to the banks of Newfoundland.

The birds of thefe inlands are the fame with thofe of the Orknies, except the Skua, p. 531, which breeds only in Foula and Unft. Among the few land-birds which migrate to them in fummer, is the Golden-crefted Wren, N0 ${ }^{153 \text {. Its }}$ fhorteft flight muft be fixty miles, except it Thould reft midway on Fair ifland; a furprifing flight for fo diminutive a bird!
Multitudes of the inhabitants of each clufter of inlands feed, during the feafon, on the eggs of the birds of the cliffs. The method of taking them is fo very bazardous, as to fatisfy one of the extremity to which the poor people are driven for want of food, Copin/ba, Hunda, Hay, Foula, and Nofs bead, are the moft celebrated rocks; and the neighboring natives the moft expert climbers and adventurers after the game of the precipice. The height of fome is above fifty fathoms; their faces roughened with thelves.or ledges, fufficient only.for the birds tareft and lay their eggs. T.o thefe the dauntlefs fowlers will afcend, pafs intrepidly from one to the other, collect the eggs and birds, and defcend with. the fame indifference. In moft places, the attempt is made from above : they are lowered from the llope contiguous to the brink, by a rope, fometimes made of Straw, fometimes of the brifles of the hog: they prefer the laft, even to ropes of hemp, as it is not liable to be cut by the fharpnefs of the rocks; the former is apt to untwift. They trult themfelves to a fingle affiftant, who lets his companion down, at d holds the rope, depending on his ftrength alone; which
(See my V.oy, to the Hebrides, and Br. Zool, iii. for the hiftory of the Herring.: +Br. Zool. iii. No 89,
often,

Cod-fisho

OPAR.

Birds。

Fowhing.
often fails, and the adventurer is fure to be dafhed to pieces, or drowned in the fubjacent fea. The rope is often Mifted from place to place, with the impending weight of the fowler and his booty. The perfon above receives fignals for the purpofe, his affociate being far out of fight; who, during the operation, by help of a ftaff, fprings from the face of the rocks, to avoid injury from the projecting parts.

In Foula, they will truft to a fmall fake driven into the ground, or to a fmall dagger, which the natives ufually carry about them; and which they will fick into the ground, and, twifting round it a fifhing cord, defcend by that to climbing places, and, after finifhing their bufinefs, fwarm up by it without fear. Few who make a practice of this come to a natural death. They have a common faying, 'Such a one's Gutcher went over the Sneak; and my father went over ' the Sneak too.' It is a pity that the old Nor.wegian law was not here in force. It confidered this kind of death as a fpecies of fuicide. The next of kin (in cafe the body could be feen) was directed to go the fame way; if he refufed, the corpfe was not to be admitted into holy ground *.

But the moft fingular fpecies of fowling is on the holm of Nofs, a valt rock fevered from the ille of Nofs by fome unknown convulfion, and only about fixteen fathoms diftant. It is of the fame ftupendous height as the oppofite precipice $t$, with a raging fea between; fo that the intervening chafm is of matchlefs horror. Some adventurous climber has reached the rock in a boat, gained the height, and faftened feveral ftakes on the fmall portion of earth which is to be found on the top: correfpondent ftakes are placed on the edge of the correfpondent cliffs. A rope is fixed to the ftakes on both fides, along which a máchine, called a cradle, is contrived to flide; and, by the belp of a fmall parallel cord faftened in like manner, the adventurer wafts himfelf over, and returns with his booty, which is the eggs or young of the Black-backed Gull, $\mathrm{N}^{\circ} 45 \mathrm{I}$, and the Herring Gull, $\mathrm{N}^{\circ} 452$.
Quadrupeds. The number of wild Quadrupeds which have reached the Orkney and Schetland inands are only five; the Otter, Brown Rat, Common Moufe, Fetid Shrew, and Bat. Rabbets are not of Briti/h origin, but naturalized in every part. In the fandy ines of Orkney, they are found in myriads, and their fkins are a great article of commerce; but the injury they do in fetting the unftable foil in motion, greatly counter-vales the profit.

## These isles once

 WOODED.In many parts of thefe iflands are evident marks of their having been a wooded country. In the parifh of St. Andrew in the Orknies, in North Maven, and even in Foula in the Schetlands, often large tracts are difcovered filled with the remains of large trees, which are ufually found after fome violent tempeft hath

* Deles, Hif. Ferroe Ifes, 154.
$\dagger 480$ feet.



## 





 $4 h^{4}+6$






















$\mathbb{B I R} \mathbb{D} \mathbb{C A T C H I N G} \operatorname{AT} \mathbb{O R K N E}$

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iflands, they are moft frequently called Wart or Wardbills, which thews that they were garrifoned. They had their wardmadher *, or watchman, a fort of centinel, who ftood on the top, and challenged all who came in fight. The gackman + was an officer of the fame kind, who not only was on the watch againf furprize ; but was to give notice if he faw any hips in diftrefs. He was allowed a large horn of generous liquor, which he had always by him, to keep up his fpirits $\ddagger$. Along the Orkney and Schetland Chores, they almoft form a chain; and by that means not only kept the natives in fubjection, but were fituated commodioully for covering the landing of their countrymen, who were perpetually roving on piratical expeditions. Thefe towers were even made ufe of as ftate-prifons; for we learn from Torfaus, that after Sueno had furprized Paul, count of Cathnefs, he carried him into Sutberland, and confined him there in a Norvegian tower §. So much has been faid on this fubject by the Reverend Mr. Cordiner and myfelf, that I fhall only refer to the pages, after faying, that out of our kingdom, no buildings fimilar to thefe are to be found, except in Scandinavia. On the mountain Swalberg \| in Norway is one; the Stir-bijkop $\pi$, at Upfal in Sweden, is another; and Umfeborg, in the fame kingdom, is a third **.

Thefe towers vary in their inner ftructure; but externally are univerfally the fame; yet fome have an addition of frength on the outfide. The burgh of Culfwick in Schetland, notwithftanding it is built on the top of a hill, is furrounded with a dry ditch thirteen feet broad; that of Snaburgh in $U_{n f f}$, has both a wet and a dry ditch; the firft cut, with great labor, through the live rock. The burgh of Moura is furrounded by a wall, now reduced to a heap of fones, and the infide is cylindrical, not taper, as ufual with others. The burgh of Hogfiter, upon an ifle in a loch of the fame name, has alfo its addition of a wall; a peculiarity in a caufeway, to join it to the main land, and a fingular internal ftructure. Numbers of little burghs, with fingle cells, are fcattered about thefe iflands, in the neighborhood of the greater; and which probably were built by the poorer fort of people, in order to enjoy their protection. A multitude of places in thefe iflands have the addition of burgh to their names, notwithftanding there is not a veftige of a tower near them; the materials having long fince been carried away, and applied to various ufes. One was, by way of pre-eminence, called Coningf. burgh, or the burgh of the king. I lament its lofs the more, as it might have proved fimilar to its namefake in Yorkhire, and furnifhed additional materials to

[^12]

Soman Campe in Fedlar.


SBurgh of Hoojic
Pitazellforit































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Stone Weapons.

Circles.

Semicircles.

Plain Columns.

Sculptured Co. LumNs. L
this place, were fix pieces of brafs, caft into a form the neareft refembling fetw ters. They were wrapped in a piece of raw hide; but.we cannot pretend to fay, that they belonged to the occupiers of the camp.

Flint heads of arrows, flint axes, fwords made of the bones of a whale, ftones, beads, and antiquities, muft be referred to the earlieft inhabitants, at a period in which thefe kingdoms were on a level with the natives of new-difcovered iflands in the South Sea. Druidical circles of ftones, the temples of primæval religion of our ifland, are not uncommon. The fineft and moftentire are thofe at Stennis, in one of the Orkney ifles. The diameter of the circle is about a hundred and ten yards. The higheft ftone fourteen feet. The whole is fingularly furrounded with a broad and deep ditch, probably to keep at a diffance the unhallowed vulgar.

At the fame place is a noble femicircle, confifting of four valt fones entire, and one broken. The higheft are twenty feet high above ground. Behind them is a mound of earth, conformable to their pofition. If there never was a number of fones to complete a circle, this antiquity was one of the kind which the. learned Doctor Borlafe, calls a theatre, and fuppofes was defigned for the exhibition of dramatical performances*. I fufpect them to have been either for thepurpofes of religion, or judicial tranfactions; for the age was probably not fufficiently refined for the former amufements. Upright ftones, either memorials of. the dead, or victories obtained on the foot, are very numerous. The moft remarkable is the ftone of Sator, in the ifle of Eda. It is a flag, fifteen feet high; five and a half broad, and only nine inches thick. Its ftory is quite unknown; but it probably refts over a hero of that name. Notwithftanding the long refi-. dence of the Norwegians in: thefe illands, I find only one ftone with a Runic infcription, which runs along the fides. The reft of the fone is plain, and deftitute of the fculptures fo frequent on thofe found in Scandinavia.

In the wall of the church at Sandnefs, is a ftone with three circles, a femi-circle, and a fquare figure, engraven on it. This is the only one which bears any refemblance to the elegant carved columns at Meigle and Glames, and which : extend, after a very long interval, as far as the church-yard of Far, on the extreme northern coaft of Cathnefs. Several of thefe have been before attended to. I can only remark, that they are extremely local, and were, by their fimilarity,., only the work of a fhort period. We imagine that the firf, about which we . can form any conjecture, was erected in. 994, on the defeat of Camus, the Dane.: : the laft.in 1034, on the murder.of Malcolm the Second.

In the ine of $U_{n f t}$ are two fingular circles, near each other. The largeft is fifty feet in diameter, to the outmoft ring; for it confifts of three, concentrical; the outmoft is formed of fmall ftones, the two inner of earth; through all of which is a fingle narrow entrance to a tumulus which rifes in the centre. The other circle is only twenty-two feet in diameter, and has only two rings, formed of earth : in the centre is a barrow, the fides of which are fenced with ftones. No marks of their having been places of interment have been found, yet moft probably that was their ufe.

The links or fands of Skail, in Sandwich, one of the Orknies, abound in round barrows. Some are formed of earth alone, others of fone covered with earth. In the former was found a coffin, made of fix flat ftones. They are too thort to receive a body at full length: the ikeletons found in them lie with the knees preffed to the breaft, and the legs doubled along the thighs. A bag, made of rufhes, has been found at the feet of fome of thefe fkeletons, containing the bones, moft probably, of another of the family. In one were to be feen multitudes of fmall beetles. Whether they were plaçed there by defign, or lodged there by accident, I will not determine; but, as I have difcovered fimilar infects in the bag which inclofed the facred Ibis, we may fuppofe that the Egyptians, and the nation to whom thefe tumuli did belong, might have had the fame fuperfition refpecting them. On fome of the corpfes interred in this illand, the mode of burning was obferved. The afhes, depofited in an urn which was covered on the top with a flat ftone, have been found in the cell of one of the barrows. This coffin or cell. was placed on the ground, then covered with a heap of fones, and that again cafed with earth and fods. Both barrow and contents evince them to be of a different age from the former. . Thefe tumuli were in the nature of family vaults: in them have been found two tiers of coffins *. It is probable, that on the death of any one of the family, the tumulus was opened, and the body interred near its kindred bones.

The violence of the winds have, by blowing away the fands in a certain part of Wefra, one of the Schetlands, difcovered an extenfive burying-place, once covered with the thicknefs of twenty feet. This feems to have belonged to different nations. One is marked by the tumuli confifting of fones and rubbih; fome rounded, others flat at top like truncated cones. Near them are multitudes of graves, which are difcoverable only by one, two, three, four, and fometimes even more fhort upright ftones, fet in the level fand. The corpfe was interred a few feet deep, and covered with a layer of fine clay, to keep the fand from touching it.
*See Mr. Low's account, and plate, Archaologia, iij. 276. tab. xiii.

Graves of Westra.

Sepulchíal Antieuities.

Circular.

## Barrows:

Not only human bones, but thofe of oxen, horfes, dogs, and ficep, have been found in thefe graves. Befides, were feveral forts of warlike inftruments, battleaxes, two-handed fwords, broad fwords, brazen daggers and fcull-caps, and fwords made of the bones of the whale : knives and combs: beads, brotches, and chains of ornament : a metal fpoon, and a neat glafs cup greatly corroded : fmall flat circular pieces of marble: ftones thaped like whetfones, and fpherical ftones petforated, fuch as were in former ufe in Scotland for turning of fpindles: but the moft lingular thing was a thigh-bone clofely incircled by a ring of gold. The tumuli feem to have been the places of fepulture of the inhabitants of the ines: the graves, thofe of fome foreign nation who had landed here, had a conflict, and proved victorious. I found my conjecture on the arms and other matters found in them. The brafs were Norwegian ${ }^{*}$, the iron belonging to the natives; but the weapons of conquerors and conquered were, with ceremonies refembling thofe at the funeral of Pallas, flung into the graves of the victorious party.

> Hinc alii fpolia occifis direpta Latinis Conjiciunt igni, galeas enferque decoros, Frenaque, ferventefque rotas; pars munera notan. Ipforum clypeos; et non felicia tela : Multa boum circa mactantur corpora mortri.

$\mathrm{I}_{\mathrm{N}}$ Scandinatia.
The antiquities of this clafs found in Scandinavia are very numerous, and of magnitude which evince the extreme population of the country. I difcover only. three kinds. The firft may be exemplified in the vaft rounded earthen tumulus in Smaland, with a rude'monumental upright fone at top; and near it a fpherical. ftone, beautifully carved, flung up in honor of Ingo King of Sweden, in the latter end of the ninth century $\dagger$ : others in honor of Humblus, and Laudur brother to King Angantyr; the laft furrounded at its bafe with a circle of rude ftones.t. The Rambora Rolle is a mount of earth, with three upright pillars, placed fo as to form a triangular fpace $\mathbb{1}$, Other tumuli confift entirely of vaft heaps of ftones. Several of the fepulchral memorials are formed of fones difpofed in a circular form : fome of low ftones, like that of the Danifb King Harald Hyldeland, placed round the edge of the flat area of a low mount. He was flain in battle by Ringo King of Sweden $\S$, who paid him all funeral honors, burnt his body with great pomp, and placed around his tumulus the numerous bodies of his faithful fols. lowers who were flain around their prince; and their places of reft are marked by. multitudes of fmall earthen barrows, with a fingle fone at the top of each. On

[^13]of the victims *. Others confift of fmall ftones with Maen-birion, as the $W_{l} l / \beta$ flyle them, lofty rude pillars, intermixed. In fome the leffer ftones depart from the circular form, are oval or oblong : their edges are often contiguous, and thofe parts are often marked with a lofty pillar $t$. Two pillars are fometimes found, with an enormous ftone fet from top to top, fo as to form the refembiance of a gateway $\ddagger$. Columns of great height are alfo found, furrounded at their bafe with two circles of fmall ftones $\pi$. Finally, the ftones are difpofed fo as to form wedges, fquares, long rows, as well as circles. The firft denoted that armies of foot and horfe had prevaled: the fecond, troops of warriors : the third, duels of champions: and the laf, the burials of families $\S$. Multitudes of fingle obelifcs are fcattered over the country : fome quite plain; others infcribed with Runic characters, memorial of the dead, intermixed with well-fancied ornaments $\|$.

In many of the tumuli are found the weapons and other matters which had been depofited with the burnt bones of the deceafed. In thofe of the earlieft ages are the fone weapons, fuch as axes and fears heads made of flint. In others have been met with a fmall lamp, a key, and fwords of brafs of the fame form with fome of the $\bar{R}$ oman fwords**. A fuperftition attending the fwords was fingular: thofe of higheft temper were fuppofed to have been made by Duergi, dwarfs or fairies, and were thought to have been irrefiftible. The reader will not be difpleafed with the elegant verfion $\dagger \dagger$ of a Runic poem, defcribing the incantations of a fair heroine, to obtain the magical fword out of the tomb of her deceafed father.

[^14]Each from his filent tomb I call;
Ghoits of the dead, awaken all!
With helmet, Mield, and coat of mail,
With fword and fear, I bid ye hail!
Where twifted roots of oak abound,
And undermine the hollow ground,
Each from his narrow cell I call;
Ghofts of the dead, awaken all!
In what darkfome cavern deep,
Do the fons of Angrym tleep?
Duft and afhes tho' ye be,
Sons of Angrym, anfwer me.
Lift'ning in your clay-cold beds,
Sons of Eyvor, lift your heads.'
Rife, Hiorvardur, rife and fpeak;
Hervardur, thy long filence break.
Duft and afhes tho' ye be,
One and all, oh aufwer me.
Never, ok never may ye reft;
But rot and putrefy unblefs'd,
If ye refufe the magic blade,
And belt, by fairy fingers made !
Angantir.
Ceafe, oh daughter, ceafe to call me ;
Didft thou know what will befall thee,
Thou hadft never hither fped, With Runic fpells to wake the dead:
Thou, that in evil hour art come To brave the terrors of the tomb. Nor friend, nor weeping father, gave Anganiyr's reliques to the grave; And Tirfing, that all-conqu'ring fiword, No longer calls Angantyr lord.
A living warrior wears it now_

## Hervor.

'Tis falfe, Angantyr; only thou. So may great Odin ever keep
In peace the turf where thou dof neep;
As Tirfing fill befide thee lies,
Th' attendant of thy obrequies !
My juft inheritance I claim;
Conjure thee by a daughter's name, Thy only child:

Angantyr.
Too well I knew
Thou wouldit demand what thou thalt rue.
By Tirfing's fatal point thall die The braveft of thy progeny.
A warlike fon thall Hervor bear,
Hervor's pride, and Tirfing's heir;
Already, daughter, I forefee
Heidrek the hero's name will be:
To him, the young, the bold, the frong, Tirfing hereafter will belong.

HERVOR.
Ne'er fhall my inchantments ceafe, Nor you, ye fpirits, reft in peace, Until ye grant what I demand, And Tirfing glitters in my hand.

Angantyr.
Oh Virgin, more than woman bold! Of warlike mien, and manly mould! What has induc'd thy feet to tread The gloomy manfions of the dead, At this lone hour, devoid of fear, With fword, and thield, and magic fpear ?

HERVOR.
The caufe thou know'it, why to thy tomb I've wander'd thro' the midnight gloom s Yield then the Fairies work divine; Thou art no father elfe of mine ; But goblin damn'd.

## Angantyr.

Then hear me, Maid,
That art not ev'n of death afraid!
Hialmar's bane thou fhalt command;
The fatal fword is in my hand: But fee the flames that round it rife! Dof thou the furious fire defpife ?

HERVOR.
Yes; I dare feize, amidft the fire, The object of my foul's defire; Nor do thefe eyes behold with dread, The flame that plays around the dead.

> ANGANTYR.

Rafh Maid! will nothing then controul The purpofe of thy daring foul?

To there fierce flames that round it play,
The fword from out the tomb IIl bring;
Go, and the fong of triumph ling.

## Hervor.

Offspring of kings! I know thee now,
And thus before thy prefence bow; Father, Hero, Prince, and Friend! To thee my grateful knees I bend. Not half fo happy had I been, Tho' Scandinavia hail'd me queen. Angantyr.
How art thou to thy intreft blind,
Weak woman, tho' of dauntlefs mind!
Tirfing, the object of thy joy;
Thy future offspring thall deflroy.

## HERVOR.

My feamen call; I muft away:
Adieu, O King! I cannot Ray. Fate, do thy worf! in times to come Be what it may, my children's doom!

> ANGANTYR.

Take then, and keep Hialmar's bane, Dy'd. in the blood of heroes flain.

Hervor, if truly I divine;
The fell, devouring, poifon'd blade, For death and for deftruction made.

## HERVOR.

With joy the two-edg'd fword I take, Nor reck the havock it will make; Poffeffing which, I little rue Whate'er my frantic fons may do.

## Ancantyr.

Daughter, farewell! as thou doft live; To thee the death of twelve I give: ; To thee, O maid of warlike mind, What Angrym's fons have left behind.

## Hervor.

Anganiyr, reft in peace! and all Ye ghofts, who have obey'd my call; Reft in your mould'ring vaults below ! While from this houle of death I go, Where, burfing from the vap'rous ground,: Meteors moot, and blaze around.

I:hall juft mention, that the antient Scandinavians had alfo their Cromlehs $\bullet$ : I can trace but one inftance, and that on the top of a tumulus in Zealand; which, with two other barrows, is included in a fquare of ftones.

Circles, for the purpofe of religious rites, were not wanting here. The Ettefupa, or circle of lofty rude columns in Weft Gothland, was celebrated for the facrifices of the heathens $t$; and the great ftones at Finfad, difpofed in form of a cell, and called St. Birgitta's Oratory $\ddagger$, was no other than a temple of worhip, analogous, probably, to that of the Druids.
The next flep is to the Feroe inlands, a group about two hundred and ten miles to the north-weft of the northern Schetland, between lat. 6I, 15. and 62, 30. There are feventeen which are habitable, each of which is a lofty mountain arifing out of the waves; divided from the others by deep and rapid currents. Some of them are deeply indented with fecure harbours; . providence feeming to have fayored mankind with the fafeft retreats in the moft boifterous feas. All are very fteep, and moft of :

[^15]Land Birds.

Fowling.

From above.
them faced with molt tremendous precipices. The furface of the mountains confifts of a fhallow foil of remarkable fertility; for barley, the only corn fown here, yields above twenty for one; and the grafs affords abundant pafturage for fheep. The exports are falted mutton and tallow, goofe quils, feathers, and Eider down ; and, by the induftry of the inhabitants, knit woollen waiftcoats, caps, and ftockings. No trees beyond the fize of juniper, or funted willows, will grow here : nor are any wild quadrupeds to be met with, except rats and mice, originally efcaped from the fhipping.
The lift of land birds is very fmall:-The Cinereous Eagle, p. 214. B; the Lanner, p. 225. K; the Sparrow Hawk, p. 226. N ${ }^{*}$; a fpecies of Owl ; the Raven, $\mathrm{N}^{\circ}$ 134; and-Hooded Crow, p. 251. B. are the pernicious fpecies. Ravens were fo deftructive to the Lambs and Sheep, that in old times every boatman was obliged to bring into the feffions-houfe, on St. Olaus's day, the beak of one of thofe birds, or pay one fkin , which was called the Raven-fine, in cafe of neglect. The remaining land fowl are Wild Pigeons and Stares, White Wagtails, Wrens, and fometimes the Swallow. The Snow Bunting only refts here in fyring, on its paffage northward. The Heron is fometimes met with. The SpoonBill is Common t. The Sea Pie, Water Rail, and Lapwing, are feen here. The birds of the rocks, fuch as Puffins, Razor Bills, and Little Auks, Foolifh and Black Guillemots, fwarm here; and the Geyir-fugl, or Great Auk, at-certain periods vifits thefe iflands. The laft, by reafon of its fhort wing incapable of flight, neftles at the foot of the cliffs. The Skua, Arctic, Black-backed, and Herring Gulls, Fulmars, Manks, Stormy Petrels, Imber and Northern Divers, Wild Swans and Geefe, (the Swans only vernal paffengers towards the north) Eider Ducks, Havelda or Long-tailed Ducks, Corvorants, and the Sula Gannet, form the fum of the palmated fowl of thefe inhofpitable fpots.:

The manner of fowling is fo very ftrange and hazardous that the defcription thould by no means be omitted. Neceffity compels mankind to wonderful attempts. The cliffs which contain the objects of their fearch are often two hundred fathoms in height, and are attempted from above and below. In the firft cafe, the fowlers provide themfelves with a rope eighty or a hundred fathoms in length. The fowler faftens one end about his waift and between his legs, recommends himfelf to the protection of the Almighty, and is lowered down by fix others, who place 2 piece of timber on the margin of the rock, to preferve the rope from wearing againft the flarp edge. They have befides a fmall line faftened to the body of the adyenturer, by which he gives fignals that they may lower or raife him, or fhift him

[^16]
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fo as to leave a great temporary chafin in the foot on which it falls, and carries away with it, to an amazing diftance, any filhes which may happen to be within reach of its fury. Thus great fhoals of Herrings have been found on the higheft mountains of Feroe. It is equally refiflefs on land, tearing up trees, ftones, and animals, and carrying them to very diftant places. We muft no longer laugh at the good archbifhop *, who gravely tells us, that at times, the Rats called Lemming are poured down from the clouds in great fhowers on the Alps of Norway. We affent to the $\mathrm{f}_{\mathrm{a}} \mathrm{ft}$; but muft folve the phœnomenon by afcribing it to a whirlwind, as he does in one place; yet immediately. fuppofes they may be bred in the upper regions out of feculent matter.

Among the numerous whirlpools of thefe feas, that of Suderoe, near the ifland of the fame name, is the moft noted. It is occafioned by a crater, fixty-one fathoms in depth in the centre, and from fifty to fifty-five on the.fides. The water forms four fierce circumgirations. The point they begin at is on the fide of a large bafon, where commences a range of rocks running fpiral! $y$, and terminating at the verge of the crater. This range is extremely rugged, and covered with water from the depth of twelve to eight fathoms only. It forms four equidiftant wreaths, with a channel from thirty-five to twenty fathoms in depth between each. On the outfide, beyond that depth, the fea fuddenly finks to eighty and ninety. On the fouth border of the bafon is a lofty rock, called Sumboe Munk, noted for the multitude of birds. which frequent it. On one fide, the water is only three or four fathoms deep; on the other fifteen. The danger at moft times, efpecially in ftorms, is very great. Ships are irrefiftibly drawn in : the rudder lofes its power, and the waves beat as high as the mafts; fo that an efcape is almoft miraculous: yet at the reflux, and in very fill weather, the inhabitants will venture in boats, for the fake of fifhing. Mr. Debes omits the times of greateft danger. It is to be hoped that attention will be paid to the various periodical appearances of a phœenomenon, the caufe of which is very fatisfactorily explained by the worthy paftor $\dagger$.

Mankind found their way to thefe iflands fome time before the difcovery. of Iceland. Naddodd, a Norwegian pirate, had retircd here, as the only place of fecurity'. he could find $\ddagger$. About this time, Harold Harfagre pofleffed himfelf of Norway, and flung off the Dani/h yoke. A party was formed againft him; but it was foon fubdued, and the malecontents quitting the kingdom, retired tothe Hebrides, Orknies, Schetland, and Feroe, and gave rife to the Norwegian reign in all thofe inands.
Icriand.
From the Feroe illands, the hardy Scandinavians made the next ftep, in their northern migrations, to Iceland. I mult premife, that there is the higheft prohability that this inland was difcovered in an age moft remote to theirs: and that it was the Thule of Pytheas, an illuftrious Marfeillian, at left cotemporary with

[^17]Arifotle *, and who puthed his difcoveries towards the north, as his countryman Euthymenes did beyond the line. Pytheas arrived at Thule, an ifland, fays he, fix days failing northward from 'Britain, where, he informs us, was continual day and night for fix months alternately $\dagger$. He does not exactly hit on the length of day and night; but he could have been at no other, at that diftance from Britain, but Iceland, in which there was a moft remarkable abfence of light. As to Naddodd, in 86 I , he was accidentally driven by a tempeft to the eaftern fide of Iceland, to a place now called Reidarfiall. He found the country covered with fnow, and therefore named it Snceland; yet he returned home full of its praifes. Soon after, Gardar, a Swede, experienced the fame fortune. On a voyage to the Hebrides, he was tempeft-driven to the fame ifland; on which, by the advice of his mother, who was a fort of diviner, he landed at Horn. At this period Iceland was cloathed with wood from the Chore to the very tops of the mountains. He wintered there, and likewife returned full of its praifes $\ddagger$.

Floke, a celebrated pirate, was the next adventurer. He took with him three Ravens, and, like another Noah, made them the augury of the land. Before he failed, he performed a great facrifice for the fuccefs, upon a vaft pile of ftones, which he raifed for the purpofe. This points out another origin of the vaft tumuli we fo frequently fee. He made the Schetland and the Fcroe ifles his firft fteps ; and loofed from the latt for Iceland, the neareft point of which is about five hundred and forty miles diftant. His firf Raven returned to Ferce: the fecond flew back to the flip : the third directed him to the wifhed-for land $\S$. He wintered there. The cattle he brought with him perifhed through want. The fpring proved unufually cold, and the fea appeared full of ice; for which reafon he beftowed on the ifland the name it at prefent bears. Floke was fick of his voyage: returned full of difpraifes of the country. This did not difcourage other adventurers, all of them Scandimavians, thruft out of the exuberant northern hive. The reft of the world, which their countrymen ravaged, was affuredly too fmall for them, otherwife they never would have colonized alinoft the moft wretched foot in the northern hemifphere. Ambition polfibly actuated the leaders, who might think it

> Better to reign in hell than fesve in heaven.

Colony after colony arrived. They confederated, and formed a republic, which exifted near four hundred years; but with as many feuds and faughters as could

[^18]happen in a climate where luxury might pamper and corrupt the inhabitants. In 1261, wearied with their diffenfions, they voluntarily re-united themfelves to their mother-country, Norway, under the reign of its monarch Haquin. It is remarkable, that the poetic genius of their aboriginal country flourifhed with equal fublimity in every climate. The Scalds, or bards, retained their fire in the irhofpitable climate of Iceland, as vigoroully as when they attended on their chieftains to the mild air of Spain, or Sicily, and fung their valiant deeds.

Every thing which furnified topics to the poets of other countries, was, in the molt remote period, wanting here. Groves, verdant meadows, purling ftreams, and gentle zephyrs, were totally unknown; and in their ftead, ftunted Mrubs, a thin herbage, rude torrents, and fierce gales, reign in evcry part. We admit the apology of the learned Tarfaus for the prefenr fate of his country*. Violent tempefts might cover whole tracts with the untable fand, eruptions of water from the mountains defolate fome parts, earthquakes bury vaft extents of fertile land: with fragments of rocks, and inundations of the fea change the face of others. But foft fcenery was not requifite to infpire poets who were to fing only the preparations for warlike exploits, the flaughter of a battle, the deeds of their heroes, and the magic folemnities of fuperftitions.

The ifland, at prefent, exhibits to the traveller amazing fopes of lava, which. once freamed from the vulcanocs, and terminated in the fea. Such is the appearance, about three miles from Hafnaifoird, in lat. 64. 4. of vaft maffes of lava piled to a montanous height upon each other, broken, vitrified, $\AA_{1 a r p}$, rude, and black. In parts, fandy tracts intervene: in others, a foil peculiar to the place, a tufa, originated from the violent eruptions of impure water which rulh from the mountains, attendant on the fiery eruptions. Vallies compofed of a very thin foil, afford grafs for a numerous breed of cattle and fheep. Here is found variety of fpecies of, the beft graffes; of the aira, paa, fefuca, and carex. Part is harvefted againft winter; but not in fuch plenty, but that the farmer is obliged often to feed his fock with. the wolf-filh, or the heads of cod-fifh beaten fmall, and mixed with a quarter part of hay. To what food will not neceffity compel both man and heaft to recur!

The woods of Iceland have long fince vanifbed, unlefs we except a few ftunted birch, fearcely ten feet high, and four inches in diameter; and a few feecies of willow, fo fmall and fo rare as fearcely to be of ufe to the inhabitants. But they, are abundantly fupplied with drift-wood from Europe and America, as appears by the fpecies found on the fhores, efpecially on all the northern coaft, as Langanefs on the north-eaft, and Hornftrandt on the north-weft. That woods were found here
in very remote periods, is very evident, from the quantity of futurbrand met with in feveral parts; which fill retains traces of its vegetable origin; the marks of branches, and circles of the annual growth of the wood: fome pieces are even capable of being planed. It is found in the fiffures of the rocks, much compreffed by their weight, and in pieces fometimes big enough to make a middle-fized table. This is fometimes ufed as fuel; but the want of it is fupplied, in fome meafure, by the drift-wood, by peat, and by feveral ftrange fubftitutes, the effect of necefity. Smiths prefer the futuibrand to fea-coal in their bufinefs. The beds of this foffil frongly refute the notion of Iceland having been entirely formed by vulcanic violence, fince the original creation; and raifed out of the fea in later times, as others have been known to have done. Delos and Rbodos, in very remote ages; Thera, the modern Santorini, and Therafia, in the 1 35th Olympiad; Thia, in the time of Pliny*; and in the beginning of this century another fprung from the fea, by the force of fubterraneous fires, near to Sartorini $\dagger$ : and, while I am now writing, an ifland is forming by the fame caufe, not remote from the Reichenes, part of the very ifland in queftion. But thefe futur or forte brands are certainly the remains of antient forefts, overturned and buried by earthquakes, after the golden age of the ifland. Let me add to this another proof, from the number of its vegetables: there being found on it not Plants, numbri fewer than three hundred and nine perfect, and two hundred and thirty-three cryptogamous plants. On the ine of Afcenfion, which is totally and aboriginally vulcanic, a Fiora of not more than feven plants is to be feen $\ddagger$.

This valt illand extends from 63. 15. to about 67. 18. north latitude: is reckoned to be five hundred and fixty Englifs miles long, and about two hundred and fifty broad $\|$. . It has a rugged coaft, indented deeply with fecure bays; but faced with very few ifles. It lies in the Hyperborean ocean, divided from Greenland by a fea about thirty-five leagues wide §. The whole is traverfed with great ridges of mountains; the highef naked, and ufually free from fnow, by reafon of the faline and fulphurous particles with which they abound. The lower, called $70 k-$ keler, are cafed with eternal. ice and fnow; and afe the glacieres of Iceland. Of thefe, Sneficell Fokkel, which hangs over the fea in the welt part of the illand, is far the higheft q . Out of thefe, at different periods, have been tremendous eruptions of fire and water, the burft of which is attended with a moft terrific noife: flames and balls of fire iffue out with the fmoke: and fhowers of fones are vomited up; of which there has been an inftance of one weighing near three hundred pounds being flung to the

[^19]diftance of four miles. The heights of the mountains have not been taken; but that of the Hecla-fiall is not far hort of feventeen hundred yards. Of this fpecies of mountain, Hecla has been moft celebrated : the records of Iceland enumerate ten of its eruptions fince the arrival of the Norwegians. It was the hell of the northern nations; but they feem divided in their opinions, whether the pains of the damned arofe from fire, or, what was more tremendous to the natives of thefe countries, from the cold *.

> To bathe in fiery floods, or to refide
> In thrilling regions of thick-ribbed ice.

Hecla has been known to have had only ten eruptions between the years 1104 and 1693; from the laft to 1766, when it burft out in flames and lavia. It emitted flames in 1771 and 1772 ; but did not overflow with $\mathcal{S}_{\text {tenna }}$, or a ftone flood. But other vulcanoes have, in the prefent century, proved the firacles to the internal fires of Iceland. The vallies between the mountains are in general fandy and fterile. Fieryeruptions are not confined to the mountains. Laft year they burft out of the fulphureous foil of the low parts of Skaftafield Syfel or province ; and the lava has overflown the country for the fpace of thirty miles, and has at laft reached the fea, deftroying every thing in its progrefs. It dries up the rivers, and fills their beds with lava. Moors in fome places ftop its courfe; but it totally changes their nature. It has taken to the deferts of the fame province, and begins to fpread to the eaft, or Mulé Sylfel, the moft populous and fruitful part of the inland; nor were there any figns of its ceafing at the time when this account was fent to me $\dagger$.
Huers, or boll ing jets d'eaux.

The Fountains of many of the vallies are of a moft extraordinary nature; are called Huers, and form at times jets d'eaux of fcalding water, ninety-four feet high, and thirty in diameter, creating the moft magnificent gerbes in nature! efpecially when backed by the fetting fun. They arife out of cylindrical tubes of unknown depths: near the furface they expand into apertures of a funnel fhape, and the mouths fpread into large extent of ftalactitical matter, formed of fuc. ceffive fcaly concentric undulations. The playing of thefe ftupendous fpouts is foretold by noifes roaring like the cataract of Niagara. The cylinder begins to fill : it rifes gradually to the furface, and gradually encreafes its height, fmoking amazingly, and flinging up great ftones. After attaining its greateft height, it gradually finks, till it totally difappears. Boiling jets deeaux, and boiling fprings, are frequent in moft parts of the ifland. In many parts they are applied to the culinary ufes of the natives. The moft capital is that which is

[^20]
## I Clllll $\mathbf{C} \quad \mathrm{E} \quad \mathrm{L} \quad \mathrm{N}$.

called Geyer, in a plain rifing into fmall hills, and in the midft of an amphitheatre, bounded by the moft magnificent and various-haped icy mountains; among which the three-headed Hecla foars pre-cminent.

Thefe Hicers are not confined to the land. They rife in the very fea, and form fealding fountains amidft the waves. Their difance from the land is unknown; but the new vulcanic ifle, twelve miles off the point of Reickenes, emitting fire and fmoke, proves that the fubterraneous fires and waters extend to that §pace; for thofe aweful effects arife from the united fury of thefe two elements *. The depth of water between this new creation and the Geir-fugl Skier, is forty-four fathoms; ten leagues to the weft, two hundred and five: and the bottom compofed of black fand $\dagger$; doubtlefs no other than the Pumex arenaceus, the frequent evomition of vulcanoes. How much paft human comprehenfion muft the powers have been, that could force up materials for an inland, even from the medium depth I have given! and how deep beneath the bottom of the ocean muft have been the caufes which could fupply fone, or pumice, or lava, to fill the fpace which this inand occupies, many miles in circumference, and polfibly above a hundred fathoms in depth 1

If fome iflands fpring out of thefe feas, others are fwallowed by the force of earthquakes. Their foundations are undermined by the fury of the fubterraneous elements, which carries off the materials of their bafis, and difcharges it in lava, or different forms, through the vulcanic fpiracula. The earthquakes fhatter the cruft on which they ftand, and they tumble into the great abyfs. Such was the fate of the nine ifles of Gouberman, which lay about four leagues from Sandanefs, between Patrixford and Cape. Nort, all which fuddenly difappeared. Their names ftill exift in feveral maps; but their place is only diftinguifhable by the fuperior depth of water in the fpot on which they ftood $\ddagger$.

The number of inhabitants in Iceland is computed not to exceed fixty thoufand. Confidering the ungenial furface of this vaft illand, probably the number is equal to the means of fupport. Writers apologize for the fewnefs of inhabitants, by attributing it to the almoft depopulation of the place by the forte aiod, or black death, a peftilence which commenced in Cathay, or Cbina, in 1346, fpread over all. Afia, and Africa, reached the fouth of Europe in 1347, and in 1348 fpread itfelf over Britain, Germany; and northern Europe, even to the extremity of the inhabited north. The fmall-pox, and other cpidemics, are mentioned as contributing to thin the ifland. During the time of the plague, tradition relates,

- See Mr. Wbiteburfis Theory. par M. de Kerguelin, 69.
$\dagger$ Sable noir commé la poudre a canon. Vojage au Nord, $\ddagger$ The fame, 65,66 .

In thr Sea.
in terms moft graphically horrid, that the perfons who efcaped to the mountains, faw the whole low country covered with a thick peltiferous fog. A guefs may be made at the number of inhabitants in the eleventh century; for a bilhop of Schalbolt caufed, in 1090, all who were liable to pay tribute to be numbered: four thoufand of that rank were found; fo that, giving five to a family, the fum is twenty thoufand *. Much of the labor in the northern world falls to the female part of the family; and in thofe patriarchal times, the fons alfo Mared the toil. I cannot therefore under-rate the number of commonalty, or untaxable people, heads of families, at ten thoufand; which, by the fame rule, will give fifty thoufand of the lower rank. Befides the dearth of food in this rude ifland, other caufes contribute to prevent the increafe of inhabitants. Neceffity forces the men to feek from the fea fubfiftence, denied by their niggardly land. Confant wet, cold, and hard labor, abridge the days of thoufands; and that labor is increafed tenfold, to fupply the rapacity of their mafters. Incredible as it may feem, a late king of Deninark fold the whole ifland, and its inhabitants, to a company of merchants, for the annual rent of one thoufand pounds. This company ennave the poor natives; who are bound to fell their fifh, the ftaple of the ifland, at a low price to there monopolizers; who, dreading refiftance, even have taken from them the $u$ fe of fire-arms 1 Here is given a ftronger caufe of dcpopulation, perhaps, than the others; for Hymen can have but faint votaries in the land from whence.liberty is banifhed. Bat for thefe caufes, here ought to be found the genuine fpecies of the Norman race, unmixed with foreign blood; as muft be the cafe with every place remote from the reft of the world. Here are to be fought the antient cuftoms and diet of their original ftock, which are now probably worn out in the land of their diftant anceftors. The luxury of food hat fo little crept in among them, that their meat and drink in general is peculiar to themfelves; and much of the former compofed of herbs neglected in other places.
Dress. The drefs of the natives feems unchanged for a very confiderable time: that of the men is fimple, not unlike that of the Norwegian peafants $\dagger$; that of the females is graceful, elegant, and peculiar to them, and perhaps fome very oldfafhioned Norwegian lady. They ornament themfelves with filver chains and rich plates of filver, beautifully wrought. On their head is a lofty flender drefs, not unlike a Pbrygian bonnet. I cannot compare this to any antient European fathion. ${ }^{\text {J }}$ Jabel of France, queen to Edward II. wore a head-drefs of an enor-

[^21]
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## $\begin{array}{lllllll}\text { I } & \mathrm{C} & \mathrm{E}^{\prime} & \mathrm{L} & \mathrm{A} & \mathrm{N} & \mathrm{D} .\end{array}$

berries are but thinly difperfed, thefe little animals are obliged to crofs rivers to make their diftant forages. In their return with the booty to their magazines, they are obliged to repafs the ftream; of which Mr. Olaffen givés the following account :"The party, which confifts of from fix to ten, felect a flat piece of dried cow-dunge on which they place the berries in a heap in the middle; then, by their united force, bring it to the water's edge, and after launching it, embark, and place themfelves round the heap, with their heads joined over it, and their backs to the water, their tails pendent in the ftream, ferving the purpofe of rudders*." When I confider the wonderful fagacity of Beavers, and think of the management of the Squirrel, which, in cafes of fimilar ncceffity, make a piece of bark their boat, and tail their. fail $t$, I no longer hefitate to credit the relation.
Foxes. The Common Fox, Aict. Zool. $\mathrm{N}^{\circ}$ II, and the Arctic, No ro, are frequent j ; are profcribed, and killed for the fake of a reward, in order to prevent the havock they would make among the fheep.
Bears. The Polar Bear, $\mathrm{N}^{\circ} 18$, is often tranfported from Greenland, on the inands of ice; but no fooner is its landing difcovered, than a general alarm is fpread, and purfuit made till it is deftroyed. The Icelanders are very intrepid in their attack on this animal ; and a fingle man, armed only with a fpear, frequently enters the lifts with this tremendous beaft, and never fails of victory. A perfon who lived: near Langenfes, the extreme northern point, where the Bears moft frequently land, is fill celebrated for having flain not fewer than twenty in fingle combat. There is a reward for every fkin, which mull be delivered to the next magiffrate.

The Common Bat, p. 185, A. is fometimes found in, this Inland, and finifhes the lift of the land-animals of the country.

The amphibious quadrupeds, or Seals, are very numerous. Iceland, being bleffed with domeftic animals, has lefs ufe of this race than other Arctic countries; yet they are of confiderable advantage. The fkins are ufed for cloathing ; a good one is equal in value to the fkin of a fheep, or the hide of a cow; and the fat fupplies the lamps in the long nights with oil. The Common, during winter, is exceffively fat, and will yield fixty pounds.
Sealg.
The Icelanders have two fpecies of native Seals: the Common, No 72, called by them Land Salur, becaufe it keeps near the coaft; the other, the Great, $\mathrm{N}^{\circ}{ }^{\mathrm{F}} 3$, or $U_{t-S a l u r}$. They are taken in nets placed in the creeks and narrow bays, which they pafs through to get on fhore. When it begins to grow dark the hunters make a fire, and fling into it the fiavings of horns, or ary thing tirat fmells frong ; this allures the Seals, who ftrike into the nets, and are taken.

[^22]- At other times, a koder or lure is tied to a rope, and placed before the nets; to which the Seals, fuppofing it to be fome ftrange animal, will eagerly fwim, and Itrike into the nets, paying with their lives for their curiofity. This carries them fometimes fo far, that they will ftray to a confiderable diffance inland, attracted by a candle, or the fire in a fmith's forge. If they are taken young, they are capable of being tamed: they will follow their mafter, and come to him like a dog, when called by the name which is given them. The Icelanders have a frange fuperftition about thefe animals: they believe they refermble the human ipecies more than any other, and that they are the offspring of Praraon and his hoft, who were converted into Seals when they were overwheimed in the Red Sca.

Other fpecies of Seals are migratory. Among them is the Harp, $\mathrm{N}^{\circ} 77$, or Vade-Selur. Thefe quit the feas of Iceland in March, and fwim through the ftreights of Davies, by fome unknown opening, to the fartheft north; bring forth their young, and return, by the north of Greenland, in May, extremely lean, to the north of Iceland; continue their route, and return to that ifland about Cbrijimas, chiefly upon the drift-ice, on which they are either fhct, or harpooncd. The Hooded Seal, $\mathrm{N}^{0} 76$, or Bladru Seal, is rarely taken here. The Walrus, $\mathrm{N}^{\circ} 7$ 1, or Rof-unger, is fometimes wafted here from Greenland on the ice.

It cannot be expected, that many of the feathered tribe flould inhatit an ifland fo very fevere in its climate, and fo remote from the more fouthern continent and inands. It is, like all other Arciic countries, the afyluin to water-fowl, to breed and educate their young; but, being an inhabited place, fewer refort here than to the untrodden waftes of the more diftant north. The Guiand Duck, p. 572. E. may poffibly be a local bird. The reft, whether land or watcr, are common to Norway, and many other parts of Eurcpe. The Great Auks, $\mathrm{N}^{\circ} 428$, are found here in greater numbers than elfewhere: they inhabit and breed on the rocks, called from them Geir-fugl Skicr, off the point of Rakencs, the mof fouthern part of the inand. Notwithftanding thcy are furrounded with a fwelling fea, and tremendous breakers, the Icclanders venture there annually, in order to colleit the eggs, to contribute to the provifion of the year. I can only reckon fixteen land-birds * : twenty cloven-footed water-fowl ; four with pinnated

feet, and forty-three with webbed feet, natives or frequenters of the ifland. I have omitted, in the Zoologic part, the Leffer Guillemot, Br. Zool. ii. N" 235, which is a native of Iceland, and called there Ringuia. It ought to have had a place in an appendage to the Guillemots, p. 517.

The Raven holds the firf rank among the land-birds in the Scandinavias. mythology. We fee the ufe made of them by the chieftain Floke. The Bards, in their fongs, give them the claffical attribute of the power of prefage. Thus they make Thromundr and Thorbiorn, before a feudal battle, explain the foreboding voice of this bird, and its intereft in the field of battle *.

Thr. Hark! the Raven's croak I hear, Lo! the bird of Fate is near. In the dawn, with durky winge, Hoarfe the fong of death the fings. Thus in days of yore the fang, When the din of battle rang; When the hour of death drew nigh, And mighty chiefs were doom'd to die.

Thor. The Raven croaks: the warriors nain, With blood her dufky wings difain; Tir'd her morning prey the feeks, And with blood and carnage reeks. Thus, perch'd upon an aged oak, The boding bird was heard to croak ; When all the plain with blood was fpread, Thirfing for: the mighty dead.

## R. W.

The Raven had ftill higher honors in the northern nations. It was facred to Odin, the hero and god of the north. On the facred flag of the Danes was embroidered this bird. Odin was faid to have been always attended by two, which fate on his Thoulders; whence he was called the God of Ravens: one was ftyled. Huginn, or Thought; the other Muninn, or Memory. They whifpered in his ear all: they faw or heard. In the earlieft dawn, he fent them to fly round the world, and they returned before dinner, fraught with intelligence. Odim thus fang their. importance :

Hugism and Muninn, my delight!
Speed thro the world their daily fight :
From their fond lord they both are flown,
Perbaps eternally are gone.
Tho' Huginn's lofs I mould deplore
Yet Muninn's would afflic me more to

R. W.

I have already fpoken of the excellent Falcons of this ifland : let me add, that Falcons were among the animals facrificed to Odin $\ddagger$, being birds' of the firft courage, and which delighted in blood.

[^23]The fea which furrounds Iceland is faid to be more falt than ufual in other countries. It leaves great faline incruftations on the rocks, which the natives fcrape off and ufe. I can, with no certainty, give the depth of the water, except where Mr. Kerguelin founded, ten leagues to the weft of Geir-fugl Skier, where he found it to be two hundred and five fathoms *. The equinoctial tides rife as high as fixteen feet : the ordinary tides twelve $t$. The coafts almoft univerfally bold, thofe of the inlets excepted, where there appears a fmall ftrand.

The bays, eípecially thofe of the fouth, which lie under the influence of the cold of Greenland, are annually frozen over; that of Patrixfiord was thut up even as late as the 14th of May $\ddagger$ : but the fea near the coafts never feels the influence of the frof. It is in thofe places deep, and agitated by a moft turbulent motion: The dreaded ice is what floats from Greenland and Spitzbergen, and often fills, during the.whole fummer, the ftreight between the former and this illand $\|$, and even extends along the northern coaft, covering the fea to a vaft diftance from land. It confifts of the two fpecies, the mountanous ice, called Fial-jakar; and the fmooth ice of inconfiderable thicknefs, fyled Hellu-is: There arrive generally in $\mathrm{Fa}_{\text {- }}$ nuary, and go away in March. Sometimes it does not touch the land till April, when it fixes for a confiderable time, and? brings to the Ielanders the moft tremendous evils; a multitude of polar bears, which furead their ravages far and wide among the cattle; and a cold of incredible violence, which chills the air for many miles, and even caufes the horfés and fheep to drop down dead §. To this is attributed the ftunted ftate of the miferable woods of the country ; which caufe muft have exifted from the commencement of its iron age; for there feems to have been a period in which there had been confiderable wooded tracts $\pi_{0}$

The bottom of the fea is probably rocky.; for it abounds with greater variety of, fuci than Great Britain, which give Chelter to filhes innumerable; a fource of wealth to the natives (were they permitted the free ufe) as they are of food to diftant nations, the veffels of which.annually refort here to filh, but, without any.commerce with the Icelanders, which is ftrictly prohibited: In 1767 , two hundred Dutch, and eighty French doggers, of about a hundred tons each, were employed, thofe of each nation under the orders and protection of a frigate. They keep from four to fix leagues from fhore, and finh with hooks baited commonly. with large muffels, in forty or fifty fathoms water. Others go to the diftance of fifteen leagues, and finh in the depth of a hundred fathoms. The great cap,

[^24]ture is Cod. As foon as the fifhermen take one, they cut-offtrie head, wafh, gut, and falt it in cafks, with either rock-falt or that. of Lifbon. The filhery commences in March, and ends in September. It begins at the point of Brederwick, and extends round the North Cape, by the ifle of Grim, to the point of Langenefs.

The Englifh have entirely deferted this figery fince they have been in poftefion of Newfoundland. It had been, in very early times, the refort of our veffels, as is evident by the proclamation of Henry V. in order to give fatisfaftion for the ill conduct of fome of his fubjects, in 1415 , on the coafts of this inand ${ }^{*}$, in which he forbids them torrefort to the illes of Denmark and Norway, efpecially to Iceland, otherwife than had been antiently cuftomary. In 1429, the Engli/h parlement enforced this order, by making it penal for any of our fubjects to trade in the Danifh ports, except in North Earn or Bergen. At length, the Danifh monarch wifely refolved to referve the benefits of the fifheries to his own fubjects; and in 1465 made it capital for any Englifhman to trade in the ports of Iceland $\dagger$. Even thofe of Helgeland and Finmark were fhut againft them, unlefs they were driven in by a form. I imagine that this feverity mult have arifen from fome glaring infolence of our countrymen. But the antient treaties were revived, which were renewable by a freh grant every feven years $\ddagger$. In later times, even Queen Elizabeth deigned to afk leave of Chrifitian IV. to fib in thofe feas; but afterwards inftructed her ambaffador to infift on the right of a free and univerfal fifhery. The anfwer does not appear: but in the reign of her fucceffor, we had not fewer than a hundred and fifty veffels employed in this fifhery. Poffibly we might comply with the regulations infifted on by the king of Denmark; or perhaps a greater indulgence was given, by reafon of the marriage of fames with his fifter Anne. I obferve, that the Danißh prince excepts the port of Wefmony, it being referved for the peculiar fupply of the royal court $\|$.

The opprefied natives fifh in the bays in boats, containing one, and never more than four men. If they venture to fea, which they feldom do to above eight miles diftance, they have larger boats, manned with twelve or fixteen hands; in thefe they llave for the benefit of the monopolifts, to whom they are compelled to fell their filh at a trifling price. How weak muft be the feelings of that government which can add mifery to mifery ; and not attempt rather to beftow comforts on fubjects condemned tó fuch a dreadful abode!

The fpecies of finh in thefe feas are few; but the multitudes, under feveral of the moft ufeful kinds, are amazing; thofe of Cod in particular. Herrings pafs by
\# Rymer's Foed.ix. 323. $\quad+$ Ibid. xvi. 443. $\ddagger$ Ibid. xv. 443. 1 Cambden's Life of Queen Elizabeth, in the Complete Hif. of England, ii. 550.
this ifland in their annual migrations from the north, and for a hort fpace fill every bay. Poverty and want of falt make thefe riches of other nations a tantalizing appearance to the unfortunate natives. This is the moft northern place in which the Herring is feen : they are not found in the flallow water of Spitzbergen; neither is it probable that they double Greenland, and retire to the frozen ocean, equally wanting in depth of water;-are they not rather loft in the vaft profundity of thefe very feas, in the depth of fix hundred and eighty-three fathoms, in lat. 65, between this illand and the north of Norway; or in the unfathomable depths a little farther north, where the water was found bottomlefs with feven hundred and eighty fathoms*? The other fifhes of Iceland are in general common to Greenland: my remarks refpecting them fhall be deferred till I treat of that icy region.

In order to view the correfpondent hores of the trad I have paffed over, I thall return to the ftreights of Dover. Calais is feated in a low wet tract; and the whole coaft, from thence to the extremity of Holland, is fandy, and fronted with fand-hills; providentially higheft in that loweft of countries, in which the ftrongeft protedion againft the fury of the fea is neceffary. The coaft of Flanders, the rich bait of ambition, ftained with blood, is dangerous by reafon of frequent narrow fand-banks, difpofed in parallel rows, according to the direction of the land. The coafts of Holland are alfo greatly infefted with fands; but between them and the land is a rlear channel. From between Dunkirk and Calais, even to the Scar, at the extremity of futland, $^{2}$ is low land, not to be feen but at a fmall diftance, unlefs at Camperden in Holland; Heilegeland, off the mouths of the Elbe and Wefer; and Robfnout, and Harthal, in futland. While the oppofite coafts of England are comparatively high, and the channel deep, thefe are univerfally obftructed with fand: the great German rivers bring down by their floods amazing quantities of fand and mud, the courfe of which is impeded at fea by the violence of the winds, blowing at fouth and weft two-thirds of the year $t$. Thele, with the help of the tides, arreft the progrefs of the fand into the open fea, and form the numerous banks which, fatal as they may be to mariners, are the fecurity of Holland, in particular, from naval invafions. The fpring-tides at Calais rife twenty feet; at the pier head at Dover, to twentyfive; the caufe of the variation is fuppofed, by Mr. Cowley, to be the different diftances of the two piers from low-water mark, the firft being half a mile, the laft only a hundred yards; at Oftend it rifes to eighteen; at Flußing, fixteen and a half; at Helvoetfluys and the Texel, twelve; and on the coafts of Holfein and $\mathcal{F}_{u t-}$ land, where the fea expands to a more confiderable breadth, the tides grow more irregular, and weaken both in height and frength; at the Elbe they do not ex-
*Lord Mulgrave's Voj' towards the North Pole. t Yarranton's England's Improvinent, 4, 5.

Antient Flan. ders and HolLAND.

Animals.
ceed feven or eight feet; on the coaft of $\mathcal{F u t l a n d}$ only two or three; a fingular phenomenon, as they are fo greatly higher on the correfpondent coafts of England. The flood on the weft coalt of Holland fets to the northward, contrary to the courfe of the tides on the eaft coafts of England and Scotland.

Flanders and Brabant formed part of the Gallia Belgica of Cefar; and Holland the Batavorum Infula. The rivers are the Scaldis, Mofa, and Rhenus, the modern Sckeld, Maffe, and Rbine. The two firft probably do not vary greatly in their difcharge into the fea: the laft has experienced a moft confiderable change. The right branch of this river runs, for fome fpace, as it did in antient times, when it formed the lake Flevo, then refumed the form of a ftream, and difcharged itfelf into the fea at a place ftill called the Flie-froom, between the illes of Flie-landt and Schelling, at the mouth of the Zuyder-zee. Long after that period the country was dry, firm, and well inhabited; a mighty inundation totally changed the face of it, and enlarged the Flevo lacus into the prefent $\dot{Z}$ uyder-zee, and broke the coaft into the chain of iflands which now front the fhore, even as far as the mouth of the Wefer. The Dutch hiforians date this accident in 1421 : it feems to have been the operation of a length of time; for the paffage through the $T_{\text {exel }}$ was forced open in $\mathbf{1 4 0 0}$, and gave rife to the profperity of $A m$ herdam ${ }^{*}$. This country was firft peopled by the Catti, a German nation ; thefe were thinned almoft to extirpation by the fwarms from the great northern hive, in their expeditions by land to other parts of Europe. For a very long fpace Flanders and Holland were a feat of banditti : the vaft foref: of Ardennes gave protection to them in one country; the moraffes fecured them in the other. Government at length took place, in Holland under its counts, in Flanders under its forefters. Thefe provinces fell at laft under the dominion of the dukes of Burgundy; from them to the houfe of Aufria and crown of Spain. The revolutions from that are well known. Holland received its fecond popula_ tion from Germany, happily (for a country whofe exiftence depends on induftry) a moft induftrious race. The Rbine annually brings down multitudes of people, to repair the lofs of men occafioned by diftant voyages, and by the moft unwholefome colonies in the Eaft and Weft Indies. Holland is, from its climate, unfavorable to the encreafe of mankind : it cannot depend on itfelf for the reparation of the lofs of people, but muft look elfewhere for fupplies.

Flanders has many of the fame fpecies of animals with Great Britain; but, from the nature of its coaft, wants moft of the water-fowl, a few cloven-footed birds excepted, which breed on fandy fhores. Holland has ftill fewer quadrupeds and birds. Of the quadrupeds which we want, are a few Beavers in the Rbine and Maefe. The Wolf is common in Flanders, and is found

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Cimbrian deluge.

## The Sound.

Futland and Holfiein, the antient Cimbrica Cherfonefus *, and Cartrist, terminating in the liw poiat called the Skagen, or Scaw, ftretches out in form of a peninfula, bouded by the North fea and the Kattegate, the oblique approach into the Baltic. It is a very narrow track, and only the refling-place of birds in their way from Scandinavia, and the farther north, the refidence of numerous fpecies. The rich marfhes, in a climate mild from its fituation between two feas, afford numbers of wholefome plants, the food of a remarkably fine breed of cattie. Befides the home confumption, thefe provinces fend out annually thirty-two thoufand head. The nobility do not think it beneath them to prefide over the dairy: and their number of cows is princely. M. De Rantzau had not fewer than fix hundred milch cows.

What the extent of this country might have been in very early times is unknown: it muft have been prodigioully great, otherwife it never could have poured out that amazing number of people it did, in their eruption into France, when they were defeated by Marius, in ror before Christ. Their army was computed to confift of three hundred thouland fighting men (including the Teutoni) befides women and children. About feven years before, they had fuffered a great calamity from an inundation of the fea, which had deftroyed great part of their country; and compelled the furvivors, then crouded in the narrow Cherfonffus, to apply to the Romans for other lands. Tacitus fpeaks of the veftiges of this once mighty people, in the lines, vifible in his time, on each thore. I prefume that the inundations to which this coaft is fubject from the fea, hath utterly deftroyed every trace of them. The charts plainly point out their overwhelmed territories in Futs-riff, and the neighboring fand-banks. The firft might have been the continuation of land from the end of futland, beginning at the S.kaw, and running out into the North fea in form of a feythe, not very remote from land, and terminating a little fouth of Bergen in Norway, leaving between its banks and that kingdom a deeper channel into the Baltic.

The Kattegatte lies betwcen part of $\mathcal{F}$ utland and the coaft of Sweden: the laft covered with illes innumerable. It is almoft clofed at the extremity, by the low Daniß illands of Seland and Funen, which had in old times been (with Sweden) the feat of the Suiiones. Between the firft and the coalt of Sweden, is the famous Sound, the paffage tributary to the Danes by thoufands of Chips. Thefe ifles were of old called Codonania §, and gave to the Kattegatte the name of Sinus Codanus. The proper Baltic feems to have been the Mare Suevicum of the antients; and the fartheft part, the Mare Sarmaticum, and part of the Mare Scythicum. As a na-

[^25]
## $\begin{array}{lllllllll}\mathbf{T} & \mathrm{H} & \mathrm{E} & \mathrm{B} & \mathrm{A} & \mathrm{L} & \mathrm{T} & \mathrm{I} & \mathrm{C} .\end{array}$

turalift, I muft mention, that when Linnaus fpeaks of the Mare Occidentale, he intends the Kattegatte. Its greateft depth is thirty-five fathoms. It decreafes as it approaches the Sound; which begins with fixteen fathoms, and near Copenbagen fhallows to even four.

The Roman fleet, under the command of Germanicus, failed, according to Pliny, round Germany, and even doubled the Cimbricum Promontorium, and arrived at the inlands which fill the bottom of the Kattegatte ${ }^{*}$ : either by obfervation or information, the Romans were acquainted with twenty-three. One they called Glefaria, from its amber, a foffil abundant to this day on part of the fouth fide of the Baltic. A Roman knight was employed by Nero's mafter of the gladiators, to collect, in thefe parts, that precious production, by which he came perfectly ac. quainted with this countryt. I cannot fuppofe, that the Romans ever fettled in any part of the neighborhood, yet there was fome commerce between them, either direct, or by the intervention of merchants. Many filver coins have been found at Kivikke, in Schonen in Sweden, of Hadrian, Antoninus Pius, Commodus, and Albinus $\ddagger$. Among the iflands, Pliny makes Norway one, under the name of Scandinavia incomperta magnitudinis, and Baltia another, immenfee magnitudinis, probably part of the fame, and which might give name to the Sounds called the Belts, and to the Baltic itfelf. The geographer Mela had the jufteft information of this great water, which he defcribes with great elegance,' Hac re mare (Codanus - sinus) quod gremio littorum accipitur, nunquam latè patet, nec USQUAM mari si-- mile verum aquis'pafim interfluentibus ac fape tranfgrefis vagum atque diffufum - facie amnium fpargitur, qua littora attingit, ripis contentum infularum non longè dif-- tantibus, et ubique pane tantundem, it anguffum et par freto curvanfque fe fubinde, ' longo fupercilio inflexum eff.' The different nations which inhabited its coafts fhall hereafter be mentioned.

I would, like Mela, prefer giving to the Baltic the name of a gulph rather than a fea; for it wants many requifites to merit that title. It wants depth, having in no one place more than a hundred and ten fathoms. From the eaftern mouth of

Voyage of the Romanfleet.

## The Baltica GUlPh. <br> Depth.

[^26]No tides.

Lengthand BREADTH OF THE Baltic.
of the Gulphof Bothnia.

Not salt.
few species of FIS.H.

It wants tides, therefore experiences no difference of height, except when the winds are violent. At fuch times there is a current in and out of the Baltic, ac. cording to the points they blow from ; which forces the water through the Sound with the velocity of two or three Danifb miles in the hour. When the wird blows violently from the German fea, the water rifes in the feveral Baltic harbours, and gives thofe in the weftern part a temporary faltnefs: otherwife the Baltic lofes that other property of a fea, by reafon of the want of tide, and the quantity of valt rivers it receives, which fweeten it fo much as to render it, in many places, fit for domeftic ufes. In all the Baltic, Linnaus enumerates but three fuci*, plants of the fea: in the gulph of Bothnia, which is beyond the reach of falt water, not one + .

The fewnefs of fpecies of fifh in the Baltic is another difference between it and a genuine fea. I can enumerate only nineteen $\ddagger$ which are found in this vaft extent of water: and may add one cetaceous filh, the Porpefle. No others venture beyond the narrow ftreights which divide the Baltic from the Kattegatte; yet the great Swedif Faunift reckons eighty-feven belonging to his country, which is wafhed only by thofe two waters. Let me mention the Herring as a fpecies which has from very early times enriched the neighboring cities. There was, between the years 1169 and 1203, a vaft refort of Chrifian Ships to fifh off the ifle of Rugen, the feat of the antient $R u g i i$, infomuch that the Danes cloathed themfelves with fcarlet and purple, and fine linen.

The Hornimpa, or Cottus Quadricornis, Faur. Suec. No 32 I , and the Syngnathus Typhle, or Blind Pipe-fíh, $\mathrm{N}^{\circ} 377$, are unknown in the Briti/b, feas : the firft feems peculiar to the gulph of Botbnia, and is a filh of fingular figure, with four flat hornlike proceffes on the head $\|$.
The extent of the Baltic in length is very great. From Helingor, where it properly begins, to Cronfadt, at the end of the gulph of Finland, is eight hundred and ten Englifh fea miles. Its breadth, between Saltwic, in Smaland, and the oppofite More, two hundred and thirty-feven. The gulph of Botbnia, which runs due north, forms an extent almoft equal to the firft, being, from Tornea in Lapland, to

| - Flora Suec. | t Flora Lapp. |  |  |
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| $\ddagger$ Porpeffe, | Striated Cod-finh, | Turbot, | Herring, |
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I Muf. Fr. Adolph. i. 70. tabo xxxii. fig. 4.
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I would, like Bela, prefer giving to the Baltic the name of a gulph rather than a fear; for it wants many requifites to merit that title. It wants depth, having in no one place more than a hundred and ten fathoms. From the eaftern mouth of the Sound to the ifle of Bornholm it has from nine to thirty: from thence to Stockholm, from fifteen to fifty: and a little fouth of Lido, fixty. It has in this courfe many fand-banks, but all in great depths of water. Between Alands Huff, amid the great archipelago, the Bland ines, and the inf of $O f e l$ in the gulph of Riga, the depths are various, from fixty to a hundred and ten II. Many. frefh-water lakes exceed it in that respect.

- Plain. lib. ii. c. 67. lib. iv.c. 13. Kivikenfe, P. 27. | Ruffian and other charts.
$\ddagger$ Forfenius de Monum.
$\dagger$ Lib. xxxvii. c. 3.


## Voyage or the

 Eolian piet.

## Tb Baltic

GULP.
Depth.

No tides.

Notsalt.

Few sprcies of FISH.

Length and breadthofthe Baltis;
of the Gulph of
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## $\begin{array}{lllllll}\mathrm{L} & \mathrm{A} & \mathrm{P} & \mathrm{L} & \mathrm{A} & \mathrm{N} & \mathrm{D} .\end{array}$

the Chore near Dantzic, not lefs than feven hundred and feventy-eight: an amazing space, to be fo ill focked with filhy inhabitants.

From the ifle of Rugen, the courfe of the Baltic is ftrait and open, except where interrupted by the famous ine of Gottland, the place of rendezvous from whence the Goths made their naval excurfions. In 811 , on this illand, was founded the famous town of Wi/buy, the great emporium of the north : it was, for ages, the refort of every Chriftian nation. The Englifb long traded here, before they ventured on the diftant voyage of the Mcditerranean. It became an independent city, and made its maritime laws the ftandard of all Europe to the north of Spain. In 1361, Waldemar III. of Denmark, attacked, ravaged, and plundered it of immenfe riches; all which perifhed at fea after they were fhipped ${ }^{*}$. Its prefent inhabitants are hufbandmen and filhermen, fecure from the calamities of war by the happy want of exuberant wealth.

Beyond Stockibolm the Baltic divides into the gulphs of Botbnia and Finland: the firft runs deeply to the north, and the country is compofed chiefly of granite rock, or frewed over with detached maffes of the fame. Its greateft breadth is between Geffe and Abo, in Finland, where it meafures a hundred and fixty-two miles: its greateft depth a hundred and ninety-five yards $\dagger$. It terminates in Lapland, a country divided by the river Tornea, which runs navigable far up between

Isle of Gottland.

Lapland. a continued mountanous foreft. It is fuppofed to have been peopled in the eleventh century by the Finni : a fact not eafy to be admitted; for the Finni, or Fennones, are a brawny race, with long yellow hair, and brown irides. The Laplanders are, on the contrary, fmall in body, have fhort black hair, and black irides. It is certain that a party of Fins deferted their native country, Finland, in the age before mentioned, rather than relinquifh the brutality of heathenifm. Their offspring remain converted, and in fome meafure reclamed, b.tween Norway and Sweden $\|$; but are a moft diftinct race from the Laplanders, who poffeffed their country long before. In the ninth century, the hero Regner flew its king or leader in battle $\oint$ : at that period it was in a favage ftate; nor was its conqueft attempted by Sweden till 1277, when Waldemar added it to his kingdom, and in vain attempted its converfion aा. Scarcely two centuries have elapfed fince it has fincerely embraced the doctrines of Chriftianity. In confequence of which, cultivation and civilization have fo well fucceeded in the fouthern parts, that many deferts are peopled, moraffes drained, and the reafon of the natives fo greatly improved, that they have united with the Swedes, and even fent their reprefentatives to the

[^27]Houfe of Peafants in the national diet *. But thefe were at all times the moft cultivated of this diftinct race. They trained the Rein-deer to the fledge, domefticated it from its wild flate, and made it the fubflitute for the Cow.

Their country, which penetrates even to the Northern ocean, confifts of favage mountains, woods, vaft marfhes, rivers, and lakes, the haunts of myriads of water-

Fish.

Aland Isles.

Gulph of Finland.

## Petergburg.

 fowl, which refort here in fummer to breed, free from the difturbance of mankind. Linneus, the great explorer of thefe deferts, my venerated example! mentions them as exceeding in numbers the armies of Xerxes; re-migrating, with him, in autumn, eight entire days and nights, to feek fuftenance on the fhores and waters of more favorable climates $t$.Their lakes and rivers abound in fifh; yet the number of fpecies are few. Thefe are the Ten-fpined Stickle-back, Br. Zool. iii. ${ }^{\circ}{ }^{\circ} 13^{\circ}$; Salmon, $\mathrm{N}^{\circ}{ }^{143}$, in great abundance, which force their way to the very heads of the furious rivers of Tornea and Kiemi, to depofit their fpawn; Char, $\mathrm{N}^{\circ} 149$, are found in the lakes in great abundance; and Graylings, $\mathrm{N}^{\circ}{ }^{\circ}$ 150, in the rivers; Gwiniads, $\mathrm{N}^{\bullet}$ 152, are taken of eight or ten pounds weight; Pikes, $\mathrm{N}^{\circ}{ }_{153}$, fometimes eight feet long; and Perch, $\mathrm{N}^{\circ}$ 124, of an incredible fize §; and the Salmo Albula, Faun. Suec. $\mathrm{N}^{\circ} 353$, clofes the lift of thofe of the Lapland lakes and rivers.

The mouth of the gulph of Bothnia is filled with a prodigious clufter of little iflands and rocks, dangerous to mariners. Aland is the chief, an illand of fur- . prifing rockinefs, and with all the other afpects as if torn from the continent by fome mighty convulfion. The gulph of Finland extends from thence due eaft, and has, on its northern coaft, a chain of fimilar iflands, and a few fprinkled over the channel. All the coaft and all its illes are compofed of red or grey granite; and all the coafts of Sweden are the fame, mixed in places with fand-ftones. Finland and Carelia are the bounds of the gulph on this fide: Livonia, the granary of the north, and Ingria, on the other. Thefe countries, with Rufia, made part of the European Scythia, or Sarmatia; and this part of the Baltic has been fometimes ftyled Mare Scythicum, and Mare Sarmaticum $\mathbb{H}$. The gulph decreafes in depth from fixty to five fathoms, as you advance towards Cronftadt, the great naval arfenal of Ruffa. From thence is twelve miles of fhallow water to Peterfourg, that glorious creation of Peter the Great ; the inlet of wealth and fcience into his vaft dominions, before his time inacceffible to the reft of Europe, unlefs by the tedious voyace of the White fea; and a country unknown, but by the report of the splendid barbarifm of its tyrants. Peter was formed with a fingular mixture of

[^28]
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2XIV $\quad \mathrm{F} \quad \mathrm{I} \quad \mathrm{N} \quad \mathrm{L} A \mathrm{~A} \quad \mathrm{~N} \quad \mathrm{D}$

Sarmate. Inmy return to the German fea, let me review the antient inhabitants of the Baltic. The wandering Sarmate, of Scythian defeent, poffeffed all the country from lake Onega to the Vi/Jula; and part of the vaft Hercynian foreft, famous of old for its wild beafts, occupied moft of this country. Bifons with their great manes: Uri with their enormous horns, which the natives bound with filver and quaffed at their great feafts : the Alces, or Elt, then fabled to have jointlefs legs : and Wild Horles, were among the quadrupeds of this tract *. I fmile at the defcription of certain birds of the Hercynian wood, whofe feathers hone in the night, and often proved the guide to the bewildered traveller $t$. The refplendent plumage of the Strix Nyctea, the Snowy Owl, $\mathrm{N}^{\circ}$ 121, might probably have ftruck the eye of the benighted wanderer, and given rife to the frange relation.

Eningia.

Onfa.

Hippopodis.

Eningia was the oppofite Chore, and the fame with the modern Finland, inhabited by people of amazing favagenefs and fqualid poverty; who lived by the chace, headed their arrows with bones, cloathed themfelves with fkins , lay on the ground, and had no other Melter for their infants than a few interwoven boughs $\ddagger$. They were then, what the people of Terra del Fuego are now. There is no certainty refpecting the Oone; inlanders, who fed, as many do at prefent, on the eggs of wild fowl and on oats $\|$; but moft probably they were the natives of the ifles of Aland, and the adjacent archipelago; for Mela exprefsly places them oppofite to the Sarmate. We may add, that the Hippopode and Panoti might be the inhabitants of the northern part of the Bothnian gulph; the firft fabled to have hoofs like horfes, the laft ears fo large as to ferve inftead of cloaks. The Hippopodo were certainly the fame fort of people as the Finni Lignipedes of Olaus, and the Skride Finnus of Ohthere. They wore fnow-fhoes, which might fairly give the idea of their being, like horfes, hoofed and fhod. As to the Panoti, they baffle my imagination.

The Botbnian and Finland gulphs feem to me to have been, in the time of Tacitus, part of his Mare pigrum ac immotum, which, with part of the Hyperborean ocean, really infulated Scandinavia, and which he places beyond the Suiones, or modern Sweden. Pliny gives, I fuppofe from the relation of Britifh or other voyagers, to part of this fea, probably the moft northern, the title of Morimarufa, or Dead Sea, and Cronium. The learned Forfter, with great ingenuity, derives the word from the Gaelic and Celtic language. The firft, from the Welf, môr, fea, and marw, dead; the other from the Irifh, muir-croinn, the coagulated, i. e. congealed fea. Tacitus adds to his account, that it was believed to encir-

[^29]- cile the whole globe, and that the laft light of the fetting fun continued fo very vivid as to obfcure the ftars themfelves. There is not a fingle circumftance of exag'geration in all this: every winter the gulph is frozen, and becomes motionlefs. 'Many inftances may be adduced even of the.Baltic itfelf being frozen*. The flars are frequently loft in the amazing fplendor and various colors of the aurora borcalis. The Hilleviones, an antient people of Sweden, ftyled Scandinavia, alterum orbem terrarum, and their defcendants, long carolled the junction of the Botbnian gulph with the northern ocean, traditionally rehearfed-in old Swedifin fongs. Tacitus ufes the two laft words to exprefs the world furrounded by this fea. In the days of the geographer Mela, there certainly was a ftrong tide in this upper part of the Baltic; for, fpeaking of the inands off Finland, he fays, " Quæ Sarmatis adverfa funt, ob alternos acceffus recurfufque pelagi, et quod * Spatia queis diftant, modò operiuntur undis, modò nuda funt; aliàs infulæ "s videntur, aliăs una et continens terra." With propriety, therefore, in another place, does he compare it to a freight, par freto, notwithftanding he was ignorant of its other entrance. Doctor Pallas moft juftly afcribes the formation of not only the Baltic, but its former communication with the White Sea, to the effects of a deluge. The whole intermediate country is a proof; the foundation being what is called the old rock, and that covered with variety of matter; fuch as beds of pebble and gravel, and fragments of granite, torn from the great mafs. Parts of the channel which formed the infulation of Scandinavia, are the chain of lakes, from that of Ladoga to the White Sea, fuch as Onega, and others, often connected by rivers, and lying in a low country, filled with the proofs above-mentioned. This was the ftreight through which the tide poured itfelf from the Hyperborean ocean, and covered, at its flux, the iflands defcribed by Mela. This, like the other northern feas, was annually frozen over, and could be no obftacle to the ftocking of Scandinaria with quadrupeds. There is no fixing the period in which this paffage was obfructed. An influx of fand, or an earthquake, might clofe it up. As foon as this event took place, the Baltic felt the want of its ufual feed: it loft the property of a fea; and, by a conftant exhalation, from that time decreafed in the quantity of water. Modern philofophers have proved the great lofs it has furtained, and that it decreafes from forty to fifty inches, in a century: that, near ${ }^{1}$ Pithea, the gulph of Botbnia has retired from the land half a mile in furty-five years; and near Lulea, a mile in twenty-eight. Notwithftanding its prefent -ftate, when we confider the accounts given by the antients, the old Swedifl traditions, and the prefent veftiges of the former channel, we can, without any
- Forfier's Obf. 80.
i-

Antient
Strfights beTWERN
the Baltic akd White Sea.

Suiongi.

Norway.
The Naze.
force of fancy, give full credit to the infulated form of Scandinavia, given in one of Cluverius's maps *; which, he fays, is drawn from the erroneous accounts of the antients.

The Suiones pofferfed the modern Sweden, and extended even to the ocean, and were a potent naval power. Their hips were fo conftructed, with prows at each end, that they were always ready to advance. Thefe people, in after times, proved, under the common name of Nortmans, the peft and conquerors of great part of fouthern Europe; their fkill in maritime affairs fitting them for diftant expeditions. In the fixth century they were called Suethans, and were famous for their cavalry. In their time, the Sable, $\mathrm{N}^{\circ} 30$, was common in their country: fornandes, therefore, obferves, that notwithftanding they lived poorly, they were moft richly cloathed: he alfo informs us, that they fupplicd the Romans with thefe precious furs, through the means of numbers of intervening nations $t$. Scandinavia, in that period, had got the name of Scanzia; and as it was then called an ifland, and by fornandes $\ddagger$, a native of the country; there is all the reafon to imagine, that the paffage into the Hyperborean ocean was not in his time clofed.

After repaffing the Sound, appear Schonen, Halland, and Bobufland, Swedifh provinces, bounded by the Kattegatte. Halland, from fome fimilitude of found, is fuppofed to have been the feat of the Hilleviones, a mof populous nation; perhaps the fame with the Suiones of Tacitus; for beyond them he places the Sitones, or the country of Norway, who were a great naval people; as the hiftorian fays that they differed not from the Suiones, except in being under a.female government. The promontory of the Naze, vifible at eight or ten leagues diftance, with the low land of Bevenoergen in futland, forms the entrance into the German fea.. The Bommel, and the Drommel, high mountains to the eaft of it; and the high land of $L_{\ell f}$, a vaft mountain, gradually rifing from the fhore, to the weft, are noted guides to mariners. It is reafonably fuppofed, that Pliny, intended this vaft region by his inland of Nerigon, from whence, fays he, was a paffage to Thule. He fpeaks alfo of Bergos, which, from agreement of found, is thought to be the prefent province of Bergen. The promontorium Rubcas is gueffed to be the North Cape, between which and the Cimbri, Pbilamon § places the Mare Morimarufa, or the Dead Sea, fo. called from the clouded $\mathfrak{k k y}$ that ufually reigned there.

Our firft certain knowlege of the inhabitants of this country, was from the defolation they brought on the fouthern nations by their piratical invafions.

[^30]
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SEA.

Dyerendes.

Chain of Is. lands.

Tiese.

Rivers.
wellern point of Sondmor, then winds' north-ealt to its extremity at the Nöth Cape. High and precipitous rocks compofe the front, with a fea generally fromone to three hundred fathoms deep wafhing their bafe *. Multitudes of narrow. creeks penetrate deep into the land, overfhadowed by ftupendous mountains. The fides of thefe chafms have depth equal to that-of the adjacent fea; but in the middle is a channel called Dybrendes, i. e. deep courfes, from fifty to a hundred fa= thoms broad, and of the difproportionable depth of four hundred $t$, feemingly time-worn by the ftrength of the current from the torrent-rivers which pour into them. Fifh innumerable refort to their edges. Thefe creeks are, in many places, the roads of the country; for the vallies which traverfe it are often fo precipitous as to be impervious, unlefs by water. Some, which,want thefe conveniences, are left uninhabited by reafon of the impoffibility of conveying toand from them the articles of cominerce.

Millions of iflands, large and fmall, fkerries, or rocks, follow the greateft part of this wondrous coaf. The inands are rude and mountanous, and foar correfpondent to the Alps of the oppofite continent. Thofe of Loeffort, on the north. fide of the dreadful whirlpool Maelfrom, engraven by Le Bruyn, give a full idea of the nature of the coafts $\ddagger$. The fea near the iflands is fo deep and rocky, that the Nortuegian kings caufed vaft iron rings to be faftened with lead $§$ to the fides, to enable fhips to moor in fecurity, or to affift them in warping out. A few of the former give fhelter to the fifhermen and their fmall fock of cattle; the reft rife in columns of grotefque forms. On the outfide of thefe natural: counterfcarps, are multitudes of haubroe, or fea-breakers, longitudinal banks of fand, running north and fouth, from the diftance of four to fixteen leagues from the continent, and from ten to fifteen fathoms below the furface of the water ; the haunts of myriads of ufeful finh.

The tides off the Naze, and moft of the coafts of Norway, are very inconfiderable. "At the North Cape, the fpring tides have been obferved to rife to the height of eight feet one inch; the neap to fix feet eight inches $\|$. Mr. William Fergufon, an able pilot, who had often the conduct of our fleets in the North fea, informed me, that on the Naze, and many other parts of Norway, the tides were hardly perceptible, except with ftrong wefterly winds, when they tofe two or three feet, and fell with the eafterly winds.

Into the ends of moft of the Dybrendes rufh the furious rivers, or rather torrents, of the mountains; ufelefs for navigation, but molt fingularly advantageous

[^31]for the conveyance of the great article of commerce, the malls and timber of the country, from the otherwife inacceffible forefts. The trees are cut down, and at prefent conveyed from fome diftance to the rivers, down which they are precipitated over rocks and ftupendous cataracts, until they arrive at the Lentzes or booms *, placed obliquely in the fream in fit-places. To them the owners of the timber refort; and, on paying a certain rate to the proprietors, reccive their pieces, which are all marked before they are committed to the water; but numbers are injured or deftroyed in the rough paffage.

The fpecies which is of fuch great value to Norway, is the Fyr or Fure, our Scotcb Pine, and the Pinus Sylvefris of Linnaus. It grows in the drieft places, and attains the vaft age of four hundred years + ; and is of univerfal ufe in the northern world. Such trees as are not deftined for mafts are fquared, and arrive in England under the name of Balk: the reft are fawed on the fot, in hundreds of mills, turned hy, the torrents, and reach us in form of planks. An immenfe quantity of tar is made from the trees, and even from the roots, very long after they have been divided from the trunk. 'The Gran, Pinus Abies, or what we call Norway Fir, is in little efteem. Thoufands are cut down annually by the peafants, who feed their cattle with the tender hoots. It is the talleft of European trees, growing to the height of a hundred and fixty feet. In winter, the branches are depreffed to the ground with fnow, and form beneath them the dens of wild beafts.
I. muft here mention the adventitious fruits, fuch as nuts and other vegetable productions, which are brought by the waves to thefe hores, thofe of Feroe, and the Orknies, from Famaica and other neighboring parts $\ddagger$. We muft have recourfe to a caufe very remote from this place. Their vehicle is the gulph-ftrean from the gulph of Mexico. The.trade-winds force the great body of the ocean from the weftward through the Artilles into that gulph, when it is forced backward along the hore from the mouth of the Midisipi to Cape Florida; doubles. that cape in the narrow fea between it and Cuba, and from Cape Florida to Cape Cannaveral runs nearly north, at the diftance of from five to ieven leagues from Shore, and extends in breadth from fifteen to eighteen leagues. There are regular foundings from the land to the edge of the fream, where the depth is genefally feventy fathoms; after that no bottom can be found. The foundings off Cape Cannszeral are very fteep and uncertain, as the water fhallows fo quick, that from forty fathoms it will immediately leflen to fifteen, and from that to four, or lefs; fo that, without great care, a dip may be in a few minutes on. Ghore. It muft be obferved, that, notwithftanding the gulph-ftream in general:

[^32]Lentizes.

Exotic fruits FOUND ON THE SHORES.

Gulphestream:
is faid to begin where foundings end, yet its influence extends feveral leagues within the foundings; and veffels often find a confiderable current fetting to the northward all along the coaft, till they get into eight or ten fathom water, even where the foundings flretch to twenty leagues from the fhore; but their current is generally augmented or leffened by the prevaling winds, the force of which, however, can but little affect the grand unfathomable ftream. From Cape Cannaveral to Cape Hatteras the foundings begin to widen in the extent of their run from the fhore to the inner edge of the ftream, the diftance being generally near twenty leagues, and the foundings very regular to about feventy fathoms near the edge of the fream, where no bottom can be afterwards found. Abreaft of Savannah river, the current fets nearly north; after which, as if from a bay, it Atretches north-eaft to Cape Hatteras; and from thence it fets eaft-north-eaft, till it has loft its force. As Cape Hatteras runs a great way into the fea, the edge of the fream is only from five to feven leagues diftant from the cape ; and the force and rapidity of the main fream has fuch infuence, within that diftance, over lhips bound to the fouthward, that in very high foul-winds, or in calms, they have frequently been hurried back to the northward, which bas often occafioned great difappointment both to merchant fhips and to men of war, as was eften experienced in the late war. In December 1754, an exceeding good failing fhip, bound from Philadclphia to Charlefown, got abreaft of Cape Hatteras every day duing thirteen days, fometimes even with the tide, and in a middle diftance between the cape and the inner edge of the flream; yet the hip was forced back regularly, and could only recover its loft way with the morning breeze, till the fourteenth day, when a brifk gale helped it to ftem the current, and get to the fouthward of the Cape. This fhews the impoffibility of any thing which has fallen into the ftream returning, or ftopping in its courfe.

On the outfide of the ftream is a ftrong eddy or contrary current towards the ocean ; and on the infide, next to America, a ftrong tide fets againft it. When it fets off from Cape Hatteras, it takes a current nearly north-eaft; but in its courfe meets a great current that fets from the north, and probably comes from Hudfon's Bay, along the coaft of Lalrador, till the inland of New, foundland divides it ; part fetting along the coalt through the ftreights of Belleife, and fweeping paft Cape Breton, runs obliquely againft the gulph-ftream, and gives it a more eaftern direction : the other part of the northern current is thought to join it on the eaftern fide of Newfoundland. The influence of thefe joint cursents muft be far felt; yet poffibly its force is not fo great, nor contracted in fuch a pointed and circumferibed direction as before they encountered. The prevaling winds all.over this part.of the ocean are the weft and north-welt, and con-

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## Romantic

Views.

Heichts of mountains.
the diftinguifhed fummits of Horrikalero, Avafaxa, and Kittis, and ends in fcattered maffes of granite, in the low province of Finland. It inclofes Scandinavia in form of a horfe-fhoe, and divides it from the vaft plains of Ruflia. The antient name of this chain was Sevo mons, to this day retained in the modern name Seveberg. Pliny compares it to the Riphoan hills, and truly fays, it forms an immenfe bay, even to the Cimbrian promontory *.

The mountains and inlands break into very grotefque forms, and would furnifh admirable fubjecis for the pencil. Among the defiderata of thefe days, is a tour into thofe parts by a man of fortune, properly qualified, and properly attended by artifts, to fearch into the great variety of matter which this northern region would furnifh, and which would give great light into the hiftory of a race, to which half Europe owes its population. Among the views, the mountains of the Seven Sifers in Helgeland $t$, and the amazing rock of Torg-hatten $\ddagger$, rifing majeftically out of the fea, with its pervious cavern, three thoufand ells $\|$ long, and a hundred and fifty high, with the fun at times radiating through it, are the moft capital. Not to mention the tops of many, broken into imaginary forms of towers and Gothic edifices, forts, and caftles, with regular walls and baftions.

I agree with the Comte $D_{e}$ Buffon, in thinking that the heights of the $S_{c a n}$ dinavian mountains, given by Bihop Pontoppidan, and Mr. Browallius, are extremely exaggerated §. They are by no means to be compared with thofe of the Helvetian Alps, and lefs fo with many near the equator. The fober accounts I have received from my northern friends, ferve to confirm the opinion, that there is an increafe of height of mountains from the north towards the equatorial countries. M. Afcanius, profeffor of mineralogy at Drontheim, affures me, that from fome late furveys, the higheft in that diocefe are not above fix hundred fathoms above the furface of the fea; that the mountains fall to the weftern lide from the diftance of eight or ten Norwegian miles $\pi$; but to the eaftern, from that of forty. The higheft is Dovre-fial in Drontheim, and Tille in Bergen. They rife flowly, and do not Arike the eye like Romfdale-born, and Hornalen, which foar majeftically from the fea. In Sweden, only one mountain has been properly meafured to the fea. Profeffor Ritzius of Lund, acquaints me, that Kinnekulle in Wefro-Gothia is only eight hundred and fifteen Englifh feet

* Stuo mons ibi immenfus, nee Riplais jugis minor, inmanem ad Cimbrorum ufque promonto. rium efficit finum, qui Codanus vocatur. Lib. iv. c. 13 .
$\dagger$ Pontoppidan, i. 46.tab. iii. I The fame, i. 47: tab. iii. V Of two Danifl feet each. S.Epogues de la Nature, Suppl. tom. vi. p. 136. edit. Amficrlam. If Of 18,000 feet each.
above the lake Wenern, or nine hundred and thirty-one above the fea. He adds, the following have been only meafured to their bafes, or to the next adjacent waters: Aor/kata, a folitary mountain of 7 amtland, about four or five Swedifs miles from the higheft Alps, which feparate Norway and Sweden, is faid to be fix thoufand one hundred and fixty-two Englifh feet above the neareft rivers: Swuckufol, within the borders of Norway, four thoufand fix hundred and fifty-eight above lake Famund; and that lake is thought to be two or three thoufand above the fea : and finally, Sylficillen, on the borders of famtland, is three thoufand one hündred and thirty-two feet perpendicular, from the height to the bafe. Pontoppidan gives the mountains of Norway the height of three thoufand fathoms: Browallius thofe of Sweden two thoufand three hundred and thirty-three, which makes them nearly equal to the higheft Alps of Savoy, or the fill higher fummits of the Peruvian Andes

In Finmark, the mountains in fome places run into the fea: in others recede far, and leave extenfive plains between their bafes and the water. Their extreme height is on the Fiall-ryggen, dorfum Alpium, or back of the Alps, a name given to the higheft courfe of the whole chain : the fummits of which are clad with eternal fnow. Thefe are fkirted by lower mountains, compofed of hard fandy earth, deftitute of every vegetable, except where it is mixed with fragments of rock, on which appear the Saxifrages of feveral kinds; Diapen/ia Lapponica, Fl. Lapp. N• $8 \dot{8}$; Azalea Procumbens, $\mathrm{N}^{\circ} 90$; the Andromeda Carulea, $\mathrm{N}^{\circ}{ }^{164}$; and Hypnoides, $\mathrm{N}^{\circ} 165$, thinly fcattered. Lower down are vaft woods of $\operatorname{Birch}, \mathrm{N}^{\circ} 34 \mathrm{I}$, a tree of equal ufe to the Laplanders, and the northern Indians of America. On the lower Alps abound the Rein-deer Lichen, $\mathrm{N}^{\circ} 437$, the fupport of their only cattle; the Dwarf Birch, $\mathrm{N}^{\circ} 342$, the feeds of which are the food of the White Grous beneath the fnow, during the long and rigorous winter; the Arbutus Alpina, $\mathrm{N}^{\circ} \mathrm{I} 6 \mathrm{I}$; and Arbutus Uva Urfa, N ${ }^{\circ} 162$; and, finally, the Empetrum Nigrum, or Black Heath Berries, ufed by the Laplanders in their ambrofial difh the Kappifialmas *.

The Scotch Pine, $\mathrm{N}^{\circ} 346$, and Norvay Fir, $\mathrm{N}^{\circ} 347$, form the immenfe forefts of Lapland, affociated with the Birch : the Pine affects the dry, the Fir the wet places, and grow to a vaft fize; but, being inacceffible, are loft to the great ufes of mankind. On their northern fides they are almoft naked, and deprived of boughs by the piercing winds; "the wandering Laplander remarks this, and ufes it as a compafs to fteer by, amidft thefe wilds of wood. Whole tracts are oft-times fired by lightning; then proftrated by the next ftorm. The natives make, of the under part of the wood (which acquires valt hardnefs by length of time) their fnow-fhoes; and

* Fl. Latp. p. 103.

Finmark.

Plants.

Quadrupedscy
Scandinavia.
form their bows for thooting the fquirrel with pieces united with glue, made from: the fkin of the perch. Their fragile boats are formed of the thinneft boards : their ropes of the fibrous roots: and finally, the inner bark, pulverized and baked, is the fubftitute for bread to a people deftined to this rigorous climate. Thefe three trees, the Dwarf Birch, $\mathrm{N}^{\mathrm{N}} 34 \mathrm{I}$, the Alder, $\mathrm{N}^{\circ} 340$, and not lefs than twenty-three fpecies: of Willows, form the whole of the trees of Lapland. Every other Swedif tree vanifhes on approaching that country.

There is a great analogy between the plants of thefe northern Alps, and thofe. of. the Scotti/h Highlands. A botanift is never furprized with meeting fimilar plants on hills of the fame height, be their diftance ever fo great. It may be remarked, that out of the three hundred and reventy-nine perfect plants which grow in Lapland, two hundred and ninety-one are found in Scotland; and of the hundred. and fifty cryptogamous, ninety-feven are to be met with in North Britain.

The Alps, the woods, and marihes of the vaft region of Scandinavia (for I will confider it in the great) give fhelter to numbers of quadrupeds unknown to Britains: Thofe which brave the feverity of the extreme north of this country are diftinguifhed by the addition of the Lapland name. The Elk, $\mathrm{N}^{\circ} 3$ of this Work, is found in many parts: the Rein, Godde, $\mathrm{N}^{\circ} 4$, is confined to the chillieft places: the Wolf, Kumpi, $\mathrm{N}^{\circ}{ }^{9}$, is a peft to the whole: the Arctic Fox, $N_{j a}$, $\mathrm{N}^{0} 10$, Ikirts the fhores of all the northern regions: the Crofs Fox, Raude, $\mathrm{N}^{0}$ ir. $\beta$, and the Black Fox, $\mathrm{N}^{\circ}{ }_{11}$. a. is fcattered every where : the Lynx, Albos ${ }^{*}, \mathrm{~N}^{\circ}{ }_{15}$, inhabits the thickeft woods: the Bear, Guouzbia, N ${ }^{\circ}$ 20, and Glutton, Gjeed'k, No 21, have the fame haunts: the Sable, $\mathrm{N}^{\circ} 30$, which continued in Lapland till the middle of the laft century, is now extinct: the Leffer Otter, or Mænk, of the Swedes, is confined to Finland: the Beaver, Majag, $\mathrm{N}^{\circ} 90$, is fill found in an unfociable ftate in feveral parts: the Flying Squirrel, p. 124, the Orava of the Finlanders, is found in their forefts $\dagger$, and thofe of Lapland: the Lemmus, Lumenik, p. 136, is at feafons the peft of Norway, iffuing like a torrent from the Koelen. chain: The Walrus, Mor/h, N. ${ }^{71}$, is fometimes found in the Finmark feas: the Harp Seal, Dalja, $\mathrm{N}^{\circ} 77$, the Rough Seal, $\mathrm{N}^{\circ} 74$, the Hooded, Oanide? $\mathrm{N}^{\circ}{ }_{76}$, and the Little Seal, Hij. Quad. ii. $N^{\circ} 386$, omitted by me in this Work, inhabit

[^33]t. See Mr. Gabricl Bonfdorff's account of the animals of Finland, p. 24,

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The frimes of this extenfive coaft amount to only one hundred and eleven, and are inferior in number to thofe of Britain by twenty-eight. The fpecies of the North Sea which differ from the Briti/h, are not numerous. The depth of water, and the forefts of marine plants which cover the bottom of the Norwegian feas, are affuredly the caufe of the preference of certain kinds, in their refidence in them. Infinite numbers of rare Vermes, Shells, Lithophytes, and Zoophytes, are found there, feveral of which, before their difcovery by Bifhop Pontoppidan, were

## Curious rishes.

Thost or use. the fuppofed inhabitants of only the more remote feas *. Among the fifhes which, have hitherto Chunned our Mores, are the Raia Clavata, Muller, No 309.; Squalus Spinax, $312+$; Sq. Centrina, 313, which extends to the Mediterranean; Chimera. Monfrofa, 320, a moft fingular fin; Sygnathus Typhle, and Equoreus, 324, 328; the Regalecus Glefue, 335, Afčan. Icon. tab. xi.; Gadus Brofme, 341; G. Dypterygius, or Eyríc-lange, 346; Blennius Raninus, \& Fufcus, 359, 360; Echeneis Remora, 361; Cioryphana Novacula, \& Rupefiris, 362, 363; Gobius Fozo, 365; Plearonectes: Cynogloffus, Linianda, \& Linguatula, 372, 375, 377; Sparus Erytbrinus, 380 ; Labrus. Suillus, 381; Perca Norvegica, and Lucio-perca, 390, 391; Scomber Pelagicus, 398; Silurus Afotus, 404 ; Clupea Villofa, 425.
Thefe are not the fifhes of general ufe. Providence hath, in thefe parts, bellow ed with munificence the fpecies which contribute to the fupport of mankind; and: made thereby the kingdom of Norway a coaft of hardy fifnermen. The chain of. inlands, and the fhores, are the populous parts. It is the fea which yields them a harveft ; and near to it fand all, the capital towns: the faples of the produce of. the ocean on one hand, and of the more thinly inhabited mountains on the other. The farther you advance inland, the lefs numerous is the race of man.
Herrings.
The Herring, the Cod, the Ling, and the Salmon, are the maritime wealth of this country. The Herring has two emigrations into this fea: the firft is from. Cbrifmas to Candlemas, when a large fpecies arrives, preceded by two fpecies of Whales, who, by. inftinct, wait its coming. The fihermen poft themfelves on fome high cliff, impatiently waiting for the cetaceous filh, the harbingers of the others. They look for them at the moon Torra, or the firf new one after Cbriftmas, and the moon Gio, which immediately follows.

Thefe Herrings frequent the great fand-banks, where they depofit their fpawn。 They are followed by the Spring Herrings, a leffer filh, which approach much nearer to the fhore; after which arrive the Summer Herring, which almoft literally fill every creek : the whole filhery is of immenfe profit. From Fanuary to October;

[^34]r752, were exported, from Bergen alone, eleven thoufand and thirteen lafts; and it was expected that as many more would be hipped off before the expiration of the year. The Herrings which vifit this coaft are only part of the vaft northern army which annually quits the great deeps, and gives wealth and food to numbers of European nations.

The Cod yields another fifhery of great profit. They firf arrive immediately after the earlieft Herrings, and grow fo pampered with their fry, that they reject a bait; and are taken in vaft nets, which are fet down in fifty or feventy fathom water, and taken up every twenty-four hours, with four or five hundred great fifh entangled in them. As the Herrings retire, the Cod grows hungry; and after that is taken with hook and line, baited with Herring. In more advanced feafon, other varieties of Cod arrive, and are taken, in common with Turbot and other fifh, with long lines, to which two hundred fhort lines with hooks are faftened: the whole is funk to the bottom ; its place is marked by a buoy faftened to it by another line of fit length. The extent of the Cod-fifhery may be judged of on hearing that 40,000 tonder, of four buthels each, of French and Spanifh. falt, are annually inported into Bergen for that purpofe only.

The Ling is taken on the great fand-bank during fummer, by hook and line, and, being a filh noted for being capable of long prefervation, is much fought after for diftant voyages.

The Salmon, a moft univerfal northern filh, arrive in the Norwegian rivers, and valt quanties are fent, fmoke-dried or pickled, into various countries.

The prefecture of Nordland, is the fartheft part of the kingdom of Norway. In it is the diftrict of Helgeland, remarkable for that uncommon genius, Oatber, or Oltbere, who, in a frozen climate, and fo early as the ninth century, did Shew a paffion for difcovery, equal perhaps with that of the prefent. His country was at that time the laft in the north which had the left tincture of humanity. In the year 890 he was attrakted by the fame of our renowned Alfred. He vifited his court, and related to him his voyages. He told the monarch that he was determined to prove if there was any land beyond the deferts which bounded his country. It appears that he failed due north, and left, on his ftarboard fide, a wafte, the prefent Finmark, occafionally frequented by fhe Finnas, or wandering Laplanders, for the fake of fifhing and fowling. He went as far as the -Whale-fighers ufually ventured : a proof that the men of Norway praciifed that fifhery:many centuries before the Englifh. He doubled the North Cape, and entered the Cwen Sea, or White Sea, and even anchored in the mouth of the Dwina. He was to thefe parts what Columbus. was to America: but the knowlege of this country was loft for centuries after the days of Octber. He mentioned the Seride Finnas, who lived to the north-weft of:

Cod,

Ling.

Salmon.

Nordland.
Of-Octherd.
the Cwien Sea, and who wore fnow- hooes. The country about the $D$ wina was well inhabited by a people called Beormas, far more civilized than the Finnas. The map attending Alfred's Orofius places them in the country of the Samoieds, a race at prefent as uncultivated as mankind can be: we therefore muft fuppofe thofe Beormas to have been Ruflians. Octber fays, that in this fea he met with HorfeWhales (Walrufos) and produced to the prince fpecimens of their great teeth, and of thong-ropes made of their Rkins; a mark of his attention to every thing curious which occurred to him *.

## Norwegiams

## afine race.

Longevitt.

I muft not leave Norway without notice of its chief of animals, Man. Scandinavia, in the courfe of population, received its inhabitants by colonies of hardy Scythians, who, under the name of Sarmatians, extended themfelves to the coafts of the Baltic. In after-times their virtue was exalted by the arrival of their countryman, Odin, and the heroes he fettled in every part of the country. The feverity of the climate has not checked the growth, or diftorted the human form. Man here is tall, robuft, of juft fymmetry in limbs, and thews ftrongly the human face divine. Their hair is light: their eyes light grey. The male peafants of the mountains are hairy on their breafts as Bears, and not lefs hardy : active in body : clear and intelligent in their minds. Theirs certainly is length of days; for out of fix thourand nine hundred and twenty-nine, who died in 1761 , in the diocefe of Cbrifiana, three hundred and ninety-four lived to the age of nintey; fixty-three to that of a hundred; and feven to that of a hundred and one $\dagger$. The Norwegians jufly hold themfelves of high value; and nightingly call their fellow-fubjects, the the Danes, Futes $\ddagger$. The Danes tacitly acknowlege the fuperiority, by compofing almoft their whole army out of thefe defcendants of the all-conquering Normans.

I fabll here fupply an omifion in my account of the Scandinavian antiquities, p. xxxvi. by mentioning the famous tomb, about feven Swedifh yards long and two broad, found at Kivike, a parifh of Scbonen in Sweden, in the centre of a vaft tumulus of round ftones. It was oblong, and confifted of feveral flat ftones, the infide of which is carved with figures of men and animals, and the weapons of the age, axes and fpears heads. A figure is placed in a triumphal car; cornets feem founding: captives with their hands bound behind, guarded by armed men; and figures, fuppofed to be female, form part of the conquered people. It is fuppofed that the Roman fleet made an accidental defcent here, had a fuccefsful fkirmilh with the natives, might have loft their leader, and left this mark of their viftory amidft the

[^35]
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## Sir Hugh WilLOUGHBY.

North Cape.

Cherie Island.
buy's, frtuated in a gond harbour, in the ifle of Wardoe, at the extremity of Finmark; probably built for the protection of the fifhing trade, the only object it could have in this remote place.

A little farthér eaftward, in Mufcuvitifh Finmark, is Arzina, noted for the fad fate of that gallant gentleman, Sir Hugh Willougbby, who, in 1553, commanded the firt voyage on the difcovery by fea of Mufcovia, by the north-eaft; a country at that time fcarcely'known to the reft of Europe. He unfortunately loft his paffage, was driven by tempefts into this port, where he and all his crew were found the following year frozen to death. His more fortunate confort, Richard Chancellor captain and pilot major, purfued his voyage, and renewed the difcovery of the White Sea, or Bay of St. Nicholas; a place totally forgotten fince the days of Oither. The circumftances attending his arrival, exactly refemble thofe of the firft difcoverers of Anerica. He admired the barbarity of the Ruffian inhabitants: they in return were in amaze at the fize of his fhip: they fell down and would have kiffed his feet; and when they left him fpread abroad the arrival of ' a flrange nation, of lingular gentleneffe and courtefic *.' He vifited in fledges the court of Bafilowitz II. then at Mofsow, and layed the foundation of immenfe commerce to this country for a feries of years, even to the remote and unthought-of Per $/ 2 n$.

I ©hall take my departure from the extreme north of the continent of Europe, or rather from its fhattered fragments, the ifle of Maggeroe, and other iflands, which lie off the coalt, in lat. 71. 33. At the remote end of Maggeroe is the North Cape, high and flat at top, or what the failors call Table-land $\dagger$. Thefe are but the continuation of the great chain of mountains which divides Scandinavia, and finks and rifes through the ocean, in different places, to the Seven Sifers, in about lat. 80. 30 , the neareft land to the pole which we are acquainted with.

Its firft appearance above water, from this group, is at Cherie I/Rand, in lat. 74. 30. a moft folitary fpot, rather more than midway between the North Cape and Spitzbergen, or about a hundred and fifty miles from the latter. Its figure is nearly sound: its furface rifes into lofty mountanous fummits, craggy, and covered with perpetual fnow: one of them is truly called Mount Mifcry. The horror of this inle to the fift difcoverers mult have been unfpeakable. The profpect dreary, black, where not hid with fnow, and broken into a thoufand precipices. No founds but of the dafing of the waves, the crafhing collifion of floating ice, the difcordant notes of myriads of fea-fowl, the yelping of Arctic Foxes, the farting of the Walrufes, or the roaring of the Polar Bears.

[^36]This, ifland was probably difcovered by Stephen Bennet in 16:3*, employed by Alderman Cherie, in honor of whom the place was named. The anchorage near it is twenty and thirty fathoms. He found there the tooth of a Walrus, but fave none of the animals, their feafon here being paft: this was the $17^{\text {th }}$ of $A: / g u f$. Encouraged by the hopes of profit, Bennet made a fecond voyage the next year, and arrived at the illand the gth of fluy; when he found the Walrufes lying huddled on one another, a thoufand in a heap. For want of experience, he killed only a few; but in fucceeding voyages the adventurers killed, in $16 \approx 6$, in fix hours time, feven or eight hundred; in 1608, nine hundred or a thoufand in feven hours; and in 1610 , above feven hundred. The profit, in the teeth, oil, and fkins, was very confiderable $\dagger$; but the flaughter made among the animals frightened the furvivors away, fo that the bencfit of the tufinefs was loft, and the ifland no more frequented. But from this deficiency originated the commencement of the Whale-fifhery by the Engli/b.

It is remarkable that this inland produces excellent coals $\ddagger$; yet none are known nearer than the diocefe of Aggerbuys, in the fouth of Norway, and there in very fnall quantities. Lead ore is alfo found, both in Cherie Ifand and a little one adjacent, called Gull I/and $\|$.

About a hundred and fifty miles almoft due north, is South Cape, north lat. 76. 30, the extreme fouthern point of Spitzbergen, the largeft of the group of frozen ifiands which go under that name, or New Groenland. From this to Ver-legan-book, north lat. 80. 7, the northern extremity, is above three hundred miles; and the greateft breadth of the group is from Hackluyt's Headland to the extreme eaft point of North Eafland, comprizing from 9. to near 24. eaft longitude. The fhores are ragged and indented. A very deep bay runs into the eaft fide from fouth to north; and a large trifurcated one from north to fouth. Stat's Forland is a large illand rent from the fouthern part of the eaft fide. North Eafland is divided from the north-eaft fide by the Waygat and Hinlopen ftraits, ufually blocked up with ice, and fo fhallow as to be, in one part, only three fathoms deep §. The long ifle of King Cbarles lies parallel to the weft fide. At the fouthern end is Black Point; the coaft high, black, and inacceffible; in parts feeming foaring above the clouds; and the interjacent vallies filled with ice and fnow. Fair Foreland, or Vogel-hoof, is the northern headland, made by failors. And due north of it, at the weftern point of Spitzbergen, is the fmall lofty ille of Hackluyt's Headland, anoo ther object of the mariners fearch.

To the north of the great group is Moffen's Ifle, in lat. 80, oppofite to the mouth of Leffle bay. This illand is very low, and fufpected to be a new creation,

[^37]Walrusps.

Coals.
Lead.

Spitzbergen.

Mopfen's Isle.

Low Island. Basaltic.

Plants. Animals.

Birds.

Drift-wood.
by the meeting of the ftreams from the great ocean, rufhing along the weft fide of Spitzbergen, and through the Waygat, and forcing up the gravelly bottom of this fhallow part, where the lead touches the bottom at from two to five fathoms water, at half a-mile from its weftern fide .

To the eaftward of this is another low inand, almoft oppofite to the mouth of the Whaygat : it is remarkable for being part of the Bafaltic chain, which appears in fo many places in the northern hemifphere. The columns were from eighteen to thirty inches in diameter, mofly hexagonal, and formed a moft convenient pavement. The middle of the ille was covered with vegetables, Moffes, Sorel, Scurvy Grafs, and Ranunculufes in bloom on fuly 30 oth. Of quadrupeds, the Reindeer fattened here into excellent venifon; the Arctic Fox; and a fmall animal larger than a Weefel, with Chort ears, long tail, and Spotted with black and white, were feen. Small Snipes, like Jack Snipes; Ducks, then hatching; and Wild Geefe feeding, helped to animate this dreary fcene $\dagger$.

The beach was formed of an antient aggregate of fand, whale-bones, and old timber, or drift-wood. Fir-trees feventy feet long, fome torn up by the roots, others frefh from the axe, and marked with it into twelve feet lengths, lay confufedly fixteen or eighteen feet above the level of the fea, intermixed with pipeftaves, and wood falhioned for ufe; all brought into this elevated fituation by the fwell of the furious furges.

The appearance of drift-wood is very frequent in many parts of thele high latitudes: in the feas of Greenlancl, in Davis's ftreights, and in thofe of Hudfon; and again on the coafts of Nova $Z_{e m l j a}$. I have only two places from whence I can derive the quantity of floating timber which appears on the coaft of Nova Zemlja and thefe inlands: the firft is from the banks of the $O b y$, and perhaps other great rivers, which pour out their waters into the Frozen ocean. In the fpring, at the breaking up of the ice, vaft inundations fpread over the land, and fweep away whole forefts, with the aid of the vaft fragments of ice; thefe are carried off, rooted up, and appear entire in various places. Such as are found marked into lengths, together with pipe-ftaves, and other falhioned woods, are fwept by the Norwegian floods out of the rivers, on the breaking of a lentze $\ddagger$, a misfortune which fometimes happens, to the bankruptcy of multitudes of timber-merchants. At fuch times not only the trees which are floating down the torrents, but the faw-mills, and all other places in which bufinefs is carried on, undergo the fame calamity; and the timber, in whatfoever form it happens to be, is forced into the ocean, and conveyed by tides or tempefts to the moft diftant parts of the north.

- Pbips, 54. $\quad+$ The fame, 58. $\ddagger$ Purcbas, iii. 527.


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attempt was made to cut a paffage through the ice; after a perfeverance worthy of Britons, it proved fruitlefs. The commander, at all times mafter of himfelf, directed the boats to be made ready to be hauled over the ice, till they arrived at navigable water ( $a^{\prime}$ tafk alone of feven days) and in them to make their voyage to England. The boats were drawn progrefively three whole days*. At length a wind fprung up, the ice feparated fufficiently to yield to the preffure of the fullfailed thips, which, after laboring againft the refifting fields of ice $t$, arrived on the 1oth of Augu/ in the harbor of Smeeringlerg, at the weft end of Spitzlergen, between it and Hackluyt's Hcadland.

It was the hard fortune of Lord Mulgrave, at this-feafon, to meet with one of thofe amazing hoals of ice which cover, at times, thefe feas, for multitudes of leagues. He made the fulleft trial, from long. 2 to 21 eaft, and from about lat. 80. 40 , as low as about 78.30 , oppofed by a face of ice without the leaft opening, and with all the appearance of a folid wall. It is well known, that the coafts of Sibiria are, after a northern tempeft, rendered inacceffible for a vaft extent, by the polar ice being fet in motion. It is as well known, that a ftrong fouthern wind will again drive them to their former feats, and make the fhores of the Frozen ocean as clear as the equatorial feas. A farther difcovery on this fide was denied to the noble navigator. His misfortune will for ever redound to his honor, as it proved his fpirit, his perfeverance, and a foul fertile in expedients among the greateft difficulties 1

That navigators have gone into higher latitudes I cannot deny: the authenticated inftances only thew their accidental good fortune, in having the ice driven towards the pole, and in making a retreat before they were enveloped in the returning ice. The Ruffians, under vice-admiral T/hit/haghef, within thefe very few years, made an attempt to fail to the pole by the eaftern fide of Spitzbergen; but after fuffering great hardhips, returned without effecting any difcovery. Curiofity has been amply fatisfied : and I believe we may reft fully content with the common paffage to India, on the conviction of this tract being totally impracticable.
Ice.
The forms affumed by the ice in this chilling climate, are extremely pleafing to even the moft incurious eye. The furface of that which is congealed from the fea-water (for I muft allow it two origins) is flat and even, hard, opake, refembling white fugar, and incapable of being lid on, like the Briti/h ice $\ddagger$. The greater pieces, or fields, are many leagues in length: the leffer, are the meadows

- PbipsVoy. tab. v.
$\dagger$ Same, tab. vi ${ }_{4}$
$\ddagger$ Crantz. i. ${ }^{3}$.
of the Seals, on which thofe animals at times frolic by hundreds. The motion of the leffer pieces is as rapid as the currents: the greater, which are fometimes two hundred leagues long, and fixty or eighty broad *, move flow and majeftically; often fix for a time, immoveable by the power of the ocean, and then produce near the horizon that bright white appearance, called by mariners the blink of the ice $t$. The approximation of two great fields produces a moft fingular phænomenon; it forces the leffer (if the term can be applied to pieces of feveral acres fquare) out of the water, and adds them to their furface : a fecond, and often a third fucceeds; fo that the whole forms an aggregate of a tremendous height. Thefe float in the fea like fo many rugged mountains, and are fometimes five or fix hundred yards thick $\ddagger$; but the far greater part is concealed beneath the water. Thefe are continually encreafed in height by the freezing of the fpray of the fea, or of the melting of the fnow, which falls on them. Thofe which remain in this frozen climate, receive continual growth; others are gradually wafted by the northern winds into fouthern latitudes, and melt by degrees, by the heat of the fun, till they wafte away, or difappear in the boundlefs element.

The collifion of the great fields of ice, in high latitudes, is often attended with a noife that for a time takes away the fenfe of hearing any thing elfe; and the leffer with a grinding of unfpeakable horror.

The water which dafhes againft the mountanous ice freezes into an infinite varicty of forms; and gives the voyager ideal towns, ftreets, churches, fteeples, and every fhape which imagination can frame $\|$.

The Icebergs, of Glacieres of the north-eaft of Spitzbergen, are among the capital wonders of the country; they are feven in number, but at confiderable diftances from each other : each fills the vallies for tracts unknown, in a region totally inacceffible in the internal parts. The glacieres of Switzerland feem contemptible to thefe; but prefent often a fimilar front into fome lower valley. The laft exhibits over the fea a front three hundred feet high, emulating the emerald in color: cataracts of melted fnow precipitate down various parts, and black firing mountains, freaked with white, bound the fides, and rife crag above crag, as far as eye can reach in the back ground $\S$.

At times immenfe fragments break off, and tumble into the water, with a moft alarming dafhing. A piece of this vivid green fubftance has fallen, and grounded in twenty-four fathoms water, and fpired above the furface fifty feet ${ }^{* *}$. Simi-

[^38]lar icebergs are frequent in all the Argtic regions; and to their lapfes is owing the folid mountanous ice which infefts thofe feas.

Froft fports alfo with thefe icebergs, and gives them majeftic as well as other molt lingular forms. Maffes have been feen, affuming the fhape of a Gothic church, with arched windows and doors, and all the rich tracery of that ftyle, compofed of what an Arabian tale would fcarcely dare to relate, of cryftal of the richeft fapphirine blue: tables with one or more feet; and often immenfe flat-roofed temples, like thofe of Luxxor on the Nile, fupported by round tranfparent columns of carulean hue, float by the aftonifhed fpectator *.
'Thefe iccbergs are the creation of ages, and receive annually additional height by the falling of fnows and of rain, which often inftantly freezes, and more than repairs the lofs by the influence of the meiting fun $t$.
SNow. The fnow of thefe high latitudes is as fingular as the ice. It is firft fmall and hard as the fineft fand $\ddagger$; changes its form to that of an hexagonal fhield, into the fhape of needles, croffes, cinquefoils, and ftars, plain and with ferrated rays. Their forms depend on the difpofition of the atmofphere; and in calm weather it coalefces, and falls in clufters $\S$.

Bears. furvived to relate the account. The Bears falk forth at the fame time from their

Srasons.

Foxes.
Fowls.

Thunder and lightning are unknown here. The air in fummer is generally clear ; but the fky loaden with hard white clouds. The one night of this dreadful country begins about Ociober 20th, O. S.; the fun then fets, and never appears till about the $3^{\text {d }}$ of February $\|$ : a glimmering indeed continues fome weeks after its fetting: then fucceed clouds and thick darknefs, broken by the light of the moon, which is luminous as that in England, and fhines without intermiffion during the long night $\pi$. Such alfo is the cafe in Nova Zemlja **. The cold, according to the Englifh proverb, ftrengthens with the new year ; and the fun is, uhered in with unufual feverity of froft. The fplendor of that luminary on the fnowy fummits of the mountains was the moft glorious of lights to the fingle party who dens, attended by their young cubs. By the beginning of March, the chearful light grows ftrong: the Arctic Foxes leave their holes, and the fea-fowls refort in great multitudes to their breeding-places $\dagger \dagger$.

[^39]
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Hardours.

TideandSea.

Soll!

Plants.
cataracts of melted fnow of the fhort fummer, or to the pools in the middle of the filds of ice, to which the mariners are indebted for freh water.

The harbours on the wefl fide are frequent; penetrate deep into the ifland of Spitzbergen; and are the only channels by which the flight knowlege of the interior parts is attained. North Harbour is a fceac of picturefque horror, bounded by black craggy Alps, ftreaked with fnow; the narrow entrance divided by an inand; and at feafons affording a land-locked felter to multitudes of fips.

The tide at the Vogel Sang flows only four feet, and the flood appears to come from the fouth. The depth of the fea is very irregular: near the thore it is generally hallow : off Low Ifland only from ten to twenty fatioms; yet fuddenly deepens to a hundred and reventeen: off Cloven Cliff from fourteen to twenty-eight, and deepens to two hundred. The fhallows are ufually on rock; the great depths on foft mud : the former I look on as fubmarine iflands; but, from the fmall number of fifh, the bottoms muft be univerfally barren.

The grit worn from the mountains by the power of the winds, or attrition of cataracts of melted fnow, is the only thing which refembles foil, and is the bed for the few vegetables found here. This indeed is affitted by the putrefied lichens of the rocks, and the dung of birds, brought down by the fame means.

Even here Flora deigns to make a Mort vifit, and fcatter over the bafes of the hills a fcanty ftock. Her efforts never rife beyond a few humble herbs, which thoot, flower, and feed, in the fhort warmth of $\mathcal{F} u n e$ and $\mathcal{F} u l y$; then wither into reft till the fucceeding year. - Let me here weave a flender garland from the lap of the goddefs, of fuch, and perhaps all, which the hath beftowed on a country fo repugnant to her bounty. Let the falubrious Scurvy Grafs, the refource of diftempered feamen, be remarked as providentially moft abundant in the compofition.

Let me firft mention its only tree, the Salix Herbacea; or Dwarf Willow, defcribed by Marten, p. 65, Phips, 202, which feldom excceds two inches in height, yet has a jult title to the name. The plants are, a new fpecies of Grafs, now named Agrofis Algida: Tillaa Aquatica, Sp. Pl. 186. Fl. Suec. 156: Funcus Campefris, Fl. Sc. i. 186 : Sibbaldia Procumbens? Fl. Lap. III.; Marten's Spitz. tab. H. fig. b: Polygonum Viviparum, Fl. Lap. 152; Marten's Spitz. tab. I. fig. a: Saxifraga Oppofitafolia, Fl. Lap. 179, 222 : Sax. Cernua, Sp. Pl. i. 577 ; Fl. Lap. 172: Sax. Rivularis, Sp. Pl. 577 ; Fl. Lap. 174 : Sax. Cafpitofa, Sp. Pl: 578 ; Fl. Suec. 376: Sedum Annuum? Sp. Pl, 620; Marten's Spitz. tab. F. fig. c: Cerafium Alpinum, Sp. Pl. 628; Fl. Lap. 192: Ranunculus Sulphureus, Phips Voy. 202; Mart. Spitz. 58 : R. Lapponicus, Fl. Lap. 46I, 503: R. Nivalis? 232; Mart. Spitz. tab. F. fij. a: Cochlearia Danica, Sp. Pl. 903; Fl. Suec. 578, 579 :

Cochl. Grcenlandica, Sp. Pl. 904 : Polytricbum commune, Fl. Lap. • 395 : Bryum Hippnoides, Fl. Lap. 396 : Bryum Trichoiàes? Dill. 391; Mufc. tab. 50, fig. 61: Bryum Hypnoides? Dill. Mufc. 394, tab. 50, fig. 64, C : Hypnum Aduncum, Sp. Pl. 1592; Fl. Suec. 879, 1025 : Fungermannia fulacea, Sp. Pl. 1601: ${ }^{\text {fung }}$. like the Lichenaftrum Ramofus, fol. trif. Dill. Mufc. 489, tab. 70, fig. 15 : Lichen Ericetorum, Fl. Lap. 936, 1068 : L. Jlandicus, 959, 1085: L. Nivalis, 446: L. Caninus, 441 : L. Polyrbizos, Sp. Pl. 1618; Fl. Suec. 1108 : L. Pyxidatus, Fl. Lap. 428 : L. Cornutus, 434 : L. Rangiferinus, 437 : L. Globiferus, Lin. Mantifl. 133: L. Pafchalis, Fl. Lap. 439 : L. Chalybeiformis, S.p. Pl. 1623; Fl. Suec. 988, 1127 : and the Fucus Saccharinus? Fl. Lap. 460; Mart. Spitz. tab. F. fig. 6.

It is matter of curiofity to trace the decreafe of vegetables from our own ifland to this fpot, where fo few are to be found. They decreafe with the numbers of herbivorous animals, and the wants of mankind. The following catalogue may not be quite juft, but is probably pretty near the truth :

| England has | - | $\begin{aligned} & \text { Perfect. } \\ & 1,124 \end{aligned}$ | - | Inperfect. 590 | - | $\begin{gathered} \text { Total. } \\ \text { I,714 } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Scotland | - | 804 | - | 428 | - | 1,232 |
| The Orknies | - | 354 | - | 144 | - | $49^{8}$ |
| Sueden | - | 933 | - | 366 | - | 1,299 |
| Lapland | - | 379 | - | 155 | - | 534 |
| Iceland | - | 309 | - | 233 | - | 542 |

Thofe of Spitzbergen are given above.
The three terreftrial quadrupeds of thefe inands are confined here without pofibility of migration. The Polar Bears pafs the greateft part of the winter in a torpid ftate: appear in numbers at the firft return of the fun, when, probably, they take to the ice, in queft of their prey, Seals, or dead Whales.
'It is difficult to account for the means which the Foxes find for fupport, as the ifland is deftitute of birds during the whole winter; and, the bays being totally frozen up, they can find no fubfiftence from the fea. Perhaps they lay up provifion for winter, on which they fubfift till the arrival of the birds in March; at which feafon they have been obferved firft to quit their holes, and appear in multitudes *. The Rein Deer have at all times their favorite lichon, which they can readily get at, by help of their palmated horas.

Walruses and Seals are found in great abundance; the latter are often the object of chace, for the fake both of oil and finins: the Ruflans make voyages on
purpofe. In 1743, four unhappy mariners of that nation were accidentally lert on thore on North Eaftand'; called by the Ruffians Malyy Broun. Here three (the fourth' died in the laft year) lived till Auguft 15 th 1749 ; when they were providentially relieved by the arrival of a thip, after pafing fix years, realizing in ingenious contrivances the celebrated Englifb fable of Robinfon Crufoe *:

In the year 1633 feven Dutch failors were left voluntarily on the weftern part of Spitzbergen, to pafs the winter, and form their remarks. They were furs nifhed with medicines, and every requifite to preferve life; but every one perifhed by the effects of the fcurvy. In the next year, feven other unhappy men devoted themfelves, and died in the fame manner. Of the firft fet, it appeared by his journal, that the laft was alive the 30th of April 1634 ; of the fecond, the life of the laft furvivor did not continue far beyond the 28th of February 1635 t. Yet eight Englifhmen, left in 1630 in the fame country, by accident, and unprovided with every thing, framed themfelves a hut from fome old materials, and were found by the returning fhips, on May 28th 1631, in good health $\ddagger$. Thus Ruflan hardinefs and Britifl fpirit braved a climate, which the phlegmatic conftitution of a Dutchman could not refilt.

Birds.

Fish.

To meet with the Snow Bunting, No 222, a bird whofe bill, in common with the reft of that genus, is calculated for granivorous life, is a kind of miracle. The country has a very fcanty provifien of feeds; the earth yields no worms, the air no infects; yet thefe birds are feen in flocks innumerable, and that chiefly on the ice around Spitzbergen: as it breeds early, pofibly the old and young may have quitted the land, and collected on the ice at the time of the arrival of the: fhips.

Of cloven-footed water-fowl, the Purre, $\mathrm{N}^{\circ} 390$, alone is feen here.
Of web-footed, the Puffin Auk, $\mathrm{N}^{\circ} 427$; the Razor Bill, $\mathrm{N}^{\circ} 425$; the Little. Auk, $\mathrm{N}^{\circ} 429$; the Foolifh Guillemot, $\mathrm{N}^{\circ} 436$; the Black Guillemot, $\mathrm{N}^{\circ} 437$; the Northern Diver, $\mathrm{N}^{\circ} 439$; the Ivory Gull, $\mathrm{N}^{\circ} 4.57$; the Herring Gull, $\mathrm{N}^{\circ} 452$; the Arctic Gull, $\mathrm{N}^{\circ} 459$; the Kittiwake, $\mathrm{N}^{\circ} 456$; and the Greater. Tern, $N^{\circ} 448$ : thefe, with the Eider Duck, N ${ }^{\circ} 480$, complete the fhort lift of the feathered tribe of Spitzbergen.' All thefe breed in the froft-rent cracks of the mountains, and appear even in thefe regions before the 16th of March $\S$.

The Whale is lord paramount of thefe feas; and, like a monftrous tyrant, feems to have terrified almoft every other fpecies of filh away. A few Coal Fifb, Br. Zool. iii. $N^{\circ} 78$, and two of the unctuous Suckers, $\mathrm{N}^{\circ} 58$, were the whole which were taken by Lord Mulgrave, after feveral trials by haok and by net.

- Sce the curious Narrative, \& The game, p. 8x.8.
$\dagger$ Cburcbill's Coll. ii. 41 52427. $\quad \ddagger$ The fame, iv. 808.


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Diseovery of Spitzbergen.

White Sea.

Archangel.
the Voriicella Encrinus, Lin. Syft. $\mathrm{N}^{\circ}$ 1317, engraven in our Tranfactions, vol. xlviii. p. 305, and taken in lat. 79, off this coaft: two of them being drawn up with the founding-line, in 236 fathom water.

The priority of difcovery of thefe infands has been a great matter of controverly between the Englifs and the Dutch. We clame it from the fight which Sir Hugl Willoughby is pretended to have had of it in his unfortunate voyage; but if what he faw, in lat. 72 , was not a fog-bank, we muft fuppofe it to have been either Fobn Mayen's ine, or part of Eoft Greenland. The abfurd zeal of the Englif) compilers inakes Stephen Boroughs the fecond difcoverer of this country, in 1556; but it is very certain, that he never got higher than lat. 70. 42, nor ever meant any difcóvery but a palfage to the river $O b^{*}$. It doubtlefsly was firft difcovered by the Dutch Barentz; who, in his third voyage, in 1596, for the finding out the north-eaft paffage, met with a land in lat. $79 \frac{1}{2}$ r and anchored in a good road, in eighteen fathom water. He afterwards failed as high as 80 , and found two of the illands of which Spitzbergen is compofed $\dagger$. Embarrafled with ice, he took a fouthern courfe, and was foon after wrecked on the coaft of Nova Zemlja: but the Englifh and Dutch purfued the hint; and the Whale-fifhery, which before was chiefly carried on by the Bifcayeners in the bay of St. Laurence, was commenced here with great fuccefs. So active were we, that our hips frequented the place within two years after its difcovery.

I now return to the North Cape on the coaft of Finmark; and after paffing by the feveral places mentioned in pages lxxix. and lexx. enter a ftreight, bounded by Mufiovitifh Finmark, confifting of low hills, and the flat province of Mefen, on the eaft. This leads into the Bioele Mari, or White Sea; or, more properly, gulph; for its waters are fhallow, its bottom full of mud, brought by the great rivers which difcharge themfelves into it, which almoft deprive it of faltnefs. This was the Cwen fea of Octher ; but had been forgotten fince his time. The Dwina, or Double River, is the greatef, which takes its name from being formed by the Suchona and the rug, very remote from its mouth. It is navigable to a great diftance, and brings the commodities of the interior parts of the empire to Archangel, a city feated on its banks, about fix miles from the fea. It tofe from a caftle built there by Bafilowitz II. to protect the in-

[^40]creafing trade brought here on the difcovery of the White Sea by the Englif; for Thips of all nations reforted to this port, even as far as from Venice. Its exports, ir: 1655, amounted to three hundred and thirty thoufand pounds *. Peter the Great, intent on aggrandizing his creation, Peter/burg, prohibited all trade to Archangels, except from the neighboring provinces. Still its exports of tar were confiderable : in 1730 , to the amount of forty thoufand lafts, of eleven barrels each $\dagger$. It fends, during winter, great quantities of the Nawaga, a fmall fpecies of three-finned Cod $\ddagger$, to Peterfourg, frozen, as Kola does Herrings in the fame fate.

The White Sea is every winter filled with ice from the Frozen ocean, which brings with it the Harp Seal, $\mathrm{N}^{\circ} 77$; and the Leporine, $\mathrm{N}^{\circ} 75$, frequent it during fummer. Whoever furveys the maps of the provinces between this fea and the gulphs of Botbnia and Finland, will obferve them to be more occupied by lakes than land, and be at once fatisfied of the probability of the once-infulated ftate of Scandinavia. As foon as thefe ftreights were clofed, the White Sea loft its depth, and is at prefent kept open only by the force of its great rivers.

On the ealtern fide of the entrance into the ftreight is the inle of Kandinos, often. fpoken of by our early navigators in their way, to the $W_{\text {aygatz, }}$ in their fearch for a north-eaft paffage. Between it and the main land is a very narrow channel. After doubling the cape of Kandinos, the fea forms two great bays. A confiderable part of the fhore to the eaft confifts of low fandy hills $\|$. Into the moft remote bay flows, in lat. 68. 30, by many mouths, the valt river Peezora, a place of great. trade before the time of Peter I. Thoufands of Samoieds and other favages reforted to the town, with feathers of White Grous, and other birds; Sables, and the molt valuable furs; finins of Elks and other deer.; the oil from the Walrus, $\mathrm{N}^{\circ} 7 \mathrm{I}$, from the Beluga, p. 182; and different fort of finh §. Here was, in 1611, a great fifhery of Beluga: above fifty boats, with three men each, were employed to harpoon them $\pi$. The entrance into the river is dangerous, by reafon of a fandy thoal. The tide rifes there only four feet.

The coafts eaft of Archangel, even as far as the river $O b$, are intrabited by the Samoieds; a race as fhort as the Laplanders, more ugly, and infinitely more brutalized; their food being the carcaffes of borfes, or any other animals. They ufe the Rein Deer to draw their fledges, but are not civilized enough to

[^41]make it the fubfitute for the Cow. Thefe are in fact the Hottentots of the north.

To the eaft of the Peczora commences the continent of

## Uralifan Chain.

Its height.

Which has molt natural and Atrongly-marked limits. Here appear the Werchoturian mountains, or famous Urallian chain, which begins diftinctly (for it may be traced interruptedly farther fouth) near the town of Kungur, in the government of Kafan, in lat. 57.20, runs north, and ends oppofite to the Waygatz freight, and rifes again in the ifle of Nova Zemlja. The Ruflans alfo call this range Semennoi Poias, or the Girdle of the World, from a fuppofition that it encircled the univerfe: Thefe were the Riphai montes: Pars mundi damnata a natura rerum, et denfa mer $j a$ Caligine ${ }^{*}$, of which only the fouthern part was known to the antients, and that fo little as to give rife to numberlefs fables. Beyond thefe were placed the happy Hyperborei, a fiction moft beautifully related by Pomponius Melat. Moderns have not been behind-hand in exaggerating feveral circumftances relative to thefe noted hills. r/brand Ides, who croffed them in his embafly to China, afferts that they arefive thoufand toifes or fathoms high: others, that they are covered with eternal fnow. The laft may be true in their more northern parts; but in the ufual paffages over them, they are free from it three or four months.

The heights of part of this chain have been taken by M. l' Abbè d'Auteroche; who; with many affurances of his accuracy, fays, that the height of the mountain Kyria, near Solikamfkaia, in lat. 60, does not exceed four hundred and feventy-one toifes from the level of the fea, or two hundred and eighty-fix from the ground on which. it ftands $\ddagger$. But, according to $M$. Gmelin, the mountain Pauda is much higher, being feven hundred and fifty-two toifes above the fea $\|$. From Peterfourg to this chain

[^42]
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At the northern end of the great Urallian chain, is the Waygatz ftreight, which cuts them from Nowria Zerlja, Nova Zembla, or the New Land. The paffage is narrow, obftructed by iflands, and very frequently by ice. The flux and reflux is here uncertain, by reafon of the winds; but the tide has been oblerved to rife only four feet ${ }^{*}$ : the depth from ten to fourteen fathoms. It was difcovered by Stephen Boroughs, in 1556; and the navigation was often attempted by the Dutch, in hopes of a paffage that way to China. Continual obftructions from the floating ice bafled their defigns, and obliged them to return.

Nova Zeinlja confifts of five inands; but the channels between them are always filled with ice $t$. It is quite uninhabited, but is occafionally frequented by the people of Mefen, who go there to kill Seals, Walrufes, Arctic Foxes, and White Bears, the fole animals of the place, excepting a few Rein Deer. Attempts have been made to find a way to the Eaf Indies to the north of it; but with equal bad fuccefs as through the Waygatz. Barentz juft doubled the eaftern end in 1596 ; fuffered hipwreck there with his crew; and paffed there a moft miferable winter, continually befieged by the Polar Bears: feveral of the crew died of the fcurvy or excefs of cold ; the furvivors made a veffel of the remains of their fhip, and arsived fafe in Europe the following year; but their great pilot funk under the fatigue $\ddagger$.

The fouthern coafts of thefc inlands are in a manner unknown. Between them and the continent is the Kara fea, which forms a deep bay to the fouth, in which the tide has been obferved to flow two feet nine inches. Fifhing people annually come here from the Peczora through the Waygatz, for the fake of a fmuggling trade in furs with the Samoieds of the government of Tobolki\|. In the reign of the Emprefs Anne attempts were made to double the great cape Falmal, between the gulph of Kara and that of the $O b$; one of which (in 1738) only fucceeded, and that after encountering the greateft difficulties §. Had the difcovery of Sibiria depended on its approach by fea, it might have fill remained unknown.
Teyriver $O_{b}$.
The mouth of the $O b$ lies in a deep bay, which opens into the $I c y S e a$, in lat. 73.30. This is the firft and greateft of the Sibirian rivers: it rifes from a large lake in lat. 52 , has a gentle courfe through eight hundred leagues of country, navigable almoft to its fource $\pi$ : is augmented by the vaft river Irtijch, in lat. 61, which again receives on each bank a multitude of vaft rivers in its extenfive progrefs. Tobolki, capital of Sibiria, lies on the forks, where it takes in the Tobol. The

[^43]banks
banks of the Irticch and $O b$, and other Sibirian rivers, are, in many places, covered with immenfe forefts, growing on a foft foil; which being torn up by the refiftefs force of the vaft fragments of ice brought down by the torrents occafioned by the melting of the fnows, are conveyed into the $I c y$ and other feas, and form the driftwood I have before fpoken of. The channel of the $O^{\prime}$, from its fource to the Ket, is flony: from that river to the mouth it runs through a fat land. After it has been frozen fome time, the water grows foul and fetid. This is owing to the vaft morafles it in fome places goes through, to the fownefs of the curront, and to the earth-falt (crdfaltz) with which fome of the rivers which run into it arcimpregnated. The fin therefore flun the waters of the $O b$, and refort in vaft fhoais to the mouths of thofe rivers which rufh into it from ftony countries, and in fuch places are taken in great abundance. This ftench continues till the river is purified in the fpring by the melting of the fnow. The Taz, another river which empties iffelf into the eaft of the gulph of $O b$, is liable to the fame impurity.

The $\mathfrak{F e n e f e i}$ next fucceeds. Mr. Gmelin, as a naturalif, would confider this as the boundary between Europe and Afia. From its eaftern banks every thing puts on a new appearance: a certain new and unufual vigour rcigns in every thing. The mountains, which to the weftward, as far as the Urallian chain, appeared only fcattered, now take full poffeffion, and are interfperfed with moft beautiful vallies. New animals, fuch as the Argali, p. 12, and $M u / k$, p. 34, and feveral others, begin to fhew themfelves. Many European pla.:ts difappear, and others peculiar to A/ia, gradually mark the alteration *. This river is fcarcely inferior to the $O b$. It rifes from the two rivers $U l u=k e m$ and Bei-kem, in north lat. 5I. 30, long. III, and runs due north into the $I_{c y} S_{e a}$, forming a mouth filled with multitudes of infands: its channel for the moft part fony or gravelly: its courfe fwift: its finhes moft delicate: its banks, efpecially the eaftern, mountanous and rocky; but from the fort of Saiaenes to the river Dubtches, rich, black, and cultivated. It is fed by numbers of rivers. The Tungufca, and the lower Tungufca, are the moft noted. The firft rufhes, near Irkutz, out of the great lake Baikal, under the name of the Angara, between two vaft rocki, natural, but with all the appearance of being cut through by art, and tumbling over huge ftones in a bed a mile wide, and for a fpace nearly the fame $\dagger$. The collifion of the-waters againft the ftones is attended with a mof dreadful noife, which, with the magnificence of the fcenery, forms the mof awful approach imaginable to this facred water. A deity prefided over the lake; and no one dared call it by that degrading name, for fear of incurring the penalty of the difrefpect. Inftead of lake, the borderers ftyle it the Holy Sea; and its vâft mountains, the Holy Mountains. St. Nicholas prefides over them, and has

[^44]$\dagger$ Bell's Trazei's, 8vo. ed. i. 279.

Its annual
STENCH.

Jeneseiriver.

Lare Baikal.

Sealg.

Tonn of ManGDzEA.
here his chapel. The mountains ape cloathed with forefts: of large-trees on the lower parts; with fewer and leffer as they gain the heights. Thefe are the retreat of the Wild Boar, and variety of game. Its depth of water is very great : its clearnefs perfe尺 : free from illands, except the Olchon and Saetchia: navigable in all parts : and in therms, the waves like thofe of the fea. Its length is a hundred and twenty-live common leagues: its breadth from four to feven *. The Common Seal abounds in this lake. It is a finall variety, but fo fat as to appear almofe. thapelefs. Thefe animals muft have been here aboriginally; for, befides the vaft: diftance from the fea, their paffage muft have been entirely obftructed by the cataradts which intervene. I am got eight degrees beyond my plan; but I could not refift the defcription of this prince of lakes.

The Angai a runs nearly due north for a great way; then affumes the name of Tungufa, turns weftward, and joins the Fenefei in lat. 58. The lower Tungufa rifes far to the fouth-we, , approaches very near to the Lena, and falls into the Fenefei in lat. 65. 40. Above its junction. Atands the town of Mangazea, celcbrated for its great fair of furs of every kind, brought there by the furrounding pagans, who pafs the long winter in the chace. Many Ruffans have alfo migrated, and fittled here for the fame purpofe, and draw great profit from the fpoils of the animals. This neighborhood is, during fummer, the great refort of mulvitudes of fpecies of water-fowl. About the feaft of St. Peter, here Flora begins to difclofe her bcauties: the country is covered with the mof beautiful Sibirian flowers; many of which enliven the gardens of our more fouthern climate. The fowls now exult, and unite in emitting their various notes; none particularly melodious in themfelves, but together form a concert far from difagreeable + ; perhaps from the hearer being confcious that they are the notes of happinefs, at the enjoyment of the reviving rays of the fun.

In antient times, Mangazea, or, as it was then called, Mongozey, and Mongolmy, was feated near the mouth of the $\mathscr{T a z} \ddagger$; but was removed by the inhabitants into a milder climate, i. e. juft to the fouth fide of the ArEFic circle. Before that period it was a place of great trade, and was eagerly vifited from Archangel, through a complication of difficulties, by fea, by rivers, by land, by rein-drawn fledges, and by drawing the veffels from river to river over frequent carrying-places \|. Thefe tracts were certainly Le pais prefque inaccelfble à caufe de boües, $\mathfrak{F}$ de glaces, and, Le pais de tenebres, fpoken of by Marco Polo §, as the regions from whence the Chams of Tartary procured the richeft furs.

From the mouth of the Fenefei, the immenfe promontory Taimura Aretches
*Voyage en Siberie, i. $213 . \quad+$ Same, ii. $5^{6} . \quad \ddagger$ Same, $57 . \quad| |$ Same, and Purcbas, iii. 539. § In Bergeron's Collection, 160, 161 .

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## $I \subset Y \quad S \quad A \quad A$.

the eaft, it grows mountanous, covered with ftones, and full of coal. On the fummit of the chain, to the eaft of Simovie Retchinoïe, is an amazing bed of fnall Muffels, of a fpecies not obferved in the fubjacent fea. I think them brought there by fea-fowl, to eat at leifure; for it is not wonderful that numbers of objects of natural hiftory fhould efcape the eve in fuch a fea as this. Many parts again are low; but in moft places the fea near the fhore is rugged with pointed rocks. The coaft about the bay of cape $T \int c b u t k i$, the moft eaftern extremity of $A f f a$, is in fome places rocky, in others floping and verdant; but within land rifing into 2 dauble ridge of high mountains.

## Freezing ofthe

About the end of Augufs, there is not a day in which this fea might not be frozen; but in general it never efcapes later than the firft of OEFober. The thaw commences about the twelfth of $\mathcal{F}$ une, at the fame time with that of the mouth of the $\mathcal{F e n e f e} i^{*}$. From the great headlands, there is at all times a fixed, rugged, and mountanous ice, which projects farinto the fea. No fea is of fo uncertain and dangerous navigation: it is, in one part or other, always abundant in floating ice. During fummer, the wind never blows hard twenty-four hours from the north, but every part of the thore is filled for a vaft diftance with ice; even the ftreights of Bering are obftructed with it $\dagger$. On the reverfe, a ftrong fouth wind drives it towards the pole, and leaves the coaft free from all except the fixed ice. During winter, the fea is covered, to the diftance of at left fix degrees from land. Markoff, a hardy Cofac; on March 15 th, O.S. in the year 1715, attempted, with nine other perfons, a journey from the mouth of the fana, in 7 I north lat. to the north, over the ice, on nedges drawn by dogs. He went on fuccefsfully fome days, till he had reached lat. 77. or 78 : he was then impeded by moft mountanous ice. He climbed to the fummit of one of the Icebergs; and feeing nothing but ice as far as his eye could reach, returned on April 3d, with the utmoft difficulty: feveral of his dogs died, and ferved as food for the reft $\ddagger$.

I thall juft mention fome of the attempts made to pafs through the Icy Sea to that of Kamt/chatka. The firft was in 1636 , from the fettlement of rakutzk. The rivers from the Fana to the Kolyma were in confequence difcovered. In 1646 a company of Ruflian adventurers, called Promy/cbleni, or Sable-hunters, made a voyage from the Kolyma to the country of the Tcchut $k i$, and traded with thofe people for the teeth of the Walrus. A fecond, but unfuccefsful voyage was made in the next year; but in 1648 one Defclonew, on the 20th of Fune, began his memorable voyage, was fortunate in a feafon free from ice, doubled the $T$ fchut $/ k i-n o f s$;, arrived near the river Olutora, fouth of the river Anadyr, where he fuffered $\mathbf{O h i p}$ -

- Voy. en Siberie, ii. 29. Eaf Spitzbergen, 55.
$\dagger$ Pallas : Alfo Narrative of four Rufian failors caft away on $\ddagger$ Forfler's Obf. 8x.
wreck, but efcaped to enjoy the honor of his difcovery. Many other attempts were made, but the moft which the adventurers have done was to get from the mouth of one great river to another in the courfe of a fummer. I find very few names, ex cept of rivers, in a traCt fo vaft as it is, on account of its being fo little frequented. To the eaft of the promontory Taimura, that of St. Transfigurationis bounds the caft fide of the bay of Chatanga, in lat. 74. 40, long. from Ferro 125. Szuaitoi-nofs, or the Holy Cape, in lat. 73.15 , is a far-projecting headland, and, with the ifles of the Lena, and another intervening headland, forms two vaft bays. Out of the moft eaftern, into which the river Yana difcharges itfelf, one Schalourof, a broken Ruflian merchant, took his departure for an eaftern difcovery. He began his voyage in $\mathcal{F} u l y 1760$ from the Lena, but was fo obfructed with ice that he was forced into the Yana, where he was detained the whole winter, by the fame caufe, till fuly 2gth, 1761. He doubled the Swaitoi-nofs September the 6th; according to fome, faw to the north a montanous land, poffibly an illand. He was eight days in getting through the paffage between the continent and the ine of St. Diomede, which lies a little to the fouth eaft of the Nofs. He paffed with a favorable wind the mouths of the Indigirka and Alazeia, and getting entangled among the ice between the MedJiedkie Offrova, or Bear Iflands, was obliged to lay up his veffel in one of the mouths of the Kolyma during winter, where he fubfifted on rein-deer, which frequented thofe parts in great herds during the fevere feafon; and on various fpecies of falmon and trout, which were pufhing their way up the river before it was frozen. After this he made two other attempts. In the year 1763 he paffed the $P_{e} f z c a n o i-n o f s$, and got into a deep bay, called $T$ ccbaoîn Skaja Goûba, with the ille of Sabedei at its mouth; the great Schalot/koi-no/s to the eaft; and at its bottom the little river $\mathcal{T}$ chaounn, which difcharges itfelf here out of the land of the $T$ /chut/ki, fome of whom he faw on the fhore, but they fled on his appearance. He found no means of fubfifting in this bay, therefore was obliged to return to the Lena, and was greatly affifted in his paffage by the ftrength of the current, which uniformly fet from the eaft. In 1764 he made his laft attempt, and was, as is conjectured, fain by the $T$ chut $/ k i$; but whether he doubled the famous cape of that name, is left uncertain. A MS. map, which Doctor Palifas favored me with, places the montanous ifle before mentioned in lat. 75, oppofite to the cape Schalatkoi *. Thus clofes all the accounts I can collect of the voyages along
*This was fuppofed to have been part of the continent of America; but in 1768, M. Tclitfcheris, governor of Sibiria, put the matter out of doubt; for he fent there three young officers in the winter, on the ice. They found fome finall defart ifles, without the left appearance of land on the north; but on one they met with a fort of defence, formed of floating wood, on the fide of a precipice, but by whom formed, or againit what enemy, is hard to guefs. Pallas. MS.
this diftant coaft. Part is taken from Mr. Coxe's Ruffan Difcoveries*, and part from a manufcript for which I am indebted to the learned Profeffor before mentioned.

The wind which paffes over the ice of this polar fea, has rendered Sibiria the coldeft of inhabited countries : its effects may perhaps extend much farther. At Chamnanning, in Thibet, in lat. 30.44. (according to Major Rennel's claffical map) Mr. Bogle found, during winter, the thermometer in his room at $29^{\circ}$ below the freezing point. In the middle of April the ftanding waters were all frozen, and heavy fnows perpetually fell $t$. I have heard of ice even at Patna, in lat. 25.35 ; and of the Seapoys who had flept on the ground being found in the morning torpid. Near the fort of Argun, not higher than lat. 52, the ground feldom thaws deeper than a yard and a half $\ddagger$. At Iakut $k$, in lat. 62, the foil is eternally frczen even in fummer, from the depth of three feet below the furface. An inhabitant, who by the labor of two fummers funk a well to the depth of ninety-one feet, loft his labor, and found his fartheft fearches frozen $\S$. Birds fall down, overcome with the cold; and even the wild beafts fometimes perifh. The very air is frozen, and exhibits a moft melancholy gloom $\|$.

The Aurora Borealis is as common here as in Europe, and ufually exhibits

Lis.

Fish. fimilar variations : one fecies regularly appears between the north-eaft and eaft, like a luminous rainbow, with numbers of columns of light radiating from it: beneath the arch is a darknefs, through which the ftats appear with fome brilliancy. This fpecies is thought by the natives to be a forerunner of ftorms. There is another kind, which begins with certain infulated rays from the north, and others from the north-eaft. They augment little by little, till they fill the whole Kky , and form a fplendor of colors rich as gold, rubies, and emeralds: but the attendant phænomena ftrike the beholders with horror, for they crackle, fparkle, hifs, make a whiftling found, and a noife even equal to artificial fire-works. The idea of an electrical caufe is fo ftrongly impreffed by this defcription, that there can remain no doubt of the origin of thefe appearances. The inhabitants fay, on this occafion, it is a troop of men furioully mad which are paffing by. Every animal is fruck with terror ; even the dogs of the hunters are feized with fuch dread, that they will fall on the ground and become immoveable till the caufe is over T .

I am nightly acquainted with the fifh of the Icy fea, except the anadromous kinds, or thofe which afcend from it into the Sibirian rivers. The $O b$, and other

[^45]
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and Indigirßa. M. Gmelin and the Abbé D'Auteroche affure us, that Pikes, Perch, Ruffs, Carp, Bream, Tench, Crucians, Roach, Bleaks, and Gulgeons, are alfo met with in the $O b$, and different rivers of this country *. I cannot reconcile this to the former account given me by fo able a naturalift, to whom I owe this hiftory of the-Arclic fifh. The Salmo Kundha, Pallas Iim. iii. 706, abounds in the gulphs of the Icy fea, but does not afcend the rivers; and the Pleuronectes Glacialis, Pallas Itin. iii. 706, is frequent on the fandy fhores.

To review the inhabitants of the Arctic coafts, I Mall return as far as Finmark. I refer the reader to p. ixxix. for what I have faid of the Laplanders. The Samoieds line the coafls from the eaft fide of the White fea, as far (according to the $R u(f i a n$ maps) as the river $O b$, and even the Anabara, which falls into the $I c y$ fea in lat. 73. $3^{\circ}$; and poffefs the wildeft of ccuntries inland, as low as lat. 65 . After them fucceeds, to the eaft, a race of middle fize; and, extraordinary to fay, inftead of degeneracy, a fine race of men is found in the $T$ Tchuiki, in a climate equally fevere, and in a country equally unproductive of the fupports of life, as any part of thefe inhofpitable regions. The-manners of all are brutal, favage, and nearly animal; their loves the fame; their living fqualid and filthy beyond conception : yet on the fite of fome of thefe nations Mela hath placed the elegant Hyperborei: and our poet, Prior, giving free loofe to his imagination, paints the manners of thefe Arctic people in the following beautiful fiction, after defcribing the condition of the natives of the torrid zone.

And may not thofe, whofe diftant lot is calt Haft'ning from morn, and headiong driven from North beyond Tartary's extended Wafle; Where, thro' the plains of one continual day, Six mining months purfue their even way, And six fucceeding urge their dufky flight, Obfcurd with vapors, and o'erwhelm'd in night; May not, I afk, the natives of thefe climes (As anuals may inform fucceeding times) To our quotidian change of heaven prefer Their own vicifitude, and equal mare Of day and night, difparted thro' the year? May they not forn our fun's repeated race, To narrow bounds prefrib'd, and little face,
noon,
Half of our daily toil yet fcarcely done? May they not juitly to our climes upbraid Shortnefs of night, and penury of thade ? That, ere our weary'd limbs are juftly bleft With wholefome fleep, and neceffary reft, Another fun demands return of care, The remnant toil of yefterday to bear ? Whilf, when the folar beams falute their fight, Bold and fecure in half a year of light, Uninterrupted voyages they take To the remoteft wood, and fartheft lake;

[^46]
## $\begin{array}{llllllllllll}A & R & C & T & I & C & C & O & A & S & T & S .\end{array}$

Manage the fining, and purfue the courfe
With more extended nerves, and more continued force ?
And when declining day forfakes their fky ; When gathering clouds fpeak gloomy Winternigh, With plenty for the coming feafon bleft, Six folid months (an age) they live releas'd From all the labor, procefs, clamor, woe, Which our fad feenes of daily action know :

They light the fhining lamp, prepare the feaft, And with full mirth receive the welcome gueft: Or tell their tender loves (the only care Which now they fuffer) to the liftning Fair; And rais'd in pleafure, or repos'd in eafe, (Grateful alternates of fubltantial peace) They blefs the long nocturnal influence fhed On the crown'd goblet, and the genial bed.

With greater reality fpeaks that juff oblerver of nature, the naturalift's poet, of the inhabitants of this very country; 'as a true contraft to the foregoing lines:

Hard by thefe fhores, where farce his freezing They wafte the tedious gloom. Immers'd in frean
Rolls the wild $O$ by, live the laft of men; And half enliven'd by the diftant fun, That rears and ripens man as well as plants; Here human nature wears its rudeft form. Deep from the piercing feafon, funk in caves, Here, by dull fires, and with unjoyous chear, fuis,
Doze the grofs race. Nor fpightly jeft, nor fong, Nor tendernefs they know; nor auglt of life, Beyond the kindred bears that falk without. Till morn appears, her rofes dropping all, Sheds a long twilight bright'ning o'er the fellds, And calls the quiver'd favage to the chace.

Thomson.
This amazing extent of the Afratic Ruffran dominions remained undifcovered' to a very late period. The Czars, immerfed in fenfuality, or engaged in wars, had neither tafte or leifure to explore new countries. A plundering excurfion was made into it in the reign of Baficuitz I ; a fecond was made under his fuccelfor: but a ftranger, the celebrated Coffac, Yermac, driven from his country on the fhores of the Cajpian fea, pufhed his way with a refolute band as far as Orel, near the head of the Kama, on the weftern fide of the U:allian chain. There he met with one Strogonoff, a Ruffian merchant, recently fettled in thofe parts for the fake of the traffic of furs. He continued in that neighborhood the whole winter, and was fupplied by the Ruftians with all neceffaries. In the fpring he turned his arms againit Kutchum Chan, one of the moft powerful of the petty princes. of the country which now forms part of the government of Tobolki. In 158 r, he fought a decifive battle with the Chan, overthrew him, and feated himfelf on the throne. Finding his fituation precarious, he ceded his conquefts to $B a-$ filovitz, who feized on the opportunity of adding this country to his dominions: He fent $\mathrm{Y}_{\text {ermac a }}$ fupply of men. But at length his good fortune forfook him: He was furprized by the Chan; and, after performing all that a hero could do, perifhed in attempting to efcape.

The Ruljans, on the death of their ally, retired out of Sibiria; but they foon returned, recovered the conquefts made by Yermac, and, before the middle of the following century, added to their antient poffeffions a territory fourteen hundred and feventy leagues in length, and near feven hundred in breadth (without including the Ruflan colonies on the inland of Oonalaßkia, on the coalt of America*) yet is fo thinly peopled, and with fuch barbarians, as to add no ftrength to the empire by any fupplies to the army or navy. They are almoft torpid with inaction; lazy to the higheft degree, from their neceffary confinement to their ftoves during the long winter of the country. In that feafon, the ground is clad with deep fnow, and the froft moft tremendounly fevere. The fpring, if fo it may be called, is diftinguifhed by the muddied torrents of melting fnows, which rufh from the mountains, and give a fea-like appearance to the plains. Mifts, and rain, and fnow, are the variations of that feafon, and they continue even to the fourth of $\mathcal{F}$ une. The flort fummer is hot, and favorable to vegetation. Corn may be feen a foot high by the 22d of Gune; and the grafs is moft luxuriant. Culinary plants will fcarcely grow about Tobol/ki. Fruits of every kind, except a currant, are unknown. A fingle crab-like apple, raifed in a hot-houfe, was once produced there, nliced in a large dih, at a great entertainment, and ferved up with as much oftentation as we would in England a pine-apple.

The animals of Sibiria, the furs of which were the original object of its conqueft, are now fo reduced, that the Ruflans are obliged to have recourfe to England for a fupply from North America, which they add to their own ftock of furs exported into Cbina. Metals feem the faple trade of the country. Thofe of iron and copper are abundant and excellent. Gold and filver are found in feveral places, and in fuch abundance, as to form a moft important article in the revenues of Rufla. The copper mines of Kolyvan, from which thofe pretious metals are extracted, employ above forty thoufand people, moftly colonifts. The filver mines of Nertfchinf, beyond lake Baikal, above fourteen thoufand. The whole revenue arifing from the mines of different metals, is not lefs than £. $679,182.13^{5 .}$ †
Plants. Next to the difcovery of the new world, no place has added more to the entertainment of naturalifts than Sibiria. As has been before obferved, nature there affumes a new appearance in the animal world: it does the fame in the vegetable; at left, very few trees are found common to Europe and Afia. Let me jult mention the nobler kinds: the Oak, frequent as it is in Rufla and in Cafan, is not to be feen in this valt region nearer than the banks of the Argun

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dülus nana, $\mathrm{Sp} . \mathrm{Pl}$.677. Pconia tenuifolia, Sp. Pl. i. 748. Clematis integrifolia, Sp. Pl. i. 767. Adonis vernalis, Sp. Pl. i. 771. Aflragalus alopecuroides, Sp. Pl. ii. 1064. Hypericum Afcyron, Sp.Pl.ii. 1102. Echinops Ritro, Fl. Sib.il. 100. Veratrum nigrum, Fl. Sib. i. 76.

Tschutski. After the conqueft of Sibiria, the Tfcbutki were the firft people difcovered by the Ruflians, who were indebted to the adventure of Dcfchnew for the knowlege of them. They are a free and brave race, and in fize ard figure fuperior to every neighboring nation; tall, fout, and finely made, and 'with long and agreeable countenances; a race infulated frangely by a lefer variety of men. They wore no beards. Their hair was black, and cut hort, and covered either with a clofe cap, or hood large enough to cover the fioulders. Some hung beads in their ears, but none had the barbarifm to bore either nofes or lips. They wore a fhort and clofe frock, breeches, and fhort boots: forne had trowfers. The materials of their cloathing was leather admirably dreffed, either with or without the hair*. It is faid that at times they wear jackets made of the inteftincs of whales $\dagger^{-}$, like the Efkimaux; probably when they go to fea, for they excel their neighbors in fifhing, and ufe open boats covered with $\mathbb{R}$ ins $\ddagger$, and like the women's boats of the Greenlanders. They have alfo the lefler or kijak. They make ufe of fledges, and have large fox-like dogs of different colors, with long foft woolly hair, which are probably defigned for the draught. Some fay that they ufe rein-deer, of which they have valt abundance, but neither milk them nor kill them for food, preferring the flefh of fea animals, except one dies by chance, or is killed by the wolves. They are a brave and warlike people; are armed with bows and arrows; the laft pointed with ftone or bone. They had fpontoons headed with fteel, procured by traffic from the Ruffians; thefe they ufually flung over their right fhoulder; and a leathern quiver of molt elegant workmanfhip hung over the left $\S$. The Ruffians have often gained dear-bought victories over this brave people, but never were able to effect their conqueft. They retained an high fenfe of liberty, and conflantly refufed to pay tribute; and the ambitious European mifcalled them rebels. They will not on any confideration part with their weapons: poffibly a Tfchutki may think a difarmed man difhonored. Captain Соок, in his three hours vifit to them, found their attachment to their arms, notwithftanding they. willingly parted with any thing elfe, and even without the profpect of exchange. They treated him with great civility, but prudent caution: faluted him by bow-

[^47]ing and pulling off their caps, poffibly a piece of politenefs they learned from the Ru fians. They treated him with a fong and dance, and parted friends; but not without a moft remarkable and confequential event:-A year after the interview between Captain Cook and the $T T_{\text {chut }}$ ki, a party of thefe people came to the frontier poft of the Ruffians, and voluntarily offered friendhip and tribute. Thefe generous people, whom fear could not influence, were overcome by the civility and good conduct of our illuftrious commander : they miftook him and his people for Ruflans, and, imagining that a change of behaviour had taken place, tendered to their invaders a lafting league *. Poffibly the munificent emprefs may blum at the obligation conferred by means of Britiß fubjects, in procuring to her empire a generous ally, at the inftant her armed neutrality contributed to deprive us of millions of lawful fubjects.
From the fhortnefs of the interview little knowlege could be gained of their cuftoms. I fhall only obferve, that they bury their dead under heaps of ftones, or carnedds: feveral were feen here with the rib of a whale on the top inftead of a pillart; a proof of the univerfality of thefe memorials of the dead.

The country of the $T \int c h u t / k i$ forms the moft north-eafterly part of Afia. It is a peninfula, bounded by the bay of Tchaoun, by the Icy Sea, the ffreights of Bering, and the gulph and river of Anadir, which open into the fea of Kamt/chatka. It is a mountanous tract, totally deflitute of wood, and confequently of animals which require the Chelter of forefts. The promontory Schalotkoi, before mentioned, is the mof wefterly part. Whether it extends fo far north as lat. 74, as the Raffians place it, is very doubtful : there is the opinion of our great navigator againft it. From his own reafonings he fuppofed that the tract from the Indigir/ka, ealtward, is laid down in the maps two degrees to the northward of its true pofition $\ddagger$. From a map he had in his poffeffion, and from information he received from the $R u f i a n s$, he places the mouth of the Kowyma, in lat. 68, inftead of lat. 71. 20, as the Peterfourg map makes it. It is therefore probable, that no part of Afra in this neighborhood extends further than lat. 70 , in which we mult place the Schalot/koi Nofs; and after the example of Mr. Campbell, who formed his map of this country chiefly from the papers of Captain Bering §, give the land which lies to the eaft of that promontory a very fouthern trend. As Captain Cook had caufe to imagine that the former charts erred in longitude as well as latitude, it is probable that he reached within fixty miles of the Schalotkoi Nofs $\|$. There we find him on Auguf 2 gth $^{\text {th }} 1778$, and from this period are enabled, from his remarks, to proceed fecurely accurate.

- Voy. iii. 217. Harris's Voy. ii. 1016.
$\dagger$ Ellis's Narrative, i. 332. || Voyage iii. 270.
$\ddagger$ Voyage iii, 268. § In After

Tumuit.

Corrections in Geographybe Capt. Coor.

Serdze Kamen.

Capt. Bering.

East Care.

After croffing the Icy Sea from the molt extreme part of the coaft of America which he could attain, he fell in with land. It appeared low near the fea, and high inland; and between both lay a great lake. To a fteep and rocky point, nearly in lat. 68. 56, and long. 180. 51, his ne plus ultra on the Afiatic fide, he gave the name of Cape North; beyond which he could not fee any land, notwithftanding the weather was pretty clear. The rea, at three miles diftance from the Chore, was only eight fathoms deep : this, with a rifing wind, approaching fog, and apprehenfion of the coming down of the ice, obliging him to defift from farther attempts in thefe parts, he proceeded as near to the coaft as he could with prudence, towards the fouth-eaft, and found it retain the fame appearance. In lat. 67.45 , he difcovered a fmall ifle, about three leagues from the main, with fteep and rocky fhores, on which he beftowed the name of Burney, in honor of one of his officers; gratefully immortalizing the companions of his voyage, in this and other inftances. After paffing the inland, the continent inland rofe into mountains of confiderable height, the termination of the great chain I before defcribed.
In lat. 67.3 , long. 188. 11 , he fell in with Serdze Kamen *, a lofty promontory, faced towards the fea with a fteep rocky cliff. To the eaftward the coaft continues high and bold, towards the North Cape low, being a continuation of the Aretic flats. This was the northern limit of the voyage of another illuftrious navigator, plan of difcovery in thefe parts as our great countryman was in the late voyage. He was in the fervice of Peter the Great; who, by the ftrength of an extenfive genius, conceiving an opinion of the vicinity of America to his Afiatic dominions, laid down a plan of difcovery worthy of fo extraordinary a monarch, but died before the attempt was begun; but his fpirit furvived in his fucceffor. Bering, after 2 tedious and fatiguing journey through the wilds of Sibiria, arrived in Kamtfchatka, attended with the fcanty materials for his voyage, the greateft part of which he was obliged to bring with him through a thoufand difficulties. Several of the circumftances of his adventures will be occafionally mentioned $t$. I fhall only fay here, that he failed from the river of Kamtfchatka on Fuly 15th, 1728 ; on the 15 th of Auguf faw Serdze Kamen, or the heart-haped rock, a name beftowed on it by the firft difcoverer.

From Serdze Kamen to a promontory named by Captain Cook Eaf Cape $\ddagger$, the land trends fouth-eaft. The laft is a circular peninfula of high cliffs, projecting

[^48]
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merited this memorial. It lies in lat. 63.4 , long. 192. An anonymous inlet, imperfectly feen, and lying in lat. 64. 24, long. 190. 3 I , in mid-channel, com-pletes the fum of thofe feen remote from land between the ftreights and the ifle of St. Laurence. As to thofe named in the chart given by Lieut. Synd, who in 1764 made a voyage from Kamt/chatka towards Bering's Streights, they feem to exift only in imagination, notwithftanding the Rufian calendar has been exhaufted to find names for them. St. Agatbon, St. Titus, St. Myron, and many others, fill the fpace palled over by Capt. Cook, and which could not have efcaped the notice of his fucceffor *.

The land from Bering's Tfchut $/ k i$ Nofs trends vaftly to the welt, and bounds on that fide the valt gulph of Anadir, into the bottom of which the river of the fame name empties itfelf; and limits the territory of the $\mathcal{T}$ chut $/ k i$.

From thence is a large extent of coaft trending fouth-weft from Cape St. Thade deus, in lat. 62. 50, long. 180, the fouthern boundary of the gulph of Anadir, to Oljutorkoi $N o f s$, beyond which the land retires full weft, and forms in its bofom a gulph of the fame name. Off Thaddeus Nofs appeared, on Fune 29th, abundance of walrufes and great feals; and even the wandering albatrofs was feen in this high latitude + . Between this and the $P_{\text {engin }} / \mathrm{k}$ gulph, at the end of the fea of $O c h o t / k$, is the ifthmus which unites the famous peninfula of Kamt $\int c h a t k a$ to the main land, and is here about a hundred and twenty miles broad, and extends in length from 52 to 61, north lat. The coafts are often low: often faced with cliffs, in many parts of an extraordinary height; and out at fea are rude and fpiring rocks, the haunts of leonine feals, whofe dreadful roarings are frequently the prefervation of mariners, warning them of the danger, in the thick fogs of this climate $\ddagger$. The coalt has but few harbours, notwithftanding it juts frequently into great headlands. The moft remarkable are, the North Head, with its needle rocks, at the entrance of the bay of Awatcha (Voyage, vol. iii. tab. 58.); Cheepoonfkoi Nofs, ftill further north, engraven in vol. ii. tab. 84; and Kronot/koi Nofs, with its lofty cliffs. The peninfula widens greatly in the middle, and lellens almoft to a point at Cape Lofatka, which flopes into a low flat, and forms the fouthern extremity of the country. The whole is divided lengthways by a chain of lofty rocky mountains, frequently covered with fnow, and fhooting into conic fummits, often fmoking with vulcanic eruptions. They have broken out in numbers of places : the extinct are marked by the craters, or their broken tops. The vulcano near Awatcha $\S$, that of Tolbatchick, and that of the mountain of Kamt/chatka $\|$, are the modern. They burß out fometimes in whirlwinds of flames,

- Coxe's Rufian Difcovery Map, p. 300.—Voy. iii. 503. + Voyage iii. 241. $\ddagger$ Defor. Kamtfch. 429. § See tab. 85, Voyage, vol. iii. ; and defcription of its eruption, p. 235. \See Defcr. Kamtfchatka, tab. xV. P. 342.
and burn up the neighboring forefts: clouds of fmoke fucceed, and darken the whole atmofphere, till difperfed by Ghowers of cinders and afhes, which cover the country for thirty miles round. Earthquakes, thunder, and lightning, join to fill the horror of the feenery at land; while at fea the waves rife to an uncommon height, and often divide fo as to thew the very bottom of the great deep *. By an event of this kind was once expofed to fight the chain of fubmarine mountains which connected the Kuril ifles to the end of this great peninfula. I do not learn that they overflow with lava or with water, like the vulcanos of Europe. There are in various parts of the country hot fprings, not inferior in warmth to thofe of Iceland $\dagger$ : like them they in fome places form fmall jets d'eaux, with a great noife, but feldom exceed the height of a foot and a half $\ddagger$.

The climate during winter is uncommonly fevere; for fo low as Bolcheret/k, lat. 52,30 , all intercourfe between neighbors is ftopped. They dare not ftir out for fear of being froft-bitten. Snow lies on the ground from fix to eight feet thick as late as May; and the forms rage with uncommon impetuofity, owing to the fubterraneous fires, the fulphureous exhalations, and general vulcanic difpofition of the country. The prevaling winds are from the weft, which palfing over the frozen wilds of Sibiria and Tartary, add keennefs and rigour to the winters of Kamtfchatka. Winter continues till the middle of fune: from that month to the middle of September may be called fummer, if a feafon filled with rain, and milts, and ungenial kies, merits that name. Rye, barley, and oats, are committed to the earth, but feldom come to perfection. The fubfiftence of the $R_{u} f_{\text {rans }}$ and Coflacks depends therefore on importation from Sibiriá. In fome parts grafs grows to a great height, and hay of uncommon nutriment is harvefted for the fattening of cattle §. Grain is a luxury for the colonifts only : the natives have other refources, the effects of neceffity. Excepting in few places, this is a land of incorrigible barrennefs. As foon as the fea otters and other pretious furs are exhaufted, Kamt/chatka will be deferted by the Ruflans, unlefs they fhould think fit to colonize the continent of America, which the furs of that country, or the profpect of mineral wealth, may induce them to attempt.

Few ores have as yet been difcovered in this peninfula: not that it wants either copper or iron; but every neceflary in thofe metals is imported at fo cheap a rate, that it is not worth while for a people ignorant in mining and fmelting to fearch for them in the almoft inacceffible mountains.

From the climate and the barren nature of Kamt/chatka, the reader need not be

Hot Springs.

Climate.

Orrs.

Plants,

[^49]furprized at the poverty of its Flora. It muft not be fuppofed that the fcanty enumeration of its plants arifes from a neglect of fearch, or the want of a botanift to explore its vegetable kingdom. Steller, a firf-rate naturalift of Germany, who attended Bering in his laft voyage, refided here a confiderable time after his efcape from that unfortunate expedition, exprefsly to complete his remarks in natural hiftory. The tefult of his botanical refearches was communicated to Doctor Gmelin, another gentleman fent by the Ruffian government to examine into the natural hiftory of its dominions. Europe has from time to time been ranfacked for men of abilities to perform this meritorious miffion, and the fruits of their labors have been liberally communicated to a public thirfting for knowlege. The names of Muller, Gmelin, Steller, De L'Isle, Krashaninicoff, Guildenstaedt, Lepechin, and Pallas, will ever be held in refpect, for adding to the ftock of natural knowlege. But how much is it to be lamented that England wants a patron to encourage the tranflation of their works, locked up at prefent in Ruffian or German, concealed from the generality of readers, to the great fuppreffion of knowlege!

I here give a lift of the plants of Kamtfchatka in fyftematic order; and from it annex an account of the ufes made of them by the natives of the peninfula. I muft not omit my thanks to the Rev. Mr. Lightfoot, and the Rev. Mr. Hugh Davies of Beaunaris, for the great affiftance I received from them. Let me premife, that the plants marked $A$. are common to America and Kamt $/$ chatka; with B. to Bering's Ine; with E. to England or Scotland; and with Virg. thofe which extend to Virginia, or the eaftern fide of North America ${ }^{*}$. It is remarkable, that the European plants, which had deferted Sibiria about the Fenefei, appear here in great abundance.
Veronica. Gmel. Sib.iii. 219. No 33. Sanguiforba canadenfis. $A$.
V. incana.
V. ferpyllifolia. E.

Iris fibirica.
Iris. Gm. Sib. i. 30. $\mathrm{N}^{\circ} 28$. Dactylis. Gm. Sib.i. 1 30. $\mathrm{N}^{\circ} 68$.
Bromus criftatus. Amoen. Acad. ii. 312.
Triticum. Gm. Sib. i. $119 . \mathrm{N}^{\circ} 56$.
Plantago major. A. E. Virg.
Pl. afiatica.

Cornus fuecica.
Pulmonaria virginica. A. Am. Acad. ii. 310.

Cerinthe major. $A$.
Cortufa Gmelini. Am. Acad. ii. 313. Anagallis. Gm. Sib. iv. 87, 37 .
Azalea procumbens. $E$.
Phlox fibirica. Am. Acad.ii. 314. Convolvulus perficus. Ibid.

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Anemone narciffifolia.
Anem. ranunculoides.
Anem. Dichotoma. Am. Acad. ii. 3 ro
Thalictrum flavum. E.
Ranunculus.
Troillius europeus. E.
Helleborus trifolius. Am. Acad.ii. 327.
Bartfia pallida. - - - ibid. Orchis bifolia. E. Virg.
Pedicularis verticillata.
Linnæa borealis. Virg.
Myagrum fativum. $E$.
Thlafpi burfa paftoris, E. Virg.
Arabis grandiflora.
Turritis hirfuta. E.
Geranium pratenfe. E.
Lathyrus. Gm. Sib. iv. 85.
Aftragalus alopecuroides. Am. Acad. ii. $33^{\circ}$.
Aftr. alpinus.
Altr. Gm. Sib. iv. 44. $\mathrm{N}^{\circ} 58$.
Aftr. phyfodes. Am. Acad. ii. 329.
Hypericum. Gm. Sib. iv. 279. $\mathrm{N}^{\circ} 3$.
Picris hieraciodes. E.
Sonchus. Gm. Sib. ii. $13 . \mathrm{N}^{\bullet} 13$.
Prenanthes repens. Am. Acad. ii. 33 r.
Serratula noveboracenfis. Virg.
Circium. Gm. Sib. ii. 69. $\mathrm{N}^{\circ} 49$.
Cacalia fuaveolens. Am. Acad. ii. 3 ro.
Artemifia vulgaris. A.E.
Gnaphalium margaritaceum. E. Virg.
Erigeron acre. A.E.
Tuffilago. B. Gm. Sib. ii. 145. $\mathrm{N}^{\circ} 125$.
After. A. B. Gm. Sib.ii. 175. $\mathrm{N}^{0} 145$.
After. - $\quad$ I86. $\mathrm{N}^{\circ}{ }^{152}$.
Solidago virga aurea. A.B.E.
Solidago. Gm. Sib. ii. 170. $\mathrm{N}^{\circ} 190$.
Cineraria fibirica.
Pyrethrum. A. B. Gm. Sib. ii. 203: $\mathrm{N}^{\circ}{ }^{170}{ }^{\circ}$

Orchis latifolia. E.
Ophrys Camticatca. Am. Acad.in. 332:
Drachontium Camtfcatcenfe. Am.Acad. ii. 332 .

Carex panicea. E. Virg.
Carex. Gm. Sib. i. 139. No 77.
Betula alba. E.
Betula nana. E. Virg.
Betula alnus. A. E. Virg.
Urtica dioica. $E$.
Sagittaria latifolia. E.
Pinus cembra.
Pinus Larix. A. Virg.
Pinus picea.
Salix retufa.
Salix viminalis. E.
Empetrum nigrum A. E. Virg.
Populus alba. $E$.
Juniperus communis. E.
Equifetum hyemale. E. Virg.
Afplenium Rhyzophyllum. Am. Acad.ii. 3II. Virg.
Lycopodium rupeftre. Virg. . ibid.
Lycop. Sanguinolentum. ii. 333. Senecio. B. - - 136. $\mathrm{N}^{\circ} 118$.

Usss. The Kamt/chatkans boalt of their fkill in the knowlege of the application of the vegetable kingdom to the ufes of mankind. The Sibirians cure the venereal difeafe by a decoction of the root of the Iris Sibirica, which acts by purging and vomiting. They keep the patient eight days in a fove, and place him in a bed of the leaves
of the ArEtium Lappa, or common Burdock, which they frequently chànge till the cure is effected.

The Heracleum Panaces, or Sweet grafs, was a plant of the firft ufe with the Kamtfcbatkans, and formerly made a principal ingredient in all their difhes; but fo powerful does the love of hot liquors fway with the Ruffans, that, lince their arrival, it is entirely applied to diftillation. The beginning of $\mathfrak{F} u l y$ the more fucculent ftalks and leaves are gathered; after the down is fcraped off with fhells, they are layed to ferment ; when they grow dry, they are placed in bags, and in a few days are covered with a faccharine powder : only a quarter of a pound of powder is collected from a pood, or thirty-fix pounds of the plant, which taftes like liquorice. They draw the firit from it by fteeping bundles of it in hot water; then promote the fermentation in a fmall veffel, by adding the berries of the Lonicera Xylofteum, Sp. Pl. i. 248, and Vaccinium uliginofum, 499. They continue the procefs by pouring on more water, after drawing off the firft: they then place the plants and liquor in a copper ftill, and draw off, in the common manner, a fpirit equal in ftrength to brandy*. Accident difcovered this liquor. One year, the natives happening to collect a greater quantity of berries of feveral kinds, for winter provifion, than ufual, found in the fpring that a great quantity had fermented, and become ufelefs as a food. They refolved to try them as a drink, and mixed the juice with water. Others determined to experience it pure ; and found, on trial, the ArEfic beatitude, drunkennefs t. The Ruffians caught at the hint, introduced diftillation, and thus are enabled to enjoy ebriety with the production of the country.

The Moucho-more of the Rufians, the Agaricus mufarius, Sp. Pl. 1640, is another inftrument of intoxication. It is a fpecies of Toadftool, which the Kamtfchadales and Koriaks fometimes eat dry, fometimes immerfed in a fermented liquor made with the Epilobium, which they drink notwithftanding the dreadful effects. They are firft feized with convulfions in all their limbs, then with a raving fuch as attends a burning fever; a thoufand phantoms, gay or gloomy (according to their conftitutions) prefent themfelves to their imaginations: fome dance; others are feized with unfpeakable horrors. They perfonify this mufhroom; and, if its effects urge them to fuicide, or any dreadful crime, they fay they obey its commands. To fit themfelves for premeditated affafinations, they take the Moucho-more. Such is the fafcination of drunkennefis in this' country, that nothing can induce the natives to forbear this dreadful potion $\ddagger 1$
*Voyage, iii. 3 37. $\dagger$ Gmelin, Fl. Sib, i. 217. $\ddagger$ Hif. Kamtcliatka, 992 100.

Saranne. As a food, the Saranne, or Lilium Kamtfcbatcenfe, is among the principal. Its rosts are gathered by the women in $A u g u f$, dried in the fun, and layed up for ufe : they are the beft bread of the country; and after being baked are reduced to powder, and ferve inftead of flour in foups and feveral difhes. They are fometimes wafhed, and eaten as potatoes; are extremely nourifhing, and have a pleafant bitter tafte. Our navigators boiled and eat them with their meat. The natives often parboil, and beat it up with feveral forts of berries, fo as to form of it a very agreeable confection. Providentially it is an univerfal plant here, and all the grounds bloom with its flower during the feafon*. Another happinefs remarked here is, that while figh are fcarce, the Saranne is plentiful; and when there is a dearth of this, the rivers pour in their provifions in redoubled profufion. It is not to the labors of the females alone that the Kamt/chatkans are indebted for thefe roots. The ceconomic Moufe, p. 134. A. faves them a great deal of trouble. The Saranne forms part of the winter provifions of that little animal: they not only gather them in the proper feafon, and lay them up in their magazines, but at times have the inftinct of bringing them out, in funny weather, to dry them, leaft they bould decay $t$. The natives fearch for their hoards; but with prudent tendernefs leave part for the owners, being unwilling to fuffer fuch ufeful caterers to perifh.

Let me add, that Steller enumerates other fpecies of the Lilly genus, which I believe are edible. Every fpecies of fruit, except berries, is denied to this unkind climate ; but the inhabitants ufe various forts of them as wholefome fubftitutes, which they eat freh, or make into palatable jams, or drefs with their fifh, either frefh or when preferved for winter ufe: fuch are thofe of the Lonicera Xylofeum or Gimolof, a fort of Honeyfuckle: the Rubus Chamamorus, Morochka, or Cloudberries: the Vaccinium Myrtillus, Uliginofum, Vitis Idaa, and Oxycoccos, or Bilberries, Marfh Bilberries, Red Bilberries, and Cranberries: the Empetrum Nigrum, or Heathberries : the Prunus Padus, or Bird Cherry: Cratagus Oxyacantha, or White Thorn with red and with black berries: the funiperus Communis, or Common Juniper: and finally, of thofe of the Sorbus Aucuparia, or Common Service.

Of the Epilobium Latifolium, Sp. Pl. 494, or Kipri, is brewed a common beverage; and, with the affiftance of the Sweet Plant, is made an excellent vinegar: the leaves are ufed as a tea, and the pith is mixed with many of the difhes, and ferved up green as a defert. When the infufion of it is mixed with the Sweet Herb in the diftillation, much more brandy is procured than if water alone is ufed $\ddagger$.

[^51]The

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pofes. Of the Betula alba, or Common Birch, a tree fo ufeful to thefe northern nations, they make their fledges and canocs; and cut the frefh bark into fmall nices like vermicelli, and eat it with their dried caviar : they alfo tap the trees, and drink the liquor without any preparation. With the bark of the alder they dye their leather ; but that, and every tree they have near the coaft, is funted, fo that they are obliged to go far inland for timber of proper fize.

I mult add, as a vegetable of ufe in œconomics, the Triticum, Gm. Sib.i. in9, $\mathrm{N}^{\circ}{ }_{5} 6$, which grows in great quantities along the Mores, which they mow, and work into mats, which ferve for bed clothes and curtains; into mantles, fmooth on one fide, and with a pile on the other, which is water-proof. They alfo make with it facks, and very elegant bafkets; thefe, as well as the mats, they ornament with fplit whale-bones, and work into variety of figures *. The Urtica dioica, or Common Nettle, is another plant of great ufe: this they pluck in Auguf or September, tie in bundles, and dry on their huts: they tear it to pieces, beat, and clean it; then fpin it between their hands, and twift the thread round a fpindle. It is the only material they have to make their nets; which, for want of fkill in the preparation, will rot, and laft no longer than one feafon $t$.
Quadrupeds.
In refpect to the quadrupeds of this country, I have reafon to think, from the great affiftance I have received from the $R u / f i a n$ academifts, or their labors, that my account of them, in my zoological part of this Work, can receive little addition. I requeft that the Browin Bear, $\mathrm{N}^{\circ} 20$, may be fubftituted inftead of the Black, $\mathrm{N}^{\circ} 19$, as the native of $\operatorname{Kamt/chatka.~I~was~led~into~the~miftake~by~the~}$ fufpicions of a moft able naturalift. I am fince informed, by the beft authority (that of Captain King $\ddagger$ ) that it is the brown fpecies which is found there; that they are carnivorous $\S$, and prey at times on the Argali or wild fheep; but do not attack man, except urged by extreme hunger, or provoked by wounds, or by. the flaughter of their young; when nothing but their death can fecure the fafety of the perfons who fall in their way. In the firft cafe, they will hunt mankind by the fcent, and facrifice them to their want of food, which ufually is filh.or berries.-The Kamt/chatkans never read Pope, but obferve his advice :

Learn from the Bealts the phyfic of the field.
The Bear is their great mafter; and they owe all their knowlege in medicine and furgery, and the polite arts, to this animal. They obferve the herbs to which he has recourfe when he is ill, or when he is wounded, and the fame fimples prove

[^52]equally reftorative to the two-legged Urfine race. The laft even acknowlege the Bear as thẹir dancing-mafter, and are moft apt fcholars in mimicking his attitudes and graces*. I was informed by one of the gentlemen who was on the voyage, that the SeaOtter, $\mathrm{N}^{\circ} 36$, was feen on the firftarrival on the American coaft; but, as it is not mentioned in that excellent and magnificent work till the arrival of the fhips in Nootka found, I will not infift on the accuracy of its latitude.

The Argali yields a difh of moft excellent flavor. The natives work the horns into fpoons, fmall cups, and platters; and have frequently a fmall one hanging at their belts, by way of a drinking horn, in their hunting expeditions $\dagger$.

The Dogs are like the Pomeranian, but vaftly larger; the hair rather coarfer, and the ufual color light dun, or dirty creme-color. Bitches are never ufed for the draught, but dogs alone; which are trained to it from their puppy-hood, by being tied with thongs to ftakes, with their food placed at a fmall diftance beyond their reach; fo that by conftant laboring and ftraining, they acquire both frength of limb and habit of drawing $\ddagger$.

The leonine and urfine Seals, and the Manati, muft have been on their mirgrations during the time the navigators vifited this peninfula; for they faw not one of thofe curious animals. The common Seals, being fationary, were met with in great numbers. The bottle-nofed Seal, or Sea-Lion of Lord Anfon, is totally unknown in thefe feas. I refer the reader, for a view of the quadrupeds and birds of Kamtfchatka, to the catalogue which Captain King honored with a place in the third volume of the Voyage §. I fhall only add, that the clafs of Auks is far the moft numerous of any, and contains fix fpecies unknown to $E_{u-}$ rope; that the only bird which has efcaped me is a fmall Blue Petrel $\|$, feen in numbers in about lat. 59.48 , off the northern part of the peninfula.

Kamtfchatka is deftitute of every fpecies of ferpent and frog. Lizards are very frequent, and are detefted by the natives, who believe them to be fpies fent by the infernal gods to examine their actions, and predict their deaths. If they catch one, they cut it into fmall pieces, to prevent it from giving any account of its miffion: if it efcapes out of their hands, they abandon themfelves to melancholy, and expect every moment their diffolution; which often happens through fear, and ferves to confirm the fuperftition of the country $\mathbb{I}$. The air is very unfavorable

Argali

Dogs.

Seals.

Reptiles:

INSECTS

$\begin{array}{lllllllllll}\mathrm{K} & \mathrm{A} & \mathrm{M} & \mathrm{T} & \mathrm{S} & \mathrm{C} & \mathrm{H} & \mathrm{A} & \mathrm{T} & \mathrm{K} & \mathrm{A} .\end{array}$
to infects, except lice and fleas, which are in all their quarters; and, filthy to relate! are eaten by thefe beaftly people *. Bugs are acquifitions of late years, imported into the bay of Awatcha.

Fish.

Whale.

The filh of Kamtfchatka are with difficulty enumerated. There does not feem to be any great variety of genera; yet the individuals under each fpecies are found in moft aftonifhing abundance. Providence hath been peculiarly attentive to the natives of this peninfula, by furnihing them in fo ample a manner, who for the greater part muft for ever be deprived of fupport derived from grain and cattle. The vegetables they have are fufficient to correct the putrefcent quality of the dried fifh, and often form an ingredient in the dißhes; which are prepared different ways. The foukola is made of the falmon kind, cut into fix pieces, and dried either in the open air or fmoked : the roes are another difh in high efteem with them, either dried in the air, or rolled in the leaves of different plants, and dried before the fire. They can live a long time on a fmall quantity of this food, and eat with it the bark of birch or willow trees, to affift them in fwallowing a food fo very vifcid; but their ambrofial repaft is the Huigul, or filh flung into a pit till it is quite rotten, when it is ferved up in the ftate of carrion, and with a ftench unfupportable to every nofe but that of a Kamtfchatkan $\dagger$.

The Fin Whale, Br. Zool. iii. $\mathrm{N}^{\circ} 18$, is very frequent, and is of fingular ufe to the inhabitants. They eat the flefh; preferve the fat for kitchen ufe and for their lamps; with the corneous lamine they few the feams of their canoes, and make nets for the larger fort of filh; they form the fliders of their ीledges with the under jaw-bones, and likewife work them into knives; with the blade-bones, worked down to a fharp edge, they form fcythes, and moft fuccefsfully mow the grafs. The $T$ chut $/ k i$ verify the relation of Pliny $\ddagger$, and, like the Gedrof of old, frame their dwellings wita the ribs §; with the ligaments they make excellent fnares for different animals; with the inteftines dried, cleaned, and blown, they make bags for their greafe and oil; and with the fkins the foles of their fhoes, and ftraps and thongs for various purpofes. The TTchut $k i$ take thefe animals by harpooning; the Oloutores, in nets made of thongs cut out of the fkins of the Walrus; and the Kamtcchatkans, by thooting them with darts or arrows, the points of which, having been anointed with the juice of the Zgate; a fpecies of Anemone and Ranunculus $\|$, are fo noxious as to bring fpeedy death from the flighteft wound, like the celebrated poifon of the Paragua Indians. The vaft animals in queftion,

[^53]
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Every fpecies of Salmon dies in the fame river or lake in which it is born, and to which it returns to fpawn. In the third year, male and female confort together, and the latter depofits its fpawn in a hole formed with its tail and fins in the fand; after which both fexes pine away, and ceafe to live. A filh. of a year's growth continues near the place, guards the fpawn, and returns to the fea with the new-born fry in November*. The Salmons of this country fpawn but once in their lives : thofe of Sibiria and Europe, the rivers of which are deep, and abound with infect food, are enabled to continue the firft great command of nature during the period of their exiftence. In Kamt/chatke the rivers are chilly, fhallow, rapid, full of rocks, and deftitute of nourifhment for fuch multitudes: fuch therefore which cannot force their way to the neighborhood of the tepid ftreams, or get back to the fea in time, univerfally perifh; but Providence has given fuch refources, in the fpawners, that no difference in numbers is ever obferved between the returning feafons. It is fingular, that neither the lakes or rivers have any fpecies of filh but what come from the fea. All the lakes (for this country abounds with them) communicate with the fea; but their entrance, as well as that of many of the rivers, is entirely barred up with fand brought by the tempeftuous winds, which confine the firh moft part of the winter, till they are releafed by the forms taking another direction.
Tshawytscha. The fpecies which appears firl is the T/bawyt/cha. This is by much the largeft ; it weighs fometimes between fifty and fixty pounds, and its depth is very great in proportion to the length. The jaws are equal, and never hooked : the teeth large, and in feveral rows : the fcales are larger than thofe of the common
$\dagger$ P. D. 12.
P. 16.
V. 10.
A. 15. Salmon; on the back dufky grey, on the fides filvery: the fins bluifh white, and all parts unfpotted : the tail is lunated : the flefh, during its refidence in the fea, is red; but it becomes white in frefh waters. It is confined, on the eaftern fide of the peninfula, to the river of Kaintfchatka and Awatcha; and on the weftern to the Bolchaia-reka, and a few others; nor is it ever feen beyond lat. 54. It enters the mouths of the rivers about the middle of May, with fuch impetuofity as to ralfe the water before it in waves. It goes in far lefs numbers than the other fpecies; is infinitely more efteemed; and is not ufed as a common food, but referved for great entertainments. The natives watch its arrival, which is announced by the rippling of the water; take it in ftrong nets; and always eat the firft they take, under a notion that the omiffion would be a great crime.

[^54]The Narka is another fpecies, called by the Rusfians, Krafnaya ryba, from the intenfe purplith rednefs of the flefh. It is of the form of the common Salmon; but never exceeds fixteen pounds in weight. When it firf enters the rivers it is of a filvery brightnefs, with a bluih back and fins: when it leaves the fea the teeth are fmail, and jaws frait; but after it has been fome time in the fref water, the jaws grow crooked (efpecially in the male) and the teeth large. It begins to afcend the rivers in valt numbers in $\mathcal{F}$ une; penetrates to their very fources; and. returns in September to the fea, firft refting for fome time in the deep parts of the intervening lakes. It is taken in nets, either in the bays, as it approaches the rivers, or in the rivers, after it has quitted the fea *.

The Kyjutch, or Bjelaya ryba, or White Fifh of the Ruffians, afcends the rivers in $\mathcal{F u l y}$, particularly fuch as are difcharged from the inland lakes, and remain till December, when all the old finh perifh, and the fry take to the fea. The upper jaw of the male, in its laft period, becomes crooked. This fpecies has the form of a common Salmon, but never attains three feet in length. It is of a filvery glofly color, fpotted about the back; but in the rivers acquires a reddifh caft : the jaws are long and blunt: the teeth large: the flefh is reddinh before it quits the fea; but in the frefh water grows white. It is reckoned the moft excellent of the light-colored fifh.

The Keta or Kayko, in form and fize refembles the laft ; but the head is fhorter and more blunt: the tail is lunated: the flefh white : the color of the fcales a filvery white: the back greenifh; and the whole free from fpots. It afcends the rivers in $\mathcal{F} u l y$, and the fifhery continues till Ocfober. This fpecies is fourd in great abundance; and is fo common, that the foukola made with it is called houfhold bread.

The Gorbufcha, or Hunch-back, arrives at the fame time with the laft. In form it refembles the Grayling: never exceeds a foot and a half in length : is of a filvery color, and unfpotted : the tail forked: the fefh white. After it has been fome time in the frefh water it changes its thape (the male efpecially) in a moft furprizing manner. The jaws and teeth grow prodigiounly long, efpecially the upper, which at firft is fhorteft, but foon fhoots beyond the under, and grows crooked downwards; the body becomes emaciated, and the meat bad: but what is moft characteriftic, an enormous bunch rifes juft before the firft dorfal fin, to which it owes its name. Its flefh is bad; fo that this fifh falls to the fhare of the dogs.

- This fecies is defcribed (Voyage, iii. 351) under the name of Red Fi/h; the preceding, in p. 350, under that of Tchavitfu.

Nerka.
P. D. 11 .
P. 16.
V. 10.
A. 15.

Kysutch.
P. D. ir.
P. 14.
V. 10.
A. 14.

## Keta.

P. D. 14.
P. $15^{-}$
V. II,
A. 18.

## Gorbuscha.

P. D. 12.
P. 15.
V. 10.
A. 15.

Malma.
P. D. 12.
P. 14 .
V. 8.
A. 10 .

The Malma, or Golet of the Rufians, grows to the weight of twenty pounds, and to the length of about twenty-eight inches. It is the moft flender and cylindrical of all the genus. The head refembles that of a trout : the fcales are very fmall : the back and fides bluinh, with fcattered fpots of fcarlet red : the belly white : ventral. and anal fins red: tail flightly forked. This and the two following are fporadic, going difperfedly, and not in Moals. It afcends the rivers with the laft, and attains their vely fources. It feeds on the fpawn of the other fpecies, and grows very fat. The natives falt thofe they take in autumn, and preferve frozen thofe which are caught when the frofts commence *.

Milktschitsch.
P. D. II.
P. 14.
V. 10.
A. 13.

Mykiss.
P. D. 12.
P. 14 .
V. 10.
A. 12.

Kunsha.

Inghaghitsh.
P. D. 8, 9
P. 12.
V. 10.
A. 12.

The Milktfchitfch is a fcarce fjecies, in form like a young Salmon; but the fcales larger in proportion, and the body more flat: it never exceeds a foot and a half in length : is of a filvery white, with a bluif back : nofe conical : jaws equal: tail nightly forked.

The $M y k i f s$, appears at firf very lean, but grows foon fat: it is very voracious: feeds not only on fifh, but infects and rats, while fwimming over the rivers; and is fo fond of the berries of vaccinium vitis idea, that it will dart out of the water, and fnatch at both leaves and berries, which hang over the banks $\dagger$. In fhape it refembles a common Salmon : feldom grows above two feet long: has large fcales, blunt nofe, and numerous teeth: the back is'dufky, marked with black fpots; and on each fide is a broad band of bright red : the belly white. It is a fpecies of excellent flavor; but is fcarcer than the other kinds. Its time of arrival is not known: M. Steller therefore fufpects that it afcends the rivers beneath the ice $\ddagger$.

The Kun/ba, mentioned in page crv, frequents the bays of this country, but never advances inland; and grows to the length of two feet: the nofe is fhort and pointed : the back and fides dufky, marked with great yellowifh fpots, fome round, others oblong : the belly white : the lower fins and tail blue: the fleih white, and excellent. It is a fcarce fifh in thefe parts; but near Ochotfk afcends the rivers in great fhoals.

I conclude this divifion of the tribe with the common Salmon, which is frequent here, and, like the others, afcends the rivers, equally to the advantage of the natives of the country.

Of the Salmon which Linneus diftinguifhed by the title of Coregoni is the Inghaghit/j, which has the habit of a fmall carp, with very large fcales: the jaws nearly of equal length : the eyes very great, and filvery: the teeth very minute : the body filvery, bluifh on the back : tail forked: it does not exceed five inches

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mountains, fuch as yield fecurity and tranquillity to the finned inhabitants, We find the foundings to be moft unequal : in fome places only twenty-two fathoms, in others the lead has not found a bottom with a hundred and fixty fathoms of line. On fuch places the fifh might reft undifturbed during the rage of the tempeftuous winters. I do not find the leaft notice of fhells being met with in thefe feas: either there are none, or they are pelagic, and efcape the eyes of the navigators. But nature probably hath made ample provifion for the inhabitants of the fea, in the quantity of fea-plants which it yields; Steller, the great explorer of this region, enumerates the following, many of which are of uncommon elegance:

| Fucus peucedanifulius, | , Gm. Hi | . 76 | Fucus rofa marina |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Fucus turbinatus |  | 97 | Fucus crenatus | - |  |
| Fucus corymbiferus, | $E$. | - 124 | Fucus fimbriatus | - | - 200 |
| Fucus dulcis, E. | - - | - 189 | Fucus anguftifolius | - | 205 |
| Fucus tamarifcifolius * | *, E. |  | Fucus agarum | - | - 210 |
| Fucus bifidus | - | I | Fucus quercus marina |  |  |
| Fucus polyphyllus | - | 206 | Fucus veficulofus, $S_{p}$ |  | 6, E. |
| Fucus clathrus | - | 211 | Ulva glandiformis |  |  |
| Fucus myrica | - | 88 | Ulva Príapus | - | 231 |

Of there the Quercus marina is ufed as a remedy in the dyfentery; and the females of Kamt/chatka tinge their cheeks with an infufion of the Fucus tamarifcifolius in the oil of Seals.
Tides.
In the harbours of Sts. Peter and Paul the greatelt rife of the tides was five feet eight inches at full and change of the moon, at thirty-fix minutes paft four, and they were very regular every twelve hours $\ddagger$. The Ruffian philofophers obferved here a fingular phænomenon in the flux and reflux of the fea twice in the twenty-four hours, in which is one great flood and one fmall flood; the laft of which is called Manikha. At certain times nothing but the water of the river is feen within its proper channel; at other times, in the time of ebb, the waters are obferved to overflow their banks. In the Manikba, after an ebb of fix hours, the water links about three feet, and the tide returns for three hours, but does not rife above a foot; a feven-hours ebb fucceeds, which carries off the fea-water, and leaves the bay dry. Thus it happens three days before and
after the full moon; after which the great tide diminifhes, and the Manikba, or little tide, increafes *.

The rivers of the country rife in the midft of the great chain of mountains, and flow on each fide into the feas of Oihot $k$, or that of Kamt $f c b a t k a$. They furnifh a ready paffage in boats or canoes (with the intervention of carrying-places) quite acrofs the peninfula. As has been mentioned, the waters yield no fifh of their own, but are the retreat of myriads of migrants from the neighboring feas.

This peninfula, and the country to the weft, are inhabited by two nations ; the northern parts by the Koriacs, who are divided into the Rein-deer or wandering, and the fixed Koriacs; and the fouthern part by the Kamtfcbatkans, properly fo called: the firf lead an erratic life, in the tract bounded by the Penfchinfka fea to the fouth-eaft; the river Kowyma to the weft; and the river Anadir to the north $t$. They wander from place to place with their Reindeer, in fearch of the mofs, the food of thofe animals, their only wealth $\ddagger$. They are fqualid, cruel, and warlike, the terror of the fixed Koriacs, as much as the $\mathcal{T}$ fcbut $/ k i$ are of them. They never frequent the fea, nor live on fifh. Their habitations are jourts, or places half funk in the earth: they never ufe balagans, or fummer-houfes elevated on polls, like the Kamtfchatkans: are in their perfons lean, and very fhort: have fmall heads and black hair, which they thave frequently : their faces are oval : nofe fhort: their eyes fmall: mouth large: beard black and pointed, but often eradicated.

The fixed Koriacs are likewife fhort, but rather taller than the others, and

Natives.

Koriacs. Wandering.

Fixed. ftrongly made: they inhabit the north of the peninfula : the Anadir is alfo their boundary to the north; the ocean to the eaft; and the Kamt/chatkans to the fouth. They have few Rein-deer, which they ufe in their lledges; but neither of the tribes of Koriacs are civilized enough to apply them to the purpofes of the dairy. Each fpeak a different dialect of the fame language; but the fixed in moft things refemble the Kamt/chatkans; and, like them, live almoft entirely on filh. They are timid to a high degree, and behave to their wandering brethren with the utmoft fubmifion; who call them by a name which fignifies their faves. Thefe poor people feem to have no alternative; for, by reafon of the fcarcity of Rein-deer, they depend on thefe tyrants for the effential article of cloathing. I cannot trace the origin of thefe two nations; but from the features may pronounce them offspring of Tartars, which have fpread to the eaft, and degenerated in fize and ftrength by the rigour of the climate, and often by fcarcity of food.

[^55]Kamtschat. KANS.

Religion.

GENII.

Numbers of People.

The true Kamtfibatkans * poffefs the country from the river Ukoi to the fouthern extremity, the cape Lopatka. They are fuppofed, by M. Steller, to have been derived from the Mongalian Cbinefe, not only from a fimilarity in the termination of many of their words, but in the refemblance of their perfons, which are fhort. Their complexion is fwarthy: their beard fmall: their hair black: face broad and flat: eyes fmall and funk : eye-brows thin : belly pendent: legs fmall— circumftances common to them and the Mongalians. It is conjectured, that in fome very remote age they fled hither, to efcape the yoke of the eaftern conquerors, notwithftanding they believe themfelves to be aboriginal, created and placed on the fpot by their god Koutkou.

In refpect to their deity, they are perfect minute philofophers. They find fault with his difpenfations; blafpheme and reproach him with having made too many mountains, precipices, breakers, fhoals, and cataracts; with forming forms and rains; and when they are defcending, in the winter, from their barren rocks, they load him with imprecations for the fatigue they undergo. In their morals they likewife bear a great fimilitude to numbers among the moft polifhed rank in the European nations-they think nothing vitious that may be accomplifhed without danger; and give full loofe to every crime, provided it comes within the pale of fecurity.

They have alfo their leffer deities, or genii. Each of them have their peculiar charge; to thefe they pay confiderable veneration, and make offerings to them, to divert their anger or enfure their protection. The Kamouli prefide over the mountains, particularly the vulcanic; the Ouchakthou, over the woods; Mitg, over the fea; Gaetch, over the fubterraneous world; and Fouila is the author of earthquakes. They believe that the world is eternal ; that the foul is immortal; that in the world below it will be reunited to the body, and experience all the pains ufual in its former ftate; but that it never will fuffer hunger, but have every thing in great abundance: that the rich will become pook, and the poor rich; a fort of juft difpenfation, and balance of former good and evil $\dagger$. But almoft all thefe fuperftitions are vanifhed by, the attention of the Rulfians to their converfion. There are few who have not embraced the Chriftian religion. Churches have been built, and fchools erected, in which they are fuccefsfully taught the language of their conquerors, which has already almoft worn out that of the native people.

The country was very populous at the arrival of the Rufians; but, after a dreadful vifitation of the fmall-pox, which in 1767 fwept away twenty thoufand

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quite gorged; and at the fame time heated the place, by inceffantly pouring water on hot ftones, till it became unfupportable. When the gueft was crammed up to the throat, the generous landlord, on his knees, ftuffed into his mouth a great nice of whale's fat, cut off what hung out, and cried, in a furly tone, Tana, or There! by which he fully difcharged his duty; and, between heat and cramming, obliged the poor gueft to cry for mercy, and a releafe from the heat, and the danger of being choaked with the noble welcome: oftentimes he was obliged to purchafe his difmiffion with moft coftly prefents ; but was fure to retaliate on the firft opportunity *.

From the birds they learned the art of building their balagans or fummerhoufes. They feem like nefts of a conic form, perched on high poles inftead of trees; with a hole on one fide, like that of the magpie, for the entrance. Their jourts, or winter refidences, are copied from the cconomic Moufe, p. I 34 ; but with lefs art, and lefs cleanlinefs. It is partly funk under ground ; the fides and top fupported by beams, and wattled, and the whole covered with turf. In this they live gregarioully, to the number of fix families in each;; in a ftate intolerable to an European, by reafon of fmoke, heat, and ftench, from their fore of dried or putrid finh, and from their lazinefs, in never going out to perform their offerings to Cloacina $\dagger$.

Infligated by avarice, the Ruflans made a conqueft of this favage country; and found their account in it, from the great value of its furry productions. They have added to their dominions this extremity of Afia, diftant at leaft four

## Roadstokamts-

 CHATKA.Ruril Isles. thoufand miles from their capital. The journey to it is fill attended with great difficulties, through wild and barren regions, over dreadful mountains ; and poffibly impracticable, but for the multitude of Sibirian rivers, which, with fhort intervals of land, facilitate the paffage. Travellers ufually take their departure out of Sibiria from Fakutz, on the river Lena, in lat. 62: they go either by water along the river, to its conflux with the Aldun, along the Aldun to the $M a i$, and from that river up the $\mathcal{F} u d o m a$; and from near the head of that tiver to $O_{c h o t k}$, the port froin whence they embark, and crofs the fea of Ochot/k to Bolfchaia-reka, the port of the weftern fide of Kamtchatka. The whole journey ufually takes up the fhort fummer: that over the hills to $O$ chot $k$ (and which is moft convenient) was performed by Steller in thirty-four days, excluding feven of reft $\ddagger$.

The Kuril or Kurilki ines, which probably once lengthened the peninfula of Kamtfohatka, before they were convulfed from'it, are a feries of illands running

[^57]fouth
fouth from the low promontory Lopatka, in lat. 5I ; between which and Shoonj the moft northerly, is only the diftance of one league. On the lofty Paramolfor, the fecond in the chain, is a high-peaked mountain, probably vulcanic *: on the fourth, called Araumakutan, is another vulcano $\dagger$; on $U_{r u}$ /s is another; on Storgu two; and on Kunatir, or Kaunachir, one. Thefe three make part of the group which pafs under the name of the celebrated land of $\mathcal{F}_{\mathrm{f}} \mathrm{f} \ddagger$. Japan abounds with vulcanoes $\S$; fo that there is a feries of fpiracles from Kamtfokatka to fapan, the laft great link of this extenfive chain. Time may have been, when the whole was a continuation of continent, rent afunder before the laboring earth gave vent to its inward flruggles, through the mouths of the frequent vulcanoes. Even with thefe difcharges, Fapan has fuffered confiderably by earthquakes $\|$. Vulcanoes are local evils, but extenfive benefits.

The Rufians foon annexed thefe iflands to their conquefts. The fea abounded with Sea Otters, and the land with Bears and Foxes; and fome of them theltered the Sable. Temptations fufficient for the Ruffians to invade thefe iflands; but the rage after the furs of the Sea Otters has been fo great, that they are become extremely fcarce, both here and in Kamt/fhatka.

The iflands which lie to the eaft of that peninfula, and form a chain between it and America, muft now engage'our attention. They lie in the form of a crefcent, and are divided into three groupes; the Aleutian, the Andreanoffskie, and the Fox ifes: but mention mult firft be made of Bering's ille, and that of Mednoi, and one or two fmall and of little note. Thefe lie about two hundred and fifty verfts to the eaft of the mouth of Kamtfchatka river. Bering's is in lat. 55, where that great feaman was fhipwrecked in November 1741, on his return from his American difcoveries; and, after enduring great hardhips, perifhed miferably. Numbers of his people died of the fcurvy, with all the dreadful fymptoms attendant on thofe who perifined by the fame difeafe in Lord Anfon's voyage $\mathbb{I}$; the furvivors, among whom was the philofopher Steller, reached Kamt/chatka in Auguft 1742, in a veffel conftructed out of the wreck of their fhip. The ifle is about feventy or eighty verfts long; confifts of high granitical mountains, craggy with rocks and peaks, changing into free-ftone towards the promontories. All the vallics run from north to fouth : hills of fand, formed by inundations of the fea, floated wood, and fkeletons of marine animals, are found at great diftances from the thore, at thirty fathoms perpendicular height above the high-water level; which ferve as a monument of the violent inundations that the vulcanoes before mentioned

- Voyage, iii. 388. $\quad \ddagger$ Decourvertes des Rufes, i. ir $3 . \quad \ddagger$ Thefe ifles are marked in a Ruffan map, communicated to me by Doftor Pallas, with MS. notes. § Kampjer Hif. Fapad. i. 305. || Same, 304. Il Book i. ch. x. and Decouvertes, \&c. ii. 293.

Vulcanic.

Bering's Isle.
produce in thefe feas. Farther, the effect of the meteoric waters, and of the frofts, caules the rocks very fenfibly to fhiver and fall down, and precipitates every year fome great mafs into the fea, and changes the form of the illand. The others are in the fame cafe; fo nothing is more probable than their gradual diminution, and, by confequence, the more eafy communication formerly from one continent to the other, before the injuries of time, the effects of vulcanoes, and other cataffrophes, had infenfibly diminifhed the fize, and perhaps the number of thefe illes, which form the chain; and had eaten in the coafts of $A / f a$, which every where exhibit traces of the ravages they have undergone *.

The ifland fwarmed with Sea Otters, which difappeared in March. The Urfine Seal fucceeded them in vaft numbers, and quitted the coalt the latter end of May. The Leonine Seal, the Lachtach or Great Seal, and the Manati, abounded, and proved the fupport of the wrecked during their ftay. Artiic Foxes were feen in great multitudes, and completed the lift of Quadrupeds. The fame fpecies of water-fowl haunt the rocks, and the fame fpecies of fifh afcend the rivers, as do in Kamt/chatka. The tides rife here feven or eight feet. The bottom of the fea is rocky, correfpondent with the ifland.

The few plants of this ifiand, which have not been difcovered in Kamtfchatka, are as follow :

Campanula, Gm. Sib. iii. 160, 28. Senecio, Gm. Sib.ii. 136, No 118. Leontodon taraxacum, A. E. Virg. Arnica montana. Hieracium murorum, $\beta . E$. Tanacetum vulgare, E.
Gnaphalium dioicum, $A$.

Chryfanthemum leucanthemum, $A$. Virg.

Mednoi.
There, with a few creeping Willows, added to thofe in the Kamt/chatkan Flora, form the fum of thofe oblerved in Bering's ifland.

Mednoi, or the copper inland, lies a little to the fouth-eaft. A great quantity of native copper is found at the foot of a ridge of calcareous mountains on the eaftern fide, and may be gathered on the thores in vaft maffes, which feems originally to have been melted by fubterraneous fires. This illand is full of hillocks, bearing all the appearance of vulcanic fpiracles; which makes it pro. bable, that thefe illands were rent from the continent by the violence of an earth_

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value. The natives bore their nofes and under lips, and infert bones in them by way of ornament. Among the laft in this group is Oonolafsba, which was vifited by Captain Cook. This lies fo near to the coaft of America, as to clame a right to be confidered as an appurtenance to it. I fhall therefore quit thefe detached paths for the prefent, and, in purfuance of my plan, trace the coafts of the northern divifion of the great continent, from the place at which it is divided from South Anerica.

California.
After traverfing obliquely the Pacific Occan, appears California, the moft foutherly part of my plan on this fide of the new world. This greateft of peninfulas extends from Cape Blanco, lat. 32, to Cape St. Lucas, lat. 23; and is bounded on the eaft by a great gulph, called the Vermillion fea, receiving at its bottom the vaft and violent river Colerado. The weft fide is mountanous, fandy, and barren ${ }^{*}$, with feveral vulcanoes on the main land and the ifles $\dagger$ : the eaftern, varied with extenfive plains, fine vallies watered with numbers of ftreams, and the country abounds with trees and variety of fruits. The natives, the moft innocent of people, are in a ftate of paradifaical nature, or at left were fo before the arrival of the European colonifts among them. 'The men went nearly naked, without the confcioufnefs of being fo. The head is the only part they pay any attention to; and that is furrounded with a chaplet of net-work, ornamented with feathers, fruits, or mother of pearl. The women bave a neat matted apron falling to their knees: they fling over their fhoulders the fin of fome beaft, or of fome large bird, and wear a head-drefs like the other fex. The weapons of the country are bows, arrows, javelins, and bearded darts, calculated either for war or the chace. In the art of navigation, they have not got beyond the bark-log, made of a few bodies of trees bound parallel together; and in thefe they dare the turbulent element. They have no houfes. During fummer they thelter themfelves from the fun under the fhade of trees; and during nights fleep under a roof of branches fpread over them. In winter they burrow under ground, and lodge as fimply as the bealts themfelves: fuch however was their condition in 1697 ; I have not been able to learn the effect of European refinement on their manners. Numbers of fettlements have, fince that time, been formed there, under the aufpices of the Jefuits. The Order was of late years fupported by the Marquis de Valero, a patriotic and munificent nobleman $\ddagger$, who favored their attempts, in order to extend the power and wealth of the Spani乃
dominions;

* Shelvoke, in Harris s Coll. i. 233. + Hackluyt, iii. 401.-Hif. California, i. 140.
$\ddagger$ This is the nobleman whom the writer of Lord Anfon's Voyage figmatifes with the epithet of munificent bigot. It was not by a reverend author, as is generally fuppofed, but by a perfon whofe principles were unhappily in the extreme of another tincture.-Having from my youth been honored


## C A L I F O R N I A.

dominions; and I believe with fuccefs. The land and climate, particularly Monterey, in lat. $3^{6}$, is adapted for every vegetable production; and a good wine is made from the vines introduced by the colonifts.

The natives are a fine race of men, tall, brawny, and well made; with black hair hanging over their fhoulders, and with copper-colored 1 kins. We have a moft imperfect account of the animals of this peninfula. It certainly poffeffes two wool-bearing quadrupeds. As to birds, I doubt not but the Jefuits are right, when they fay, that it has all that are found in New Mexico and Nerv Spain. The capes of Florida and cape St. Lucas lie nearly under the fame latitudes, and form the fouthern extremities of North America ; but our ignorance of the productions of the valt provinces of New Mexico, will leave ample fubject to a future naturalift to fupplymy deficiencies.
This country was difcovered under the aufpices of the great Cortez, and Don Antonio de Mendoga, cotemporary viceroy of the new conquefts: each, actuated by a glorious firit of emulation, fent out commanders to advance the welfare of their country to the utmoft ; and Francifco Ulloa, in 1539, and Fernando Alarchon, in 1540, foon difcovered this peninfula, and other adjacent regions, fources of immenfe wealth to their country ${ }^{*}$. The Spanifb adventurers of thefe early times failed as high as lat. 42 ; and named, in honor of the viceroy, the fartheft point of their difcovery Cabo di Mendoga.

Our celebrated navigator, Sir Francis Drake, on Fune 5th 1578, touched on this coaft, firft in lat. 43 ; but was induced, from the feverity of the cold, to fail to lat. $3^{8}$, where he anchored in a fine bay. He found the natives to be a fine race of men, naked as the Californians, with the fame kind of head-dreffes; and the females habited like their fouthern neighbors. He was treated like a deity. The chief of the country, by the refignation of his crown or chaplet, his fceptre, i. e. calumet, and other infignia of royalty, vefted in Sir Francis the whole land; which he named New Albion, from its white cliffs, and took formal poffer-
with the friend dhip of the Anfon family, I can give a little hiftory of the compilation of the Voyage:-A Mr. Paman firit undertook the work. It was afterwards taken out of his hands, and placed in thofe of the reverend Mr. Walters, chaplain of the Centurion; but he had no fhare in it, farther than collecting the materials from the feveral journals: thofe were delivered to Mr. Benjamin Robins, a moft able mathematician, and the moft elegant writer of his time. He was fon of a quaker-taylor at Bath, whom I have often feen a a moft venerable and refpeftable old man. Mr. Robins unfortunately forgot that he was writing in the character of a divine; and it was not thought proper to affront Mr. Wallers, by omitting his name in the title-page, as he had taken in fubfriptions: this, therefore, will account for the confant omifion of the word Providence, in a voyage which abounded with fuch fignal deliverances.
*. A full account of thefe voyages may be feen in Hackluyt, iii. 397, ©ca

Natives.

Sir Francis
Drake.
fion of in the name of his royal miftrefs. We may be thankful that we never clamed the ceffion : it forms at prefent part of New Mexico; and probably is referved for future contefts between the Spaniards and the offspring of our late colonilts. Sir Francis found this country a warren of what he calls, 'a ftrange ' kind of Conies, with heads as the heads of ours; the feete of a Want, i. e. a - Mole, and the tail of a Rat, being of a great length : under her chinne is on ' either fide a bag, into the which fhe gathereth her meat when the hath filled her ' bellie abroad.' The common people feed on them, and the king's coat was made of their Rkins *. This fpecies is to be referred to the divifion of Rats with pouches in each jaw; and has never been obferved from that period to this.
Captain Coor.
Exactly two hundred years from that time the coalt was again vifited by an Englifhman, who in point of abilities, fpirit, and perfeverance; may be compared with the greateft feaman our ifland ever produced. Captain James Cook, on March 7 th 1778 , got fight of New Albion, in lat. 44. 33 north, and long. $235 \cdot 20$ eaft, about eight leagues diftant. The fea is here (as is the cafe the whole way from California) from feventy-three to ninety fathoms deep. The land is moderately high, diverfified with hills and vallies, and every where covered with wood, even to the water's edge. To the moft fouthern cape he faw he gave the name of Cape Gregory, its latitude 43. 30 : the next, 'which was in 44.6 , he called Cape Perpetua; and the firf land he faw, which was in 44. 55, Cape Foul-weather. The whole coaft, for a great extent, is nearly fimilar, almoft ftrait, and harborlefs, with a white beach forming the fhore. While he was plying off the coaft, he had a fight of land in about lat. 43. 10, nearly in the fituation of Cape Blanco de St. Sebafian, difcovered by Martin d'Aguilar in 1603. A little to the north, the Oregon, or great river of the $W_{e} f$, difcharges itfelf into the Pacific Ocean. Its banks were covered with trees; but the violence of the currents prevented D'Aguilar from entering into it $t$. This, and the river of Bourbon, or Port Nelfon, which falls into Hudfon's Bay; that of St. Laurence, which runs to the eaft; and the $M i j_{1} / \operatorname{ip} i$, which falls into the bay of Mexico, are faid to rife within thirty miles of each other. The intervening fpace muft be the higheft ground in North America, forming an inclined plane to the difcharges of the feveral rivers. An ill-fated traveller, of great merit, places the fpot in lat.' 47, weft long. from London 98, between a lake from which the Oregon flows, and another called White Bear lake, from which the Mififipi $\ddagger$.

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inconfiderable fpace between it and the Pacific Ocean; and.frequently detached branches jut into the fea, and form promontories; which, with parts of the chain itfelf, were often feen by our navigators in the courfe of their voyage. Some branches, as we have before obferved, extend towards the eaft, but not to any great diftance. A plain, rich in woods and favannas, fwarming with Bifons or Buffaloes, Stags, and Virginian Deer, with Bears, and great variety of game, occupies an amazing tract, from the great lakes of Canada, as low as the gulph of Mexico; and eaftward to the other great chain of mountains, the Apalachian, which are the Alps of that fide of northern America. I imagine its commencement to be about lake Champlain and lake George, with branches pointing obliquely to the river $S_{t}$. Laurence eaftward, and rifing on its oppofite coafts: others extending, with lowering progrefs, even into our poor remnant of the new world, Nova Scotia. The main chain paffes through the province of New York, where it is diftinguifhed by the name of the Highlands, and lies within forty miles of the Atlantic. From thence it recedes from the fea, in proportion as it advances fouthward; and near its extremity in South Carolina is three hundred miles diftant from the water. It confifts of feveral parallel ridges *, divided by moft enchanting vallies, and generally cloathed with variety of woods. Thefe ridges rife gradually from the eaft one above the other, to the central; from which they gradually fall to the weft, into the vaft plains of the Mififipi. The middle ridge is of an enormous bulk and height. The whole extends in breadth about feventy miles; and in many places leaves great chafms for the difcharge of the vaft and numerous rivers which rife in the bofoms of the mountains, and empty themfelves into the Atlantic ocean, after yielding a matchlefs navigation to the provinces they water. In p. xcv, I have given a view of the immenfe elevated plain in the Ruffian empire. Beyond the branch of the Apalachian mountains, called Tbe Endlefs, is another of amazing extent, nearly as high as the mountains themfelves $t$. This plain, (called the Upper Plains) is exceedingly rich land; begins at the Mohock's river; reaches to within a fmall diftance of lake Ontario; and to the weftward forms part of the extenfive plains of the Ohio, and reaches to an unknown diftance beyond the Miffifit. Vaft rivers take their rife, and fall to every point of the compafs; into lake Ontario, into Hudfon's river, and into the Delawar and Sufquehanna. The tide of the Hudfon's river flows through its deep-worn bed far up, even to within a fmall diftance of the head of the Delawar ; which, after a

[^60]furious courfe down a long defcent, interrupted with rapids, meets the tide not very remote from its difcharge into the ocean *.
Much of the low grounds between the bafe of the Apalacition hills and the fea (efpecially in Virginia and Carolina) have in early times been occupied by the ocean. In many parts there are numbers of fmall rifings, compofed of Chells, and in all the plains incredible quantities beneath the furface. Near the Miffipi again, in lat. 32. 28, from the depth of fifty to eighty feet, are always found, in digging, fea-fand and fea-thells, exactly fimilar to what are met with on the flores near Penfacola t. This is covered with a ftratum of deep clay or marle, and above that with a bed of rich vegetable earth. All this proves the propriety of applying the epithet of NEW to this quarter of the globe, in a fenfe different to that intended by the novelty of its difcovery. Great part of North America at left became but recently habitable: the vaft plains of the $M i \int_{2} /{ }_{i} p i$, and the tract between the Apalacbian Alps and the Atlantic, were once poffeffed by the ocean. Either at this period America had not received its population from the old world, or its inhabitants mult have been confined to the mountains and their vallies; till the waters ceafed to cover the tracts now peopled by millions.

The compofition of the northern mountains agrees much with thofe of the north of $A / i a$, and often confifts of a grey rock fone or granite, mixed with glimmer and quartz; the firft ufually black, the laft purplifh. Near the river St. Laurence, a great part of the mountains refts on a kind of flaty limeftone. Large beds of limeftones, of different colors, are feen running from the granitical mountains, and are filled with Cornua Ammonis, and different forts of fhells, particularly with a finail rpecies of fcallop, together with various forts of corals, branched as well as ftarry. The ftrata of limeftone alfo appear near the bafe of different parts of the Apalachian chain $\ddagger$. Without doubt, the fchiftous band, confifting of variety of ftone, fplit and divided by fiffures horizontal and perpendicular (in $A / i a$ the repofitory of metallic veins) is alfo found attendant on the granitical mountains of North America, and like them will be found rich in ores $\S$ : but that country has not yet been furveyed by a philofophical eye. The labor will be amply repayed to the proprietors, by the difcovery of mineral fources of wealth, perhaps equal to thofe already difcovered in the fimilar fecondary chains of mountains in the Ruflan empire $H$. !
Captain Cook continued his voyage to the northward; but, by reafon of fqually weather and fogs for a few degrees, or from lat. 50 to 55.20 , was deprived

* Mr. Lervis Evans, p. 9, and map. 216.-Bartram's Trarvels, 10, 38. in Canada. See Kalm, iii, 212.
† 7. Lorimer, efq.
$\ddagger$ Kalm, iii. 21, 198,
§ In fuch feem to be lodged the lead and filver ores found \# See Dr. Pallas's Obf. fur la formation de Montagnes, \&c.


## Defuca's PasSAGE.

## Nootxa Sound.

of the opportunity of making the oblervations he wifhed. In lat. 48. 15, he in vain looked for the pretended ftreights of fuan de Fuca, who impofed on a Michael Lock, an Englifhman he met with at Venice, an account of having found, in 1592, an entrance in this latitude, and failed through it, till he arrived in the North fea, i.e. Hudfon's Bay*. Of equal credibility is the pretended paffage of Admiral de Fontes, in 1640, which is placed in lat. 50. 1; and, according to one map, falls into that of De Fuca: according to another, into a vaft inland rea, called Mer de l'Oueft: Diligent fearch was alfo made after this in the Spanifb expedition of 1775 ; which ended in difproving thefe ftrange fictions $\ddagger$. It had likewife the farther importance of flling up the gap in the charts, by furnifhing us with a furvey of that tract of coalt which Captain Cook was obliged to quit.

In lat. 49, Captain Cook found a fecure felter in an harbor called by him King George's Sound; by the natives, Nootka. The fhores are rocky §; but within the Sound appears a branch of the range I before mentioned. It is here divided into hills of unequal heights, very fteep, with ridged fides, and round blunted tops; in general cloathed with woods to the very fummits. In the few exceptions, the nakednefs difcovers their compofition, which is rocky, or in parts covered with the adventitious foil of rotten trees or mofes.

The trees were the Pinus Canadenfis, or Canada Pine; the P. Sylufftris, or Scotch Pine, and two or three other forts; Cuprefus Thyoides, or the White Cedar. The Pines of this neighborhood are of a great fize: fome are a hundred and twenty feet high, and fit for mafts or Ship-building $\|$; but the dimenfions of fome of the canoes in Nootka Sound heft fhew their valt bulk-they are made of a fingle tree, hollowed fo as to contain twenty perfons; and are feven feet broad, and three deep. They are the fame with the monoryla of the antient Germans and Gauls $\pi$, but conftructed with much more elegance. The old Europeans were content if they could but float. They probably were formed on the fame rude model as thofe of the old Virginians**, or of the antient Britons, fimilar to one I have feen dug up in a morafs in Scotland, as artlefs as a hog-trough tt. Thofe of Nootka Sound are at the head tapered into a long prow, and at the ftern they decreafe in breadth, but end abrupt.

The day-tides rife here, two or three days after the full and new moon, eight

| North-welt Fox, 163. | $\dagger$ See 耳efferies's Obf. on the Letter of Adm. de Fontes, and his |
| :---: | :---: |
| map ; alfo de L'Ihe's map. | $\ddagger$ Maurelle's Voy, in 1775 , in Mr. Barringtou's Mijcellanies, 508. |
| § Voyage, ii. 290. tab. 86, 87. | $\\|$ Barrington's Mifcell. 290. IT Polyen. Stratagen. | lib. v. c. 23.-Vel. Paterc. lib. ii. c. 107. ** Brcuis et fida Narratio Virginie, in which are engraven the canoes of the country, taken from the drawing of foln With; fent there with Tho. Harriot for that purpofe, by Sir Walter Raleigh, who communicated them to $D_{6}$ Bry,-See tab. xii. and xlii. of the Ascount of Elorida. $\quad \dagger$ Tour Scotl. ii, p. 106.

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brafs, or copper: eyes fmall, black, languifhing : mouth round : lips large and thick : hair of the head thick, frong, black, long, and lank; that on the eyebrows very thin : neck fhort and thick: limbs finail and ill-made: fkin a pallid white, where it can be viewed free from dirt or paint. The women are nearly of the fame form and fize as the men, but undiftinguifhable by any feminine foftnefs. Many of the old men have great beards, and even muftachios; but the younger people in general feem to have plucked out the hair, except a little on the end of the chin.

Their drefs confifts of mantles and cloaks, well manufactured among themfelves, and either woollen, matting, or fome material correfpondent to hemp. Over: their other cloaths the men frequently throw the fkin of fome wild beaft, which ferves as a great cloak. The head is covered with a cap made of matting, in form of a truncated cone, or in that of a flower-vafe, with the top adorned with a pointed or round knob, or with a bunch of leathern taffels. Their whole bodies are incrufted with paint or dirt, and they are a moft fquallid offenfive race; filent, phlegmatic, and uncommonly lazy; eafily provoked to violent anger, and as foon appeafed. The men are totally deflitute of flame: the women behave with the utmof modefty, and even bafbfulnels *. I fhall not repeat what has been faid of the infinite variety of hideous mafques this nation poffeffes, and feems particularly fond of, was not the ingenious Editor of the Voyage at a lofs for their intent, whether for religious or for mafquerading purpofes $\dagger$. Mr. Bartram $\ddagger$ proves that thefe mafques extend to the eaftern fide of the continent, and that their ufe was fportive; for he was plagued part of a night with the buffoonery, of a fellow, who came into his lodgings while he was on his travels, and, after playing a thoufand antic tricks, vanifhed in a manner as if he meant to be taken for a hobgoblin. The Offiaks have exactly the fame cuftom $\S$.

Thefe people have made fome progrefs in the imitative arts; for, befides their fkill in the fculpture of their mafques, which they cut into the Chape of the heads of various feecies of beafts and birds, they are capable of painting with tolerable exactnefs : accordingly, they often reprefent on their caps the whole progrefs of the Whale-filhery. I have feen a fmall bow made of bone, which was brought by the navigators from this fide of North America, on which was engraven, very intel. ligibly, every object of the chace. I have caufed this fingular bow to be engraven, and in the fame plate, that moft terrific Tomabawk of Nootka Sound, called the Taaweefh, or TJufkeab. The offenfive part is a ftone projecting out of the mouth of a fculpture in wood, refembling a human face, in which are ftuck human and other teeth : long locks of fcalped hair are placed on feveral parts of the head,


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waving when brandifned in a moft dreadful manner. I could difinguif the Elk, the Rein, the Virginian Deer, and the Dor; birds, probably of the Goofe kind; the Whale-filhery, the Walrus, and the Seal.-With what facility might be reclamed and civilized a people fo ftrongly poffeffed with a difpofition towards the liberal arts 1

From lat. 55.20, towards the north, the country increafes in height, efpecially inland, where a range of very lofty mountains, moflly covered with fnow, is feen nearly parallel with the coaft, a branch of thofe I have before mentioned. Above lat. 56 the coaft is broken into bays and harbours. In this neighborhood Captain Russian Voyage. Tfchirikow, confort to the great navigator Bering, who was feparated from his commander by a ftorm, was fo unfortanate as to touch on an open part of the. coaft, in about lat. 55, in which he anchored in a mof dangerous fituation, full of rocks. Having loft his fhallop, and after that his fmall boat, with part of his crew, which he had fent on fhore to water, and which were deftroyed by the natives, he was obliged to return from his ineffectual voyage ${ }^{*}$. A vaft conic mount.in, called by Captain Cook Mount Edgecumbet, rifes pre-eminent above all the others. This is in lat. 5.7 . 3 , lorg. 224.7. Not remote from hence is the Bay of Iflands, the fame as the Port los Remedios, nearly the ne plus of the Spanifbexpedition of 177.5 . The adventurers comforted themfelves with having reached lat. 58 , and having attained the higheft latitude ever arrived at in thefe feas $\ddagger$. This coaft, as well as the reft, continued covered with woods.

A high peaked mountain, Mount Fair-weather, and the inlet Crofs Sound, next appear. The firft is the higheft of a chain of fnowy mountains, which lie inland about five leagues, in lat. 58.52. The land between them and the fea was very low, for the trees feemed to arife out of the water. Several fea-birds, with a black ring round the head; the tip of the tail, and upper part of the wings, marked with black; the body bluifh above, white beneath, came in view; and on the water fat a brownifh Duck, with a deep blue or black head §.

In lat. 59. 18, is a bay, with a wooded ine off its fouth point, named by Captain Cook, Bering's; in honor of the illuftrious Dane who firf difcovered this part of America, and, as was conjectured, anchored there for a fmail fpace. The appearance of the country was terrific; it confifted of lofty mountains (in fuly) covered with fnow: but the chain is interrupted near this port by a plain of a few miles in extent; beyond which the view was unlimited, having behind it a continuance of level country, or fome great lake. He had not leifure to make óbfervations; he only named a cape, which advanced into the fea, Cape Elias $\|$ : this is not at prefent known ; but the name of Mount Elias was beftowed by Captain

[^61]Cook on a very confpicuous mountain*, which lay inland to the north-welt of the bay, in lat. 60. 15.

Bering, during the fhort fay he made on the coaft, fent his boat on fhore to procure water. That great naturaliff, Sieller, companion of the voyage, took the opportunity of landing. The whole time allotted him was only fix hours; during which he collected a few plants, and thot that beautiful fpecies of Jay, No 139, to which I have given his name. He returned on board with the regret a man of his zeal muft feel at the neceffity of fo flight an examination in fo ample a field. What he could have done, had circumftances permitted, is evident from the excellent collection he formed of natural hiftory refpecting Kamt/chatka, and fome of its inlands $\dagger$.

Among the plants found by him on the American continent were, Plantago major, Sp. Pl. i. 163 ; Great Plantane, Fl. Scot. i. 117. K. Virg.: Plantago Affatica, Sp. Pl. i. 163. K.: Polemonium Carruleam, Sp. Pl. i. 230 : Greek Valerian, Hudfon, i. 89. K. : Lonicera Xylofteum, Fl. Sib. iii. 129. K.: Ribes Alpinum, Sp. Pl. i. 291. Fl. Scot. i. 146. K.: Ribes grofularia, Sp. Pl. i. 291 ; Goofeberries, K. Virg.: Claytonia Virginica? Sp. Pl. i. 294. K. Virg.: Heuchera Ainericana? Sp. Pl.. i. 328. K.: Heracleum Panaces, Sp. Pl. i. 358 ; or Cow Parfnep, $K$. which he found in one of the habitations of the natives, tied up in bundles $\ddagger$ ready for ufe. (I have mentioned, at p. cxvir. the application of it in Kamt/chatka, for the purpofes of diftilling an intoxicating liquor; but the Americans are fortunate enough to be jgnorant of that art, and only ufe it as a food.). Vaccinium Myrtillus, Sp. Pl. i. 498; Bilberries, Fl. Scot. i. 200. K.: Vaccinium Vitis Idaa, Virg. Sp. Pl. i. 500; Red Whortle-berries, Fl. Scot. i. 202. K.: Erica, FI. Sib. 131, N ${ }^{\circ}$ 22. K. : Adoxa Mofchatellina, Sp. Pl. i. 527; tuberous Mofchatel, Fl. Scot. i. 209. K.: Rubus Idaus, Sp. Pl. i. 706; Rałberry-bufh, Fl. Scot. i. 263. K. : FragariaVefca, Sp. Pl. i. 708; Wood Strawberry, Fl. Scot. i. 267. Virg. K. : the Leontodon Taraxicum, Virg. B. Sp. Pl. ii. 1122; or common Dandelion, Fl. Scot. i. 433: Abfinthium, Sp. Pl. ii. 1188; or common Wormwood, Fl. Scot. i. 467 : Artemifia Vulgaris, Sp. Pl.ii. 1188; or Mugwort, Fl. Scot.i. 468: Gnapbalium Dioicum, Sp. Pl. ii. 1199 ; Mountain Cudweed, or Cat's-foot, Fl. Scot. i. 470. K. : After feu potiùs Heleniam fruticofum, Fl. Sib. ii. 175, B. K. with beautiful yellow flowers: Erigeron acre, Sp. Pl. ii. 121I; Blue Fleabane, Fl. Scot. i. 474. K.: Cbryfanthemum Leucantbemum, ii. 1251; Great Daify, or Ox-eye, Fl. Scot. i. 488. B. K. Virg. : Pyrethrum, Fl. Sib. ii. 203, ${ }^{\circ}{ }^{170}$. B. K. : Achillea Millefolium,

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in abundance as articles of commerce. The fkin of the head of the male leonine Seal was alfo offered to fale: in the Voyage it is called the Urfine; but from the great Chagginefs of the hair I prefume I am not wrong in my conjecture. This is the only place in the northern hemifphere in which it was found by the navigators *.

Birdso

Men.

Among the birds were the black Sea Pies with red bills, obferved before in Van Diemen's Land and New Zealand. A Duck, equal in fize to our Mallard, with a white bill tinged with red near the point, and marked with a black fpot on each fide near the bafe : on the forehead a large white triangular foot, and a larger on the hind part of the neck : the reft of the plumage dulky : the tail fhort and pointed : the legs red. The female was of duller colors, and the bill was far lefs gay. Another fpecies refembled the fmall one found at Kerguellen's Land. A Diver (Grebe?) of the fize of a Partridge; with a black compreffed bill: head and neck black: upper part of the body deep brown, obfcurely waved with black; the lower part dufky, fpeckled minutely with white. Honey-fuckers, probably migratory in this high latitude, frequently flew round the fhips $\dagger$.

To give all the additions I am able to my zoologic part, I fhall here mention certain fpecies of Petrels, obferved on the weftern coaft of North America:-fuch as numberlefs brown Petrels near the entrance of Cook's river, flying round a remarkable fugar-loaf hill $\ddagger$. A fpecies feen near Nootka Sound, about eleven inches long, with the noftrils fcarcely tubular: bill and plumage above dufky, beneath white: legs back. This is common to Turtle Ifle, lat. 19.48, fouth, long. 178. 2, weft; and Cbrifmas I/e, lat. i. 59, north, long. 202. 30, eaft. Another, about thirteen inches long, with the forehead, fpace between the eyes and bill, the chin, and throat, of a greyifh white, varied with fpecks of dufky: crown and upper part of the body dufky: under parts hoary lead-color: legs pallid §. I may add a fourth, feen off the coaft of Kamtfchatka, which Mr. Ellis mentions as being fmall, and of a bluifh color $\|$.

Mankind here fhew a variation from the laft defcribed. The natives are ge. nerally above the common ftature, but many below it : fquare-built or ftrongchefted : theirheads molt difproportionably large; their faces flat, and very broad: their necks fhort and thick : their eyes fmall, in comparifon to the vaft breadth of their faces: their nofes had full round points, turned up at the end : their hair long, thick, black, and ftrong : their beards either very thin, or extirpated; for feveral of the oid men had large, thick, but ftrait beards: their countenances generally full of vivacity, good-nature, and franknefs, not unlike the Cirtfinaux,

* Voy. ii. 377. $\quad+$ Same, 378. $\ddagger$ Ellis's Narrative, i. $251 . \quad$ This, and the preceding, in the Leverian Mufeum. \|| Narrative, ii. 246.
a people who live far inland, between the little and the great lakes Ouinepique. On the contrary, the inhabitants of Nootka in their dulnefs refemble the Afinibouels, who live on the weftern fide * : and thefe two nations may have been derived from a common ftock with the maritime tribes whom we have had occafion to mention, The fkins of the natives of this found were fwarthy, poffibly from going often naked; for the fkins of many of the women, and the children, were white, but pallid. Many of the women were diftinguifhable from the men by the delicacy of their features, which was far from the cafe with thofe of Nootka.

In thefe parts, within the diftance of ten degrees, is a change of both drefs and manners. The cloak and mantle are here changed for a clofe habit, made of the fkins of different beafts, ufually with the hair outwards; or of the $\mathbb{k}$ ins of birds, with only the down remaining; fome with a cape, others with a hood: over which, in rainy weather, is worn a garment like a carter's frock, with large fleeves, and tight round the neck, made of the inteftines probably of the whale, and as fine as gold-beater's' leaf. On the hands are always worn mittens, made of the paws of a bear ; and the legs are covered with hofe, reaching to midway the thigh. The head is generally bare; but thofe who wear any thing, ufe the high truncated conic bonnet, like the people of Nootkat. In this place only was obferved the Calumet; a ftick about three feet long, with large feathers, or the wings of birds, tied to it. This was held up as a fign of peace.

I leave the reader to amufe himfelf in the Voyage, by the account of the ftrange cuftom of the natives in cutting through their under lip, and giving themfelves the monftrous appearance of two mouths $\ddagger$ : in the orifice they place a bit of bone or thell by way of ornament. This cuftom extends to the diftant Mofquitos, and even to the Brafilians $\S$, but feems unknown in other parts of America.-I endeavour to confine myfelf to paffages which may lead to trace the origin of the people. Thefe paint their faces, and puncture or tattow their chins. They are moft remarkably clean in their food, and in their manner of eating it, and even in the keeping of their bowls and veffels. In their perfons they are equally neat and decent, and free from greafe or dirt $\|$ : in this they feem an exception to all other favages.

They have two kinds of boats; one large, open, and capable of containing above twenty people. It is made of the kins of marine animals, diftended on ribs of wood, like the vitilia navigia of the Britons, at the time in which they were on a level with thefe poor Americans; or like the woman's boat of the Greenlanders and Efkimaux. The canoes are exactly of the fame conftruction with thofe of the latter; and the difference of both is very trivial. The canoes of thefe

[^62]Cape Bede.

MountSt.Augustine.

## Cook's River.

-Americans are broader than thofe of the ealtern fide of the continent; and come have two circular apertures, in order to admit two men*. Every weapon which thefe people have for the chace of quadrupeds or filh, is the fame with thofe ufed by the Greenlanders: there is not one wanting.

From Prince William's found the land trends north-weft, and terminates in two headlands, called Cape Elizabeth and Cape Bede; thefe, with Cape Banks on the oppofite fhore, form the entrance into the valt eftuary of Cook's river; in the midft of which are the naked ifles, diftinguifhed by the name of the Barren. Within, to the weft, is a lofty two-headed mountain, called Cape Douglas; which is part of a chain of a vaft height, in which was a vúlcano, at the time this place was vifited, emitting white fmoke : and in the bottom of a bay, oppofite to it, is an ifland, formed of a lofty mountain, on which was beftowed the name of Mount St. Auguftine $\dagger$. The eftuary is here of a great breadth, owing to a bay running oppofite to Mount Augufine deeply to the eaft.

The eftuary of Cook's river is of great length and extent. The river begins between Anchor Point and the oppofite fhore, where it is thirty miles wide: the depth very confiderable, and the ebb very rapid. Far within, the channel contracts to four leagues, through which rufhes a prodigious tide, agitated like breakers againft rocks. The rife of the tide in this confined part was twenty-one feet. It was examined feventy leagues from the entrance, as far as lat. 6i. 30 , long. 210, and its boundaries were found to be flat, fwampy, and poorly wooded, till they reached the foot of the great mountains. Towards the north, it divides into two great branches, or perhaps diftinct rivers. That to the eaft is diftinguifbed by the name of Turn-again river. The firf is a league wide, and navigable, as far as was tried, for the largeft fhips, and continued very brackifh; there is therefore the greateft probability of its having a very long courfe, and being, in after times, of confiderable ufe in inland navigation: that it is of fome even at prefent is very certain; for here, as well as in Prince William's found, the Indians were poffeffed of glafs beads and great knives of Englifh manufacture, which the Hudfon's bay company annually fend in great quantities, and exchange for furs with the natives, who travel to our fettlements very far from the weft. The company alfo fend copper and brafs veffels; but neither copper or iron in bars. There does not feem to be any direft dealings with the Indians of this coaft: the traffic is carried on by intermediate tribes, who never think of bringing furs to a people fo amply fupplied as the Indians are who deal with our factories. Nations who ufe the moft pretious furs merely as a deferce from the cold, make no diftinction of kinds: if they could get more beads or more knives for the fkins of Sea Otters

Wroyage, ii. 371. $\quad+$ See the chart, ii. tab. 44.

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of that ifland: it feemed a dialect of the Greenlanders. They called their wooden fhields Kuyaky, prołably becaufe they refemble a kaiak, or a little canoe, a GreenLand word for that fpecies of boat; and themfelves Kanagift, as the others ftyle themfelves Karalit. They have likewife the woman's boat, like the people of Prince William's found : in fact, they feem to be the fame people, but more refined. They were armed with pikes, bows and arrows, and wooden ©hields. Their Chirts were made of the fkins of birds; alfo of the earlefs Marmot (Arct. Zool. i. ${ }^{\circ}{ }^{\circ} 47$ ), Foxes, and Sea Bears, and fome of filhes fkins. Dogs, Bears, common Otters, and Ermines, were obferved here. Their dwellings were made with timber, and were from fifteen to twenty fathoms long, covered with a thatch and dried grafs. Within they were divided into compartments for every family, and every compartment lined neatly with mats. The entrance was on the top, covered with frames, on which were ftretched the membranes of dried inteftines inftead of glafs*. Thefe people feemed to have made far greater progrefs in the arts than their neighbors. They worked their carpets in a very curious manner; on one fide clofe fet with beaver wool. The Sea Otters fkin's which they brought for fale were in fome parts fhorn quite clofe with fharp ftones, fo that they gliftened and appeared like velvet. They fhewed ftrong proofs of genius in their invention to preferve themfelves from the effects of the Ruffian fire-arms. They bad the fpirit to make an attack, and formed fkreens with three parallel perpendicular rows of ftakes, bound with fea-weeds and ofiers; their length was twelve feet, and thicknefs three: under the fhelter of thefe they marched; but their fuccefs was not correfpondent to their plan $\dagger$ : a fally of the Rufians difconcerted them, and put them to the rout.

The ifland confifts of hills mixed with lowlands. It abounds with bulbs, roots ${ }_{9}$. and berries, for food ; with Mrubs, and even trees fufficiently large to be hollowed. into canoes capable of carrying five perfons $\ddagger$. In this kind of boat they differ. from thofe of the Greenlanders.

Holibut isle.
Off the extremity of the peninfula of Alafchka is Holibut ifland, in lat. 54, rifing into a lofty pyramidal mountain, lying oppofite to the narrow fhallow ftreight which lies between the ine Oonemaka and Alajchka. The chain on the continent is feen to rife into ftupendous heights, covered with fnow : among them feveral of the hills appear to rife infulated, and of a conic form. One

[^63]was a vulcano, flinging up volumes of black fmoke to a great height*, then freaming before the wind with a tail of vaft length and picturefque appearance. It often took a direction contrary to the point the wind blew from at fea, notwithftanding there was a frefh gale. It lies in lat. 54.48 north, long. 195. 45 W . and is evidently a link in the vulcanic chain, which extends, in the fouthern hemifphere, as low at left as that of St. Clement in Cbili, in lat. 45. 30.

The extremity of Alafchka ends abrupt, and has oppofite to it an ifland called Oonemak or Unmak, of nearly a correfpondent breadth, feparated from it by a very narrow and fhallow channel, fituated in lat. $54 \cdot 3^{\circ}$, and leading into Briffol bay, pervious only by boats or very fmall veffels. The ille is a hundred verfts long, and from reven to fifteen broad; and has in the middle a vulcano. In the low parts feveral hot fprings burft forth, to which the illanders carry the fifh or flefh they want to boil ; and they are alfo fond of bathing in the temperate parts $\dagger$.

To the weft are the fmall ifles of Oonella and Acootan: at a fmall diftance from them is Oonalaßka or Aghoun-alaijka $\ddagger$, a name evidently referring to the continent. My MS. calls its length a hundred and twenty verfts, its breadth from ten to eighteen. It is the moft remote of the Rufian colonies, who have now made fettlements.on moft of the ifles between Afa and America; all under the care of private adventurers. The voyage from Ochot $k$ or Kamtfchatka lafts three or four years; and is folely undertaken for the fake of the fkins of Sea Otters. Poffibly. other reafons will, in a little time, induce them to attempt the colonization of the continent. Timber may be one; for their northern Affatic dominions and their iflands yield none. I forefee docks and timber-yards in all convenient places. At prefent, the natives of thefe ifles have only the fkin-covered canoes $\S$, and even for the ribs they, are obliged to the chance of drift-wood. In thefe, in drefs, and in weapons, they refemble the Efkimaux. The language is a dialect of the E/kimaux. They are rather of low ftature. They have fhort necks, fwarthy chubby faces, black eyes, and ftraight long black hair. The falhion of wearing feathers or bits of fticks in their nofes is ufed in Oonalaßka. Both fexescut their hair even over their foreheads: the men wear theirs loofe behind; the females tie theirs in a bunch on the top of their head : the firft wear long loofe frocks, of the fkins of birds; the laft of the fkins of Seals. The men fling over their frocks another, of the guts of the cetaceous animals, dried and oiled, to keep out the water $\|$; and, to.

[^64]defend:

Oonbmak.

Oonalashea,

Natives,
defend their faces from the weather, they wear a piece of wood, like the front of the bonnet of an Englifh lady*. Some ufe the bonnet in the form of the truncated cone. The women nightly tattow their faces, and often wear a ftring of beads pendent from their nofes; both fexes perforate their under lip, but it is very uncommon to fee any except the females flick in it the ornamental bone. The nofe-ornaments extend far inland on the continent; for the Americans, who trade with the Hudfon's bay company, ufe them: but from the figures given by $D e$ Brie, they do not feem ever to have reached the people of Virginia and Florida. They inhabit jourts, or fubterraneous dwellings, each common to many families, in which they live in horrible filthinefs: but they are remarkably ciyilized in their behaviour; and have been taught by the Ruffians to pull off their caps, and to bow, in their falutations.
Barrows: They bury their dead on the fummits of hills, and raife over the fot a barrow of ftones $\dagger$, in the manner cuftomary in all the north of Europe in very early days.

On the north fide of the promontory Alafchka, the water decreafes confiderably in depth, and the mountains recede towards the bottom far inland, and leave a large tract of low land-between them and the fea. Here it forms a great bay, called Sen Otters: extreme northern refort of the Sea Otter.

BristelBayand River.

Gore's Isle. Brifol; with a vaft river at the end, with an entrance a mile broad, feated in lat. 58.27. Cape Newenbam, lat. 58.42, a rocky promontory, is the northern horn of the bay, eighty-two leagues from Cape Oonemak, its fouthern : an univerfal barrennefs, and want of vegetation, appeared in the neighborhood of the former. The Walrufes ( $\mathrm{N}^{\circ}{ }_{71}$ ) began, the 15 th of $\mathcal{F u l y}$, to Chew themfelves in great numbers about this place : a proof that ice is not effential to their exiftence. The inhabitants of this coaft were dreffed much more fqualidly than thofe before feen; but, like the others, deformed their nofes and lips. They fhaved their head or cut the hair clofe, and only left a few locks behind or on one fide, fomewhat in the Cbinefe fabhion. From Cape Newenham, the continent runs due north. To the weft is Gore's inland, diftinguifhed by a vaft cliff, in lat. 60. 17 , long. 187. 30, called Point Upright; and near it a moft rugged, high, rocky iflet, named the Pinnacles $\ddagger$. Myriads of the Auk tribe haunted thefe precipices. This feems the

From Sboal-nefs, in lat. 60, long. 196, there is a gap in the American geography, as far as Point Sballow Water, lat. 62. 50 ; and not far from thence were the fymptoms of the difcharge of fome great river, from the uninveftigated part. Be-

[^65]
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another, feemingly the chief, almof blind: the third, a girl: the laft, the wife. She made ufe of Captain King to act as a charm to reftore her blind hufband to his fight*. He was firft directed to hold his breath; then to breathe on, and afterwards to fpit on his eyes. We are not without fimilar fuperftitions. The Romans $\dagger$ applied the fame remedy to difeafes of the fame part: but I doubt whether they, or our polithed nation, ever expreffed the fame feelings as this poor woman did. She related her ftory in the moft pathetic manner; fhe prefled the hands of the Captain to the breaft of her hulband, while fhe was relating the calamitous hiftory of her family; pointed fometimes to the hurband, fometimes to the cripple, and fometimes to the poor child. Unable to contain any longer, Ihe burft into tears and lamentation. She was followed by the reft of her kindred in an unifon, which, I truft, filled the eyes of the civilized beholders, as their relation has mine.

From Cape Darly the land trends to the weft, and ends in Point Rodney; low land, with high land far beyond, taking a northerly direction inland. Off this point, in litt. 64. 30, is Sledge ifland, fo called from a lledge being found on it, refembling thofe which the Ruffians ufe in Kamt/chatika to carry goods over the fnow. It was ten feet long, twenty inches broad, with a rail on each fide, and fhod with bone; all neatly put together, in fumc parts with wooden pins, but moftly with thongs of whalebonc: a proof of the ingenuity of the natives. Whether it was to be drawn with dogs or rein-deer, does not appear; for the ifland was deferted, and only the remains of a few jourts to be feen. In lat. 64. 55, long. 192, is King's ifland, named in honor of the able and worthy continuator of the voyage. The continent oppofite to it bends towards the eaft, and forms a fhallow bay; then fuddenly runs far into the fea, and makes the moft weftern extremity yet known, and probably the moft weftern of all. On it were feveral huts; and ftages of bone, fuch as had been obferved in the $T$ fchut $/ k i$ country. This cape forms one fide of Bering's ftreights, ànd lies nearly oppofite to Eafr Cape, on the Afiatic fhore, at the fmall diftance of only thirty-nine miles. This lies in lat. 65. 46 ; is named Cape Prince of Wales; is low land, and the heights, as ufual, appeared beyond; among which is a remarkable peaked hill. It would be unjuft to the memory of paft navigators, not to fay, that there is the greateft probability that either this cape, or part of the continentadjacent to it, was difcoyered, in 1730 , by Michael Gwofdew, a land furveyor attendant on the Coffack,
*See Voyage, ii. 48 r . $\dagger$ Mulieris falivam quoque jejunx potentem dijudicant oculis csuentatis,-Plin. Hif. Nat, lib. xxviii. c. 7.

Colonel Schelakow, in the unfortunate expedition undertaken by him to render the $T$ Tchut $k i$ tributary .

Here begins the Icy. Sea or Frozen Ocean. The country trends ftrongly to the eaft, ard forms, in lat. 67. 45, long. 194. 51 , Point Mulgrave; the land low, backed inland with moderate hills, but all barren, and deftitute of trees. From hence it makes a flight trend to the welt. Cape Lifourn lies in lat. 69; and Icy Cape, the moft extreme land feen by any navigators on this fide, was obferved in lat. 70.29, long. 198. 20, by our illuftrious feaman, on Auguft 18 th 1778 . The preceding day he had made an advance as high as 7.0 . 4.1 ; but, baffed by impenetrable ice, upon the jufteft reafoning was obliged to give up, all thoughts of the north-eaft paffage: which reafons were confirmed, in-the following year, by his fucceffor in command, Captain Clerke. All the trials made by that perfevering commander could not attain a higher latitude than 70. 11, long. 196. 15. He found himfelf laboring under a lingering. difeafe, which he knew muft be fatal, unlefs he could gain a more favorable climate; but his high fenfe of honor, and of his duty to his orders, determined him to perfift, till the impoffibility of fuccefs was determined by every officer. He gave way to their opinion, failed towards the fouthward on Fuly 21ft, and on Auguft 22d honorably funk, at the age of thirty-eight, under a diforder contracted by a continued fcene of hardfhips, endured from his earlieft youth in the fervices of his country $t$.

To fuch characters as thefe we are indebted for the little we know, and pro-

Point Mul-
grave. bably all that can be known, of the Icy Sea. The antients had fome obfcure notion of its coafts, and have given. it the name of Scythicum Mare; a cape jutting into it was ftyled Scythicum Promontorium; and an ifland at the bottom of a deep bay to the weft of it, Scythica Infula. It is following the conjectures of the ingenious to fay, that. the firft may be the Cape Falmal, and the laft, Nova Zemlja, which fome will make the Infula Tazata of Pliny, as it refembles in name the river Tas; which flows almoft oppofite to it into the gulph of $O b \ddagger$. The knowlege which the antients had of thefe parts muft have been from traffic. The old Ladoga was, in very early times, a place of great commerce, by affiftance of rivers and feas, even from the fartheft parts of the Mediterranean; the coins of Syria, Arabia, Grecce, and Rome, having been found in the burial-places adjoining to that antient city §. Another channel of knowlege was formed from the great traffic carried on by the merchants, from even the remote India, up the Volga and the Kama, and from thence to Tfcherdyn, an emporium on the river Kolva,

[^66]feated in the antient Permia or Bionmia, and not far fouth of the river Pectzora. From thence the Biormas, who feem to have been the factors, embarked with the merchandize on that river, went down with it to the coafts of the Frozen Sea; and, after obtaining furs in exchange, they returned and delivered them, at $T / c_{\text {cher }} j ;$, to the foreign merchants * : and from them the antients might pick up accounts.

The Icy Sea extends from Nova Zemlja to the coaft of America. We have feen how unable even the Ruflians have been to furvey its coafts, except by interrupted detail, notwithftanding it formed part of their own valt empire. To our navigators was given the honor not only of fettling parts of its geography with precifion, but of exploring the whole fpace between the moft northern promontory of Afia and the fartheft acceffible part of America. This was a tract of one hundred leagues.t. The traverfing it was a work of infinite difficulty Depth. and danger. The fea fhallow; and the change from the greateft depth, which did not exceed thirty fathoms, to the left, which was only eight, was fudden : the bottom muddy, caufed by the quantity of earth brought down from the vaft rivers which pour into it from the Afiatic fide. We fufpect that it receives but few from the American, their general tendency being eaft and weft. The Icy Sea is Challow, not only becaufe its tides and currents are very inconfiderable; but its outlet through the freights of Bering very narrow, and even obftructed in the middle by the illands of St. Diomedes: both which circumftances impede the carrying away of the mud. The current, fmall as it is, comes chiefly from the fouth-weft, and is another impediment. The land of each continent is very low near the fhores, and high at a fmall diftance from them : the former is one inftance of a correfpondent fhallownefs of water. The foundings off each continent, at the fame diftances from the fhore, were exactly the fame.
Ice. The ice of this fea differs greatly from that of Spitzbergen. It probably is entitely generated from the fea-water. The Icy Sea feems to be'in no part bounded by lofty land, in the valleys of which might have been formed the ftupendous icebergs, which, tumbling down, form thofe lofty inlands we had before occafion to mention. The ice here is moveable, except about the great headlands, which are befet with a rugged mountanous ice. 'It is notorious, that a ftrong gale from the north in twenty-four hours covers the whole coaft, for numbers of miles in breadth; will fill the ftreights of Bering, and even the Kaimtchatkan feas: and in fmaller pieces extend to its iflands. In the Icy Sea it confifts chiefly of field ice. Some fields, very large, and furrounded with lefler, from forty

[^67]
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Ifia and America, is very hallow. It deepens from thefe fereights (as the Britifs feas do from thofe of Dover) till foundings are loft in the Pacific Ocean ; but that does not take place but to the fouth of the ines. Between them and the ftreights is an increafe from twelve to fifty-four fathom, except only off St. Thaddeus Nofs, where there is a channel of greater depth. From the vulcanic difpoítion I am led to believe not only that there was a feparation of the continents at the flreights of Bering, but that the whole fpace, from the illes to that fmall opening, had once been occupied by land; and that the fury of the watery element, actuated by that of fire, had, in moft remote times, fubverted and overwhelmed the tract, and left the iflands monumental fragments.
Whether that great event took place before or after the population of America, is as impofible, as it is of little moment, for us to know. We are indebted to our navigators for fettling the long difpute about the point from which it was effected. They, by their difcoveries, prove, that in one place the diftance between continent and continent is only thirty*nine miles, not (as a celebrated cavilift would have it) eight hundred leagues. . This narrow ftreight has alfo in the middle two inands, which would greatly facilitate the migration of the Afiatics into the New World, fuppofing that it took place in canoes, after the convulfion which rent the two continents afunder. Befides, it may be added, that thefe ftreights are, even in the fummer, often filled with ice; in winter, often frozen : in either cafe mankind might find an ealy paflage; in the laft, the way was extremely ready for quadrupeds to crofs, and ftock the continent of America. I may fairly call in the machinery of vulcanoes to tear away the other means of tranfit farther to the fouth, and bring in to my affiftance the former fuppofition of folid land between Kamtfchatka and Oonalafcha, inftead of the crefcent of iflands, and which, prior to the great cataftrophe, would have greatly enlarged the means of migration; but the cafe is not of that difficulty to require the folution. One means of paffage is indifputably eftablifhed.

But where, from the vaft expanfe of the north-eaftern world, to fix on the firft tribes who contributed to people the new continent, now inhabited almoft from end to end, is a matter that baffles human reafon. The learned may make bold and ingenious conjectures, but plain good fenfe cannot always àccede to them. As mankind encreafed in numbers, they naturally protruded one another forward. Wars might be another caufe of migrations. I know no reafon why the $\mathbb{H}_{\text {fatic }}$ north might not be an officina virorum, as well as the European. The overteeming country, to the eaft of the Riphaan mountains, muft find it neceffary to difcharge its inhabitants : the firft great wave of people was forced forward by the next.to

[^68]it', more tumid and more powerful than itfelf: fucceffive and new impulfes continually arriving, fhort reft was given to that which fpread over a more eaftern tract; difturbed again and again, it covered frefh regions; at length, reaching the fartheft limits of the Old World, found a new one, with ample fpace to occupy unmolefted for ages; till Columbus curfed them by a difcovery, which brought again new fins and new deaths to both worlds.
The inhabitants of the New do not confift of the offspring of a fingle nation : different people, at feveral periods, arrived there; and it is impolfible to fay, that any one is now to be found on the original fpot of its colonization. It is impoffible, with the lights which we have fo recently received, to admit that America could receive its inhabitants (at left the bulk of them) from any other place than eaftern $A / j a$. A few proofs may be added, taken from cuftoms or drefles common to the inhabitants of both worlds: fome have been long extinct in the - old, others remain in both in full force.

The cuftom of fcalping was a barbarifm in ufe with the Scythians, who carried about them at all times this favage mark of triumph : they cut a circle round the neck, and ftripped off the fkin, as they would that of an ox*. A little image, found among the Kalmucs, of a Tartarian deity, mounted on a horfe, and fitting on a human Kkin, with fcalps pendent from the breaft, fully illuftrates the cultom of the Scytbian progenitors, as defcribed by the Greek hiftorian. This ufage, as the Europeans know by horrid experience, is continued to this day in America. The ferocity of the Scythians to their prifoners extended to the remoteft part of Afia. The Kamt $f$ chatkans, even at the time of their difcovery by the Ruffanst, put their prifoners to death by the moft lingering and excruciating inventions; a practice in full force to this very day among the aboriginal Americans. A race of the Scythians were ftyled Antbropophagi $\ddagger$, from their feeding on human fleth. The people of Nootka Sound fill make a repaft on their fellow creatures $\S:$ but what is more wonderful, the favage allies of the Britifh army have been known to throw the mangled limbs of the French prifoners into the horrible cauldron, and devour them with the fame relifh as thofe of a quadruped $\|$.

The Scythians were fayed, for a certain time, annually to transform themfelves into wolves, and again to refume the human fhape If. The new-difcovered Americans about Nootka Sound, at this time difguife themfelves in dreffes made of the fkins of wolves and other wild beafts, and wear even the heads fitted to their

[^69]Customscommon to Americaand the north of Asia.
own *. Thefe habits they ufe in the chace, to circumvent the animals of the field. But would not ignorance or fuperfition afcribe to a fupernatural metamorphofis thefe temporary expedients to deceive the brute creation ?

In their marches the Kamt/chatkans never went abreaft, but followed one another $i_{n}$ the fame track $+^{-}$. The fame cuftom is exactly obferved by the Americans.
The Tungufi, the mof numerous nation refident in Sibiria, prick their faces with fmall punctures, with a needle, in various fhapes; then rub into them charcoal, fo that the marks become indelible $\ddagger$. This cuftom is fill obferved in feveral parts of America. The Indians on the back of Hudfon's bay, to this day perform the operation exactly in the fame manner, and puncture the fkin into various figures; as the natives of New Zealand do at prefent, and as the antient Britons did with the herb Glaftum, or Woad §; and the Virginians, on the firft difcovery of that country by the Engli/b $\|$.

The Tungufz ufe canoes made of birch-bark, diftended over ribs of wood, and nicely fewed together $\pi$. The Canadian, and many other American nations, ufe no other fort of boats. The paddles of the Tungu $\sqrt{2}$ are broad at each end; thofeof the people near Cook's river, and of Oonalafcha, are of the fame form.

In burying of the dead, many of the American nations place the corpfe at full length, after preparing it according to their cuftoms; others place it in a fitting pofture, and lay by it the molt valuable cloathing, wampum, and other matters. The Tartars did the fame: and both people agree in covering the whole with earth, fo as to form a tumulus, barrow, or carnedd **.

Some of the American nations hang their dead in trees. Certain of the Tungu/s obferye a fimilar cuftom.

I can draw fome analogy from drefs : conveniency in that article muft have been confulted on both continents, and originally the materials muft have been the fame, the fkins of birds and beafts. It is fingular, that the conic bonnet of the Chinefe fhould be found among the people of Nootka. I cannot give into the notion, that the Cbinefe contributed to the population of the New World; but I can readily admit, that a hhipwreck might furnilh thofe Americans with a pattern fon that part of the drefs.

In refpect to the features and form of the human body, almoftevery tribe found along the weftern coaft has fome fimilitude to the Tartar nations, and fill retain: the little eyes, fmall nofes, high cheeks, and broad faces. They vary in fize

[^70] ii. 222, tab. xiv.

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## NOT PEOPLEDFROM EUROPE:

he faw many frange things: that he returned home, and, making a report of the fruitfulnefs of the new-difcovered country, prevaled on numbers of the $W_{\epsilon} l / h$ of each fex to accompany him on a fecond voyage, from which he never returned. The favorers of this opinion affert, that feveral Wel/h words, fuch as gwrando, to hearken or liften; the ifle of Croefo. or welcome; Cape Breton, from the name of our own ifland; gwynndwr, or the white water; and pengwin, or the bird with a white head; are to be found in the American-language *. I can lay little ftrefs on this argument, becaufe likenefs of found in a few words will not be deemed fufficient to eftablifh the fact ; efpecially if the meaning has been evidently perverted : for example, the whole Pinguin tribe have unfor-. tunately not only black heads, but are not inhabitants of the northern hemifphere; the name was alfo beftowed on them by the Dutch, a Pinguedine, from their exceffive fatnefs $\dagger$ : but the inventor of this, thinking to do honor to our country, inconfiderately caught at a word of European origin, and unheard of.in the New World. It may be added, that the $W e l / h$ were never a naval people; that the age in which Madoc lived was peculiarly ignorant in navigation; and the moft which they could have attempted muft have been a mere coalting voyage.

## Norwegians,

The Norwegians put in for fhare of the glory, on grounds rather better than the Welfh. By their fettlements in Iceland and in Greenland, they had arrived within fo fmall a diftance of the New World, that there is at left a-poffibility of its having been touched at by a people fo verfed in maritime affairs, and fo adventurous, as the antient Nortmans were. The proofs are much more numerous than thofe produced by the Britißh hiftorians; for the difcovery is mentioned in feveral of the Icelandic manufcripts. The period was about the year 1002, when it was vifited by one Biorn; and the difcovery purfued to greater effect by Leif, the fon of Eric, the difcoverer of Greenland. It does not appear that they reached farther than Labrador; on which cpaft they met with E/kimaux, on whom they, beftowed the name of Skralingues, or dwarfilh people, from their fmall ftature. They were armed with bows and arrows, and had leathern canoes, fuch as they have at prefent. All this is probable; nor hould the tale of the German, called Turkil, one of the crew, inva= lidate the account. He was one day miffing; but foon returned, leaping and, finging with all the extravagant marks of joy a bon vivant could thew, on difcovering the inebriating fruit of his country, the grape $\ddagger$ : Torfaus even fays, that he returned in a fate of intoxication $\S$. To convince his commander, he brought feveral bunches, who from that circumftance named the country Vinland. I do

[^71]not deny that North America produces the true vine*; but it is found in far lower latitudes than our adventurers could reach in the time employed' in their voyage, which was comprehended in a very fmall fpace. I have no doubt of the difcovery; but, as the land was never colonized, nor any advantages made of it, it may be fairly conjectured, that they reached no farther than the barren country of Labrador.
The continent which flocked America with the human race, poured in the brute creation through the fame paffage. Very few quadrupeds continued in the peninfula of Kamt/chatka. I can enumerate only twenty-five which are inhabitants of land; for I muft omit the marine animals, which had at all times power of changing their fituation : all the reft periffed in their migration, and fixed their refidence in the New World. Seventeen of the Kamtfchatkan, quadrupeds are found in America: others are common only to Sibiria or Tartary, having, for unknown caufes, entirely evacuated Kamtfchatka, and divided themfelves between America and the parts of Afia above cited. Multitudes again have deferted the Old World, even to an individual, and fixed their feats at diftances moft remote from the fpot from which they took their departure; from mount Ararat, the refting-place of the ark, in a central part of the Old World, and excellently adapted for the difperfion of the animal creation to all its parts. We need not be ftartled at the valt journies many of the quadrupeds took to arriye at their prefent feats: Might not numbers of fecies have found a convenient abode in the valt Alps of Afia, inftead of wandering to the Cordilleras of Chili? or might not others have been contented with the boundlefs plains of Tartary, inftead of travelling thoufands of miles, to the extenfive flats of Pampas? -To endeavour to elucidate common difficulties is certainly a trouble worthy of the philofopher and of the divine; not to attempt it would be a criminal indolence, a neglect to

Vindicate the ways of God to man.
But there are multitudes of points beyond the human ability to explain, and yet are truths undeniable: the facts are indifputable, notwithftanding the caufes are concealed. In fuch cafes, faith muft be called in to our relief. It would certainly be the height of folly to deny to that Being who broke open the great fountains of the deep to effect the deluge-and afterwards, to compel the difperfion of mankind to people the globe, directed the confufion of languages-powers inferior in their nature to thefe. After thefe wondrous proofs of Omnipotency,

[^72]it will be abfurd to deny the poffibility of infufing inftinct into the brute creation. Devs eft anima brutorum; God himfelf is the foul of brutes: His pleafure muft have determined their will, and directed feveral fpecies, and even whole genera, by impulfe irrefiftible, to move by flow progreffion to their deftined regions. But for that, the Llama and the Pacos might ftill have inhabited the heights of Armenia and fome more neighboring Alps, inftead of laboring to gain the diftant Peruvian Andes; the whole genus of Armadillos, flow of foot, would never have abfolutely quitted the torrid zone of the Old World for that of the New; and the whole tribe of Monkies would have gambolled together in the forefts of India, inftead of dividing their refidence between the fhades of Indoftan and the deep forefts of the Brafils. Lions and Tigers might have infefted the hot parts of the New World, as the firlt do the deferts of Africa, and the laft the provinces of Afra; or the Pantherine animals of South America might have remained additional fcourges with the favage beafts of thofe antient continents. The Old World would have been overftocked with animals; the New remained an unanimated wafte! or both have contained an equal portion of every bealt of the earth. Let it not be objected, that animals bred in a fouthern climate, after the defcent of their parents from the ark, would be unable to bear the froft and fnow of the rigorous north, before they reached South America, the place of their final deftination. It muft be confidered, that the migration muft have been the work of ages; that in the courle of their progrefs each generation grew hardened to the climate it had reached; and that after their arrival in America, they would again be gradually accuftomed to warmer and warmer climates, in their removal from north to fouth, as they had in the reverfe, or from fouth to north. Part of the Tigers ftill inhabit the eternal fnows of Ararat, and multitudes of the very fame fpecies live, but with exalted-rage, beneath the Line, in the burning foil of Borneo or Sumatra; but neither Lions or Tigers ever migrated into the New World. A few of the firt are found in India and Perfia, but they are found in numbers only in Africa. The Tiger extends as far north as weftern Tartary, in lat. 40.50, but never has reached Africa. I thall clofe this account with obferving, that it could be from no other part of the globe except $A f a$, from wherice the New World could receive the animal creation.

The late voyage of the illuftrious Cook has reduced the probable conjectures of philofophers into certainty. He has proved that the limits of the Old and New World approach within thirteen leagues of each other. We know that the intervening freights are frequently frozen up; and we have great reafon to fuppofe, that the two continents might have been once united, even as low as the Aleutian iflands, or lat. 52. 30. Thus are difcovered two means of paffage from Afa to America; the laft

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## TABLE OF QUADRUPEDS.

with in other countries. It certainly will point out the courfe they have taken in their migration; and, in cafe mifnomers are avoided, will reduce to the fingle continent of $A f a$ the original country from whence they fprung. Men of the firlt abilities, and firit in learning, who have neglected the ftudy of natural hiftory, will give Lions and Tigers to America, milled by the ignorance of travellers, who miftake the Puma, ${ }^{\circ}{ }^{\circ} 14$ of this Work, for the firft ; and the fpotted wild beafts, allied to the Pantherine race, for the fecond.

TABLEOF QUADRUPEDS.

| genus. <br> İ. Ox. | Bifon, | $\mathrm{N}^{\circ} 1$. | OLD WORLD. <br> In parts of Lithuania, and about mount Caucafus; except there, univerfally domefticated. | NEW WORID. <br> To the weft,of Canada, and as low as Louifiana. In New Mexico, on the wef. tern fide of North America. |
| :---: | :---: | :---: | :---: | :---: |
|  | Murk, | $\mathrm{N}^{\circ}{ }_{2}$ | A variety in the interior parts of Guinea, and the fouth of Africa. See Hif. Quad. i. $\mathrm{N}^{\circ} 9$. | To the north of Hudjon's Bay, from Churchil river to lat. 73, and among the Chrifinaux, and in New Mexico. |
| II. Sheep. | Argali, | $\text { p. } 12 .$ | Sardinia. Corfica. Crete. North of India. Perfian Alps. About the Onon and Argun, in Sibiria. Mongalia, to lat. 60. Eaft of the Lena, and quite to Kamt/chatka. | Surpected to be found in California; but not on the beft authorities. |
| III. Derr | Moore, | $\mathrm{N}^{\circ} 3 .$ | Norway. Sweden, to lat. 64. Ruffia. Sibiria, as low as lat. 53. As far eaft as Lake Baikal; and in the north of China to the north of Corea. lat. 45*. | Hudfon's Bay. Canada. Nova Scotia. New England; and near the northern part of the river Obio. |
|  | Rein, | $\mathrm{No}_{4}$ | Lapland. Norway. Samoiedea. Along the Arstic coafts, | Hudfon's Bay. Northern parts of Canada. Labrador, |

GENUS.

D I V. I.
IV. Doc.

\begin{tabular}{|c|c|c|}
\hline Stag, $\begin{aligned} & \text { Virginian, } \\ & \text { Mexican } \mathrm{R} \\ & \text { Roe, }\end{aligned}$ \& OLD W ORLD.
coafts, to Kamtfchatka.
In the Urallian moun-
tains to Kungur, in lat.
57. Io. About Lake
Baikal. Spitzbergen.
Greenland.
Norway, and moft part of
Europe to the fouth. In
the north of Afia. Cbina.
Barbary. E.

- \& NEW W ORID.
brador. Inand of New-
foundland.

From Canada, over all
parts of North America.
Mexico.
From the provinces fouth
of Canada to Florida.
Perhaps in Guiana.
Interiornorth-weftern parts
of America? Mexico.
According to Charlevoix,
in Canada? <br>

\hline \multicolumn{3}{|l|}{\multirow[t]{4}{*}{| $\begin{array}{lllllllll}\mathbf{D} & \mathbf{I} & \mathbf{G} & \mathbf{I} & \mathbf{T} & \mathbf{A} & \mathbf{T} & \mathbf{E} & \boldsymbol{D} .\end{array}$ |
| :--- |
| D I V. I. |}} <br>

\hline \& \& <br>
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\end{tabular}



[^73]
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GENUS.

| Leffer, | $\mathrm{N}^{\circ} 35$. | OLD WORED. <br> About the banks of the Yaik. Poland. Lithuania. Finland. | NEW WORLD. <br> From Nerv Ferfey to Carolina. |
| :---: | :---: | :---: | :---: |
| Sea, | $\mathrm{N}^{\circ} 36$. | Kamt/chatka. Kuril ifles. | Weftern coalts of America. |

D I V. If.

| XI. Hare. | Varying, ${ }^{\circ} \mathrm{o} 37.1$ | Scandinavia. Ruffia. Sibi- ria. Kamtfchatka. Green- land. E. | Hudjon's Bay. About Cook's river. |
| :---: | :---: | :---: | :---: |
|  | American, $\mathrm{N}^{\circ} 3^{8}$. | - - | From Hudfon's Bay to the extremity of North America. |
|  | Alpine, $\quad \mathrm{N}^{\circ} 39 \cdot$ | From the Altaic chain to lake Baikal; thence to Kamt/chatka. | Aleutian inles. Poflibly the welt of North America. |
| XII, Beaver. | Caftor, $\quad \mathrm{N}^{\circ} 40$. | Scandinavia. About the Fenefei and Kondu. In Cafan, and about the raik. | From Hudfon's Bay to Louifiana. |
|  | Mufk, $\quad \mathrm{N}^{\circ} 4 \mathrm{I}$. | - - | From Hudfon's Bay to Louifiana. |
| $\left.\begin{array}{r} \text { XIII. Porcu- } \\ \text { pine. } \end{array}\right\}$ | Canada, $\mathrm{N}^{\circ} 42$. | - - | From Hudfon's Bay to Virginia. |
| XIV. Mabmot. | Quebec, $\mathrm{N}^{\circ} 43$ | - - | Canada. |
|  | Maryland, $\mathrm{N}^{\circ} 44$. | - | From Penfylvania to the Bahama ines. |
|  | Hoary, $\mathrm{N}^{\circ} 45$. Tail-lefs, $\mathrm{N}^{\circ} 46$. | - - - - | North of North America. |
|  | Earlefs, $\mathrm{N}^{\circ} 47$. | Bohemia. Auftia. Hungary. From the Occa over the temperate parts of Sibiria. About $\mathfrak{F a k u t z . ~}$ Kamtchatka. | Weftern lide of North America. |
| XV. SeUlrrel. | Hudfon, $\mathrm{N}^{\circ} 48$. |  | Hudjon's Bay. Labrador. |

Grey,


D I V. III.

| GENUS. XX. Walrus. | Arctic, $\mathrm{N}^{\circ} 7 \mathrm{l}$. | OLD WORLD. <br> Spitzbergen. Greenland. Nova Zemlja. The coaft of the Frozen Sea. And on the Afiatic fide, to the fouth of Bering's ftreights, as low as lat. 62. 50. | NEW WORLD. <br> Hudfon's Bay. Gulph of St. Laurence. On the weftern fide of America, as low as lat. 58. 42. |
| :---: | :---: | :---: | :---: |
| XXI. Seal. | Common, $\mathrm{N}^{\circ} 72$. | All the European and northern Affatic feas, even to the fartheft north. Kamt $f$ chatka. $E$. | Northern feas of America. |
|  | Great, $\quad \mathrm{N} \circ 73$. | Greenland and Kamt/chatka. E. | Weft of North America. |
|  | Leporine, $\mathrm{N}^{\circ} 75$. | White Sea. Iceland. Spitz- bergen. Kamt/chatka. | There can be no doubt that every fpecies of |
|  | Harp, $\mathrm{N}^{\circ} 77$. | Spitzbergen. Greenland. Iceland. White Sea. Kamtfchatka. | Seal is found on the American coaft. |
|  | Urfine, ${ }^{\text {N }} 79$. | Kamt/chatka. New Zealand. | Welt of America, and from the inle of Gallipagos to New Georgia. |
|  | Leonine, - ${ }^{\circ} 80$. | Kamtfchatka. | Weft of America. Streights of Magellan. Staten land. Falkland inles. |
| XXII. Manatr. | $\left\{\begin{array}{r} \text { Whale-tailed, } \\ N^{\circ} 8 \mathrm{r} . \end{array}\right\}$ | Bering's ifle, and near the ifle of St. Mauritius. | Welt of America: <br> Weft of America. |

D I V. IV.


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the thick horns of the Buffalo. Their arms are fears, darts, and bows and arrows; the laft pointed with ftone or copper, but moft rudely made, for want of proper tools. In their drefs they much refemble the E/kimaux of Hudfon's Bay, but the tails of their jackets are fhorter; neither do the women, like them, fliffen out the tops of their boots. Their canoes differ in not having long projecting prows, but in other refpects are of the fame conftruction. In moft circumftances thefe people refemble thofe of the Bay; and differ materially only in one, for the men in thefe pull out by the roots all the hair of their heads.-Mr. Hearne firft faw the fea on $\mathcal{F u l y}$ 16, at the difance of eight miles. He went to the mouth of the river (in lat. 72 ; weft long. from London 121) which he found full of fhoals and falls, and inacceffible to the tide, which feemed to flow twelve or fourteen feet. The fea was at this time full of ice, and on many pieces he faw Seals. The land trended both to the eaft and to the weft, and the fea was full of illands. The land about Copper river, for the face of nine or ten miles to the fea, con-. fifted of fine marlhes, filled in many places with tall Willow, but no fort of berrybearing Ihrubs. There are no woods within thirty miles of the mouth of Copper river; and thofe which then appear, confift of ill-flaped and ftunted Pines.

The people who live neareft to this river, are the Copper-mine Indians, and the Plat-cotes de Chiens, or Dog-ribbed Indians; thefe have no direct commerce with Hudfon's Bay, but fell their furs to the more fouthern Indians, who come for them, and bring them down to the fettlements. The Dog-ribbed Indians ftill make their knives of ftones and bones, and head their arrows with flate. The Copper Indians have abundance of native copper in their country; they make with it ice-chiffels and arrow-heads. The mine is not known; but I find that an Indian chief, who had many years ago communication with a Mr : Frof, one of the Company's fervants, fays, that the copper was ftruck off a rock with fharp ftones; and that it lay in certain illands far to the northward, where was no night during fummer *.

Mr. Hearne fet out on his return the 22d of Fuly. He took, in fome places, a route different from what he did in going, and got to the fettlements in $\mathcal{F}$ une $\mathbf{1} 7.72$, I have perufed the journal, and had frequent converfation with Mr. Hearne the laft year. I took the liberty to queftion him about the waters he had croffed during winter upon the ice; and whether they might not have been at that time obftruCted ftreights, a paflage to the Pacific Ocean? He affured me, that he could make no miftake: that he paffed over many of them in canoes during the fum-
mér, and that the others had large rivers running out of them, almoft every one to the weft: that the Indians, who croffed them annually, in their way to the north to trade for furs, were exceedingly well acquainted with them, and knew them to be frefh-water lakes; and in particular ufed to fifh in them for Pikes, fifh notorioully known never to frequent falt-water.

I muft now take a blind unguided courfe along the $I_{c y} S_{e a}$. The charts give the land a turn to the fouth, in lat. 81. long. 22 from London. This is the moft northern extremity of the country called Greenland, if it reaches fo far; but, be. yond the difcovery by Mr. Hearne, in lat. 72, the northern limits given in our charts appear to be merely conjectural. To the fouth, on the eaftern coaft, in 1670, was feen land in lat. 79. Another part, in lat. 77.30, called in the maps the land of Edam, was feen in 1655. The inlet named Gael-hamkes, in lat. 75, was difcovered in 1664. A headland was obferved, in 1665, a degree further fouth : and in 1607 our celebrated Hudfon difcovered what he named Hold with Hope, in lat. $73^{*}$. Excepting the laft, the reft of the attempts were made by the Danes, for the recovery of Old Greenland. Gael-hamkes alone continues known to navigators, and is annually frequented by European Whale-fifhers, who extend their bufinefs even to this coaft. It is reprefented as a great ftreight, twentyfive leagues wide, communicating with Baffin's Bay. A fpecies of Whale, frequent in Davis's Streights, and not found on this fide of the coafts, is often feen here harpooned with the ftone weapons of the inhabitants of the oppofite country; which filh mult have efcaped through this paffage $\dagger$. The land to the north of Gaclhamkes is level, and not very high; and within five or fix leagues from it are foundings. That to the fouth is very lofty, and rifes into peaks like that of Spitzbergen; and the fea oppofite to it is fathomlefs $\ddagger$.

In lat. 71. long. 8. weft from London, is fohn Mayen's ifland, formerly much frequented by Whale-fifhers; but thofe animals have now left the neighboring

Greentand.

John Meyen's Isle. fea. The north end rifes into a prodigious mountain called Beerenberg, or the Bears, from its being the haunt of numbers; but it is fo fteep as to be inacceffible to all human creatures. The fea, within mufket-hot from fhore, was fixty fathoms deep; a little farther the depth is paft the reach of the line $\|$.

Oppofite to Iceland begins the once-inhabited part of Old Greenland. A very OldGreenland. deep ftreight opens a little oppofite to Snafelnas, and runs acrofs Greenland, near Iacob's Haven, into Davis's Streights, fo as quite to infulate the country: it is

[^74]Peopled by NorWEGIANS.
now almoft entirely clofed with ice, and annually fills the fea with the greateft icebergs, which are forced out of it. A little to the north of the eaftern entrance are two mountains of a ftupendous height, called Blaaferk and Huitferk, cafed in perpetual ice. The whole country, to the fouthern end, confifts of fimilar mountains: a few exhibit a ftoney furface; but the greater part are genuine glacieres, fhooting into lofty peaks, or rugged fummits: yet fuch a country as this became the fettlement of numbers of Norwegians during feveral centuries. The valiant Eric Raude, or the Red, having committed a murder in his own country (a common caufe for feeking adventures, with the heroes of Greece as well as Scandinavia) fled here in the tenth century. Numbers of his countrymen followed him. Leif, his fon, became a convert to Chriftianity. Religion flourifhed here : a bihoprick was eftablifhed, and monafteries founded. The cathedral was at Gardar, a little to the fouth of the polar circle.
Voyage ofthe Zeni.

In Hackluyt * is a relation of the voyage of the two Zeni (noble Venetians) who in 1380 vifited this country, and give evidence to the exiftence of the con- vent, and a church dedicated to St. Thomas, poffeffed by friers preachers. It appears to have been built near a vulcano, and the materials were lava, cemented with a fort of pulvis puteolanus, which is known to be a vulcanic attendant. A fpring of boiling water was near the houfe, and was conveyed into it for all their culinary ufes. I am not averfe to giving credit to this account ; there being no reafon to deny the former exiftence of burning mountains, when fuch numbers are to be found in the neighboring Iceland; and at this very time there is a fountain of hot water in the ifle of Onortok, not remote from Cape Farewell $t$. A ftrange phrafeology runs through the voyage of thefe two brethren, and perhaps fome romance; but fo much truth is every where evident, that I hefitate not to credit the authenticity.

Torfous enumerates feventeen bifhops who prefided over the diocefe. The laft prelate was appointed in 1408. The black death had almoft depopulated the country not long before that period. Probably the furviving inhabitants fell victims to want, or were extirpated by the natives: for, after that year, we hear no more of them. It certainly had been well inhabited: the ruins of houfes and churches evince its former ftate. In the fifteenth century the kings of Denmark attempted to difcover whether any of the antient race remained; but all in vain : the adventurers were driven off the coaft by the ice with which it was blocked up, which remains an invincible obftacle to re-fettle the eaftern coaft, even were there the left temptation. All is a dreadful tract from lat. 81 to Staten Hook or Cape Farewell, its

* Vol. iii. 123 ; and Purchas, iii, 610. $\quad$ Crantz, i. 18.


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Trees.

Ice-Blinck.

Tipes,
in different maps bear different names, and in one are even confolidated; fo little are thefe parts known *.

Todefcribe Greenland, would be to ring changes on ice, and fnow, and lofty mountains (fome, according to Mr. Crantz, a thoufand fathoms high) rifing into broken crags or fharp fpires, or vallies with no other garniture than mofs and fome moor grafs; and in fome parts are long flat mountains, clad with perpetual ice and fnow. Where the birds, by their dung, have formed a little foil, fome plants are found. Mr. Crantz $\dagger$ enumerates about twenty-four fpecies, befides the cryptogamious kinds. Egede obferved, in lat. 60 or 6I, fmall Junipers, Willows, and Birch; the laft two or three yards high, and as thick as a man's leg $\ddagger$; an amazing tree for this country. Davis alfo faw fome low Birch and Willows as high as about lat. $65 \S$. Nature here fuffers the reverfe of meliora. tion; the glacieres conftantly gain on the vallies, and deftroy all hopes of im. provement. That amazing glaciere, the Ice Blinck or Ice Glance, on the weftern coaft, is admirably defcribed by Mr. Crantz. I muft refer to him for the account, after faying, that it is a flupendous aggregate at the mouth of an inlet, and of an amazing height ; the brilliancy of which appears like a glory to the navigators at many leagues diftance. It forms, beneath, a feries of moft magnificent arches, extend_ ing eight leagues in length, and two in breadth; through thefe are carried, at the ebb of tide, great fragments of ice, which have fallen from various icebergs, and prove one fupply to the ocean of its floating ice $\|$. The ftreights, now obftructed to navigation, are fuppofed to be open at bottom, by arches fimilar to thofe fpoken of; for an immenfe quantity of ice is annually difcharged from their mouths **.

I have mentioned the iflands of ice at p. Lxxxv; for thofe of Spitzbergen have every thing in common with thofe of Greenland. Perhaps the colors in the laft may be more brilliant; the green being as high as that of the emerald, the blue equal to that of the fapphir ; the firft, Mr. Egede attributes to the congelation of frefh, the latter to that of falt-water.tt. Here are frequent inftances of the freezing of the fea-water. The froft often forms a pavement of ice from iffand to illand, and in the confined inlets $\ddagger \ddagger$.

The tides rife at the fouth of this country three fathoms, in lat 65 ; on the well fide two, or in fpring-tides three; at Difco, about lat. 69, only one; further north it links even to one foot. In great fpring-tides, efpecially in winter, is this ftrange phænomenon: fprings of frefh-water are forced up on the fhores in places where they were before unknown $\$ \S$.

| Collate Mr. M | , and others. | $\dagger$ Vol. i. 60. | $\ddagger$ Hif. Greenl. |
| :---: | :---: | :---: | :---: |
| § Hackluyt. iii. 101. | $\\|$ Crantz. i. 211 to 24. | ** Same, 19. | $\dagger \dagger$ Egede, $55^{\circ}$ |
| If Crantz, i. 43. | §§Same, 41. |  | +1.eseless. |

During the long day of the fhort fummer is confiderable heat. The long winter is a little cheared by the Aurora Borealis, which appears and radiates witk unufual brilliancy and velocity in the fpring, about the time of the new moon. Fogs give a gloom to the fummer, and froft-fmoke often adds horror to the winter. It rifes out of the opening of the ice in the fea, and peels off the very fkin from thofe who venture to approach it. The effect of the froft is very violent on the human body; but lefs fo than in the north-eaft of Sibiria, where at times it is fatal to ftir abroad, even when protected with every guard of cloathing *.

The Greenlanders faftidiounly ftyle themfelves Innuit, i. e. men, as if they were the ftandard of the human race; yet few of them attain the height of five feat; but are well made. Their hair is long and black; their faces flat; their eyes fmall. They are a branch of the E/kimaux, the fmall race which borders all the Arefic coafts. They originated from the Samoied Afiatics, who, paffing over into the New World, have lined the coaft from Prince William's Sound on the weftern fide, in lat. 6I, quite to the fouthern part of Labrador on the eaftern. They crept gradually in their little canoes northward, and diminifhed in fize in their progrefs, till they attained their full degeneracy in the E/kimaux and Greenlanders. Similar people, or veftiges of them, have been feen in different places, from Prince William's Sound to the north of Bering's ftreights. They were again feen by Mr. Hearne in lat. 72. By report of the Greenlanders of Difco bay, there are a few inhabitants in Baffin's bay, in lat. 78. Egede fays, that the country is peopled to lat. 76 t; but the higheft colonized foot is at Noog fook, in lat. 7 Ir . They are a race made for the climate, and could no more bear removal to a temperate clime, than an animal of the torrid zone could into our unequal kky : feafons, and defect of habitual food, would foon bring on their deftruction.' This race has been found to agree in manners, habits, and weapons, and in many inftances in language, from Prince William's Sound to the end of Labrador, a tract extending near fifteen hundred leagues $\ddagger$. They only line the coafts; for the Indians perfecute them with mercilefs hatred, and almoft pufh them into the fea. They imagine thefe poor creatures to be magicians, and that to them they owe every ill fuccefs in life $\S$. The numbers of the Greenlanders are now amazingly diminifhed. In 1730 there were thirty thoufand fouls, at prefent only ten thoufand; a decreale chiefly owing to the ravage of the fmall-pox.

Greenland has been moft happy in its Zoologit. The Reverend Mr. Otto Fabricius, whom a laudable zeal for enlightening the minds of the grofs inhabitants,

[^75]led to thefe parts, hath given a molt ample and claffical account of the animals. His Fauna Groenlandica is among the firf works of the kind. I eagerly expect the performance of the promifed remainder of the work.
Quarupeds.
The Quadrupeds of this country are, the Rein-deer, $\mathrm{N}^{\circ}{ }_{4}$, which are here merely confidered as objects of the chace. Their number is leffened greatly, and they are now only found in the moft remote parts. The Ukalcrajek ${ }^{\text {is }}$, I fufpect, an animal of imagination. It is faid, by the Greenlanders, to be longeared, hare-lipped, and to refemble that animal ; to have a fhort tail ; to be of a white color, with a dark lift down the back, and of the fize of a Rein-deer. The Dogs, p. 41, refemble Wolves in figure, fize, and nature. Left to themfelves, they hunt in packs the few animals of the country, for the fake of prey. They exactly refemble the Dogs of the E/kimaux of Labrador. It is probable, that they might have been originally brought here by their mafters, who firf fled that country, and populated Greenland. Arctic Foxes, $\mathrm{N}^{\circ}$ Io, abound here; and, with Polar Bears, $\mathrm{N}^{\circ}{ }^{\circ} 8$, infeft the country. Had I'not fuch excellent authority, I thould have doubted whether the Wolverene, $\mathrm{N}^{\circ} 21$, ufually an inhabitant of wooded countries, was found in Greenland; but it is certainly met with, yet rarely, in the fouthern parts, where it preys on the Rein-deer and White Hares. It muft have been originally, wafted hither on the ice from Terra de Labrador, the neareft place to this, of which it is an inhabitant. The Varying Hare, $\mathrm{N}^{\bullet} 37$, is very common. The Walrus, and five fpecies of Seals, inhabit thefe feas: the Common, $\mathrm{N}^{\circ} 72$; the Great, $\mathrm{N}^{\circ} 73$; the Rough, $\mathrm{N}^{\circ} 74$; the Hooded, $\mathrm{N}^{\circ} 76$; the Harp, $\mathrm{N}^{\circ} 77$; and an obfcure fpecies; called by the Laplanders, Fatne Vindac, with a round head and long fnout, bending like the probofcis of an elephant $\dagger_{-}$ Mr. Fabricius adds to the marine animals, the Whale-tailed Manati, $\mathrm{N}^{\circ} 8 \mathrm{r}$, of which he once faw the head partly confumed.

The Polar Bears, Seals, and Manati, were originally natives of thefe countries. The other Quadrupeds found their way here from either Hudfon's Bay or Labrador, on the illands of ice. The Arctic Fox found the fame kind of conveyance from Greenland to Iceland as it did with the Rein-deer to Spitzbergen. To the laft was wafted, probably from Labrador, the Common Weefel, the Red or Com_ mon Fox ; and the Moufe, mentioned p. xirix, miffed Greenland, but arrived at and ftocked Iceland; and the Common Bat was originally tempeft-driven to the latter from Norway: the Wolverene and Varying Hare never reached farther than Greenland.-This feems the progrefs of Quadrupeds in the frigid zone, as high as land is found.

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chalot, Br. Zool. iii. No 21: Delphinus Orca, or Spekhuggr, Fauno Groenl. $\mathrm{N}^{\circ} 28$; the tormentor of the greater Whales. whom they will ix on, as Bull-dogs will on a Bull, and tear out large pieces from their bodies: Delphinus Phoca, the Porpesse, Br. Zool. iii. N 25: Deli:hinus Delphis, or the Dolphin, $\mathrm{N}^{\circ} 24$ : the Delphinus Tursio, or the Grampus, $\mathrm{N}^{\circ} 26$ : and finally, the Delphinus Albicans, or Beluga Whale, p. 182 of this Work, which enlivens thofe waters with its refplendent whitenefs.

Among the cartilaginous fpecies are the Raia Fullonica, Lin. Syft. 396 : the White Shark, Br. Zool. iii. $\mathrm{N}^{\circ} 42$, equally voracious from the equator to the Arctic circle; and, with fiercenefs unfubdued by climate, often bites in two the Greenlanders fitting in their Seal-fkin canoes: the Picked Shark, Br. Zool. $\mathrm{N}^{\circ} 40$ : the Basking Shark, $\mathrm{N}^{0} 4 \mathrm{I}$ : the Squalus Pristis, or Saw Shark, Lin. Syf. 401 : the Lump Sucker, Br. Zool. iii. N• 57 ; a great article of food with the natives: Cyclopterus Spinosus, or Spiny Sucker, Faun. Groenl. No 93 : Cyclopterus Minutus, or the Minute, ${ }^{\circ} 94$ : the Unctuous Sucker, Br. Zool. $\mathrm{N}^{\circ} 58$.

Of the boney Fifhes, the Eex, Br. Zool. No ${ }^{\circ} 3$, is 'rarely found in the foutherrs rivers. The Wolf-fish, $\mathrm{N}^{\circ} 65$, appears here in the fpring with the Lump Fifh, and difappears in autumn. The Greenland Faunift defcribes a leffer variety, in $\mathrm{N}^{\circ} 97$, b. The Launce, Br. Zool. iii. $\mathrm{N}^{\circ} 66$ : the Ophidium Vi_ ride, Faun. Groenl. $\mathrm{N}^{\circ} 99$ : the Haddock, Br. Zool. iii. N ${ }^{\circ} 74$, is plentiful here in winter. Gadus Callarias, or Varied Cod, Lin. Sy/f. 436; and Common Cod, Br. Zool.iii. $\mathrm{N}^{0} 73$, frequent the coafts in fpring and au:tumn. The Pout, No 75: Gadus Virens, or Green Cod, Lin. Syfo. 438 : the Hake, Br. Zool. $\mathrm{N}^{\circ} 8 \mathrm{r}$ : the Ling, $\mathrm{N}^{\circ} 85$ : and the Gadus Brosme, Faun. Groenl. $\mathrm{N}^{\circ}$ 107, are fpecies of Cod-fifh found in thefe feaso The Spotted Blenny, Br. Zool. iii. No 93. A new fpecies, the Biennius. Pungtatus, Faun. Groenl. $\mathrm{N}^{\circ} \mathrm{iro}$; and that curious fifh the Corypharna Rupestris, $N^{0^{\prime}}{ }^{1 i n}, A c t$. Nidr. iii. tab. ini.; the firft rare, the laft frequent in the deep fouthern bays. The Armed Bull-head, Br. Zool. iii. N॰ 980 The Father Lasher, $\mathrm{N}^{\circ}$ 99, is a molt common fifh, and fingularly ufe_ ful. Cottus Scorpioides, Faun. Greenl: No iri, or Quadricornis, Lino. Syfi. 451 ; and the River Bull-head, Br: Zool. iii. $\mathrm{N}^{\circ} 97$, are found here in falt-water. The Zeus Gallus, Lin. Sy/a. 454, a filh of the hottef parts of South America, is fufpected to be found here. The Holibut, Br. Zool. iiio. No 102, is very common; as is the Pleuronectes Cynoglossus, Faun. Groenlo $\mathrm{N}^{\circ} 118$; and the new feecies, Pl. Platessoides, $\mathrm{N}^{\circ} 119$, is feen here in fmall numbers near the mouths of rivers. Labrus Exoletus, Faun. Groenl.

No 120: Striped-Wrasse? Br. Zool. iii. 1ig: Porca Norvegica, Faun. Groenl. No 121 : Three-Spined Stickleback, Br. Zool. iii. No 129 , not only in rivers but places overflowed by the fea. The Salmon, $\mathrm{N}^{\circ}{ }^{143}$, is extremely fcarce at prefent; yet in Davis's time, was among the prefents made to him by the favages; and Baffin ${ }^{*}$ faw moft amazing fhoals of thefe filh in Cockin's Sound ${ }_{0}$ on this weftern coaft, in lat: 65.45. The Salmo Carpio, Faun. Groenl. No 124, is one of the moft common and ufeful fifhes; is frequent in the lakes, rivers, and eftuaries. The Char, Br. Zool. iii. No 149, conforts with the other, and is as common. The Salmo Stagnalis, Faun. Groenl. $\mathrm{N}^{\circ}$ 126, a new fpecies, found remote in the mountain lakes, and caught only by the hunters of Rein-deer. The Salmo Rivalis, No 127, is another, inhabiting finall brooks. The Salmo Arcticus, No 128, or Capelin of the Newfoundland fifhers $t$, is the laft of this genus, but the moft ufeful; the daily bread, and the fifh in higheff efteem with the Greenlanders, and providentially given to them in the greateft abundance. The Common Herring, Br. Zool. iii. $\mathrm{N}^{\circ}$ 160, is a rare fifh in thefe feas; as is the Anchovy, $\mathrm{N}^{\circ} 163$.

The fame indefatigable Zoologift hath difcovered in this country (including cruftaceous) not fewer than ninety-one Infects, a hundred and twenty-fix Vermes, ffty-nine fhells, and forty-two Zoophytes.

John Davis, a moft able feaman, was the firf who examined the weft fide of Greenland. Before his time the eaftern coalt was the only part known to Europeans. He made there three different voyages, in 1585, 1586, and 1587. After doubling Cape Farewell, he founded', and could not find bottom with three hundred fathoms of line. North of what he properly called the Land of Defolation, he arrived in a filthy, black, and fagnating water, of the depth of a hundred and twenty fathoms. He found drift-wood in lat. 65, and one entire tree fixty feet long, with its root; the fpecies were Fir, Spruce, and Juniper $\ddagger$, which came down from remote places on the banks of the rivers of Hudfon's Bay; for Mr. Hutchins affures me, that to this day, in certain years, vaft quantities of timber are brought down with the ice at the opening of the rivers. He alfomet with black Pumices $\|$, whether from neighboring vulcanoes, burning or extinct, remains unknown; or whether, which is mof probable, conveyed there from Iceland. The ftone of the country is moflly granitical. Some fand-ftone, and many forts of coarfe marble. The Lapis Ollaris is found here in abundance, and of great ufe to the natives for making of pots. Talic is frequent here,

[^76]Albeftos, and Gypfum. Granates are not uncommon. Sulphùreous Marcafites which have more than once deceived the navigators with the opinion of their being gold*. The mineral fymptoms of copper, fuch as ftains of blue and green, are feen on thefe rocks; but avarice itfelf will never tempt adventurers to make here a trial.

Davis got as high as lat. 72, and called the country London Coaft. The ftreight he paffed, between the weft of Greenland and the great iflands, is honored by his name. He feems to have been engaged among the great iflands; for he fays he failed fixty leagues up a found, found the fea of the fame color with the main fea, and faw feveral Whales. He failed through another found to the fouth-weft, found ninety fathom water at the entrance; but within could not touch ground with three hundred and thirty. He had hopes of having found the long-fought-for paffage. The tides rofe fix or feven fathoms; but, as is frequent among inlands, the food came from fuch variety of places, that he could not trace its principal origin + .

## Bapria's Bay.

At lat. 72. 30, I muft take as my pilot that great feaman William Baffin, who gave name to the great bay I now enter on. His firft voyage was in 1613; his fecond, in which he made the moft effectual trial for the north-weft paffage, was in 1616. He paffed through Davis's Streights. In lat. 70. 20, on the London Coaf, he found the tides rife only eight or nine feet. In Horn Sound, lat. 73.45, he met with feveral people $\ddagger$. To the north of that, in 75.40 , was a large and open bay; Cape Dudley Digges forms its northern point; within is Wefenbolme Sound; beyond that, Whale Sound; and in the extreme north, or bottom of this great bay, is that named by Bafin after Sir Thomas Smith, lying in 78 degrees. In thofe three founds were abundance of Whales; but in the laft the largeft in all this bay. It is highly probable, that there are one or more communications from hence to the Icy Sea, through which the Whales pafs at certain feafons; and this (if I may collect from their numbers) might be that of their migration fouthward. The diftance into the Icy Sea can be but very fmall, but probably blocked up with ice; or if not, from the fudden lifting of the ice in that fea by the change of wind, the paffage muft be attended with too great hazard to be attempted. The ice prevented our great feaman from making trial of the tides in this bay, which would have brought the matter to greater certainty. He faw multitudes of Walrufes and Seals in thefe parts, but no figns of inhabitants. From hence the land trended wefterly,

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appetite. They boil their finh with water and rye-meal: and this conftitutes their diet during winter. In the fummer they live chiefly on fowls, or their eggs; but in general they forbear felh, as the falts prefcribed by their religion are fo numerous. They are dreffed in the fkins of the animals they kill, which they ufe with the fur fide next to their bodies : their bedding is likewife compofed of Kk ins, chiefly of thofe of the Bear or Rein Deer. The 1 kin of the Fox is the molt valuable; but thefe are preferved as articles of commerce in their own country. They catch the Beluga, or white Whale, in 'nets, being converfant in this fpecies of fifhery; but are ignorant of that of the great Whale. They were very folicitous to get information on that fubject ; which I endeavoured to inftruct them in, in return for the information they fo readily gave me. They are moft excellent markfmen; but, what is peculiar, in prefenting their piece, they do not raife it to their fhoulder, but place the butt-end between their arm and their fide, fixing thei, ve on the object toward which they direct the barrel. I faw a Bear receive a confiderable fhot: it aftonifhed me greatly to fee the animal apply great quantities of fnow to the part (which was bleeding freely) as if confcious of its fiyptic powers. It retreated with much flownefs; but at fhort intervals looked behind, and, with much art, threw abundance of fnow with its hind-paws into the wound. Few of the Ruflans die from the feverity of the cold, but are often froft-bitten, fo as to lofe their toes or fingers; for they are fo hardy as to hunt in all weathers. I naturally afked them, Had they a furgeon? They replied, 'No! nol Christ is our doctor!' They quit the inland in September, and are privileged to leave the place by the 22 d of that month, whether they are relieved by a frelh party from $R u \int_{i a}$ or not."-Let me remark, that the great exercife ufed by thefe volunteer adventurers; their quantity of vegetable food; their frehening their falt provifion, by boiling it in water, and mixing it with flour; their beverage of whey; and their total abftinence from fpirituous liquors-are the happy prefervatives from the fcurvy, which brought all the preceding adventurers, who perißhed, to their miferable end *.

Hegosonem Bazp
We now proceed through a namelefs freight, between the main land and the two great illands on the eaft; and, after doubling Cape Southampton, enter into Hudfon's Bay, in the gulph called the Welcome. This bay was difcovered in 1610, by that able feaman Henry Hudfon, from whom it takes its name. His view, in the voyage he made, was the difcovery of a paffage to the Eaf Indies. The

- See this fubject amply treated by Doctor Aikim in a Treatife on the fuccefs, with refgeet to the bealth, of fome attempts to pafs the winter in high northern latitudes.
trial has been vigoroufly purfued lince his days, but without fuccefs. In 1742 an attempt was made, as low as the bottom of the Welcome, by Captain Middleton; and from the check he met with, he called that part Repulfe Bay. In fubfequent trials Wager's Water was fufpected to be the paffage into the Weftern ocean; but in 1747 its end was difcovered, and found to terminate in two navigable rivers. The romantic fcenery which the adventurers met with in the way is mof admirably defcribed by the elegant pen of Mr. Henry Ellis.

Chefferfield, or Bowden's Inlet, was likewife fufpected to have been the defired ftreight ; but in 1762 Meffrs. Norton and Cbrifopher, in a floop and cutter be-

Chestrafirld Inlet. longing to the Company, went to the remoteft end. At the diftance of a hundred and twenty-eight miles from the mouth was fcarcely any tide; thirty miles further it quite died away. The land here grew contracted into a very narrow paffage. Here the adventurers entered with the cutter, and difcovered that the end was in a magnificent frefh-water lake, to which was given the name of Baker's. The land was quite level, rich in grafs, and abounding with Deer. They found the end quite innavigable, and to terminate in a fmall fream, with many fhoals at its mouth, and three falls acrofs it. After finding the water decreafe to the depth of two feet, they returned fully fatisfied with their voyage.

Hudfon's Bay has been fo frequently defcribed, that I fhall only give a general view of it and its adjacent parts. Its entrance from the ocean, after leaving to the north Cape Farewell and Davis's Streights, is between Refolution illes on the north, and Button's ifles, on the Labrador coaft, to the fouth, forming the eaftern extremity of the ftreights diftinguifhed by the name of its great difcoverer. The coafts very high, rocky, and rugged at top; in places precipitous; but fometimes exhibit large beaches. The illes of Salifoury, Nottingham, and Digges, are alfo very lofty, and naked. The depth of water in the middle of the bay is a bundred and forty fathoms. From Cape Cburchill to the fouth end of the bay are regular foundings; near the fhore fhallow, with muddy or fandy bottom. To the north of Churchill, the foundings are irregular, the bottom rocky, and in fome parts the rocks appear above the furface at low water. From Moofe river, or the bottom of the bay, to Cape Cburcbill, the land is flat, marhy, and wooded with Pines, Birch, Larch, and Willows. From Cape Cburchill to Wager's Water' the coafts are all high and rocky to the very fea, and woodlefs, except the mouths of Pockerekefko, and Seal rivers. The hills on their back are naked, nor are there any trees for a great diftance inland.

The mouths of all the rivers are filled with fhoals, except that of Cburchill, in which the largeft fhips may lie; but ten miles higher, the channel is obftructed with fand-banks; and all the rivers, as far as has been navigated, are full of rapids
and cataracts, from ten to fixty feet perpendicular. Down thefe rivers the Indian traders find a quick paffage; but their return is a labor of many months.

As far inland as the Company have fettlements, which is fix hundred miles to the weft, at a place called Hudfon Houfe, lat. 53. long. 106. 27, from London, is flat country : nor is it known how far to the eaftward the great chain, feen by our navigators from the Pacific Ocean, branches off.

## Climate. The climate, even about Haye's river, in only lat. 57, is, during winter, ex-

 cefively cold. The fnows begin to fall in October, and continue falling by intervals the whole winter ; and, when the froft is moft rigorous, in form of the fineft fand. The ice on the rivers is eight feet thick. Port wine freezes into a folid mafs; brandy coagulates. The very breath fell on the blankets of the beds in form of a hoar froft, and the bed-cloaths often were found frozen to the wall *. The fun rifes, in the fhorteft day, at five minutes paft nine, and fets five minutes before three. In the longeft day the fun rifes at three, and fets about nine. The ice begins to difappear in May, and hot weather commences about the middle of Fune; which, at times, is fo violent, as to fcorch the face of the hunters. Thunder is not frequent, but very violent. But there mult be great difference of heat and cold in' this vaft extent, which reaches from lat. 50.40, to lat. 63, north.During winter the firmament is not without its beauties. Mock funs and halôs are not infrequent; are very bright, and richly tinged with all the colors of the rainbow. The fun rifes and fets with a large cone of yellowifh light. The night is enlivened with the Aurora Borealis, which fpreads a thoufand different lights and colors over the whole concave of the 1 ky , not to be defaced even by the fplendor of the full moon; and the fars are of a fiery rednefs $\dagger$.
Fish. Hudfon's Bay is very ill fupplied with Fifh. The common Whale is frequent there. The Company have attempted to eftablifh a fißhery; and for that purpofe procured experienced people from the Spitzbergen fhips, and made confiderable trials between lat. 6 I and 69 ; but, after expending twenty thoufand pounds, and taking only three filh, were, in 1771 , obliged to defift. The ice prevented the veffels from getting to a proper ftation in due time; and the hard gales, and quick return of winter, always deprived them of an opportunity of making a fair trial. The fighery of the Beluga, or White Whale, is attended with more fuccefs. It haunts the mouths of rivers in $\mathcal{F} u n e$, as foon as they have difcharged the ice, and are taken in great numbers. There are two varieties; one with a blue caft, the other of a pure white. Thefe animals, probably, fuperfete; a

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kind, called here the Sea Gwiniad: the head is not fo dufky : eyes fmaller ; and back lefs arched. The nofe of the male is blunt; and the fomach mufcular, like a gizzard: the female has an arched nofe. They are very numerous in autumn, juft when the rivers are frozen over, and are called here Tickomeg. The Salmo Arcticus, or Capelin, is obferved to precede the Salmon, and is fometimes thrown on fhore in amazing quantities by hard gales.

The Omifco Maycus is a new feecies of Trout, taken in May in Albany river, not exceeding four inches and a half long. It has five branchioftegous rays : firlt dorfal fin has eleven rays, ventral eight, anal feven, pectoral thirteen : tail forked : in the jaws are minute teeth : back, as low as the lateral line, is of a pale color, marked with two longitudinal rows of black felliform fpots: below the lateral line the color filvery: the belly white.

The Pike, Er. Zool. iii. No ${ }^{1} 53$, abounds in all the lakes. It by no means arrives at the fize of the Englifh. Mr. Hutchins does not recollect any above the weight of twelve pounds.

The Cyprinus Catafomas of Dr. Forfer *, or Sucker Carp, is a new fpecies: of which there are two varieties; the Mithco-Mapeth of the Indians, marked with a broad ftripe of red along the lateral line, and found on the fea-coaft; and the White, or Namapeth, with larger fcales, and wholly of a whitih color: very fearce in the falt-water, but in fuch plenty in the inland lakes and rivers, as to be even burdenfome to the nets. They grow to the weight of two pounds and a half. The form is oblong: the head boney, rugged, and decreafing ta the tip of the nofe : the mouth fmall, and placed beneath : the body fcaly : the tail lunated.

Shell-fifh are very fcarce in this fea. Mytilus Edulis, the Edible Muffel, Br. Zool. iv. $\mathrm{N}^{\circ}$ 73, alone are plentiful; but of Cockles, only the dead Ihells are feen. From the number of fhells which are dug up, for the fpace of ten miles inland of this flat muddy country, may be collected a proof of the great retreat of the water; but for want of inhabitants, the period of its lofs cannot be af. certained.
Bixds. Among the birds, which efcaped my notice while I was writing the zoologie part of this Work, are two of the Eagle kind, found in this country: the firft is the Yellow-Headed, with a dufky bill, cere, andoirides: head and neck yellowifh: back dark brown; each feather tipped with dirty yellow. This fpecies appears in Hudfon's Bay in April. Builds its neft in trees, with flicks and grafs; and

[^79]in October. Is called by the Indians, Ethenefue Mickefue $t$.
A variety of the Golden Eagle is alfo a native of the fame place. The forehead is brown : crown and hind part of the neck ftriped with brown, white, and rufty yellow : lower part of the neck, breaft, and belly, deep brown : co. verts of the wings, back, fecondaries, and fcapulars, of the fame color; the two laft white towards their bottoms, and mottled with brown : primaries black : middle feathers of the tail brown, barred with two or three cinereous bands; exterior feathers brown, blotched with cinereous: legs cloathed with pale brown feathers to the toes, which are yellow. Length three feet. A fyecimen of this was prefented to the Britifh Mufeum.

To thefe may be added a genuine Falcon, communicated to me by Mr. Latbam. The bill very fharp, and furnifhed with a large and pointed procefs in the upper mandible: cere yellowifh: head, front of the neck, breaft, and belly, white: each feather marked along the fhaft with a line of brown, narroweft on the head: the back and coverts of the wings of a dirty bluilh afh-color; the edges of the feathers whitih, and many of them tipped with the fame: primaries dufky; exterior webs blotched with white; interior barred with the fame color: tail of the fame color with the back, barred with white ; but the bars do not reach the fhaft, and, like thofe in the Iceland Falcon, oppofe the dark bars in the adverfe web: the legs bluifh. The length of this fine fpecies is two feet two inches.

Multitudes of birds retire to this remote country, to Labrador, and Newfoundland, from places moft remotely fouth, perhaps from the Antilles; and fome even of the moft delicate little fpecies. Moft of them, with numbers of aquatic fowls, are feen returning fouthward, with their young broods, to more favorable climates. The favages, in fome refpects, regulate their months by the appearance of birds; and have their Goofe month from the vernal appearance of Geefe from the fouth. All the Grous kind, Ravens, cinereous Crows, Titmoufe, and Lapland Finch, brave the fevereft winter; and feveral of the Falcons and Owls feek fhelter in the woods. The Rein Deer pafs in valt herds towards the north, in October, feeking the extreme cold. The male Polar Bears rove out at fea, on the floating ise, moft of the winter, and till fune: the females lie concealed in the woods, or beneath the banks of rivers, till March, when they come abroad with their twin: cubs, and bend their courfe to the fea in fearch of their conforts. Several are killed in their paffage; and thofe which are wounded fhew valt fury, roar hideoully, and bite and throw up into the air even their own progeny. The females and the young, when not interrupted, continue their way to fea. In $\mathcal{F} u n e$, the
$\dagger$ The defription and Liftory of this fecies was communicated to me by Mr. Hutchins.

Terra de La. BRADOR.
males return to fhore, and, by Auguf, are joined by their conforts, with the cubs, by that time of a confiderable fize ${ }^{*}$.

The eafiern boundary of the bay is Terra de Labrador; the northern part has a ftrait coaft facing the bay, guarded with a line of inles innumerable. A vaft bay, called the Archiwinnipy Sea, lies within it, and opens into Hudfon's Bay by means of Gulph Hazard, through which the Beluga Whales dart in great numbers. Here the Company had a fettlement, for the fake of the finhery, and for trading with the E/kimaux; but deferted it as unprofitable about the year $175^{8}$ or 1759. The eaftern coaft, fo admirably defcribed by that honored name, Sir Roger Curtis + ! is barren paft the efforts of cultivation. The furface every where uneven, and covered with maffes of fone of an amazing fize. It is a country of fruitlefs vallies and frightful mountains, fome of an aftonifhing height: the firf watered by a chain of lakes, formed not from fprings but rain and fnow, fo chilly as to be productive of only a few fmall Trout. The mountains have here and there a blighted fhrub, or a little mofs. The vallies are full of crooked ftunted trees, Pines, Fir, Birch, and Cedars, or rather a fpecies of Juniper. In lat. 60, on this coaft, vegetation ceafes. The whole thore, like that on the weft, is faced with iflands at fome diftance from land. The inhabitants among the mountains are Indians; along the coafts, E/kimaux. The Dogs of the former are very fmall ; of the latter, large, and headed like a Fox. Notwithftanding they have Rein-deer, they never train them for the fledge; but apply the Dogs to that ufe $\ddagger$. Walrufes vifit a place called Nuchvûnk, in lat. 60, during winter; from thence they purchafe the teeth, with which they head their darts. Davis fufpected that he had found a paffage on this coaft, in 1586, to the Weftern ocean; but it proves no more than a deep bay.

The laudable zeal of the Moravian clergy hath induced them to fend, in the year 1752, miffionaries from Greenland to this country. They fixed on Ni/bet's harbour for their fettlement ; but the firft party was partly killed, partly driven away. In 1764, under the protection of our government, another attempt was made. The miffionaries were well received by the E/Rimaux, and the miffion goes on with fuccefs $\mathbb{1}$. Thefe pious people, like the Jefuits, have penetrated almont into every part of the knownworld; and, for the fake of the Gofpel, dared the extremities of heat and cold. They endeavour to humanize the favages of Greenland, and improve the morals of the foft inhabitants of the unwholefome coafts of Bengal. They are not actuated by ambition, political views, or ava-

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is none like the filheries. In 1534 they were actually engaged in them. A private man, Sir Humphry Gilbert, brother-in-law to Raleigh, or, what was better, animated by a congenial foul, failed in 1583 with every provifion for fettling this important colony. On his return he was fwallowed up by the ocean. His love of improvement, and his piety, never forfook him. He was feen fitting unmoved in the ftern of his fhip, with a book in his hand; and often heard to fay, 'Courage, my lads 1 we are as near heaven at fea as at land *.'

The inle of Newfoundland is of a triangular form, and lies between lat. 46.40, and 51. 30 : vifited occafionally, but not inhabited, by favages from the continent.

The boafted mine of this ifland lies on the fouthern and weftern fides, on the great bank, which ffretches from north-eaft to fouth-welt, about two hundred leagues. The water on the bank is from twenty-two to fifty fathoms; on the outfide from fixty to eighty; on the leffer banks much the fame. A great fwell and thick fog generally mark the place of the greater. The fubject of the filhery has been often treated of ; but the following fhort though clear account of fo interefting a fubject cannot fail being acceptable to the Britifh reader.

Newfoundland Fishery.
" The boats or fhallops are forty feet-in the keel, rigged with a mainmaft and foremaft, and lugfails; furnifhed with four oars, three of which row on one fide, and the other (which is twice as large) belays the other three, by being rowed fideways over the ftern, by a man who ftands up for that purpofe, with his face towards the rowers, counteracting them, and fteering at the fame time as he gives way to the boat.
" Each of the men in this boat is furnifhed with two lines, one at each fide of the boat, each furnifhed with two hooks; fo here are fixteen hooks conftantly employed; which are thought to make a tolerable good day's work of it, if they bring in from five to ten quintals of fifh, though they have ftowage for, and fometimes bring in thirty. Two hundred quintals is called a faving voyage; bue not under. The bait is finall finh of all kinds; Herring, Capelin, Lance, Tom Cod, or young Cod; the firft of which they falt, and keep for fome time, in cafe of fcarcity of the reft; but thefe are not near fo eagerly taken by the filh when falted. In cafe fmall fifh cannot be got, they ufe fea-fowl, which are eafily taken in vaft numbers, by laying nets over the holes in the rocks where they come to rooft in the night. If neither fmall fifh nor birds are to be got, they are forced to ufe the maws of finh they catch, which is the worf bait of any.
" When the fifh are taken, they are carried to the ftage, which is built with one' end over the water for the conveniency of throwing the offals into the fea, and
for their boats being able to come clofe to difcharge their fifh. As foon as they come on the ftage a boy hands them to the header, who ftands at the fide of a table next the water end; whofe bufinefs it is to gut the filh and cut off the head, which he does by preffing the back of the head againft the fide of the table, which is made tharp for that purpofe; when both head and guts fall through a hole in the floor into the water. He then thoves the fin to the fplitter, who ftands oppofite to him; his bufinefs is to fplit the fin, beginning at the head, and opening it down to the tail; at the next cut he takes out the larger part of the backbone, which falls through the floor into the water. He then fhoves the finh off the table, which drops into a kind of hand-barrow, which, as foon as filled, is carried off to the falt-pile. The header alfo flings the liver into a feparate bafket, for the making of train-oil, ufed by the curriers, which bears a higher price than Whale-oil.
"In the falt pile, the fifh are fpread upon one another, with a layer of falt between:

- Thus they remain till they have taken falt; and then are carried, and the falt is wathed from them by throwing them off from hore in a kind of float called a Pound. As foen as this is completed, they are carried to the laft operation, of drying them; which is done on flanding flakes made by a fight wattle, juft ftrong enough to fupport the men who lay on the fifh, fupported by poles, in fome places as high as twenty feet from the ground: here they are expofed, with the open fide to the fun; and every night, when it is bad weather, piled up five or fix on a heap, with a large one, his back or fkinny part uppermoft, to be a fhelter to the reft from rain, which hardly damages him through his finin, as he refts flanting each way to fhoot it off. When they are tolerably dry, which in good weather is in a week's time, they are put in round piles of eight or ten quintals each, covering them on the top with bark. In thefe piles they remain three or four days to fweat; after which they are again fpread, and when dry put into larger heaps, covered with canvas, and left till they are put on board.
'" Thus prepared, they are fent to the Mediterranean, where they fetch a good price; but are not efteemed in England: for which place another kind of filh is prepared, called by them Mud Fifh; which, inftead of being fplit quite open, like their dry fih, are only opened down to the navel. They are falted, and lie in falt, which is wafhed out of them in the fame manner with the others; but inftead of being laid out to dry, are barrelled up in a pickle of falt boiled in water.
"The train-oil is made from the livers: it is called fo to diftinguif it from Whale or Seal oil, which they call fat oil, and is fold at a lower price (being only
ufed for lighting of lamps) than the train-oil, which is ufed by the curriers. It is thus made:-They take a half tub, and, boring a hole through the bottom, prefs hard down into it a layer of fpruce boughs; upon which they place the livers; and expofe the whole apparatus to as funny a place as poffible. As the livers cor-rupt the oil runs from them, and, Araining itfelf clear through the fpruce boughs, is caught in a veffel fet under the hole in the tub's bottom."

Capebreton.

Nova Scotia.

Chimate.

The barren ifland of Cape Breton forms one fide of the great entrance into the gulph of St. Laurence. It is high, rocky, and dreary : rich in thick beds of coal, and may prove the Newcafle of America. This ifle was firft difcovered by Sir Humphry Gilbert, in his fatal voyage. It was foon after frequented, on account of the Walrufes, and the finhery of Whales. Among the earlieft adventurers were the induftrious $B i f$ cayeners, who feem to have been our mafters in the art. Till of, late years, it had been important by being the feat of the French fifhery; but the ftrong fortrefs of Louibourg is now demolihhed, and the place deferted.

The great peninfula of Nova Scotia is feparated from Cape Břeton by a narrow ftreight. It was, in 1616, poffeffed by the French, who attempted to colonize it from their new fettlement in Canada; but they were foon expelled by the Englifh, who deemed it part of North Virginia; the whole continent, at that time, going under the name of Virginia, fo called, originally, in honor of our virgin queen. The French had given it the name of Acadie. Fames I. made a grant of the country to Sir William Alexander in 1621, on condition that he would form there a fettlement. It then received the title of Nova Scotia. In order to encourage Sir William, he planned the order of baronets, which is called after the country. To every knight who would engage to colonize any part, a grant was to be made of certain portions of land. The order was not inftituted till 1625 , when a number. were created, and they held their lands from the crown of Scotland as a free barony, with great privileges to all who would fettle in the country *. The defign almoft. inftantly failed, and the French were permitted to repoffefs themfelves of the province. Its value became known, and lince that period it has frequently changed maflers. It never was effectually fettled till the year 1749, when a Iarge colony was fent there under the aufpices of the Earl-of Halifax.

The climate of this province is, during the long winter, extremely fevere; and the country covered with fnow many months: the fummer mifty and damp. The face of it is in general hilly; but can fcarcely be called moun-

[^81]
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## Magnificent Views.

from fifty to feventy-two feet high, and with moft amazing rapidity. Hogs, which feed along the fhores, are much more fenfible of its approach than mankind: they are obferved to liften, to prick up their ears for fome time, and then fuddenly to run off at full fpeed.

The coafts are, in general, rude and rocky, with fome variations; but in many places exhibit moft picturefque fcenery. All the northern fide is high, red, and rocky. The ifles of Canfo are varied with many low white rocks. From them to Torbay is a feries of lofty coaft, broken and white. Beaver Harbour is guarded by moft piEturefque rounded ifles. South thore of Chebucto fteep : the plaifter cliffs in George Bay are remarkable for their precipitous face and whitenefs. Sable or Sand Illand is diftinguifhed (as the name imports) by amazing fand-hills of a fugar-loaf form. The ifle of Great Manan, on the weftern fide of the entrance of the bay of Fundy, is very lofty, the ftrata divided, and the top wooded. St. Mary's Bay is nobly bounded by high rocks, cloathed on their fummits with woods: the entrance into it are the Grand and Petit Pafage; the fides of the laft are either covered with hanging woods, floping to the water-edge, or broke into fhort precipices. The entrance into the fine harbour of Annapolis is moft auguft: a narrow gut, bounded by enormous precipices, with lofty hills foaring above, the tops of which are even and cloathed with woods. The approach to the bafon of Minas is not lefs magnificent. The columnar rocks of Cape Split are very fingular. The ifle of Haute is lofty and fteep on every fide. The whole neighborhood abounds with views of the molt fublime and romantic caft. This peninfula joins the great continent by a very narrow ifthmus, beyond which we retain a wretched barren remnant of near half of the New World; the fad reverfe of the fhort fpace of twenty years!-My eyes withdraw themfelves from the mortifying fight. Britain, which fate (by the wifdom of one man) as the Queen of Nations, now deplores her folly; and ought to confefs, that ' thofe things which were for her wealth, proved to her ' an occafion pf falling.' She funk under the delufion of profperity, by falfe fecurity, and the pride of victories. If the makes a proper ufe of adverfity, fhe ftill may rife into glory and wealth, by honeft induftry, and by the repreffion of rapacity and fordid ambition.-Once more, gracious Heaven, endeavour to fave an ungrateful people! once more ralfe up fome great inftrument to execute thy mercies!-Pour with. full meafure into our youthful Minifter the virtues of his father l-Emulate, young Man, his virtues, and then-

Si qua fata afpera rumpas;
Tu Marcellus eris.

## I N T R O D U C TION.



## B.

Borive, an antient Scotch cafle on a per-
forated rock
Baltic fea, rather a gulph. Defribed
by Tacitus
its depth
no tides in
once joined to the Wbite
very few finh in

H. Holland,

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The Bijon and Aurocbs of Europe is certainly the fame fpecies wittio this; the difference confifts in the former being lefs fhaggy, and the. hair neither fo foft nor woolly, nor the hind parts fo weak. Both. European and American kinds fcent of mufk.

Where ANTIENTLY FOUND.

Wherbat present.

Europe.
Asia.
Ast.

In antient times they were found in different parts of the old world, but went under different names; the Bonafus of Arip otle, the Urus of Casar, the Bos ferus of Strabo, the Bijon of Pliny, and theBifon of Oppian, fo called from its being found among the Bifiones, a people of Thrace: According to thefe: authorities, it was found in their days in Media and in Pcoonia, a province of Macedonia; among the Alps, and in the great Hercynian foreft, which extended from Ger_ many even into Sarmatia ${ }^{*}$. In later days a white fpecies was a na_ tive of the Scottifh mountains; it is now extingt in its favage ftate, but the offspring, fufficiently wild, is ftill to be feen in the parks of Drumlanrig, in the South of Scotland, and of Cbillingbam Caifle in. Nortbumberland $\dagger$.
In thefe times it is found in very few places in a ftate of nature; it is, as far as we know, an inhabitant at prefent only of the forefts of Litbuania, and among the Carpatbian mountains, within the extent, of the great Hercynian wood $\ddagger$, its antient haunts; and in $A f a$, among: the vaft mountains of Caucafus.

It is difficult to fay in what manner thefe animals migrated originally from the old to the new world; it is molt likely it was. from the north of $A f a$, which in very antient times might have been: flocked with them to its moft extreme parts, notwithftanding they. are now extinct. At that period there is a probability that the old: and the new continents might have been united in the narrow channel between Tcbutki nofs and the oppofite headlands of America;

[^82]and the many iflands off of that promontory, with the Aleutian or New Fox illands, fomewhat more diftant, ftretching very near to America, may with great reafon be fuppofed to be fragments of land which joined the two continents, and formed into their infular ftate by the mighty convulfion which divided A/ia from America. Spain was probably thus disjoined from Africa; Britain from France; Ice_ land from Greenland; Spitzbergen from Lapland.

But that they paffed from Afia to America is far the more probable, than that they focked the new world from the fide of Europe, not only on account of the prefent narrownefs of the ftreight between the two continents, which gives a greater' caufe to fuppofe them to have been once joined; but that we are now arrived at a certainty, that thefe animals in antient days were natives of Sibiria: the fculls, with the horns affixed, of a fize far fuperior to any known at this time, have been found foffil not only on the banks of the Ilga, which falls into the Lena, but even in thofe of the Anadyr, the moft eaftern of the Sibirian rivers, and which difembogues north of Kamtfcbatka into thofe ftreights: fimilar fkulls and horns have been difcovered near Ditfcbau, in Poland, alfo of a gigantic magnitude; and in my opinion of the fame fpecies with the modern Bijons *.

In America thefe animals are found in the countries fix hundred miles weft of Hudfon's Bay; this is their moft northern refidence. From thence they are met with in great droves as low as Cibole $\dagger$, in lat. 33, a little north of California, and alfo in the province of Mivera, in New Mexico $\ddagger$; the fpecies inftantly ceafes fouth of thofe countries. They inhabit Canada, to the weft of the lakes; and in greater abundance in the rich Javannas which border the river Miffitip and the great rivers which fall into it from the weft, in the upper Louifiana §.

[^83]
## B I S O N.

Trmid.

Chase.

Another METHOD.

There they are feen feeding in herds innumerable, promifecuoully with multitudes of ftags and deer, during morning and evening; retiring in the fultry heats into the thade of tall reeds, which border the rivers of Anerica.
They are exceedingly fhy; and very fearful of man, unlefs they are wounded, when they purfue their enemy, and become very dangerous.

The chafe of thefe animals is a favorite diverfion of the Indians: it is effected in two ways; firft, by fhooting; when the markfman mult take great care to go againft the wind, for their finell is fo exquifite that the moment they get fcent of him they inftantly retire with the utmoft precipitation *. He aims at their fhoulders, that they may drop at once, and not be irritated by an ineffectual wound. Provided the wind does not favor the beafts, they may be approached very near, being blinded by the hair which covers their eyes. The other method is performed by a great number of men, who divide and form a vaft fquare: each band fets fire to the dry grafs of the favanna where the herds are feeding; thefe animals have a great dread of fire, which they fee approach on all fides; they retire from it to the center of the fquare $\dagger$; the bands clofe, and kill them (preffed together in heaps) without the left hazard. It is pretended, that on every expedition of this nature, they kill fifteen hundred or two thoufand beeves.

The hunting-grounds are prefcribed with great form, leaft the different bands fhould meet, and interfere in the diverfion. Penalties are enacted on fuch who infringe the regulations, as well as on thofe who quit their pofts, and fuffer the beafts to efcape from the hollow fquares; the punifhments are, the ftripping the delinquents, the taking away their arms (which is the greateft difgrace a favage can undergo), or laftly, the demolition of their cabins $\ddagger$.

[^84]
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Hard to be TAMED.

Attempts have been made to tame and domefticate the wild, by catching the calves and bringing them up with the common kind, in hopes of improving the breed. It has not yet been found to anfwer: notwithftanding they had the appearance for a time of having loft their favage nature, yet they always grew impatient of reftraint, and, by reafon of their great ftrength; would break down the ftrongeft inclofure, and entice the tame cattle into the corn-fields. They have been known to engender together, and to breed; but I cannot learn whether the fpecies was meliorated * by the intercourfe : probably perfeverance in continuing the croffes is only wanted to effect their thorough domeftication ; as it is notorious that the Bifons of the old world were the original ftock of all our tame cattle.

Thefe were the only animals which had any affinity to the European cattle on the firft difcovery of the new world : before that period, it was in poffeffion of neither Horfe nor Afs, Cow nor Sheep, Hog, Goat, nor yet that faithful animal the Dog. Mankind were here in a ftate of nature; their own paffions unfubdued, they never thought of conquering thofe of the brute creation, and rendering them fubfervient to their will. The few animals which they had congenerous to thofe mentioned, might poffibly by induftry have been reclamed. This animal might have been brought to all the ufes of the European Cow; the Pecari might have been fubitituted for the Hog; the Fox or Wolf for the Dog: but the natives, living wholly by chafe, were at war with the animal creation, and neglected the cultivation of any part, except the laft, which was imperfectly tamed.

Such is the cafe even to the prefent hour; for neither the example of the Europeans, nor the vifible advantages which refult from an attention to that ufeful animal the Cow, can induce the Indian to pay any refpect to it. He contemns every fpecies of domeftic labour, except what is neceffary for forming a provifion of bread. Every
wigwam or village has its plantation of Mayz, or Indian corn, and on that is his great dependence, fhould the chafe prove unfuccefsful.

Domefticated cattle are capable of enduring very rigorous climates; Cows are kept at Quickjock in Lecha Lapmark, not far from the aretic circle; but they do not breed there, the fucceffion being preferved by importation : yet in Iceland, a fmall portion of which is within the circle, cattle abound, and breed as in more fouthern latitudes : they are generally fed with hay, as in other places; but where there is fcarcity of fodder, they are fed with the fifh called the Sea-Wolf, and the heads and bones of Cod beaten fmall, and mixed with one quarter of chopped hay : the cattle are fond of it, and, what is wonderful, yield a confiderable quantity of milk. It need not be faid that the milk is bad.

Kamtfchatka, like America, was in equal want of every domeftic ani- Kamtschatia. mal, except a wolf-like Dog, till the Rufians of late years introduced the Cow and Horfe. The colts and calves brought from the north into the rich paftures of Kamt $t$ cbatka, where the grafs is high, grow to fuch a fize, that no one would ever fufpect them to be defeended from the Ponies and Runts of the Lena *. The Argali, the ftock of the tame Sheep, abounds in the mountains, but even to this time are only objeets of chafe.. The natives are to this hour as uncultivated as the good Evander defcribes the primary natives of. Latium to have been, before the introduction of arts and.fciences.

> Queis neque mos, neque cultus erat, nec jungere tauros,
> Aut componere opes norant, aut parcere parto:
> Sed rami atque afper vidu venatus alebat.

No laws they know, no manners, nor the care-
Oflah'ring Oxen, or the fhining Share;
No arts of gain, nor what they. gain'd to fpare:
$\}$
Their exercife the chafe: the running flood Supplied their thirft ; the trees fupplied their food.

## Dryden.

2. Mysk:

Size.

Muk Ox, Hif. 2yad. $\mathrm{N}^{\circ} 9$.
Le Bœuf mufqùe, de M. Feremie, Voy. au Nord, iii. 314.-Charlevoix, N: France, v. 194-Lev. Mus.

BULL. With horns clofely united at the bafe; bending inwards and downwards; turning outwards towards their ends, which taper to a point, and are very fharp: near the bafe are two feet in girth; are only two feet long meafured along the curvatire : weight of a pair, feparated from the head, fometimes is fixty pounds *.

The hair is of a dufky red, extremely fine, and fo lung as to trail on the ground, and render the beaft a feeming fhapelefs mafs, without diftinction of head or tail $\dagger$ : the legs and tail very fhort: the fhoulders rife into a lump.

In lize lower than a Deer, but larger as to belly and quarters $\ddagger$. I have only feen the head of this animal; the reft of the defrription is taken from the authorities referred to: but by the friendfhip of Samuel Wegg, Efq; I received laft year a very complete fkin of the cow of this fpecies, of the age of three years, which enables me to give the following defcription:

Cow. The noftrils long and open : the two middle cutting teeth broad, and fharp-edged; the three on each fide fmall, and truncated: under and upper lips covered with fhort white hairs on their fore part, and with pale brown on their fides: hair down the middle of the forthead long and erect ; on the cheeks finooth and extremely long and pendulous, forming with that on the throat a long beard: the hair along the neck, fides, and rump hangs in the fame manner, and almoft touches the ground: from the hind part of the head to the fhoulders is a bed of very long fofi hair, forming an upright mane: in the old beafts the fpace between the fhoulders rifes into a

[^85]hunch:

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Muk Ox, Hife quad No.




 guth ate only wo feo long meafuredidong ge curvatire: Weght of a pair, feparated from the head, fometimes is fixty pounde?.




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to any I have féen, and which might be very ufeful in manufactures if fufficient could be procured. I give full credit to $M$. feremie, who fays, that he brought fome of the wool to Frence, and got fockings made with it, more beautiful than thofe of fllk ${ }^{*}$. The fkin is thin.

The length of the whole hide, from nofe to tail, is about fix feet four inches: of the head alone fourteen inches. The legs could not be well meafured, but were little more than a foot long.

The fituation of thefe animals is very local. They appear firft in the tract between Clburcbill river and that of Seals, on the welt fide of Hudfon's Bay. They are very numerous between the latitudes 66 and. 73 north, which is as far as any tribes of Indians go.. They live in herds of twenty or thirty. Mr. Hearn $\dagger$ has feen in the high latitudes. feveral herds in one day's walk. They delight moft in the rocky and barren mountains, and feldom frequent the woody parts of the country. They run nimbly, and are very active in climbing the rocks. The flefh taftes very ftrong of Mufk, and the heart is fo ftrongly infected as hardly to be eatable; but the former is. very wholefome, having been found to reftore fpeedily to health the fickly crew who. made it their food $\ddagger$.

They are lhat by the Indians for the fake of the meat and fkins, the laft from its warmth making excellent blankets. They are brought down on fledges to the forts annually during winter, with about three or four thoufand weight of the ferh. Thefe are called Cburcbill Buffaloes, to diftinguifh them from the laft fpecies, which. are in Hudjon's Bay called Inland Buffaloes, of which only the: tongues are brought as prefents $\|$.

They are found alfo in the land of the Cris or Crifinaux, and the Alfinibouels: again among the Attimofpiquay, a nation fuppofed to in-

[^86]habit about the head of the river of Seals *, probably not very remote from the South Sea. They are continued from thefe countries \{outhward, as low as the provinces of Quivera and Cibola; for Father Marco di Nifa, and Gomara, plainly defcribe both kinds $\dagger$.

Some of the fkulls of this fpecies have been difcovered on the molfy plains near the mouth of the Oby in Sibiria. It is not faid how remote from the fea; if far, they probably in fome period might have been common to the north of Afia and of America; if near the fhore, it is poffible that the carcafes might have floated on the ice from America to the places where the remains might have been found $\ddagger$. Of this fpecies was the head, and fuch were the means of conveyance, from the coaft of Hudfon's or Baffin's, mentioned by Mr. Fabricius, and which he faw fo brought to Greenland \|; for it could not have been, as he conjectures, the head of the grunting Ox , an animal found only in the very interior parts of northern Afia.

[^87]

S 1 E E P. Hift. Quad. Genus III.

A R G A L I: Wild Sheep, Fiff. 2uad. No 11. H. p. 38.—Smellie, vi. 205.Lev. Mus.

THE Sheep, in its wild ftate, inhabits the north-eaft of $A f a$, beyond lake Baikal, between the Onon and Argun, to the height of latitude 60, on the eaft of the Lena, and from thence to Kamt $f$ cbatka, and perhaps the Kurili iflands. I dare not pronounce that they extend to the continent of America; yet I have received from Doctor Pallas a fringe of very fine twitted wool, which had ornamented a drefs from the ine of Kadjak; and I have myfelf another piece from the habit of the Americens in latitude 50. The firt was of ${ }^{-}$ a fnowy whitenefs, and of unparalleled finenefs; the other ás fine, but of a pale brown color: the firt appeared to be the wool which. grows intermixed with the hairs of the Argali; the laft, that which is found beneath thofe of the Murk Ox. Each of thefe animals may exift on that fide of the continent, notwithftanding they might have not fallen within the reach of the navigators in their lhort ftay off the coaft.

Certain quadrupeds of this genus were obferved in California by the miffionaries in 1697 ; one as large as a Calf of one or two years old, with a head like a Stag, and horns like a Ram : the tail and hair fpeckled, and fhorter than a Stag's. A fecond kind was larger, and varied in color; fome being white, others. black, and furnifhed: with.

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ingle perfon to be poffeffed of a thoufand or twelve hundred. They have upright ears, fhort tails, and often four or five horns *. They are fometimes kept in ftables during winter, but ufually left to take their chance abroad, when they commonly hide themfelves in the caves of exhaufted vulcanoes $\dagger$. They are particularly fond of feurvygrafs, with which they grow fo fat as to yield more than twenty pounds. 'The ewes give from two to fix quarts of milk a day, of which butter and cheefe is made. The wool is never fhorn, but left on till the end of May, when it grows loofe, and is ftripped entirely off in one fleece; and a fine, fhort, and new wool appears to have grown beneath; this continues growing all fummer, becomes fmooth and gloffy like the hair of Camels, but more fhaggy $\ddagger$. With the wool the natives manufacture their cloth; and the fieh dried is an article of commerce.

In all parts of Europecin Rafia are found the common Sheep. Thofe of the very north, and of the adjacent Finmark, have fhort tails and -upright ears, and wool almoft as rude as the hair of Goats; but are feldom polyceratous. They fometimes breed twice in a year, and bring twins each time $\|$.

In the Sifiatic dominions of Rufia, from the borders of Ru/fia to thofe of Clina, is a moff fingular variety of Sheep, deftitute of tails, with rumps fwelling into two great, naked, and fmooth hemifpheres of fat, which fometimes weigh forty pounds : their nofes are arched : their ears pendulous: their throats wattled : their heads horned, and fometimes furnifhed with four horns. Thefe are fo abundant throughout Tartary, that a hundred and fifty thoufand have been annually fold at the Orenburg fairs; and a far greater number at the fort Troizkaje, from whence they are driven for naughter into diffe-

[^88]rent parts of Rufia*. Sheed do not thrive in Kamtfcbatka, by ream fon of the wetnefs of the country.

Sheep abound in Nerw England and its inandis: the wool is Chort, and much coarfer than that of Great Britain; poffibly proper attention to the houfing of the Sheep may in time improve the fleece; but the feverity of the climate will ever remain an obitacle to its perfeetion. Manufactures of cloth have been eftablifhed, and a tolerable cloth has been praduced, but in quantities in no. degree equal to the confumption of the country. America likewife wants. downs; , but by clearing the hills of trees, in a. long feries of years. that defect may be alleviated. As we advance further fouth, the: Sheep grow fcarcer, worfe, and the wool more hairy.

* Pallas, Sp. Zook fafc. xi. 63. tab. i\%.


## G O A T. Hif. Quad. Genus IV.

I BEX, Hift. Quad. $\mathrm{N}^{\circ} 13$, is fuppofed to extend to the mountains of the eaftern part of Sibiria, beyond the Lena, and to be found within the go. vernment of Kamt/chatka.-Lev. Mys.

THE tame Goat inhabits northern Europe as high as Wardbuys, in latitude 71, where it breeds, and runs out the whole year, only during winter has the protection of a hovel : it lives during that feafon on mofs and bark of Fir-trees, and even of the logs cut for fuel. They are fo prolific as to bring two, and even three, at a time. In Norway they thrive prodigiouly, infomuch that 70 or 80,000 of raw fkins are annually exported from Bergen, befides thoufands that are fent abroad dreffed.

Goats are alfo kept in Iceland, but not in numbers, by reafon of the want of fhrubs and trees for them to brouze. They have been introduced into Greenland, even to fome advantage. Befides vegetable food, they will eat the ArEtic trouts dried; and grow very fat $\dagger$.
The climate of Soutb America agrees fo well with Goats, that they multiply amazingly: but they fucceed fo ill in Canada, that it is neceffary to have new fupplies to keep up the race $\ddagger$.

[^89]DEER.

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## D E E R. Hif. Quod. Genus VII.

Elk, Hif. Quad: $\mathrm{N}^{\circ} 42$ :-Smellie vi. 315 -LEv. Mus.
3. Mooss.

DE ER. With horns with fhort beams, fpreading into a broad palm, furnifhed on the outward fide with fharp fnags; the inner fide plain: no brow antlers: fmall eyes: long flouching afinine ears: noferils large: upper lip fquare, great, and hanging far over the lower; has a deep furrow in the middle, fo as to appear almoft bifid: under the throat a fimall excrefcence, with a long tuft of coarfe black hair pendent from it: neck fhorter than the head; along the top an upright, fhort, thick, mane: withers elevated: tail fhort: legs long; the hind legs the fhorteft : hoofs much cloven.

Color of the mane a light brown; of the body in general a hoary brown: tail dufky above; white beneath. The vaft fize of the head, the fhortnefs of the neck, and the. length of the ears, give the beaft a deformed and ftupid look.

The greateft height of this animal, which I have heard of, is feventeen hands; the greateft weight 1229 pounds.

The largeft horns I have feen are in the houfe of the Hudjon's Bay Company; they weigh fifty-fix pounds: their length is thirty-two inches; breadth of one of the palms thirteen inches and a half; fpace between point and point thirty-four.

The female is leffer than the male, and wants horns.
Inhabits the ine of Cape Breton, Nova Scotia, and the weftern fide

Color.

Size.
of Horms. of the Bay of Fundy; Canada, and the country round the great lakes, almoft as far fouth as the river Obio *. Thefe are its prefent northern and fouthern limits. In all ages it affected the cold and wooded regions in Europe, Afia, and America. They are found in all the woody tracts of the temperate parts of Ruffa, but not on the Arctic flats, nor yet in Kamtfcbatka. In Sibiria they are of a monftrous fize, particularly among the mountains.

[^90]$$
18 \quad \mathrm{M} \quad \mathrm{O} \quad \mathrm{O} \quad \mathrm{~S} \text { E. }
$$

Name.

Residenceavd FOOD.

Gait. They have a fingular gait : their pace is a fhambling trot, but they go with great fwiftnefs. In their common walk they lift their feet very high, and will without any difficulty ftep over a gate five feet high.

They feed principally in the night. If they graze, it is always, againft an afcent; an advantage they ufe for the reafon above affigned.
Ruminate.

Young.
The Elk and the Moofe are the fame fpecies; the laft derived from $M u f u$, which in the Algonkin language fignifies that animal *. The Englifh ufed to call it the Black Moofe, to diftinguifh it from the Stag, which they named the Grey Moofe t. The Frencl call it L'Orignal.

Thefe animals refide amidft forefts, for the conveniency of brouning. the boughs of trees, becaufe they are prevented from grazing with any kind of eafe, by reafon of the hortnefs of their necks and length. of their legs. They often have recourfe to water-plants, which they can readily get at by wading. M. Sarrafin fays, that they are very fond of the anagyris fatida, or ftinking bean trefcil, and will uncover the fnow with their feet in order to get at it.

In pafling through the woods, they raife their heads to a horizontal pofition, to prevent their horns from being entangled in the branches. They ruminate like the Ox .

They go to rut in autumn; are at that time very furious, feeking: the female by fwimming from ine to ifle. They bring two young at a birth, in the month of April, which follow the dam a whole year. During the fummer they keep in families. In deep fnows they colleet in numbers in the forefts of pines, for protection from the incle-mency of the weather under the fhelter of thofe ever-greens.

They are very inoffenfive, except in the rutting-feafon; or except they are wounded, when they will turn on the affailant, and attack

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of a triangle : the bottom opens into a fecond enclofure, completely triangular. At the opening are hung numbers of fares, made of flips of raw hides. The Indians, as before, affemble in great troops, and with all kinds of noifes drive into the firft enclofure not only the Moofes, but the other fpecies of Deer which abound in that country: fome, in forcing their way into the fartheft triangle, are caught in the fnares by the neck or horns; and thofe which effape the fnares, and pafs the little opening, find their fate from the arrows of the hunters, directed at them from all quarters *.

They are often killed with the gun. When they are firf unharboured, they fquat with their hind parts and make water, at which inftant the fportfiman fires; if he miffes, the Moofe fets off in a moft rapid trot, making, like the Rein-deer, a prodigious rattling with its hoofs, and will run for twenty or thirty miles before it comes to bay or takes the water. But the ufual time for this diverfion is the winter. The hunters avoid entering on the chafe till the fun is ftrong enough to melt the frozen cruft with which the fnow is covered, otherwife the animal can run over the firm furface: they wait till it becomes foft enough to impede the flight of the Moofe; which finks up to the fhoulders, flounders, and gets on with great difficulty. The fportfman purfues at his eafe on his broad rackets, or fnow-fhoes, and makes a ready prey of the diftreffed animals,

> As weak againft the mountain heaps they pufh
> Their beating breaft in vain, and piteous bray., He lays them quivering on th' enfanguin'd fnows, And with loud fhouts rejoicing bears them home.

Tномpson.
juperstitions
RELATINGTO the Moose.

The opinion of this animal's being fubject to the epilepfy feems to have been univerfal, as well as the cure it finds by fratching its ear with the hind hoof till it draws blood. That hoof has been ufed in Indian medicine for the falling-ficknefs; they apply it to the heart of
the afficted, make him hold it in his left hand, and rub his ear with it. They ufe it alfo in the colick, pleurify, vertigo, and purple fever; pulverifing the hoof, and drinking it in water. The Algonkins pretend that the flefh imparts the difeafe; but it is notorious that the hunters in a manner live on it with impunity.

The favages efteem the Moofe a beaft of good omen; and are perfuaded that thore who dream often of it may flatter themfelves with long life *.

Their wild fupertition hath figured to them a Moofe of enormous lize, which can wade with eafe through eight feet depth of fnow; which is invulnerable, and has an arm growing out of its fhoulder, fubfervient to the purpoles of the human : that it has a court of other Moofes, who at all times perform fuit and fervice, according to his royal will.t.

I lament that I am not able to difcover the animal which owned the vaft horns fo often found in the bogs of Ireland, fo long and fo confidently attributed to the Moofe. Thefe have been found to be fometimes eight feet long, fourteen between tip and tip $\ddagger$, furnifhed with brow antlers; and weighing three hundred pounds: the whole fikeleton is frequently found with them.
The fables delivered by foffelyn, of the Moofe being thirty-three hands, or twelve feet, high ; and by Le Hontai, of its horns weighing between three and four hundred pounds; occafioned the naturalifts of part times to call the foffil horns thofe of the Moofe; and to flatter themfelves that they had difcovered the animal they belonged to : but recent difcoveries evince the error. I once entertained hopes that the Wadelfe § of the Hudfon's Bay Indians was the fpecies; but by fome late information I received from Mr. Audreio Grabam, factor in the Bay, I find it to be no other than the common Moofe.

[^91]4. Rein. Hif. Quad. No 43.-Smellie, vi. 316.-Hackluyt, iii. 114.-I.ev. Mu3.

DEER. With large but nender horns, bending forward; with brow antlers broad and palmated, fometimes three feet nine inches long; two feet fix from tip to tip; weight, mine pounds twelve ounces avoirdupoife. The body is thick and fquare: the legs fhorter than thofe of a Stag : the height of a full-grown Rein four feet fix.
Color of the hair, at firft fhedding of the coat, of a brownifh $a f_{1}$; afterwards changes to a hoary whitenefs. The animal is admirably guarded againft the rigor of the climate by the great thicknefs of the hairs, which are fo clofely placed as totally to hide the flin, even if they are put afide with ever fo much care.

Space round the eyes always black: nofe, tail, and belly white : above the hoofs a white circle: hair along the lower fide of the neck very long : tail hort.

Hoofs, and falfe hoofs, long and black; the laft loofely hung, making a prodigious clatter when the animal runs.
Female, The female is furnifhed with horns; but leffer, broader, and flatter, and with fewer branches than thofe of the male. She has fix teats, but two are fpurious and ufelefs. They bring two young at a time.
Place. The habitation of this Deer is ftill more limited than that of the former, confined to thofe parts where cold reigns with the utmoft feverity. Its moft fouthern refidence is the northern parts of Canada,
Hudson's-Baf. bordering on the territories of Hudjon's Bay. Cbarlevoix mentions a fingle inftance of one wandering as far as the neighborhood of 2uebec*. Their true place is the vaft tract which furrounds the
*V. igi.
Bay.

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inle of Kadjak, and others of the eafternmoit Fox ilands, the inhabitants have fkins of them from the Américan continent, and border their bonnets with the white hairs of the domeftic Rein-deers, ftained red. They are found again in the countries which border on the Icy fea *; from which they retire, at approach of winter, towards the woods, to feed on the mofs, not only that which grows on the ground, but the fpecies pendulous from the trees. The whole northeaft of Sibiria abounds with them. They alfo are yet found wild in the Urallian mountains; along the river Kama, as far as Kungus; and about fome fnowy fummits more fouth : and again on the high chain bordering on Sibiria on the fouth, and about lake Baikal. Towards

Samoizdea.

Laplanders, heir uses ofit.
the Cow, the Sheep, and the Goat. Thofe moft innocent of people have, even under their rigorous fky , fome of the charms of a paftoral life. They have fubdued thefe animals to various ufes, and reclamed them from their wild ftate. They attend their herds of Rein-deer, during fummer, to the fummits of their alps; to the fides of their clear lakes and ftreams, often bordered with native rofes. They know the arts of the dairy, milk thefe their cattle, and make from it a rich cheefe. They train them to the fledge, confider them as their chief treafure, and cherith them with the utmoft tendernefs.
Samoieds. among the well-known Laplanders. I here tranfgrefs the limits of my plan, to give a light comparative view of the progrefs of civilization among the inhabitants of thefe frozen climes.

With the Laplanders this animal is the fubftitute to the Horfe,

The brutifh Samoied confiders them in no other view than as ani_ the welt they are continued in the land of the Samoieds; and finally mals of draught, to convey them to the chafe of the wild Reins; which they kill for the fake of the fkins, either to cloath themfelves, or to cover their tents. They know not the cleanly delicacy of the milk or cheefe; but prefer for their repaft the inteftines of beafts, or the half-putrid flefh of a horfe, ox, or fheep, which they find dead on the high road $\dagger$.

## $\begin{array}{llll}\mathrm{R} & \mathrm{E} & \mathrm{I} & \mathrm{N} .\end{array}$

The Korcki, a nation of Kamtfcbatka, may be placed on a level with the Samoieds: they keep immenfe herds of Reins; fome of the richeft, to the amount of ten or twenty thoufand; yet fo fordid are they as to eat none except fuch which they kill for the fake of the dins ; an article of commerce with their neighbors the Kamtfebatkans: otherwife they content themfelves with the flelh of thofe which die by difeafe or chance. They train them in the fedge, but neglect them for every domeftic purpofe *. Their hiftorian fays, they couple two to each carriage ; and that the Deer will travel a hundred and fifty verfts in a day, that is, a hundred and twelve Engli/b miles. They caftrate the males by piercing the fpermatic arteries, and tying the fcrotum tight with a thong.

The inhabitants about the river Kolyma make ufe of the foft fkins of the Rein-deer, dreffed, for fails for a kind of boat called Schitiki, caulked with mofs; and the boards as if fewed together with thongs; and the cordage made of flices of the fkin of the Elk $\dagger$.

The favage and uninformed E/kimaux and Greenlanders, who poffers, amidft their fnows, thefe beautiful animals, neglect not only the domeftic ufes, but even are ignorant of their advantage in the fledge. Their element is properly the water; their game the Seals. They feem to want powers to domefticate any animals unlefs Dogs. They are at enmity with all; confider them as an object of chafe, and of no utility till deprived of life. The flefh of the Rein is the moft coveted part of their food; they eat it raw, dreffed, and dried and fmoked with the fnow lichen. The wearied hunters will drink the raw blood; but it is ufually dreffed with the berries of the heath: they eagerly devour the contents of the ftomach, but ufe the inteftines boiled. They are very fond of the fat, and will not lofe the left bit $\ddagger$. The fkin, fometimes a part of their cloathing, dreffed with the hair on, is foft and pliant ; it forms alfo the inner lining of their tents, and moft

[^92]
## R $\quad \mathrm{E} \quad \mathrm{I} \quad \mathrm{N}$.

excellent blankets. The tendons are their bow-ftrings, and when fplit are the threads with which they few their jackets *.

The Greenlanders, before they acquired the knowlege of the gun, caught them by what was called the clapper-bunt $\dagger$.' The women and children furrounded a large fpace, and, where people were wanting, fet up poles capped with a turf in certain intervals, to terrify the animals; they then with great noife drove the Reins into the narrow defiles, where the men lay in wait and killed them with harpoons or darts. But they are now become very fcarce.

Multitudes
IN Hudson's Bay.

On the contrary, they are found in the neighborhood of Hudfon's Bay in moft amazing numbers, columns of eight or ten thoufand are feen annually palfing from north to fouth in the months of March and April $\ddagger$, driven out of the woods by the mufketoes, feeking refrefh-
Migration. ment on the fhore, and a quiet place to drop their young. They go to rut in September, and the males foon after fhed their horns; they are at that feafon very fat, but fo rank and mufky as not to be eatable. The females drop their young in fune, in the moft fequeftered fpots they can find; and then they likewife lofe their horns. Bearts of prey follow the herds : firt, the Wolves, who fingle out the ftragglers (for they fear to attack the drove) detach and hunt them down: the Foxes attend at a diftance, to pick up the offals left by the former. In autumn the Deer with the Fawns re-migrate northward.
Uses. The Indians are very attentive to their motions; for the Rein forms the chief part not only of their drefs but food. They often kill multitudes for the fake of their tongues only ; but generally they feparate the fefh from the bones, and preferve it by drying it in the finoke : they alfo fave the fat, and fell it to the Engli/b in bladders, who ufe it in frying inftead of butter. The fkins are alfo an article of commerce, and ufed in London by the Breeches-makers.
Caser.
The Indians fhoot them in the winter. The Englifl make hedges, with ftakes and boughs of trees, along the woods, for five miles in

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28 S T A G.

Kamtfchatka, nor in any country inhabited by the Rein-a line in a manner feparates them.

Their fkins are an article of commerce imported * by the Hudfon's Bay company; 'but brought from the diftant parts far inland by the Indians, who bring them from the neighborhood of the lakes. In moft parts of North America they are called the Grey Moofe, and the Elk; this has given occafion to the miftaken notion of that great animal being found in Virginia, and other fouthern provinces.

The Stags of America grow very fat: their tallow is much efteemed for making of candles. The Indians fhoot them. As they are very fhy animals, the natives cover themfelves with a hide, leaving the horns ereet; under. fhelter of which they walk within reach of the herd. De Brie, in the xxvth plate of the Hiftory of Florida, gives a very curious reprefentation of this artful method of chafe, when it was vifited by the French in 1564 .

Stags are totally extirpated in Rufia, but abound in the mountanous fouthern track of Sibiria, where they grow to a fize far fuperior to what is known in Europe. The height of a grown Hind is four feet nine inches and a half, its length eight feet; that of its head one foot eight inches and a half.

The fpecies ceafes in the north-eatern parts of Sibiric, nor are any found in Kamtcibatka.

DEER. With round and nender horns, bending greatly forward; numerous branches on the interior fides: deflitute of brow antlers: color of the body a cinereous brown : head of a deep brown: belly, fides, fhoulders, and thighs, white, mottled with brown : tail
ten inches long, of a dufky color: feet of a yellowifh brown. Are not fo well haunched as the Engli/b Buck, and are lefs active *.

Inhabits all the provinces fouth of Canada, but in greateft Place. abundance in the fouthern; but efpecially the vaft favannas contiguous to the $M i f f i p i$, and the great rivers which flow into it. They graze in herds innumerable, along with the Stags and Buffaloes. This fpecies probably extends to Guiana, and is the Baieu of that country, which is faid to be about the fize of a European Buck, with fhort horns, bending at their ends $\dagger$.

They are capable of being made tame; ànd when properly trained, are ufed by the Indians to decoy the wild Deer (efpecially in the rutting feafon) within fhot. Both Bucks and Does herd from Septernber to Marcb; àfter that they feparate, and the Does fecrete themfelves to bring forth, and are found with difficulty. The Bucks from this time keep feparate, till the amorous feafon of Septenber revolves. The Deer begin to feed as foon as night begins; and fometimes, in the rainy feafon, in the day: otherwife they feldom or never quit their haunts. An old Americam fportfman has remarked, that the Bucks will keep in the thickets for a year, or even two $\ddagger$.

Thefe animals are very reftlefs, and always in motion, coming and going continually $\S$. Thofe which live near the fhores are lean and bad, fubject to worms in their heads and throats, generated from the eggs depofited in thofe parts $\|$. Thofe that frequent the hills and favannas are in better cafe, but the venifon is dry. In hard winters they will feed on the long mofs which hangs from the trees in the northern parts.

Thefe and other cloven-footed quadrupeds of America are very fond of falt, and refort eagerly to the places impregnated with it. They are always feen in great numbers in the fpots where the ground

[^93]has been torn by torrents or other accidents, where they are feen licking the earth. Such foots are called licking-places. The huntfmen are fure of finding the game there; for, notwithftanding they are often difturbed, the Buffaloes and Deer are fo paffionately fond of the favory regale, as to bid defiance to all danger, and return in droves to thefe favorite haunts.

The fkins are a great article of commerce, 25,027 being imported from New-York and Penfylvania in the fale of 1764.

The Deer are of the firft importance to the Savages. The fkins form the greatelt branch of their traffick, by which they procure from the colonits, by way of exchange, many of the articles of life. To all of them it is the principal food throughout the year ; for by drying it over a gentle but clear fire, after cutting it into fmall pieces, it is not only capable of long prefervation, but is very portable in their fudden excurfions, efpecially when reduced to powder, which is frequently done.

Hunting is more than an amufement to thefe people. They give themfelves up to it not only for the fake of fubfiftence, but to fit themfelves for war, by habituating themfelves to fatigue. A good huntrman is an able warrior. Thofe who fail in the fports of the field are never fuppofed to be capable of fupporting the hardfhips of a campaign; they are degraded to ignoble offices, fuch as dreffing the flins of Deer, and other employs allotted only to flaves and women $\dagger$.

When a large party meditates a hunting-match, which is ufually at the beginning of winter, they agree on a place of rendezvous, often five hurdred miles diftant from their homes, and a place, perhaps, that many of them had never been at. They have no other method of fixing on the fpot than by pointing with their finger. The preference is given to the eldeft, as the moft experienced $\ddagger$.

$$
\dagger \text { Lasufon, 208. } \ddagger \text { Catefoy, App. xii. }
$$

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in all the luxuries of the country. The chafe rouzes their appetites; they are perpetually eating, and will even rife to obey, at midnight, the calls of hunger. Their viands are exquifite. Venifon boiled with red peafe; turkies barbecued and eaten with bears fat ; fawns cut out 'of the does belly, and boiled in the native bag; fifh, and crayfifh, taken in the next ftream; dried peaches, and other fruits, form the chief of their good living *. Much of this food is carminative: they give loofe to the effects, and (reverfe' to the cuftom of the delicate Arabs $\dagger$ ) laugh molt heartily on the occafion $\ddagger$.

They bring along with them their wives and miftreffes: not that they pay any great refpect to the fair. They make (like the Cathnefians) errant pack-horfes of them, loading them with provifions, or the fkins of the chafe; or making them provide fire-wood. Love is not the palfion of a Savage, at left it is as brief with them as with the animals they purfue.

Mexican Roe? Hif. Quad. ${ }^{\circ}{ }^{\circ}$ 5.-Smellie, iv. 136.

DEER. With horns near nine inches long, meafuring by the curvature; and near nine inches between tip and tip, and two inches diftant between the bafes. About an inch and a half from the bottom is one fharp erect fnag. This, and the lower parts of the horns, are very rough, ftrong, and fcabrous. The upper parts bend forwards over the bafes; are fmooth, flatted, and broad, dividing into three fharp frags. Color of the hair like the European Roe; but while young are rayed with white. In fize fomewhat fuperior to the - European Roe.

Inhabits Mexico II ; probably extends to the interior north-weftern parts of America, and may prove the Scenoontung or Squinaton, defcribed as being lefs than a Buck and larger than a Roe, but very like it, and of an elegant form $\$$.

[^94]Hif. Quad. $\mathrm{N}^{\circ}{ }_{51}$-Smellie, iv. i20.-Lev. Mus.

DEER. With upright, round, rugged horns, trifurcated: hairs tawny at their ends, grey below : rump and under-fide of the tail white. Length near four feet : tail only an inch.

According to Cbarlevoix, they are found in great numbers in Ca - . nada. He fays they differ not from the European kind: are eafily domefticated. The Does will retreat into the woods to bring forth, and return to their mafter with their young *. They extend far weft $\dagger$. If Pifo's figure may be depended on, they are found in Brazil. $\ddagger$; are frequent in Europe; and inhabit as high as Sweden and Norway §: is unknown'in Rulja.

A. Tall-less Roe, Hif. 2uad. p. 109.

In its ftead is a larger variety: with horns like the laft, and color the fame; only a great bed of white covers the rump, and extends fome way up the back : no tail, only a broad cuitaneous excrefcence around the anus.

Inhabits all the temperate parts of Rufia and Sibiria, and extends as far to the north as the Elk. Defcends to the open plains in the winter. The Tartars call it Saiga: The Rufficins Dikaja Reza.
B. Fallow Defr, Hif. 2uad. No 44.

Are animals impatient of cold: are unknown in the Ruffan empire, except by importation: and are preferved in parks in Sweden\|. The Englifo tranlator of Pontoppidan mentions them (perhaps erroneoully) among the deer of Norzay.

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    * Hift. Nouv. France, v. 19\%. \(\quad+\) Dobbs's Hudfon's Bay, \(24 . \quad \pm 97\).
§ Faiun. Succ. N \({ }^{\circ}\) 43, and Pontop. Norzuay, ii. 9. It Du Pratz, ii. 54.
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## M U S K. Hit. Quad. Genus X.

A. Tibet M. Kif. Quad. $\mathrm{N}^{\circ}$ 54.—Mofchus, Pallas Sp. Zool. faff. xiii. Lev. Mus.

MUSK. With very harp fender white turks on each fide of the upper jaw, hanging out far below the under jaw: e ears rather large: neck thick: hair on the whole body long, upright, and thick fer; each hair undulated; tips ferruginous; beneath them black; the bottoms cinereous: on each fade of the front of the neck is a white line edged with black, meeting at the cheft; another croffes that beneath the throat: limbs very flender, and of a full black: tail very fort, and fcarcely vifible. The female wants the turks and the mufk-bag.

The murk-bag is placed on the belly, almost between the thighs. A full-grown male will yield a drachma and a half of mull; an old one two drachmas.

Size.

Place.

The length of the male is two feet eleven; of the female, two feet three. The weight of a male from twenty-five to thirty pounds, Troy weight: of an old female, from thirty to thirty-five; but forme young ones do not exceed eighteen.

Inhabits Afia, from lat. 20 to 60 , or from the kingdoms of Laos and Tong-King, between India and China, and through the kingdom of Tibet* as high as Mangafea. The river fenefei is its weftern boundary, and it extends eaftward as far as lake Baikal, and about the rivers Lena and Witim; but gradually narrows the extent of its re-
 mountains, amidft the fnows, or in the fir-woods which lie between them: goes ufually folitary, except in autumn, when they collect in flocks to change their place: are exceffively active, and take amazing

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# D I V. II. <br> DIGITATED QUADRUPEDS. <br> S E C T. I. With Canine Teeth. 

# D I V. II. Digitated Quadrupeds. 

SECT.I. With Canine Teeth. Rapacious, Carnivorous.

DOG.
g. Wolf.

Color.

HIST. QUAD. Genus XVII.
Hiff. 2uad. ${ }^{\circ}{ }^{1}$ 137.-Smellie, iv. 196.-Lev. Mus.

DOG. With a long head: pointed nofe : ears fharp and erect: legs long: tail bufhy, bending down : hair pretty long. Color ufually of a pale brown, mixed with dull yellow and black.

Inhabits the interior countries fouth of Hudjon's Bay; and from thence all America, as low as Florida. There are two varieties, a greater and a leffer. The firft ufually confines itfelf to the colder parts. The latter is not above fifteen inches high*. In the more uninhabited parts of the country, they go in great droves, and hunt the deer like a pack of hounds, and make a hideous noife. They will attack the Buffalo; but only venture on the ftragglers. In the unfrequented parts of America are very tame, and will come near the few habitations in hopes of finding fomething to eat. They are often fo very poor and hungry, for want of prey, as to go into a fwamp and fill themfelves with mud, which they will difgorge as foon as they can get any food.
The Wolves towards Hudjon's Bay are of different colors; grey and white ; and fome black and white, the black hairs being mixed with the white chiefly along the back. In Canada they have been found entirely black $\dagger$. They are taken in the northern parts in logtraps, or by fpring.guns; their fkins being an article of commerce.

In the Leverian mufeum is the head and fcull of a wolf: dufky and brown, formed by the natives into a helmet. The pro-

[^95]tection

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are fed with fifh-bones and opana, $\overline{\mathrm{i}}$. e. putrid fifh preferved in pits, and ferved up to them mixed with hot water. Thofe ufed for draught are caftrated; and four, yoked to the carriage, will draw five poods, or a hundred and ninety Englifh pounds, befides the driver; and thus loaden, will travel thirty verfts, or twenty miles, a day; or if unloaden, on hardened fnow, on nliders of bone, a hundred and fifty verts, or a hundred Englifb miles*.
It is pretty certain that the Kamt $\int$ chatkan Dogs are of wolfifh defcent; for Wolves abound in that country, in all parts of Sibiria, and even under the ArEtic circle. If their mafter is flung out of his 腯ge, they want the affectionate fidelity of the European kind, and leave him to follow, never ftopping till the fedge is overturned, or elfe ftopped by fome impediment $\dagger$. I am alfo ftrengthened in my opinion by the ftrong rage they have for the purfuit of deer, if on the journey they crofs $\ddagger$ the fcent; when the mafter finds it very difficult to make them purfue their way.

The great traveller of the thirteenth century, Marco Polo, had knowlege of this fpecies of conveyance from the merchants who went far north to traffic for the precious furs. He defcribes the fledges; adds, that they were drawn by fix great dogs; and that they changed them and the fledges on the road, as we do at prefent in going port 1 :

The Kamtfcbatkans make ufe of the fkins of dogs for cloathing, and the long hair for ornament: fome nations are fond of them as a food; and reckon a fat dog a great delicacy §. Both the Afiatic and American Savages ufe thefe animals in facrifices to their gods $\boldsymbol{\sigma}$, to befeeak favor, or avert evil. When the Koreki dread any infection,

[^96]they kill a dog, wind the inteftines round two poles, and pafs between them.

The Greenlanders are not better mafters. They leave their dogs to feed on mufiels or berries; unlefs. in a great capture of feals, when they treat them with the blood and garbage. Thefe people alfo fometimes eat their dogs: ufe the ikins for coverlets, for cloathing, or to border and feam their habits: and their beft thread is made of the guts.

The Dogs in general are large ; and, in the frigid parts at left, have the appearance of Wolves: are ufually white, with a black face; fometimes varied with black and white, fometimes all white; rarcly brown, or all black : have fharp nofes, thick hair, and fhort ears: and feldom bark; but fet up a fort of growl, or favage howl. They fleep abroad; and make a lodge in the fnow, lying with only their nofes out. They fwim moft excellently: and will hunt, in packs, the ptarmigan, arttic fox, polar bear, and feals lying on the ice. The natives fometimes ufe them in the chafe of the bear. They are exceffively fierce; and, like wolves, inftantly Ay on the few domeftic animals_introduced into Greenlond. They will fight among themfelves, even to death. Canine madnefs is unknown in Greenland ${ }^{*}$. They are to the natives in the place of horfes: the Greenlanders faften wo their fledges from four to ten; and thus make their vifits in favage fate, or bring home the animals they have killed. Egede fays that they will travel over the ice fifteen German miles in a day, or fixty Englifh, with fledges loaden with their mafters and five or fix large feals $\dagger$.

Thofe of the neighboring ifland of Iccland have a great refem: blance to them. As to thofe of Newfoundland, it is not certain that there is any diftinct breed: moft of them are curs, with a crofs of the maftiff: fome will, and others will not, talse the water, abfolutely refufing to go in. The country was found uninhabited, which makes it more probable that they were introduced by the Europeans;

[^97]who ufe them, as the factory does in Hudjon's Bay, to draw firing from the woods to the forts.

The Savages who trade to Hudjon's Bay make ufe of the wolfin kind to draw their furs.

It is fingular, that the race of European Dogs fhew as ftrong an antipathy to this American fpecies, as they do to the Wolf itfelf. They never meet with them, but they fhew all poffible figns of dinike, and will fall on and worry them ; while the wolfifh breed, with every mark of timidity, puts its tail between its legs, and runs from the rage of the others. This averfion to the Wolf is natural to all genuine Dogs: for it is well known that a whelp, which has never feen a wolf, will at firft fight tremble, and run to its mafter for protection: an old dog will inftantly attack it.
I fhall conclude this article with an abftract of a letter from Dr: Pallas, dated October 5th 1781; in which he gives the following confirmation of the mixed breed of thefe animals and Dogs.
" I have feen at Mofoow about twenty fpurious animals from dogs " and black wolves. They are for the moft part like wolves, except " that fome carry their tails higher, and have a kind of coarfe bark" ing. They multiply among themfelves: and fome of the whelps " are greyifh, rulty, or even of the whitifh hue of the Arctic wolves: " and one of thofe I faw, in fhape, tail, and hair, and even in bark" ing, fo like a cur, that, was it not for his head and ears, his ill" natured look, and fearfulnefs at the approach of man, I fhould: " hardly have believed that it was of the fame breed.."

DOG. With a hharp nofe : ears almoft hid in the fur, fhort and rounded: hair long, foft, and filky: legs hort: toes covered above and below with very thick and foft fur: tail fhorter than that of the common Fox, and more bufhy.

Inferior in fize to the common FQx: color a blueih-grey, and

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Thofe found on Bering's and Copper ines were probably brought: from the Afatic lide on floating ice : Steller having feen in the remoter iffands orly the black and brown foxes: and the fame only on the continent of America. They burrow in the earth, and form holes. many feet in length ; flrewing the bottom with mofs.. But in Spitzbergen and Greenland, where the ground is.eternally frozen, they live in the cliffs of rocks: two or three inhabit the fame hole. They fwim well, and often crofs from inland to inland in fearch of prey. They are in heat about Ledy-day; and during that time continue in the open air: after that, retreat to their earths. Like dogs, continue united in copulation: bark like them: for which reafon the Ruflans call them Pézati. They couple in Greenlond in March, and again in. May; and bring forth in April and in $\nmid u n e^{*}$.

They are tame and inoffenfive animals; and fo fimple, that there are inflances of their ftanding by when the trap was baiting, and inftantly after putting their heads into it. They are killed for the fake of their fkins, both.in Afa and Hudfon's. Bay:- the fur is light and. warr., but not durable. Mr. Grabam informed me, that they have: appeared in fuch numbers about the fort, that he has taken, in dif-ferent ways, four huadred from. December to Marcb. He likewife. alfured me, that the tips of their tails are always black; thofe of the common foxes always white : and that he never could trace the breeding-places of the former.

The Greenlanders take them either in pitfalls dug in the fnow, and baited with the Capelin fifh; or in fprings.made with whale-bone, laid over a hole made in the fnow, frewed over at bottom with: the fame kind of fing; or in traps made like little huts, with flat ftones, with a broad one by way of door, which falls down (by means of a fring baited on the infide with a piece of flefh) whenever the fox enters and pulls at it $\dagger$. The Greenlanders preferve the fkins. for traffic; and in cafes of neceflity eat the fleth. They alfo make:

## ARCTIC FOX:

buttons of the fkins: and fplit the tendons, and make ufe of them inftead of thread. The blue furs are much more efteemed than the white.

European Fox, Hif. 2uad. N ${ }^{\mathrm{o}} \mathrm{I}_{3} 9$ :-Smellie, iv. 2i4.-Lev. Mus.
ii. European:

DOG. With a pointed nofe: pointed erect ears: body of a: tawny red. mixed with afh-color:: fore part of the legs black: tail long and buhy, tipt with white.

Inhabits the northern parts of Nortb America from Hudjon's Bay, probably acrofs the continent to the iflands intermediate between America and Kamt/cbatka. Captain Bering. faw there five quite tame, being unufed to the fight of man.

This fpecies gradually decreafes to the fouthward, in numbers and in fize: none are found lower than Penfyluania. They are fuppofed not to have been originally natives of that country. The Indions believe they came from the north of Europe in an exceffive hard winter, when the feafon was frozen. The truth feems to be, that they were driven in fome fevere feafon from the north of their own country, and have continued there ever lince. They abound about Hudjon's Bay, the Labrador country, and in Newfoundland and Conada; and are found in Iceland*. They burrow as the Eurcpean foxes do; and in Hudjon's Bay; diring winter, run about the woods in fearch of prey, feeding on birds and leffer animals, particularly mice.
Nerw England is faid to have been early focked with foxes by a. gentleman who imported them from Eiggland, for the pleafure of the chafe $\dagger$; and that the prefent breed fyrung from the occafion. This fpecies is reckoned among the pernicious animals, and, being very deftructive to lambs, are profcribed at the rate of two fhillings a head.

The variety of Britifh. fox, with a black tip to the tail, feems unknown in America.

The fkins are a great article of commerce: abundance are imported annually from Hudjon's Bay and Nerufoundland. The natives of Hulfon's Bay eat the ferh, rank as is it is.

This fpecies abounds in Kamt $\delta$ cbatka, and is the fineft red fur of any known: grows fcarce within the Arctic circle of the Affatic regions, and is found there often white.

THIS variety is found very often entirely black, with a white tip to the tail ; and is far inferior in value and beauty to thofe of Kamtf. cbatka and Sibiria, where a fingle fkin fells for four hundred rubles.

The beft in North America are found on the Labrador fide of Hudfon's Bay. They are alfo very common on the inands oppofite to Kamt fchatka. The American black foxes, which I have examined, are frequently of a mixed color: from the hind part of the head to the middle of the back is a broad black line : the tail, legs, and belly, black: the hairs on the face, fides, and lower part of the back, cinereous; their upper ends; black the tip white.

Cross. FOX. With a bed of black running along the top of the back, took the name. The belly is black : the color of the reft of the body varies in different fkins; but in all is a mixture of black, cinereous, and yellow : the fur in all very foft : and the tail very bufhy and full of hair; for nature, in the rigorous climate of the North, is ever careful to guard the extremities againft the injury of cold.

This is likewife a very valuable variety. It is remarked, that the more defireable the fur is, the more cunning and difficult to be taken is the fox which owns it ${ }^{*}$. The Cofacks quartered in Kamtfcbatka have attempted for two winters to catch a fingle black fox. The Crofs-fox, vulpes crucigera of Gefner, and Kors-raef of the Swedes $t$, is found in all the Polar countries.

- Hif. Kamtfbatka, 95. + Gefner 2uad. 967. Faun. Suec. $\mathrm{N}^{\circ} 4$.


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FOX. With a fharp nofe: long fharp upright ears: long legs: color entirely grey, except a little rednefs about the ears. Inhabits from New England to the fouthern end of North America; but are far more numerous in the fouthern colonies. They have not the rank fimell of the red foxes. They are alfo lefs active, and grow very fat*. They breed in hollow trees: give no diverfion to the fportfinen, for after a mile's chafe they run up a tree $\dagger$. They feed on birds; are deftructive to poultry; but never deftroy lambs $\ddagger$. The fkins are ufed to line clothes: the fur is in great requeft among the hatters. The greafe is reckoned efficacious in rheumatic diforders.

Silvery Fox, Hif. Quad. N ${ }^{0} 143$.

FOX. With a fine and thick coat of a deep brown color, ove fpread with long filvery hairs of a molt elegant appearance.
Inhabits Louifiana, where their holes are feen in great abundance on the woody heights. As they live in forefts, which abound in game, they never moleft the poultry, fo are fuffered to run at large $\S$.

They differ fpecifically from the former, more by their nature in burrowing, than in colors.

[^98]HIST. QUAD. Genus XIX.

Hif. 2uad. No 160.-Smellie, v. 197.200.-Lev. Mus.
14. Puma.

CAT. With a fmall head: large eyes: ears a little pointed: chin white: back, neck, fides, and rump, of a pale brownifh red, mixed with dufky hairs : breaft, belly, and infide of the legs, cinereous : tail a mixture of dufky and ferruginous, the tip black.

The teeth of a vaft fize : claws whitih; the outmoft claw of the fore feet much larger than the reft : the body very long: the legs high and ftrong. The length of that I examined was five feet three from head to tail ; of the tail, two feet eight.

Inhabits the continent of Nortb America, from Canada to Florida; and the fpecies is continued from thence low into South America, through Mexico, Guiana, Brafil, and the province of Quito, in Peru, where it is called Puma, and by the Europeans miftaken for a Lion: it is, by reafon of its fiercenefs; the fcourge of the country. The different climate of North America feems to have fubdued its rage, and rendered it very fearful of mankind: the left cur, in company with his mafter, will make it run up a tree*, which is the opportunity of fhooting it. It proves, if not killed outright, a dangerous enemy; for it will defcend, and attack either man or beaft. The fleh is white, and reckoned very good. The Indians ufe the fkin for winter habits; and when dreffed is made into fhoes for women, and gloves for men $\dagger$.

It is called in North America the Panther, and is the moft pernicious animal of that continent. Lives in the forefts. Sometimes purs, at other times makes a great howling. Is extremely deftructive to do-

- Cate $\beta y$, App. xxv. $\quad+$ Lazufon, 118.
meftic animals, particularly to hogs. It preys alfo upon the Moofe, and other deer; falling on them from the tree it lurks in, and never: quits its hold*. The deer has no other way of faving itfelf; but by: plunging into the water, if there happens to be any near; for thePanther, like the Cat, detefts that element. It will feed even on beafts of prey. I have feen the fin of one which was fhot, juft as ie had killed a wolf. When it has fatisfied itfelf with eating, it carefully conceals the reft of the carcafe, covering it with leaves. If any* other animal touches the reliques, it never, touches them again.

15. Lyna. Hif. 2uad. ${ }^{\mathrm{N}}{ }_{1 \text { 170.—Smellic, }}$ v. 207.217.-Liv. Mus..

CAT. With pale yellow eyes: ears erect, tufted with black long. hair: body covered with foft and long fur, cinereous tinged* with tawny, and marked with dufky fpots, more or lefs vifible in different fuhjects, dependent on the age, or feafon in which the animak: is killed : the legs ftrong and thick: the claws large. About three times the fize of a common Cat: the tail only four inches long, tipt with black.

Inhabits the vaft forefts of Nortb America: is called in Canada, Le Cbat, ou Le Loup-cervier $\dagger$, on account of its being fo deftructive to deer; which it drops on from the trees, like the former, and, fixing. on the jugular vein, never quits its hold till the exhaufted animal. falls through lofs of blood $\ddagger$.

The Englifb call it a Wild Cat. It is very deftructive to their youngpigs, poultry, and all kind of game. The fkins are in high efteem for the foftnefs and warmnefs of the fur; and great numbers are an-. nually imported into Europe:

[^99]
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Obscurespecisf. There fill remain undeffribed fome animals of the Feline race, which are found in Nortb America, but too obfcurely mentioned by travellers to be afcertained. Such is the beaft which Lawfon faw to the weftward of Carolina, and calls a Tiger. He fays it was larger than the Panther, i. e. Puma, and that it differed from the Tiger of Afia and Africa*. It poffibly may be the Brafiliani Panther, Hift. Quad. $\mathrm{N}^{\circ} 158$, which may extend further north than we imagine. It may likewife be the Cat-a-mount of Du Pratz $\dagger$; which, he fays, is as high as the Tiger, i. e. Puma, and the fkin extremely beautiful.

The Pijoux of Louifiana, mentioned by Cbarlevoix $\ddagger$, are alfo obfcure animals. He fays they are very like our Wild Cats, but larger : that fome have fhorter tails, and others longer. The firft may be referred to one of the three laft fpecies: the laft may be our Cayense Cat, $\mathrm{N}^{\circ}{ }_{163}$.


Domeftic Cats are kept in Iceland and Norway §. Some of them efcape and relapfe to a favage ftate. In Iceland thofe are called Urda_ kelter, becaufe they live under rocks and loofe ftones, where they hide themfelves. They prey on fmall birds. The moft valuable of their fins are fold for twelve Danifs fkillings, or fix pence a-piece. Linneus, fpeaking of the cats of Sweden, fays, they are of exatic origin $\|$. They are not found wild either in that kingdom, or any part of the Rufian: dominions. Unknown in America.

[^100]HIST. QUAD. Genus XX. BEAR.

Hif. 2uad. No 175.-Lev. Mus.
18. Polar.

BEAR. With a long narrow head and neck: tip of the nofe black: teeth of a tremendous magnitude: hair of a great length, foft, and white, and in part tinged with yellow : limbs very thick and ftrong: ears fhort and rounded.

Travellers vary about their fize: De Buffon quotes the authority of Gerard le Ver* for the length of one of the ikins, which, he fays, was twenty-three feet. This feems to be extremely mifreprefented; for Gerard, who was a companion of the famous Barentz, and Heemskirk, a voyager of the firf credit, killed feveral on Nova Zembla, the largeft of which did not exceed thirteen feet in length $\dagger$. They feem fimaller on Spitzbergen: one meafured by ordèr of a noble and able navigator $\ddagger$, in his late voyage towards the Pole, was as follows: I give all the meafurements to afcertain the proportions.


This fpecies, like the Rein and Arctic Fox, almoft entirely fur, Priacr. rounds the neighborhood of the Polar circle. It is found within it,

[^101]IThe Honorable Confantine fobn Pbipps, now Lord Mulgrave.
far as navigators have penetrated; in the inand of Spitzbergen, and within Baffin's Bay; in Greenlond and Hudjon's Bay; in Terra di Labrador ${ }^{*}$; and, by accident, wafted from Greenland, on iflands of ice, to Iceland and Nerofoundland. It perhaps attends the courfe of the Arctic circle along the vaft regions of America; but it is unknown in the groupes of iflands between that continent and Afia; neither is it found on the $\tau$ cbuktki Nofs, or the Great Cape, which juts into the fea north of Kamtrchatka $\dagger$. None are ever feen in that country. But thicy are frequent on all the coalts of the Frozen Ocean, from the mouth of the $O b \ddagger$, eaftward; and abound moft about the eftuaries of the Fenefei and Lena. They appear about thofe favage tracts, and abound in the unfrequented illands of Nova Zembla; Cberry, and Spitzbergen, where they find winter quarters undifturbed by mankind. The fpecies is happily unkrown along the fhores of the White fea, and thofe of Lapland and Norway. Poffibly even thofe rigorous climates may be too mild for animals that affect the utmoft feverity of the Arcii: zone. They never are feen farther fouth in Siliria than Mangofea, nor wander into the woody parts, unlefs by accident in great mifts.

They are fometimes brought alive into England. One which I faw was always in motion, rettlefs, and furious, roaring in a loud and hoarfe tone; and fo impatient of warmth, that the keeper was obliged to pour on it frequently pailfuls of water. In a ftate of nature, and in places little vifited by mankind, they are of dreadful ferocity. In Spitzbergen, and the other places annually frequented by the human race, they dread its power, having experienced its fuperiority, and fhun the conflitt: yet even in thofe councries prove tremendous enemies, if attacked or provoked.

Barentz, in his voyages in fearch of a north-eaft paffage to Cbina, had fatal proofs of their rage and intrepidity on the inland of Nova Zembla: his feamen were frequently attacked, and fome of them

[^102]
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During fummer they refide chiefly on inlands of ice, and pafs frequently from one to the other. They fwim moft excellently, and fometimes dive, but continue only a fmall fpace under water. They have been feen on iflands of ice eighty miles from any land, preying and feeding as they foat along. They lodge in dens formed in the vaft maffes of ice, which are piled in a ftupendous manner, leaving great caverns beneath: here they breed, and bring one or two at a time, and fometimes, but very rarely, three. Great is the affection between parent and young; they will fooner die than defert one another*. They alfo follow their dams a very long time, and are grown to a very large fize before they quit them.
During winter they retire, and bed themfelves deep beneath, forming fpacious dens in the frow, fupported by pillars of the fame, or to the fixed ice beneath fome eminence; where they pafs torpid the long and difmal night $\dagger$, appearing only with the return of the fun $\ddagger$. At their appearance the ArEfic Foxes retire to other haunts if.

The Polar Bear became part of the royal ménagery as early as the reign of Henry III. Mr. Walpole has proved how great a patron that defpifed prince was of the Arts. It is not lefs evident that he extended his protection to Natural Hiftory. We find he had procured a White Bear from Norway, from whence it probably, was imported from Greenland, the Norwegians having poffeffed that country for fome centuries before that period. There are two writs extant from that monarch, directing the fheriffs of London to furnifh fix pence a day to fupport our White Bear in our Tower of London; and to provide a muzzle and iron chain to hold him when out of the water; and a long and frong rope to hold him, when he was fifhing in the Thames §. Fit provifion was made at the fame time for the king's Jlephant.

[^103]The fkins of this fpecies, in old times, were offered by the hunters to the high aitars of cathedrals, or other churches, that the prieft might ftand on them, and not catch cold when he was celebrating high mafs in extreme cold weather. Many fuch were annually offered at the cathedral at Drontbeim in Norway; and alfo the fkins of wolves, which were fold to parchafe wax lights to burn in honor of the faints*.

Hif. Quad. $\mathrm{N}^{\circ}{ }_{17.4}$ —Smellie, v. 1.g.

BEAR. With a long pointed nofe, and narrow forehead: the cheeks and throat of a yellowifh brown color: hair over the whole body and limbs of a gloffy black, fimoother and fhorter than that of the European kind.

They are ufually fmaller than thofe of the old world; yet Mr. Bartram gives an inftance of an old he-bear killed in Florida which was feven feet long, and, as he gueffed, weighed four hundred pounds $\dagger$.

Thefe animals are found in all parts of Nortb Anzerica, from Hudfon's Bay to the fouthern extremity; but in Louifana and the fouthern parts they appear only in the winter, migrating from the north in fearch of food. They fpread acrofs the northern part of the American continent to the Kamtfcbatkan fea. They are found again in the oppofite country $\ddagger$, and in the Kuril/ki inlands, which intervene between Kamtfobatka and Fapan \|, Fefo Mafma, which lies. north of fapan§, and probably fapan itfelf; for Kampfer fays, that a few fmall bears are found in the northern provinces $\mathbb{I}$.

It is very certain that this fpecies of bear feeds on vegetables. Du Pratz, who is a faithful as well as intelligent writer, relates, that

[^104]19. Black.
in one fevere winter, when thefe animals were forced in multitudes from the woods, where there was abundance of animal food, they re_jected that, notwithftanding they were ready to perifh with hunger; and, migrating into the lower Louifiana, would often break into the courts of houfes. They never touched the butchers meat which lay in their way, but fed voracioully on the corn or roots they met with*.

Neceffity alone fometimes compels them to attack and feed onthe fwine they meet in the woods: but flefh is to them an unnatural diet. They live on berries, fruits, and pulfe of all kinds; are remarkably fond of potatoes, which they very readily dig up with their great paws; make great havock in the fields of maize; and are great lovers of milk and honey. They féed much on herrings, which they catch in the feafon when thofe fifh come in fhoals up the creeks, which gives their flefb a difagreeable tafte; and the fame effect is obferved when they eat the bitter berries of the Tupelo.

They are equally inoffenfive to mankind, provided they are not irritated; but if wounded, they will turn on their affailant with great fury, and, in cafe they can lay hold, never fail of hugging him to death; for it has been obferved they never make ufe, in their rage, of either their teeth or claws. If they meet a man in a path they will not go out of his way; but will not attack him. They never feek combat. A finall dog will make them run up a tree.

The bears of Kamtfcbatka refemble thofe of America: they areneither large nor fierce. They alfo wander from the hills to the lower lands in fummer, and feed on berries and fifh. They reject food; nor ever attack the inhabitants, unlefs they find them anleep, when, through wantonnefs, they bite them feverely, and fometimes tear a piece of flefh away; yet, notwithftanding they get a tafte of human blood, are never known to devour mankird. People thus injured are called Dranki $\dagger$, or the flayed.

The American bears do not lodge in caves or.clefts of rocks; like. thofe of Europe. The bears of Hudfon's Bay form their dens beneath

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then migrate into the lower parts of Louifiana: they arrive very lean; but foon fatten with the vegetables of that milder climate*. They never wander far from the banks of the $M i \sqrt{2} / 2 p i$, and in their march form a beaten path like the track of men.

Laveson and Catefby $\dagger$ relate a very furprizing thing in refpeet to: this animal, which is, that neither European or Indian ever killed a Bear with young. In one winter were killed in Virginia five hundred bears, and among them only two females; and thofe not pregnant. The caufe is, that the male has the fame unnatural dinike to its offspring as fome other animals have : they will kill. and devour the cubs. The females therefore retire, before the time of parturition, into the depth of woods and rocks, to elude the fearch of their favage mates. It is faid that they do not make their appearance with their young till March $\ddagger$.

All who have tafted the flefh of this animal fay, that it is moft delicious eating: a young Bear, fattened with the autumnal fruits, is a difh fit for the niceft epicure. It is wholefome and nourifhing, and refembles pork more than any other meat. The tongue and the paws are efteemed the moft exquifite morfels; the hams are alfo excellent, but apt to ruft, if not very well preferved.

Four inches depth of fat has been found on a fingle Bear, and fifteen or fixteen gallons of pure oil melted from it $\S$. The fat is of a pure white, and has the fingular quality of never lying heavy on the ftomach, notwithftanding a perfon drank a quart of it $\|$. The Americans make great ufe of it for frying their fifh. It is befides ufed medicinally, and has been found very efficacious in rheumatic complaints, achs, and ftrains.

The Indians of Louifiana prepare it thus:-As foon as they have killed the Bear, they fhoot a Deer; cut off the head, and draw the flin entire to the legs, which they cut off : they then ftop up every orifice, except that on the neck, into which they pour the melted fat

[^105]of the Bear; which is prepared by boiling the fat and flefh together. This they call a Deer of oil, and fell to the French for a gun, or fomething of equal value*.

Bears greafe is in great repute in Europe for its fuppofed quality of making the hair to grow on the human head. A great chymift in the Haymarket in London ufed to fatten annually two or three Bears for the fake of their fat.

The fkin is in ufe for all purpofes which the coarfer forts of furs are applied to: it ferves in America, in diftant journies, for coverlets; and the finer parts have been in fome places ufed in the hat manufacture $\dagger$.

The Indians of Canada daub their hands and face with the greafe, to preferve them from the bite of mufketoes: they alfo fmear their bodies with the oil after exceffive exercife $\ddagger$. They think, like the Romans of old, that oil fupples their joints, and preferves them in full activity -

## Black Bear; Hif. Quad. $\mathrm{N}^{\mathrm{a}}$ 174.-Smellie, v. 19.

BEAR. With long fhaggy hair, ufiually dufky or black, with brown points; liable to vary, perhaps according to their age, or fome accident, which does not create a fpecific difference.

A variety of a pale brown color, whofe fkins I have feen imported from Hudfon's Bay. The fame kind, I believe, is alfo found in Europe. The cubs are of a jetty black, and their necks often encircled with white.
$\beta$. Bears fpotted with white.
r. Land Bears, entirely white. Such fometimes fally from the lofty mountains which border on Sibiria, and appear in a wandering manner in the lower parts of the country $\|$. Marco Polo relates, that they were frequent in his time in the north of Tartary, and of a very great fize.

[^106]Grizzl:
d. Grizzly Bears. Thefe are called by the Germans Silber-bar, or the Silver-bear, from the mixture of white hairs. Thefe are found in Europe, and the very northern parts of Nortb America, as high as lat. 70 ; where a hill is called after them, Grizzle Bear Hill, and where they breed in caverns*. The ground in this neighborhood is in all parts turned by them in fearch of the hoards formed by the Ground Squirrels for winter provifion.

All thefe varieties form but one fpecies. They are granivorous and carnivorous, both in Europe and America; and I believe, according to their refpective palates or habits, one may be deemed a variety which prefers the vegetable food; another may be diftinguifhed from its preference of animal food. Mr. Grabam affures me, that the brown Bears, in the inland parts of Hudfon's Bay, make great havock among the Buffaloes : are very large, and very dangerous when they are attacked and wounded.

In all favage nations the Bear has been an object of veneration. Among the Americans a feaft is made in honor of each that is killed. The head of the beaft is painted with all colors, and placed on an elevated place, where it receives the refpects of all the guefts, who celebrate in fongs the praifes of the Bear. They cut the body in pieces, and regale on it, and conclude the ceremony $\dagger$.
Chase. The chafe of thefe animals is a matter of the firft importance, and never undertaken without abundance of ceremony. A principal warrior firft gives a general invitation to all the hunters. This is followed by a moft ferious faft of eight days, a total abftinence from all kinds of food; notwithftanding which, they pafs the day in continual fong. This they do to invoke the fpirits of the woods to direct them to the place where there are abundance of bears. They even cut the flerh in divers parts of their bodies, to render the fpirits more propitious. They alfo addrefs themfelves to the manes of the beafts flain in preceding chafes, as if it were to direct them in their dreams to plenty of game. One dreamer alone cannot determine

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fufficiency; for to kill a bear forms the character of a complete man. They again give a great entertainment, and now make a point to leave nothing. The feaft is dedicated to a certain genius, perhaps that of Gluttony, whofe refentment they dread, if they do not eat every morfel, and even fup up the very melted greafe in which the meat was dreffed. They fometimes eat till they burft, or bring on themfelves fome violent diforders. The firft courfe is the greatert bear they have killed, without even taking out the entrails, or taking off the fkin, contenting themfelves with fingeing the fkin, as is prac_ tifed with hogs*.

The Kamtccloatkans, before their converfion to Chriftianity, had al. moft fimilar fuperftitions refpecting bears and other wild beafts : they entreated the bears and wolves not to hurt them in the chafe, and whales and marine animals not to overturn their boats. They never call the two former by their proper name, but by that of Si pang, or ill-luck.
 with guns: formerly they had variety of inventions; fuch as filling the entrance of its den with logs, and then digging down upon the animal and deftroying it with fpears $\dagger$. In Sibiria it is taken by making a trap-fall of a great piece of timber, which drops and cruhhes it to death : or by forming a noofe in a rope faftened to a great $\log$; the bear runs its head into the noofe, and, finding itfelf engaged, grows furious, and either falls down fome precipice and kills itfelf, or wearies itfelf to death by its agitations.

The killing of a bear in fair battle is reckoned as great a piece of heroifm by the Kamtfclatkans as it is with the Americans. The victor makes a feaft on the occafion, and feafts his neighbors with the beaft; then hangs the head and thighs about his tent by way of trophies.

Thefe people ufe the flins to lie on, and for coverlets; for bonnets, gloves, collars for their dogs, foles for their fhoes, to prevent them
*Gharlevoix, v. 169 to 174. $\quad+$ Hif. Kamt/fbatka, Fr. iii. 73.
from fipping on the ice. Of the fhoulder-blades they make inftiuments to cut the grafs; of the inteftines, covers for their faces, to protect them from the fun during fpring; and the Coffacks extend them over their windows inftead of glafs. The flefh and fat is among the chief dainties of the country *.

Superfitions, relative to this animal, did not confine themfelves to America and Afa, but fpread equally over the north of Europe. The Laplanders held it in the greateft veneration: they called it the Dog of God, becaufe they efteemed it to have the ftrength of ten men, and the fenfe of twelve $\dagger$. They never prefume to call it by its proper name of Guouzbja, leaft it revenge the infult on their flocks; but fyle it Moedda-aigia, or the old man in a furred cloak $\ddagger$.

The killing of a Bear was reckoned as great an exploit in Lapland as it was in America, and the hero was held in the higheft efteem by both fexes; and, by a fingular cuftom, was forbid all commerce with his wife for three days. The Laplanders bring home the fain beafts in great triumph. They ereet a new tent near their former dwelling, but never enter it till they have flung off the drefs of the chafe. They continue in it three entire days; and the women keep at home the fame fpace. The men drefs the flefh of the Bear in the new tent, and make their repaft, giving part to the females; but take great care never to beftow on them a bit of the rump. Neither will they deliver to them the meat through the common entrance of the hut, but through a hole in another part. In fign of victory, the men fprinkle themfelves with the blood of the beaft.

After they have finifhed eating-the fefh, they bury the bones with great folemnity, and place every bone in its proper place, from a firm perfuafion that the Bear will be reftored, and re-animate a new body.

At the pulling off the fin , and cutting the body into pieces, they were ufed to fing a fong, but without meaning or rhyme $\|$; but the

| * Hij. Kamt/Gbatka, Fr. iii. 390. | + Leems Lapmark, Suppl. 64. | $\ddagger$ The |
| :---: | :---: | :---: |
| fame, 502. \|| The fame, Suppl. |  |  |
|  | K | antient |

antient Fins had a fong, which, if not highly embellifhed by the tranflator, is far from inelegant.

> Beaft! of all foreft beafts fubdued and flain, Health to our huts and prey a hundred-fold Reftore; and o'er us keep a confant guard! I thank the Gods who gave fo noble prey! When the great day-ftar hides beyond the alts, I hie me home; and joy, all clad in fowers, For three long nights fhall reign throughout my huta With tranfport fhall I climb the mountain's fide. Joy op'd this day, joy fhall attend its clofe. Thee I revere, from thee expect my prey: Nor e'er forgot my carol to the BEAR *.

BEAR. With fhort rounded ears, almoft concealed by the fur: face fharp, black, and pointed: back broad, and, while the animal is in motion, much elevated, or arched; and the head carried low : the legs fhort and ftrong: claws long and fharp, white at their ends.

The length from nofe to tail twenty-eight inches; of the trunk of the tail feven inches. It is covered with thick long hairs, reddih at the bottom, black at the end; fome reach fix inches beyond the tip.

The hairs on the head, back, and belly, are of the fame colors, but much finer and fofter. Before they are examined, the animal appears wholly black. The throat whitifh, marked with black. Along. the fides, from the fhoulders to the tail, is a broad band of a ferruginous color: in feveral of the fkins, brought from Hudfon's Bay, I ob-

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huntfinen deep in the fnow, which it will carry away to other places to devour. About the Lena it will attack horfes, on whofe backs are often feen the marks of its teeth and claws. By a wonderful fagacity it will afcend a tree, and fling from the boughs a fpecies of mofs which Elks and Reins are very fond of; and when thofe animals come beneath to feed on it, will fall on them and deftroy them : or, like the Lynx, it afcends to the boughs of trees, and falls on the Deer which cafually pafs beneath, and adheres till they fall down with fatigue. It is a great enemy to the Beaver ${ }^{*}$, and is on that ac. count fometimes called the Beaver-eater. It watches at the mouth of their holes, and catches them as they come out. It fearches the traps laid for taking other beafts, and devours thofe which it finds taken. It breaks into the magazines of the natives, and robs them of the provifions; whether they are covered with logs, bruihwood, and built high between two or three ftanding trees $\dagger$.

It lodges in clefts of rocks, or in hollows of trees, and in Sibiria often in the deferted holes of Badgers; never digging its,own den, nor having any certain habitation. It breeds once a year, bringing from two to four at a litter $\ddagger$. Its fur is much ufed for muffs. Notwithftanding its great fiercenefs when wounded, or firft feizure, it is capable of being made very tame $\|$.
Fur.
The fkins are frequently brought from Hudjon's Bay, and commonly ufed for muffs. In Sibiria the fkin is moft valued which is black, and has left of the ferruginous band. Thefe are chiefly found in the mountancu:s forefts of $\mathfrak{F a k u t / k}$, and ufed by the natives to adorn their caps. Few of the Sibirian flins are fent into Rufia, but are chiefly fold to the Mongals and Chinefe.

The relations of the exceffive gluttony of this animal; that it eats till it is ready to burft, and that it is obliged to unload itfelf by. fqueezing its bedy between two trees; are totally fabulous: like other animals, they eat till they are fatisfied, and then leave off $\S$.

[^107]Hiff. 2uad. $\mathrm{N}^{0}$ 178.—Smellie, v. 46.-Lev. Mus.

BEAR. With upper jaw larger than the lower: face fharppointed, and fox-like: ears fhort and rounded: eyes large, of a yellowifh green; the fpace round them black: a dufky line extends from the forehead to the nofe; the reft of the face, the cheeks, and the throat, white: the hair univerfally long and foft; that on the back tipt with black, white in the middle, and cinereous at the roots: tail annulated with black and white, and very full of hair: toes black, and quite divided: the fore-feet ferve the purpofes of a hand.

Thefe animals vary in color. I have feen fome of a pale brown, others white. Their ufual length, from nofe to tail, is two feet: near the tail about one.

Raccoons inhabit only the temperate parts of Nortb America, from New England* to Florida $\dagger$. They probably are continued in the fame latitudes acrofs the contunent, being, according to Dampier, found in the illes of Maria, in the South Sea, between the fouth point of Ca lifornia and Cape Corientes. It is alfo an inhabitant of Mexico, where it is called Mapach $\|$.

It lives in hollow trees, and is very expert at climbing. Like other beafts of prey, keeps much within during day, except it proves dark and cloudy. In fnowy and formy weather it confines itfelf to its hole for a week together. It feeds indifferently on fruits or fleh; is extremely deftructive to fields of mayz; and very injurious to all kinds of fruits; loves ftrong liquors, and will get exceffively drunk. It makes great havock among poultry, and is very fond of eggs. Is itfelf often the prey of Snakes $\$$.

[^108]Thofe.

Thofe which inhabit places near the fhore live much on fhell-fifh, particularly oyfters. They will watch the opening of the fhell, dextrounly put in its paw, and tear out the contents; fometimes the oyfter fuddenly clofes, catches the thief, and detains it till drowned by the return of the tide. They likewife feed on crabs, both fea and land. It has all the cunning of the Fox. Lawfon fays, that it will ftand on the fide of a fwamp, and hang its tail over into the water: the crabs will lay hold, miftaking it for a bait; which, as foon as the Raccoon feels, it pulls out with a fudden jerk, and makes a prey of the cheated crabs.

It is made tame with great eafe, fo as to follow its mafter along: the ftreets; but never can be broke from its habit of ftealing, or killing of poultry $\dagger$. It is fo fond of fugar, or any fweet things, as to do infinite mifchief in a houfe, if care is not taken $\ddagger$.

It has many of the actions of a Monkey; fuch as feeding itfelf with its fore feet, fitting up to eat, being always in motion, being very inquifitive, and examining every thing it fees with its paws. Notwithftanding it is not fond of water, it dips into it all forts of dry food which is given to it; and will wafh its face with its feet, like a Cat.

It is fought after on account of the fur. Some people eat it, and efteem it as very good meat. The Swedes call it Siup, and Ejpan; the Dutch, Hefpan; and the Iroquese, Affigbro. The hair makes the belt hats, next to that of the Beaver. The tail is worn round the neck in winter, by way of prefervative againft the cold $\|$.

[^109]
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yet I find that name beftowed on the latter by La Hontan; by Dobbs, who makes it fynonymous; and by Cbarlevoix, though the laft miftakes the animal, yet not the manners of that which he afcribes it to. On the other hand, Mr. Grabam and Mr. Edwards omit that title, and call it only Wolveren, or Queequehatch.

0PÖSSUM. With ten cutting teeth above, eight beneath: ${ }^{24}$. Vrranian. eyes black, finall, and lively: ears large, naked, membranaceous, and rounded: face long and pointed; whifkers on each fide of the nole, and tufts of long hairs over the eyes: legs are hort; the thumb on the hind feet has a flat nail, the reft of the toes have on them Jharp talons:: the body is fhort, round, and thick: the tail long; the bafe is covered with hair for three inches, the reft is covered with finall fcales, and has the difguiting refemblance of a Snake.

On the lower part of the belly of the female is a large pouch, in which the teats are placed, and in which the young lodge as foon as they are born. The body is člөathed with very long foft hairs, lying ufually uneven: the color appears of a dirty white; the lower parts'of the hairs dufky : and above each eye is a whitifh fpot: the belly tinged with yellow.

The length of one I examined was feventeen inches, of the tail fourteen.

This fpecies is found as far north as Conada*, where the French call it Le Rat de bois; from thence it extends fouthward, even to the Brafils and Peru. The fingularity of the ventral pouch of the female, and the manner of its bringing up its young, places it among the moft wonderful animals of the new continent.
'As foon as the female finds herfelf near the time of bringing forth, She prepares a neft of coarfe grafs, covered with long pieces of fticks, near four feet high and five in diameter, confufedly put to-
gether*. She brings forth from four to fix at a time. As foon as they come into the world they retreat into the falfe belly, blind, naked, and exactly refembling little fæetufes. They faften clofely to the teats, as if they grew to them; which has given caufe to the vulgar error, that they were created fo. There they adhere as if they were inanimate, till they arrive at a degree of perfection in hape, and attain fight, ftrength, and hair: after which they undergo a fort of fecond birth. From that time they run into the pouch as an afylum from danger. The female carries them about with the utmoft af. fection, and would rather be killed than permit this receptacle to be opened; for the has the power of contracting or dilating the orifice by the help of fome very ftrong mufcles. If they are furprifed, and have not time to retreat into the pouch, they will adhere to the tail of the parent, and efcape with her $t$.
The Opoffum is both carnivorous and frugivorous. It is a great enemy to poultry; and will fuck the blood and leave the feih untouched $\ddagger$. It climbs trees very expertly, feeding on wild fruits, and alfo on various roots. Its tail has the fame prehenfile quality as that of fome fpecies of Monkies. It will hang from the branches by it, and by fwinging its body, fling itfelf among the boughs of the adjacent trees. It is a very fluggifh animal; has a very fow pace, and makes fcarcely any efforts to efcape. When it finds itfelf on the point of being taken, it counterfeits death ; hardly any torture will make it give figns of life §. If the perfon retires, it will put itfelf in motion, and creep into fome neighboring bufh. It is more tenacious of life than a Cat, and will fuffer great violence before it is killed $\|$.

The old animals are efteemed as delicate eating as a fucking pig; yet the fkin is very fætid. The Indian women of Louifiana dye the hair, and weave it into girdles and garters $\boldsymbol{T}$.

[^110]
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27. Pine. Martino

Length, from nofe to tail, ten inches; the tail is five and a half:
Inhabits only Hudfon's Bay, Canada, and the northern parts ofi North Anerica. In Newfoundland it is fo bold:as to commit its thefts. in open view. Feeds on eggs, the young of birds, and on the mice: with which thofe countries abound. They alfo prey-on Rabbits, and: the White Grous. The ikins are exported from Canada among whatthe French call lo nenuä pelleterie, or finallfurs*.

It is found again in plenty in Kamt $f$ cbatka $\dagger$, the Kurili inands, Sidiria, and in all the northern extremities of Europe:. It is fcarce in Kemtfchatka; and. its chafê is not attended, to, amidft the quantity of fuperior furs. But in Sibiria and Norway they are: a confiderable article of commerce. In, the former, they are taken in traps, baited. with a bit of fleh $\ddagger$; in the latter, either fhot with blunt arrows, or taken, as garden mice are in England, by;a flat fone propped by a baited.ftick, which falls down on the left touch, and crufhes them to death §.. They are found in Sibiriain great plenty in woods of birch, yet are never feen in thofe of fir. Their fkins are fold.there on the fpot from two to three pounds fterling per hundred $\|$.

They are not found on the ArEEic flats. The inhabitants: of the $\pi \int c b u k t \int c b i \cdot N o f s$ get them in exchange from the Americans, where they are of a larger fize than any in the Rufian dominions.

The exceffive cold of certain winters has obliged even thefe hardy; animals to migrate, as was evident in the year 1730, and 1744.I.


WEESEL.. With white cheeks and tips of ears; yellow throât and breaft; reft of the fur of a fine deep chefnut-color in the male, paler in the female : tail bufhy, and of a deeper color than: the body.

[^111]Thefe animals inhabit, in great abundance, the northern parts of place. America; but I believe the fpecies ceafes before it arrives at the temperate provinces. They appear again in the north of Europe, extend. acrofs the Uralliain chain, but do not reach the Oby.

They inhabit forefts, particularly thofe of fir and pine, and make mannms. their nefts in the trees. Breed once a year, and bring from two to four at a litter. They feed principally upon mice; but deftroy alfo all kinds of birds which they can mafter. They are taken by the natives of Hudfon's Bay in. fmall log-traps, baited, which fall on and kill them. The natives eat the flefh.

Their fkins are among the more valuable furs, and make a moft important article of commerce: I obferved, that in one of the Hua' fon's Bay Company's annual fales, not fewer than: $1.2,370$ good fkins, and 2360 damaged, were fold; and in that year (1743) 30,325 were imported by the French from Canada into the port of Rocbelle. Theyare found in great numbers in the midtt of the woods of Canada; and once in two or three years come out in great multitudes, as if their retreats were overfocked: this the hunters look on as a forerunner. of great fnows, and a feafon favorable to the chafe *.

It is remarkable, that notwithftanding this fpecies extends acrofs the continent of America, from Hudjon's. Bay to the oppofite fide, yet it is loft on the Afiatic fide of the fraits of $\mathcal{T}(c b u k t c b b i$; nor is it recovered till you reach Catberinebourg; a diftrict of Sibiria weft of Tobolk, and twenty-five degrees weft longitude diftant from America. The finef in the known world are taken about $U f a$, and in the mountains of Caucafus $\dagger$. It is known that the $\mathcal{T} j c b u k t c b i \ddagger$ procure the fkins for cloathing themfelves from the Americans; their country being deftitute of trees, and confequently of the animals, inhabitants of forefts, furnifhing thofe ufeful articles.

The Houfe Martin, Hif. Quad..N№ 199 , is found neither. in America, or the Aretic countries.

- Cbarleveix, v. 197. $\quad+$ DoEsor Pallas. $\ddagger$ Muller, Pref, xxix.

WEESEL. With ears a little pointed: body and head covered with hair of a mixture of grey, chefnut, and black, and beneath protected by a cinereous down : the lower jaw encircled with white : legs and tail black: on the breaft, between the fore-legs, a fpot of white, and another on the belly between the hind-legs: toes covered above and below with fur.

I faw this and the following animal at Paris, in the cabinet of M. Aubry, Curè de St. Louis en L'Ifle. They were in glafs cafes, fo I could get only an imperfect view of them. According to M. de Buffon, the length of this was a foot and a half French meafure; the tail ten inches *. The fur is fine ; and the fkins were often imported by the Frencl from Canada.

This feems to me to be-very nearly allied to the European Martin, $\mathrm{N}^{\circ}{ }^{15}$. Br. Zool. vol. i. It agrees very much in dimenfions, and in the white marks. It is alfo the animal which Mr. Grabam fent to the Royal Society from Hudjon's Bay, under the name of fackafb, which he fays harbours about creeks, and lives on fifh. Brings from two to four young at a time. Is caught by the natives, who eat the flefh and barter the fkins.

WEESEL. With a long neck and body : fhort legs: head and body brown tinged with tawny : tail black: the down of a bright afh-color.

- Le Pekan, tom. xiii. 304. tab, xlii. xliñ.


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They abhor water: therefore the notion of their being the Satherion of Arifotle is crroneous.
Capture. Another way of taking them, befides thofe which I before mentioned, is by placing a piece of timber from tree to tree horizontally; near one end of this is placed a bait : over the lower piece of wood is placed another, fufpended obliquely, and refting at one end on a poft very flightly: a rod extends from it to a nooie, to which the bait is faftened. As foon as the Sable feizes the meat, the upper timber falls, and kills the precious animal *. The hunting-feafon always begins with the firft fnows: but they are now become fo very fcarce, as to be confined to the vaft forefts of the extreme parts of Sibiria, and to the ditant Kamt $f$ cbatka. Such has been the rage of luxury!

Furswhenfirst USED AS A LUXU$8 . x$.

It was not till the later ages that the furs of beafts became an article of luxury. The more refined nations of antient times never made ufe of them: thofe alone whom the former ftigmatized as barbarians, were cloathed in the flins of animals. Strabo defcribes the Indians covered with the fkins of Lions, Panthers, and Bears $\dagger$; and Seneca $\ddagger$, the Scytbians cloathed with the fkins of Foxes, and the leffer quadrupeds. Virgil exhibits a picture of the favage Hyperboreans, fimilar to that which our late circumnavigators can witnefs to in the cloathing of the wild Americens, unfeen before by any polifhed people.

Gens effrena virum Riphao tunditur Euro; Et pecudum fulvis velantur corpora fetis.

Molt part of Europe was at this time in fimilar circumftances. Cafar might be as much amazed with the fkin-dreffed heroes of Britain, as our celebrated Cook was at thofe of his new-difcovered regions. What time hath done to us, time, under humane conquerors, may effect for them. Civilization may take place, and thofe fpoils of animals, which are at prefent effential for cloathing, become the mere objeets of ornament and luxury.

[^112]$\dagger$ strabo, lib. xvii.
I can-

I cannot find that the Greeks or old Romans ever made ufe of furs. It originated in thofe regions where they moft abounded, and where the feverity of the climate required that fpecies of cloathing. At firt it confifted of the fkins only, almoft in the fate in which they were torn from the body of the beart; but as foon as civilization took place, and manufactures were introduced, furs became the lining of the drefs, and often the elegant facing of the robes. It is probable, that the northern conquerors introduced the fafhion into Europe. We find, that about the year 522, when Totila, king of the Vi/igothr, reigned in Italy, that the Suethons (a people of modern Sweden) found means, by help of the commerce of numberlefs intervening people, to tranfinit, for the ufe of the Romans, fapbilinas pelles, the precious fkins of the Sables*. As luxury advanced, furs, even of the molt valuable fpecies, were ufed by princes as lining for their tents: thus Marco Polo, in J 252 , found thofe of the Cbom of Tartary lined with Ermines and Sables $\dagger$. He calls the laft Zibelines, and Zambolines. He fays that thofe, and other precious furs, were brought from countries far north; from the land of Darknefs, and regions almoft inacceffible, by reafon of moraffes and ice $\ddagger$. The Wel/h fet a high value on furs, as early as the time of Howel $D d a \|$, who began his reign about 940 . In the next age, furs became the fafhionable magnificence of Europe. When Godfrey of Boulogne, and his followers, appeared before the emperor Alexis Comnene, on their way to the Holy Land, he was ftruck with the richnefs of their dreffes, tam ex oftro quam aurifrigis et niveo opere barmelino et ex mardrino grifioque et vario. How different was the advance of luxury in France, from the time of their great monarch Cbarlemagne, who contented himfelf with the plain fur of the Otter! Henry I. wore furs; yet in his diftrefs was obliged to change them for warm Wel/h flannel $\S$. But in the year 1337 the luxury had got to fuch a he'ad, that Edward III. enacted, that all perfons who could not fpend a hundred a year, fhould abfolutely be prohibited the ufe of this fpecies of finery.

[^113]Thefe, from their great expence, mult have been foreign furs, obtained from the Italian commercial ftates, whofe traffic was at this period boundlefs. How ftrange is the revolution in the fur trade! The north of $A f a$, at that time, fupplied us with every valuable kind; at prefent we fend, by means of the poffefion of Hudjon's Bay, furs, to immenfe amount, even to Turkey and the diftant Cbina.
gi. Figher.
Hif. Quad. $\mathrm{N}^{0}$ 202-Smellie, v. 297.-Lev. Mus.

WEESEL. With ears broad, round, and dufky, edged with white: head and fides of the neck pale brown mixed with arh-color and black : hairs on the back, belly, legs, and tail, brown at the bafe, and black at their ends : fides of the body brown.

The feet very large and broad, covered above and below thickly with hair: on each foot are five toes, with white claws, fharp, ftrong, and crooked : the fore legs fhorter than thofe behind : the tail is full and bufhy, fmalleft at the end. Length, from nofe to tail, is twentyeight inches; of the tail feventeen.

This animal inhabits HudJon's Bay, and is found in Nerw England, and as low as Penfylvania. About Hudfon's Bay they are called We. jacks, and Woodhbocks. They harbour about creeks, feed upon fifh, and probably birds. They breed once a year, and have from two to four at a birth. The natives catch them, and difpofe of the fkins, which are fold in England for four or fix fhillings apiece. Such is the account I received from Mr. Grabam.

The late worthy Mr. Peter Collinfon tranfmitted to me the following relation, which he received from Mr. Bartram:-"They are " found in Penjylvania; and, notwithftanding they are not amphibi" ous, are called $F i / h e r s$, and live on all kinds of leffer quadrupeds." I do not know how to reconcile thefe accounts of the fame animal (for fuch it is) unlefs it preys indifferently on fifh and land animals, as is often the cafe with rapacious beafts, and that both Mr. Grabam and Bartram may have overlooked that circumftance.

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tion. A fmall fpace is often no means of fecurity; the animal either will turn its tail, and by a frequent crepitus prevent all repetition of attempts on its liberty; or elfe ejaculate its fifling urine to the diftance of eighteen feet *. Its enemy is ftupified with the abominable ftench; or perhaps experiences a temporary blindnefs, fhould any of the liquid fall on his eyes. No wahhing will free his cloaths from the finell : they muft even be buried in frefh foil, in order to be ef. fectually purified.

Perfons who have juft undergone this misfortune, naturally run to the next houfe to try to free themfelves from it ; but the rights of hofpitality are denied to them: the owner, dreading the infection, is fure to fhut the door againft them.

Profeffor Kalm ran the danger of being fuffocated by the ftench of one, which was purfued into a houfe where he was.

A maid-fervant, who deftroyed another in a room where meat was kept, was fo affected by the vapour as to continue ill for feveral days; and the provifions were fo infected, that the mafter of the houfe was forced to fling them away $\dagger$.

Travellers are often obliged, even in the midft of forefts, to hold their nofes, to prevent the effects of its ftench.

The brute creation are in like dread of its effluvia. Cattle will roar with agony; and none but true-bred dogs will attack it: even thofe are often obliged to run their nofes into the ground before they can return to complete its deftruction. The fmell of the dogs, after a combat of this nature, remains for feveral days intolerable.

Notwithftanding this horrible quality, the flefh is eaten, and is efteemed as fweet as that of a Pig. The bladder muft be taken out, and the fkin flayed off, as foon as the animal is killed $\ddagger$.
I fhould think it a very difagreeable companion : yet it is often tamed fo as to follow its mafter like a Dog; for it never emits its

[^114]vapour unlefs terrified *. It furely ought to be treated with the higheft attention.

The fin is neglected by the Europeans, by reafon of the coarfenefs of the hair. The Indians make ufe of it for tobacco pouches, which they carry before them like the Higblanders.

It climbs trees with great agility. It feeds on fruits $\dagger$ and infects. Is a great enemy to birds, deftroying both their eggs and young. It will alfo break into hen-roofts, and deftroy all the poultry $\ddagger$. It breeds in holes in the ground, and hollow trees, where it leaves its young, while it is rambling in queft of prey.

Hif. Quad. No 218.-Smelie, v: 297.-Liev. Mus.
33. Skuxz.

WEESEL. With fhart rounded ears: fides of the face white: from the nofe to the back extends a bed of white; along the top of the back, to the bafe of the tail, is another broad one of black, bounded on each fide by a white ftripe: the belly, feet, and tail, black. But the colors vary: that which is figured by M. de Buffon has a white tail : the claws on all the feet very long, like thofe of a Badger : the tail very full of hair.

This inhabits the continent of America, from Hudfon's Bay $\S$ to Perull. In the laft it is called Cbinche. It burrows like the former, and has all the fame qualities.- It is alfo found in Mexico, where it is called Conepatl, or Boy's little Fox $\mathrm{If}_{\text {. }}$

[^115]0TTER. With fhort rounded ears: head flat and broad: long whifkers: aperture of the mouth fmall: lips very mufcular, defigned to clofe the mouth firmly while in the action of diving: eyes fmall, and placed nearly above the corners of the mouth : neck fhort: body long: legs fhort, broad, and thick: five toes on each foot, each furnifhed with a ftrong membrane or web: tail depreffed, and tapering to a point.

The fur fine; of a deep brown color, with exception of a white fpot on each fide of the nofe, and another under the chin.

Thefe aximals inhabit as far north as Hudfon's Bay, Terra di Labrador, and Canada, and as low fouth as Carolina and Louifiana ${ }^{*}$; but in the latter provinces are very fcarce. The fecies ceafes farther fouth. Laweon fays that they are fometimes found, to the weftward of Carolina, of a white color, inclining to yellow. Thofe of Nortlo America are larger than the European, and the furs of fuch which inhabit the colder parts are wery valuable. Their food is commonly fifh; but they will alfo attack and devour the Beaver $\dagger$.

They are found again in Kamt $c c a t k a$, and in moft parts of northern Europe and Afia, but not on the Arfic flats: are grown very fearce in Rufia. The Kamt $/ c h a t k a n s$ ufe their furs to face their garments, or to lap round the fkins of Sables, which are preferved better in Otter flins than any other way. They ufually hunt them with dogs, in time of deep fnow, when the Otters wander too far from the banks of rivers $\ddagger$.

[^116]
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the docks and bridges of towns, where it proves a ufeful enemy to rats *.

It is befides very deftructive to the Tortoife; whofe eggs it fcrapes out of the fand and devours: and eats the frefl-water mufcles; whofe fhells are found in great abundance at the mouth of their holes. It is capable of being made tame, and domefticated $f$.
Assa. The fpecies is fpread in Afra, along the banks of the $Y_{a i k}$, in the Orenburg government $\ddagger$. None are feen in Sibiria; but appear again near the rivers which run into the Amur. Its fur is in thofe parts very valuable, and efteemed as next in beauty to the Sable. It is either hunted with dogs or taken in traps. In Europe it is found in Poland and Litbuania, whereit is named Nurek; and the Germans call it Nurtz. It is alfo an inhabitant of Finland: the natives call it Ticburi; the Swedes, Mank §, a name carried into America by fome Santedif3 colonift, rod with a light variation is ftill retained.

> Hiff. Quad. N® 230.
> Lutra Marina, Kalan. Nov. Com. Petrop. ii. 367. tab. xvi. Caftor Marin, Hif. Kamtf(chatka, 444. Sea Otter, Muller, $57,58 \|$.-LEv. Mus.

Description.

OTTER. With hazel irides: upper jaw long, and broader than the lower: nofe black : ears erect, conic, finall : whifkers long and white: in the upper jaw fix, in the lower four, cutting teeth : grinders broad: fore legs thick; on each four toes, covered with hair, and webbed : the hind feet refemble exactly thofe of a Seal : the toes divided by a ftrong fhagreened membrane, with a fkin fkirting the external fide of the outmoft toe, in the manner of fome water fowl.

[^117]The fkin is extremely thick, covered clofely with long hair, remarkably black and gloffy; and beneath that is a foft down. The hair fometimes varies to filvery. The hair of the young is foft and brown.

The length, from nofe to tail, is about three feet; that of the tail thirteen inches and a half. The tail is depreffed, full of hair in the middle, and fharp-pointed. The weight of the biggeft, feventy or eighty pounds.

Thefe are the moft local animals of any we are acquainted with, being entirely confined between lat. 44 and 60 , and weft longitude 126: to 150 eaft from London, in the coaft and feas on the north-eaft parts of America; and again only between the Kamtccbatkan fhores and the inles which intervene between them and America. They land alfo on the Kuril inlands; but never are feen in the channel between the north-eaft part of Sibiria and America.

They are moft extremely harmlefs, and moft fingularly affectionate

SIzx.

Placz:

Mannerg. to their young. They will never defert them, and will even pine to death on being robbed of them, and frive to breathe their laft on the fpot where they experienced the misfortune.

It is fuppofed that they bring but one at a time. They go be_ tween eight and nine months with young, and fuckle it almoft the whole year. The young never quits its dam till it takes a mate. They are monogamous, and very conftant.

They bring forth on land: often carry the young between their teeth, fondle them, and frequently fling them up and catch them again in their paws. Before the young can fwim, the old ones will take them in their fore feet, and fwim about upon their backs.

They run very fwiftly : fwim fometimes on their lides, on their backs, and often in a perpendicular.direction. They are very fportive, embrace each other, and kifs.

They never make any refiftance; but endeavour, when attacked, to fave themfelves by flight: when they have efcaped to fome diftance, they will turn back, and hold one of their fore feet over their

## Capture.

Fur.
eyes, to gaze, as men do their hands to fee more clearly in a funny day; for they are very dull-lighted, but remarkably quick-fcented.

They are fond of thofe parts of the fea which abound moft with weeds, where they feed on fifh, fepir, lobiters, and fhell-fifh, which they comminute with their flat grinders.

They are taken different ways: in the fummer, by placing nets among the fea-plants, where thefe animals retire in the frequent forms of this tempeftuous coaft.

They are killed with clubs or fpears, either while they lie aneep on the rocks, or in the fea floating on their backs.

Thirdly, they are purfued by two boats till they are tired, for they cannot endure to be long at a time under water.

During winter they are brought in great numbers to the Kurilian inands, by the eaftern winds, from the American fhore.

The hunter goes with a dog, who points them. He knocks it on the head, and flays it, while the dog is beating ábout for another.

They are called in the Kamtfibatkan tongue Kalan, in the plural Kalani.

Their flefh is preferred to that of Seals by the natives; but the unfortunate crew who were fhipwrecked in the expedition in 1741, under Captain Bering, found it to be infipid, hard, and tough as leather; fo that they were obliged to cut it in fmall pieces before they could eat it. Others pretend, that the flelh of the young is very delicate, and fcarcely to be diftinguifhed from young lamb.
But the valuable part of them is their fkin. Few are brought into Europe; but great quantities are fold to the Cbinefe, at vaft prices, from feventy to a hundred rubles apiece, or 14 or 251 . fterling each. What a profitable trade might not a colony carry on, was it poffible to penetrate to thefe parts of Nortb America by means of the rivers and lakes! The accefs to Pekin,would be then eafy, by failing up the gulph of Petcheli. At prefent, thefe valuable furs are carried by land above three thoufand miles to the frontiers of Cbina, where they are delivered to the merchants.

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## D I V. II. Sест. II. DIGITATED QUADRUPEDS.

Without Canine Teeth: and with two Cutting Teeth only in each jaw.

## D I V. II. Sect. II. Digitated Quadrupeds.

# Without Canine Teeth : and with two Cutting Teeth only in each jaw. 

Generally Herbivorous, or Frugivorous.

HARE.
37. Varying. HIST. QUAD. Genus XXVI. Hif. 2ead. $\mathrm{N}^{\circ}{ }^{242}$.-Alpine Hare, Br. Zoot. i. $\mathrm{N}^{\circ}$ 21.-Liv. Mus.

HARE. With the edges of the ears and tips black : the colors, in fummer, cinereous, mixed with black and tawny : tail always white.

Mr. GraBam fays, that thofe of Hzulfonis Bay are of the fame fize with the common; but thofe which I have examined in Scotland are much lefs, weighing only fix pounds and a half: the common Hare weighs upwards of eight.

This fpecies inhabits Greenland, where alone they continue white throughout the year*; and are very numerous amidft the fnowy mountains. They are ufually fat; and feed on grafs, and the white mofs of the country. They are found about the rocks at Cburchill, and the ftreights of Hudfon's Bay; but are not common. They breed once a year, and bring two at a time $\dagger$. They changetheir color to white at approach of winter. They are met with in Canada and Nerwfoundland'; after which the fpecies ceafes to the fouthward, or at left I have no authority for its being continued; the Hare of New England feeming, by Fofelyn's account, to be thefollowing fpecies.

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There animals are found from Hudjon's Bay to the extremity of North America; but fwarm in countries bordering on the former. In the time of M. Feremie, who refided in Hudfon's Bay from 1708 to 1714, twenty-five thoufand were taken in one feafon *. At prefent they are a principal winter food to our refidents there. They are taken in wire fnares, placed at certain intervals in fmall openings made in a long extent of low hedging formed for that purpofe ; the animals never attempting to jump over, but always feek the gaps. Thefe hedges are removed, on the falling of the fnows, to other places, when the Rabbets feek new tracks $\dagger$. Their flefh is very good; but almoft brown, like that of the Englijh Hare.

From Hudjon's Bay, as low as New England, thefe animals, at approach of winter, receive a new coat, which confifts of a multitude of long white hairs, twice as long as the fummer fur, which ftill remains beneath. About the middle of April they begin to fhed their winter covering.

From New England fouthward they retain their brown color the whole year. In both warm and cold climates they retain the fame nature of never burrowing; but lodge in the hollow of fome decayed tree, to which they run in cafe they are purfued. In the cultivated parts of America, they make great havoke among the fields of cabbage, or turnips. $\ddagger$. In Carolina, they frequent meadows and marfhy places; and are very fubject to have maggots breed in the fkin §. In that province they breed very often, and even in the winter months, and bring from two to fix at a time; but ufually two or four $\|$.

I know of no ufe that is made of the fkins, excepting that the narives of Hudjon's Bay wrap them round the limbs of their children, to preferve them againtt the cold.

[^118]*     * Without a tail.

$$
\text { Hiff. 2uad. No } 248 .- \text { Blackb. Muf. }
$$

HARE. With fhort, broad, rounded ears: long head, and whifkers: fur dufky at the roots; of a bright bay near the ends; tips white : intermixed are divers long duky hairs.

Length nine inches.
Found from the Altaic chain to lake Baikal, and from thence to Kamtfchatka. They dwell amidft the fnows of the lofieft and moft dreadful rocky mountains, and never defcend to the plains. They alio are faid to inhabit the fartheft Fox or Aleutian illands: therefore poffibly may be met with in America.

The manners are fo amply defcribed in my Hiftory of Quadrupeds, that I fhall not repeat an account of them.

$$
\text { Hif. 2uad. } \mathrm{N}^{\circ} 25 \mathrm{~s} .- \text { Susellic, v. 2i.-LEv. Mus. }
$$

Descriptiono.

BEAVER. With a blunt nofe: ears fhort, rounded, and hid in? the fur: eyes friall : very ftrong cutting teeth : hair of a deep. chefnut brown: fore feet finall, and the toes divided : hind feet large, and the toes webbed : the tail eleven inches long, and three broad ${ }_{\mathrm{j}}$. almoft oval, flat, and covered with thin.fcales.

The ufual length, from nofe to tail, is about two feet four; but It have meafured the fkin of one, which was near three feet long.

Beavers vary in color. They are fömetimes found of a deep black, efpecially in the north. In Sir Afbton Lever's mufeum is a:fpecimen. quite white. As they advance fouthward, the beauty of their fur: decreafes. Among the Illinois they are tawny, and even as pale as ftraw color*.
Thacx. In North America thefe animals are found in great plenty all round Hudjon's Bay, and as low as Carolina $\dagger$ and Louifana $\ddagger$. They are not known in Eaft Florida §. The fpecies alfo ceafes before it arrives. in Soutb America. To fpeak with precifion, it commences in lat. 60, or about the river of Seals, in Hudjon's Bay; and is. loft in lat. 30, in: Louifiana.

From.Hudjon's Bay and Canada, I can trace them weftward to 120 ; degrees of longitude, as far as the tract wefl of Lac. Rouge, or the: Red lake $\|_{0}$. The want of difcovery prevents us from knowing whether they are continued to the weftern extremity of this great continent oppofite to Afia: probably they are, for, the Ruffian adventurers got fome of their fkins on the ine of Kadjak, which the natives mult

[^119]
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ing into the ground ftakes, five or fix feet long, placed in rows, and: fecuring each row by wattling it with twigs, and filling the interftices with clay, ramming it down clofe. The fide next to the water is nloped, the other perpendicular. The bottom is from ten to twelve feet thick; the thicknefs gradually diminifhes to the top, which is about two or three. The centre of the dam forrs.s a fegment of a circle; from which extends, on each fide, a ftrait wing: in the midtt of the centre is ufually a gutter left for the wafte water to difcharge itfelf. Thefe dams are often a hundred feet long, and nicely covered with turf.
Houszs.
The houfes thefe wife animals make, are placed in the water collected by means of the dam, and are feated near the fhore. They are built upon piles, and are fometimes round, fometimes oval; the tops are vaulted, fo that their infide refembles an oven, their outfide a dome. The walls are made of earth, ftones, and fticks, and ufually two feet thick. They are commonly about eight feet high above the furface of the water ${ }^{*}$, and are very neatly and clofely plaiftered on the infide. The floor is a foot higher than the water. The houfe; fometimes, has only one floor, which is ftrewed with leaves or mofs; on which each Beaver lies in its proper place; at other times there are three apartments; one to lodge, another to eat in, and a third to dung in $\dagger$ : for they are very cleanly, and inftantly caufe the filth'to be carried off by the inferior Beavers.
M. Du Pratz $\ddagger$ fays, that thofe of Louifiana form numbers of cells, and that each animal, or more probably each pair, poffefs one. He fays, that he has feen no lefs than fifteen of thefe cells furrounding the centre of one houfe. He alfó acquaints us, that the Beavers of Louifana are a third lefs than the brown fort; are covered with a cinereous down, which is covered with long filvery hairs.

In each hoafe are two openings; one towards the land, the other is within, and communicates with the water, for the conveniency of

[^120]
## C $\begin{array}{llllll}\mathrm{A} & \mathrm{S} & \mathrm{T} & \mathrm{O} & \mathrm{R} .\end{array}$

getting to their magazine of provifion in frofty weather. This orifice is formed fo as to be beyond the thicknefs of the ice; for they lodge their provifions under the water, and dive and bring it into their houre according as they want it.

Their food is laid in before winter by the tenants of each houfe; it confits of the bark and boughs of trees. Lawfon fays that they are fondeft of the faffafras, afh, and fweet gum. In fummer they live on leaves; fruits, and fometimes crabs and cray-fifh; but they are not fond of fifh.

The number of houfes in each pond is from ten to twenty-five: the number of animals in each, from two to thirty. They are fuppofed to affociate in pairs; are therefore monogamous: another proof of their advances towards civilization.

I think I have heard that every family confifts of an even number. Sometimes the community, within the precinct of a dam, confifts of four hundred; but I prefume this muit be in places. little frequented by mankind:

They begin to build their houfes, when they form a new fétlement, in the fummer; and it cofts them a whole feafon to finifh their work, and lay in their provifions.

They are very attentive to their fafety; and on any noife take to. the water for their further fecurity. They form vaults or burrows in the banks of the creek formed by the dam, into which they retreat in cafe of imminent danger.

They feem to be among quadrupeds, what Bees are among infécts. They have a chief, or fuperintendant, in their works, who directs the whole. The utmoft attention is paid to him by the whole community. Every individual has his talk allotted, which they undertake with the utmoft alacrity. The overfeer gives a fignal by a certain number of finart ीaps. with his tail, expreffive of his orders. The moment the artificers hear it, they haften to the place thus pointed out, and perform the allotted labor, whether it is to carry wood, or draw the clay, or repair any accidental breach.

Macazines.

Foob.

Number or houses;

Centinelb.

Slaves.

They have aldo their centinels, who, by the fame kind of fignal. give notice of any apprehended danger.

They are fid to have a fort of flavifh Beaver among them (analogoes to the Drone) which they employ in Servile works, and the dometic drudgery*.

I have mentioned before their fugacity in laying in the winter provifion. They cut the wood they prefer into certain lengths; pile them in heaps beneath the water, to keep them moist; and, when they want food, bite the wood into final pieces, and bring it into their houfes. The Indians obferve the quantity which the Beavers lay in their magazine at approach of winter. It is the Almanack of the Savages; who judge from the greater or leis flock, of the mildness or Severity of the approaching feafon $\dagger$.

The expedition with which they cut down trees, for the forming their dams, is amazing. A number furrounds the body, and will in a few minutes gnaw through a tree of three feet in circumference; and always contrive to make it fall towards the foot they wish $\ddagger$.

Beavers have in America variety of lakes and waters in which they might fix their feats; but their fagacity informs them of the precarious tenure of fuch dwellings, which are liable to be overthrown by every flood. This induces them to undertake their mighty and marvellous labors. They therefore felect places where no fuch inconveniences can be felt. They form a dam to fupport a refervoir, fed only by a frail rill; and provide for the overflow of the wafte water by a fuitable channel in the middle of their bank. They have nothing to fear but from land floods, or the fudden melting of the flows. Thefe fometimes make breaches, or damage their houses; but the defects are inftantly repaired.

During the winter they never fir out, except to their magazines of provifion; and in that feafon grow exceffively fat.

They are ftrongly attached to certain haunts, there being places which they will not quit, notwithstanding they are frequently if-

[^121]turbed.

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It is not wonderful that fuch fociable animals fhould be very affec. tionate. 'Two young Beavers, which were taken alive and brought to a neighboring factory in Hudjon's Bay, were preferved for fome time; and throve very faft, till one of them was killed by an accident. The furvivor inftanitly felt the lofs, began to moan, and ab. ftained from food till it died ${ }^{*}$.

They are taken feveral ways : fometimes in log-traps, baited with poplar fticks, laid in a path near the water. The Indians always waih their hands before they bait the traps, otherwife the fagacious animal is fure to fhun the fnare.

Sometimes they are fhot, either while they are at work, or at food, or in fwimming acrofs the rivers. But thefe methods are ufed only in fummer, and not much practifed; for the fkins in that feafon are far lefs valuable than in the winter. At that time they are taken in nets placed above and below their houfes, acrofs the creeks, on ftakes. If the water is frozen, the ice is cut from fhore to fhore, in order to put down the ftakes. When the net is fet, the Indians fend their women to the Beaver-houfes to difturb the animals; who dart into the water, and are ufually taken in the net, which is inftantly hauled up; and put down again with all expedition. If the Beaver miffes the net, it fometimes returns to its houfe, but oftener into the vaults on the fides of the banks; but the poor creature feldom efcapes, being purfued into all his retreats, the houfes being broke open, and the vaults fearched by digging along the fhores.

The value of the fur of thefe animals, in the manufacture of hats, is well knowin. It began to be in ufe in England in the reign of Cbarles I. $\dagger$, when the manufacture was regulated, in 1638 , by proclamation ; in which is an exprefs prohibition of ufing any materials except Beaver fuff, or Beaver wool; and the hats called demi-caftors werc forbidden to be made, unlefs for exportation.

This caufed a valt encreafe of demand for the fkins of the Beavers. The Indians, on the difcovery of America, feem to have paid very
little attention to them, amidft the vaft variety of bcafts they at that time poffeffed, both for food and cloathing. But about the period of the farhion of hats, they became an article of commerce, and object of chafe. The fouthern colonies foon became exhautted of their Beavers; and of later years the traffic?has been much confined to Ca nado and Hudfon's Bay. The importance of this trade, and the ravages made among the animal creation in thofe parts, will appear by the following ftate of the imports into the ports of London and Rocbelle in 1743. I take that year, as I have no other comparative flate :

```
Hudfon's Bay company fale, begun November 17th 1743.
    26,750 Beaver fkins.
    14,730 Martins.
        590 Otters.
            1,iro Cats, i. e. Lynx.
            320 Fox.
            600 Wolverenes.
            320 Black Bears.
            1,850 Wolves.
            40 WoodMocks, or Flihers.
                    10 Minx.
                    5 Raccoon.
                    120 Squirrels.
                    130 Elks, i. e. Stags.
                    440 Deer.
Imported into Rocbelle in the fame yeas.
            127,080 Beavers.
            16,512 Bears.
            110,000 Raccoon.
                    30,325 Martins.
                        12,428 Otters and Fihers.
                1,700 Minx.
                1,220 Cats.
                    P
\[
\mathbf{1 , 2 6 7} \text { Wolvés. }
\]

92 Wolverenes. 10,280 Grey Foxes and Cats.

451 Red Foxes.
This great balance in favor of the Frencl arifes not only from their fuperior honefty in their dealings with the ignorant Indians, but the advantageous fituation of Canada for the fur trade. They had both fides of the river St. Lawrence; the country round the five great lakes; and the countries bordering on the rivers flowing into them; and finally, the fine fur countries bordering on the Hudjon's Bay company, many of whofe waters falling into the St. Lawrence; gave an eafy conveyance of thofe commodities to Montreal; where a fair is annually kept, with all the favage circumftances attendant on Indian concourfe.

The traffic carried on in Hudjon's Bay is chiefly brought from the chain of lakes and rivers that empty themfelves into the bay at Nelfon's river, running foutherly from lat. 56 to lat. 45. Lake Pachegoia is the moft northerly: there the Indians rendezvous in March, to make their canoes for the tranfportation of the furs; for at that feafon the bark of the birch-tree feparates very eafily from the wood.

Hif. Quad. No 252.—Smellie, v. 260.

BEAVER. With a thick nofe, blunt at the end: ears fhort, hid in the fur: eyes large : body thick, and in form quite refembles that of the Beaver; its color, and that of the head, a reddifh brown: breaft and belly cinereous, tinged with ruft-color: the fur is very foft and fine.

The toes on every foot are diftinct and divided: thofe of the hind feet fringed on both fides with ftiff hairs or briftles, clofely fet together: tail compreffed, and thin at the edges, covered with fmall fcales, with a few hairs intermixed.

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but burrow, like Water-rats, in banks adjacent to lakes, rivers, and ditches*, and often do much damage, by admitting the water through the embankments of meadows. They continue in their holes, except when they are in the water in fearch of food. They make their nefts with fticks, placing a lining of fome foft materials within \(\dagger\) : Cbarlevoix \(\ddagger\) adds, that they fometimes make ufe of a hollow tree for their refidence.

When taken young, they are capable of being tamed; are very. playful and inoffenfive, and never bite.

\footnotetext{
* Kalm, ii. 56, and Cbarlevoix.
+ Kaln, ii. 58.
\(\ddagger\) v. \(15^{8 .}\)
}

HIST. QUAD. Genus XXVIII.

Hif. 2uad. \(^{\circ}{ }^{\circ}\) 257.-Lev. Mus.
42. Canada.

PORCUPINE. With flort ears, hid in the fur: hair on thehead, body, legs, and upper part of the tail, long, foft, and of a dark brown color; but fometimes found white : on the upper part of the head, body, and tail, are numbers of ftrong fharp quils; the longeft, which are thofe on the back, are three inches long; the fhorteft are towards the head and on the fides, and concealed in the hair; mixed with them are certain ftiff ftraggling hairs, at left three inches longer than the others, tipt with dirty white: the under fide of the tail is white.

On each fore foot are four toes; on the hind five; all armed with long claws, hollowed on the under fide.

The fize of one, which Sir Joseph Banks brought from Newfoundland, was about that of a Hare, but more compactly made; the back arched; and the whole form refembling that of the Beaver: the tail is fix inches long, which, in walking, is carried a little bent upwards.

This fpecies inhabits America, from Hudjon's. Bay to Canada \({ }^{*}\), Newfoundland, New England, and, but rarely, as far fouth as Virginia \(\dagger\). Lawfon makes no mention of it among the animals of Carolina. Du Pratz \(\ddagger\) fays, it loves the cold, and is found on the banks of the Illinois. It may therefore be ranked among the local northern animals.

They are found in great plenty about Hudfon's Bay, where the trading Indians depend much on them for food. They are reckoned excellent eating, even by the Europeans, tafting, when roafted, likefuck-
ing-pig. The bones, during winter, are of a greenifh yellow, owing, as is fuppofed, to their feeding during that feafon on the bark of the pine. It is obferved, that the bones of animals fometimes take a tincture from their diet; for example, thoie of beafts which feed on madder become red *. They are alfo very fond of the bark of juniper. In fummer, they live on the wild fruits, and lap water, but will not go into it. In winter, take fnow by way of beverage.
They neftle under the roots of great trees, and will alfo, in queft of fruits, afcend the boughs. When the Indians difcover one in a tree, they cut it down, and kill the animal by a blow on the nofe.

They defend themfelves with their quills. They fly from their purfuer; but when they cannot efcape, will fidle towards their enemy, in order to pufh their quils into him: they are but weak inftruments of offence; for a fmall ftroke with the hand againft the grain will bring them from the fkin, leaving them ficking flightly in the flefh. The Indians ufe them to make holes in their nofes and ears, for the placing their nofe and ear-rings, and other finery \(\dagger\). They alfo trim the edges of their deer-fkin habits with fringes of dyed quils \(\ddagger\), or make pretty linings with them for the bark boxes.

They are very indolent animals, neep much, and feldom travel a mile from their haunts \(\|\).
M. de Buffon gives two figures of 'this beaft, under the name of \(L e\) Coendou and L'Urfon. The firft he makes an inhabitant of Brafil: the laft, of Hudfon's Bay: but the Coendou is a very different animal \(\S\). The two figures he has exhibited are of our Porcupine in the winter and fummer drefs, the hair growing thinner as the warm feafon approaches \(\mathbb{\pi}\). His Coendou' hews it in the firft ftate, his Utfon in the fecond \({ }^{* *}\).

They are faid to copulate in September, and to bring only one young, the firf week in April; another, which it brings forth, being always dead \(\dagger \dagger\).
\begin{tabular}{|c|c|c|}
\hline I. Tranf. 1xii. \(374 \cdot\) & + Drage's woy. i. 177. & \(\pm\) The fame, 191. \\
\hline 11 Mr. Grabam, '§ See Syr & uad, N - & \IEdw. Hif. Birds, i. 52. \\
\hline ** Hiff. Nat. xii. tab. liv. Iv. & tt Mr. Grabam. & \\
\hline
\end{tabular}

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Inhabits the temperate and warm parts of North Anerica, from Perjgluania to the Babaina IJands. It feeds on fruits, berries, and veretables. In the provinces it inhabits the hollows of trees, or burrows under ground, fleeping for a month together. The European fpecies continues dormant half the year: whether it takes a long fleep in the warm climate of the Babamas I am uncertain. It dwells there among the rocks, and makes its retreat into the holes on the approach of the hunters. In thofe inands it is very fond of the berries of the Ebretia Bourreria, called there Strong Back. The fefh is reckoned very good, but refembles more that of a Pig than a Rabbet *.

It is called there the Babama Coney. By Mr. Edwards, who figures one from Maryland, the Monax, or Marmot of America \(\dagger\).

Hif. Quad. \(\mathrm{N}^{0}\) 261.-Lev. Mus.

MARMOT. With the tip of the nofe black : ears fhort, and oval: cheeks whitifh : crown dufky and tawny: hair in all parts rude and long; on the back, fides, and belly, cinereous at the bottoms, black in the middle, and tipped with white, fo as to fpread a hoarinefs over the whole: legs black : claws durky: tail full of hair, black and ferruginous.

Size of the preceding.
Inhabits the northern parts of North America.

MARMOT. With hort ears: color of the head and body a cinereous brown: the extremities of the hairs white: two cutting teeth above, four below : no tail.

About the fize of the common Marmot.
Inhabits Hudjon's Bay.

MARMOT. Without ears: face cinereous: back, and hind part-of the head, of a light yellowifh brown; fometimes fpotted diftinctly with white, at others undulated with grey: belly and legs of a yellowifh white : tail about four inches and a half long. Length, from nofe to tail, about nine and a half. But there is a pygmy variety wholly yellow, and with a fhort tail, frequent near the falt lakes, between the mouths of the Yaik and the femba.

Inhabits Bobemia, Auftria, and Hungary, and in the Rufian empire; begins to be common about the Occa, eaft of Mofcown; extends over all the temperate and epen parts of Sibiria, and about \(\mathcal{F} a k u t k\), and in Kamtfcbatka. It is alfo on the illand of Kadjak, and was feen in great numbers by Steller on Scbamagin's ifles, almoft clofe on the fhore of North America, which give it place in this part of the work.

They burrow, and fink the pipes to their retreats obliquely, and diameter, ftrewed with dried grafs. The entrances, or pipes, of the males are of greater, and thofe of the females of leffer, diameters. Towards winter they make a new pipe to their neft, but that only reaches to the turf; and with the earth which is taken out they fill up the fummer pipe.

They live entirely in a ftate of folitude, unlefs in the amorous feafon, when the females are found in the fame burrows with the males; but they bring forth in their own burrows, and by that means prevent the males from deftroying the young, as they cannot enter by reafon of the narrownefs of the pipes, the males being fuperior in fize to their mates. They feep all night; but in the morning quit thēir holes, efpecially in fine weather, and feed and fport till approach of night. If the males approach one another, they fight fharply. The females often fet up a very fharp whiftle; the males are, for the moft part, filent. At the fight of a man, they
inftantly run into their burrows; and are often feen ftanding upright, and looking about them, as if on the watch : and if they fpy any body, give a loud whiftle, and difappear.

They are very eafily tamed, and become very fportive and amufing; and are very fond of being ftroked and cherifhed. In this ftate they will eat grain, and many forts of herbs. In a wild flate they prey on mice, and fmall birds, as well as vegetables. Gmelin fays, that in Sibiria they inhabit granaries; but I do not find it coinfirmed by Doctor Pallas. Gmelin adds, that thofe who frequent granaries, feek for prey during the whole winter*: as to the others, they certainly remain torpid all the fevere feafon, and revive on the melting of the fnows.

They bring forth from three to eight at a time. The young grow yery quick, and defert the maternal burrows in the fummer.

Their enemies are all forts of Weefels, which dig them out of their holes. More males than females perifh, as the latter are fiercer, and defend themfelves much better. During day they are fratched up by hawks and hurgry crows.

In fome places they are taken in fnares, for the fake of their fkins, which are ufually fent to Clina. The Kamticbatkans make moft elegant garments and hoods of them; fpecimens of the latter are preferved in the Leverian Mufeum. In Sibiria their flefh is efteened a great delicacy, efpecially in autumn, when they are a lump of fat.

The Ruflans call them Sulik; the Sibirians, fevra/cha, and femuranka; the Kamtfcbatkans, Syrath.

\footnotetext{
* Voyage en Siärié, i. 378 .
}

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N. B. The ears of the American Squirrels have no tufts.

SQUIRREL. Of a ferruginous colour, marked along the top of the back with a line of a deeper hue: belly of a pale alh-color, mottled with black, and divided from the fides by a dulky line: tail fhorter and lefs bufhy than that of the European kind; of a ruftcolor, barres, and fometimes edged with.black..
Inhabits the pine-forefts of Hudjon's Bay and Labrador: \(:\) live upon the cones: keep in their nefts the whole winter. Are found as high, as the Copper river; yet do not change their colors by the feverity of the winter, like the Petits gris of northern Europe and Afa, from: which they form a diftinct fpecies. I know of only one exception in change of color in thofe of America, Sir Afiton Lever. being poffeffed of a. fpecimen of a milky whitenefs; but he did not know from. what part of the continent it came.
a. Carolina*. With the head, back, and fides, grey, white, and ferruginous, intermixed : belly white : the color divided from that of the fides by a ruft-coloured line: lower part of the legs red: tail: brown, mixed with black, and edged with white.

Both thefe are rather lefs than the European Squirrels.
\[
\text { Hif. 2uad. } \mathrm{N}^{0} \text { 272.-Smellie, v. } 321 . \text { Liev: Mus. }
\]

\(S\)QUIRREL. With hair of a dull grey color, intermixed with black, and frequently tinged with dull yellow : belly white. But they vary, the body being fometimes of a fine uniform grey.
- Leffer Grey Squirrel, Hif. 2uad. p.

This is the largeft of the genus, and grows to half the fize of a Rabbet.
In America I do not difcover this animal farther north than New England \({ }^{*}\).; from whence they are found in vaft numbers as far fouth as Louifiana \(\dagger\). Thefe, and the other fpecies of Squirrels, are the greateit pefts to the farmers of Nortb America. They fwazm in feveral of the provinces, and ofien defcend in troops from the back fettlements, and join the reft in their ravages on the plantations of mayz, and the various nuts and maft.which that fertile country. produces.

Thofe which migrate from the mountains generally arrive in autumn; inftantly clear the ground of the fallen acorns, nuts, and maft, and form with them magazines for their winter.provifions, in holes which they dig under ground for that purpofe. They are often robbed of their hoards; for the colonifts take great pains to find: them out; and oft-times the hogs, which rove about the woods, root up and devour their magazines. It is from thefe that they fupply themfelves, from time to time, with provifions, quitting their nefts, and returning with a.fufficient fock to laft them for fome fpace; it. being obferved, that during winter they do not care to quit their. warm retreat, unlefs on a vifit to their ftorehoufes; therefore, whenever they are obferved to run about the woods in greater numbers than ufual, it is a certain fign of the near approach of fevere cold; for inftinct directs them to lay in a. greater ftock than ufual, leaft the inclemency of the weather. Ihould deprive them of accefs to their fubterraneous magazines.

The damage which they do to the poor planters, by deftroying the mayz, is incredible. They come by hundreds into the fields, climb up the ftalks, and eat the fweet corn wrapt up in the heads, and will deftroy a whole plantation in a night. For this reafon they were profcribed. In fome places the inhabitants.were, each; obliged annually to bring in four Squirrels heads. In others, a fum was given,
about three pence, for every one that was killed. This proved fuch an encouragement, as to fet all the idle people in the province in \({ }^{\text { }}\) purfuit of them. Penfylvania paid, from fanuary 1749 to Fanuary 1750, 80001 . currency: but on complaint being made by the deputies, that their treafuries were exhaufted by thefe rewards, they were reduced to one half. How improved muft the fate of the Americans then be, in thirty-five years, to wage an expenfive and fucceffful war againft its parent country, which before could not bear the charges of clearing the provinces from the ravages of thefe infignificant animals!

It has been obferved, that the Squirrels are greatly multiplied within thefe few years, and that in proportion to the encreafe of the fields of mayz, which attract them from all parts; I mean not only the grey fecies, but all the others.

They are eaten by fome people, and are efteemed very delicate. Their fkins, in America, are ufed for ladies fhoes; and are often imported into England, for lining or facing for cloaks.

They make their nefts in hollow trees, with mofs, ftraw, wool, and other warm materials. They chiefly inhabit trees of the deciduous kind; but fometimes in pines, whofe cones are an article of their provifion. They keep their nefts for feveral days together, feldom ftirring out, except for a frefh fupply of food. Should a deep fnow prevent them from getting to their forehoules, multitudes perifh with hunger.

When they are fitting on a bough, and perceive a man, they inftantly move their tails backward and forward, and gnafh their teeth with a very confiderable noife. This makes them detefted by the fportfmen, who Iofe their game by the alarm they give. The Grey Squirrel is a difficult animal to kill : it fits on the higheft trees, and often between the boughs, and changes its place with fuch expedition that the quickeft markfman can farcely find time to level his piece ; and if it can once get into a hole, or into any old neft, nothing

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Inhabits neither Hudfon's Bay nor Canada, but is found in moft. other parts of America, as far as Mexico*. It is equally numerous, and as deftructive to the mayz as the Grey Squirrel, but breeds and affociates in troops feparate from that fpecies \(\dagger\); yet makes its neft in the fame manner, and like it forms magazines of provifion againft the fevere feafon.

In Mexico, and probably in other parts of America, they eat the cones of pine-trees; and lodge in the hollows of the trees.
A. With merribranes from leg to leg.
Hif. 2uad. No 283.-Smellie, v. 307.-Lev. Mus.

SQUIRREL. With large black eyes: round and naked ears:s a membrane, covered with hair, extending from the fore to the hind legs: the hairs on the tail difpofed flatways on each fide: are long in the middle, fhort towards the end, which tapers to a point: that and the body of a brownif cinereous: the belly white, tinged with yellow.

Inhabits all parts of North America, and as low as Mexico, where it is called 2uimichpatlan \(\ddagger\). The natives of Virginia named it \(A \delta a\) panic \(\|\).

They live in hollow trees. Like the Dormoufe, they neep the whole day; but towards night creep out, and are very lively and active. They are gregarious, numbers being found in one tree. By means of the lateral membranes, thcy take prodigious leaps, improperly called flying; and can fpring ten yards at an effort. When they would leap, they extend the hind legs, and ftretch

\footnotetext{
* Is the Qusubtechallotilitic, or Tlilacotequillin, of the Mexicans. Fernandez, 8. \(\dagger\) Catefby, ii. 73. \(\ddagger\) Fernand. Nov. Hi/p. 8. \(\quad \| \mid\) Snith's Virginia, 27.
}
out the intervening fin, which producing a larger furface, makes the animals feecifically lighter than they would otherwife be: even with all this advantage, they cannot keep in a ftrait line, but are urged downward with their weight. Senfible of this, they mount the tree in proportion to the diftance of the leap they propofe to take, leaft they fhould fall to the ground before they had reached a place of fecurity.

They never willingly quit the trees, or run upon the ground, being conftant refidents of the branches. They go in troops of ten or twelve, and feem in their leaps, to people unàccuftomed to them, like leaves blown off by the wind.

They bring three or four young at a time. They ufe the fame food, and form their hoards like other Squirrels.

They are very eafily tamed, and foon grow very familiar. They feem of a tender nature, and to love warmth, being very fond of creeping to the lleeve or pocket of the owner. If they are flung down, they fhew their dinike to the ground, by inftantly running up and fheltering themfelves in his cloaths.
\[
\text { Hiff. Quad. No } 284 .
\]

\(S\)QUIRREL. With the lateral kins beginning at the ears, uniting under the chin, and extending, like thofe of the former, from fore leg to hind leg: the ears naked, and rather long: the hairs on the tail difpofed horizontally.

The color of the upper part of the body reddifh : the lower part cinereous, tinged with yellow.

This fpecies, according to Seba, who is the only perfon who has defcribed or figured it, came from Virginia*. Linnaus is very confufed in his fynonyms of this and the former kind; that of Mr. Edwards refers to the other fpecies; and that of Seba, in his article of Sciurus Volans, to both \(\dagger\).
- Seb.Muf. i. tab. xliv. p. 72.
tSyft. Nat. 85, where he calls it Mus Volans; and p. 88, where he fyles it Sciurus.

It is fingular that there fhould be only one fpecimen ever brought of this fpecies, from a country we have had fuch great intercourfe with. It may perhaps be a monftrous variety, by the extent of the fkin intoa fort of hood. As to color, that is an accidental difference, which: happens to numbers of other animals.

\section*{Hif. 2uad: \(\mathrm{N}^{\mathrm{o}} 28 \mathrm{z}\).}

Greater Flying Squirrel, Pb. Tr. 1xii. 379:

SQUIRREL. With the hair on the body and fides of a deep cinereous color at the bottom; the ends ferruginous: breaft and'. belly of a yellowifh white: the whole coat long and full: the tail thick of long hairs, difpofed in a lefs flatted manner than thofe of the European kind; brown on the upper fide, darkeft at the end ; thelower part of the fame color with the belly: the lateral fkin, the inftrument of flight, difpofed from leg to leg, in the fäme manner as in the firt fpecies, \(\mathrm{N}^{\circ} 5 \mathrm{r}\).
In fize it is far fuperior to the common Flying Squirrel, being at: left equal to the Engli/s kind.

This fpecies is found in the fouthern parts of Hudfon's Bay, in theforefts of the country bordering. on Severn river in fames's bay.

A. Common. Hiff. 2uad. \(\mathrm{N}^{\circ}\) 266:-Smellie, iv. 268.-Lev. Mus:

SQUIRREL. With tufted ears : head, body, and legs, ferruginous: breaft and belly white : tail reddifh brown.
This fpecies inhabits the northern world, as high as Lapmark; is

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in the town of Tom \(k\), in deferted houles, and in the towers of the fortifications; where numbers are taken alive, and of great fize, by the children of the place.

A beautiful and large variety, about the Baraba, called the Teleutian, is in great efteem for its beautiful grey color, like a Gull's. back, with a filvery glofs, and finely undulated. Their fummer color is ufually dufky red, and the fides and feet black. Thefe are highly efteemed by the Cbinefe, and fell at the rate of 6 or \(7 l\). fterling per thoufand *

A fimall variety of this, lefler even than the common kind, is met with about the neighborhood of the Kafym and Ifet.

A variety is alfo met with which change to a white color; and others again rètain a white color both in winter and fummer.

The late navigators to the Icy fea brought home with them from Pulo Condor, a knot of inlands in north lat. 8.40. on the coalt of Cambodia, a Squirrel totally black.
B. European Flying Seuirrel, Hif. 2aad: \({ }^{0}\) 285.-Smellit, v. 307.-Lev. M'uso

S
QUIRREL. With naked ears: flying membranes extending. from the middle of the hind legs to the bafe of the fore feet, and fpreading there in a rounded fail : tail full of hair, and round at the end: color of the upper part of the body a fine grey, like that of a Gull's back : the lower part white.

Length to the tail four inches and a quarter ; of the tail, five.
Inhabits the birch-woods of Finmark, Lapland, Finland, Litbuania, and Livonia. Is found in Afra, in the woods of the Urallian chain, and from thence to the river Kolyma. Neftles in the hollows of tress remote from the ground, where it makes its neft of the fofteft moffes. Is always folitary, except in the breeding-feafon, and never appears.
- Memr. Ruf. Afat: vii. \(124!\).
in the day-time. Lives on the buds and catkins of the birch, and on the fhoots and buds of pines, which give its juices a ftrong refinous fmell; and its excrements will burn ftrongly, with a pitchy fcent. The laft are always found at the root of the tree, as if the animal defcended to eafe nature. It feldom comes out in bad weather ; but certainly does not remain torpid during winter; for it is often taken in the traps Iaid for the Grey Squirrels. The fkins are often put up in the bundles with the latter, fo that the purchafer is defrauded, as their fur is of no value. They leap at vaft diftances from tree to tree, and never defcend but for the purpofe before mentioned. By reafon of fimilitude of color between them and the birch bark, they are feen with great difficulty, which preferves them from the attacks of rapacious birds.

They bring forth two, three, and rarely four, young at a time: When the parent goes out for food, the laps them carefully up in the mofs. They are very difficult to be preferved, and feldom can be kept alive, by reafon of want of proper food. They are born blind, and continue fo fourteen days. The mother pays them great attene tion; broods over them, and covers them with its flying membrane. The Ruffians call them Ijetaga, or the Flying.

DORMOUSE. With naked rounded ears: the eyes full and black; about them a whitilh fpace : the head, body, and tail, of a reddifh brown, deepeft on the laft: from neck to tail a black line extends along the top of the back : on each fide run two others, parallel to the former, including between them another of a yellowifh white: breaft and belly white: the toes almoft naked, and of a flefh-color ; long, hender, and very diftinct; four, with the rudiment 'of a fifth, on the fore feet; five perfect toes on the hind.
S:ze. \(\quad\) The length is about five inches and a half; of the tail, to the end of the hairs, rather longer.

Inhabits all parts of Nortb America, I think, from Hudfon's Bay to Louifana; certainly from Canada, where the French call them Les Suifes, from their fkins being rayed with black and white, like the breeches of the Switzers who form the Pope's guard *.

They are extremely numerous: live in woods, yet never run up trees, except when purfued, and find no other means of efcape. They live under ground, burrow, and form their habitations with two entrances, that they may fecure a retreat through the one, in cafe the other fhould be ftopped. Thefe little animals form their fubterraneous dwellings with great kill, working them into the form of long galleries, with branches on each fide, every one terminating in an enlarged apartment, in which they hoard their ftock of winter provifion \(\dagger\). Their acorns are lodged in one, in a fecond the mayz, in a third the hickery-nuts, and in the laft their moft favorite food,

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they kill them. The fkins are fold to the Cbinefe merchants. About the Lena, a thoufand of their fkins are not valued at more than fix or eight rubles *.

Thefe animals are found in great numbers in Afia, beginning about the river Kama \(\dagger\), and from thence growing more and more frequent in the wooded parts of Sibiria; but thefe, and all the fpecies of Squirrel, ceafe towards the north-eaft extremity of the country, by reafon of the interruption of woods, which cuts them off from Kamtfcbatka.
55. English? Dormoufe, Br. Zool. i. \(\mathrm{N}^{\circ}\) 234--Hif. 2uad. \(\mathrm{N}^{\circ}\) 289.—Smellie, iv. 334-LEv. Mus.

Mr. Lawfon fays that the Englifh Dormoufe is found in Carolina; but it has not as yet been tranfmitted to Great Britain. In order to afcertain the fpecies, I add a brief defcription.

DORMOUSE. With full black eyes: broad, thin, femi-tranfparent ears: throat white : reft of the body and the tail of a tawny red. Size of the common Moufe; but the body of a plùmper form, and the nofe more blunt: tail two inches and a half long, covered on every fide with hair.

In Europe, inhabits thickets; forms its neft at the bottom of a tree or fhrub; forms magazines of nuts for winter food; fits up to eat, like the Squirrel; lies torpid moft of the winter; in its retreat, rolled up into the fhape of a ball; retires to its neft at approach of cold weather.

\footnotetext{
- Pallas, Nov. Sp. an. 380.
\(t\) A river falling into the Wolga about forty miles below Cafan.
}

HIST. QUAD. Genus XXXIII.
\[
\text { Br. Zool. i. } \mathrm{N}^{\circ} 25 .- \text { Hift. 2uad. } \mathrm{N}^{\circ} \text { 297.-Smellie, iv. 275.-Lev. Mus. }
\]

RAT. With head and body of a very deep iron grey, nearly black: belly afh-colored: legs almoft naked, and dunky: a claw inftead of a fifth thumb on the fore feet. Length, from nofe to tail, feven inches; tail near eight.

Inhabits North America, not only the fettled parts, but even the rocks of the Blue mountains*, remote from all human dwellings. There they live among the ftones, and in the fubterraneous grottos frequent in thofe hills. They lie clofe during day, but at night come out, and make a moft horrible noife amidft thefe American alps. In violent frofts they lie torpid; and in the inhabited parts of the country they are obferved to redouble their fcreaks before fevere weather, as if they had fome prefage from their conftitutions.

By Mr. Bartram's obfervations it appears very certain, that thefe animals are natives of America. They are found even at prefent in the moft defolate places, as well as in the houfes and barns of the inhabited parts. It is unknown in Europe, that either the common Rat or Moufe ever deferted the haunts of mankind, for rocks and deferts: they therefore have been there from the earlieft times. It is likely, that if ever the Blue mountains become inhabited, the wild Rats will quit their rocks, and refort to thofe places where they find harvefted food, and will quickly become perniciounly domeftic.

We are pofitively told, that Soutb America was free from thefe troublefome animals, till they were introduced there from Europe, by the means of Ships, in \(1544 \dagger\).

\footnotetext{
* Bartram, as quoted by Mr. Kalm, ii. 47. \(\quad\) Garcilafo de la Vega, 384.
}

We find none of the fpecies in Kamtfcbatka, nor any where to the eaft of the Urallian chain. America muft therefore have been ftocked with them from the fide of Europe. They are very common in Rufia. Towards Afrocan they are very fmall, but of the fame color with the others.

RAT. Above, light brown mixed with tawny, dufky, and cinereous : below, of a dirty white: four toes before, and a claw inftead of a fifth toe.
I have no authority for giving this fpecies a place lrere : but mult fuppofe that the new world could not poffibly efcape the peft, as it is univerfally become a moft deftructive inhabitant of European Rhips.

Hif. 2uad. \(\mathrm{N}^{\circ}\) 29g.
Characho, Jike Cbolqomac, or Great Moufe of the Monguls.-Lbv. Mus.

RAT. With the upper jaw extending very far beyond the lower: ears large and naked: tail rather fhorter, in proportion, than that of the Black, to which it is rather fuperior in fize : color a dulky brown.

The fpecimen, from which this defcription is. taken, was fent from North America to Sir Abbton Lever; but I am not informed, whether it only frequented the deferts, or infefted houfes.
59. Water. Br. Zool. \(\mathrm{N}^{\circ} 300\). Hiff. 2uad. \(\mathrm{N}^{\circ}\) 300.—Smellie, iv. 2go.-Lev. Mus.

RAT. With fmall eyes: ears covered with the fur : teeth yellow : body covered with long hairs, black mixed with a few of a ruft-color: belly of a deep grey.

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R
AT. With a black nofe: fur fhort, and in all parts white: limbs nender : tail very thick at the bafe, tapering to a point, and cloathed with long hair.

Seba alone, vol. i. p. 76. tab. xlvii. fig. 4, defcribes this fpecies.

G3. Labrador.

RAT. With a blunt nofe : mouth placed far below: upper lip bifid: ears large, naked, rounded: fore legs fhort, furnifhed with four toes, and a tubercle inftead of a thumb: hind legs long. and naked, like fome of the ferboas: toes long, flender, and diftinet; the exterior toe the fhortelt : thumb fhort.
Saze. The whole length of the animal is eight inches, of which the tail is four and three quarters.
Colors. Color above a deep brown, beneath white, feparated on each fideby a yellow line.

Inhabits Hudfon's Bay and Labrador. Sent over by Mr. Grabam.
> * * With fhort tails:

Hif. 2uad. \(\mathrm{N}^{\circ}\) 319.-Lev. Mus.

RAT. With foft long hair, dufky at the bottom, whitifh brown at the points : along the middle of the back, from head to tail, runs a dufky line : fides yellowifh : belly and iafide of the thighs of a dirty white.

Legs very fhort: on the toes of the fore feet of the male only are four very large and fharp claws, tuberculated beneath; in the female fmaller and weaker : on the hind feet fiye toes with flender: claws.

Tail not three quarters of an inch long, terminating with long ftiff hairs; it is fcarcely vifible, being almoft loft in the fur.

Defcribed from a fkin which Doctor Pallas favored me with, which he received from the Labrador coaft.

This is nearly a-kin to the Lemmus.
\[
\text { Short-tailed Field Moufe ? Br. Zool. i. } \mathrm{N}^{\circ} 3 \text { 1.-Hiff. Quad. } \mathrm{N}^{\circ} 322 \text { ?-Smellie, }
\] iv. 293.-Lev. Mus.

R
AT. With a blunt nofe: great head: prominent eyes: ears buried in the fur: head and upper part of the body of a ferruginous brown mixed with black : belly of a deep afh-color.
-Length, from head to tail, fix inches; tail only one-and a half, with a fmall tuft at the end.

Inhabits Hudfon's Bay and Newfoundland, in the laft very numerous \(_{2}\) and does vaft damage in the gardens; refides under ground.

Hif. 2uad. \(\mathrm{N}^{\circ} 320\),

RAT. With fmall and rounded ears: head broad; color dufky and tawny brown : the belly of a dirty white: a-dufky line paffes from between the eyes, and extends obfcurely along the back. Larger than the common Moufe. Defcribed from fo mutilated a fpecimen, fent to the Royal Society from Hudfon's Bay \({ }^{*}\), that it was impoffible to determine the fpecies; only, by the dark line along the back, it feemed likeft the Hare-tailed, an inhabitant of Sibiria, whofe manners are defcribed in the Hiftory of Quadrupeds.

\footnotetext{
* Pb. Tr. Ixii. 379. Sp: 15.
}

A. Economic, Hif. 2uad. No 313.-Defrr. Kamitchatka, Fr. ed. 392.

RAT. With naked ears, ufually hid in the fur: fmail eyes: teeth tawny : limbs ftrong: color, an intermixture of black and yellow, darkeft on "the back: under fide hoary.

Length four inches and a quarter, to the tail ; the tail one inch.
Inhabits in vaft abundance Sibiria, from the eaft fide of the Urallian chain, even within the Arctic circle, and quite to Kamtfcbatka. It is the noted \(\mathcal{T}_{\text {egult }}\) chitch of that country, diftinguifhed by its curious œconomy and by its vaft migrations.

They make their burrows with the greateft fkill, immediately below the furface of the foft turfy foil. They form a chamber of a flattifh arched form, of a finall height, and about a foot in diameter, to which they fometimes add as many as thirty fmall pipes or entrances. Near the chamber they often form other caverns, in which they lodge their winter ftores: thefe confift of various kinds of plants, even fome of fpecies poifonous to mankind. They gather them in fummer, harveft them, and even at times bring them out of the cells to give them a more thorough drying in the fun. The chief labor refts on the females. The males, during fummer, go about folitary, and inhabit fome old nefts; and in that feafon never touch their hoards, but live on berries. They are monogamous, and the male and female at other times found in the fame neft. The female brings two or three young at a time, and breeds often in the year.

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\section*{B. RED, Hif. 2uad. \(\mathrm{N}^{\circ} 3\) 14: \(^{\circ}\)}

RAT. With briftly nofe and face: ears oval, rifing above the hair, naked, only tipt with fur : color, from forehead to rump, a bright red : fides light grey and yellow : belly whitifh : tail dufky above, light below.

Length not four inches; tail more than one.
Grow very common beyond the \(O b\), and live fattered over all Sibiria, in woods and mountains, and about villages; extend éven to the Arctic circle. It is the \(\mathcal{T}\) Scbetanauffcbu, or Red Moufe of the Kamtfcbatkans. It is a fort of drone: makes no provifion for itfelf, but robs the hoards of the laft fpecies *. Lives under logs of trees; frequents houfes; dares the fevereft weather, and is abroad amidft the fnows; feeds on any thing, and is often caught in the traps fet for Ermines, in attempting to devour the bait.
C. Lemmus, Hift. 2uad. \(\mathrm{N}^{\circ}\) 317.—Godde Saeppan, Leems, 224 .

RA T. With fmall eyes and mouth : upper lip divided : ears fmall, placed far backwards: four flender toes on the fore feet, and a fharp claw, like a cock's fpur, in place of a thumb: fin very thin. Color of the head black and tawny, of the belly yellow.

Length of thofe of Scandinavian Lapland, above five inches; thofe of the Rufian dominions not four.

The manners and wonderful migrations of the Lemmi of Europe, have been fully treated of in my Hiftory of Quadrupeds.

They abound in the countries from the Wbite Sea to the gulph of the Oby, and in the northern end of the Urallian chain; but differ in fize and color from thofe of Europe. Like them, they migrate at certain periods; and tend from the Urallian mountains, fometimes towards 耳enefei, fometimes towards Petzorah, and at thofe times re-
joice the Samoieds with a rich chafe of the animals which purfue the wanderers. The Samoieds affert, that the Rein-Deer will greedily devour them; perhaps they take them medicinally, as Sheep are known as greedily to feek and fwallow Spiders.
D. Lena, Mus Gmelini, Pallas, Nov. Sp. an. 195.

RAT. With fhort round ears: white whifkers: thick broad body, in all parts nearly of equal breadth : tail fhort, thickly covered with rude hairs: five toes on the fore feet, with claws very ftrong and white: four on the hind feet, with claws much weaker: the fur pretty long ; three parts of its length, from the roots, cinereous, the reft white; fo that the animal appears entirely white, except the cheeks, which are afh-colored, and the chin, which is dufky.

The leryth is three inches one-fifth, the tail four-fifths of an inch.

They are feen in great numbers in autumn, on the borders of the Icy Sea, and about the parts of the Lena that fall into it. They appear fuddenly, and depart as expeditioully. They feed on the roots of moffes, and are themfelves the food of Arctic Foxes. Perhaps they extend to the fenefei: for it is faid that there are two forts of Mice found there; one wholly white; the other black, yellow, and white, which perhaps is the Lemmus*.
E. Ringed, Hif. Quad. No 205 .

RAT. With a blunt nofe: ears hid in the fur: hair very fine : claws ftrong and hooked: color of the upper part, fometimes ferruginous, fometimes light grey undulated with deep ruft-color: a crefcent of white extends on each, from the hind part of the head towards the throat, bounded on each fide by a bed of ruft-color.

Length to the tail little more than three inches; tail one, terminated by a briftly tuft.
Found in the Arctic neighborhood of the Oby. Makes its neft with rein-deer and fnowy liver-worts, juft beneath the turfy furfaces. Are faid to migrate, like the Lemmus.
F. Tchelag, Defor. Kamtchatka, 3920

T
HE author of the defcription of that great peninfula fays no, more than that it is a very fmall fpecies; frequents houfes; and will go out and eat boldly any thing it has ftolen. The natives: call it Tcbelagatchitch.

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MOLE. With two cutting teeth in each jaw, and two flarps nender canine: the grinders fmall and Marp: nofe long, the end radiated with fhort tendrils: fore feet not fo broad as thofe of the Engli/b Mole, furnihed with very long white claws: toes on the hind feet quite feparated: body not fo thick and full as that of the common fpecies: hair long, foft, and of a rufty brown : tail covered with fhort hair.

Length of the body four inches two-tenths; of the tail, two andi a half.

Inhabits North America. Received from New York.
69. Radiated.

Hijf. Quad. No 351.-Smellie, iv. 316.-Lev. Mus.

MOLE. With a long nofe, radiated like the former : the: body fhorter, and more full : hair dufky, very long, fine, anck compact: fore feet refembling thofe of the preceding; but the toes. of the hind feet are clofely connected.

Length to the tail three inches three quarters: the tail flender, round, and taper, one inch three-tenths. long.

Received from New York.
Mannerso
This fpecies forms fubterraneous paffages in the fields, running in. various directions, and very fhallow. Their courfe may be traced. by the elevation of the earth on the furface, in form of a little bank, two inches high, and as broad as a man's hand. There holes are unable to fupport any weight, fo that walkers find it very trouble--
fome to go over places where thefe animals inhabit, the ground perpetually breaking under their feet *.

Thefe Moles have all the ftrength in their legs as thofe of Europe, and work in the fame manner. They feed on roots, are very irafcible, and will bite very feverely.
\[
\text { Hif. 2uad. No } 353 \text { - }-\mathrm{Lev.} \mathrm{Mysi,}
\]

MOLE. With a long and very flender nofe: two broad cutting teeth in the upper, four fharp and flender in the lower, jaw; the two middlemoft fhort : the grinders very numerous, ftrong, fharp, and feparate: the fore feet very broad; thofe and the hind feet exactly like thofe of the European kind.

Length about fix inches; tail one.
I received two fpecimens of this animal from New York. The hair in both foft, filky, and gloffy : the hair in each dufky at the bottom; but in one, the ends were of a yellowih brown; in the other, brown : the feet and tail of both were white. I fufpect that they were varieties of the kind defcribed by Seba \(\dagger\), which he got from Virginia: it was totally black, gloffed over with a molt refplendent purple. I may here note, the Tail-lefs Mole, figured by Seba in the fame plate, is not a native of Sibiria, as he makes it; but is an inhabitant of the Cape of Good Hope.

Thefe three fpecies agree pretty nearly with the Shrew in the fore teeth; for which reafon Linnaus claffes the two he defcribes among the Sorices. I call them Moles from their fhape, which differs not from the European kind; but thofe who chufe to be very fyftematic, may divide the genus of Shrews, and fyle thefe Sorices Talpa-formes.
- Kalm, i. 190. + P. gi. tab. xxxii. \(^{\text {. }}\)

A. European, Hif. Quad. ii. No Br. Zool. i.

MOLE. With fix cutting teeth in the upper; eight in the lower jaw ; and two canine teeth in each : color of the fur black.
Place. Inhabits Sweden; but does not extend farther than the fouth of Norway, where it is called Vond. Is frequent in the temperate parts of Rulla, and even in Sibiria, as far as the Lena. In Sibiria it is twice as big as thofe of Europe. Is found there milk-white, but more ufually fo in the Vercboturian mountains.

> HEDGE-HOG, Hift. Quad. Genus XXXVI.
B. Common, Hif. Quad. ii. \(\mathrm{N}^{\circ} 355 .-\) Br. Zool. i. \(\mathrm{N}^{\circ}\)

HEDGE-HOG. With noftrils bounded on each fide by a loofe flap: ears rounded: back covered with prickles, white, barred with black: face, fides, and rump, with ltrong coarfe hair : tail an inch long.

Is found in Sweden, in the diocefe of Aggerbuys; and in that of Bergen, in Norway*. It is called, in the Norwegian tongue, Buftedyvel. Is common in Rufia, except in the extreme northern and fouthern. parts. None in Sibiria, or very fcarce at left.
- Leems, 229. Pontoppidan, ii. 28.

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\section*{D I V. III. Pinnated Quadrupeds;}

\author{
Or, with Fin-like Feet.
}

WALRUS.
71. Arctic.

HIST. QUAD. Genus XLI.

Hif. 2uad. No 373.-Pbipps's voy. 184. Rofmarus, Zimmerman, 330.
Le Tricheque, Schreber, ii. 82. tab. lxxix. Cheval Marin, Hif. Kamt/fbatka, 427.-Smellie, vii. 354.-Lev. Mus.

Description. WALRUS. With a round head; fhort neck; finall and fiery eyes, funk a finger's depth in the fockets, and retractile from external injuries *: mouth very fmall; lips very thick, befet above and below with great whifkers, compofed of briftles, tranfparent, and thick as a ftraw : inftead of ears are two minute orifices, placed in the moft diftant part of the head.

Body is very thick in the middle, leffening gradually towards the tail. The fkin in general is an inch thick, and two about the neck \(\dagger_{\text {, }}\) and much wrinkled about the joints : it is covered with fhort hair, of a moufe-color; fome with reddinh, others with grey; others are almoft bare, as if they were mangy, and full of fcars \(\ddagger\).

The legs are very fhort ; on each foot are five toes, connected by webs, with a finall blunt nail to each. The hind feet, like thofe of Seals, are very broad : the tail is very fhort : the penis two feet long, and of a bony fubftance.

\footnotetext{
*Crantz, i. 126. + Crantz, i. 125. \(\ddagger\) Marten's Spitzberg.
}

In the upper jaw are two very long tufks, bending downwards. No cutting.teeth ; but in each jaw, above and below, four grinders, flat at top, and the furfaces of thofe which I examined much worn. The length of the largeft tufk I have heard of, was two feet three inches, Engli/b meafure, the circumference at the lower end, eight and a half; the greateft weight of a fingle tulk twenty pounds: but fuch are rarely found; and only on the coafts of the Icy fea, where they are feldom molefted, and of courfe permitted to attain their full growth \({ }^{*}\).

The Walrus is fometimes found of the length of eighteen feet, and the circumference, in the thickeft part, ten or twelve. The weight from fifteen hundred to two thoufand pounds.

Inhabits, in prefent times, the coafts of the Magdalene iflands, in the gulph of St. Laurence, between latitude 47 and 48 , their moft foutherly refidence in any part of the globe: They are not found on the feas of Labradore. The E/kimaux purchafe the teeth, for the heading their Seal-darts, from the Indians of Nuckvank, about lat. 60; who fay, that they are annually vifited in the winter by multitudes of thefe animals \(\dagger\). They are found in Davis's Streights, and within Hudfon's Bay \(\ddagger\), in lat. 62. They alfo inhabit the coaft of Greenland. I am uncertain whether they frequent Iceland; but they are found in great numbers near the illands of Spitzbergen, and on all the floating ice from thence to Cberry Ifle, a folitary fpot intermediate between the laft and the molt northerly point of Norway. In 1608, they were found there in fuch numbers, huddled on one another, like hogs, that a fhip's crew killed above nine hundred in feven hours time \(\S\).
If they are found in the feas of Norway, it is very rare \(\|\) in thefe

Spitzbergen. Cherry Isle.

Norway* days. Leems, p. 310 , fays that they fometimes frequent the fea about Finmark; but about the year 980, they feemed to have been fo numerous in the northern parts, as to become objects of chare and

\footnotetext{
* Hiff. Kamt/chatka, 120. (Martons Spitzberg. 182.
+ Pb. Tranf. '1xiv. 378.
\(\ddagger\) Ellis's voy. 80. || Pantoppidan, ii. 157.
}

тeft.

S12E.

Place.
America.
commerce. The famous Octher the Norwegian, a native of Helgrland in the diocefe of Drontbeim, incited by a moft laudable curiofity and thirft of difcovery, failed to the north of his country, doubled the Nortb Cape, and in three days from his departure arrived at the fartheft place, frequented by the Horfe-wbale filhers. From thence he proceeded a voyage of three days more, and perhaps got into the White Sea. On his return he vifited England, probably incited by the fame of King Alfred's abilities, and the great encouragement he gave to men of diftinguifhed character in every profeffion. The traveller, as a proof of the authenticity of his relation, prefented the Saxon monarch with fome of the teeth of thefe animals, then a fubftitute of ivory, and valued at a high price. In his account of his voyage, he alfo added that their flins were ufed in the fhips inftead of ropes *.
Thes are fourd again on the coafts of Nova Zembla, and on the headlands which ftretch moft towards the north Pole; and as far as the \(\mathcal{T}\) chutki point, and the ines off that promontory. They fcarcely extend lower than the neighborhood of the country of the Anadyr, but are feen in great abundance about cape Neronbam, on the coaft of America. The natives of the inands off the \(\mathcal{T} c b u t k i\) Nofs ornament themfelves with pieces of the Walrus ftuck through their lips or nofes; for which reafon they are called by their neighbors Zoobatee, or largeteetbed \(\dagger\). The natives about Unalafcha, Sandwich Sound, and Turnagain river, obferve the fame fafhion. I entertain doubts whether thefe animals are of the fame fpecies with thofe of the Gulph of St. Laurence. The tufks of thofe of the Frozen Sea are much longer, more flender, and have a twift and inward curyature.

They are gregarious, and fometimes have been found together in thoufands; are very fly, and avoid the hausts of mankind. They ufually are feen on the floating ice, preferring that for their refidence, as their bodies require cooling, by reafon of the heat which arifes from their exceffive fatnefs \(\ddagger\).

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only. for the fake of the oil. Seamen make rings of the briftles of the whikers, which they wear as prefervatives againft the cramp. The French coach-makers have made traces for coaches of the fins, which are faid to be ftrong and elaftic *. The Rufians formerly ufed the bone of the penis pulverifed, as a remedy againft the ftone \(\dagger\). Bartbolinus \(\ddagger\) recommends it, infufed in ale, in fits of the ftrangury. The Greenlanders eat the flefh and lard, and ufe the laft in their lamps. Of the fkin they make ftraps. They fplit the tendons into thread; and ufe the teeth to head their darts, or to make pegs in their boats.
Their only enemies, befides mankind, are the Polar Bears, with whom they have dreadful conflitts. Their feuds probably arife from the occupancy of the fame piece of ice. The Walrus is ufually victorious, through the fuperior advantage of its vaft teeth \(\|\). The effects of the battle are very evident; for it is not often that the hunters find a beaft with two entire tufks \(\S\).
"The Walrus, or Sea Cow, as it is called by the Americans," fays Lord Sbuldbam II, " is a native of the Magdalene inlands, St. Fobn's, " and Anticofti, in the gulph of St. Laurence. They refort, very " early in the fpring, to the former of thefe places, which feems by " nature particularly adapted to the nature of the animals, abound" ing with clams (efcallops) of a very large fize; and the moft " convenient landing-places, called Echoueries. Here they crawl up " in great numbers, and remain fometimes for fourteen days together " without food, when the weather is fair; but on the firf appear.. " ance of rain, they retreat to the water with great precipitation.

\footnotetext{
* De Buffon. \(\quad+\) Worm. Muf. 290.

I As quoted in Mufeum Regium Hafnie, \&e. pars. i. fect. iii. 9.
II Egede, 83. § Crantz, i. \(126 . \quad\) IT Pbil. Tranf. lxv. part. i. 249. The Frencb call them Vacbes Marines. Charlevoix, v. 216. That voyager fays, that the Englif had once a fifhery of thefe animals on the I/le de Sable, a fmall ialand fouth of Cope Breton; but it turned out to no advantage.
}
" They are, when out of the water, very unwieldy, and move with " great difficulty. They weigh from fifteen hundred to two thou" fand pounds, producing, according to their fize, from one to two " barrels of oil, which is boiled out of the fat between the fkin and " the flefb. Immediately on their arrival, the females calve, and "" engender again in two months after ; fo that they carry their young " about nine months. They never have more than two at a time, " and feldom more than one.
"The Echoueries* are formed principally by nature, being a gradual " flope of foft rock, with which the Magdalene inlands abound, about " eighty or a hundred yards wide at the water-fide, and freading fo " as to contain, near the fummit, a very large number of thefe ani" mals. Here they are fuffered to come on fhore, and amufe them" felves for a confiderable time, till they acquire a degree of bold"c nefs, being at their firt landing fo exceedingly timid as to make " it impoffible for any perfon to approach them.
" In a few weeks they affemble in great multitudes: formerly, when " undifturbed by the Americans, to the amount of feven or eight " thoufand. The form of the Echouerie not allowing them to re" main contiguous to the water, the foremoft are infenfibly pufhed " above the flope. When they are arrived at a convenient diftance, "s the hunters, being provided with a fpear fharp on one fide, like a " knife, with which they cut their throats, take advantage of a fide " wind, or a breeze blowing obliquely upon the fhore, to prevent " the animals from fmelling them, becaufe they have that fenfe in " great perfection. Having landed, the hunters, with the affiffance " of good dogs, trained for that purpofe, in the night-time endea" vour to feparate thofe which are moft advanced from the others, "driving them different ways. This they call making a cut; it is " generally looked upon to be a moft dangerous procefs, it being " impoffible to drive them in any particular direction, and difficult " to avoid them; but as the Walrufes, which are advanced above
" the flope of the Ecbouerie, are deprived by the darknefs of the: " night from every direction to the water, they are left wardering: " about, and killed at leifure, thofe that are neareft the fhore being. " the firt victims. In this manner have been killed fifteen or fix" teen hundred at a cut.
"The people then fkin them, and take off a coat of fat which al" ways furrounds them, and diffolve it into oit. The fkin is cut "c into fices of two or three inches wide, and exported to America " for carriage traces, and into England for glue. The teeth make "c an inferior fort of ivory, and is manufactured for that purpofe; " but very foon turns yellow."

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" finds, that if they even had a fuperfluity of wood, it would not do, " they can ufe nothing but train in them. They alfo mollify their " dry food, moftly fifh, in the train; and finally, they barter it for all " kinds of neceffaries with the factor. They can few better with " fibres of the Seals finews than with thread or filk. Of the fkins of " the entrails they make their windows, curtains for their tents, " fhirts, and part of the bladders they ufe at their harpoons; and " they make train bottles of the maw. Formerly, for want of iron, " they made all manner of inftruments and working-tools of their " bones. Neither is the blood walted, but boiled with other ingre"dients, and eaten as foup. Of the fin of the Seal they ftand in " the greateft need; for, fuppofing the fkins of Rein-deer and birds " would furnifh them with competent cloathing for their bodies, " and coverings for their beds; and their flefh, together with fifh, " with fufficient food; and provided they could drefs their meat " with wood, and alfo new model their houfe-keeping, fo as to have " light, and keep themfelves warm with it too; yet without the "Seals fkins they would not be in a capacity of acquiring thefe " fame Rein-deer, fowls, fifhes, and wood; becaufe they muft cover " over with Seal-fkin both their large and fmall boats, in which they " travel and feek their provifion. They mult alfo cut their thongs " or ftraps out of them, make the bladders for their harpoons, and " cover their tents with them; without which they could not fubfift " in fummer.
"Therefore no man can pafs for a right Greenlander who cannot " catch Seals. This is the ultimate end they afpire at, in all their "d device and labor from their childhood up. It is the only art " (and in truth a difficult and dangerous one it is) to which they are " trained from their infancy; by which they maintain themfelves, " make themfelves agreeable to others, and become beneficial mem" bers of the community*.
"The Greenlanders have three ways of catching Seals: either fing-

Manner of TAKING. " ly, with the bladder; or in company, by the clapper-bunt; or in " the winter on the ice: whereto may be added the fhooting them " with a gun.
"The principal and moft common way is the taking them with " the bladder. When the Greenlander fets out equipped according " to the 7 th Section, and fpies a Seal, he tries to furprife it una" wares, with the wind and fun in his back, that he may not be " heard or feen by it. He tries to conceal himfelf behind a wave, "s and makes haftily, but foftly, up to it, till he comes within four, " five, or fix fathom of it; mean while he takes the utmoft care " that the harpoon, line, and bladder, lie in proper order. Then he "s takes hold of the oar with his left hand, and the harpoon with " his right by the hand-board, and fo away he throws it at the "Seal, in fuch a manner that the whole dart flies from the hand" board and leaves that in his hand. If the harpoon hits the mark, "" and buries itfelf deeper than the barbs, it will directly difengage " itfelf from the bone-joint, and that from the fhaft; and alfo un" wind the ftring from its lodge on the kajak. The moment the " Seal is pierced, the Greenlander muft throw the bladder, tied to "s the end of the ftring, into the water, on the fame fide as the Seal " runs and dives; for that he does inftantly, like a dart. Then the "Greenlander goes and takes up the fhaft fwimming on the water, " and lays it in its place. The Seal often drags the bladder with it " under water, though 'tis a confiderable impediment, on account " of its great bignefs; but it fo wearies itfelf out with it, that it " mult come up again in about a quarter of an hour to take breath. " The Greenlander haftens to the fpot where he fees the bladder " rife up, and fmites the Seal, as foon as it appears, with the great " lance defcribed in the 6th Section *. This lance always comes " out of its body again; but he throws it at the creature afrefh \({ }^{6}\) every time it comes up, till 'tis quite fpent. Then he runs the

\footnotetext{
- See the Sections referred to, and tab. v.
}
or Fittle lance into it, and kills it outright, 'but'ftops üp the wound' " directly to preferve the blood'; and laftly, he blows it up, like a
" bladder, betwixt fikin and flefh, to put it into a better capacity of
" fwimming after him ; for which purpofe he faftens it to the left-
" fide of his kajak, or boat \({ }^{*}\).
"In this exercife the Greenlander is expofed to the moft and
" greateft danger of his lifé; which is probably the reafon that they
" call this hunt, or fifhery, kamavock, i. e. the Exitinction, viz. of life.
"For if the line fiould entangle itfelf, as it eafily may, in its fud" den and violent motion; or if it fhould catch hold of the kajak, "' or fhould wind itfelf round the oar, or the hand, or even the neck, " as it fometimes does in windy weathér; or'if" the Seal fhould turns " fuddenly to the other fide of the boat; it cannot be othierwife than " that the kajak muft be overturned by the ftring, and drawn down: " under water. On fuch defperate occafións the poor Greenlândér " ftands in need of all the arts defcribed in the former Section, to: " difentangle himfelf from the fring, and to raife himfelf up from: " under the water feveral times fuccerfively; for he will continuallyos be overturning till he has quite dilenğaged himela from the liné. " Nay, when he imagines himfelf to be out of all danger, and comés. " too near the dying Seal, it may ftill bite him in the face or händ; " and a female Seal that has young, infteäd of flying the field, will " fometimes fly at the Greenlander in the moft vehement rage,,'and: " do him a mifchief, or bite a hole in his kajak that he muft fink.
" In this way, fingly, they can kill none but the carelefs flupid: "Seal, called Attarfoak \(\dagger\). Several in company muft purfue the "cautious Kafigiak \(\ddagger\) by the clapper-bunt. In the fäme manntrer they " alfo furround and kill the Attargoit \| in great numbers at certain, " feafons of the year; for in autumn they retiife into the "creeks or" inlets in ftorny wéather, as in the Nepijet found in Ball's river, "between the main land and the ifland Kangek, which is full two.

\footnotetext{
- See vol. i. ifo. tab. viii. \(\quad \dagger\) See \(\mathbf{N}^{\bullet}\) 77. of this.work. \(\ddagger\) Ditto, \(N^{\circ} 72\);

11 Ditto, a variety of \(\mathrm{N}^{\bullet} 77\).
}

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"come out upon the ice to bafk themfelves in the fun. Near this " great hole they make a little one, and another Greenlander puts " a harpoon into it with a very long fhaft or pole. He that lies " upon the ice looks into the great hole, till he fees a Seal com" ing under the harpoon; then he gives the other the fignal, who " runs the Seal through with all his might.
" If the Greenlander fees a Seal lying near its hole upon the ice, " he nides along upon his belly towards it, wags his head, and " grunts like a Seal ; and the poor Seal, thinking 'tis one of its in" nocent companions, lets him come near enough to pierce it with. " his long dart.
" When the current wears a great hole in the ice in the fpring, " the Greenlanders plant themfelves all round it, till the Seals come " in droves to the brim to fetch breath, and then they kill them " with their harpoons. Many alfo are killed on the ice while they " lie fleeping and fnoring in the fun *."

Nature has been fo niggardly in providing variety of provifion for the Greenlanders, that they are necefitated to have recourfe to fuch which is offered to them with a liberal hand. The Kamtcliatkan nations, which enjoy feveral animals, as well as a great and abundant choice of fifh, are fo enamoured with the tafte of the fat of Seals, that they can make no feaft without making it one of the difhes. Of that both Rufians and Kamt/cbatkans make their candles. The latter eat the flefh boiled, or elfe dried in the fun. If they have agreat quamtity, they preferve it in the following manner :-

They dig a pit of a requifite depth, and pave it with fones; then fill it with wood, and fet it on fire fo as to heat the pit to the warmth of a ftove. They then collect all the cinders into a heap. They frew the bottom with the green wood of alder, on which they place feparately the fefh and the fat, and put between every layer branches of the fame tree; when the pit is filled they cover it with fods, fo that the vapour cannot efcape. After fome hours they take out both
fat and fleh, and keep it for winter's provifions; and they may ber preferved a whole year without fpoiling.

The Kamtfchatkans have a molt fingular ceremony. After they take the fiefh from the heads of the Seals, they bring a veffel in form of a canoe, and fing into it all the fculls, crowned with certain herbs, and place them on the ground. A certain perfon enters the habitation with a fack filled with Foncbitcbe, fweet herbs, and a little of the bark of willow. Two of the natives then roll a great ftone towards the door, and cover it with pebbles; two others take the fweet herbs and difpofe them, tied in little packets. The great ftone is to fignify the fea-fhore, the pebbles the waves, and the packets Seals. They then bring three difhes of a halt, called Tolkoucbar; of this they make little balls, in the middle of which they ftick the packets of herbs : of the willow-bark they make a little canoe, and fill it with Tolkoucha, and cover it with the fack. After fome time, the two Kamt/cbatkans who had put the mimic Seals into the Tolkoucba, take the balls, and a veffel refembling a canoe, and draw it. along the fand, as if it was on the fea, to convince the real Seals how agreeable it would be to them to come among the Kamtchatkans, who have 4 fea in their very jurts, or dwellings. And this they imagine will induce the Seals to fuffer themfelves to be taken in great numbers. Various other ceremonies, equally ridiculous, are practifed; in oneof which they invoke-the winds, which drive the Seals on their Boores, to be propitious*.

Befides the ufes which are made of the flefh. and fat of Seals, the fkins of the largeft are cut into foles for fhoes. The women make their fummer boots of the undrefled fkins, and wear them with the hair outmoft. In a country which abounds fo greatly in furs, very little more ufe is made of the fkins of Seals in the article of drefs. than what has been mentioned \(\dagger\). But the Koriaks, the Oloutores, and \(\tau^{\prime} c b u t c b i\), form. with the fkins canoes and veffels of different fizes, fome large enough to carry thirty people.

\footnotetext{
* Defir. Kamt/chatka, 425 .
+ The fame, 41, 42.424.
}

Seals fiwarm on all the coalts bf Kanitfchatka, and will go up the rivers eighty verfts in purfuit of finh. They couple on the ice in April, and fometimes on the rocks, and even in the fea in calm weather. The Tungufi give the milk of thefe animals to their children inftead of phyfic.

Capture.

Massageta Cloathedin SEAL-skins.

The Seals in this country are killed by h-rpooning, by fhooting, by watching the holes in the ice and knocking them on the head as they rife ; or by placing two or three ftrong nets acrofs one of the rivers which thefe animals frequent: fifty or more people affemble in canoes on each fide of the nets, while others row up and down, and with great cries frighten the Seals into them. As foon as any are entangled, the people kill them with pikes or clubs, and drag, them on fhore, and divide them equally among the hunters; fometimes a hundred are taken at a time in this manner.

The navigators obferved abundance of Seals about Bering's illand, but that they decreafed in numbers as they advanced towards the ftraits; for where the Walrufes abounded, the Seals grew more and more fcarce.

I did not obferve any Seal-fkin garments among thofe brought over by the navigators, fuch as one might have expected among the Efquimaux of the high latitudes they vifited, and which are fo much in ufe with thofe of Hudfon's Bay and Labrador. That fpecies of drefs doubtlefsly was worn in the earlieft times. Thefe people wanted their hiftorians; bat we are affured that the Maflagete * cloathed themfelves in the fkins of Seals. They, according to D'anville, inhabited the country to the eaft of the Cafpian fea, and the lake Aral; both of which waters abound with Seals.

Seals are now become a great article of commerce. The oil from the valt Whales is no longer equal to the demand for fupplying the magnificent profufion of lamps in and round our capital. The chafe of thefe animals is redoubled for that purpofe; and the fkins, properly tanned, are in confiderable ufe in the manufactory of boots and hoes.
- Z Strabo, lib. xi. 781.

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eight hundred pounds: were eaten by Bering's crew; but their flelh was found to be very loathfome*. The cubs are quite black.

Steleer has left behind him accounts of other Seals found in thofe wild feas; but his defcriptions are fo imperfect as to render it impoffible to afcertain the fpecies. He fpeaks in his MSS. of a middlefized kind, univerfally and moft elegantly fpotted; another, black with brown fpots, and the belly of a yellowifh white, and as large as a yearling Ox; a third fpecies, black, and with a particular formation of the hinder legs; and a fourth, of a yellowifh color, with a great circle on it of the color of cherries \(t\).
24. Rover.

Hif. 2 uad. \(\mathrm{N}^{0}{ }^{3} 83\).
Phoca Fœetida, Faun. Greenl. No 8.-Neitfeck Greenl. Crantz, i.

SEAL. With a fhort nofe, and fhort round head : teeth like the common Seal: body almoft of an elliptical form, covered with lard almoft to the hind feet : hairs clofely fet together, foft, long, and fomewhat erect, with curled wool intermixed: color dufky, freaked with white; fometimes varies to white, with a dufky dorfal line.

Does not exceed four feet in length.
Never frequents the high feas, but keeps on the fixed ice in the remote bays near the frozen land; and when old never forfakes its haunts. Couples in fune; brings forth in fanuary, on the fixed ice, which is its proper element. In that it has a hole for the benefit of fifhing; near that it remains ufually folitary, rarely in pairs. Is very incautious, and often fleeps on the furface of the water, yielding itfelf a prey to the Eagle. Feeds on fmall filh, Ihrimps, and the like. The ufes of the fkin, tendons, and lard, the fame with thofe of other Seals. The feih is red, and fretid, efpecially that of the males, :which is naufeated by even the Greenlanders.
* Muller's vey. 60. \(\quad\) Dr. Pallas, and Defor. Kantefshatka, 420.

The Seal-hunters in Newfoundland have a large kind, which they call the Square Pbipper, and fay weighs five hundred pounds. Its coat is like that of a Water-dog; fo that it feems by the length of hair to be allied to this; but the vaft difference in fize forbids us from pronouncing it to be the fame fpecies.

> Hift. Quad. \(\mathrm{N}^{\circ} 38 \mathrm{I}\).
> Phoca Leporina, Lepechin, Alt. Acad. Petrop. pars i. 264. tab. viii. ix.Hif. 2pad. \(\mathrm{N}^{\circ} 3^{81}\).

SEAL. With hair of an uniform dirty white color, with a tinge of yellow, but never fpotted; hairs erect, and interwoven; foft as that of a Hare, efpecially the young : head long: upper lip fwelling and thick: whifkers very ftrong and thick, ranged in fifteen rows, covering the whole front of the lip, fo as to make it appear bearded: eyes blue, pupil black : teeth ftrong; four cuitting teeth above, the fame below *: fore feet fbort, and ending abrupt: the membranes of the hind feet even, and not waved: tail fhort and thick; its length four inches two lines.

Length of this fpecies, from nofe to tip of the tail, is fix feet fix;
75. Leporine.

Size. its greateft circumference five feet two. The cubs are milk white.

This kind inhabits the Wbite Sea during fummer, and afcends and defcends the mouths of rivers \(\dagger\) with the tide in queft of prey. It is alfo found on the coafts of Iseland, and within the Polar circle from Spitzbergen to \(\dot{T} c b u t k i N_{0} / \mathcal{s}\), and from thence fouthward about Kamtfchatka.

Like the others, it is killed for its fat and fkin. The laft is cut into pieces, and ufed for ftraps and reins. The fkins of the young, which are remarkably white, are dyed with black, and ufed to face caps, in imitation of Beavers fkins; but the hairs are much ftiffer, and do not foon drop off.

\footnotetext{
- Mr. Lepecbin compares the number of the teeth to that of another kind (our

Harp Seal) which, he fays, has only four teeth in the lower jaw. + The fame.
}

Hif. 2uad. \(\mathrm{N}^{0}{ }_{3} 84\).
Phoca Leonina, Faun. Greenl. N \({ }^{\circ} 5\).

SEAL. With four cutting teeth above, four below : fore feet like the human; the thumb long : the membranes on the hind feet extend beyond the claws : on the forehead of the male is a thick folded k in, ridged half the way up, which it can inflate and draw down like a cap, to defend its eyes againft ftorms, waves, ftones, and fand. The females and young have only the rudiment of this guard. It has two fpecies of hair; the longeft white, the fhorteft thick, black, and woolly, which gives it a beautiful grey color.

It grows to the length of eight feet. 'The Greenlanders call it Neitfek-Soak*, or the Great Neitfek. It inhabits only the fouthern parts of their country, where it inhabits the high feas; but in April, May, and \(\mathcal{F} u n e\), comes nearer to the land. Is polygamous; copulates. with its body erect. Brings forth in April one young upon the ice. Keeps much on the great fragments, where it lleeps in an unguarded way. Bites hard: barks, and whines: grows very fierce on being wounded; but will weep on being furprized by the hunter. Fight among themfelves, and inflict deep wounds. Feed on all kinds of greater fifh. The fkins of the young form the moft elegant dreffès for the women. The men cover their great boats with thofe of the old ; they alfo cover their houfes with them, and when they grow old convert them into facks. They ufe the teeth to head hunting-fpears. Of the gullet and inteftines they make the fea-dreffes. The fomach is made into a filhing-buoy.

It is alfo found in Newfoundland: Our Seal-hunters name it the Hooded Seal, and pretend they cannot kill it till they remove that integument. The Germans call it Klap-NLutz, from its covering its face as if with a cap.

The moft dreaded enemy which this fpecies has in Greenland, is the Pbyfeter Microps; on the very fight of which it takes to the ice,

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This ìnhabits the fame countries with the Rougb and Leporine Seal; but loves the coldeit parts of the coaft. Continues on the loofe ice of Nova Zembla the whole year; and is feen only in the winter in the Wbite Sea, on the floating ice carried from the northern feas. It brings forth its young about the end of April, and after fuckling it a fufficient time departs with the firft ice into the Frozen Ocean. The young remains behind for fome time, then follows its parent with the ice which is loofed from the fhore *.

It abounds in Greenland and about Spitzbergen, efpecially in the bottoms of the deep bays. Migrates in Greenland twice in the year: in March, and returns in May; in fune, and returns in September. Couples in \(\mathcal{F u l y}\), and brings forth towards the end of March or begining of April: has one young, rarely two, which it fuckles on fragments of ice far from land. It never afcends the fixed ice; but lives and lleeps on the floating illands in great herds. Swims in great numbers, having one for a leader, which feems to watch for the fecurity of the whole. Eats its prey with its head above water. Swims, in various ways; on its belly, back, and fide, and often whirls about as if in frolick. Frequently fleeps on the furface of the water. Is very incautious. Has great dread of the Pbyfeter Microps, which forces it towards the fhore. It is often furrounded by troops of hunters, who compel it even to land, where it is eafily killed.

It is found alfo about Kamefchatka, being the third fpecies mentioned by Steller.
Size.

Uses. The flin is ufed to cover trunks; that of the young, taken in the ille of Solovki, on the weft fide of the Wbite Sea, is made into boots, and is excellent for keeping out water. The Greenlanders, in dreffing the ikins , curry off the hair, and leave fome fat on the infide to ren.
der them thicker. With thefe they cover their boats, and with the undreffed fkins their tents; and, when they can get no other, make ufe of them for cloathing.
The oil extracted from the blubber of this Seal is far the moft valuable, being fweet, and fo free from greaves as to yield a greater quantity than any other fpecies. The flerb is black.

The Newfoundland Seal-hunters call it the Harp, or Heart Seal, and name the marks on the fides the faddle. They fpeak too of a brown fort, which they call Bedlemer, and believe to be the young of the former.
\[
\text { Hiff. 2iuad. } \mathrm{N}^{\circ} 380: \text { fig. at p. } 513 .
\]

SEAL. With very fhort briftly hair, of an uniform gloffy color, almoft black : the whole back and fides comprehended within a narrow regular ftripe of pale yellow.

It is to Dr. Pallas. I owe the-knowlege of this fpecies. He re_ ceived only part of the fkin, which feemed to have been the back and fides. The length was four feet, the breadth two feet three; fo it muft have: belonged to a large fpecies. It was taken off the Kuril inands.
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Hiff. 2iuad: N` 387:
Kot Rugis Gentilibus ad Sinum Pencbinicum, Tarlat/biega, Nov. Com. Petrop.ii. 331.
tab xv.
Sea Wolf*, Pernety, Evgl. Tr. 187. tab. xvi.-Ulloa's vog. i. 226.
Chat.Marin, Hif. Kamt/fbatka, 433,

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S
EAL. With a high forehead: nofe projecting like that of a \({ }^{2}\) dog: black irides: fmaragdine pupil: whikers compofed of triangular hairs, thinly fcattered ! noftrils oval, divided by a feptum:lips thick ; their infide red, and ferrated.
* The Frensth generic name for the Seal is Loup Marrins and the Spani/s, Lobo Ma gino.

Teeth. In the upper jaw four bifurcated cutting teeth; on each fide of thefe a very fharp canine tooth bending inwards; beyond thefe ánother, which, in battle, the animal ftrikes with, as Boars do with their tufks. Inftead of grinders, in each upper jaw are fix fharp teeth refembling canine, and very flightly exerted. In the lower jaw four cutting teeth, and canine like thofe in the upper; and on each fide ten others in the place of grinders. When the mouth is clofed all the teeth lock into each other.

Tongur, Ears.
The tongue rough and bifid: the ears fhort, fmall, and fharppointed, hairy on the outfide, finooth and polifhed within.

Fore legs two feet long, not.immerfed in the body, like thofe of other Seals, but refemble thofe of common quadrupeds. The feet are furnifhed with five toes, with the rudiments of nails; but thefe are fo entirely covered with a naked fkin, as to be as much concealed as a hand is with a mitten. The animal ftands on thefe legs with the utmoft firmnefs; yet the feet feem but a fhapelefs mals.

The hind legs are twenty-two inches long, and fituated like thofe of Seals; but are capable of being brought forward, fo that the animal makes ufe of them to fcratch its head: on each are five toes,
Tarl. connected by a large web; and are a foot broad. The tail is only two inches long.
Body. The body is of a conoid fhape. The length of a large one is about eight feet; the circumference near the fhoulders is five feet, near the tail twenty inches. The weight eight hundred pounds.
Female.

Color.

Place.
The female is far inferior in fize to the male:-it has two teats, placed far behind.
The whole animal is covered with long and rough hair, of a blackifh color; that of the old is tipt with grey; and on the neck of the males is a little longer and erect : beneath the hair is a foft fur of a bay color. The females are cinereous. The fkin is thick and ftrong.

Thefe animals are found in amazing multitudes on the iflands be-

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Afrection toWARDSTHEIR XOUNG.

Causes of them.

\section*{Conflicts.}

The males hew great affection towards their young, and equal tyranny towards the females. The former are fierce in the protection of their offspring; and fhould any one attempt to take their cub, will ftand on the defenfive, while the female' carries it away in her mouth. Should fhe happen to drop it, the male inftantly quits its enemy, falls on her, and beats her againft the ftones till he leaves her for dead. As foon as fhe recovers, fhe crawls to his feet in the moft fuppliant manner, and wafhes them with her tears; he at the fame time brutally infults her mifery, ftalking about in the moft infolent manner. But if the young is entirely carried off, he melts into the greateft affliction, likewife fheds tears, and hews every mark of deep forrow. It is probable that as the female brings only one, or at moft two cubs, he feels his misfortune the more fenfibly.

Thofe animals which are deftitute of females, through age or impotence, or are deferted by them, withdraw themfelves from fociety, and grow exceffively fplenetic, peevifh, and quarrelfome; are very furious, and fo attached to their antient ftations, as to prefer death to the lofs of them. They are enormounly fat, and emit a moft naufeous and rank fmell. If they perceive another animal approach its feat, they are inftantly roufed from their indolence, fnap at the encroacher, and give battle. During the fight they infenfibly intrude on the ftation of their neighbor. This creates new offence; fo that at length the civil difcord fpreads through the whole fhore, attended with hideous growls, their note of war. They are very tenacious of life, and will live a fortnight after receiving fuch wounds as would foon deftroy any other animal.

The particular caufes of difputes among thefe irafcible beafts are the following :-The firft and greateft is, when an attempt is made to feduce any of their miftreffes, or a young female of the family: a battle is the immediate confequence of the infult. The unhappy vanquifhed inftantly lofes his whole feraglio, who defert him for the victorious hero.

The invalion of the fation of another, gives rife to frefh conflicts; and the third caufe is the interfering in the difputes of others. The battles they wage are very tremendous; the wounds they infiit very deep, like the cut of a fabre. At the conclufion of an engagement they fling themfelves into the fea to wafh off the blood.

Befides their notes of war, they have feveral others. When they Norez. lie on fhore, and are diverting themfelves, they low like a Cow. After viftory they chirp like a Cricket. On a defeat, or after receiving a wound, mew like a Cat.

Common Seals, and Sea Otters, fland in great awe of thefe ani- Dread the leoo mals, and fhun their haunts. They again are in equal awe of the Leonine Seals, and do not care to begin a quarrel in their fight, dreading the intervention of fuch formidable arbitrators; who likewife poffefs the firft place on the fhore.

The great and old animals are in no fear of mankind, unlefs they Frar not Manare fuddenly furprized by a loud fhout, when they will hurry by thoufands into the fea, fwim about, and ftare at the novelty of their difturbers.

When they come out of the water, they fhake themfelves, and fmooth their hair with their hind feet: apply their lips to thofe of the females, as if they meant to kifs them: lie down and baik in the fun with their hind legs up, which they wag as a Dog does its tail. Sometimes they lie on their back, fometimes roll themfelves up into a ball, and fall aneep. Their fleep is never fo found but they are awoke by the left alarm; for their fenfe of hearing, and alfo that of fmelling, is moft exquifite.

They copulate, more bumano, in fuly, and bring forth in the fune following; fo they go with young eleven months. The cubs are

Copulation.
Gestation. as fportive as puppies; have mock fights, and tumble one another on the ground. The male parent looks on with a fort of complacency, parts them, licks and kiffes them, and feems to take a greater affection to the victor than to the others.

\section*{Swiet swimmers.}

They fwim with amazing fivifnefs and ftrength, even at the rate of feven or eight miles an hour, and often on their back. They dive well, and continue a great while under water. If wounded in that element, they will feize on the boat, carry it with them with great impetuofity, and often will fink it.

When they wifh to afcend the rocks, they fix their fore feet on them, arch their backs, and then draw themfelves up.

Capture.

Uses.

Re-migratión.

The Kamtfobatkans take them by harpooning, for they never land on their thore. To the harpoon is faftened a long line, by which they draw the animal to the boat after it is fpent with fatigue; but in the chafe, the hunters are very fearful of too near an approach, leaft the animal fhould faften on and fink their veffel.

The ufes of them are not great. The flerh of the old males is rank and naufeous; that of the females is faid to refemble lamb; of the young ones roafted, a fucking pig. The fkins of the young, cut out of the bellites of the dams, are efteemed for cloathing, and are fold for about three fhillings and four pence each; thofe of the old for only four Chillings.

Their re-migration is in the month of September, when they depart exceffively lean, and take their young with them. On their re_ turn, they again pafs near the fame parts of Kamt fcbatka which they did in the fpring. Their winter retreats are quite unknown; it is probable that they are the inands between the Kurili and fapan, of which we have fome brief accounts, under the name of Compagnie Land, States Liand, and Yefo Gafima, which were difcovered by Martin Uriel in 1642*. It is certain that by his account the natives eimploy themfelves in the capture of Seals \(\dagger\). Sailors do not give themfelves the trouble of obferving the nice diftinetion of fpecific marks, we are therefore at liberty to conjecture thofe which he faw.

\footnotetext{
* He failed from the eaft fide of fapan in the fhip Caftricom, vifited the ifte of \({ }^{7}\) fo, and difcovered the inands which he called States Land and Company Land, the iaft not very remote from the moft fouthern Kurili illand. Recueil de voy, au Nord, iv. I.
\(t\) The fame, 12.
}

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that they come afbore in \(\mathscr{F} u n e\), and ftay till September \({ }^{*}\). Captain Cook found them again, in their place of remigration, in equal abundance, on Staten Land and Nerw Georgia, in the months of December. and \(\mathcal{F a n u a r y} \dagger\); and Don Pernety \(\ddagger\) found them on the Falkland iflands, in the month of February.

According to the Greenlanders, this fpecies inhabits the fouthernparts of their country. They call it Auvekajak. That it is very fierce, and tears to pieces whatfoever it meets; that it livēs on land as well as in water, fwins moft impetuouly, and is dreaded by the hunters \(\|\).
30. Leonine.
```

Hif. 2uad. N0}389
Beftia Marina, Kurillis, Kamtfchadaliset Rufis, Kurillico-nomine Siwutfcba diftai.
Nor. Com. Petrop.ii. 360.
Lion Marin, Hif. Kamt/chatka, 428.

```

S
EAL. With a large head : nofe turning up like that of a pug Dog: eyes large; pupil fmaragdine : the greater angle of each: as if ftained with cinnabar color. In the upper jaw four fmall cutting teeth; the exterior on each fide remote, and at fome diftance from thefe are two large canine teeth: in the lower jaw four fmall cutting teeth, and the canine: the grinders fmall and obtufe; fouron each fide above, and five below : ears conic and erect: feet exactly like thofe of the Urfine Seal:

Along the neck of the male is a mane of ftiff curled hair ; and the whole neck is covered with fong waved hairs, fuch as diftinguifi: a Lion; the reft of the animal cloatiied with fhort reddifh hairs: thofe of the female are of the color of ochre; the young of a much deeper. The old animals grow grey with,age.

\footnotetext{
- Selkirk's account in W. Rogers's voy. 136. + ii. 194. 213, \(\ddagger\) His. veyage, Engl. Trs. 8 87. \(\quad\) F Fann. Greenl. p: 6..
}

The

The weight of a large male beaft is fixteen hundred pounds. Length of the males is fometimes fourteen, or even eighteen feet *. The females are very difproportionably leffer, not exceeding eight feet.

Inhabits the eaftern coafts of Kamt \(\delta\) chatka, from cape Kronozki as low as cape Lapatka and the Kurili inlands, and even as far as Matfinai, which probably is the fame with Fefo Gafima. 'Near Matfmai Captain Spanberg obferved a certain illand of a moft picturefque form, bordered with rocks refembling buildings, and fwarming with thefe animals, to which he gave the name of the Palace of the Sea Lions \(\dagger\). Like the Urfine Seals, they are not found on the weftern fide of the peninfula. They abound, in the months of fune; fuly, Auguft; and September, on Bering"s inand, which they inhabit for the fake of quiet parturition and fuckling their young. Steller alfo faw them in abundance in fuly on the coafts of America.

They do not migrate like the former; but only change the place of refidence, having winter and fummer ftations \(\ddagger\). They live chiefly on rocky fhores, or lofty rocks in the fea, which feem to have been torn away from the land by the violence of fome earthquake \(\|\). Thefe they climb, and by their dreadful roaring are of ufe in foggy weather to warn navigators to avoid deftruction.

They copulate in the months of Auguft and September; go ten months, and bring only one at a time. The parents fhew them little affection, often tread them to death through carelefsnefs, and will fuffer them to be killed before them without concern or refentment. The cubs are not fiortive, like other young animals, but are almoft always aneep. Both male and female take them to fea to learn them to fwim; when wearied, they will climb on the back of their dam; but the male often puhhes them off, to habituate them to the

\footnotetext{
* Narborough, 31. Penroff. Falkland Ihes, 28. Pernetti, voy.-Malouines, 240: By his confounding the names of this and the Bottle-nofe Seal, No 288. Hif. Quad. he led me into a miffake about the length of this.
†: Defir. Kamt/batka, 433. \(\ddagger\) Nov. Com. Petrop. ii. 365. || Muller's vioy. 60.
}
exercife. The Rulians were wont to fling the cubs into the water, and they always fwam back to fhore.

The males treat the females with great refpect, and are very fond of their careffes. They are polygamous, but content themfelves with fewer wives than the former, having only from two to four apiece.
frar mankind;
The males have a terrible afpeet, yet they take to flight on the firft appearance of a human creature; and if they are difturbed from their fleep, feem feized with great horrors, figh deeply in their attempts to go away, fall into vaft confufion, tumble down, and tremble in fuch a manner as fcarcely to be able to ufe their limbs. But if they are reduced to a ftrait, fo as not poffibly to effect an efcape, they grow defperate, turn on their enemy with great fury and noife, and even put the mo't valiant to flight.

By ufe they lofe their fear of men. Steller once lived for fix days in a hovel amidft their chief quarters, and found them foon reconciled to the fight of him. They would obferve what he was doing with great calmnefs, lie down oppofite to him, and fuffer him to feize on their cubs. He had an opportunity of feeing their conflicts about their females; and once faw a duel between two males, which lafted three days, and one of them received above a hundred wounds. The Urfine Seals never interfered, but got out of the way as faft as poffible. They even fuffered the cubs of the former to fport with them without offering them the left injury.

This fecies has many of the fame actions with the former, in fwimming, walking, lying, and fcratching itfelf. The old bellow
Notes: like Bulls; the young bleat like Sheep. Steller fays, that from their notes he feemed like a ruftic amidit his herds. The males had a ftrong fimell, but were not near fo fetid as the Urfine fort.

Food.
Their food is filh, the leffer Seals, Sea Otters, and other marine animals. During the months of fune and fuly the old males almoft entirely abftain from eating, indulge in indolence and neep; and become exceffively emaciated.

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This fpecies has been difeovered very low in the fouthern hernifphere; but, I believe, not on the weftern fide. Sir fobn Narborough * met with them on an inland off Port. Defire, in lat. 47.48. Sir Richard Hawkins \(\dagger\) found them on Pinguin ille, within the fecond Narrow of the ftreights of Magellan. They abound in the Falkland Iflands \(\ddagger\); and were again difcovered by Captain Cook on the Nerv Year's Ifands, off the weft coaft of Staten Land \|. Ir thofe fouthern latitudes they bring forth their young in the middle of our winter, the feafon in which our late circumnavigators § vifited thofe diftant parts.
- Voy. 31. \(\quad+\) Voy. 75. \(\mathcal{I}\) Pernety's voy. 188. tab. xvi.
|| Cook, ii. 194. 203. The months in which thefe animals were obferved by the navigators, were Fanuary and February; but by Sir F. Narborough; in the Areights of Magellan, about the \(4^{\text {th }}\) of March, O.S.
f Forfer's roy. ii. 514.

Hift. 2uad. \(\mathrm{N}^{0} 390\).
Morkaia Korowa, Ruforum. Nov. Com. Petrop. ii. 294. Vaches Marines, \(D_{e f / r . ~ K a m t f / b a t k a, ~} 446\).

MANATI. With a fmall oblong fquarifh head, hanging down : mouth finall: lips doubled, forming an outward and inward lip: about the junction of the jaws a fet of white tubular briftles, as thick as a pigeon's quil, which ferve as ftrainers to permit the running out of the water, and to retain the food: the lips covered with ftrong briftles, which ferve inftead of teeth to crop the ftrong roots of marine plants: no teeth, but in each jaw a flat white oblong bone with an undulated furface, which being placed above and below, performs the ufe of grinders to comminute the food.

Noftrils placed at the end of the nofe, and lined with briftes: no ears, only in their place a fmall orifice.
Eyes very fmall, not larger than thofe of a Sheep, hardly vifible through the little round holes in the fkin; the irides black; the pupil livid: tongue pointed and finall.

The whole animal is of great deformity : the neck thick, and its union with the head fcarcely difcernible : the two feet, or rather fins, are fixed near the fhoulders; are only twenty-fix inches long; are deftitute of toes, or nails, but terminate in a fort of hoof, concave beneath, lined with briftles, and fitted for digging in fand.

The outward fkin is black, rugged, and knotty, like the bark of an aged oak: without any hair; an inch thick, and fo hard as fcarcely to be cut with an ax; and when cut, appears in the infide like ebony. From the nape to the tail it is marked with circular wrinkles rifing into knots, and fharp points on the fide. This fkin covers the whole
81. Whale-
tailed.
body like a cruf, and is of fingular ufe to the animal during winter, in protecting it againft the ice, under which it often feeds, or againft the fharp-pointed rocks, againft which it is often dafhed by the wintry ftorms. It is alfo an equal guard againft the fummer heats; for this animal does not, like moft other marine creatures, feed at the bottom, but with part of the body expofed, as well to the rays of the fun as to the piercing cold of the froft. In fact, this integument is fo effential to its prefervation, that Steller has obferved feveral dead on the fhore, which he believes were killed by the accidental privation of it. The color of this fkin, when wet, is dufky, when dried, quite black.
Tail. The tail is horizontally flat; black, and ending in a ftiff fin, compofed of laminæ like whale-bane, terminating with fibres near nine: inches.long. It is nightly forked; but both ends are of equal lengths, like the tail of a Whale.

It has two teats placed exactly on the breaft. The milk is thick and fweet, not unlike that of a Ewe. Thefe animals copulate more bumano, and in the feafon of courthip fort long in the fea; the female feigning to fhun the embraces of the male, who purfues herthrough all the mazes of her flight.

The body, from the fhoulders to the navel, is very thick; from thence to the tail grows gradually more fender. The belly is very large ; and, by reafón of the quantity of entrails, very tumid.
Sa28: Thefe animals grow to the length of twenty-eight feet. The meafurements of one fomewhat leffer, as given by Mr. Steller, are as follow :

The length, from the nofe to the end of the tail 2 , twenty-four feet and a half: from the nofe to the fhoulders, or fetting-on of thefins, four feet four. The circumference of the head, above the noftrils, two feet feven; above the ears, four feet : at the nape of the neck, near feven feet: at the fhoulders, twelve: about the belly, above twenty : near the tail, only four feet eight: the extent of the tail, from point to point, fix feet and a half.

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approach the fhores, and are fo tame as to fuffer themfelves to be ftroked: if they are roughly treated, they move towards the fea; but.foon forget the injury, and return.

They live in families near one another: each confifts of a male and female, a half-grown young, and a new-born one. The families often unite, fo as to form vaft droves. They are monogamous. They bring forth a fingle young, but have no particular time of parturition; but chiefly, as Steller imagines, about autumn.

They are moft innocent and harmlefs in their manners, and moft ftrongly attached to one another. When one is hooked, the whole herd will attempt its refcue : fome will frrive to overfet the boat, by going beneath it; others will fling themfelves on the rope of the hook and prefs it down, in order to break it; and others again will make the utmoft efforts to force the inftrument out of its wounded companion.

Their conjugal affection is moft exemplary : a male, after ufing all its endeavours to releafe its mate which had been ftruck, purfued it to the very edge of the water; no blows could force it away. As long as the deceafed female continued in the water, he perfifted in his attendance; and even for three days after fhe was drawn on fhore, and even cut up and carried away, was obferved to remain, as if in expectation of her return.

They are moft voracious creatures, and feed with their head under water, quite inattentive of the boats, or any thing that paffes about them; moving and fwimming gently after one another, with much of their back above water. A fpecies of loufe harbours in the roughnefs of their coats, which the Gulls pick out, fitting on them as Crows do on Hogs and Sheep. Every now and then they lift their nofe out of the water to take breath, and make a noife like the fnorting of Horfes. When the tide retires, they fwim away along with it; but fometimes the young are left afhore till the return of the water: otherwife they never quit that element : fo that in nature, as well as form, they approach the cetaceous animals, and are the link between Seals and them.

They were taken on Bering's ine by a great hook faftened to a long rope. Four or five people took it with them in a boat, and rowed amidft a herd. . The ftrongeft man took the inftrument, ftruck it into the neareft animal; which done, thirty people on fhore feized the rope, and with great difficulty drew it on hhore. The poor creature makes the ftrongeft refiftance, affifted by its faithful companions. It will cling with its feet to the rocks till it leaves the fkin behind; and often great fragments of the crufty integument fly off before it can be landed. It is an animal full of blood; fo that it fpouts in amazing quantities from the orifice of the wound.
They have no voice; only, when wounded, emit a deep figh.
They have the fenfes of light and hearing very imperfect; or at left neglect the ufe of them.

They are not migratory; for they were feen about Bering's inand the whole of the fad ten months which Mr. Steller paffed there after his fhipwreck.

In the fummer they were very fat; in the winter fo lean that the ribs might be counted.

The fkin is ufed, by the inhabitants about the promontory \(T\) chuktcbi, to cover their boats. The fat, which covers the whole body like a thick blubber, was thought to be as good and fweet as May-butter : that of the young, like hogs-lard. The flefh of the old, when well boiled, refembled beef: that of the young, veal. The feih will not refufe falt. The crew preferved feveral cafks full, which was found of excellent fervice in their efcape from their horrible confinement *.

To this article muft be added an imperfect defcription of a marine animal feen by Mr. Steller on the coaft of America, which he calls a Sea Ape. The head appeared like that of a Dog, with fharp and upright earś, large eyes, and with both lips bearded: the body round and conoid; the thickeft part near the head : the tail forked;

Capture.

Uses. Thefat.

Lean.

Sea Ape,
the upper lobe the longeft: the body covered with thick hair, grey on the back, reddifh on the belly. It feemed deftitute of feet.

It was extremely wanton, and played a multitude of monkeytricks. It fometimes fwam on one fide, fometimes on the other fide of the fhip, and gazed at it with great admiration. It made fo near an approach to the veffel, as almoft to be touched with a pole; but if any body moved, it inftantly retired. It would often ftand erect for a confiderable fpace, with one-third of its body above water; then dart beneath the fhip, and appear on the other fide; and repeat the fame thirty times together. It would frequently arife with a feaplant, not unlike the Bottle-gourd, tofs it up, and catch it in its mouth, playing with it numberlefs fantaftic tricks **.

On animals of this fecies the fable of the Sirens might very well be founded.

I fhall conclude this article with a recantation of what I fay in the 357 th page of my Synopfis, relating to the Beluga; which I now find was collected, by the author I cite, from the reports of Coffacks, and ignorant fifhermen. The animal proves at laft to be one of the cetaceous tribe, of the genus of Dolphin, and of. a fpecies called by the Germans Wit-Fifch, and by the Rufians Beluga \(\dagger\); both fignifying White fifh : but to this the laft add Morkaia, or of the Sea, by way of diftinguifhing it from a fpecies of Sturgeon fo named. It is common in all the Arctic feas; and forms an article of commerce, being taken on account of its blubber. They are numerous in the sulph of.St. Lawrence; and go with the tide as high as Quebec. There are fifheries for them, and the common Porpeffe, in that river. A confiderable quantity of oil is extracted; and of their fkins is made a fort of Morocco leather, thin, yet ftrong enough to refift a mufquetball \(\ddagger\). They are frequent in the Dwina and the Oby; and go in fmall families from five to ten, and advance pretty far up the rivers in purfuit of finh. They are ufually caught in nets; but are fome-

\footnotetext{
* Hif. Kamtfchatka, 136.
\(\dagger\) Pallas, Itin. iii. 84. tab. iv. Crantz Greenl, i. 114. Purchas's Pilgrims, iii. 549.
I Cbarlevoix, v. 217.
}

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BAT. With the head like that of a Moufe: top of the nofe a little bifid: ears broad, fhort, and rounded : in each jaw two canine teeth : no cutting teeth : tail very long, inclofed in the membrane, which is of a triangular form : the wings thin, naked, and dufky : bones of the hind legs very flender.

Head, body, and upper part of the membrane inclofing the tail, covered with very long hair of a bright tawny color, paleft on the head, beginning of the back, and the belly: at the bafe of each wing is a white \(\int_{p o t}\).

Length from nofe to tail two inches and a half; tail, one inch eight-tenths : extent of the \(v\) ings, ten inches and a half.
Inhabits the province of New York; and difcovered by Dr. Forffer* n New Zealand, in the South Seas.
83. Longhaired.

Mr. Clayton, in Ph. Trarf. Abridg. iii. 594.

BAT. With long ftraggling hairs, and great ears.

The above is all the account we have of this fpecies; which is faid to be an inhabitant of Virginia.

Mr. Lawfon fays, that the common Bat is found in Carolina \(\dagger\).
\[
\text { - Obfervations, छ̇c. } 18 \text { g. } \quad+\text { Hif. Carolina. } 125 .
\]

\author{
Hif. 2uad. No 407.-Great Bat, Br. Zool. i. N \({ }^{\circ} 3^{8 .}\)
}

\author{
84. Noctulep
}

BAT. With the nofe flightly bilobated: ears fmall and rounded: on the chin a fmall wart : body of a cinereous red.
Extent of wings fifteen inches: body between two and three in length : tail one inch feven-tenths.

Brought from Hudjon's Bay in fpirits. I faw it only in the bottle ; but. it appeared to be this fpecies.

A. Common Bat, Hif. 2uad. \(\mathrm{N}^{\circ} 411,-B r\). Zool: i: \(\dot{N}^{0} 41,-\) Lev, Muso

THIS fpecies is found in Iceland, as I was informed by the late Mr. Fleifcher, which is the moft northernly refidence of this. genus. In Afia I can trace them no farther eaftward than about the river Argun, beyond lake Baikal.```


[^0]:    - Now refident in London.

[^1]:    * A quarto in Latin, containing 68.5. pages,.printed at Leyden, 1777 ; fold in London by Mr. Faden, Geographer, St. Martin's Lane.
    + A new edition of the map has been lately publifhed by the learned Author ; thegeographical part is corrected according to the late voyages of Captain Cook, and great ${ }^{-}$ additions made to the zoological part. An explanation is given, in the third volume of the Zoologia Geographicas. lately publifhed in German, by the Author.

[^2]:    - Plato died about the year 347 before Christ, aged 81. Pythagoras, about 497, aged 9a
    $\ddagger$ See this opinion farther difouffed by Mr. Somner, Pb. Tranf. Abridg. iv. 2 30.

[^3]:    * All the intelligence refpesting the tides, \&c. in thefe parts I $_{7}$ received from Mr. Fames Hammond of the cuftom-houfe, Dover, and Mr. William Cowly, a veteran pilot of the fame place.

[^4]:    * Six Wild Bulls were ufed at the inftallation feaft of George-Nevil, archbihop of York. Leland's Gollect. vi. 2. $\quad \dagger$ Tours in Scotland. $\ddagger$ Martial. Plutarch. §Raii Syn. 2uad. 214.

[^5]:    * Health's Emprovement. $\quad+$ Ecole de la Chaffe, clxi.

    I The Common Seal, is common to the ocean and Mediterranean fea. Poffibly the Me.ititerranean Seal, Hif. 2uad. $\mathrm{N}^{\circ}{ }_{376}$, may be fo likewife. -This work is always intended, when the name of the work referred to is not added to the numbers,

[^6]:    - Compare $\operatorname{Sir}$ W. Dugdale's maps of this tract, in its morafly and drained flate. Hif. Embank. p. $375.416 . \quad+$ Same, P. $375^{\circ}$
    $\ddagger$ See Tour in Scotland, 1769 ; Lincolnflire, where the fen birds are enumerated.
    § Defcr. Britain, «108,

[^7]:    * Soft near the top, and of a crumbling quality when expofed long to the frof. At the foot of the cliff it is hard, folid, and fmooth. Boats are employed every fummer in carrying great quantities to Sunderland, where it is burnt into excellent lime. Moft of the lime-ftone ufed at Scarborough is made from ftones flung up by the fea. It may be remarked, that whatoever degree of hardnefs any limeftone poffeffes in the quarry, the mortar made from it, by proper management, may be made as hard, but by no means harder: Moft of the houfes in and about London are built with lime made of chalk; bence the many miferable cafualijes there, by the fall of houfes. The workmen, fenfible of the weaknefs of that kind of mortar, endeavour to keep the walls together by lodging frames of timber in them ; which being confumed in cafes of fire, the whole building tumbles fuddenly, and renders all attempts to extinguifh the fire very dangerous, -Mr . Travis.

[^8]:    * Tour in Scotland, 1769 ; and fuller in Mr. Hutchinfon's Nortbumberlata, ii. 376. + Adair. Hammond. Tbomppon.

[^9]:    - See Tokr in Scotland, 1772. part ii. p. 212.
    $\dagger$ Douglas's Eafl Coaf of Scolland, 14.

[^10]:    - See Mr. Cordiner's beautiful vièw of a flack of this kind, tab. xy.
    $\dagger$ Mela.
    $\ddagger$ Plin. lib. iv. c. 19. § Mr, William Fergufon.

[^11]:    * Claudian. ${ }^{n}$
    $\dagger$ Mela, lib. iii. c.6. Plin. lib. iv. c. 16. $\quad \ddagger$ Tour Scotl. 1772. p. 90.
    1 Same p. 25. §Claudian, de iv. Conf. Honorii. II Torfaus Rer. Orcad. lib. i. c. 3. p. ro.

[^12]:    - Ibre Gloff. Sueo-Goth. 108 5. $_{5} \quad+$ Crit. Dif. by Fobn Macpberfon, D. D. $325 . \quad \ddagger$ Torfaus Rer. Orcad. 8. § Eaxter, Glof. Antiq. Brit. 109. || Information by letter from Mr. Sklm of Copenbagen. II Dalbberg, tab. 64. ** The fame, tab. 300.-For more ample accounts, fee Mr. Cordiner's Letters, 73, 105, 118, and my Tour's in Scotland.

[^13]:    - Wormii Mon. Dan. 50. Dalblerg Suecia Antiqua, et Hodierna, tab. 314. t. Dablberg Suecia: Autiqua, tab. 322. I The fame, 3 1•5. H.The fame, 323. \&Saxo Gramm. 147.

[^14]:    The Runtc INVOCATION of Hervor, the Daughter of Angantyr,
    Who demands, at her Father's Tomb, a certain Sword, called Tirffing, $^{2}$ which was buried with him.

    ## HERVOR.

    Awake, Argantyr! To thy tomb, With neep-expelling charnss, I come. Break thy drowfy fetters, break!
    'Tis Hervor calls-Awake! awake !

    > Tirfing, made by fairy hands, Hervor from thy tomb demands. Hervardur, Hiorvardur, hear!
    > Lift, oh lift, my father dear!

    Dabllerg, tab. 3 r5. ${ }^{\prime}$ †The fame, and tab. 281. $\ddagger$ Olaus Magnus. If. Wormii Mon. Dan. p. 63:
    § I do not well underfland fome of thefe diftinetions; but give them from Oiaus Magnus, lib. i. c. I8. Moft of them are exemplified at Finfla in Seveden. See Dablberg, tab. 104, and Perinkiold Monum. Sueo-Goth. p. 216.
    || Wormii Monum. Dan. 64, \& pallim.
    ** Dablbarg, tab. 314.
    $t+$ By my friend, the

[^15]:    *Wormii Mon. Dan. p. 8. $\quad+$ Dalbberg, tab. 280. $\ddagger$ The fame, 105.

[^16]:    * Thefe on the authority of Mr . Debes, who wrote the hiftory of there illes in 1679 .
    $\$$ Brumnich, p. 46.

[^17]:    - Olaus Magnus, Archb. of Upfal. $\quad$ See bis plan, p. 52. $\ddagger$ Inands Landnamabok, 5.

[^18]:    * The works of Pytheas had been read by Dicaarcbus, a difciple of Arifotle's. See Strabo, liu. ii. p. 163 .
    $\dagger$ Plin. lib. ii. c. 75. $\ddagger$ Same, p.7. §Same, p. 8. Torfaus. Hif. Norveg. ii. 97.

[^19]:    - Hif. Nat. lib. ii. c. 87. $\quad$ Mof admirably defcribed in the Ph. Tranf. Abridg. v. 196, \&c. $\ddagger$ Oßeck'sVoy. ii. 98. Friflt's Voy. ii. 575.576 . $\forall$ Mallet, i.' 15 . § Kerguelin, 175.
    -1 See Olaffen, i. tab, xvii.

[^20]:    * Bartholinus de Contenptu Mortis, 359.
    $\dagger$ Letter from Mr. Brunnich, dated OCober 31, 1783.

[^21]:    *Arngrim Gonas's Comment. Iceland. in Hacklay:, i. 556. + See Olafien, i. tab. iii. Pontoppidan, ii. tab. p. 272.

[^22]:    * Olaffen, as related to him. $\quad$. Linnaus, Klein, Rzacঞinfki, Scheffer.

[^23]:    - Ifand's Landnamabok, 172.
    $\dagger$ Bartholinus de Caufs contempta Mortis, \&c. 429.
    $\ddagger$ MalLot's Northern Antiq. ii. 132.

[^24]:    *Voyage au Mer du Nord, 69.
    $\dagger$ Horrebow, 101.
    $\ddagger$ Korguelin, 35. \# Troill, 48; 49. . § Kerguelin, 20, 175. T S See p. xlv.

[^25]:    - Ptolem. Lib. ii. c. 11. $\{$ Plin. Nat. Hif. lib. iv. c. 33. §Mela, lib. iii. c. 3.8.

[^26]:    - Plin. lib.ii. c. 67. lib. iv. c. 13.
    $\|$ Ruflan and other charts.

[^27]:    * Hif. Abregè de Nord. i. 206. $\quad \dagger$ Prof. Ritzius of Lund. $\|$ Pb. Tir. Abr, vii. part iv. p. 44. § Hif: Abregè du Nord. ii. 59. IT The fame, p. 3.

[^28]:    - Anderfon, ii. 41 פ. † Ancen. Acad. iv. 570. Fl. Laf. 273. §Scbeffer's Lapland. $\forall$ Pioleniy.

[^29]:    - Cefar Bell. Gall. lib. iv. Plin. lib. viii. c. 15.
    $\dagger$ Solinus, c. 32. Plin. x. c. 47.

[^30]:    * At the end of his fecond vol. of Germania Antiqua. $\quad+$ Fornandes de Reb. Geticis, c: iii. $\pm$ The fanse, c. iv. § As quoted by Pliny, lib. ir, c. 1.3.

[^31]:    = Pontoppidan, i. $\quad+$ Thefame, i.68. $\ddagger$ Le Bruyn's Voyages, i.tab. 1. §olaus Magnus, Gent. Septentr. lib. ii. c. xi. \| Mr. Bajley, in Plizl. Tranf. lix. 27a.

[^32]:    * Pontopppidan, i. 93. tab. vii.
    $\dagger$ Amsen. Aca.d. iv.
    I Voj. Hebrides,

[^33]:    * I have vo proof of this but the name. The Lynx inhabits Norquay and Srweden, and all the woody parts of Sibiria; a circumftance I omitted in p. 50, of this Work. I fcarcely know whether I fhould apologize for the omifion of the Fitchet, Hif. Quat. i. No 195 ; the Mufela Putorius, No ${ }_{16} 6$, Faun. Suec. Linnfus fpeaks with uncertainty of its being found in Scania, and that is a latitude rather too far fouth for my plan.

[^34]:    - See the Plates in Pontoppidan's Hiff. Norway.
    $t$ In the Britif Zoology, iii, No40, the trivial Spinax is inferted inftead of Acantbias.

[^35]:    - The Tranfation of Orofius, by the Hon. Daines Barrington, p.9, \&c. and Hackluyt, i. 4. i Pbil. Trarf. vol. lix. 11.7. $\ddagger$ Lord Molefzworth's Accoust of Denmark, 25.

[^36]:    *Hackluyt, i. 2f6. $\quad+$ See a view of thefe iflands in Pbil. Trauf. vol. lix. tab. xiv.

[^37]:    - Purchas, iii. ${ }^{666 .}$
    fi The fame, $55^{8 .} 5^{64}$
    $\dagger$ The fame, pp. 560. 565.
    $\ddagger$ The fame, ${ }_{564}$.
    § Earrington's Mijcel. 35 .
    1
    by

[^38]:    - Crantz, i. 31. + Phips, 72. $\ddagger$ Elis's Voy. 127. || Marten, 37. Crantz, i. 3I. § See the beautiful plate in Pbips's Voy. tab. vii. *"Phips, p. 70.

[^39]:    * Marten, 43. + The fame. $\ddagger$ The fame. §The fame, 51. \|Relation of Eight Englifmen, \&cc. Churchill's Coll. iv. 818.-Relation of Seven Dutchmen, \&c. Cburchill, ii. 430. II Narrative of Four Ruflan Sailors, 94. ** De Ver, trois Voy, au Nord. 22, b. tt Relation of Eight Engli/bmen, \&cc. 817, 818,819.

[^40]:    -Hackluyt, i. 274, 280.
    t Troin Voyages au Nord, \&ic. par Girard de Ver, p. 14, 15.

[^41]:    * Anderfon's Dieq. i. 97. $\quad$ The fame, 328. $\ddagger$ Nov. Com. Petrop. xiv. 484. tab. xii. Its length does. not exceed eleven inches. \| Hackluyt, i. 277. § Purchas, i. 546. - The fame, 549.

[^42]:    * Plinii Hif. Nat. lib. iv. ©. 12.
    t In Afatico littore primi Hyperborei, fuper aquilonem Riphaofque montes, fub ipfo fiderum cardine jacent; ubi fol non quotidiè, ut nobis, fed primû̀n verno 压quinoctio exortus, autumnali demum occidit; et ideò fex menfibus dies, \& totidem aliis nox ufque continua eft. Terra augufta, aprica, per fe fertilis. Cultores juftiffimi, et diutiùs quam ulli mortalium \& beatiùs vivunt. Quippe feto femper otio lati, non bella novêre, non jurgia; facris operati, maximè Apollinis; quorum primitias Delon mifife, initio per virgines fuas, deinde per populos fubinde tradentes ulterioribus; moremque eum diu, \& donec vitio gentium temeratus eft, fervaffe referuntur. Habitant lucos fylvafque; et ubi eos vivendi fatietas magis quam tædium cepit, hilares, redimiti fertis, femet ipfi in pelagus ex certa rupe prrecipiti dant. Id eis funus eximium eft. Lib, iii. c. 5.
    $\ddagger$ Voyage do la Siberie, ii. 605 .
    $\forall$ Preface to Elor, Sibir. i. 54.

[^43]:    * Hackluyt. i. 28z. $\quad+$ Doctor Pallas. $\ddagger$ See this curious voyage, as related hy De Veer. $\quad$ Pallas. §Coxe's Ruflan Difoveries, 306. II Gmelin Introd. Fl. Sib. vii. xxx. By Leuca he feems to mean a Verf, of which $104 \frac{1}{2}$ make a degree. See cxxiii. and Mr. Coxe's Ruftan Difcoveries, Introd. xiii.

[^44]:    * Pref, Fl. Sibir, xliv.

[^45]:    - P. 323 to 329. $\quad+$ Pb. Tranf. Ixvii. 471. $\ddagger$ Pref. Flora Sib. 78. Forfer's

    Obf. 85. quoted from Gmelin. \|Pref. Flora Sib. 73. II Voy. en Siberie, ii. 31, 52.
    Sibirian

[^46]:    * Voy en Siberie, par Gmelin, i. 84, 89, 241. ii. 167, 170, 219.-Voy. en Siberie, par l'Abbé D'Auterocke, i. 200. Engl. Ed. 231.

[^47]:    - Vojage, ii. 450, tab. ${ }^{11}$.
    $\dagger$ Hif. Kamtfchatka, Fr.
    $\ddagger$ Voyage, ii. 452. § See tab. $5^{1}$ of the Foyage.

[^48]:    * See tab. 84 of the Voyage. $\quad+$ The account of the veyage is extremely worthy of perufal, and is preferved by the able Doctor Campbell, in Harris's Colleaion, ii. 1018.
    $\ddagger$ See tab. 84 of the Vojage.

[^49]:    - Defcr. Kamtfcb. Fr. 340, 341. $\quad+$ Voyage iii. 206, 332. 348, and tab. iv. v. in which are given the courfe of the warm freams.
    $\ddagger$ Defr. Kamtch. Fr. § Voy. iii. 327. furprized

[^50]:    * Taken from Doctor Forfer's Flora Americee Septentrionalis. It is highly probable that many, not noted as fuch, may be common to both fides of the continent, notwithftanding they efcaped the notice of Steller or our navigators.

[^51]:    - Deff. Kamtfch. ${ }_{3} 6_{3}$.
    $\dagger$ Pallas, Nov. Sp. Mur. 230.
    $\ddagger D_{e} f_{0} . K a m t / c h .368$.

[^52]:    * Hif. Kamtjcbatka, 373. $\quad+$ Same, $375 . \quad \ddagger$ SeeVoy.iii. 304 to 308, where Mr. King gives a full account of the prefent method of lunting. p. $58,1.26$, to change the word carnivorous into unimal.
    § The reader is requefted, at

[^53]:    * Defcr. KamifChatka, Fr. s07. † Hif. Kamtchatka, Engl. 194. Fr. 46. $\ddagger$ Hiff. Nat. lib. ix. c. 3. §Voyage, iii. 450 . II cannot difover the fecies. Gmelin, in his Flora Sibirica, does not give the left account of thefe plants.

[^54]:    * Deffr. Kamtcch. 47 I.
    $\dagger$ Numbers of rays in the dorfal, pectoral, ventral, and anal fins.

[^55]:    - Defcr. Kamtfch. sio.
    $\dagger$ Hif. Kamt/fb. $\mathbf{1}_{3}$.
    $\ddagger$ See p. 25 of this Work.

[^56]:    * The moft proper word for the natives of this country is Kamt/chadales; but as I have on many occafions ufed this, I wifh to continue it.
    $\dagger$ Hif. Kamt/cb. 68, 73.

[^57]:    - Hif. Kamtfch, 107 to 109. $\uparrow$ Ellis's Nar.ï. 217. $I$ Defcr. Kamtfch. 602.

[^58]:    * I am indebted to Doctor Pallas for the whole account of this chain of illands, except where I make other references.--My extracts are made from a French Memoir, drawn up by my learned friend, and communicated to me.

[^59]:    - Hackluyt, iii. 738. + Hif. California, ii. 292.
    $\ddagger$ Carver's Travels, 76, 121.—Mr. Carver, captain of an independent company, penetrated far inland into America; and publifhed an interefting acciount of his travels. This gentleman was fuffered to perifh for want, in London, the feat of literature and opulence.

[^60]:    - Doctor Garden. See alfo Mr. Lewis Evans's Effays and map. Pbiladelphia, 2ded. p. 6, Eoc.
    f Mr. Lewis Evans, p. 9, and map.

[^61]:    *. Voy. © Decourvertes de Ruffes, i. 250 . Mikel. 507. §Cook's Voy, ii. 347.
    $\dagger$ Cook's Voy. ii. 344, tab. 86.
    $\ddagger$ Barrington's
    \|Voy. ©゚ Decouvertes, i. 254.-Cook, ii. 347, $3_{3}$.

[^62]:    *Dobbs, 24. $\quad+$ Voyage, ii. 368, 369. $\ddagger$ Same, 369, tab. 46, 47. § Dampier, i. 32, de Bry. Brafil, 165. $\quad$ VVoyage, ii. 374.

[^63]:    - From a MS. communicated to me by Dr. Pallas, Bragin was commander of a veffel which was fitted out by the merchants on a voyage to the new-difcovered iflands, and failed from Ocbotk in 1772. About ten years prior to this, another voyage was made to Kadjak by Stephen Glottoff. See Coxe's Difc. 108. + Coxe's Ruf. Difc. $12 . \quad$ I MS.

[^64]:    - See the plate, N 087 , yol. ii. for the feveral views. Pallas, MS. §See their boats, tab. 50.
    $\dagger$ Bragin's Voy. MS. $\quad \ddagger$ Doctor
    $\|$ See their drefles, tab. 48, 49, 56, 57.

[^65]:    *Voyage, ii. 5ro. $\dagger$ Same, 5\$1. $\ddagger$ See tab. 87.

[^66]:    - Decouvertes, Sac. i. 166. \$: Strablenberg Hif. Rufia, 113 .
    +See the particulars of his fervices, Voyage, iii. 280. § Same,: 110 .

[^67]:    * Nichols's Rulian Nations, in 176. + Voyage, iii, 277.

[^68]:    *. The author of Recherches Pbilofophiques fur les Americains, i. 136.

[^69]:    * Herodotus, lib. iv.-Compare the account given by the hiforian with the Tartarian icuneulus, in Dr. Pallas's Travels, i. tab. x. a.
    + Hif. KamtChatka, 57. © Voyage, ii.
    $\#$ Golden's Five Indian Nations, .i. 155.
    $\ddagger$ Mela, lib. ii. c. $\mathbf{1}$.
    II Herodotu:, lib. iv.

[^70]:    * Voyage, ii. 311, 329.-A very curious head of a.Wolf, fitted for this ufe, is preferved in the Leverian Mufeum. + Hif. Kamt/ch. 61. $\ddagger$ Bell's Travels, oft. ed. i. 240. § Herodian in Vita Severi, lib. iii. \| De Bry, Virginia, tab. iii. in. It Yprande Ldes, in Harris's Coll. ii. 929.
    ** Compare Colden, i. 17; Lafitau, i. 416; and Archaologia,

[^71]:    * Porwal's Hiff.Wales, 228, 229.- +Cluf. Exot. 101. $\ddagger$ Mallet's Nortbern Antiq. Engl. ed. i. 284. §Hif. Vinlandic antiq. per Therm. Torfaum, p. 8.

[^72]:    * Glover's Accosnt of Virginia, Phil. Tranf. Abr. iii, $\$ 70$.

[^73]:    - As I have been affured by Docior Pallas, fince the publication of my Hifory of Quadrupeds.

    Shaw's Travels, 249 .
    $\ddagger$ Condamine's Travels, 82,-Ulloa's Voyage, i. 46r.

[^74]:    - Purchas, iii. 588.
    $\dagger$ Voyages par de Pagès, ii. 222.
    $\ddagger$ Saine
    \# Marten's spitzb. 186.

[^75]:    - Voyage en Siberie, i. $38 \mathrm{r} . \quad \dagger$ As quoted in Green's map of America. $\ddagger$ Coos's Voy. i. Pref. ixxiv. § Same, ï. 43.

[^76]:    - Purchas, iii. 848. $\quad$ S See it well engraven in M. Du Hamel, Hif. de Poifonss part ii. taboxvii. $\ddagger$ Davii's Vog, in Hackkyt, iii, 10s. $\quad$ Same, iri.

[^77]:    - Purcbas, їi, 833-Egede, 32.
    $\dagger$ Hacklyyt, iii. 102.
    $\ddagger$ Same, 846.

[^78]:    - Voy. to Hudfon's Bay, 1746, written by the Clerk of the California, i. 159. His name was Drage; his account is fenfible and entertaining.
    $\dagger$ Ellis, 172.

[^79]:    - By whom it is well defribed and figured, in vol. 1xiii. p' ${ }^{155}$. tab. vi. of Ph. Tranf,

[^80]:    - See an ingenious and laudable Calendar of Hudfon's Bay, publifhed by Doctor Maffait, in his new Syftem of General Geography, 348 to 354, $\quad+$ Pí. Tranf. lxiv. 372. $\ddagger$ Same, 386.
    - Crantz, Hif. Morav. 404, 608.

[^81]:    - Collins's Baronets, iv. 330:

[^82]:    - Arifot. Hif. An. lib. ii. c. r.-Cafar Bel. Gall. lib. vi.-Plinii Hift. Nat. lib. xv. c. 15.-Oppian Cyneg. ii. Lin. 160.
    + Br. Zool. i. $\mathrm{N}^{0}$ 3.-Voy. Hebrides, 124.-Y.our. Scotl. 1722, Part ii. p. 285.
    $\ddagger$ There is a very fine figure of the European Bifon in Mr. Ridinger's Jagbere $T$ 'bistri:

[^83]:    - Nov. Com. Petrop. xvii. 460. tab. xi. xii.-I am forry to diffent from my efteemed friend Doctor Pallas, who thinks them to be the horns of Buffaloes; which are longer, ftraiter, and angular.
    $\dagger$ Purchas, iv. 1560, 1566 . $\ddagger$ Fernandex, Nov. Hijp. x. c. 30.-Hernandex, 58. § Du Pratz, ii. 50. i. 116. 286.

[^84]:    - Du Pratx, i. 49. ii. 227. $\quad$ Charlevoix, N. France, v. 192. $\ddagger$ Cbarlcvoix, v. 192.

[^85]:    * M. Jeremie, in Voyages au Nord, iii. 315.
    $\dagger$ The fame. $\ddagger$ Drage's Voy. ii. 260.

[^86]:    - Voy. au Nond, iii. 314.
    $\dagger$ The gentleman who undertook, in 1770, 1771, 1772, the arduous journey tof the Icy Sea, from Prince of. Wales's Fort, Hudfon's Bay. To kim, through Mr. V'egg's: intereft, I am indebted for the fin and this information.
    $\ddagger$ Dragés voy..ii. 260~ \| Mr. Grabam's MS.

[^87]:    * Dobbs's Hudjon's Bay, 19, 25. $\ddagger$ Purcbas, iv. 1561. v. 854. $\ddagger$ Pallas, in nov. com, Petrop. xvii. 601. tab. xvii. || Faun, Groenl, 28.

[^88]:    *Smellie, vi. 207, 219.
    H Horrebow, 46.
    $\ddagger$ Troil's voy. $13^{\prime 8}$. || Leems, 228.

[^89]:    *Smellie, vi. 363. $\quad+$ Faun. Groenl. p. 29. $\quad \pm$ De Buffon, ix. 71.

[^90]:    * Du Pratz, i. 301.

[^91]:    * Cbarlevois, v. 186.
    book iii. 20. tab. xxii.
    + The fame.
    $\ddagger$ Wrigbt's Loutbiana, § Hif. Quan. 45.

[^92]:    * Hiff. Kamt/fbatka, 226, 227. -The Koreki exchange their Deer with the neighboring sations for'rich furs. $\quad+$ Maller's Summary, E゚r. xviii. $\ddagger$ Eaun. Groenl. p. 28.

[^93]:    - The late ingenious Mr. Ellis hhewed me a Bezoar found in one of thefe Deer, killed in Georgia. It was of a fpheroid form, an inch and three quarters broad, half an inch thick in the middle; of a pale brown color; hard, fmooth, and gloffy.
    $\dagger$ Bancroft. $\ddagger$ Doctor Garden. §. Du Pratz, ii. 5 I. \|l Lazufon, 124.

[^94]:    * Larwfon, 207. $+D^{\prime}$ Arvieux'stravels, 147. $\ddagger$ Larwfon, 207. I| Hernandez. § Dobbs's Hudfon's Bay, 24.

[^95]:    * Du Pratz, ii. 54 .
    $\dagger$ Smellie, iv, 212.

[^96]:    * Hif. Kamtfcbatka, 107. 197. $\quad+$ The fame, 107.
    - $\ddagger$ The fame. -There is a variety of black wolves in the Vekroturian mountains. The the-wolves have been fuccefffully coupled with dogs in fome noblemen's parks about Moforw.
    || In Bergeron, 160. §Hift. Kamtfchatka, 231. The Americans do the fame, Drage, i. 216. THif. Kamt/sb. 226. Drage, ii. 41.

[^97]:    - Faun. Greenl. p. ıg.

[^98]:    - Lawfon, 125. + Cate $b y$, ii. 78. Fofelyn, 82. $\ddagger$ Kalm, i. 282.
    \& $D_{u}$ Pratz, ii. 64. Cbarlevoix, v. 196.

[^99]:    - Cbarlirvoix, v. 189, who by miftake calls it Carcajou, and Kincajou; two very.dif.
    ferent animals. + Cbarlevoix, v. 195. $\ddagger$ Lawfon, 118. Catefy, Appi xxv.

[^100]:    * Hif. Carolina, 119.
    $t$ ii. 64. I wifh to fupprefs the fynonym of Cat-a-mount; as applied to the Cayenne Cat, as it feems applicable to a much larger fecies.
    $\ddagger$ Hift. de le Nouv. France, vi. $158 . \quad$ S:Oluf. Iceland, i. Paragi. 80. Pontop... ii $8 . \quad \|$ Faun. Sueco. $\mathrm{N}^{\circ} 9$.

[^101]:    - De Buffon, Suppl. iii. 200. $\quad+$ See Le Ver, P. 14i ed. 1606. Amfeld:

[^102]:    *Pbil. Tranf. Ixiv. 377. $\quad$ Alulder, Pref. xxv. $\ddagger$ Purchas's Pilgrims, iii. 805 .

[^103]:    - Marten's Spitzb. 102.
    $\dagger$ Egede, 60. Martens fays, that the fat is ufed in pains of the limbs, and that it afitas parturition.

    I Heemkirk's voy. in Purcbas, iii. 500, 501 . II The fame, 499. § Madox's Antiquities of the Exsbrguer, i. 376 .

[^104]:    - Olaus Magnus, lib. xviii. c. 20.
    + Journal of his travels into Eaff Florida, 2.6. $\ddagger$ Hif. Kamtfib. iii. 385. \| The fame, 287. §Voy. au Nord. iv. 5. n Hijt. Fapan, i. 126.

[^105]:    - Du Pratz, ii. 60. + Lawfon, 117. Catefy, App. xxvi. $\ddagger$ Fofelyn's woy: 91. § Bar!ram's journ. E. Florida, 26. |ll Lawfon, il6.

[^106]:    * Du Prate, ii. 62. † Lawuon, 117. $\ddagger$ Kalm, iii. 13. || Dozzor Pallas.

[^107]:    - Dobbs, 40. $\quad$ Mr: Grajam. $\ddagger$ The fame. \|Edw. ii. 10 j. (Hif. Kamt/fb. $3^{85}$.

[^108]:    - Foljelyn's vay. 85.
    $\dagger$ Account of Elorida, 50.
    || Fernand. Nov. Hifp. i. § Kalm, i. 97. ii. 63.

[^109]:    *121. $\quad$ Kalm, i. 208. I The fame. || Kalm, ii. 97.

[^110]:    - Bartran's journal E. Florida, $30 . \quad+$ The fame. $\ddagger D_{u}$ Pratz, ii. 65; ( The fame, 56.
    \| Lawfon, 120.
    II Du Pratz, ii. 66.

[^111]:    - Charlevoix, v. 197:. + Hif. Kamtchatka; 99:. $\ddagger$ Bell's traveli; i. 199. § Pontcopidan, ii. 25. $\#$ Gmolin, Rul. Samlung, 516. II Ifow. Sp. an. 188.

[^112]:    * Decouvertes dans le Rufe, Gr. iv. 237. tab. vi. vii. p. $11844^{\circ} \quad 才$ Epif. Ep. xc.

[^113]:    - Jornandes de Rebus Geticis. t 160, 161, 162. || LegesWallica:
    t Ln Bergeron's Coll. 70. Purchas, iii. 86.
    § Barrington on the Statutes, 4 th ed. 243.

[^114]:    -Kalm, i. 275.

    + The fame, $27 \%$.
    $\ddagger$ Lawfon, 11g. Kalm ${ }_{2}$ i. 278.

[^115]:    - Kalm, i. 278. $\quad+$ Cateffy, ii. tab. 62- $\ddagger$ Kalm, i. 274. § Sent from thence by Mr. Grabamı || Fcuilliz Ob/. Peru, 1714, p. 272. || Fipro andex, Mex. 382.

[^116]:    - Larwon, 119, and Du Pratz, ii. 69. $\quad+$ Dobbs, 40. $\ddagger$ Hiff. Kamtf. 115, 116.

[^117]:    - Kaim, ii. 61. $\quad+$ Lawfon, $122 . \quad 1$ Dr. Pallas. §Fauna Suec. N® 13. || I here infert the fynonyms; for in the Synopfis of Quadrupeds, following Linncus and Brifon, I confourd the Brafilian Otter of Marcgrave with this animal.

[^118]:    *. Voyages au Nord, iii. 344• $\quad+$ Drage, i. 17.6. $\quad \ddagger$ Kalm, ii. 46. : S Larwfon, 122 . -H Doizor Garden.

[^119]:    - Charlevoix, v. 140: $\quad$ Lavefor. $\quad$ Du. Pratz, ii, 69: § Accoant of Eaff Florida, 50 . $\|$ Dobbs, 35 .

[^120]:    -Clexk, i. 142. † Mr. Grabam. Catefly, App. xxx, $\ddagger$ i. 241.

[^121]:    *Mr; Graham. $\quad+$ Cbarlevoix, v. $151 . \quad \ddagger$ Cate By, App. 30.

