

FUR-BEARING ANIMALS



MAP TO
 "FUR-BEARING ANIMALS"
 BY HENRY POLAND





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FUR-BEARING ANIMALS

IN NATURE AND IN COMMERCE

BY

HENRY POLAND, F.Z.S.



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P R E F A C E.



THIS work is intended, firstly, to aid persons engaged in trade to recognize readily, and to have a closer knowledge of the animals with which they are to some extent already familiar, and which they would have some difficulty in finding in more elaborate and scientific works. Secondly, to be a connecting link between commerce and science. The scientific portions of natural history are often described with much detail, but, though interesting and important, they should not altogether close our eyes to the relations which the animals bear to man, and the important part they play with regard to his clothing and, consequently, to his personal comfort. The Author has also endeavoured to make this work more interesting to the general public by adding small sketches of the habits of the animals described.

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INTRODUCTION.

COLOUR.

IN treating of colour, the first prominent fact we observe is the increase of pigment as approach is made towards the Equator, and the corresponding decrease towards the Poles. For instance, the Skunk, Raccoon, European Lynx, Bengal Tiger, and Ermine, are all of a darker hue the nearer they are to the Equator. There are, however, one or two exceptions, one being the Beaver, which attains its greatest depth of colour in a certain district in the Dominion of Canada, and is lighter in the Southern States of America. But this may be owing to the greater altitude in which it lives in the latter district. Another exception is the Alaska Red Fox. This is also demonstrated in the case of plants and birds, and even in the human race. The negroes, Hindoos, etc., whose dark skins seem to have been produced by exposure to the sun's rays, after many years' stay in a colder climate lose a great deal of their colour, becoming a yellow or dusky-brown hue. When it is past the season of mid-winter, the skins become lighter, and it is therefore best to trap fur-bearing animals at this time.

The new growth is always deeper in colour than the old coat.

In forests and woods the colour is generally deeper.

White has always been considered a mark of distinction. It is mentioned at an early age in Scripture (Judges, v. 10). The North American Indians set a high value on a white Buffalo skin, which they consider "good medicine," and give several horses in exchange for it. The Alaska Indians now esteem highly a pure White Marten skin, and are willing to pay five Otter or Fox skins for it. The reverence with which the White Elephants are regarded in Siam is a well-known fact. The late King Cetewayo kept a herd of royal coronation white cattle. They must have been very beautiful, as the Zulu cattle, although smaller than Alderneys, are extremely well-made and handsome. We cannot but consider the wild white cattle of Chillingham Park to be the descendants of a tame variety become feral. Their ancestors were probably imported for the sacrifices of the Druids, and their descendants became wild in the turbulent times and drove out the smaller Celtic Ox from the centre of the country. The Zebu, the sacred Ox of India, is white, and at the same time tame. These white animals, including the Charolais breed of France, seem to have been of great size and strength. They are perhaps all derived from the same ancestor as the Chillingham, and the Zebu would probably interbreed readily with the latter.

A few Albinos, drab, and parti-coloured animals are found in almost every species.

The original colour of all wild animals was probably brown, grey, and black, the first-named being the most numerous.

White animals, as a race, are only found in the extreme north. In temperate climes white, spotted, and mottled colours seem to be produced by artificial breeding.

The most ancient breed of sheep was probably black, like the Persian and Arabian sheep. Many dark sheep are found in the Highlands of Scotland, Shetland, Iceland, Italy, etc. The white seem to have been selected for the sake of the wool.

Blue, which is of such frequent occurrence in plants, is seldom found in animals, the only species in which this colour is found being the Blue-faced Mandrill. The so-called Blue Fox is rather of a deep drab.

Red is of frequent occurrence; for instance, the Red Fox, Red Squirrel, Red Monkey, Black-backed Jackal, etc.

Cold has a great effect on the colour of the fur of animals, as well as on the plumage of birds. It turns them in many instances pure white, thus preventing them from being seen in the snow by their enemies, and also serving to retain the heat in their bodies, white being a worse conductor of heat than black or drab. The White Fox, Ermine, and Hare furnish good examples of this; and amongst birds the pheasant of the Himalayas and the ptarmigan of Norway. In severe weather in this country the common Hare begins to assume the winter coat; the cheeks, back of the ears, and hind-quarters becoming white, or greyish-white, and the white of the belly extending further into the sides.

The Arctic Hare has some of the colour remaining in the tip of the ears, and the Ermine and White Fox in the tip of the tail.

QUALITY.

The quality of the fur depends to a great extent on the mildness or severity of the winter. A cold winter produces the best fur, and a mild winter the reverse.

This is not, however, always the case, for in a very rigorous winter, if food be not abundant, the animals suffer from exposure and want ; their coats become thin, and many of them die.

The quality depends also on altitude, the fur becoming thicker and finer as a greater height (and consequently lower temperature) is attained. The Snow Leopard, which is found at a height of 8,000 feet, is a good illustration of this.

Open water, such as lakes and seas, render the fur thicker. When on an exposed sea-coast the sea-air renders the fur coarse, as in the fauna of Nova Scotia, Kamschatka, and Kadiak Island.

Exposed steppes have the same effect as the sea-air, rendering the fur coarse, but to a lesser degree, as in the Turkestan Leopard.

Woods and forests render the fur finer ; for instance, the Timber or Forest Wolves have finer fur than those living on the exposed prairie.

The density of pine or fir forests is a good protection from the northern blasts, making the country warm and inhabitable, and tends to increase animal life in high latitudes. Siberia, when densely covered with forests, was much warmer than it is at the present time.

Half-seasoned skins are usually blue-pelted ; that is, with a dark-bluish stripe down the back or sides. The third quality are generally quite dark, of a deep greenish-blue hue. In the pelt of the Raccoon there is sometimes a peculiar bluish mark, shaped like a horn. This is probably owing to the skins not having been quite seasoned.

Veiny skins are usually poor in quality. The young have usually a thicker, although sometimes a coarser

coat, than the adult animals. The Mongolian Tiger is a good example. Others, such as the Phocidæ, or Hair-Seals, are only thickly-furred when quite young, losing the thick and woolly covering when they enter the water.

SIZE.

As the wild animals decrease gradually in colour towards the Poles, so they increase in size. This is a very natural effect, for in a more northern and colder latitude, animals have a great range of country to traverse in order to procure their necessary food, thus developing bone and muscle, and causing interbreeding of the species. Moreover, the elimination of the more weakly animals through rigour of climate, and the consequent greater abundance of food for those remaining, are causes likely to increase the size. Notable examples are the White Hare, Beaver, Red Fox, Skunk, Rabbit, Bay Lynx, and Tiger. The Sitka Musk-rat is a curious exception, which is difficult to account for, unless by reason of scarcity of food in this district.

The size of all animals is also increased by domestication. This is effected by crossing the various strains, and is intensified by judicious high feeding. The domestic Rabbit, and many breeds of cattle are cases in point. In-breeding makes the stock become more symmetrical, but smaller, and if carried to too great an extent, sterility ensues.

SEX.

The number of females of any species is supposed by many naturalists to exceed that of the males, but this is pure hypothesis. We only seem to have any true statistics in the case of the human race, the dog, and perhaps the Alaska Seal. In these it is generally accepted that the sexes are of almost the same number. We must not suppose that by observing an abundance of one sex in a certain district or at a certain time, that the particular sex is predominant; we find a superabundance of females in England, and a like proportion of the opposite sex in Australia.

Again, the Red Deer and others congregate in herds of different sexes at different times of the year.

Although the Fur Seal is polygamous, yet the proportion of the young is equal, the young bachelors congregating together separately, as also do the females before and after leaving the Prybilov Islands.

The males in migrating arrive several weeks before the females, as in the case of birds.

The sexes of cattle and sheep are of about equal numbers.

FASHION.

Fashion exercises a great influence over the prices of furs. Skins, that for some years have been neglected, and almost unsaleable, owing to the vagaries of fashion, suddenly assume a high value, an advance of 50 or 100 per cent. in these days of quick communication and transit not being much thought of, although a rise of

30 or 40 per cent. was considered sufficient a few years ago. Any fashion, if constantly kept up, would probably lead to the extinction of many species, but its frequent changes give the animals time to increase. The Hudson's Bay Company have a good plan of passing over for a time any district that is exhausted. The furs of a country are, as a rule, only used to a minor extent there, a great number being exported, and, on the other hand, many foreign ones are imported, the want of one country being supplied by the abundance of another, thus stimulating and promoting commerce.

QUANTITIES.

The immense number of fur skins imported will perhaps astonish many readers, and the more so, as the importation of the skins of many animals is increasing every year. Some quantities, however, are stationary; and others are on the decrease. Certain wild animals, especially those of large size, are steadily decreasing; but, on the other hand, many animals, such as the Raccoon, American and Australian Opossum, increase with the settlement of the country, feeding in the cultivated fields, and thus procuring food more readily than when the land was unreclaimed.

The prolific nature of the Rabbit was well known in former times, and its enormous increase in Australia in a few years, a decade at most, does not cause the same astonishment; it is, moreover, a matter of history that the Rabbit almost devastated a small island in ancient times.

Another cause for the increase in the quantities captured is the facility of transit by means of railways and steamers.

Quantities are nevertheless subject to a certain degree to the demand. If the fashion sets in for a certain fur, it is soon known to the trappers, who pursue the animal with greater vigour, and capture as large a quantity as possible, neglecting those whose skins are in less demand, and which in some cases hardly pay the expenses of trapping, collecting, and shipping. The Indians, on the other hand, trap all sorts of fur-bearing animals, and refuse to do business with a collector if he will not buy all the kinds. Having therefore paid too much for the unmarketable skins, and perhaps too little for the more saleable articles, the collector is obliged to re-value his purchases after the settlement of the transactions. In the subjoined list of the Hudson's Bay Company's sales, the quantities quoted are those that are imported towards the end of the previous year, excepting those shipments which are delayed by the ice to the north of Hudson's Bay; these do not arrive till the year after. The goods from the North-West district were originally sold in the year in which they arrived, but since the September sales have been suspended, they are sold the following year. As they take much longer in the voyage than those from the other districts, they have been quoted for the year in which they arrive.

QUANTITIES OF EUROPEAN FURS.

	European Badger.	Cat.	Ermine.	Stoneard Baum Marten.	Fitch.	Russian Sable.	Rabbit.	Squirrel.
—								
1820	584	9,558	44,030	280	146,167	—	293,240	115,550
1821	659	12,483	32,020	301	102,507	—	277,971	116,532
1822	914	21,323	21,795	4,090	139,845	120	463,729	274,371
1823	1,520	27,372	32,715	800	206,178	40	430,663	281,106
1824	2,204	45,777	56,956	13,417	232,324	40	315,627	606,862
1825	2,197	20,059	37,366	43,280	320,130	—	500,070	615,137
1826	667	9,875	16,555	5,388	239,457	—	195,729	457,254
1827	676	9,200	38,302	8,200	282,482	—	151,759	789,488
1828	2,160	13,756	32,976	22,200	269,919	180	230,571	946,891
1829	2,903	13,452	97,055	19,826	275,905	220	261,956	1,530,497
1830	2,991	4,651	73,119	47,469	246,618	360	366,186	1,316,018
1831	2,365	5,535	118,049	48,117	240,955	424	868,084	1,176,314
1832	2,102	7,968	32,857	51,708	53,074	—	563,242	2,369,264
1833	2,395	8,201	58,102	94,239	175,722	280	498,067	1,358,849
1834	1,844	42,417	174,203	47,234	206,368	1,595	646,123	1,450,542
1835	1,247	13,541	167,691	50,424	50,427	900	312,186	1,589,884
1836	1,043	48,255	264,606	98,012	121,534	240	669,398	2,254,564
1837	1,720	18,768	143,433	112,388	66,213	20	444,538	2,267,474
1838	2,248	14,677	118,822	81,135	65,172	—	137,812	2,525,034
1839	1,898	21,416	89,599	107,539	103,367	360	314,139	2,730,826
1840	559	11,187	37,473	87,993	61,246	—	160,303	1,499,112
1841	1,187	20,038	36,471	109,646	105,828	20	191,016	1,890,060
1842	1,451	9,546	101,618	73,864	73,202	310	155,845	2,148,897
1843	1,816	1,908	97,802	99,802	171,900	195	98,250	1,949,879
*1844	1,949	7,835	105,656	119,375	113,504	40	45,927	2,289,838

* The duties having been taken off the quantities can no longer be determined.

QUANTITIES OF AMERICAN

	Coat Beaver.	Parchment Beaver.	Marten.	Otter.	Lynx.	Fox.	Wolver- inc.
1752	10,143	33,675	24,639	1,296	4,009	913	670
1753	9,061	29,041	25,725	1,338	7,179	1,015	712
1754	7,295	22,270	10,787	1,123	4,198	638	721
1755	7,441	27,755	9,671	1,191	1,444	753	868
1756	7,825	25,042	6,050	1,192	838	1,222	847
1757	9,846	26,388	5,352	1,339	631	572	751
1758	8,000	22,886	7,882	1,305	917	352	652
1759	7,000	20,110	20,295	1,250	1,881	2,445	934
1760	9,900	23,126	22,465	1,514	3,842	4,755	871
1761	13,300	30,446	18,547	2,232	5,338	2,719	952
1762	13,000	36,265	13,389	2,557	5,820	2,057	1,221
1763	9,353	24,881	17,332	1,478	6,000	2,207	1,322
1764	10,500	23,088	11,814	1,553	3,005	2,892	843
1765	14,450	30,450	7,558	1,935	1,771	1,536	755
1766	10,400	28,536	8,066	2,144	1,138	2,445	486
1767	10,500	23,436	20,768	1,752	1,088	3,323	885
1768	6,300	17,950	19,949	1,438	1,128	1,146	473
1769	6,750	18,767	15,897	1,171	2,508	952	481
1770	9,500	25,273	26,047	1,296	4,012	3,583	604
1771	9,900	22,427	22,496	1,605	4,225	2,126	933
1772	8,350	19,851	12,626	1,490	5,463	1,451	742
1773	5,700	17,689	9,891	1,579	2,301	1,552	570
1774	4,600	19,472	16,739	1,958	1,744	609	407
1775	4,050	16,668	19,742	1,698	705	911	451
1776	4,900	15,964	18,143	1,773	1,157	674	337
1777	5,700	25,597	17,798	2,144	2,823	887	434
1778	4,300	20,033	16,730	1,584	2,478	558	199
1779	2,900	17,320	17,484	1,343	1,245	988	193
1780	7,070	26,867	22,060	2,401	3,168	2,188	344
1781	6,360	35,763	18,277	2,174	2,966	2,149	396
1782	2,050	18,752	7,466	2,306	1,553	593	121
1783	1,500	13,100	13,420	1,750	960	540	87
1784	2,500	15,500	13,800	1,400	980	440	90
1785	3,200	24,350	16,322	1,996	822	515	218
1786	3,950	25,095	23,365	2,145	801	999	234
1787	3,800	37,100	27,960	3,000	1,080	1,620	250
1788	2,900	38,320	25,070	2,940	2,050	1,440	270
1789	4,900	41,690	23,901	2,674	1,550	3,778	242
1790	3,600	41,530	18,847	2,822	970	2,290	242
1791	5,276	49,738	20,954	3,701	1,603	5,823	202
1792	3,600	46,930	21,095	2,983	1,400	6,000	300
1793	4,724	42,242	11,639	3,338	1,546	2,130	295
1794	4,024	39,517	8,627	3,737	989	1,837	296
1795	3,664	51,123	15,547	4,667	1,102	2,834	344
1796	2,516	48,697	25,787	4,364	1,149	2,683	312
1797	2,901	44,516	30,374	4,151	1,625	8,780	388
1798	2,595	43,418	18,488	4,006	1,541	11,754	410
1799	1,728	39,995	22,875	3,997	2,269	7,440	397

FURS (HUDSON'S BAY CO.).

Bear.	Wolf.	Mink.	Musk-rat.	Raccoon.	Elk and Deer.	Rabbit, Amer.	Fishor.
350	988	233	553	..	534	...	...
375	1,820	88	285	...	419	...	...
250	1,071	...	...	...	...	...	...
414	1,450	...	...	...	...	...	...
443	1,927	...	...	...	...	...	...
333	1,621	...	...	...	...	...	...
340	2,452	...	...	...	...	...	...
367	4,008	..	...	...	...	...	...
434	3,395	...	...	...	...	...	...
621	4,718	...	...	...	...	...	...
585	3,212	...	...	...	...	...	...
541	2,731	147	2,789	...	...	...	...
648	4,073	...	...	...	1,072	...	...
494	3,461	120	1,269	...	1,927	...	...
706	4,226	133	...	...	...	...	...
732	5,905	302	5,279	...	2,385	...	534
409	2,914	307	1,458	...	4,010	...	110
442	3,080	174	2,312	...	590	...	116
373	5,476	160	1,199	...	2,274	...	160
401	3,565	129	622	...	3,237	...	120
275	2,703	94	943	...	3,944	...	97
269	4,263	116	2,323	...	4,499	...	67
250	583	163	5,913	...	3,127	...	13
226	1,955	163	4,909	...	3,920	...	30
243	383	192	5,626	...	3,206	...	36
309	613	290	4,357	307	3,945	...	99
314	375	197	3,700	300	1,252	..	36
219	30	263	4,095	416	500	...	46
309	2,644	221	6,100	289	6,421	...	56
310	1,166	218	4,750	300	3,025	...	95
406	375	150	2,750	430	516	...	85
350	1,430	200	5,830	...	100	...	59
230	480	150	2,500	540	700	...	40
196	1,820	188	4,040	488	1,403	...	74
172	2,393	371	5,161	401	2,379	...	95
170	3,500	380	5,700	840	1,490	...	80
210	2,580	366	4,360	660	3,665	8,200	30
384	2,423	464	5,197	502	2,980	4,440	181
341	3,038	308	8,801	406	3,430	4,602	100
479	3,237	567	9,004	604	3,036	9,294	182
450	3,450	388	5,250	...	4,060	...	145
372	3,007	323	5,147	347	1,820	862	146
459	2,619	384	12,776	664	2,923	4,130	282
629	3,741	876	19,532	1,075	3,358	17,470	344
466	4,734	1,035	10,390	733	4,217	12,072	242
526	7,681	1,145	12,708	867	2,876	9,646	457
549	8,264	1,148	9,309	910	4,097	7,917	465
675	11,636	1,240	10,557	2,209	3,938	14,447	584

QUANTITIES OF AMERICAN FURS

	Coat Beaver.	Parch't Beaver.	Marten.	Otter.	Lynx.	Fox.	Wolver- ine.	Bear.	Wolf.
1800	1,668	35,037	30,053	3,694	3,708	10,164	495	605	5,693
1801	1,406	33,253	22,949	3,486	4,495	32,754	466	672	3,122
1802	2,150	37,187	18,265	3,911	3,658	17,155	377	683	4,666
1803	1,642	32,127	9,893	3,897	2,083	7,624	365	607	4,035
1804	1,668	31,737	17,182	4,160	1,091	3,109	358	560	3,252
1805	1,862	28,083	22,318	4,548	820	8,322	356	529	3,199
1806	1,011	20,732	40,182	3,447	1,052	13,284	313	566	4,260
1807	1,050	29,759	40,476	4,320	1,588	3,052	401	759	4,181
1808	1,684	32,884	33,706	5,077	2,788	3,741	163	1,060	3,704
1809	1,425	32,025	2,350	866	277	2,700	37	162	97
1810	1,274	28,720	51,807	8,206	7,029	7,114	401	1,560	16,330
1811	1,060	15,524	11,339	3,044	2,593	2,019	155	425	3,162
1812	1,525	41,873	24,425	6,492	1,884	5,273	314	1,036	5,983
1813	672	18,066	9,990	3,425	167	1,319	163	684	1,280
1814	462	17,356	23,106	3,947	122	2,353	116	846	505
1815	698	10,380	21,787	2,908	131	8,802	166	466	1,520
1816	...	11,243	16,628	2,297	116	1,923	38	154	20
1817	651	27,815	56,648	5,837	347	3,704	182	1,094	2,189
1818	551	25,493	65,139	7,753	845	2,979	291	1,568	5,077
1819	480	17,356	65,851	4,211	1,533	3,811	257	763	2,994
1820	281	15,683	62,411	3,747	2,901	2,964	247	260	627
1821	297	20,565	69,995	5,394	4,128	3,847	18	1,511	3
1822	210	59,847	87,884	7,331	8,986	8,048	778	2,700	285
1823	706	46,202	62,861	8,069	7,173	5,119	579	2,312	384
1824	1,309	76,060	61,216	10,528	6,456	3,309	631	2,183	727
1825	800	66,600	61,520	9,625	5,104	3,730	694	3,139	1,141
1826	1,652	61,400	88,839	7,895	5,161	10,011	590	2,118	1,568
1827	472	51,125	105,561	9,051	7,254	2,757	513	2,600	1,057
1828	...	57,200	83,417	10,552	11,550	7,706	402	2,999	1,269
1829	...	65,614	73,860	11,192	20,558	4,122	454	1,941	1,261
1830	...	25,718	25,524	3,795	24,611	4,534	652	1,583	2,196
1831	...	87,000	96,450	18,100	38,200	4,453	1,242	3,490	3,140
1832	lbs.	70,100	37,954	13,012	16,347	4,674	1,472	4,158	6,371
*1833	264	32,203	17,732	5,442	870	522	114	1,500	567
†1834	1,074	98,288	64,490	22,303	14,255	9,937	1,571	7,451	8,484
1835	860	78,908	61,005	15,487	6,990	15,694	1,265	4,127	3,722
‡1836	239	51,788	56,893	10,208	4,440	2,378	145	2,191	958
§1837	304	82,927	156,168	15,934	31,887	25,008	2,166	7,563	7,031
1838	165	61,868	83,709	10,792	45,152	6,726	948	4,161	1,875
1839	198	56,288	63,129	9,465	66,691	8,626	1,328	4,087	6,869
1840	220	55,431	56,860	8,636	35,843	12,681	1,998	4,923	8,185
1841	322	50,900	57,848	7,153	45,143	8,407	2,034	5,409	9,550
1842	372	40,305	63,529	5,960	10,034	7,115	1,647	5,576	8,696
1843	184	39,086	70,532	6,820	8,247	9,061	1,229	6,040	10,733
1844	409	38,252	71,954	6,971	7,173	11,104	1,080	5,700	13,204
1845	484	41,111	103,621	6,398	10,359	16,312	1,075	4,329	10,191
1846	190	65,189	148,670	8,168	21,180	12,597	938	6,339	8,522
1847	211	26,892	146,137	6,648	31,062	19,759	985	5,630	10,725
1848	137	40,845	115,323	9,266	47,065	20,219	1,126	6,003	7,969

* YF, MR not arrived this year.

† Including YF, MR of 1833.

(HUDSON'S BAY CO.)—continued.

Mink.	Musk-rat.	Rac- coon.	Elk and Deer.	Rabbit, Amer.	Fisher.	Swan.	Casto- run.	Badger, Amer.
1,344	15,272	1,979	5,185	21,825	578	...	...	...
1,073	15,894	2,329	2,642	24,600	393	...	...	...
923	8,534	1,635	3,836	18,099	418	...	...	...
678	10,757	1,522	3,556	10,613	762	...	...	...
847	16,153	890	4,314	9,856	228	168	...	...
1,899	31,100	1,062	4,992	28,048	211	435	...	...
1,880	21,046	1,500	4,441	34,746	417	396	...	...
2,662	14,886	1,013	4,059	54,336	502	1,192	...	...
3,185	24,660	1,173	5,339	25,914	714	1,067	...	...
706	21,167	1,152	45	34,210	164	1,652	...	...
4,499	32,564	1,071	4,352	101,072	980	4,631	...	...
660	25,268	101	513	22,580	614	517	...	...
398	44,144	168	3,854	15,003	570	588	...	...
541	80,381	96	141	2,506	317	4,305	...	...
1,065	138,772	46	324	9,105	550	3,884	...	...
1,324	99,534	70	48	19,855	338	3,835	...	...
533	18,983	...	...	19,427	51	25	...	...
2,475	154,070	22	35	77,052	395	3,670	...	...
3,567	63,357	87	772	14,268	962	2,463	...	...
1,638	62,431	...	49	16,955	802	279	...	...
1,722	66,236	300	258	19,682	779	718	...	...
2,647	113,914	350	300	16,650	879	8	...	...
4,667	156,279	290	992	9,561	1,805	447	...	...
4,549	217,646	64	578	970	1,289	1,507	...	...
5,929	306,891	51	3,221	830	1,688	3,377	...	...
5,559	235,000	78	712	...	1,820	3,911	...	...
6,952	397,597	153	1,633	2,330	1,440	5,817	...	...
11,119	473,298	138	1,000	5,444	1,325	5,052	...	...
13,969	859,093	79	2,779	...	1,321	4,307	...	...
16,592	1,062,513	107	3,340	...	1,482	3,734	...	...
7,672	396,300	...	...	...	974	5,636	...	...
22,700	728,000	177	...	1,330	3,400	3,559	lbs.	...
9,990	387,000	372	...	...	2,970	4,994	2,707	...
6,506	63,374	210	...	...	682	...	759	...
25,100	694,092	713	...	...	5,296	7,918	3,462	...
17,809	1,111,646	522	...	...	2,479	4,703	3,029	...
16,049	161,053	1,900	...	...	1,435	12	1,475	...
27,750	838,549	585	...	...	6,115	6,600	2,788	...
15,641	188,545	273	...	...	3,590	3,251	2,030	...
19,141	573,600	1,115	...	...	4,962	2,704	1,520	...
22,190	198,236	1,034	...	...	6,401	2,129	1,667	...
17,093	100,640	1,175	2,492	...	5,293	2,002	1,492	...
17,780	549,577	1,820	3,790	...	4,040	1,940	1,161	...
25,382	543,155	1,898	3,790	...	4,302	2,456	773	883
24,855	265,117	1,763	2,161	...	4,504	2,576	1,055	1,387
32,031	295,617	1,467	306	285,607	4,678	2,453	2,060	1,115
53,264	303,172	1,305	3,518	29,006	5,805	1,922	1,746	1,225
36,621	248,710	1,140	1,971	25,840	5,269	1,573	1,657	798
37,123	224,347	2,091	2,395	...	5,894	1,522	1,170	769

‡ W not arrived this year.

§ Including W of 1836.

QUANTITIES OF AMERICAN FURS

	Coat Beaver.	Parch't Beaver.	Marten.	Otter.	Lynx.	Fox.	Wolver- ine.	Bear.	Wolf.	Mink.
1849	135	32,502	65,558	11,810	43,253	15,977	1,465	6,342	12,045	34,712
1850	452	49,517	66,069	9,155	20,604	10,842	1,454	5,876	9,783	24,772
1851	147	62,130	80,005	8,296	9,303	12,107	1,374	6,021	8,087	17,827
1852	61	52,430	90,633	9,221	6,722	17,070	1,508	8,340	8,558	27,413
1853	...	60,691	85,603	12,318	4,850	14,883	1,104	6,864	7,228	39,686
1854	...	62,914	127,019	11,335	4,907	16,003	1,036	6,612	13,830	49,373
1855	...	72,425	177,052	10,223	10,764	23,620	1,052	9,027	8,515	58,628
1856	...	76,825	175,494	13,992	21,511	25,178	1,065	8,814	9,499	54,924
1857	...	86,414	132,752	12,433	32,264	25,271	933	7,326	7,451	65,522
1858	...	94,053	136,451	13,011	33,038	22,882	1,099	8,259	12,834	73,066
1859	...	106,797	120,430	12,454	27,460	24,816	1,319	8,539	8,781	55,720
1860	...	107,745	77,844	13,664	15,968	20,801	1,394	7,654	5,980	32,548
1861	...	105,562	74,062	14,205	7,927	16,809	1,547	7,487	3,909	38,306
1862	...	109,636	78,039	13,659	4,616	17,479	1,295	7,036	3,904	45,534
1863	...	127,674	105,659	14,527	4,570	21,774	1,374	7,792	8,204	59,599
*1864	...	118,118	115,430	12,606	4,760	17,670	1,212	7,349	5,427	63,724
†1865	...	155,880	145,889	19,991	17,044	22,344	1,057	8,249	12,378	49,349
1866	...	150,192	115,560	14,626	34,732	25,829	706	7,687	6,610	53,113
1867	...	145,654	96,114	14,609	68,097	42,912	927	6,360	7,427	73,752
1868	...	158,110	163,088	12,673	70,372	48,836	1,643	8,116	9,318	81,769
1869	...	129,039	67,072	11,818	39,119	28,542	1,396	8,600	5,047	35,081
1870	...	173,181	50,193	12,623	19,992	17,797	1,824	7,778	5,169	28,184
1871	...	174,461	54,333	12,778	8,806	15,861	1,747	7,830	3,701	35,660
1872	...	157,764	64,587	11,431	5,679	25,400	1,637	9,357	7,016	44,352
*1873	...	105,369	62,488	8,875	4,839	20,501	1,761	6,884	3,470	55,496
†1874	...	139,393	125,733	11,766	10,045	23,552	1,386	7,163	2,565	63,810
1875	...	129,976	87,803	12,414	17,849	20,555	1,265	6,499	2,417	83,319
1876	...	126,959	84,439	11,559	18,868	20,145	1,282	7,737	2,071	79,206
1877	...	145,706	83,835	12,278	43,575	52,693	1,881	8,680	3,128	90,080
1878	...	147,263	55,439	13,201	37,490	26,168	2,000	7,565	2,575	63,318
1879	...	132,099	52,578	9,988	21,291	22,594	1,909	7,557	4,813	36,360
1880	...	120,836	46,529	10,124	14,767	18,437	2,322	8,336	3,032	38,823
1881	...	119,698	54,370	10,317	10,053	14,855	1,621	7,862	1,486	40,834
1882	...	118,728	66,821	12,292	7,581	14,545	1,881	9,139	2,081	56,882
1883	...	104,459	70,802	9,207	8,016	13,333	1,568	5,515	1,555	52,258
*1884	...	119,549	78,755	12,270	27,119	6,969	1,528	10,808	1,820	110,610
§1885	...	102,589	78,857	10,867	51,414	19,039	1,198	8,386	1,226	76,393
||1886	...	83,589	50,842	8,322	73,878	19,947	1,244	8,283	1,161	64,215
¶1887	...	102,745	72,939	11,597	78,555	35,157	2,439	9,763	4,749	82,941
1888	...	33,061	64,179	8,748	33,720	27,611	2,020	9,139	3,330	43,641
1889	...	73,355	72,713	9,280	18,726	18,649	2,243	11,643	2,495	35,400
**1890	...	64,246	64,639	8,180	11,445	22,017	1,388	10,542	4,237	29,363

* MR, EM not arrived this year. † Including MR EM, of 1864. ‡ Including MR, EM of 1873.
 § Part of YF not imported. *Canis Owens* wrecked.

(HUDSON'S BAY CO.)—continued.

Musk-rat.	Rae-coon.	Elk and Deer.	Rabbit, Amer.	Fisher.	Swan.	Castor-um, lbs.	Badger, Amer.	Skunk.	Hair Seal.	Fur Seal.
179,075	1,289	653	24,301	7,500	1,510	1,796	1,140	1,263	1,303	...
192,261	1,442	1,326	15,621	6,522	1,016	1,728	738	...	1,064	...
291,281	1,712	...	26,781	5,027	1,093	1,264	1,471	1,453	122	...
488,238	1,633	...	54,827	6,053	1,009	2,388	1,710	1,618	953	...
527,161	1,481	...	82,430	5,218	1,304	2,849	956	4,459	1,750	...
319,444	1,052	459	82,814	4,049	1,233	3,009	900	5,959	2,404	...
260,805	1,978	283	91,316	5,333	1,043	3,230	1,240	11,318	2,777	...
295,847	1,370	58	70,685	5,618	646	3,179	999	7,728	5,365	...
311,953	1,929	149	84,489	5,642	775	3,994	1,185	8,124	8,368	...
243,862	2,140	2,637	95,534	6,258	802	3,976	1,369	8,483	14,002	...
206,156	1,959	3,081	62,543	7,633	840	4,181	1,773	9,970	12,761	...
205,471	2,560	2,713	29,590	6,415	1,028	4,573	1,213	3,674	12,095	...
330,527	2,871	2,242	15,409	5,984	1,028	4,046	1,091	3,204	17,833	...
356,789	3,376	4,279	18,516	5,822	864	3,103	1,642	1,908	14,250	...
429,304	3,980	10,491	39,258	5,036	851	4,075	1,295	2,332	16,692	...
367,302	2,384	3,200	5,052	4,715	771	2,942	1,562	2,063	15,145	...
424,875	4,150	3,825	155,461	5,310	387	5,335	1,235	2,765	16,331	...
312,543	4,832	3,715	144,519	4,432	989	5,298	618	2,755	14,931	...
610,280	24,783	4,170	106,279	5,951	247	3,082	1,644	6,067	14,845	...
469,775	5,811	6,851	45,909	7,376	725	3,674	1,781	6,115	9,654	...
275,963	4,887	8,744	22,668	8,917	303	4,664	2,288	7,062	3,062	...
436,509	2,411	9,480	631	6,349	2,596	6,142	1,986	3,293	2,722	...
590,916	2,967	6,444	3,070	6,509	307	3,547	2,274	2,621	9,821	...
711,174	1,630	9,032	9,932	4,348	305	3,125	2,786	2,162	3,445	...
659,159	3,582	6,858	6,434	3,271	271	3,209	1,512	1,206	8,775	891
474,942	3,114	6,995	60,520	3,272	266	1,923	1,870	1,789	6,125	2,344
626,711	7,193	12,058	49,053	3,274	303	2,911	2,280	2,644	12,848	2,447
583,319	2,147	11,229	50,934	3,262	303	1,277	2,273	2,444	3,565	316
464,297	999	13,623	104,123	5,706	164	1,610	2,474	6,919	4,435	813
511,993	506	9,506	87,722	5,750	123	1,400	2,031	8,263	3,401	1,779
519,963	607	6,700	65,585	5,155	188	2,951	2,866	8,140	7,077	1,136
830,100	813	6,433	17,593	4,987	250	2,516	1,867	6,768	5,720	3,308
1,028,187	534	5,056	10,950	5,171	198	3,286	1,428	5,239	2,192	3,085
1,081,489	803	2,922	17,830	4,977	222	1,571	1,499	7,163	5,963	5,633
1,082,999	354	...	13,595	3,784	112	2,640	746	6,393	1,896	134
817,003	142	...	13,072	4,170	246	2,020	1,330	12,628	380	573
347,050	124	...	45,118	4,029	91	3,082	1,473	21,189	2,824	6
380,022	325	1,553	53,522	4,492	57	1,450	749	10,926	4,284	2,071
344,818	239	.	136,726	6,138	134	2,501	1,109	16,322	1,652	2,025
223,615	217	803	137,685	5,387	109	2,033	777	11,298	1,278	2,583
322,360	153	92	94,150	6,530	93	2,372	1,301	10,747	1,632	482
574,742	172	150	36,286	5,658	38	1,646	2,445	12,583	2,195	279

§ Including MR, EM of 1884. No MR, EM of 1885; lost at sea.

¶ With part of YF 1886.

** Part of YF not imported.

QUANTITIES OF AMERICAN FURS

	Beaver.	Bear.	Otter.	Fisher.	Marten.	Wolf.	Wolver- ine.
1763	75,040	8,340	8,060	2,800	42,247	608	59
1764	88,000	5,000	7,000	3,000	30,000	200	100
1765	66,664	4,540	6,126	1,183	22,340	287	57
1766	92,295	8,902	10,669	3,816	35,085	324	104
1767	75,905	6,625	12,383	3,436	57,371	694	143
1768	55,064	6,582	7,773	1,895	44,490	646	74
1769	91,388	13,982	11,753	2,688	59,050	1,059	211
1770	97,182	11,201	12,000	4,345	48,028	815	113
1771	95,288	6,872	12,876	3,983	51,331	1,234	172
1772	107,829	9,289	13,410	3,123	45,980	2,380	337
1773	94,681	3,429	14,176	2,912	29,841	2,875	318
1774	98,827	5,912	14,737	2,899	38,263	5,332	358
1775	97,148	11,222	14,668	3,884	47,840	5,393	324
1776	92,612	6,169	11,953	3,397	56,787	8,279	323
1777	120,800	11,530	19,250	3,740	43,320	5,550	360
1778	109,000	12,100	14,600	3,000	45,500	6,700	400
1779	97,000	14,000	13,600	4,100	35,000	6,300	200
1780	101,500	10,000	16,000	4,200	37,000	6,300	200
1781	91,500	5,500	13,000	2,300	22,000	5,400	180
1782	116,000	9,550	15,100	3,300	24,000	2,900	220
1783	105,000	12,500	19,700	3,700	43,300	5,750	300
1784	126,600	14,200	21,900	4,100	42,300	7,200	300
1785	121,000	12,400	19,600	4,500	36,000	7,700	350
1786	116,000	17,000	22,700	4,000	47,000	13,000	500
1787	140,000	18,200	32,800	6,800	73,000	9,700	700
1788	127,000	14,000	19,300	4,600	52,000	9,500	450
1789	164,823	16,331	21,303	5,547	32,341	5,890	537
1790	161,500	16,000	21,000	5,500	33,000	5,800	550
1791	173,500	14,600	22,500	6,000	37,000	9,600	650
1792	165,000	20,000	21,000	6,300	61,000	8,300	750
1793	172,000	19,700	21,600	5,700	25,000	9,700	700
1794	152,800	17,200	47,200	4,800	37,000	7,600	950
1795	144,000	15,000	18,500	6,200	45,000	5,700	950
1796	130,500	15,800	16,700	3,700	31,000	6,700	950
1797	56,000	8,800	9,500	3,600	35,000	4,000	450
1798	110,000	17,000	14,500	5,500	45,000	8,700	750
1799	114,200	21,000	16,000	5,400	34,500	5,900	780
1800	129,200	24,500	18,000	6,000	40,000	2,400	1,000
1801	116,500	22,600	21,000	5,300	23,000	3,000	1,300
1802	140,000	17,000	19,000	6,300	20,000	4,600	1,400
1803	93,200	23,000	17,000	7,000	32,000	5,600	1,400
1804	110,000	17,600	20,000	6,000	25,000	8,200	1,300
1805	91,300	19,300	15,000	4,300	13,800	4,600	1,000
1806	106,000	16,000	12,000	7,000	54,000	1,000	200
1807	114,000	10,500	8,400	5,400	46,000	...	50
1808	94,200	1,300	7,000	3,900	10,000	...	...
1809	101,800	550	6,200	3,000	300	...	450
1810	101,100	8,000	3,500	2,600	500	50	550

(UNITED STATES, CANADA, ETC.).

Lynx.	Mink.	Fox.	Raccoon.	Musk-rat.	Elk.	N.A. Deer.	Castor- turus, lbs.
4,150	1,030	2,300	39,000	6,080	1,568	6,511	...
4,000	1,100	6,500	37,000	12,000	700	3,000	...
2,851	1,235	1,840	54,951	32,099	1,038	2,917	...
4,435	1,876	1,723	101,066	47,011	2,078	8,670	2,225
3,905	3,904	2,764	56,750	17,644	3,348	4,808	1,964
2,160	1,815	1,010	38,316	15,826	5,223	6,282	590
2,891	3,433	3,345	117,307	25,826	7,079	15,828	2,257
5,373	3,524	2,521	52,504	29,769	5,788	17,695	2,399
8,021	2,967	3,386	43,025	30,204	4,050	32,565	2,303
7,179	3,934	3,096	51,503	25,022	6,594	46,470	289
8,147	2,970	3,300	37,468	34,229	3,070	28,734	2,645
6,360	3,121	3,431	40,157	52,712	4,633	55,769	...
11,051	4,855	6,006	14,586	54,451	7,815	85,130	...
9,588	3,660	4,488	72,538	40,654	7,868	89,199	...
12,840	6,060	10,480	198,500	44,180	4,675	125,510	...
12,000	4,800	10,600	173,000	66,800	8,200	130,000	1,500
8,500	6,700	12,000	125,000	62,000	4,000	116,000	1,200
10,000	8,000	13,000	19,700	64,000	5,500	138,000	...
5,000	6,800	9,500	85,000	73,000	5,800	71,000	...
6,700	4,700	13,400	80,500	50,400	5,700	95,000	2,000
8,300	7,200	5,200	95,000	69,000	5,600	123,000	1,000
9,400	9,300	7,800	173,600	87,800	7,500	227,000	1,000
9,700	9,300	6,000	96,000	133,000	8,800	158,000	1,000
5,600	9,000	6,000	105,000	190,000	6,000	117,000	1,400
8,700	35,500	13,900	145,000	269,000	19,000	142,000	1,500
8,900	11,000	7,000	114,000	31,000	6,700	140,000	2,000
8,990	17,714	8,540	161,180	201,840	4,040	94,000	4,000
9,000	17,700	8,500	161,000	200,000	1,000	94,000	4,000
9,400	21,000	11,000	178,000	147,000	2,000	86,000	6,000
10,000	16,000	12,000	182,000	138,000	1,000	129,000	3,000
10,500	22,700	8,500	187,000	29,000	600	125,000	5,000
9,200	12,800	6,100	130,000	16,000	250	130,000	2,000
9,400	8,600	8,600	125,000	82,000	600	165,000	2,000
8,300	9,000	8,000	130,500	93,000	800	168,000	1,500
5,700	7,000	9,600	109,000	80,000	300	80,000	200
9,500	8,400	11,000	185,000	50,000	800	153,000	1,600
12,500	8,000	7,800	130,000	6,000	1,000	160,000	2,500
16,000	8,000	14,000	108,000	12,000	700	197,000	1,000
18,000	10,500	29,000	95,000	...	1,200	215,000	400
17,000	10,000	13,090	145,000	25,000	1,400	152,000	200
14,000	12,000	10,000	150,000	76,000	600	204,000	1,300
15,000	12,000	9,000	180,000	93,000	1,100	246,000	300
8,800	11,200	9,100	124,000	66,100	1,200	207,500	700
5,300	15,000	10,000	125,000	15,500	800	216,000	600
6,200	9,400	1,500	80,000	1,000	1,050	163,000	...
5,800	9,000	1,000	123,000	5,400	600	103,500	...
5,900	2,000	200	47,000	15,000	860	81,600	150
2,800	200	800	39,000	9,000	500	83,000	100

QUANTITIES OF AMERICAN FURS

	Beaver.	Bear.	Otter.	Fisher.	Marten.	Wolf.	Wolverine.	Lynx.	Mink.	Fox.	Raccoon
1811	80,000	400	2,200	2,500	...	...	...	...	...	300	28,000
1812	93,000	4,500	7,800	1,100	600	...	1,500	7,800	...	4,800	1,000
1813	70,000	7,000	7,500	2,300	...	5,200	800	4,000	200	1,800	...
1814	67,000	2,600	7,000	4,600	25,000	200	450	1,700	4,000	1,800	3,000
1815	57,500	2,500	5,600	2,500	36,000	100	100	200	4,610	3,000	19,000
1816	40,600	7,000	9,500	3,500	30,000	1,000	200	2,300	9,000	4,000	45,000
1817	55,000	3,400	7,200	3,700	67,000	3,100	850	2,700	7,500	3,700	15,000
1818	55,000	3,800	9,600	3,900	84,000	2,000	300	4,000	9,000	3,600	15,000
1819	51,000	5,500	10,000	4,000	76,000	1,800	500	6,000	11,000	6,000	30,000
1820	56,000	3,000	6,000	2,400	105,000	2,600	400	6,200	7,500	6,000	15,300
1821	58,300	7,000	8,500	4,000	80,000	1,100	400	10,000	11,000	13,000	143,000
1822	65,652	6,572	9,471	3,855	103,098	1,109	394	12,230	31,435	15,202	151,622
1823	10,016	4,063	3,096	3,474	26,254	31	33	3,946	24,149	18,072	79,390
1824	2,616	3,519	1,740	5,440	33,898	146	6	5,913	19,837	9,031	42,834
1825	9,677	9,006	2,600	5,824	38,054	521	12	7,148	42,617	22,131	52,643
1826	5,923	9,851	3,899	5,829	63,812	900	43	7,120	55,901	34,703	83,257
1827	4,906	5,958	2,524	6,847	42,451	149	12	5,190	44,963	18,810	76,405
1828	12,581	9,640	1,440	5,681	82,257	194	37	6,108	64,855	39,317	79,415
1829	9,388	10,616	4,148	5,518	66,738	299	28	5,968	60,560	15,740	110,340
1830	7,332	12,730	7,510	7,140	82,256	750	16	9,220	90,550	52,990	172,470
1831	12,002	8,789	3,624	8,920	78,800	727	25	9,420	102,882	53,648	209,497
1832	5,753	13,569	4,160	11,143	57,151	829	7	8,318	95,712	67,647	347,552
1833	17,871	20,387	5,645	6,215	53,687	2,400	138	16,940	93,216	69,730	363,288
1834	13,641	13,707	3,920	6,003	59,240	2,370	557	5,529	96,550	71,425	219,164
1835	3,318	7,590	2,922	5,700	51,425	2,041	60	2,486	116,447	61,994	274,651
1836	4,460	9,974	2,840	4,832	53,814	1,720	25	8,982	104,471	62,099	273,510
1837	17,065	4,202	10,848	5,587	55,780	1,750	15	9,350	78,689	68,458	204,106
1838	10,559	5,080	9,283	5,130	56,245	1,442	11	6,766	75,823	58,375	177,017
1839	9,024	5,204	1,380	4,850	71,300	1,750	10	8,725	95,700	52,249	250,100
1840	975	4,819	7,359	3,486	58,900	1,112	14	8,982	101,450	41,041	283,088
1841	6,587	6,360	8,720	6,135	46,150	3,300	15	14,210	116,400	61,549	357,200
1842	5,638	6,417	7,136	6,130	39,650	5,460	34	9,580	121,500	63,316	340,200
1843	12,022	5,205	7,550	4,994	37,963	2,090	...	5,077	118,860	67,162	392,474
1844	7,361	6,152	6,240	5,370	31,299	375	...	3,852	107,872	59,495	420,759
1845	2,433	4,485	7,028	6,197	43,107	1,553	...	748	156,976	72,663	406,709
1846	4,181	7,316	9,993	6,949	41,939	3,690	...	854	192,224	72,631	486,767
1847	2,692	4,471	5,269	6,398	37,697	1,120	...	830	178,688	54,356	423,757
1848	709	3,269	4,477	5,066	38,822	84	...	627	190,133	48,949	423,519
1849	416	3,719	5,426	3,899	39,894	1,834	...	3,208	184,847	61,114	434,878
1850	1,829	3,666	3,031	5,437	27,294	235	...	3,386	167,675	62,535	507,142
1851	800	3,528	3,815	4,998	18,191	...	...	5,465	207,422	55,160	551,140
1852	850	4,136	4,604	3,396	27,171	207	...	5,968	181,712	59,985	560,544
1853	3,211	2,921	3,208	3,584	15,422	...	...	728	193,005	68,023	507,061
1854	3,204	3,220	5,166	2,588	9,737	...	...	1,151	153,798	47,030	485,022
1855	6,681	3,808	6,263	3,400	15,090	...	...	750	141,937	54,013	497,347
1856	12,256	3,461	5,592	2,677	15,966	...	...	1,207	70,075	61,035	437,038
1857	10,087	3,644	4,787	3,961	15,731	...	...	776	79,698	70,394	475,909
1858	12,050	3,596	6,150	3,218	15,338	2,073	...	1,997	100,596	95,707	467,522
1859	18,120	4,758	9,184	5,286	13,295	1,835	...	3,942	30,805	77,219	581,025
1860	28,040	4,320	12,671	4,943	21,555	...	...	4,067	99,891	75,649	611,018
1861	8,458	2,132	8,586	3,342	17,335	...	...	2,059	70,218	62,914	527,054

(UNITED STATES, CANADA, ETC.)—*continued.*

Musk-rat.	Elk.	N. A. Deer.	Cas-torum. lbs.	Swan.	Cat, Common	Chinchilla	Ameri-can Opossum	Fur Seal.	African Monkey	Skunk.
1,000	300	80,000	...	...	...	...	...	...	...	...
21,000	...	5,000	...	4,500	...	...	...	...	...	...
68,000	150	37,000	12,000	4,400	...	...	...	...	...	...
29,000	50	44,000	..	5,000	...	...	...	...	...	...
16,000	100	26,000	500	6,000	...	...	...	...	...	...
172,000	...	35,000	500	4,000	...	...	...	...	...	...
197,000	...	57,000	1,100	6,000	...	...	...	...	...	...
28,000	...	125,000	1,500	300	...	...	...	...	...	...
268,700	...	152,000	...	...	...	...	...	...	...	...
44,000	360	85,000	...	800	...	...	...	...	...	...
..	...	54,000	...	3,200	...	...	...	...	...	...
6,836	...	69,710	...	533	...	...	...	...	...	...
41,026	...	47,866	...	...	...	...	...	...	...	...
67,661	...	78,692	...	101	...	...	...	...	...	...
46,416	...	65,639	...	270	...	...	...	...	...	...
178,890	...	164,757	...	...	...	...	...	...	...	...
6,749	100	132,638	...	...	...	...	...	...	...	...
99,661	...	58,509	...	...	...	...	...	...	...	...
103,150	24	140,900	74	...	...	...	...	...	...	...
16,305	65	139,170	...	...	...	...	...	...	...	...
12,160	...	179,350	...	1,080	...	...	...	...	...	...
12,590	85	83,015	...	1,417	...	...	...	...	...	...
97,466	282	159,021	163	...	...	...	...	...	...	...
47,279	16	180,186	...	1,620	...	...	...	...	...	...
68,332	167	221,573	..	1,567	...	...	...	...	...	...
88,264	324	199,300	...	...	...	...	...	...	...	...
146,233	444	162,798	...	...	...	...	...	...	...	...
405,779	262	124,358	...	...	...	...	...	...	...	...
306,515	140	98,621	...	...	...	...	...	...	...	...
193,400	158	200,454	...	...	...	...	...	...	...	...
117,922	221	214,183	...	...	...	...	...	...	...	...
74,224	191	163,039	...	4,830	...	...	...	...	...	...
229,296	158	120,773	...	6,116	3,220	88,456	...	...	...	...
221,532	129	100,115	...	988	2,066	161,894	...	...	...	...
701,284	331	160,479	...	665	5,328	176,698	...	...	...	...
891,674	189	114,049	...	941	5,025	226,444	...	...	...	...
460,920	113	92,957	...	1,631	958	213,532	...	...	...	...
389,455	145	77,568	...	1,697	2,826	85,580	...	...	...	...
674,740	227	29,414	...	...	3,473	66,807	31,263	12,391	...	...
690,635	179	52,767	...	...	6,058	101,602	...	13,915	...	...
1,101,640	290	84,502	...	...	9,544	100,477	...	9,348	...	...
1,146,102	470	53,936	...	...	6,125	80,988	14,444	16,193	...	...
1,266,811	200	38,641	...	...	5,427	48,072	14,334	9,714	17,688	...
1,163,893	...	29,479	...	...	5,050	57,573	...	18,199	5,675	...
1,472,319	...	16,979	...	...	9,751	50,347	13,119	29,464	3,885	...
933,166	195	64,187	...	...	8,211	107,997	83,807	20,641	20,162	...
894,075	...	53,099	...	...	6,613	119,442	55,303	9,423	19,869	...
904,016	...	48,469	...	...	6,338	146,102	17,337	19,504	3,642	10,131
1,209,744	...	18,788	...	...	10,807	62,551	41,508	14,476	20,116	76,403
1,657,438	...	19,961	...	...	8,524	43,609	100,295	13,231	38,692	138,376
1,622,972	No record kept.	14,741	No record kept from this date.	No record kept.	8,706	52,356	52,284	24,341	61,653	112,935

QUANTITIES OF AMERICAN FURS

Date of Year.	Beaver.	Bear.	Otter.	Fisher.	Marten.	Wolf.	Wolverine.	Lynx.	Musk.	Fox.	Raccoon.
1862	9,004	2,272	8,202	3,536	22,260	...	...	2,668	32,483	43,159	476,317
1863	9,192	3,760	7,359	2,997	21,651	...	...	3,241	33,647	62,626	475,637
1864	14,035	4,459	6,566	2,714	21,437	...	...	2,293	33,884	52,286	489,021
1865	6,998	4,140	5,781	1,560	16,988	...	...	1,776	17,948	44,698	437,763
1866	4,779	3,361	2,427	1,725	8,924	...	...	4,019	7,056	38,418	383,346
1867	8,931	3,630	4,707	3,690	23,785	...	...	19,764	25,304	121,101	526,881
1868	5,292	3,326	4,502	2,513	21,037	...	...	9,468	29,429	87,395	285,735
1869	8,945	3,887	6,518	4,982	24,258	...	...	10,779	24,900	99,408	384,805
1870	52,526	4,024	7,169	3,785	31,532	38	32	11,830	33,985	77,493	418,405
1871	40,891	4,046	5,012	4,335	29,515	2,606	232	9,467	12,201	66,390	406,749
1872	55,134	6,028	5,759	3,632	31,487	1,783	...	982	104,043	117,186	457,686
1873	63,781	6,198	8,037	3,351	30,734	2,208	132	2,441	51,509	90,726	458,933
1874	60,694	4,907	5,727	3,244	31,672	10,897	21	3,422	48,912	94,415	395,178
1875	48,983	5,624	8,248	3,820	34,064	3,351	23	3,659	37,889	119,506	439,789
1876	37,670	6,026	6,689	2,810	30,503	6,728	...	3,668	72,448	92,215	514,863
1877	44,057	7,043	7,074	3,218	39,589	5,890	...	9,323	115,943	86,726	525,344
1878	33,258	7,063	6,039	2,424	21,390	8,384	195	4,824	103,152	72,839	382,074
1879	36,861	7,347	12,102	4,009	48,216	3,091	224	10,063	160,481	116,373	546,104
1880	52,641	6,815	7,749	2,872	32,548	6,836	268	10,587	178,339	97,300	660,269
1881	58,241	8,364	9,019	4,738	36,172	2,248	507	7,374	170,620	99,363	632,270
1882	49,995	8,449	10,940	2,958	40,843	2,289	273	4,769	200,799	104,580	566,269
1883	33,266	7,574	6,704	2,704	33,724	988	1,562	3,452	127,701	104,486	401,536
1884	21,308	7,016	8,144	2,708	34,382	524	778	2,926	277,883	124,312	710,929
1885	20,670	8,884	7,139	2,148	27,354	273	419	4,116	226,272	97,423	595,101
1886	14,611	9,058	10,062	3,297	51,873	1,826	460	8,090	331,120	74,143	486,201
1887	27,272	8,423	6,349	2,700	49,168	6,420	496	7,629	314,726	127,510	399,352
1888	21,667	6,604	4,292	2,425	31,057	5,727	441	8,938	239,126	86,337	360,298
1889	23,963	10,564	8,272	3,387	34,028	6,858	1,131	7,024	166,803	123,373	579,551
1890	17,798	9,355	8,595	2,391	29,111	10,258	682	4,092	366,107	113,933	705,559
1891	11,693	12,795	7,334	2,955	38,412	10,000	738	6,496	173,389	106,755	549,180

(UNITED STATES, CANADA, ETC.)—*continued.*

Musk-rat.	N. A. Deer.	Cat. Commn.	Chin-chilla.	American Opossum.	Fur Seal.	African Monkey.	Skunk.	Sea-Otters.	Australian Opossum.
1,762,742	6,354	3,687	71,995	24,427	31,949	42,447	27,765	...	...
1,893,898	20,509	5,355	37,786	89,579	27,986	32,806	92,279	...	...
1,919,666	26,523	3,305	72,266	116,288	20,326	16,652	133,939	...	...
1,989,297	17,149	3,008	39,877	134,721	17,259	18,324	101,692	...	...
1,265,164	2,208	4,752	80,974	218,144	19,844	31,249	73,837	...	...
2,470,917	7,865	7,940	60,332	267,570	15,697	28,241	134,652	...	...
2,478,887	12,284	5,589	107,567	160,133	83,941	13,094	88,413	...	...
2,679,302	11,230	6,460	43,826	166,752	149,808	14,104	104,886	...	...
3,361,874	3,145	8,538	39,060	115,181	153,654	10,098	107,603	...	...
3,439,173	...	7,705	25,734	93,417	154,959	19,814	42,377	3,824	18,029
3,028,649	1,109	8,726	22,361	143,444	168,672	26,814	203,699	4,307	41,628
2,171,265	...	13,670	20,563	250,464	170,678	23,439	261,542	5,095	313,343
1,700,137	...	6,460	25,876	149,862	161,291	23,719	190,774	4,920	150,939
2,235,946	...	10,068	31,221	239,549	174,107	30,259	241,704	4,564	274,311
2,005,217	...	5,507	20,069	251,260	167,141	23,163	329,270	5,059	583,050
1,873,434	...	6,959	16,581	217,306	142,671	30,200	280,697	5,420	734,214
1,940,835	...	6,854	27,176	310,538	169,497	30,893	278,184	5,258	456,102
2,717,011	...	7,488	13,714	355,589	175,119	50,211	435,961	5,176	465,526
3,142,445	...	11,924	5,231	329,517	205,240	84,257	509,051	5,583	993,052
2,715,486	...	8,735	8,763	299,568	210,745	98,935	343,826	5,647	1,493,236
2,169,922	...	9,397	19,408	267,699	189,694	93,340	438,672	5,657	1,817,372
1,949,394	...	7,895	25,956	183,160	171,205	60,540	417,482	5,680	934,944
3,000,879	...	7,651	4,665	414,828	157,329	99,152	589,850	5,038	1,639,547
2,368,596	...	4,792	13,907	411,636	180,059	91,981	547,760	4,908	1,893,324
2,064,288	...	3,909	17,053	223,414	217,704	113,369	468,284	4,804	1,999,194
2,154,399	...	3,955	3,926	230,499	226,370	97,051	614,876	4,413	1,613,067
1,271,263	...	3,798	5,157	285,725	219,670	178,695	509,941	4,352	1,947,596
1,284,679	...	4,365	1,391	265,704	214,577	223,599	625,566	3,511	3,169,571
2,257,906	...	8,280	2,725	591,174	182,653	136,914	678,199	2,713	2,389,396
1,396,103	...	6,707	7,793	502,133	125,731	215,996	554,815	2,392	2,254,111

THE SKINNERS' COMPANY.

The Skinners' Company is one of the oldest guilds in the City of London. It ranks sixth or seventh, taking precedence with the Merchant Taylors' Company in alternate years.

The Skinners' Company was originally a company of furriers or fur-traders, but there is no document from which the date of foundation or particulars about origin can be traced.

In course of time two other trades—the Upholders and the Tawers—were absorbed into it. The latter were probably fur-skin dressers.

According to the Report of the Commissioners of the City of London Livery Company's Commission, the first Charter was granted by Edward III. on March 1, 1327. It prevented the selling of old fur for new by skimmers or philippars.

By another Charter granted on February 22, 1437, by Henry VI., the Skinners' Company regulated the exposure for sale of furs, mixing old and new furs, and the scrutinizing of all works, business, and wares in London and suburbs; also in all places, fairs and markets in England.

Charles I. seized the lands of the Company, but they were afterwards restored.

Charles II. granted a further Charter on June 28, 1667, which, besides confirming the Company in their property of houses and land, gave them jurisdiction over the manufacture of furs and skins, coney-wool, and the manufacture, cutting, clipping, and dividing the wool from the pelt of coney (rabbit) skins and other

furs, the manufacture of muffs and linings for garments, gloves, etc., with especial care to foster the trade in domestic furs; with a further grant of power to search and present the offenders against the Guild to the Master and Wardens for punishment according to law; to seize wares, sue, etc.; also to appoint apprentices, who should serve for seven years.

The Hall is on Dowgate Hill. The Master and six Wardens form the Court, or governing body. The Liverymen number about 200, who take up the Livery on payment of £50, and serve an apprenticeship of seven years. There are also a clerk, accountant, beadle, and under-beadle, who transact the legal and other business of the Company.

The Skinners' Company possesses some property in the City and in the north of Ireland. It also owns the Tunbridge School in Kent, the head-master of which is appointed by the Court. It has a fine collection of plate. The chief dinner is on Corpus Christi Day. This was instituted on April 20, 1392. The ancient name of the Company was "The Guild or Fraternity of the Body of Christ of the Skinners of London."

The Skinners' Company does not now exercise any jurisdiction over the fur trade.

WEST INDIA COMPANY.

The West India Company was established in 1621. It was a Dutch Company, and the headquarters were in New York. It exported Beaver skins only, but these were shipped in large quantities. Its sole rival was the Plymouth Company of England.

NORTH-WEST COMPANY.

The North-West Company was formed in 1783 by several of the principal merchants of Montreal, under the directorship of Sir Alexander Mackenzie, and was augmented by amalgamation with a rival Company in 1787. The headquarters were at Fort William, where great feasts were held.

“Thus was created the famous ‘North-West Company,’ which, for a time, held a lordly sway over the wintry lakes and boundless forests of the Canadas, almost equal to that of the East India Company over the voluptuous climes and magnificent realms of the Orient. The Company consisted of twenty-three shareholders, or partners, but held in its employ about two thousand persons as clerks, guides, interpreters and voyageurs or boatmen.”—“Astoria,” page 5.

The North-West Company was amalgamated with the Hudson’s Bay Company in 1821, who also purchased Astoria. This was founded by the late John Jacob Astor.

HUDSON’S BAY COMPANY.

The Hudson’s Bay Company was established in 1670, under the patronage of Prince Rupert. The rivalry between this and the North-West Company between 1811 and 1820 was so great, that hunting parties at times came to blows, lives being sometimes lost. In 1821 the two Companies were amalgamated.

The Company consists of the Governor, Sir Donald A. Smith, K.C.M.G.; the Deputy-Governor, Earl of Lichfield, and seven Directors, as follows:—T. R.

Grant, Thomas Skinner, John Coles, Sir T. R. Edridge, S. Fleming, C.M.C., R. Stephenson, W. V. Morgan.

The Secretary is Mr. W. Armit, and the Broker Mr. E. Harris.

The capital consists of 100,000 shares of £13 each. The market value of a share is £15 15s. The last dividend, which was declared on July 22, 1891, was unfavourable, being only 6s. 6d. a share.

The fleet of the Company consists, among others, of the following ships:—

Lady Lampson. *Perseverance* (163 tons).

Lady Head (457 tons). *Erik* (412 tons).

Labrador (266 tons). *Prince Rupert* (368 tons).

Titania (879 tons—a barque, formerly an old tea-clipper).

These vessels make one voyage a year, either from Hudson's Bay or the North-West coast of America. The York Fort ship arrives in London in September; the Moose River ship at the end of July or beginning of August; and the Vancouver Island at the end of November or December. Many shipments are, however, now made by the great steamship lines from Montreal, the transit by steam being more expeditious. Some goods from the North-West district are sent through the West Indies, the passage by Cape Horn being only used for the bulkier and less valuable goods. The Company had a steamer especially constructed for the Labrador salmon fishery, but this business not proving lucrative, this vessel was sold. The voyage from York Fort or Moose River is somewhat hazardous. A ship from the latter was frozen in in 1884, also in 1779, 1833, 1864, and 1873. These, however, are the only recorded instances since 1735.

The *Princess Royal* was wrecked in a violent storm in October, 1885, in James' Bay, near Moose Factory, and the cargo, valued at £34,000, was lost. The captain and crew were for some time in a perilous position, but fortunately succeeded in getting ashore and making their way to Moose Factory. The barque, *Cam Owens*, was wrecked on the outward voyage in 1886.

The fur sales of this Company take place at the commencement of the year; the Beaver, Musquash, and American Rabbit in January, and all other furs in March. Up to 1878 the North-West goods were sold in September; in 1880-82 they were sold in July; since that date they have been included in the March sales.

The annual fur sales amount to about £300,000.

There is also a sale of Castorum, Deer-skins, Eider-down, Quills, etc., in December, and a sale of salmon in the same month.

The Buffalo robes of the Company were sold in Montreal.

The former premises of the Company were in Fenchurch Street, where the sales were held. For many years subsequently they were held at the London Commercial Sale Rooms, in Mincing Lane. This year (1891) they have been held at College Hill. The skins are now shown in the well-arranged warehouse of the Company in Lime Street, and are attended by buyers from all parts of Europe and America. The skins are sorted into colours and qualities, and are sold by the broker, Mr. E. Harris; but, following an old-fashioned custom, the lots were, till this year, knocked down by the Governor, Secretary, or one of the committee of the Company. In former times, the lots were sold by the light of the candle; that is, no further bids were allowed after a certain portion of the candle was burnt.

The Company divide their hunting-grounds into 33 districts and 152 posts. Most of the latter are under the charge of a chief trader. They are established throughout Canada, where blankets, powder, trade-guns, vermilion, etc., are exchanged for furs. As it takes a long time for the outfit to go out, and the expenses of transit and portages are so great, the profits ought to compensate for the interest and risks incurred. This was formerly the case, but now the profits are reduced by the encroachments of other traders. Still, however, the Indians give the preference to their old friends, the Hudson's Bay Company. The Company formerly leased Fort Yukon and district in Alaska, and had also an agency in the Sandwich Islands (1847).

York Factory on Hayes River is the chief depôt, and has substantial buildings. The majority of the forts consist merely of square wooden stockades, sometimes with the addition of a tower. Fort Pitt was taken by the half-breeds a few years ago at the rising of Riel. On the transfer of Rupert's Land to the Canadian Government in 1870, it was agreed that £300,000 should be paid by the latter to the Hudson's Bay Company; the Company should retain all their posts, and have also the option of selecting a block of land adjoining their posts within any part of British North America, with the exception of Canada proper and British Columbia.

The furs, bought or exchanged at the different trading posts from the Indians, are packed in small square packages, so as to be easily transported over the different portages near the falls. They are carried by canoes to the depôts, whence they are shipped to London, there to be sold by auction. Next to the Beaver, which is the most important skin traded with by the Company, the Mink, Martin, Bear, and Fisher, form considerable

articles of trade, although the price of the two former has as steadily declined as that of the Beaver has advanced. The Company import but few Sea-Otters. They endeavoured to introduce Beavers into Charles Island, in Hudson Strait, but without success. When the French possessed Canada, before the establishment of the Hudson's Bay Company there, the Beavers were exported to La Rochelle, in France, and sold there. The most important tribes of North American Indians inhabiting the Hudson's Bay Company's territory are the Crees, Blackfeet, and Chippewayans.

The chief marks in the catalogues of the sales, denoting the district where the skin is taken, are :—

Y	.	.	.	York Fort.
M K R	.	.	.	Mackenzie River.
M R & E M	.	.	.	Moose River and East Main.
F G & L W R	.	.	.	Fort George and Little Whale River.
B & M	.	.	.	Bersamis and Mingin.
N W	.	.	.	North-West.
E B	.	.	.	Esquimaux Bay.
S B	.	.	.	Severn Bay.
K P C	.	.	.	King's Post, Canada.
A	.	.	.	Albany.
G R	.	.	.	Grand River.
S	.	.	.	Saskatchewan.
L H	.	.	.	Lake Huron.
L S	.	.	.	Lake Superior.
U	.	.	.	Ungava.
T	.	.	.	Temiscamingue.

Some of the old marks are :—

S R .	Severn River.	M D .	Montreal District.
C R .	Coppermine River.	S D .	Severn District.
A R .	Albany River.	S S M	Sault S ^{te} Marie.
M V .		P .	Penetanguishene.
O D .	Oregon District.	G N .	

The outfit, or goods sent out to supply the different posts, amounts to rather over £100,000.

RUSSIAN FUR COMPANY.

The Russian Fur Company, which succeeded to more than sixty smaller companies, was established in 1799. Its greatest success was under Baranov's administration, from 1808 to 1818. This Company was dissolved in 1867, when its property and rights were sold to the United States Government. The headquarters were at Sitka, and the chief trade was in Fur Seal and Sea-Otter skins.

ALASKA COMPANY.

The Alaska Commercial Company has its headquarters at 310, Sansome Street, San Francisco.

The President is Louis Storr.

Most of the furs collected are sent to London, and sold there.

The chief source of income was the catch of the Fur Seal on the Pribylov Islands, which the Company leases from the United States Government. The catch was limited to 100,000 skins, for which a royalty of two dollars per skin is paid. After holding this lease for twenty years, it lost the contract in 1890. The condition of the natives of the Pribylov Islands since the establishment of the Company there has much improved. The Company also obtains an abundant supply of furs from the mainland of Alaska, such as Marten, Mink, Beaver, Black Bear, and American Fox.

Fort Yukon, although in the province of Alaska, was formerly worked by the Hudson's Bay Company.

The Alaska Company carry on also a considerable

trade with the opposite coast of Asia in. Squirrel, Fox, Sable, and Bear skins. These are generally shipped from Port Aian, either by San Francisco, or through Japan to London. It has many agencies in the Aleutian Islands, such as Aktah, Oonalaska, Belcovsky, Oonga, and Kadiak.

The Sea-Otter is now the chief source of income, the amount of the sale in 1891 being about £50,000 to £60,000.

The Company employs a fleet of four steamers, and about twelve barques or sloops. No port is less than 500 to 600 miles from Sitka, which is the chief trading depôt, corresponding to York Fort depôt of the Hudson's Bay Company. The Company, by their former charter, were obliged to furnish dried salmon, fuel, and schools to the natives of the Pribylov Islands.

NORTH AMERICAN COMMERCIAL COMPANY.

This Company was formed in San Francisco on the 31st December, 1889. The capital is \$500,000, of which \$200,000 has been paid.

The Directors are :—Lloyd Tevis, Henry Cowell, Matthias Meyer, Albert Miller, and Isaac Liebes.

This body has acquired the lease of taking Fur Seal skins on the Pribylov Islands for twenty years, at an annual rental of \$55,200, and \$10.75 for each skin; provided, after the first year, the catch shall not be limited to less than 100,000 skins. The skins will, as before, be sold by Messrs. C. M. Lampson and Co., Queen Street, London.

RUSSIAN SEAL SKIN COMPANY.

The Russian Seal Skin Company was established in St. Petersburg in 1891. The Director and chief promoter is Mr. Grünevald. This Company has the exclusive right of taking Fur Seal, Sea-Otter, and Fox skins in Copper Island (Komandorski) and Robben Island (Tulenji), both of which are situated in the Behring Sea, and are leased from the Russian Government.

HARMONY COMPANY.

The Harmony Company, although not so important as the Hudson's Bay and the Alaska Companies, carries on a steady and successful business along the coast of Labrador. The transactions of this Company do not exclusively belong to the fur trade, but are of a general character, Hair Seal, Reindeer skins, and oil forming important branches of their trade. This Company was formed by, and still consists of, the Moravian Missionaries, who settled on the dreary coast of Labrador. The business is conducted by the Moravian Church Mission.

Every skin is marked in red on the pelt side to denote the district where it is taken. The following are the chief stations along the coast with their respective marks :—

Hebron . . . K	Hopedale . . . H
Okak . . . O	Zoar . . . Z
Nain . . . N	Ramah. . . R

The furs from Labrador are about the finest in America, or perhaps in the world. The Fox-skins

cannot be equalled in richness and quality. The annual collection of furs usually arrives in October, and are sold in the succeeding January or March. The Hair Seals are, however, usually sold in November.

ROYAL GREENLAND FUR-TRADING COMPANY.

The Greenland Company has its chief establishment in Copenhagen, where it holds public sales twice a year, in February and the end of November or beginning of December. Its chief exportation consists of Fox-skins (blue and white), Polar Bear, and dry Hair Seal-skins, and Eider-down.

The Hair Seals and Eider-down are sold in November, and the Blue and White Fox and Bears in February.

The Polar Bears are of finer quality and condition than in any other part of the world, and realize high prices :—

In 1886,	14,850	Hair Seals	were sold.
In 1887,	10,200	„ „ „	
In 1888,	11,700	„ „ „	

AMERICAN FUR COMPANY.

The American Fur Company was established in 1809 by John Jacob Astor, an enterprising German, who had previously been engaged for many years as a fur-trader, and who attempted at great expense to establish a port on the coast of Oregon. The principal establishment was at Michilimackniac. This Company possessed a square fort (300 feet) at the mouth of the Yellowstone River, where they conducted a profitable business with the neighbouring Indians.

MISSOURI FUR COMPANY.

The Missouri Fur Company was established in 1808 amongst the American Indians in the country of the Sioux. Mr. Lisa, a Spaniard, was the most active partner. The headquarters were at Fort Mandan and San Louis.

PACIFIC FUR COMPANY.

The Pacific Fur Company was established on the 23rd June, 1810, by John Jacob Astor, who was appointed President. The chief trading post was at Astoria. Its chief competitor was the North-West Company, who ultimately acquired the stock and forts of this Company. On the amalgamation of the North-West Company with the Hudson's Bay, Astoria formed the head depôt on the North-West coast, but was afterwards abandoned in favour of Victoria in Vancouver Island.

For a more detailed history of this Company, the reader is referred to "Astoria," by Washington Irving.

DRESSING.

The process of dressing is the method by which raw skins are prepared before being manufactured into articles of apparel.

Of the various kinds of dressing, that performed by the natives excels all others for suppleness and durability, although they are sometimes surpassed in finish. The Red Indian is perhaps the best dresser of American fur; he undoubtedly was of the Buffalo. We cannot do

better than quote Catlin's "North American Indians" (vol. i. page 45):—

"The art of dressing skins belongs to the Indians in all countries; and the Crows surpass the civilized world in the beauty of their skin-dressing. The art of tanning is unknown to them, so far as civilized habits and arts have not been taught them; yet the art of dressing skins, so far as we have it in the civilized world, has been (like hundreds of other ornamental and useful customs which we are practising) borrowed from the savage; without our ever stopping to inquire from whence they come, or by whom invented.

"The usual mode of dressing the Buffalo and other skins, is by immersing them for a few days under a lye from ashes and water, until the hair can be removed; when they are strained upon a frame or upon the ground, with stakes or pins driven through the edges into the earth; where they remain for several days, with the brains of the Buffalo or Elk spread upon and over them; and at last finished by 'graining,' as it is termed, by the squaws, who use a sharpened bone, the shoulder-blade or other large bone of the animal, sharpened at the edge, somewhat like an adze, with the edge of which they scrape the fleshy side of the skin, bearing on it with the weight of their bodies, thereby drying and softening the skin, and fitting it for use."

The Kaffir is a splendid dresser of Leopard, Antelope, and other skins, and for suppleness is unrivalled by continental dressers.

The Germans are unsurpassed in the dressing of Squirrel, Cat, and Beaver; of which the first is certainly a speciality. Nearly the whole town of Weissenfels in Saxony thrives on this trade; the soft white pelts, clean fur, skill in matching the colours, and manufacture,

being unrivalled, combined with cheap labour. The Musk-rat is also well dressed. The drawback to the German method is that in large skins the pelt is left somewhat thick.

The English specialities are Chinchilla, Marten, and Sable, in which they are unequalled. Skunk, Musk-rat, Fox, and most skins are also dressed well. In the English method, the skins are first placed in a lye of alkali; when the pelt has become soft, the skins are tubbed, and then shaved by passing them over a large knife, placed in an upright position; they are next buttered, and put in a large tub of sawdust by men half naked, who tread on them for some time, the heat of their bodies rendering the leather soft and supple; they are then beaten out and finished. The drawback to English dressing is that in cold climates the moisture in the skin freezes, and the skin becomes hard.

This latter defect is never found in the Russian preparation, which, however, leaves an unpleasant smell in the skins, somewhat difficult to eradicate.

The Chinese method is somewhat similar to the Russian. There is often a very unpleasant powder left in the skins, as in Goat-rugs. Sea-Otters and Tigers are wonderfully well dressed by the "Celestials."

DYEING.

The dyeing of fur skins is a very ancient art; it dates from the time of the Israelites, when dyed Ram-skins were used as a covering for the tabernacle.

There are fourteen firms of fur dyers in London.

According to Dr. Richardson, the occupation of a fur dyer is one of the most unhealthy.

The English brown dye, especially that of Fur Seals, has been brought to a considerable state of perfection. A mordant of lime is first used, then a dye composed of copper-dust, antimony, camphor, verdigris, and Turkish or Chinese gall-nuts roasted. Formerly as many as twelve or fourteen coats were applied to the skin cold, the ground colour having previously been trodden in with boots; but now fewer coats are used, and the colour is sometimes applied hot, the skins being dipped into the mixture.

The English dye is celebrated for brilliancy and durability, but it somewhat reduces the quality of the skin.

The English dyers have of late years acquired the art of dyeing black. The skins are dipped into vats containing the dye, and stirred with long poles.

Many skins, such as Beavers and Otters, are "silvered," by passing over them a solution of sulphuric acid. Angora Goats are dyed red, blue, black, and brown.

The French dyers have a good reputation for their black dye. The skins are plunged into large vats, filled with a dye, the chief ingredient of which is logwood. When they are brought out, they are green, but on exposure to the air they soon turn black.

Their brown dyes, although not so brilliant as the English, retain more quality in the skins. This is due to the use of vegetable dyes, which do not reduce the quality, but are hardly so permanent. The art of dyeing fur by dipping is fast superseding that of brushing.

The Germans excel in dyeing black, Persian, Astrakan, and Ucrainer Lambs, in which they are unsurpassed, both as to brilliancy and suppleness of the pelt. Of

late years they have also successfully dyed the Lynx, White Fox, and Raccoon black; also a peculiar grey colour, called blue, and quite recently the snowflake dye.

The Belgian dyers, besides the usual black and brown dyes, prepare a good number of Rabbit-skins with a cheap madder dye.

The clever Chinaman is a very poor dyer of furs.

CUSTOMS' TARIFF AND DUTY.

The Customs' duties on fur-skins and manufactured furs, after being in force for many years, were abolished in 1845.

The duties had been previously reduced in 1842.

It was customary to allow a drawback on skins imported on which the duty had been previously paid.

In some warehouses the goods destined for export were sold in bond.

If the Custom-house authorities were dissatisfied with the declaration of value of any entry, it was a general practice to take or seize the goods, and pay for them with 10 per cent. profit, but mistakes were sometimes made by the officers; the goods seized were subsequently sold at the Custom-house Rummage Sales, and often at a loss.

There are still some discrepancies in the way in which merchandise is classed under the new tariff. Slink Lamb-skins, according to the official rendering, should be described as Sheep-skins, but this fact appears to other officials to be an impossibility, when 3,000 are imported in a bale. "Skins unenumerated being Furs" is the proper classification.

Again, Eider-down has to be classed under ornamental

feathers, whereas it should be included under the head of bed feathers or down, being used for stuffing quilts and muffs. Bird-skins are described as fur-skins.

In Germany all raw or dressed furs are imported free.

In France all raw furs are free, but dressed and dyed skins are subject to a duty of seven francs per kilo, according to tariff; except China Goat-rugs, fur hats, bluebacks, white coats, etc., which are free.

The United States admit all raw furs and skins free, except from certain districts, but impose a duty of 20 per cent. on dressed skins, and 35 per cent. on manufactured.

Canada also imposes a duty of 15 per cent. on dressed furs, and 25 per cent. on manufactured furs.

Australia, except Victoria, also imposes a duty.

The duties on fur-skins in England was as follows:—

REDUCTION OF DUTY, 1842.

CLASS IX.—SKINS AND FURS.

Skins, Furs, Pelts, and Tails, viz:—

	of or from Foreign Countries.		of or from British Possessions.		Former Duties.	
	s.	d.	s.	d.	Foreign.	B. P.
Badger, undressed .....the doz. skins	1	6	0	9	0/6 per skin.	
Bear the skin	3	0	2	0	4/6	... 2/6
Beaver, undressed.....the skin	0	8	0	2	0/8	... 0/4
Cat, undressed.....the doz. skins	1	0	0	6	0/1 each.	
Chinchilla, undressed...the doz. skins	2	0	1	0	0/3 do.	
Coney, undressed .....the 100 skins	0	6	0	3	1/0 per 100.	
Deer, undressed.....the skin	0	1	0	½	0/1 each, 1/0 100	
— Indian, half dressed ...the skin	0	2	0	1	2/0 each.	
— Indian, tanned, tawed, or in any way dressed the skin	0	6	0	3		
Dog, in the hair, not tanned, tawed, or in any way dressed, the doz. skins	0	2	0	1	0/2 per doz.	
Dog-fish, undressed ...the doz. skins	1	0	0	1	5/2 doz., 0/1 doz.	
Elk, undressed .....the skin	0	6	0	3	1/0 each.	
Ermine, undressed.....the doz. skins	0	6	0	3	0/3 do.	

CLASS IX.—SKINS AND FURS—*continued.*

	Of or from Foreign Countries.		Of or from British Possessions.		Former Duties.	
	s.	d.	s.	d.	Foreign.	B.P.
Ermine, dressed .. .. .the doz. skins	12	0	1	0	0/8 each	
Fisher, undressed .. .the doz. skins	4	0	2	0	0/6 do.	0/3 ea.
Fox, undressed .. .the skin	0	6	0	3	0/8 do.	0/4 do.
— tails, undressed .. .each	0	2	0	1	0/5 do.	
Goat, raw or undressed, the doz. skins	0	3	0	2	0/6 per doz.	
— tanned, tawed, or in any way dressed .. .the doz. skins	5	0	2	6	40/0 per doz.	
Goose, undressed.....the doz. skins	1	0	0	6	0/8 each.	
Hare, undressed .. .the 100 skins	0	6	0	3	1/0 per 100.	
Husse, undressed..... the doz. skins	3	0	1	6	0/6 each.	
Kangaroo, undressed ..the doz. skins	0	2	0	1	0/5 do.	
Kid, in the hair, undressed, 100 skins	0	4	0	2	0/4 per 100.	
— dressed .. .the 100 skins	5	0	2	6	10/0 do.	
— ditto, and dyed and coloured, the 100 skins	10	0	5	0	15/0 do.	
Kolinski, undressed ..the doz. skins	1	0	0	6	0/3 each.	
Lamb, undressed in the wool, the 100 skins	0	4	0	2	0/4 per 100	
— tanned or tawed, the 100 skins	5	0	2	6	10/0 do.	
— tanned or tawed, dyed or coloured .. .the 100 skins	10	0	5	0	15/0 do.	
— dressed in oil.....the 100 skins	40	0	20	0	80/0 do.	
Leopard, undressed .. .the skin	1	6	0	9	2/6 each.	
Lion ditto .. .the skin	0	6	0	3	1/0 do.	
Lynx ditto .. .the skin	0	6	0	3	0/6 do.	
Marten ditto .. .the skin	0	4	0	2	0/6 do.	0/3 ea.
— tails, do. .. the 100 tails	2	6	1	3	5/0 per 100.	
Mink ditto the doz. skins	1	0	0	6	0/4 ea.	0/2 ea.
— dressed .. .the skin	0	6	0	3	2/0 each.	
Mole, undressed .. .the 100 skins	3	0	1	6	0/6 per doz.	
Musquash, ditto ..the 100 skins	1	0	0	6	1/0 per 100.	
Nutria, ditto ..the 100 skins	1	0	0	6	1/0 do.	
Otter, ditto .. .the skin	1	0	0	6	1/6 ea.	1/0 ea.
Ounce, ditto .. .the skin	0	2	0	1	7/6 each.	
Panther, ditto .. .the skin	0	2	0	1	2/6 do.	
Pelts of all sorts, undressed, the doz. pelts	1	0	0	6	17/0 per 100.	
— tanned, tawed, or in any way dressed .. .the doz. pelts	5	0	2	6		
Racoon, undressed .. .the doz. skins	1	6	0	9	0/2 ea.	0/1 ea.
Sable, undressed .. .the skin	2	0	1	0	2/6 each.	
— tails or tips, undressed, the doz.	1	6	0	9	0/3 do.	
Seal, in the hair, not tanned, tawed, or in any way dressed, the skin	0	4	0	4	1/0 do.	
— of British taking, imported direct from the fishery of a British possession, the doz. skins	0	0	0	1	0/1 per doz.	
Sheep, undressed in the wool, the doz. skins	0	6	0	3	1/0 per doz.	
— tanned or tawed, the 100 skins	12	0	6	0	40/0 per 100.	

CLASS IX.—SKINS AND FURS—continued.

	Of or from Foreign Countries.		Of or from British Possessions.		Former Duties.	
	s.	d.	s.	d.	Foreign.	B.P.
Sheep, dressed in oil ...the 100 skins	20	0	10	0	80/0 per 100	
Squirrel or Calabar, undressed, the 100 skins	3	0	1	6	11/6 do.	
———— tawed, the 100 skins	5	0	2	6	17/6 do.	
———— tails, undressed, for every £100 value	£5		£210s.		20 per cent.	
Swan, undressed .....the skin	0	3	0	2	1/0 each.	
Tiger, ditto .....the skin	1	6	0	9	2/6 do.	
Weasel, ditto ... the doz. skins	0	3	0	2	4/9 per 100.	
Wolf, ditto the doz. skins	2	0	1	0	0/6 ea.	0/3 ea.
———— tawed .....the skin	5	0	2	6	17/6 each.	
Wolverine, undressed .....the skin	0	3	0	2	1/0 ea.	0/6 ea.
Skins and Furs, or pieces of skins and furs, raw or undressed, not particularly enumerated or described, not otherwise charged with duty, for every £100 value	£5		£210s.		20 per cent.	
Skins and Furs, or pieces of skins and furs, tanned, curried, or in any way dressed, not particularly enumerated or described, not otherwise charged with duty, for every £100 value	£10		£5		30 per cent.	
Articles manufactured of skins or furs.....for every £100 value	£10		£5		75 per cent.	

CLASS X.—HIDES, RAW OR TANNED.

	Of or from Foreign Countries.	Of or from British Possessions.
Hides of Horse, Mare, Gelding, Buffalo, Bull, Cow, Ox, Calf, Kip, Swine and Hog, Sea-Cow, Elephant, and Eland, or large Deer .....	...	...
———— not tanned, tawed, curried, or in any way dressed, viz. :—		
dry .....the cwt.	0 6	0 2
wet .....the cwt.	0 3	0 1
———— tawed, curried, or in any way dressed, not being varnished, japanned, or enamelled .....the lb.	0 4	0 2

CLASS XII.—COTTON, HAIR, LINEN, WOOL, AND THE MANUFACTURES THEREOF.

	Of or from Foreign Countries.	Of or from British Posses- sions.
Wool, viz. :—		
— Alpaca and the Llama tribe .....the cwt.	2 6	2 6
— Beaver.....the lb.	0 6	0 3
— cut and combed .....the lb.	1 0	0 6
— Coney .....the lb.	0 1	0 1
— Cotton, or Waste of Cotton Wool ...the cwt.	2 11	0 4
— Goats' or Hair.....the cwt.	2 6	Free
— Hares' .....the lb.	0 1	Free
— Sheep or Lamb's Wool, viz. :—		
— not being of the value of 1s. the lb.		
— thereof.....the lb.	0 0½	Free
— being the value of 1s. per lb. or up- wards ... ..the lb.	0 1	Free

At the present time all Fur-skins and manufactured Furs are free from any duty : declaration has, however, to be made as to value and quantity, and the skins have to be entered under the following heads :—

Skins, Furs, and Pelts, viz. :—

„ Goat, viz., undressed	number.
„ „ tanned, tawed, or in any way dressed	number.
„ Seal	number.
„ Sheep, viz. : undressed, without the wool .	number.
„ „ tanned, tawed, or in any way dressed	number.
„ unenumerated, Furs	number.
„ other sorts, viz., undressed	number.
„ „ tanned, tawed, or in any way dressed	number.
Manufactures of Skins	value.

FAIRS.

Leipsic Fairs.—The Leipsic Fairs, although not of the same importance as in former years, are still the chief medium through which business is transacted in Germany.

The first fair in the year is that of the New Year; it is now of little importance, and visited by few merchants.

The Michaelmas Fair, which is held in September, has also lost some of its importance.

The Easter Fair, which commences the first week after Easter, and lasts a fortnight, is the chief mart in the year. It has maintained its status to a great degree, and is visited by merchants, traders, and furriers from all parts of Europe and America, France, England, Russia, Italy, Poland, Sweden, Canada, United States, etc.

Furs from most parts of the world are here dealt with: Cat, Squirrel, Persian Lamb, and Asiatic furs as well as American.

Many quaint costumes are then seen, and the Brühl, the street where most of the fur warehouses are situated, becomes a scene of bustle and activity. Booths are erected there, and the whole of the Augustus Platz and other squares are covered with similar erections.

Goods are sometimes bartered, but the general payment is by cash, which is, as usual, due at the ensuing fair; that is, the produce of one fair is paid for at the next. The purchases are usually effected through a broker, who, after a good deal of haggling, eventually settles the bargain between the buyer and seller.

Frankfurt Fair.—The fair of Frankfurt-on-the-Oder

is held in January. "Landwaare" is offered, the produce of the country, such as Otter, Fox, Fitch, Baum, and Stone Marten skins.

Irbit Fair.—The Irbit Fair takes place in February, at the small Siberian town of that name on the boundary between the two continents. It is visited by many Russian, German, and other fur merchants, or their agents, and is a mart for Russian furs, such as Squirrel skins and tails, Ermine, Fox, Beaver, Kolinsky, Russian Fitch, etc. Irbit is generally reached by means of sledges.

Ischim Fair.—The small fair of Ischim in Siberia is held in December, when Squirrel skins and tails and Kolinsky are sold.

Nijni Norgorod Fair.—The Nijni Fair is one of the few which have not suffered so much, and is still important with regard to the fur trade, and still more for other merchandise. Nijni is situated in marshy ground. During the fair, which is held in August, the town swells to double its normal size. The chief furs sold here are Persian, Shiraz, and Astrakan Lambs, Squirrel skins and linings, Russian Musk-rat, Ermine, Bear, Mongolian Goat-linings, White Fox, and Wolf. American furs, such as Skunk, Sea-Otter, Land-Otter, Fisher, Silver and Cross Fox, and Musquash are also disposed of at this fair.

Kiatka Fair.—The fair of Kiatka on the borders of China is the depôt from which Chinese traders make their purchases of furs. Ermine is one of their favourite articles.

SALES.

The great fur sales in London are now held at the College Hill Sale Rooms. Previously to 1890, they were held in the Commercial Sale Rooms, Mincing Lane. They are of great importance compared to those of former times, and the annual amount of all classes of fur-skins sold is little short of £1,000,000.

The Hudson's Bay Company used to hold their sales in their warehouse in Fenchurch Street, and later in Mincing Lane; and other sales were held in coffee-houses, such as Garraway's and Simpson's. The goods were sold by the light of the candle.

Sales are held four times a year: in January, chiefly for Beaver and Musk-rat; in March, for furs generally; also smaller sales in June or end of May and in October.

The sales are attended by buyers from nearly all parts of the world, and the Germans are conspicuous by their numbers. The room is sometimes full almost to overflowing, whilst at other times the articles offered for sale attract comparatively few.

The bids are silent, by movement of the head, and the celerity with which the sale proceeds is most astonishing, a fresh lot being brought up the instant that one is sold.

The fluctuations are somewhat considerable, an advance of 60 per cent., or a fall of 40 per cent., in these days of steamers and railways, being not infrequent.

FUR-BEARING ANIMALS.

MAMMALIA.

QUADRUMANA.



BLACK MONKEY.

Colobus vellerosus.

French : Singe noir. German : Scheitel Affe.

This animal, which is generally called by naturalists the *White-thighed Colobus*, is an inhabitant of the West Coast of Africa, and is especially abundant on the Gold Coast. It is about 1 to 2 feet in length, not including

the tail, which is quite another 2 feet long ; its body is covered with long black hair of from 2 to 4 inches in length ; this fur or hair is of a silky description from some districts, but from other localities is very coarse and harsh ; again, from some places the hair is divided by a natural parting in the centre.

The tail is white and slightly tufted ; the eyes are dark, and there is a white line of hair in strong contrast above them ; the centre of the face is however black, the cheeks and a long fringe round the face are pure white, the slight beard is also white, and there is a white spot on the chest ; the legs and feet are black, but the thighs or rump are of a greyish-white colour, and here the hair is very short. In some examples white hairs are met with throughout the skin and mixed with the black fur—these are probably aged animals ; again, a white spot of fur is found occasionally on the body.

The Black Monkey has two teats, and feeds on fruit, nuts, and other vegetable matter ; it has been brought alive to this country, but rarely lives beyond a short time.

The skins of this animal, although arriving in fair quantities (about 90,000 are imported annually), are not so fashionable a fur as they were some twenty-five years ago ; 20s. was then freely paid for a good skin, but now 1s. to 5s. 6d. is the usual price. These skins are shipped from Quittah, Accra, Salt Pond, Winnebah, Sicroe, Appam, Assinee, Addah, Anamboe, Cape Coast Castle, Lahou, Elmira, Axim, Grand Bassam, and other stations of the West Coast.

The Cape Coast Castle skins are mostly shipped rolled up, and the hair is of rather short length and thick ; those from Bassam are very coarse and harsh, and are

generally painted with red paint; the Accra skins are of the medium sorts.

Black Monkey skins were formerly procured near the coast, but now they have to be taken much farther inland; they are to a great extent bartered with the natives in exchange for British produce, such as trade-guns, bad brandy, cheap and gaudy crockery, beads, hair-oil, brass wire (drawn), etc.

The skins are to a great extent used in Germany, but some are used in the United States, Canada and Italy; they are mostly manufactured into muffs, the greater length of fur at sides adapting them well for this purpose; a few are used for trimmings, and some are occasionally dyed dark brown. The grey skin of the rump is used for outsides of foot-muffs.

BLACK MONKEY.

Colobus ursinus.

Under the name of Black Monkey is another species imported, viz., the *Ursine Colobus*; it is rather smaller than the White-thighed Colobus; the fur is coarse, harsh to the touch, and of little value; the general colour is black, except on the shoulders, where the hair is of a yellowish-white colour. The legs and thighs are black and the tail is long and white. There are not more than 50 to 200 skins imported annually.

The *Ursine Colobus* is an inhabitant of the district near Sierra Leone.

EAST AFRICAN COLOBUS.

This Monkey is nearly as large an animal as the Abyssinian, which it also greatly resembles, except that the well-marked saddle is wanting. The colour is jet black, except the fringe of long white fur on the shoulders and the tip of the tail; the rest of this long appendage is black; the tail is also slightly tufted.

The fur is short and thick.

ABYSSINIAN MONKEY.

Colobus guereza.

French: Singe d'Abyssinie.

This most beautiful species of the Monkey tribe is also one of the largest, measuring about 2 to 2½ feet long, not including the tail, which is about 4 feet in length.

Its rich black fur on the back is surrounded with very long white silky hair in the form of a circle or saddle, which gives this animal an unique appearance; the only other species where a similar circle is found are the Wolverine and Musk Ox.

The tail is black, and furnished at the end with a beautiful thick white tuft; in fact, the contrast of black and white is very beautiful.

The skins are extremely rare and much esteemed as a

fur ; the value of a good skin is about 10s. to 15s. The skin is used as a covering to shields by the natives.

The Guereza inhabits Abyssinia.

There is a mountain variety of this animal described by Mr. O. Thomas, P.Z.S. fo. 219, 1885. The skins were procured by Mr. Johnston from Mount Kilimanjaro, in East Central Africa. The tail in these specimens was



extremely thick and bushy, with individual hairs of the great length of 7 to 9 inches ; the hairs of the body mantle, moreover, cover the black at the base of the tail.

The thickness and fineness of the fur and greater length of hair on body and tail, besides the greater abundance of white, is produced by the cold altitude where this variety is found.

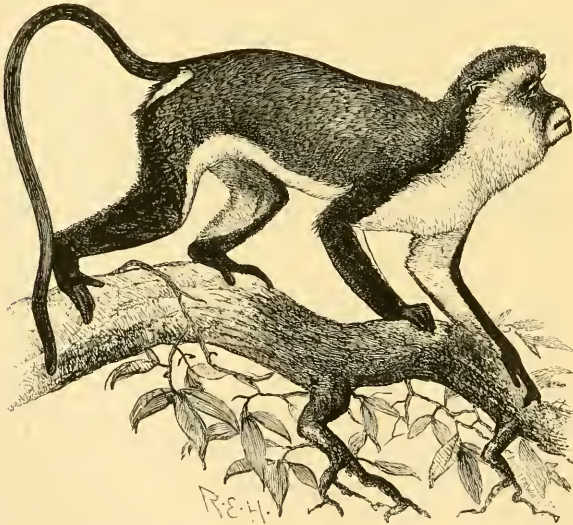
COMMON MONKEY.

Under this name skins of various species of Monkeys are imported, such as

CAMPBELL'S MONKEY. *Cercopithecus campbelli*.

This Monkey is about 18 inches long, not including its very long tail, which is almost 2 feet long.

The upper part of body is brown, but lower part is dark blue. The tail is of a blue colour nearest the root, then a speckled-grey colour predominates, which merges into dark grizzly at top; about 50 to 100 skins are sent to the London Market.



MONA MONKEY. *Cercopithecus mona*.

About the same size as the previous species.

The back is reddish-brown in colour, the head yellowish-speckled, the whiskers, chest, and belly are

white ; the legs are black and white inside. The tail is long and black, and there are two characteristic white spots at base of tail.

GREEN MONKEY. *Cercopithecus callithrichus*.

GRIVET MONKEY. *Cercopithecus griseo-rivindis*.

MALBROUCK MONKEY. *Cercopithecus cynosurus*.

Speckled ; white belly, inside legs and bottom of tail.

PATAS MONKEY. *Cercopithecus patas*.

Two feet long, flat reddish-brown, grizzly at flank, whiter at hind legs.

All these animals inhabit the West Coast of Africa, they have all long tails, and are extremely lively animals, living on fruit and other vegetable diet.

Their skins are of little value, about 1d. to 3d., and but few are imported.

VERVET.

Cercopithecus lalandii.

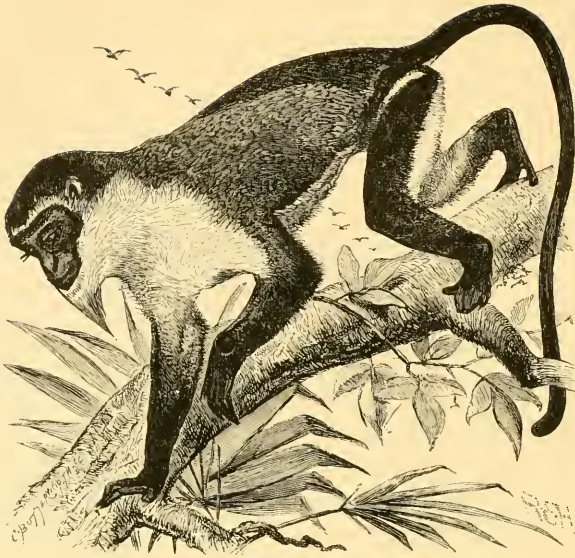
This Monkey is light-coloured and grey-speckled, its long fur is also of this hue underneath, and white at bottom of tail.

It inhabits the Cape and South Africa.

MOUSTACHE MONKEY.

Cercopithecus cephus.

The general colour of this species is speckled-brown, and the tail is the same colour and very long. The eyes are brown, the belly light bluish ; the face and nose are bright blue, with a white mark over its lips like a moustache.



GREY MONKEY.

Cercopithecus diana.

French : Singe gris. German : Perlaffe.

This beautiful animal, which is commonly known as the Diana Monkey, inhabits the West Coast of Africa.

It is more numerous than the few preceding species, but is far less abundant than the Black Monkey.

The colour of this Monkey is very varied and rich ; the back is of a bright chestnut-brown, and the sides of silvery speckled-black or dark grizzly colour ; the colours of back and sides do not merge into one another, but are quite distinct.

The cheeks, chest, and belly are white, and the eyes are brown ; the white beard and the white line on the forehead gives the animal an unique and striking appearance. There is, moreover, a white line on the thighs,

separating the brown and silvery part of the body from the black extremities. The tail is long and black, about 3 feet long; the length of the body is about 18 inches.

The Grey Monkey is a very lively and graceful creature, and lives on nuts, fruit, etc. It thrives fairly well in captivity.

There are from 400 to 800 skins imported annually, and the price varies from 1s. 6d. to 4s. 6d., according to demand. The skins make most excellent muffs, and are sometimes used for manufacture of artificial flies for fishing. This fur is generally used in France; a few skins are used in Germany and England.

There is a peculiar variety or sub-species of this animal inhabiting Sierra Leone; it is smaller in size and of more vivid markings than the larger and more numerous variety; the belly of this animal is bright scarlet, the contrast of colour is very remarkable.

The tail is black, very long, and about twice the length of the body.

From 100 to 400 skins are imported into London annually.

RED MONKEY.

Cercopithecus erythrogaster.

French: Singe rouge. German: Rother Affe.

The Red, or Red-bellied Monkey likewise inhabits the West Coast of Africa.

The fur, or rather hair, is short and black, and the belly red; the tail is long and red-brown.

The Red Monkey is not numerous, but few skins are imported (about 100 to 200), and are of little value, 4d. to 6d. being the usual quotations.

PLUTO MONKEY.

Cercopithecus pluto.

This monkey is larger than the two preceding species, being about $2\frac{1}{2}$ feet long, not including the tail.

It is of a dark speckled-grey colour, the tail is long and black, and slightly covered with whiter hairs.

The Pluto Monkey is rather a scarce animal, and its skins are rarely met with; it is likewise indigenous to the West Coast of Africa.

BLUE MONKEY.

Cercocebus fuliginosis.

French: Singe bleu. German: blauer Affe.

The Blue Monkey or Sooty Mangabey is another inhabitant of the West Coast of Africa, but it is not numerous.

The colour is deep drab, with a dark mark along the back, the belly is almost white in colour, the head is of a deep red, with a white crest of hair immediately below.

The skin of this animal is practically valueless, as the fur is so thin and poor.

WANDEROO MONKEY.

Macacus silenus.

This monkey inhabits the Malabar Coast of India, its colour is dark brown with tolerably thick fur, its

head is white, with rather long, reverted hair over its face.

Its length is about 18 inches, not including the tail, and its skin is not often imported.

BLUE MONKEY, OR MOUNTAIN ENTELLUS.

Semnopithecus schistanus.

French : Singe d'Himalayas.

The colour of this rather large and fine monkey is usually light bluish-grey; it, however, varies in colour from a dark grey shade to almost whitish-drab.

The fur is dense, thick, and silky, about 3 inches long. The size of the body and head is about 2 or 3 feet, the tail is about 2 feet long and tufted with white; there is a black crest of fur between the eyes. The belly is lighter in colour, and bare of fur.

The female has two teats.

This remarkable monkey inhabits the Himalayas, Nepaul, and Cashmere.

About 200 or 300 skins are imported annually; it is much esteemed as a fur.

CHINA GREY MONKEY.

Macacus tcheliensis.

This species is not well known, it is of a beautiful light grey-speckled colour with black thighs and belly; the cheeks are white, the tail is also white and long.

The length of this monkey is about 18 inches, not including the tail.

It is an inhabitant of Cochin-China.

GUINEA BABOON.

Cynocephalus sphinx.

The skin of this baboon occasionally appears in the lots of African monkey-skins. The Guinea Baboon is a largish animal, of about 3 feet in length.

Its hair is of a yellowish-red, coarse and harsh, with whiter hairs on the belly ; the tail is very short.

The skin is of little or no commercial value.

BLACK LEMUR.

Lemur Macaco.

This beautiful animal is of somewhat rare occurrence, and is probably a variety of another species of lemur.

The colour is jet black and the fur about 1 inch long, but not very thick except on the head and back ; the chest is barely covered with short hair of a brown colour with a whitish patch in the centre.

The Black Lemur is an inhabitant of Madagascar, living in the dense forests in the centre of the island.

It is about 30 inches in length, and the tail is short. It has a peculiar way of carrying its young, viz., across its belly.

The Black Lemur breeds in the Zoological Gardens, London, and the young are generally of different colours.

THE BLACK AND WHITE OR RUFFED LEMUR is a variety of the above animal, of the same size, and inhabits the

same districts ; the hind legs and arms are dark brown, and the back and lower half of body are of a light brown colour, almost white. The tail is short, and the fingers, and arms, and legs are furnished with spongy pads.

The skins are rarely imported, and are adapted only for mounting.

This is sometimes called the White-fronted Lemur (*Lemur albifrons*.)

RED-FRONTED LEMUR.

Lemur rufifrons.

This lemur is of a grey or greyish colour all over its body, except a patch of red hair extending over the forehead.

Like all other lemurs, it has a rather narrow head, long legs, arms and fingers. The tail is short, about 6 inches long.

The Red-fronted Lemur is rather a smaller animal than the foregoing species.

RING-TAILED LEMUR.

Lemur catta.

The length of body of this animal is about 9 inches.

The general colour is of a light grey, redder at the shoulders and whiter at chest.

The tail is ringed with black and white, and is about 8 to 12 inches in length.

It is sometimes made a pet of.

Like all other lemurs, it is an inhabitant of Madagascar.

WOOLLY OR DWARF LEMUR.

Microcebus smithii.

This very small lemur is about 6 inches in length, and is of a brown-grey colour.

GREY LEMUR.

Chirogaleus miii.

The Brown Mouse Lemur is rather smaller than the Red-fronted, and has a dark stripe on the back. The general colour is grey-brown.

LION.

Felis leo.

French : le Lion. German : Der Löwe.

This well-known and majestic animal, the emblem of strength and dignity, is now principally found in Africa, and is most abundant in Algeria, Mashona Land, and Central Africa. It has become very rare in some parts of this continent of late years, although they are very plentiful and bold in East Central Africa, as Mr. H. Johnston remarks.

In 1653 Lions were very numerous at the Cape of Good Hope, and even approached Cape Town. In 1847 500 Lions were slain near Schoer's Spruit. Mr. Selous says that they are now much rarer in Central South Africa.

The Lion also inhabits South-Western Asia, Arabia, etc., and Guzarat in India; and in ancient times was found in colder climates than its present range. It was slain by one of David's warriors in winter-time; it probably then had a thick coat, like the Turkestan Tiger. This is also shown in a marked degree in the extensive manes of the Lions of the Nineveh Sculptures.

The Lion is about 5 feet in length, and of a tawny-brown colour. The tail is long and tipped with a tuft of black hair. The male only possesses a mane: that of a full-grown animal gives it a truly majestic appearance. It grows sometimes beyond the forelegs, and is usually black or dark brown. It is probably a protection to the male when fighting. In some animals the mane is extremely short; and small yellow-maned

specimens are not uncommon. These are especially abundant in Somali Land.

The ears are small, and black or dark brown. The canine teeth are well-developed, and about two inches in length. In man-eaters, however, they are either blunted or broken. The weight of a full-grown Lion is about 550 lbs.

The Lioness is smaller than the Lion, and has no mane. The young, when born, and for several months afterwards, are spotted, especially towards the tail. They play like kittens or small cats: the mother carries its young by the back of its neck.

The roar of the Lion is deep and impressive, and has a marked effect on animals.

The Lion preys on wild animals, and its powers of carrying its prey and of leaping are very great. The strength of its paws is prodigious. It is nevertheless killed sometimes by the Gemsbok, which transfixes the Lion with its long pointed horns. The Gemsbok is probably the typical Unicorn of the British Crown.

Lion-hunting was a favourite sport of the Assyrian kings. The Lions were liberated from cages by attendants, and were shot by the king from his chariot (arrows were then used instead of bullets). The king was protected by spearmen from attacks or sudden springs of the Lion. These men were probably assisted by horsemen who encircled the Lion.

Since Lions have become so scarce in many parts of Africa, very few are now shot for sport. It is highly dangerous to shoot one with the old muzzle-loading gun.

The Lion has been tamed to a certain extent, especially when taken in hand when young. Care should then be taken not to feed them with raw meat. They are made to leap through hoops of fire, and have even

been driven in chariots. The Lion-tamer sometimes puts his head into their jaws, or leans on a Lion. The Lion-tamer, however, runs great risk, and requires and evinces great presence of mind. When performing, some use a mere horsewhip, others steel whips when in the cages. All quickly shut the doors when the performance is concluded; fatal accidents have, alas! been too frequent.

The Lion does not thrive well in the Zoological Gardens in London, the young cubs usually dying of rickets, owing, perhaps, to want of fresh air, and cold flooring of outside cages. The Cologne, Clifton, Margate, and especially the Dublin Gardens, are, on the contrary, successful in rearing the young. The latter Society derives a certain income from the sale of their surplus animals. The Lions of travelling menageries thrive better than those belonging to the Societies, the change of air having an exceedingly good effect. When out of condition, Mr. Tegetmeyer says that cows' livers and paunches, goats' or rabbits' flesh should be given them.

The Lioness, when in captivity, produces one to six young—usually four.

The value of a skin of this noble beast depends on perfectness of condition, colour and beauty of the mane. A really fine black-maned perfect skin would now be worth about £50 to £70; yellow-maned and imperfect, or menagerie skins (which lack the brightness of wild) are worth considerably less—from £5 to £30.

A Lioness' skin is worth from 10s. to 30s.

Lion-skins are usually used for mounting, for museums, or shop-windows.

Very few skins are now met with.

The value of a live Lion is from £150 to £200.

PUMA.

Felis concolor.

French : Le Cougouar. German : Kuguar.

This very graceful animal has often been known as the Lion of America, and has sometimes been called the Panther or Couguar.

It inhabits many of the States of the North American Republic, such as Florida, Montana (Yellow Stone Park), New York State, and Texas, and is also distributed over the greater part of Central and South America. It is rarely seen in the Dominion of Canada; a few are, however, taken in the West (British Columbia) and in Vancouver Island.

The Puma is about 4 or 5 feet long, and its tail, which is rather bushy, is nearly as long as its body; the general colour is an uniform light dun-brown; the fur of the belly is lighter and longer, and the tail is tipped with black.

It is rather an abundant animal; its skin is, however, of little value, and is chiefly used for wrappers or rugs: a good large skin is worth about 5s.

The value of a live Puma is about £25.

The Puma is capable of making long leaps, a spring of 20 feet not being uncommon; it is said to prey on the Porcupine of North America.

Mr. W. H. Hudson thus describes the Puma as being a deadly enemy of the Vizcacha in desert parts of South America: "Of these the Puma or Lion (*Felis concolor*) is the most numerous, as it is also the swiftest, most subtle, and most voracious; for, as regards these traits,

the Jaguar (*F. onca*) is an inferior animal. To the insatiable, bloody appetite of this animal nothing comes amiss; he takes the male Ostrich by surprise, and slays the wariest of wild things on its nest; he captures little birds with the dexterity of a Cat, and hunts for diurnal Armadillos; he comes unawares upon the Deer and Guanaco, and springing like lightning on them, dislocates their necks before their bodies touch the ground. Often after he has slain them he leaves their bodies untouched for the Polyborus and Vulture to feast on, so great a delight does he take in destroying life. The Vizcacha falls an easy victim to this subtle creature, and it is not to be wondered at that it becomes wild to excess and rare in regions hunted over by such an enemy, even when all other conditions are favourable to its increase." (P.Z.S. 1872, p. 826.)

The Guanaco is said to be the favourite prey of this animal.

TIGER.

Felis tigris.

French: Le Tigre. German: Der Tiger.

The Tiger is handsomer in colour and markings than the Lion, but does not possess its imposing and grand bearing; it is, however, said to equal even if it does not excel it in strength.

The Tiger is exclusively an inhabitant of Asia, where it is rather widely distributed; it is found throughout India, Turkestan, and some mountainous parts of China, as far north as Mongolia and the Amoor Province; it is also met with in Burmah, Sumatra, Java, and Malacca.

It is extremely numerous in some parts of Mysore and

South of India, being often found in the gardens of remote habitations.

There are two very marked varieties or sub-species of Tiger.

THE BENGAL TIGER is perhaps the more numerous of the two, and is distinguishable by the very bright markings; the general colour of body is of a rich bright brown colour, with white belly; the stripes on body are black, and well-defined spots are sometimes seen between the stripes, especially at hind legs. The black and white markings of the head are also in strong contrast; the whiskers are strong, bristly, and white in colour.

The tail is long and ringed with black.

The canine teeth are well developed.

The hair of the Bengal Tiger is very short, and lies close to the skin. Like many wild animals, the colour of the Tiger assimilates itself to the country where it lives. The stripes are with difficulty seen in the reedy jungles of India. We recently came across a skin with a grizzly head, probably from an old animal: such skins are very uncommon.

The Tiger has at times been tamed to a certain degree, but its temper is uncertain and treacherous, and many fatal accidents have occurred in consequence. It is a very powerful animal, even attacking and eating man; it is occasionally kept in confinement by the native princes of India; in that country the Tiger is generally hunted or driven by means of Elephants, or are shot from stages erected in trees: these are quite safe, as the Tiger is unable to climb.

The following incident is very interesting:—A man walking through the jungle was suddenly confronted by a Tiger; he had the presence of mind to remain quiet,

the Tiger came up to him, smelt about him, and then rubbed himself against the man, and afterwards left him untouched.

Tigers are said to begin eating their prey at the hind quarters. Tigers will at times eat fish, frogs and carrion.

One thousand four hundred and sixty-four Tigers were killed in British India in 1886.

The value of a good Bengal Tiger skin is about £4 to £6; and the value of a Tiger-claw is from 9d. to 5s.: these are mounted for pins by jewellers. The Bengal Tiger rarely exceeds 11 feet.

One thousand and sixty-three human beings were killed by Tigers in India in 1888.

Albinos, or White Tigers, are extremely scarce and are very beautiful; the stripes are generally light brown, but we have seen a white skin with dark drab stripes. There has recently been an extraordinary number of Tigers in Java; in 1846 a black, or very dark brown, Tiger is said to have been seen at Tipperah, near Chittagong.

THE MONGOLIAN OR CHINESE TIGER.—This woolly variety of the Tiger has the fur or pelage of great richness, and has consequently been classed as a different species by some naturalists. Very little seems to be known of it in Science, although it is well known in Commerce.

The fur of this animal, as before said, is very thick, and is often $1\frac{1}{2}$ to 2 inches in length, and on the belly it is much longer (several inches), like a Lynx.

The general colour is paler than the Bengal animal, and it is of a less ferocious disposition.

The stripes are scarcely so black as in the Bengal

type, and are generally not quite so numerous, although occasionally they are very beautifully and fully marked. They vary considerably; in some animals there are but few stripes on the shoulder, in others the stripes are long and sometimes triangular: the stripes are generally deeper towards the tail.

The fringe which surrounds the face of the Chinese Tiger is long (3 to 4 inches) and thick, composed of black and white fur like a Lynx; the ears are black, with a white spot near the tip; the ear of a Tiger varies considerably in size in the same way that it does in individual persons.

In many animals there is a hump of longer and thick fur between the shoulders, and in all there is a thick ridge of bristly hair running down the back, the same as Lynx, Cat, and other species of the Felidæ.

Owing to cold elevated regions where this Tiger lives, the fur has become dense, thick, and the colour of many of these animals is very pale, especially in the younger animals; the larger are mostly of a fine rich brown, approaching the deep hue of the Bengal variety. The cubs or quite young have an especially dense coat.

The size of a full-grown animal varies considerably; the largest skin we have met with measured 14 feet, including the tail. The Chinese Tiger inhabits Manchouria.

The majority of the skins are shipped from Shanghai, and fetch from £10 to £40, according to quality, condition, colour, etc.; £66 has even been paid for an extraordinary large skin. 135 skins were imported in 1891. The Chinese often use black Cat to imitate ear of Tiger when deficient.

THE TURKESTAN TIGER is distinct from the Chinese

animal in so much as it is deeper and redder in colour, and coarser in the fur, and also slightly denser. This is probably owing to exposed regions of Turkestan and high grounds of Central Asia and Western Himalayas which it inhabits: the stripes on the Turkestan or Himalayan Tiger are occasionally brown.

The skins of this animal are imported in the rough state through Russia and Leipsic, and fetch from £3 to £25.

The skins of all the different varieties of Tiger are manufactured into handsome wrappers or rugs, or are used for mounting for museums or shop-windows.

The claws are often mounted as jewellery, and are worth about 5s. in the rough state.

J A G U A R .

Felis onca.

French : Jaguar. German : Jaguar.

The Jaguar inhabits South America, Mexico, and British Honduras, but it is not found in Chili or Peru.

It is not a particularly numerous animal, and appears of late years to have decreased.

The general colour is of a light yellowish-brown, with very beautiful rings or markings; these rings are black, with a small black spot in the centre, except those on the head and the tail; the hair is very short and bristly. The belly is whiter.

The Jaguar is about 8 to 10 feet long, including the tail; it has a massive and heavy appearance, and climbs trees with agility.

There is a black variety of this animal.

OUNCE, OR SNOW LEOPARD.

Felis Uncia.

French : l'Once. German : Irbiss or Unze.

The Ounce inhabits Cashmere, the Himalayas, and many parts of high lands of Central Asia.

The general colour of the Ounce is almost white, with thick pale long fur [2 inches], which is bluer at the ground, and rather harsh to the touch; this is caused by exposed and elevated plains in which it lives; the rings or spots are but faintly marked, and are just distinguishable.

The tail is very long in proportion to the body, and is very thickly furred and marked with faint rings. It seems to us very remarkable that in a wild state and in cold climates the tails of most animals seem to become shorter, as in the Wild Cat, Bison, Yak, etc. The extraordinary length of tail of the Ounce must be sought for in other causes.

The spots on the head are small, black, and solid.

It is not so rare an animal as many suppose; a certain number of skins are imported into Russia, through Siberia, annually. The price of a good skin is from 40s. to 130s.; and 140s. is the highest price paid.

The mountains of the Leopard (Canticles, iv. 8) appears to refer to the habitat of this animal in ancient times in Palestine.

THE CHINESE LEOPARD (*Felis Pardus*) approaches more closely to the common Leopard in colouring, but has a rich fur, almost equalling that of foregoing variety

as to thickness; the fur is finer, and over 1 inch in length; the general colour is very light yellow; the spots are darker, with buff centres. Some animals, however, vary considerably.

The tail is long and thickly furred, and marked with spots at the base.

The Chinese Leopard inhabits Amoorland, Manchouria, the Corea, the high mountains of China, and eastern slopes of the Himalayas.

The skins are very beautiful, and fetch from £5 to £10 10s. These are made into very handsome rugs or wrappers; about 100 skins, splendidly dressed by the Chinese, are imported annually from Shanghai: in 1891, 123 skins.

The Chinese sometimes use the ear of the Fox to imitate the Leopard ear when this is wanting.

Both the foregoing are the woolly varieties of the Leopard.

The Turkestan or Himalayan Leopard is lighter in colour than the Chinese animal, and rather coarser in the fur.

EAST INDIAN LEOPARD.

Felis Pardus.

French : Le Léopard. German : Der Leopard.

The Leopard was also called the Pard in former times; it is remarkable for its graceful movements and handsome markings; it is plentiful in India and many other parts of Asia.

Although examples of this species vary somewhat, the usual colour is yellowish-brown; the spots are

numerous and black, with lighter coloured centres. On the face, neck, legs, and middle of the back the spots are solid; occasionally the rings or spots are marked in the centre like those of the Jaguar: the belly is white, but still spotted, as likewise the under part of the tail.

The tail is marked with black spots and ringed at the tip.

The head is beautifully marked with black and white, and the ears are dark, tipped with white.

The hair of the East Indian Leopard is very short, and harsh.

The spots are sometimes merely a collection of blotches with a deep shade of colour in the centre; in other specimens the rings are quite circular.

The whiskers are white; the colour of eyes is brown.

In the cubs the hair is rather longer, and the spots are very numerous and small.

The skins of black variety of this animal are much prized. In some, although never absolutely black, the spots are barely perceptible owing to the darkness of surrounding hair; in lighter and greyer skins the dark spots stand out in beautiful contrast. Formerly the Black Leopard was considered a different species; it is now admitted to be a mere variety, as animals of both colours are found in the same litter.

The Ceylon Leopard is very rich in colour, and has rather thicker hair than the East Indian animal.

In Bombay there appears to be a very spotted and paler type of Leopard.

The Leopard preys on the Axis, or East Indian Deer, and is said to commence eating its prey on the fore quarters. It is asserted that it also kills the East Indian Bear.

The young are pretty little creatures, and play like kittens, catching their mother's tail, etc.

Leopard-skins are used for saddle-clothes for the officers and bandsmen of the Hussars and other cavalry regiments. Sometimes the skins are also made into rugs, foot-muffs, wrappers, slippers, and drummers' aprons. Some are also bought for theatrical purposes.

Four thousand and fifty-one Leopards were killed in British India in 1886.

The Indian Government pay a royalty on every animal taken; the skins are marked by their agents, either by cutting a circular or triangular piece out of the skins at the head or root of the tail, or sometimes by merely giving a cut at the base of the tail.

The claws are occasionally used as scarf-pins.

A few thousand skins are imported into London annually; the prices fluctuating a great deal according to demand and supply: 12s. to 52s. are the extreme prices for a good large skin.

Many skins are brought over by private people.

The value of a live Leopard is about £20, and of a Black Leopard £150.

AFRICAN LEOPARD.

Felis Pardus.

The African Leopard has much darker and more numerous spots than the East Indian. The general colour is, however, paler, or almost white, thus giving it a very handsome appearance.

It is smaller than the East Indian animal.

It is fairly numerous on the Gold Coast, but here the natives have a habit of cutting off the legs of the

animals they secure. Most of the skins, consequently, are sent to this country in a mutilated condition.

The African Leopard is also found in Algeria, Natal, in the Transvaal (where it is called the Tiger), and in many other parts of Africa. Its numbers have been greatly reduced at the Cape, and the baboons, on which it preyed, have increased considerably, and have acquired a habit of preying on the young of farmers' flocks.

Where it is still met with, the Leopard commits ravages on the flocks, and is sometimes killed by strychnine.

Leopards are found in East Central Africa up to a height of about 8,000 feet. Mr. Johnston does not, however, give any remarks as to the colour of the animals in that part. We should think they would be lighter in colour and thicker in the fur at that altitude. The East African Leopard from Zanzibar has a pale-yellowish general ground, not a warm brown like the East Indian, but considerably browner than the West African variety; the spots are also not so dark.

The African Leopard rarely shows fight, except when brought to bay by its escape being cut off; it usually prefers to seek shelter by flight or by climbing.

The Kaffirs prepare the karosses of Leopard-skins with a suppleness and neatness unsurpassed by Europeans.

The spotted and unchangeable coat of this animal is mentioned in Scripture (Jer. xiii. 23).

Peculiarly spotted skins are occasionally met with. We have met with three, one of which came from the Gold Coast. One which was exhibited at the Zoological Society's meeting gave rise to a good deal of comment. These skins are merely an incipient black

variety, such as we should call a dark tabby in the domestic cat.

Several hundred skins are imported annually. The price varies from 10s. to 30s., according to demand.

PERSIAN LEOPARD.

Felis Pardus.

The Persian Leopard is a more solid and straighter animal than even the East Indian. It is, however, not so graceful.

The fur, or hair, is slightly longer than the East Indian, and harsh.

The colour is light, almost white, covered with numerous spots, many of which are solid, especially on the neck.

The fur is short, and rather thick.

This Leopard is also found in Afghanistan and in the Caucasus.

Some 30 to 50 skins are imported into London, and fetch up to 45s.

All the Leopards sharpen their claws against trunks of trees in the same way as the domestic cat does.

The peculiar habit of watching is well depicted in Scripture :—

“ A leopard shall watch over their cities.”

“ As a leopard by the way will I observe them.”

CLOUDED TIGER.

Felis macroclis.

This very beautiful animal inhabits the southern portion of China and Assam. Its graceful movements and large and dark markings do not fail to attract the notice of the most casual observer.

It is about 3 feet long, not including its tail.

The Clouded Tiger lives in trees, and its skin is worth £3 to £4.

The tail is ringed.

OCELOT.

Felis Pardalis.

French : l'Ocelot. German : Ozelot.

This graceful and well-known animal is most varied in its markings; the spots are also more of an oblong shape than the usual round of many of the Felidæ.

The general colour of the coat is light, with dark oblong spots, with drab centres. Those on the back are, however, solid black.

The ears are white at base, and black at top.

The tail rather short, dark, and partly ringed.

The whiskers are part white and part black, according to the spots.

The colour, perhaps, varies more than most animals. Some specimens are beautifully striped; others have dark blotches like a dark tabby. Some examples are red-striped.

The Ocelot is about 3 feet in length, and is an extremely lively and beautiful creature.

It inhabits British Honduras and South America generally.

Its skin is chiefly used for making wrappers, and its value is from 2s. to 4s. 6d., according to size, quality, and demand.

Several hundred skins are imported annually.

The Ocelot brings forth about two young at a time.

EYRA CAT.

Felis Eyra.

This cat is about 2 feet long, and the tail is another 8 inches.

The hair is short and bristly, and the colour bright yellow all over the body.

The skins are almost valueless, and but few are imported.

The Eyra is an inhabitant of South America.

GEOFFROY'S CAT.

Felis Geoffroy.

Geoffroy's Cat is likewise an inhabitant of South America, more especially of Buenos Ayres.

Its fur is rather long; medium colour brown, with black spots of a squarish shape, with brown centres.

The tail is similarly marked and tipped with black, but not very thickly furred.

It is rather a small animal, of about $1\frac{1}{2}$ feet in length, and is of rare occurrence.

AFRICAN LEOPARD-CAT.

Felis Chrysothrix.

This cat is sometimes called the African Golden Cat, and has very short drab or reddish hair, with spots of a darker hue, either dark brown or darkish red.

The general colour is white underneath. The colour of this cat varies considerably; some are even of a very red-brown colour.

The hair or fur is quite short; the skins are consequently of little value—about 1s. to 2s. It is by no means a numerous animal.

About 20 to 40 skins are imported annually with monkey-skins.

The Leopard-Cat inhabits West Africa.

PAMPAS CAT.

Felis passerum.

The colour of this cat is an uniform light grey, with a tinge of yellow; the fur is rather harsh and much longer on the back; the tail is rather short.

The skin is of little value and is rarely imported.

The Pampas Cat inhabits South America.

MOLINA'S GUIANA CAT.

Felis colocolo.

This small cat likewise inhabits South America; its colour is very light grey, with darker grey markings; its length is about 9 inches, not including the tail.

It is a rare animal, and its skin is seldom seen.

TIGER CAT, OR SERVAL.

Felis Serval.

French: Le Serval. German: Tigerkatze.

The Serval is larger than the Leopard-Cat, and its colours are in more marked contrast than in the latter animal. The general hue of the body is of a light

yellowish-brown, with long black narrow stripes of some three or more inches long down the back ; the spots on the sides are round, and more or less numerous in different examples : this is often the case in many species of this family.

The ears are long and black at base, and the tip or remaining half the light yellow colour of the body.

The legs are long for its size, but the head is small ; it has a peculiar appearance when sitting on its hind legs, its small head contrasting strangely with its long ears and legs.

There is a dark stripe under the chin, and a black corresponding mark on each fore-leg.

The tail is only of moderate length, and is sometimes ringed and sometimes spotted.

The Serval is an inhabitant of West and East Africa, and its skin is comparatively rare, and for this reason is not so valuable as it ought to be : 1s. to 4s. is the usual price for a good skin.

BUSHY-TAILED RED-SPOTTED CAT.

Felis cuptilura.

The Red-spotted Cat is an inhabitant of Japan, Manchouria, and other parts of China, and but little is known of its habits.

The general colour is light brown, covered with numerous red spots, from whence it derives its names : these spots are most clearly shown on the belly.

This animal is about the size of an ordinary cat, perhaps slightly larger. About 40 to 60 skins have been recently imported : value is about 1s. 6d. to 2s.

HIMALAYAN LEOPARD-CAT.

Felis bengalensis.

This beautiful cat inhabits India, Cashmere, Nepaul, and the Himalayas.

It is about 1 to 1½ feet long; the tail is another 6 inches. This appendage is full furred and partly ringed, more especially towards the tip; this is most noticeable in the Northern or Nepaul variety. The general colour is light yellow, covered with black spots, which are irregular in shape and sometimes lighter in the centre; the fur is long and fine, and the claws curved and sharp.

The Bengal Leopard-Cat is not numerous enough for its skin to be appreciated as it justly deserves to be on account of its bright markings and fineness of quality: not more than a handful of skins (some six or more) are seen from time to time. Its value is about 2s. to 3s.

DESERT CAT.

Felis ornata.

This rare cat likewise inhabits India; it is about 18 to 27 inches long, and the tail about 9 inches.

The colour is light yellowish-brown, covered with numerous darker spots or small solid black spots; these are more abundant on the back. The belly is white or very light yellow; the head is marked with black lines, and the ears are tipped with white; the tail is spotted at base, ringed with black towards the tip. The fur is about half an inch long, full, and rather harsh. The whiskers are brown or white.

The colour of this animal varies considerably, sometimes the spots are inclined to run into blotches, and the legs have a tendency to have black lines.

The value of its skin is 1s. 6d. Seventy-one skins were imported in 1891.

The larger examples appear to be called the Fishing Cat by some writers.

EUROPEAN WILD CAT.

Felis catus.

French : Chat Sauvage. German : Wilde Katze.

The Wild Cat is indigenous to Great Britain ; it is by no means rare in Sutherlandshire, Ross-shire, Invernessshire, parts of Perthshire, and South Caithness ; it is also found in North Wales, and some of the Northern counties of England. It is very rare in Lincolnshire, but is not thought to exist in Ireland. Its habitat extends to France, Sardinia, Hungary, Prussia, the Caucasus, and other parts of Europe.

Its yellowish-brown colour and full fur cannot fail to attract even the most casual observer ; its tail is bushy, ringed with black at extremity, and shorter than in the domestic cat.

The Wild Cat is about 2 to 3 feet long, and has a ridge of hair along the back like the domestic variety. The fur is about 1 inch long and very thick ; the colour is yellowish-brown, and blue shade at the ground ; there are usually a few narrow black lines or marks between the ears. The colour of individual specimens, however, vary ; many are beautifully marked with spots or stripes ; most are plain, except at the back, which is darker.

The value of its fur is about 1s. to 1s. 6d. for a good skin, but the number collected is small.

Six hundred and twenty-six Wild Cats were killed in Prussia in the winter of 1885-6.

It is said to sell its life dearly, and to be very fierce when attacked, as the following account shows :—

St. John, in his "Natural History of the Highlands," p. 45 :—"In the hanging birchwoods that border some of the Highland streams and lochs the Wild Cat is still not uncommon, and I have heard their wild and unearthly echo far in the quiet night as they answer and call each other. I do not know a more harsh and unpleasant cry than that of the Wild Cat, or one more likely to be the origin of superstitious fears in the mind of an ignorant Highlander. These animals have great skill in finding their prey, and the damage they do to the game must be very great, owing to the quantity of food which they require. When caught in a trap, they fly without hesitation at any person who approaches them, not waiting to be assailed. I have heard many stories of their attacking and severely wounding a man, when their escape has been cut off. I was fishing in a river in Sutherlandshire, and, in passing from one pool to another, had to climb over some rock and broken kind of ground. In doing so, I sank through some rotten heather and moss up to my knees, almost upon a Wild Cat, who was concealed under it. I was quite as much startled as the animal herself could be, when I saw the wild-looking beast so unexpectedly rush out from between my feet, with every hair in her body standing on end, making her look twice as large as she really was. I had three small Skye terriers with me, who immediately gave chase, and pursued her till she took refuge in a corner of the rocks, where, perched in a kind of recess, she

stood with her hair bristled out, and spitting and growling like a common cat. Having no weapon with me, I laid down my rod, cut a good-sized stick, and proceeded to dislodge her. As soon as I was within 6 or 7 feet of the place, she sprang straight at my face, over the dogs' heads. Had I not struck her in the mid-air as she leaped at me, I should probably have got some severe wound. As it was, she fell with her back half-broken amongst the dogs, who, with my assistance, dispatched her. I never saw an animal fight so desperately or one so difficult to kill. If a tame cat has nine lives, a wild cat must have a dozen."

HOUSE CAT, OR DOMESTIC CAT.

Felis domestica.

French : Le Chat. German : Hauskatze.

Who is not familiar with the softly-purring denizen of our hearths? We know it and play with it from childhood, and to many it becomes a companion in old age. It shows its contentment by purring and rubbing its fur against the trousers of its master; yet, after saying this, we must still confess that the domestic cat forms more of an attachment to places than to persons.

Its intelligence is not much inferior to that of the dog. It attracts by tapping with its paw the side of one from whom it expects to receive a dainty morsel, or even will express its wish by mewling to be let in or out of the house. When admitted, it shows its satisfaction by a low purr. The same cat would be offended if its place in front of the fire were occupied by anybody. When

the outside bell was rung it would get up from its warm position on the hearth and run under the table. It probably did this as a dog was sometimes brought into the house.

The cat loves warmth, both of the sun or of the fire, and is one of the animals attached to civilization throughout the globe.

Every one knows its wonderful agility in catching mice, small birds, etc., and the way in which it plays with its prey, allowing it to escape a few feet or inches, and then pouncing on it again.

In some animals the showing of a rather poaching propensity asserts itself. We knew a rather small cat to travel about half a mile and bring back a young rabbit or other prey, leaping two high fences on its return journey.

Its powers of dropping or falling from a height are also wonderful. This is probably owing to the elasticity of its limbs, and the freedom with which its skin moves over its body. We have seen a cat jump out of a loft some twelve feet or more high, and alight on a granite paving without seeming to have worse effects than a few rolls over.

The food of the cat usually consists of small birds, mice, etc. It is extremely fond of fish and game, and will occasionally kill or capture moles and frogs, but will not eat them. In the domesticated state its usual diet is horseflesh. Its propensity for fish even overcomes its dislike of water. It has been known to fish by means of its paw. The cat will eat grass and Indian corn, and is active enough to kill the agile squirrel.

A favourite position of the cat is sitting on its haunches or hind legs, with its tail curled round it;

sometimes it squats on all fours, with its fore-paws doubled under it.

It sharpens its claws by scratching the bark of trees, window-curtains, table-cloths, etc.

It loves to prowl about roofs and outhouses in search of sparrows and other prey. Although not fond of water, it yet swims well, and is very cleanly in its habits—so different to the habits of the dog. It is interesting to observe with what care the cat performs its toilet. It first licks one paw and cleans its head with it, and then repeats the operation on the other side. It also loves to roll in the soil or gravel.

The domestic cat produces about four young at a time, which are born blind. The kittens are generally of different colours in a litter. When disturbed, it carries its young in its mouth to a place of safety.

When deprived of its young, it has been known to suckle young rabbits.

The cat—in fact, most of the Felidæ—is extremely fond of valerian. It is sometimes troubled with parasites or nits; these are quite minute in size, and attach themselves to the hair by lobster-like claws.

Although not a large animal, it can give a good blow with its fore-paw.

The cat was sacred to the Egyptians, and was often embalmed by them. Several tons of embalmed cats were recently (1890) sold in Liverpool, and fetched £3 13s. 9d. per ton for manure. They were dug up in Central Egypt, and are supposed to be about 2,000 years old.

Its flesh was eaten during the siege of Paris, and is said even to have been relished.

Cats fight desperately at times, and generally, during the night, the caterwauling is often distracting. It is

sometimes plaintive, like a child, and sometimes angry and discordant.

Domestic cats, become wild, soon acquire the habits and colour of the wild cat. Many are shot by gamekeepers, and are sometimes taken in traps like the familiar penny mouse-trap, on a larger scale, with a drop door instead of the spring flap.

The domestic cat ought to be classed with the wild; it is the same species.

The trade in the fur or skins of the cat is of some importance. The hair is soft, and it is one of the warmest furs. It is, perhaps, only surpassed in this respect by that of the buffalo.

Every skin has a ridge of bristly hair running down the back. This hair has to be taken out when manufactured into articles of clothing. When finished, it is often called genett, and is much used for coat-linings, muffs, sets, trimmings, and rugs. Although not a very showy skin, it is a good, durable, and warm fur.

The black skins are of the greatest value.

The best and largest black skins come from Holland, where many cats are gelded. Denmark and Holstein also produce many good skins, and medium grades are collected in Germany, Switzerland, and other districts. English skins are very mixed in colour and small, but of fair quality. Russia produces many skins, but of low, medium, or poor qualities. Many are imported in linings.

American skins, of which about 3,000 are imported annually, are generally black, blue, white, or tabby in colour, and of rather low quality. The prices are from about 3d. to 1s. 6d.

Australian skins are very flat, the worst of all in quality, losing their rich coat in the warm climate. The predominating colour is red-tabby.

The prices of all cat-skins vary from year to year. Six shillings to eight shillings per skin is sometimes willingly paid for the very best Dutch skins.

The colour of the cat varies considerably, perhaps more than that of any other animal, excepting the rabbit—black, white, black and white, brindled, tortoise-shell, white and tabby, tabby, dark tabby, blue, blue-tabby, silver-tabby (sometimes called Cyprus), and red-tabby. Tabby colours are most numerous, and dark tabby, to our mind, the most beautiful. Some specimens are nearly as finely marked as a miniature tiger. Silver-grey cats are very rare; we once saw a white cat with a tabby tail.

Red-brown and other similar coloured skins are generally topped (dyed on top of the hair) to imitate the natural colour. The difference can, however, be at once detected by an experienced eye.

In Canada and other cold climates the domestic cat reverts to its original colour—mouse, or yellow, mouse-brown, and black-tabby. Spotted cats are not so often seen as in this country.

The wild cat and tame cat cannot well be broken into different species. The greater length and more tapering form of tail of the house cat is explained by the warmer condition and better feeding under which it lives.

When the coat or fur of a cat is rubbed it generates electricity. The sparks may clearly be discerned in a dark room. The eyes of the cat also gleam and shine in the dark.

The skin of the cat, like that of the lynx, is much thicker at the head. This thickening is probably a natural defence to protect the males, or tom-cats, when fighting, which is often of a desperate character.

The cat bristles up its fur when excited. It is fond of valerian. At some seasons of the year it will eat grass with avidity.

The head of the cat is round, with broad and rather long ears, which are furnished with hair in the inside and short fur on the outside; the whiskers are long, and tolerably abundant, and there are a few bristles or feelers over the eye.

The hind quarters of the cat are much higher than those of the fore quarters. The claws are retractile.

The antics of young kittens are very amusing. They love to play with balls, etc.

We have known a cat to live to the advanced age of twenty years.

THE PERSIAN OR ANGOLA CAT has a long and rather flimsy fur, which gives it a woolly, shaggy, and unkempt appearance; the colour varies almost as much as in the smoother-haired variety. The Persian Cat is much esteemed as a pet; its tail is rather shorter than in the ordinary cat; it is, however, delicate in constitution.

THE MANX CAT is tailless, and resembles the Lynx in this respect; most of the other Felidæ have long tails.

THE SIAMESE CAT is a bright-looking creature, with smooth fur of a dark red-brown colour, like a Caracal or Red Deer; it is very plain-looking, but bright and intelligent. In a recent Crystal Palace Show a light-coloured specimen, with dark markings on head or feet, exactly like a pug dog, was exhibited.

THE ABYSSINIAN CAT is another well-formed cat, similar to above in colour, but rather of a deeper rusty greyish-brown.

CAFFER CAT.

Felis caffra.

The Caffer Cat is an inhabitant of the Cape ; it is of a dun yellow-grey colour, with brown or spotted markings, more or less abundant ; the cheeks and sides are redder ; sometimes it is of a light blue colour, the tail is rather short, ringed with black, especially near the tip ; the fur is soft, and the ears are of an ochre-red colour, but sometimes are dark grey.

It appears to be an uncommon animal, and its skins are sometimes found in karosses of native manufacture ; a few hundred skins are, however, imported annually, and are used for wrappers ; the value of a skin is about 3d. to 6d.

The young are quite striped like a tabby cat. The adult animal resembles the European Wild Cat, with which it would no doubt as freely interbreed as with the Domestic Cat, with which both might well be classed.

The Caffer Cat is very similar to the Afghan Cat, or Bokhara Chaus (*Felis caudata*) ; but the latter has finer and longer fur, lighter in colour, and fewer rings on the tail.

The Chaus, Caffer Cat, Wild and Domestic Cat, are all undoubtedly one species ; their common offspring would no doubt be fertile.



SIBERIAN OR PERSIAN LYNX.

Felis Isabellina.

The Persian Lynx is much smaller than any other Lynx, excepting, of course, the Bay Lynx; it is only about 3 feet long; the fur is close, dense, and of a palish light brown or yellowish colour, sometimes marked with spots, more or less well defined; the pale and light hue of its coat is probably produced by the elevated and exposed regions in which it lives.

This Lynx inhabits Persia, Siberia, Nepaul, Thibet, and Central Asia generally.

Not many skins are imported into Western Europe, and its fur is applied to the same purposes as that of the American Lynx.

The Persian Lynx is probably a local variety of the ordinary Lynx.

AMERICAN LYNX.

Felis Canadensis.

French: Loup-cervier or Lynx. German: Luchs.

The American Lynx is distributed throughout the whole of British North America, with the exception of Labrador, where it is only found in small quantities. It is abundant in the territory of Alaska and in California. It is also met with in Minnesota, but this appears to be its most Southern range. The Yorkfort district produces the greatest quantity of skins.

The Canadian variety, coming from Nova Scotia, Moore River, East Main, and Canada ports of the Eastern part of Hudson's Bay, has been classed by many naturalists with the European animal of Norway, which it closely resembles in the fineness, silvery appearance and beauty of its fur, and texture of its pelt; in fact, the whole of the Scandinavian fauna resembles in a marked degree that of Canada and Labrador, not only in the similarity of the various species, but also in the way that the skins and pelts are handled; we, however, prefer to class the Norway Lynx with the European example, till the American Lynx, like the Elk and Reindeer, have been classified with the European types.

The Californian and North-West District Lynx is coarser in pelage and pelt, and redder and stronger in the fur than the foregoing variety. The Yorkfort and Alaska skins resemble these, but are paler, or very pale, with thick soft fur, produced no doubt by the severity of the climate; the footpads are large, and furnished with thick hair to protect the feet from the snow. The Sitka

skins have a shrivelled appearance, but the fur is soft, pale and fine.

These characteristic distinctions are only seen as a whole; the gradation from one district to another is very gradual.

All Lynx, with the exception of the Bay Lynx, will no doubt interbreed freely, and their offspring prove fertile: this is a sure way of proving whether it is a distinct species or a mere local variety.

The American or Canada Lynx, as it is sometimes called, is a moderately-sized animal, about 4 feet long and 2 feet high; the fur along the back is about 1 inch long, and is of a reddish-brown colour, intermixed with longer silvery hairs; in the centre of the back the hairs are very abundant and there is little fur there; this corresponds to the ridge of hair in domestic Cat, Tiger, etc. The upper part of under fur is reddish-brown, but the ground is of a drab-blue colour; the face is surrounded by a fringe of several inches in length of long coarse hair, black at base and white at extremity; these are more abundant under the chin, and gives the animal a weird appearance.

The tail is very short, about 2 or 3 inches long; for about two-thirds nearest the base the colour on upper part is same colour as back, but lighter underneath; the tip is quite black. The ears are long and tufted with black hair.

The fur on the belly is much longer and finer than on the back; it is soft, about 3 inches long, and white, with faint dark spots appearing.

Drab-coloured or blue varieties are very beautiful and rare, and a few are taken every year; light yellow or fawn skins are very exceptional and rarely seen: we have once seen a dark tabby Lynx, with deep large spots on the back like a cat; such incipient melanotic

forms are extremely rare, but more or less spotted animals are often met with, but in these the fur is never so rich as in the paler and thicker-furred individuals. In summer the Lynx loses most of its beautiful fur, and is chiefly covered with brown hair.

The whiskers are white and bristly, the claws are white, sharp and retractible, and are well concealed in its thick footpads; they resemble those of a Leopard, but are of course smaller.

The skin of the Lynx is rather thin, but at the head and neck it is much thicker; this is probably to protect the males when fighting.

The female has 6 or 8 teats.

The skull of the Lynx is oval-shaped, about 5 inches long, $2\frac{1}{2}$ high, and 3 broad. The canine teeth are well developed. There are ten molars.

The hind legs of the Lynx are much longer than the front legs.

The fur or skin of the Lynx forms a rather important article of trade, the usual quantity of skins imported and sold by the Hudson's Bay Company ranges from 8 to 40,000 skins; however, in 1887 over 70,000 skins were sold by the Company. These large increases usually occur in two to four successive years. In 1891, 11,445 were sold by the same Company.

Lynx on these occasions follow the Wood Hare or American rabbits in troops, leaving their usual habitats, and preying on their favourite food. When American rabbits are abundant, Lynx are always plentiful. Martens are also a favourite prey of this animal.

Lynx-skins are used over a great part of the civilized world, both in the natural and dyed state.

The United States, Germany, France, Turkey, England, and Canada, are the chief consumers.

Many skins are dyed black, and some are dyed brown, blue, or silvered.

The fur of the belly is long, and makes very handsome boas, trimmings, or muffs; this was much in vogue in England a few years ago, and is always in demand in Turkey, Herzegovina, etc., where it is much appreciated. The officers' busbies in the English Hussar regiments are made of Lynx-skins, dyed dark brown, which, being a free flowing fur, gives a dashing appearance to the wearer.

The price of Lynx-skins varies considerably, according to demand: 40s. 9d. to 42s. is a high price for a prime large skin; the lower qualities range from about 4s. to 15s.

An ancient name of the Lynx is Lucerne, probably derived from the French name of Loup-cervier.

Dr. Richardson, in his "North American Fauna," says:—"It is a timid creature, incapable of attacking any of the larger quadrupeds; but well armed for the capture of the American hare, on which it chiefly preys. Its large paws, slender loins, and long, but thick hind legs, with large buttocks, scarcely relieved by a short thick tail, give it an awkward, clumsy appearance. It makes a poor fight when it is surprised by a hunter in a tree; for though it spits like a cat, and sets its hair up, it is easily destroyed by a blow on the back with a slender stick; and it never attacks a man. Its gait is by bounds, straight forward, with the back a little arched, and lighting on all the feet at once. It swims well, and will cross the arm of a lake two miles wide; but it is not swift on land. It breeds once a year, and has two young at a time. The natives eat its flesh, which is white, tender, but rather flavourless, much resembling that of the American hare.

“The early French writers on Canada, who ascribed to it the habit of dropping from trees on the back of deer, and destroying them by tearing their throats and drinking their blood, gave it the name of Loup-cervier.”

EUROPEAN LYNX.

Felis Lynx.

French : Lynx moucheté. German : Europäischer Lynx.

The European Lynx is a rather rare animal compared to the foregoing ; it inhabits Russia, Norway, Sweden, Finland, Galicia and Spain, and formerly was also found in France.

The Northern form is very similar to the Lynx of Canada Proper and Labrador, having in its winter pelage a soft, silvery and fine coat ; in its summer dress it is rather redder than the American type.

The skins are used for the same purposes as the American Lynx, and are stretched and treated very much like those of Nova Scotia and Labrador. The best skins are worth about 22s. (1885).

The colour of the European Lynx varies considerably, according to the locality where it is found ; it is sometimes light brown, and marked with small black spots.

The Southern type, called sometimes *Felis pardina* by naturalists, is more spotted and has less fur, owing to the milder climate which it inhabits.

It can hardly be called a well-defined species, nor can the European form be consistently separated from the American type, when the varieties of the Elk, Reindeer, Wolverine and Ermine (which are common to both Continents) are classified respectively as one species.

Like the American Lynx, this animal climbs and lives in trees, and preys on birds, small mammals, etc.

CAT COMMON, OR BAY LYNX.

Felis rufa.

French : Chat Cervier. German : Luchs-katze.

This animal is by no means abundant, but this should be hardly a reason for the confusion which until recently existed in its classification.

Richardson, who is so careful and accurate in his description of the North American fauna, described it as the Banded Lynx, but, in justice to this eminent naturalist, it must be stated that but few Cat Common are found in the Hudson's Bay Territory.

It is often described by American dealers and authors under the name of Wild Cat or Lynx Cat.

The Bay Lynx inhabits New York State, Pennsylvania, Virginia, Texas, California, and other States of the American Union.

It is about 2 feet long ; the back is, as a rule, of a light brown shade, often marked with handsome spots or rings ; the belly is light coloured or white ; the chest is white, and the ears black at base, then white and black at tip ; some of the whiskers are black, and some are white. The tail is very short and coloured at the base, the same as the back ; towards the tip it is black, the extreme tip is white, with white hair underneath the whole length of the tail ; this colouring invariably distinguishes it from the Lynx. The tail is correctly described by Richardson.

The feet are well padded and furnished with sharp claws, and the face is beautifully marked with black and white lines, resembling a miniature Tiger.

The Cat Common varies considerably both in colour and marking.

The Californian variety is of a reddish hue, with well-defined black or dark red spots on the belly; the fur is tolerably thick; many specimens, especially from the Western or Middle States, are quite light or pale in colour; those from the South are well spotted on the back, but the fur is very short and harsh.

Many animals are quite plain like Lynx, others are marked with circular rings like a Leopard, and again others are very beautifully marked on the back and belly with large black spots, which are more oblong on the back. Some skins are almost white, and others of a beautiful light blue colour.

When attacked by dogs it defends itself with vigour; and by some authors its flesh is said to be excellent eating, a fact which would not seem probable from its carnivorous habits.

The skins of Cat Common are not very numerous. Six thousand seven hundred and seven were sold in 1891 at prices from 3d. to 4s. 9d. It is a useful fur, and generally used for wrappers in this country; the bulk, however, usually go to Herzegovina, Bulgaria, Turkey, etc. A few are dyed black to imitate Lynx.

The Hudson's Bay Company rarely import these skins; a few sometimes come from their Columbian posts.

THE CANADIAN OR HALIFAX BAY LYNX is a large and woolly variety of the animal just described; it does not appear to have been previously described, and seems to have escaped notice altogether.

It is much larger than the usual type of Cat Common; the fur is longer, richer, and denser, and the colour is of a richer grey-brown; that of the belly is long and beautifully marked with black spots.

This large Northern variety is not numerous, a hundred

skins or so are sold annually in London, and realize up to 9s. 9d. for a good large skin ; these are usually shipped from Halifax in Canada.

It inhabits Nova Scotia, or even a little farther North.



CARACAL, OR RED CAT.

Felis caracal.

This small Lynx is usually of a light red colour, but sometimes it is yellowish-drab or marked with silvery hairs ; the tail is rather short, and tipped with black ; it is most remarkable for the length of its ears, which are black in colour, grey inside, and tufted with long black hair ; the base of the ears is also black, this gives the animal a weird-like appearance ; the legs are marked slightly with black.

When it closes its eyes it has a peculiar satisfied expression, but when startled it is all activity, opening its mouth, hissing, snarling, and showing off the fine black markings round the mouth and at side of the eyes.

It is about $2\frac{1}{2}$ to 3 feet in length.

The Caracal is an inhabitant of South Africa, Nepal, and Northern parts of India, and is occasionally employed like the Cheetah in hunting birds and game.

Like other members of this family, it climbs trees with agility, and has a ridge of hair along the back.

The skin is of little value and is rarely imported. The Cape variety is sometimes yellowish, but generally of a light red colour.

The name Karakal is derived from the Turkish Kara, black; Kulack, ear.

CHEETAH.

Cynæturus jubatus.

French : Guépard. German : Jagdleopard.

The Cheetah inhabits South and East Africa, India, Afghanistan, etc.; it is rather smaller than the Leopard, and is of a very pale colour, and marked with numerous black round spots, which are slightly raised above the rest of the skin. It has a slight mane of black and white hair, the head is small, and there is a characteristic black line running perpendicularly from the eye towards the jaw.

In some examples the fur is long on the belly, even reaching 3 or 4 inches; the tail is rather long, and spotted at base, but ringed from the latter half of the

tail; the ears are black at base and light at the tip; the eyes are brown. In cold climates the colour is lighter and the fur and mane much longer and thicker.

Albino specimens are rare; they are very beautiful, being pure white with light brown spots. The claws are white, somewhat like dog-claws in shape, and non-retractible.

The Cheetah is used for hunting the antelope or black



buck in India. It is starved before hunting; it is usually brought blindfolded in a cart drawn by oxen, and released when the prey is in sight; it approaches by bounds, singles out one animal, and soon seizes the quarry, which it pulls down; the hunter then hastens up and replaces the bandage over its eyes, the animal being satiated with a spoonful of blood from its victim.

The late Tippoo Sahib kept sixteen of these animals for hunting. In the middle ages the Cheetah was also used in France to hunt the roebuck and hares.

In its wild state the Cheetah will eat fowls and pigs.

Sir Peter Lumsden sent a pair of young Cheetahs from Afghanistan during his eventful stay; the mother was shot, and it was at first supposed that young Snow-Leopards had been captured.

The value of its skin is about 10s. to 15s., but it is too rare an animal for its skin to find much favour; it is most suitable for wrappers or rugs.

BUSH CAT, OR AFRICAN CIVET CAT.

Viverra civetta.

French: Civette. German: Zibeth Katze.

This Cat is rather a scarce animal, of about 2 feet in length; its coat is composed of very coarse, bristly hair, of a lightish colour, but thickly covered with dark long spots, which are more or less numerous in different examples; sometimes lighter and more numerous, at others sparser, darker, and blotched like a dark tabby cat; the tail is about 9 inches or a foot long.

The Bush Cat inhabits the West Coast of Africa.

Its skin is of little value, about 2s. 6d., and but few, certainly not above 50, are imported in the year.

The Rev. J. G. Wood says that the young of the Civet Cat is almost black.

The Bush Cat secretes civet.

CHINESE BUSH OR CIVET CAT.

Viverra zibetha.

French: Civette de Chine. German: Chinesischer Zibeth Katze.

This Cat is most probably a variety of the foregoing species, to which it has a great resemblance, but is rather lighter in colour. The fur or hair is rather finer and thicker. The general colour is light yellow or grey, and generally slightly spotted. The head and neck is, however, distinctly marked with black and white. In some examples there is a deep stripe of black down the back, with two fainter lines, one on each side. The tail is long and thick-furred, and striped with six large broad black rings, of which the last is at the tip, and is much smaller. The feet are dark.

The skins are generally imported from China in plates or linings, but only in small quantities. Sometimes a few hundred skins are sent; in 1891, 1,200 were imported.

Professor Johnston, in his "Chemistry of Common Life" (p. 55), says that the substance known in commerce by the name of civet is produced by this and the foregoing species.

"It is of a pale yellow or brownish colour, has usually the consistence of honey, and possesses a somewhat acrid taste. Its smell resembles that of musk. When undiluted, this smell is so powerful as to be offensive to many; but when mixed with a large quantity of butter, or other diluting substance, it

becomes agreeably aromatic, fragrant, and delicate. It is only used as a perfume, and chiefly to mingle with and improve the odour of less costly scents.

“Numbers of them are kept in wicker cages for the purpose of collecting the civet they secrete. It is used by the women (North Africa) for the purpose of powdering the upper parts of their bodies, their necks, etc.”

Civet is imported in small quantities in horns, and finds a market in London at 12s. to 19s. Civet is sent to this country from Aden.

This Bush Cat is an inhabitant of China and Nepaul. It is also called the Zibeth.

A local variety is the Indian Civet (*Viverricula malaccensis*).

COMMON GENET.

Genetta vulgaris.

French : Genette.

The Genet, or Wild Cat, inhabits France and South Europe. It is a small animal, with dark spots on a palish yellow ground. The tail is long for its size, bristly, and ringed with black. The fur is short and harsh; the skin is consequently of low value, and is chiefly used for common wrappers.

The Genet is by no means numerous.

BLOTCHED GENET.

Genetta Tigrina.

This Cat is hardly larger than the before-mentioned species, and measures about 10 inches long. It is marked with dark blotches rather than spots. The general ground is of a lighter colour. The tail is long and spotted with six to nine dark or black rings, and is covered with long bristly hair. There is a white or lighter mark on each side of the mouth.

This Genet inhabits the West Coast of Africa, the Cape, and South Africa. The type from the former district is, of course, darker (because nearer to the Equator), and has been classified as a distinct species (*Genetta pardina*), Pardine Genet.

Both varieties are very scarce, and the fur consequently of little value. The Cape variety is the more numerous, some hundred skins being imported yearly.

This sub-species is lighter-coloured and thicker-furred than the West African type. It is especially bristly along the back.

MOUNTAIN CAT.

Bassaris astuta.

This somewhat rare animal is chiefly noticeable for the very plain greyish colour of its body, and for its long, full-furred tail, which is beautifully ringed with black and white. The belly is very light in colour

—almost white. The ears are short and light in colour; they are almost devoid of hair. The whiskers are sparse, and black and white. The fur is short, and light grey. The ground is dark, and rather darker along the back. The colour varies, however, in most examples.

The skin is of little value—about 4d. to 6d., and but few are imported. Sometimes a hundred or so appear in the sundry lots (in 1889 624 skins).

It inhabits the Western and Southern parts of the United States, and is sometimes called the Niagara Cat or Cacomistle.

Dr. St. G. Mivart, P.Z.S. p. 362, 1885, remarks that “it lives amongst rocks and trees. It is not rare, but is seldom seen, being nocturnal. It is easily tamed, and even domesticated, and makes a mild, playful pet. It is useful for destroying mice and rats, but is very destructive to poultry, and is naturally bold. It prefers to inhabit woods traversed by water-courses. It feeds on small quadrupeds and birds, and makes its nest in the trunks of trees, in holes from 12 to 18 inches deep which are the result of natural decay. The tail is carried bent over the back, much in the fashion of a squirrel. It has three or four young at a birth.”

TWO-SPOTTED PARADOXURE.

Nandinia binstata.

The Nandine, or Two-spotted Paradoxure, is a native of the West Coast of Africa, and is a rather small

animal, with small dark brown spots on a brown ground. Along the back there are no spots; these are placed along the half side nearest the belly. The tail is about 2 feet long, brown and striped. The total length of the animal is about 3 feet.

The skin is of little or no value, and is only imported with the more saleable monkey-skins.

WOOLLY PAGUMA.

Paguma langifer.

Called sometimes the Masked Paguma.

This extremely rare animal is about 4 feet long, including the tail. This appendage is rather more than half the length of the body. The head is marked with dark lines at the mouth, and the nose pointed. The ears are rather short. There are fine curved nails in its feet, which indicate its arboreal habits. The toes are dark brown. Its skin is shaped like a kangaroo; and the fur is dense, rather harsh to the touch, and about $1\frac{1}{2}$ inches long. It is of a greyish colour. The tail is broader at base than at the tip, which is black.

The Woolly Paguma inhabits Nepaul and China, but little is known of its habits.

EGYPTIAN ICHNEUMON.

Herpestes ichneumon.

German: Ichneumon.

The Egyptian Ichneumon inhabits North Africa, Spain, and Italy, and is rather a rare animal.

Some two or three hundred skins are collected annually, and sold at about 5s. 6d. ; when the fashion for pointing furs (that is placing white hair among the fur) was in vogue, the hair of this animal was in great request, being superior for this purpose to the hair of the Skunk or Fox, and even supplanted the Badger, the greater attraction being the varied white tips.

Its general colour is light brown, covered with longer hairs of red and white, alternate colours.

Its tail is long and bristly.

Its cry is a sharp hissing sound, and its bite is severe.

It lives on small birds, eggs, etc.

DUSTY ICHNEUMON.

Herpestes pulverulentus.

This Ichneumon is probably a variety of the following animal, resembling it in every respect except its colour, which is dark brown.

GREY ICHNEUMON.

Herpestes gresius.

The Grey Ichneumon is an inhabitant of South Africa.

This little animal, called also the Mongus, is very similar to the Indian species, but is rather smaller, and has more grizzly hair.

Several hundred skins are imported from time to time, and the value is from 2d. to 4d.

AARD WOLF.

Proteles cristatus.

This rather small Wolf, the Earth Wolf of the Dutch, is sometimes called Hyæna by furriers ; it inhabits South Africa, and is about 3 feet in length. The fur is thick and rather long, mixed with longer coarse hairs ; the colour is light brown, with black stripes across the body ; it has a slight mane of very long bristly hair ; the tail is furnished with long bristly coarse black hairs. The fur is well adapted for making wrappers ; but its skin is rarely met with, and worth about 1s. 6d. to 3s.

The Aard Wolf is said to feed on ants and carrion.

SPOTTED HYÆNA.

Hyæna crocuta.

French : Hyène. German : Hyäne.

The Spotted Hyæna inhabits South Africa, and is larger than the foregoing species, being 4 feet in length. The fur is thin, and chiefly composed of hair of a light brown colour, marked with dark spots ; there is a longer ridge of hair between the shoulders. The head is round, and the eyes dark and prominent. The tail is thin and bristly. The power of the jaw of the Hyæna is immense ; it breaks large bones with the greatest ease. Its cry is peculiar and unearthly. Its gait is also remarkable, and might be described as a quick shuffle.

The Spotted Hyæna has bred in the Zoological Gardens.

One thousand six hundred and fifty Hyænas were killed in British India in 1886.

ESQUIMAUX DOG.

Canis familiaris.

Many naturalists have suggested that this animal is of the same species as the Wolf; it interbreeds freely with this animal, and Indians often use Wolves to increase the size of their domesticated breed of dogs. To us it appears to be merely a domesticated Wolf. Like it, it varies in its colouring, black and white, black, white spotted with brown, white, dark brown, or grizzled, being the predominating colours.

The fur is dense and thickly covered with strong hairs, and is nearly of the same value as a small wolf-skin.

The Esquimaux Dog inhabits Labrador, and other eastern parts of British North America. But few skins are sent to this country, and these principally by the Harmony Company; an occasional skin is sometimes found amongst the Hudson's Bay Company's sundries, or is imported from Greenland.

The Hare Indian Dog is a variety of this animal, from which it however differs in many respects.

The dog of North America was used as a beast of burden by the Indians, for drawing household utensils, etc.; just as in the present day dogs are employed in Germany and Belgium for drawing milk carts, etc.

The Esquimaux Dog is invaluable for drawing sledges. On many of the Polar expeditions they were employed

as furnishing the most practical means of transport. They were used in the late Arctic Expedition of Sir George Nares, and more recently by Major Greeley, who speaks more highly of dog-sleighs than the former; but we must not lose sight of the fact that the dog is unable to draw on half-frozen snow (as was the case in Nares' Expedition); a fine surface is required in order to travel with speed.

The Esquimaux Dog will devour its harness if left within its reach: its appetite is voracious.

The well-known Pomeranian Dog resembles this animal, both in appearance and disposition.

Dr. Richardson says, p. 75:—"Without entering at all into the question of the domestic dog, I may state that the resemblance between the wolves and the dogs of those Indian natives who still preserve their ancient mode of life continues to be very remarkable, and is nowhere more so than at the very northern extremity of the Continent, the Esquimaux Dogs being not only extremely like the grey wolves of the Arctic circle in form and colour, but also nearly equalling them in size. The dog has generally a shorter tail than the wolf, and carries it more frequently curved at the hip; but the latter practice is not totally unknown to the wolf, although that animal, when under the observation of man, being generally apprehensive of danger or on the watch, seldom displays this mark of satisfaction. I have, however, seen a family of wolves playing together, occasionally carry their tails curled upwards."

Dr. Richardson, quoting Captain Lyon, says:—"It might be supposed that in so cold a climate these animals had peculiar periods of gestation, like the wild creatures; but, on the contrary, they bear young at every season of the year, and seldom exceed five at a litter."

DINGO.

Canis Dingo.

The Dingo is the Wild Dog of Australia.

Its general colour is red-brown, black, and brindled (like Wolves), or red-brown with black hairs, are sometimes met with.

It is about 3 feet long, and breeds in confinement.

The skin of the Dingo is of small value, and very few are imported.

COMMON OR EUROPEAN WOLF.

Canis lupus.

French: Loup. German: Wolf.

The Wolf, although extinct in Great Britain and Ireland, still exists in some quantities in the West of Europe; it is found in Spain, France, Russia, Hungary, Austria (Carinthia), East Prussia, and Belgium (Forest of Ardennes).

In severe and cold weather it leaves its refuge in the hills and comes out of its covert in the forest to commit ravages among the herds, and even penetrates into the villages.

In recent years an attempt has been made to exterminate or greatly reduce the number of Wolves in France. In 1883, 1,308 Wolves were killed, for which £4,105 were paid: 200 francs for a full-grown Wolf, 150 francs for a she-Wolf, 100 francs for a Wolf not fully grown, and 40 francs for a young Wolf.

In 1883,	1,308	were killed at premiums about	£4,105
In 1884,	1,035	„ „	£3,200
In 1885,	900	„ „	£2,600
In 1886,	760	„ „	£2,284
In 1887,	701	„ „	£1,920

In 1887 the departments where most Wolves were killed were the Dordogne (109), Charente (68), Vienne (50), Haute-Vienne (47), situated nearly in the centre of France ; it is still hunted in that country.

The Common Wolf is of a bolder and fiercer disposition than its American cousin (which, although larger, is more cowardly) ; in some instances, it attacks man without fear, and every one is familiar with the thrilling sledge adventures which have happened.

In olden times, in wild and thinly-populated districts, such as Flixton in Yorkshire, places of refuge from Wolves were erected for the convenience of travellers. It was then so common in Britain, during the times of the Heptarchy, that January was the "Wolf Month" of the Anglo-Saxons. (*Standard*, 25th November, 1884.)

In 1684, in a fair held on the ice on the Thames, the pelts of Irish Wolves occupied a prominent position in the show.

Mr. J. E. Harting says that, "as far as can be ascertained, it appears that the Wolf became extinct in England during the reign of Henry VII., that it survived in Scotland until 1743, and that the last of these animals was killed in Ireland, according to Richardson, in 1770, or, according to Sir James Emerson Tennant, subsequently to 1766."

The Welsh, in whose country the wild fauna existed to a much later date than in England, paid a tribute to Edward I. in Wolf heads.

The names of Wolfshole, Wolfscrag, etc., denote the

abundance at one time of this animal in the North of England. Remains of the Wolf have been found in the Swiss Lake Dwellings.

The Common Wolf is about the size of a large dog, but the Russian variety attains larger dimensions. The colour is generally brown-red, with longer black hair, the under fur or wool thick and dense, and bluish in the ground; many are of a lighter or paler colour, and again a few are almost red; the tail is full, of medium length, dark brown above and lighter below; this appendage is tipped with black; the ears are generally dark brown, and covered with short velvety fur; the whiskers are black and few in number.

The English Wolf was undoubtedly very much of the above description, but of smaller size and darker colour, and was also probably of a fierce disposition.

Wolves imported from Europe would, no doubt, after the lapse of some years, acquire the former characteristics of the English Wolf, viz., its deep colouring and smaller size.

The Collie or Shepherd's Dog is very similar in size, habits, and colour to the Common Wolf; in fact, there is a greater resemblance to this animal than to any breed of dog; the habits of Fox-hounds, packs of Boar and Stag-hounds, and the occasional predatory manners of the domestic dog (worrying and slaying Sheep), clearly indicate that the Wolf (who has likewise these characteristics) was their common ancestor. If these hounds were allowed to relapse into the wild state they would re-acquire these habits.

The Wolf is at times subject to hydrophobia; its bite is even more fatal than that of the dog.

Dr. Richardson says, "Black Wolves are more frequent in the Southern parts of Europe than in the Northern,

and to the South of the Pyrenees they are said to be more common than the ordinary species or variety." (Griffith's "Animal Kingdom," vol. ii. p. 348.)

The Siberian type is of a larger size than the foregoing species; it is usually of a light colour, with dense and rather harsh fur; many are of a reddish hue, and a few are almost quite red.

Several thousand skins are imported into Europe from Siberia; these are mostly used for making sleigh-robcs, wrappers, etc., but some are manufactured into boas.

In Russia Wolves are hunted with Wolf-hounds; when brought to bay the hunter dismounts, bestraddles the Wolf, seizes it by the ears, and dispatches it.

The Russian Wolf is sometimes tamed and trained to stand on backs of chairs, etc. It is estimated that there are about 170,000 Wolves slain annually in Russia: the reward for killing a Wolf is ten roubles (about £1). The number killed in the province of Wologda, Kasan, was 80,000 in 1889. The number of persons killed by Wolves was 203. Many Siberian Wolf-skins are sold at Irbit Fair; many are brought from Turuschanki, Berevorsky, and Perschorsky districts.

AMERICAN WOLF.

Canis lupus occidentalis.

French: Loup d'Amérique. German: Amerikanischer Wolf.

This large animal, which is also called the Timber Wolf, is about 5 to 6 feet in length, and is found throughout the wild regions of British North America (including Vancouver Island), Alaska, and of the United States. It is larger than the European representative; those from the extreme North attain to a

very considerable size, especially those from the Churchill and Esquimaux Bay districts of the Hudson's Bay Company; from the first-named districts the white variety, and those with the hair almost white, are most abundant: the exposed situation and extreme temperature undoubtedly produces these effects, and corresponds with the colour produced in the Arctic Fox. A similar conclusion is to be drawn from the blue or dusky variety of the Wolf, which is most abundant in the E. B. district. Black and pied animals are also found, but the grey is the prevailing colour of this animal. Fawn-coloured specimens are extremely rare.

The large White Wolves which a few years ago were abundant in the States, going about in troops of 50 to 60, seem to have disappeared with the Buffalo.

The fur of the Wolf from the Northern parts is long and rather silky; skins from these parts are of good quality, and consequently very valuable. The blue and white skins are exceptionally handsome; the hair between the shoulders is longer and coarser.

The ears of the American Wolf are about 4 inches long, and dark in colour, and usually protected by the dense fur with which they are surrounded. The legs of grey animals are white and grey, with short stubby hair; the tail is full, about 18 to 24 inches long, and tipped with black hair; the whiskers are sparse, and usually black.

The fur of the Alaska animal is coarse. According to Elliott, the Wolf is not found farther in the Aleutian Islands than Oomniak.

Dr. Richardson, p. 62 "Northern Zoology," says: "I do not mean to assert that the differences existing between it and its European congener are sufficiently permanent to constitute them, in the eye of the naturalist, distinct species. The same kind of differences

may be traced between the Foxes and native races of the domestic dog of the New World and those of the Old; the former possessing finer, denser, longer fur, and broader feet, well calculated for running in the snow."

And at p. 64: "The American Wolf burrows and brings forth its young in earths with several outlets, like those of a Fox. I saw some of their burrows on the plains of the Saskatchewan, and also on the banks of the Coppermine River. The number of young in a litter varies from four or five to eight or nine. In Captain Parry's and Captain Franklin's narratives, instances are recorded of the female Wolf associating with the domestic dog; and we are informed that the Indians endeavour to improve their sledge-dogs by crossing the breed with Wolves. The resemblance between the Northern Wolves and the domestic dog of the Indians is so great that the size and strength of the Wolf seems the only difference. I have more than once mistaken a band of Wolves for the dogs of a party of Indians; and the howl of the animals of both species is prolonged so exactly in the same key, that even the practised ear of an Indian fails at times to discriminate them." Again, p. 70: "The Indians do not consider the black Wolves to be a distinct race, but report that one or two black whelps are occasionally found in a litter of a grey Wolf. In conceding to their opinion, I do not mean to assert that the offspring of black Wolves are not most frequently black. The black Wolves differ from the grey ones only in colour, and their haunts and habits are precisely the same."

The American Wolf reaches a high latitude. It was observed in latitude 27° N. during the late Polar Expedition.

Mr. Fielden states that "on the 1st April, 1876,

several Wolves made their appearance in the neighbourhood of the winter-quarters of the *Alert*. They were evidently following a small herd of Musk-oxen, whose tracks and traces were observed in the vicinity; and that they were able at times to secure these animals was shown by their dung being composed chiefly of Musk-ox wool and splinters of bone. Several of our sportsmen started in pursuit of these Wolves, but, with one exception, they did not allow them to approach them within three or four hundred yards. The following day (April 2) the Wolves still continued in the neighbourhood of the ship, and at intervals their long, melancholy, but not unmusical wail reverberated from the hills."—"Voyage to Polar Sea," p. 192.)

Some 460 to 620 skins are imported annually (1891, 263 skins only) by the Hudson's Bay Company; and about 300 to 500 from other parts of North America. Grey fetch 4s. 6d. to 23s. 9d.; white, 7s. 6d. to 90s.; blue, 50s. to 126s. per skin.

These skins are especially adapted for handsome sleigh-robos or wrappers. They are especially in vogue in London, New York, Paris, Montreal, etc.

Dyed black or brown, they are made into excellent boas, to which they are well adapted, owing to the lightness of the pelt.

The skull and dentition approaches closely to that of the dog.

The female has eight teats.

The Wolf, in former times, surrounded the Moose and drove it over precipices, and then descended to devour the carcase. It, however, feared to attack the Buffalo, unless they were infirm, aged, or sickly animals.

In Alaska the Wolf preys on the Reindeer.

INDIAN WOLF.

Canis pallipes.

French : Loup des Indes. German : Ostindischer Wolf.

This Wolf is about 4 feet in length, and inhabits India, Cashmere, Nepaul, etc.

The colour is of the usual grey hue of the Wolf, but, generally speaking, much lighter. The fur is dense from the northern districts, but further south the coat is chiefly composed of short, harsh, bristly hair. It has a lanky and hungry appearance.

Six thousand seven hundred and twenty-five were killed in British India in 1886.

Very few skins are imported.

The Indian Wolf is said to breed occasionally with the village dogs.

PRAIRIE WOLF, OR COYOTE.

Canis latrans.

The Coyote is smaller than the foregoing species or varieties of Wolves, and is found in many States of the North American Republic, such as Montana, Wyoming, Colorado, Texas, and is also tolerably abundant in the Manitoba and South districts of the Hudson's Bay Company.

The colour of the Prairie Wolf is grey, or dark grizzly, with black tops. The tail is tipped with black, but occasionally is white. The ears are large for its size, usually reddish and tipped with black. The under-ground of the fur is blue, and specimens are sometimes found of an ordinary brown colour. The fur is rather long, harsh, and dense.

Some 2,000 to 3,000 skins are imported annually, and another 1,000 to 3,000 by the Hudson's Bay Company. In 1891 3,974 skins were sold by the Company. The skins from the Dominion are, of course, of fuller and finer quality than those from the United States.

Of late years it has been hunted in Iowa by packs of hounds, or dogs of mixed breeds, and affords good sport to the hunters. It is extremely wary, and difficult to take in traps.

The Coyote appears to breed occasionally with the grey or Virginian Fox. It is said to produce five to eight young at a birth. The female has six teats.

The Prairie Wolf has bred in Epping Forest from animals escaped from captivity. It breeds freely with fox-terriers, pointers, &c., thus showing the identity of the wolf and dog.

The skins of the Prairie Wolf make excellent wrappers and boas, and take a brilliant dye (black or brown).

Its fur is used all over the civilized world, with the exception of China.

SOUTH AMERICAN WOLF.

Canis antarcticus.

This small Wolf is grey in colour, and somewhat similar to the Coyote of the Northern Continent.

There are but few skins; some 50 to 100 are imported annually. Its fur is consequently little known to traders. Its skin is, however, sometimes used to replace that of the grey Fox, as its colour is dark brindled, and dark on the top hair.

The length of this Wolf is about 2 feet, not including the tail, which is about 6 to 8 inches long, and dark in colour.

It inhabits South America and resembles a Jackal.

There is a larger species, the Red Wolf (*Canis jubata*), of a size between the Coyote and North American Wolf.

The belly of this animal is of a reddish colour ; the back is dark grey, and also the tail.

It likewise inhabits South America.

SIBERIAN OR CHINESE DOG.

The Chinese Dog is about the size of a large retriever. Like other wolves or dogs, there is a long ridge of hair running down the back of this animal. The legs are long, as well as the ears. The animal has altogether a starved and lanky appearance. Its tail, being rather long and not bushy, adds to this effect. Many have coats almost like a retriever.

One of these animals was exhibited in the Gardens of the Zoological Society in 1886, but it seems to be practically unknown to the scientific world, although known for centuries to the Chinese, and has of late years become an article of commerce. The bulk is made into robes of eight skins (sometimes four), and sent from Shanghai to London and New York. They vary in colour : black, white, fawn, mottled, and some brindled, are the predominant colours. These skins or robes are generally imported in the dressed state.

This animal inhabits China, etc., and about 50,000 to 100,000 skins are imported annually into London. This does not include the yearly collection which,

according to Mr. Edgar, at Newchang, in Manchooria, reaches from £40,000 to £60,000 in value annually. He says that "there are thousands of small dog and goat farms dotted over Manchooria and the eastern borders of Mongolia, where from a score to some hundreds of dogs are annually reared on each farm, and where they constitute a source of wealth."

The Siberian Dog is larger and has a more magnificent coat than even the foregoing. It is usually black. Many skins are imported into this country either direct from Russia or through Leipsic.

The Chinese Dog-skin takes a brilliant black dye, or may be topped. It makes an excellent sleigh-robe. It is also used for the manufacture of men's coats in Canada.

JAPANESE WOLF.

Canis podophylax, or *Canis lupus*.

This rare animal is about 4 feet long. Its general colour is dark blue.

Skins are seldom seen.

CHINESE WOLF.

Canis lupus.

The Chinese Wolf is of a pale light grey colour, and the fur is dense and rather coarse. It is about the size of the foregoing species, and is rather larger than the Coyote.

Very few skins (about 100 to 745) are imported into

this country. The best skins sometimes fetch 16s. per skin. The usual price is much lower.

The Tibetan Wolf (*Canis laniger*) is a climatic variety of the Common Wolf. They are usually black.

COMMON FOX.

Canis vulpes, or perhaps *Vulpes vulgaris*.

French : Renard du pays. German : Land Fuchs.

The Common Fox is one of the most abundant fauna of the British Islands ; it is found throughout the greater part of England, Scotland, Ireland, and Wales, and in the Isle of Wight. It is best known for the sport which it affords when hunted.

There are (1889) 152 packs of Fox-hounds in England, 9 in Scotland, 16 in Ireland, 3 in Wales. Regular hunting commences about the middle of October, and ends on the 1st of March. Hunting is often prolonged to the first or second week in April.

The younger hounds or drafts are trained by a course of cub-hunting, which commences in September.

Many interesting tales and stories are told about the wiles and various tricks of the Fox when hard pressed, such as taking refuge in out-houses, etc. A case is recorded in the *Field* of a Fox when driven from cover, having climbed a tree covered with ivy, and disappeared from sight. A man ascended the tree, shook the Fox down, when he gave an excellent run of 30 minutes, and ultimately escaped.

Foxes have also been seen nestling on the bough of a tree 30 feet from the ground. When hotly pursued, they have been known to run on the tops of walls, hedges, etc.,

and to run along some distance before jumping down, and to spring across the corners.

A Fox, when hunted by a single hound, has been known to turn on its pursuer, fight with him, and to escape. The Fox has also been known to play with dogs. A rare instance is recorded in the *Field* of a Fox having taken to the sea in Sussex when pursued by the hounds.

What sportsman does not recollect with pleasure the mounted gathering at a meet of the Fox-hounds on a fine winter's morning, the cheery greetings, the various mounts, the bright-coloured suits, and the several carriages, and at last the arrival of the master of the hounds, who brings forward his charge like so many school-children, running and playing with each other? The bright sun, the blue sky, and the autumnal foliage complete the agreeable surroundings.

After a trot of a few seconds, we either arrive at a covert or proceed to a field near at hand. The hounds are now laid on in a copse or wood, or perhaps in a bunch of furze bushes, which is generally a favourite hiding-place of the Fox. When a scent is found, the Fox is forced, after a few doublings, to leave his shelter, and crosses a field, followed by his pursuers, both four and two-legged.

The blow of the horn, so short and invigorating, which can scarcely be easily forgotten, is now perhaps heard; many falls take place at hedges, gates, etc., and when hounds are running, the foremost are at times thrown out by taking an injudicious turn, or by a sudden turn of the Fox; others gain a prominent position, or those thrown out regain theirs. The Fox, as a rule, has not a great chance of escape, unless he can reach his earth, which, if situate in a chalk-pit, or the top of a hill or precipice, is generally secure; but he is sometimes dug

out of his subterranean refuge—an unsportsmanlike and barbarous proceeding.

If killed in the open, his brush is given to one of the first in; at the death, his feet and head are cut off, and the rest of his body is eaten by the hounds. The skin is not saved, and many thousand pelts are lost every year in this way.

Foxes are often trapped and caught in some counties, and turned down in others.

There existed in Germany, some 200 years ago, a favourite sport called Fox-tossing.

The English Fox is a rather short, thick-set animal, of a reddish-brown colour, with short black ears, and tail with a white tip; it is sometimes of a quite light colour, resembling that of the Prairie Red Fox of North America; sometimes, though more rarely, it has a black belly and deeper markings at the shoulder, thus resembling the Bastard or Cross Red Fox of the North American Continent; it is more enduring in speed, and stronger than its American brother, although perhaps not so fast for the first few miles.

The Common Fox is a nocturnal animal, and loves to ramble in the moonlight; it commits many ravages in the poultry yard, slaying fowls, ducks, and other poultry with impunity; even turkeys have been known to fall a prey to their rapacity.

Its favourite and principal food is rabbits; it will also devour sickly lambs, rats, birds; in fact, any small animal or bird is appreciated.

The Fox has been known to give tongue when hunting.

The scent of the Fox is pungent and peculiar, and, when the weather is mild and muggy, this hangs about a locality for some time.

The vixen or female Fox produces about seven or eight

to ten young; the cubs are covered with soft yellow downy wool, and are charming to look at; their antics and gambols are also interesting. The young Foxes have sometimes been suckled by a dog.

The Fox burrows about 6 feet deep in the earth; sometimes its home is made in the inaccessible side of a chalk-pit, or even of a sea-cliff; it sometimes takes possession of badger-earths, and has even been known to live in the same burrow with rabbits, its natural prey.

The Fox sometimes becomes to a certain extent tame; it will then enter gardens, etc., and only quit them on some one approaching. When taken in spring-traps, it will eat off its paw, if unable to escape otherwise. However, it is a sagacious animal, and not easily captured. It is said not to like the smell of old iron placed near plantations.

The Fox is at times subject to mange, and also to hydrophobia. A noble recently died from the bite of a tame Fox. The Fox will sometimes swim.

Foxes are occasionally poisoned, but farmers, as a rule, are generally accessible to the great liberality with which their claims for compensation, whether for destruction of poultry or damage to crops or fences, are met by masters of hounds; on the other hand, they have sometimes just grounds for their complaints by the heedless way in which their crops are ridden over.

In Scotland and North Devon, where, on account of the ruggedness of the country, hunting is not practicable, Foxes are often shot. This is also the case in North Wales, the Cheviots, etc.

Fox-skins from North Wales and Scotland are larger and finer than those from other parts of Great Britain. From North Wales the skins are generally stuffed with straw. As before said, but few pelts are saved

in England ; but on the Continent, Fox-skins, which resemble the English in coarseness of quality, and even exceed them in this respect, and are also very light in colour, are collected, and realize several shillings each.

About 130,000 skins are sold at Easter Fair in Leipsic ; about 200,000 Fox-skins of all sorts at Irbit Fair in Siberia. Many are also sold at the Frankfort Fair.

The collection of German Fox-skins is about 500,000 ; and 314,416 Foxes were killed in Russia in the winter of 1885-6.

The Common or Red Fox is found throughout most of the counties of the Continent ; it also inhabits Sardinia, but in this island it is very tawny, and of a dirty red colour.

The Swiss, Saxon, and Pomeranian skins are superior in quality to the French, German, and Danish. Spanish skins are of good quality, but open ; the price is about 2s.

In Scotland the Fox lives in stony and mountainous districts.

THE NORWAY RED FOX has much finer fur than those on the Continent, and closely resembles the Labrador animal in Canada. The skins are also handled in much the same way. Silver and Cross Foxes are also found in Norway and Sweden ; the former are very rare, and are not found, as far as we are aware, in any other part of Europe.

Fox-skins are generally used for cheap wrappers, or are dyed.

The price of a live Fox is about 10s.

The Common Fox is the same species as the Red Cross, or Silver Fox of North America.

AMERICAN RED FOX.

Canis fulvus.

French : Renard rouge. German : Rother Fuchs.

The American Red Fox is rarely hunted for sport, and is usually captured by trapping, for the sake of its fur ; it is rather larger than the European variety, but it is not such a robust animal, and has a somewhat lanky appearance ; its legs are longer than in the European animal, and are in most cases black ; the belly is generally black, except among the Prairie and Alaska Foxes. The tail is very bushy, of a lightish brown colour, with longer black hair at the top ; the tip of the tail is white ; the ears are black, and covered with short, black, velvety fur ; the whiskers are black, and the fur is much finer than in the European variety. The female has six teats.

The Red Fox is widely distributed in the Northern Continent of North America ; it is not found in Louisiana, its most Southern range being probably North Carolina, Tennessee, and Pennsylvania. In Virginia and in the most Southern districts the American Red Fox attains its deepest colouring, but its size is much smaller than in the more Northern types ; the bellies are generally black, but occasionally white.

The Prairie or North-west Red Fox inhabits the more Northern plain districts, such as Montana and Dakota, in the United States, the Red River district, Manitoba, and York Fort district of the Canadian Dominion. This variety is large, very light in colour, almost white ; the belly is white, and the tail, as a rule, extremely bushy ;

the pale colour is no doubt produced by exposure to weather and sun.

In Labrador, where the Harmony Company is established, the Red Fox skins are noted for their large size and fine quality, but in this desolate and forsaken region their number is but limited, and the pelts collected are but few, and realize a high price, 15s. to 30s.

The Esquimaux Bay (E.B.) skins of the Hudson's Bay Company resemble these very closely, but are not quite so large.

The Halifax Red Fox is large, the quality of fur rich, and the colour usually bright red; the belly is sometimes white.

The American Red Fox is also found in Newfoundland and Nova Scotia; here the furs produced are broad, full in quality, rather coarse, and yellow or pale in colour; this coarseness is probably produced by the sea-air. It will be seen from the above remarks that the fur and colour of the Red Fox varies in each district of the Hudson's Bay Company as well as in the different Northern States of the United States. The Red Fox is also abundant in the Province of Alaska, and in most of the Aleutian Islands; here the fur is of a fine rich red, the quality full, but sometimes rather coarse, especially those from Kadiak Island; the pelt is spongy; the belly is usually red or white; the legs are much redder than in the United States Fox, but the paws are black. The Alaska Red Fox is of a good average size.

The Red Fox occasionally visits the Pribylov Islands on packs or fields of ice; but it is killed, and not suffered to remain on the Islands, for (as it is stated) fear of spoiling the fur of the blue and white Foxes which exist there: the fact of their being different species appears not to be taken into account by those in authority.

The Columbia Red Fox is very similar to the Alaska animal.

There is a very large variety of Red Fox, nearly the size of small Wolves, inhabiting Kadiak Island; these skins, the largest of all Foxes, measure as much as 3 feet, not including the tail, which is another 18 to 20 inches; the colour is pale or light red, and the quality coarse; the ears are partly red and partly black, about one-third from the tip; the belly is of a light colour, but the paws and part of the legs are black; in this respect they resemble the Alaska.

The Kamschatka Fox surpasses all other Foxes in the depth and richness of the red colour; the fur is also of very fine quality.

The Chinese Fox is of a pale light yellow, and the skin is coarse in quality, and of small value, about 1s. 6d. to 2s.

The Japanese Fox is very similar to the Chinese; it is, perhaps, of a little deeper colour.

In most districts, except the North-west district, there are found examples (animals) of a slightly darker colour on the shoulders and rump, and blacker in the belly; these approach, but are not quite, the colour of a Cross Fox. These skins are called "Bastards" in the fur trade. They are intermediate in colour between the Red and the Cross Fox, and it is difficult to say which they resemble most. These skins realize a price about halfway between each variety, and are sold by themselves in the Hudson's Bay Company's sale, after the Red Fox skins.

There are, besides the ordinary, "Bastard" Foxes, that is, dark Foxes with black bellies and legs, found in most States of the Union.

White varieties (White-Red Fox) are extremely rare;

we have only seen one. This extraordinarily scarce specimen had a black mark on the belly, black legs, and the tail white, and marked with longer black hairs—a most interesting variety of colour.

A Silvery-Red Fox (red animal with long white hairs interspersed in the body) is of rare occurrence, but not quite so uncommon as the white variety; we have also once seen a skin of a light fawn variety of the Red Fox.

Red Fox skins are most purchased for export to Russia, Turkey, Greece, Servia, Bulgaria, and other Eastern countries, where they are used for trimming, men's coats, etc. The red-coloured skins are most eagerly competed for by the three former countries, and the pale or lighter colours go to Galicia, etc.

Many skins are also used in other parts of the Continent, either made up natural into wrappers or dyed black, brown, and other colours, and made into various articles. The tails are also used for boas when dyed black, or natural are made into hand-brushes.

The North American Indians occasionally make these skins into very handsome robes.

About 70,000 to 90,000 skins are imported annually into and sold in the London market. In 1891, 13,948 were sold by the Hudson's Bay Company; and 56,113 from Alaska, United States, and Canada, thus making a total of 70,061 skins for the year.

In 1816 the price ranged from 9s. 6d. to 23s. 3d., which latter was an unusually high price: in 1819 21s. was paid. The usual prices range from 2s. to 16s.

In the North-eastern part of Asia the skin of the Red Fox was the chief medium of barter, in the same way that the Beaver skin was in other parts of America.

As regards its habits, Dr. Richardson writes, in his

“Northern Zoology,” p. 92: “The Red Fox burrows in the summer, and in the winter takes shelter under a fallen tree. It brings forth four young about the beginning of May. They are covered at birth with a soft downy fur, of a yellowish-grey colour, the orange-coloured hair not beginning to appear until they are five or six weeks old. Even the Indian hunters do not know the cubs at an early age from those of the Cross or Silver Foxes, and I therefore cannot now place the reliance I was once induced to do on their report of young Cross Foxes being found in the burrows of the Red Fox.

“The Red Foxes prey much on the smaller animals of the rat family, but they are fond of fish, and reject no kind of animal food which comes in their way. They are taken in steel-traps, also in fall-traps, made of logs, but much nicety is required in setting them, as the animal is very suspicious. Some of the best Fox-hunters in the fur countries ascribe their success to the use of assafœtida, castoreum, and other strong-smelling substances, with which they rub their traps, and the small twigs set up in the neighbourhood, alleging that Foxes are fond of such perfume. The Red Fox hunts for its food chiefly in the night, but it is also frequently seen in the daytime. In the winter-time their tracts are most frequent on the borders of lakes, which they quarter much like a pointer dog.

“The Red Fox does not possess the wind of its English congener. It runs for about a hundred yards with great swiftness, but its strength is exhausted in the first burst, and it is soon overtaken by a Wolf or mounted huntsman. Its flesh is ill-tasted, and is eaten only through necessity.”

There is no reason to consider this Fox as distinct

from the European type ; it differs, of course, in some characteristics, but so do the Moose, Reindeer, Ermine, etc., from the European varieties ; these inhabit the same districts as the Red Fox, but for some reason have not been broken up into different species, although the American and European Moose were separated for a time.

The American Red Fox would, no doubt, freely interbreed with the European, and the offspring would be fertile.

AMERICAN CROSS FOX.

Canis fulvus.

French : Renard croissé. German : Kreuz Fuchs.

The Cross Fox is merely a variety of colour of the foregoing animal ; it is so called from the darker hair on the shoulders. It is found in all the same districts as the Red Fox, but it does not range so far South. The remarks regarding difference of quality of fur, size, distribution, etc., apply equally to this variety.

The darkest and finest skins come from the Labrador and Esquimaux Bay districts ; the least valuable skins are the North-western from Montana, Dakota, Red River, etc. These are quite pale in colour, and are usually coarser-haired. They are scarcely distinguishable from the pale North-western Red Fox.

The Silver, Cross, and Red Fox skins are packed together in the Hudson Bay packages, the only difference being the colour.

The belly and legs of the Cross Fox are black, the ears are also black, and the tail is tipped with white.

Cross Fox skins are sorted into qualities and colours; the darkest are scarcely distinguishable from the Silver Fox; the red and pale coloured skins are only a few shades darker than the Red Fox. The fur of the Cross Fox is more valuable than the Red Fox. The finest dark skins fetch from 100s. to 145s. each, an average skin being worth from 20s. to 50s. About 5,000 to 7,000 skins are imported annually into London; 2,457 were sold by the Hudson's Bay Company in 1891, and 2,824 from Alaska, Canada, and United States. These quantities show that it is scarcer than the Red Fox, but more abundant than the Silver Fox.

The majority of skins are bought for Russian consumption.

The Cross Fox is also found in Kadiak Islands in Kamschatka; it almost reaches the size of Wolves.

AMERICAN SILVER FOX.

Canis fulvus.

French: Renard argenté. German: Silber Fuchs.

The Silver Fox is also called the Black Fox. It is scarcer, and its fur is consequently of greater value, than either of the foregoing varieties. Similar remarks as to size, locality, and quality of fur, again apply to this animal; but no Silver Foxes are found in the Southern districts of the United States, and are only found in California and Western States of the Republic.

The Silver Fox is much rarer than the Cross Fox, and the highest value is attached to skins which are nearly or quite black, there being but one, two, or three such skins in a whole year's collection. Some immense

tracts or districts do not produce a perfectly black skin during a whole winter. A good black skin, with only the characteristic white tip at the tail, will fetch from £50 to £72.

Some skins are silvery nearly all over; that is, the dark under fur is thickly covered with longer black and white hair or fur; such skins are very beautiful; as a rule, the more black there is in a skin the greater is its value. There are a great many shades of colour, ranging down to the pale silvery, and cross silvery skins, which are much lower in price, say £4 to £8.

The belly is generally black, although occasionally a spot of white fur of greater or less extent is found there; the tip of tail is invariably white, even in the blackest skins; the under fur or ground is dark drab. The finest quality skins come from the Labrador coast. The tail is extremely bushy and thick, and it has five toes in its feet. About 1,500 to 2,000 skins are annually sold in London: in 1891, 554 by the Hudson's Bay Company, and 815 by other brokers from Alaska, Canada, etc.

The fur of the Silver Fox is one of the finest and most expensive skins. It is usually made into muffs, trimmings, etc., and is principally purchased for Russia and France. It is also in favour, though to a less extent, in England and Canada.

Richardson says:—"Like the two preceding varieties, the black Silver Foxes have the soles of their feet thickly covered with wool in the winter; no callous spots being then visible."

WHITE FOX.

Canis lagopus.

French : Renard blanc. German : Weiss Fuchs.

This small but interesting Fox, called the White or Arctic Fox, inhabits the most northern part of the Dominion of Canada. It is most numerous on the east coast of Hudson's Bay, that is in the Little Whale River district; it is also found in Newfoundland and in Labrador, where it attains its largest size, and the fur is then of the best quality.

The White Fox is also abundant in the York Fort and Esquimaux Bay districts. A great many are also captured in Alaska; but from this latter province the skins are coarse in the fur, and sometimes rather matted, although otherwise of good quality. A similar variety, but still coarser owing to the sea-air, is found in the large island of Kadiak, off the Alaska coast, and in the Pribylov Islands.

The White Fox is likewise plentiful in Siberia, especially in the provinces of Jeneisisk, Jakutsk, and Obdovsk. About 25,000 to 60,000 are imported annually; these usually find their way to Europe, through Leipsic or Irbis. The skins are, as a rule, rather coarse. The White Fox is found in the Faroe Islands and in Greenland. The Greenland Fox is slightly smaller in size than the usual American type, but has very fine fur, and in this respect approaches its Labrador brethren of the opposite coast.

The White Fox is of rather small size, and is about 2 feet long. In winter it is pure white, except a few blackish hairs, which are usually found at the tip of the tail, and

occasionally in the back. In the summer the colour is said to be sometimes drab. The tail is thickly furred and about a foot long; the toes are provided with five rather long white or dark claws, and the pads of the feet are covered with thick hair to protect them from the ice. The nose is black, and the whiskers white. In the young animal the colour is usually drab-blue, rather darker at the back.

The fur is long, close, and of a beautiful white, but sometimes it is yellowish or quite yellow; the under fur is sometimes white and sometimes bluish.

The fur until recent years was of little value, but now it is much admired, and exceeds the price of Red Fox. It is dyed light brown, blue, dark brown, black, imitation Silver Fox, etc.; it is made up into muffs, trimmings, etc., and its tail makes excellent boas. In the natural state it also makes excellent wrappers or sleigh-robos.

In 1816 10*l.* to 8*s.* were paid; but now (1891) the price ranges from 2*s.* 6*d.* to 16*s.* 9*d.*; 3,704 being imported by the Hudson's Bay Company, and 5,366 by the Alaska Company and others, making a total, with a few other importations, of about 9,000 skins in 1891. Nine hundred and eighty-nine White Fox skins were sold in 1891 by the Royal Greenland Company of Copenhagen.

Mr. Fielden, in the "Voyage to the Polar Sea," p. 193, says:—"The Arctic Fox decreases in numbers as we proceed up Smith Sound.—At Floeberg Reach, the winter quarters of the *Alert*, footprints of the few were occasionally seen in the snow; but it was not till July 13, 1876, that I obtained a specimen in the flesh.—Parr fired at it, when it dropped down, and crawled below some large rocks; out rushed the female from its

lair, and we secured her. The flora in the neighbourhood of this den was remarkably rich, the soil having been fertilized by the presence of the Foxes.—As we rested there, many Lemmings popped up from their holes, and, undismayed by our presence, commenced feeding on the plants. We noticed that numerous dead Lemmings were scattered around. In every case they had been killed in the same manner: the sharp, canine teeth of the Foxes had penetrated the brain. Presently we came upon two Ermines killed in the same manner. These were joyful prizes, for up to this time we had not obtained these animals in North Grinnel Land. Then, to our surprise, we discovered numerous deposits of dead Lemmings; in one hidden nook under a rock we pulled out a heap of over fifty. We disturbed numerous ‘caches’ of twenty and thirty, and the earth was honeycombed with holes, each of which contained several bodies of these little animals, a small quantity of earth being placed over them. In one hole we found the greater part of a Hare hidden away. The wings of young brent geese were also lying about; and as these birds were at that time just hatching, it showed that they must have been the results of successful forays of prior seasons, and that consequently the Foxes occupy the same abodes from year to year. I had long wondered how the Arctic Fox existed during the winter.”

Dr. Richardson, p. 85, quoting Captain Lyons, writes:—“When the animal is standing still, the hind legs are so placed as to give the idea of weakness in the loins, which is certainly not the case, as few animals can make more powerful leaps. The general weight was about eight pounds, although some were as low as seven, and a few as high as nine pounds and a half when in good case.

“The Arctic Fox is an extremely cleanly animal, being very careful not to dirt those places in which he eats or sleeps. No unpleasant smell is to be perceived even in a male, which is a remarkable circumstance. To come unawares on one of the creatures is, in my opinion, impossible; for even when in an apparently sound sleep, they open their eyes at the slightest noise which is made near them, although they pay no attention to sounds when at a short distance. The general time of rest is during the daylight, in which they appear listless and inactive; but the night no sooner sets in than all their faculties are awakened; they commence their rambles and continue in unceasing and rapid motion till the morning. While hunting for food they are mute, but when in captivity or irritated they utter a short growl like a young puppy. It is a singular fact that their bark is so undulated as to give an idea that the animal is at a distance, although at the very moment it lies at your feet.”

P. 87: “They breed on the sea-coast, and chiefly within the Arctic Circle, forming burrows in sandy spots,—not solitary like the Red Fox, but in little villages, twenty to thirty burrows being constructed adjoining each other.”

Elliot informs us:—“That Blue and White Foxes are found on the Pribylov Islands, and find among the countless chinks and crevices in the basaltic formation comfortable holes and caverns for their accommodation and retreat, feeding fat upon sick and pup Seals, as well as water-fowl and eggs, during the summer and autumn, living through the winter on dead Seals left on the rookeries, and their carcasses on the killing grounds.” (Elliot’s “Seal Islands of Alaska.”)

The Arctic Fox preys on the Eider-duck, and destroys

many eggs of this bird. It is captured in traps made of blocks of ice. Its bark is short and brisk, resembling that of a Squirrel.

There are three to five young in a litter. Its flesh, especially when young, is edible and white; that of the Red Fox is rank and disagreeable.

BLUE FOX.

Canis lagopus.

French: Renard bleu. German: Blaufuchs.

The Blue Fox is of the same size and form as the White Fox. It only differs from it in the Alaskan Islands, where it attains a larger size, owing probably to the abundant animal food found there.

The pelt, fur, and habits are exactly the same as in the White Fox; it is simply a variety of colour of this animal, and has rightly been classed as one species. Some naturalists (scientific) are wrong in supposing that a Blue Fox turns white in winter. It always remains a Blue Fox. This error has probably arisen in the fact that a White Fox often turns a drab or slate-blue in the summer.

The Blue Fox is not, as one would suppose it to be, of an ultramarine or sky-blue colour; it is rather of a slate, drab, or darkish purple hue.

The fur of the Alaskan Blue Fox, although coarse, is of a dark blue sooty colour, and is most valued on account of its rich deep colouring.

About 2,000 skins are imported yearly into London by the Alaska Commercial Company, and fetch up to 222s., and are collected in the Pribylov and Attoo Islands.

According to Elliot, the Blue Fox feeds on birds' eggs,

young Seals, etc., and was found on these Islands (St. Paul's), on first arrival of the natives. The Blue Fox was introduced into the Island of Attoo on the west of the Aleutian chain. The Alaska Commercial Company apparently draw their supplies from these districts.

The Blue Fox is rare in the York Fort district, and on the coast of Labrador. This is the more remarkable as the White Fox is common in these parts. It does not attain a large size in these parts, and the colour also varies considerably—from almost white, light buff-brown, brown, dark purple-brown, to pale blue, interspersed with white hairs, medium-coloured blue being about the darkest shade. The quality of fur from these parts is fine, and much esteemed by French buyers for this reason. £14 each has in 1888 been paid for such skins.

Greenland produces some 500 skins. The fur of these is fine, and the size about the same as the Labrador type, and rather larger than the York Fort variety. The colour also resembles the latter; but, as a rule, they are browner in colour. The Greenland skins are sold in Copenhagen by the Royal Greenland Company. The Iceland Blue Fox resembles the above, but is of coarser quality, and deeper in colour; the Faroe Islands Fox is very similar.

The tail of the Blue Fox is thickly furred, and in some examples the paws are white.

In 1891 3,379 Blue Fox skins were imported by the Alaska Commercial Company, and realized from 22s. 6d. to 250s., and 38 skins by the Hudson's Bay Company: these fetched from 19s. to 170s. In 1890 666 Blue Fox skins were sold by the Royal Greenland Company in Copenhagen; in 1891, 1,451 skins.

The Blue Fox is also found in Wrangel Island.



KITT FOX.

Canis velox.

French : Renard Ture. German : Kitt Fuchs.

The Kitt Fox is a small animal, measuring about $1\frac{1}{2}$ to 2 feet in length. It is of a light grey colour on the back, mixed with longer white hairs. The sides are light yellow and the belly white. The tail is full, about 11 inches long, grey in colour, but underneath of a lighter yellow and tipped with black hairs. The eyes are brown; the ears brownish-grey and tipped with black. The fur is thick and soft, and the pelt is thin. The whiskers are also black.

The Kitt Fox has become rather scarce of late years, owing probably to the advance of settlements in the

North-west district of Canada. The few skins imported are either shipped from York Fort or sent from Winnipeg. They are mostly taken near the latter city.

The Kitt Fox inhabits, or rather was an inhabitant of, the more southern districts of the Dominion of Canada, such as Manitoba. It is also found in Dakota and other Northern States of the North American Republic. It is never found in Virginia.

Fawn or light brown specimens are sometimes met with. By some naturalists this Fox has been confounded with the Grey Fox.

The French name of this animal arises probably from the Kitt Fox being of the same colour as the Turkish Fox.

Richardson, p. 99, says:—"The Saskatchewan is the northern limit of its range. Its burrows are found in the open part of the plains, at a distance from the woody country. According to Mr. Say, it exceeds even the Antelope in swiftness."

In the Zoological Gardens of London this Fox seems to suffer considerably from the heat in summer.

The skin is of little value. A very few skins are now imported, and realize from 8d. to 2s. 5d. Eight hundred and fifty-six skins were sold by the Hudson's Bay Company in 1891; 143 in United States and Canada sales. These are chiefly made up into cheap wrappers, but sometimes are dyed black.

GREY FOX, OR VIRGINIAN FOX.

Canis virginianus.

French : Renard de Virginie. German : Gries Fuchs.

The Grey Fox inhabits, as its Latin name denotes, Virginia, and is also abundant in many of the more Southern States of the Union, such as New Jersey, Missouri, North Carolina, Kentucky, Tennessee, and Indian Territory. It is found as far South as Florida and Louisiana, where they are said to be very abundant. It also inhabits some of the more Western States, such as Michigan, Ohio, etc., and this is its most northern range. The Western Grey Fox is larger, about 3 feet long, thicker furred, and lighter in colour than the Southern type; its under fur is more abundant; the sides are also much redder; in fact, this is the Northern variety.

The Grey Fox likewise inhabits the Pacific Coast, California, and Oregon. This variety is rather smaller, and has very fine silvery fur or hair. There is a white stripe at the head; there is no yellow at the sides. The tail is very long, about 16 inches, well grizzly, with a dark line at the top. The body is about 19 inches long.

The mountain variety of the Grey Fox has very thick, long, and rather dark fur on the back, with a pure white belly; the general colour is light grey; the fur is much longer and softer than in the other types.

The range of the Virginian Fox is scarcely so far north as the Dominion of Canada. Its skin is rarely

imported by the Hudson's Bay Company; the few skins which are sometimes sold by them are probably brought to one of their Southern posts by a trader.

The Pennsylvanian and Southern State Grey Fox is the most numerous variety of this species, and may be taken as the type.

The general colour is grey or dark grey, the back being covered with long coarse hair, each hair being of two colours, two lines of black, two of white, of alternate marking. The under fur is dark drab or blue. The ears are dark grey and red, and white inside; the throat is white; the whiskers black; the chest is red, and the belly white, and covered with soft fur; the sides are usually striped with a red or reddish colour—this varies considerably in different individuals. The tail is long and silvery, of the same colour as the back, but red underneath, and marked at the top with a stripe of blackish hair—in fact a black line; the tip of the tail is black. The eyes are dark brown or black, and the nose is black.

The Grey Fox is about $2\frac{1}{2}$ feet long. It appears to interbreed occasionally with the Red Fox, and sometimes with the Coyote or Prairie Fox.

It has been confounded with the Kitt Fox, from which, however, it is readily distinguished by its larger size, by the coarseness of its hair, its different colour and distribution, by its longer tail, which has the characteristic black line, and by its thicker pelt.

The Virginian Fox is sometimes hunted, but it is soon killed, after an hour's chase. It does not run so straight as the Red Fox, but runs in circles, and sometimes takes to trees.

Its fur is a serviceable one; it is made into excellent wrappers, trimmings, etc. It is much used in England

and France, especially in Brittany. The fur is sometimes dyed a bluish shade.

The price of a Grey Fox skin varies from 6d. to 4s. 6d. according to quality. A few years ago 12s. 6d. was paid.

In 1891 25,384 skins were sold in London.

We have once seen a black variety. This skin in question had blackish fur instead of the characteristic red fur of the sides: the tips of the fur were white. A closely allied species is the Rude Fox (*Canis rudis*) of British Guiana.

PRAIRIE FOX.

This small Fox inhabits the United States of North America, probably the most central.

In size it is even smaller than the Kitt Fox, and measures about a foot in length. It is much the same colour as the Virginian or Grey Fox; that is, it is of a silvery colour. The fur is very dense, and the tail is tipped with black.

The Prairie Fox is rarely met with, and but little is known of its habits.

Its skin or fur is of little value (about 2s. 3d.) on account of its small size.

A few hundred skins are imported from time to time.

STEPPE, OR AFGHAN FOX.

Vulpes leucopus.

This animal, sometimes called the Hill or Stone Fox, inhabits the high central Table Lands of Asia, Cashmere, etc. The usual type is of a very light brown colour, with black belly, ears, and legs; many, however, are of a darker shade on the back and rump, approaching the colour of a Cross Fox.

The Steppe Fox is of medium or small size. The fur is soft and long, and the tail is tipped with white. Several thousand skins are imported through Arabia, and some hundred thousands through Nishin to Leipsic. The value is about 1s. 6d. to 3s.

This Fox, or a very similar sub-species, is probably the animal referred to in Cant. ii. v. 15: "The little Foxes which spoil the vines."

Here we find the food of the Fox to be of a vegetable character, which fact is also exemplified by the well-known fable of Æsop of the Fox and the Grapes.

PERSIAN FOX.

Vulpes persica.

The Persian Fox is a variety of the above animal. A similar variety is found in Arabia. Both these types are rather lighter in colour than the Afghan Fox. The smell of the skin is very peculiar, and the value is about 1s. 9d.

EAST INDIAN FOX.

Vulpes leucopus.

This very small Fox is also called the Indian Desert Fox. It is of a pale light colour, similar to the Hill Fox of Afghanistan; the tip of the tail is white, and the back is covered with silvery white hairs, sometimes of a brownish shade. The fur is only of poor quality and of little value, and is sometimes shipped from Kurrachee. The East Indian Fox inhabits the Punjaub.

AZARA'S FOX.

Canis azarea.

Azara's Fox inhabits South America. Its colour is silvery-greyish light brown; the tail is dark grey and tipped with black; the belly white; the legs are grey in front and rufous colour behind. In size it is about the same as the Grey Fox.

Very few skins are imported into this country, and are worth about 1s. 8d.

CAPE FOX.

Vulpes chacma.

This Fox is an inhabitant of the Cape. The fur is of a yellowish colour, and is made by the natives into karosses. A few skins are met with from time to time.

COMMON JACKAL.

Canis aureus.

French : Chacal. German : Schakal.

This well-known animal abounds in India and Algeria. In the latter country the French Government pay 1½ francs for the slaughter of this animal. Many thousands (about 30,000) are killed annually.

The Jackal is of a rather small size, being about 2 feet in length ; its colour is of a lightish red-brown, with a small white mark on the throat ; the back is of a deeper shade. The fur is harsh and of little value.

The Jackal is nocturnal, and its cry, generally heard on moonlight nights, is a peculiar long wail, rather piercing, but not altogether unpleasant. It is a very lively animal, and bites quickly and sharply. Its nose is black and sharply pointed, and its smell very pungent. It thrives well in captivity.

It is sometimes hunted in India with Fox-hounds, which are sent out from England ; it affords good sport. The hunt usually takes place in the morning at an early hour. When hard pressed it will turn up a second Jackal.

BLACK-BACKED JACKAL.

Canis mesomelas.

This handsome animal is larger than the foregoing, and inhabits the Cape and South Africa. The hairs of the back are long and coarse, and of a dark silvery-grey colour ; the sides are covered with soft red-brown fur,

and the division between the fur and the long hair on the back is well marked, making a striking contrast ; the tail is of a blackish colour.

There are not enough skins imported to give this fur the attention it deserves, and they are mostly made up into wrappers, the value of a skin being about 3s.

RACCOON-LIKE DOG.

Canis procynides.

The skin of this animal is sometimes sold by importers under the name of Jackal, Badger, or Japanese Fox, and is sometimes sent to this country with the top hair removed, leaving only the soft under fur.

This animal has a very lively disposition. It is rather small, about a foot in length ; the general colour is dark brownish-grey, and there is sometimes a dark mark across the shoulders like that of a Cross Fox ; the under fur is abundant, soft, and of a light brownish-red colour, resembling the hue of a Red Fox, and the ground of this fur is dark ; the ears are dark brown ; over the eye there is a white stripe ; the tail, which is rather short and not very bushy, is covered with dark brown fur, and also with longer bristly hairs, which are black ; the tail is occasionally tipped with white ; the legs are short. Sometimes there is a white spot in the dark fur, but this is rare.

The Raccoon Dog is an inhabitant of China, Japan, and North-eastern Asia generally, and it is sometimes sold in captivity in Northern China. Most of the skins are exported from Japan, and chiefly from the port of Hiogo. In 1884 about 13,000 skins were imported, and

in 1891 about 70,000. The fur, both dyed and undyed, is manufactured into capes, trimmings, etc.

The value of a skin varies from 4d. to 7s. 6d., according to the quality and demand.

BAUM MARTEN, OR PINE MARTEN.

Mustela martes.

French : Martre de Prusse. German : Baum Marder, or Edel Marder.

The Pine or Baum Marten, although much rarer than in former years, still exists in Scotland, Ireland (Kerry County), North Wales (Carnarvonshire), and in some parts of England (Suffolk, North Devon, Cumberland, Lincolnshire). It appears to have been lately met with in Mid Hants, and it is believed to still exist in Epping Forest; it is also said to have been seen in Herefordshire as late as 1884. It is extensively found in Norway, Germany, Italy, Russia, Switzerland, rarely in Spain, and in other parts of Europe, and is usually to be met with in pine forests. Courland and Lithuania produce yearly about 3,000 skins. Its fur is rich and valuable, although much depreciated in price of late years; it is fine in texture, and soft to the touch. The value of a skin is about 10s.

The length of this animal is about 2 to 2½ feet, including the tail. The colour varies considerably from brown to dark brown, of a more or less yellow shade. The longer hairs are thicker on the back; the throat is covered with spots or patches of a more or less light colour. When the throat is very light, this Marten is sometimes confounded with the Stone Marten, but in

the latter animal the throat is pure white, the line between the two colours well defined, and the fur coarse. The tail of the Baum Marten is about 6 inches in length; it is thick and bushy, and generally of a yellowish-brown shade, but sometimes a very light brown; it is very rarely tipped with white. The fur is valuable, and is generally made into capes. The tails are of greater value than those of the Stone Marten, and are used for the same purpose. The heads are much esteemed for sporrans in Scotland.

The Norwegian animals produce the best fur, being finer and thicker than that from other parts.

The Pine Marten has been called the Sweet Marten in distinction to the Foul Marten or Polecat, and in some parts of England it is called the Marten Cat. It lives in trees, and feeds principally on young birds, such as wood pigeons, etc. It is very probable that it sucks eggs.

Drab, yellow, or fawn examples are occasionally met with. It is probably the same species as the American Marten. The late St. John, in his "Natural History of the Highlands" (page 124), says:—

"The Marten Cat is a very beautiful and graceful animal, with a fine fur, quite devoid of all smell, but, owing to its great agility, it must be one of the most destructive of the tribe. When hunting, their movements are quick and full of elegance, the effect of which is much heightened by their brilliant black eyes and rich brown fur, contrasted with the orange-coloured mark on their throat and breast. The Marten, when disturbed by dogs, climbs a tree with the agility of a Squirrel, and leaps from branch to branch, and from tree to tree. I used frequently to shoot them with my rifle on the tall pine-trees of Sutherlandshire. In this part of the country they are now seldom seen."

STONE MARTEN.

Mustela foina.

French : Fouine. German : Stein Marder.

The Stone Marten is called the Beech Marten in most works on Natural History. It is still extensively found in Europe—Russia, Germany, Spain, France, Italy, Greece, Turkey, Bosnia, Herzegovina being its chief habitats. It is also found in Scotland, Switzerland, Denmark, Ireland, and perhaps in North Wales. It is probably extinct in England. It is also met with in Cashmere, the North-west Provinces of India, and other parts of Central Asia. The fur is harsh to the touch, but it is much softer and finer in the Asiatic type. This change is produced by the greater altitude and lower temperature of those regions.

The general colour of the longer hair is purplish-brown, and nearly the whole of the body is of this colour; the ground or under fur is white; the throat is pure white, and marked generally like a horse-shoe; the tail, which is bushy, is from 6 to 9 inches long, and is of the same colour as the body; the tail is very rarely tipped with white, and occasionally sprinkled with white hairs.

The furs from Spain, Italy, and France are darker than those from most other European countries: the Bosnian, however, excel most in richness of colour. The Russian skins, although found in greater quantities, are lighter, and of coarser quality. The Cashmere animal is small, and of light colour.

The tails are valuable, and much sought after. They

are of less value, however, than those of the Baum Marten, and are utilized for the same purpose. The skins are chiefly bought by Russian dealers, and are sometimes dyed. This fur was in great request at the beginning of this century: 119,375 Baum and Stone Marten skins were imported into London in 1844.

The Stone Marten lives in rocks and stony cairns, the colour of the fur assimilating it well to these surroundings. This animal has often been confounded with the Baum Marten, but it is readily distinguished by its having no vestige of yellow, by the harshness of its fur, and by its well-defined white throat. Its length is about 2 feet, including the tail.

Pure white Stone Martens have occasionally been found, but they are very rare.

The canine teeth are well developed, but the two middle incisors in the lower jaw are extremely small, and scarcely discernible.

PERWITSKY.

Mustela sarmatica.

This very small animal inhabits Siberia. The under part of the body is black; the back is brown, marked with lighter spots; the tail is black, and about 4 to 6 inches long; and the body is about 5 inches in length. The fur is short and harsh, and is chiefly suitable for linings. It is rarely met with in commerce, and is of little value, although about fifty years ago it arrived in larger quantities.

AMERICAN MARTEN.

Mustela martes.

French : Martre. German : Marder.

This beautiful animal abounds in most parts of the Dominion of Canada, in the province of Alaska, and in the northern parts of the United States of America.

It has for several centuries yielded its valuable fur to the trapper, who has sought it in the dense forests of these countries, and it is one of the chief fur-bearing animals whose skin repays him for his long winter's tramp and toil.

Its fur is erroneously known under the name of sable in the manufactured state, such as it is presented to the public in the form of muffs, capes, boas, etc.

The fur of this animal is used in almost every civilized country, and is chiefly procured by the English, French, Italian, and American traders; it is also worn to a less extent in Russia, Turkey, Spain, and Norway. The tails, which are about 5 to 8 inches long, are made up separately into very valuable capes, etc., and are also used in the manufacture of the very finest "sable" paint-brushes. Robes or coats are occasionally made of these skins by the North American Indians, who match and sew them beautifully. Nothing is lost; even the skins of the paws and throat, or gills as they are usually called, are made into valuable coat-linings, tobacco-pouches, etc. These pieces are sold by the pound to German, Turkish, and other traders. The Hudson's Bay Company imports annually about 70,000 skins; 64,689 skins were sold by them in 1891, and about 38,412 by other firms in the same year.

The price of this skin varies considerably, and has much depreciated in value of late years, the present value being 2s. 3d. to 42s. The first quality furs are sorted by the Hudson's Bay Company into large dark, small dark, large pale, and small pale; the seconds are more numerous, and of all shades. There are also third, and sometimes fourth qualities.

Most American Martens are trapped. Many Martens are destroyed by Lynxes; therefore, when the latter are abundant, the Martens generally diminish.

This animal is closely allied to the Baum or Pine Marten, and by some naturalists it is considered the same animal.

The general colour is rich brown, but it is sometimes of a light yellow colour, and more rarely almost black. The last-named are highly prized, and are found in the East Main and Fort George districts of the Hudson's Bay Company. There are many intermediate shades, many of which are of a rich orange tint. The soft under fur is drab; the longer hairs of the back are darker than the rest of the body; the throat, except in the brown and dark brown animals, is covered with white or light brown patches; the tail, which is thick and bushy, is of the same shade as the body, but the longer hairs at the tip are generally dark brown. Sometimes the extreme tip of the tail is white. The feet and legs are dark brown, except in the lighter-coloured animals the paws are sometimes white; the ears are short, and white inside; the sides of the cheeks are also white; the whiskers are black. Very light-coloured examples are also found, almost the colour of Kolinsky. Others are sprinkled with silvery-white hairs, almost like a Russian Sable.

Slate-coloured animals like dark Stone Martens are

also met with. Martens that are nearly white are sometimes captured, principally in Alaska. They are, as Mr. Elliott says, highly prized by the natives, who are glad to acquire them in exchange for twenty or thirty Beaver or other skins.

The Californian animal is smaller than most other Martens, and is of a uniform brown or light brown colour. The Labrador type is large, rich in fur, but scarce, and the Nova-Scotian is very similar to this. The Alaskan is coarse-haired, large, and light in colour, and in some examples almost white, especially the head and neck. Many skins of the last-named district are turned inside out, leaving only the tail exposed to view, and are sorted into qualities and colours from the look of the pelt and tail. The poorest skins come from the northern parts of the United States, which is the most southern limit of the Marten, and the fur is consequently thin and of little value. Each district of North America has its own peculiar type.

The fur is used both dyed and undyed. Dr. Richardson, in his "North American Fauna" (page 51), says:—

"The Marten preys on mice, hares, and partridges, and in summer on small birds' eggs, etc. A partridge's head, with the feathers, is the best bait for the log-traps in which this animal is taken. It does not reject carrion. . . . It may be easily tamed, and it soon acquires an attachment for its master, but it never becomes docile. Its flesh is occasionally eaten, though it is not prized by the Indians. The females are smaller than the males. They burrow in the ground, carry their young about six weeks, and bring forth from four to seven in a litter about the latter end of April. Mr. Graham says that this animal is sometimes troubled with epilepsy."

FISHER, OR CANADIAN MARTEN.

Mustela pennanti.

French : Pecan. German : Virginischer Iltiss.

The Fisher or Pekan, as it is sometimes called, is the largest of the Marten tribe, being about 2 to 3 feet in length. The tail is from 11 to 19 inches long.

It inhabits North America, but its range is somewhat limited, comprising the whole of the Dominion of Canada, from the province of New Brunswick to that of British Columbia on the Pacific. It is only met with in the United States in the western and most northerly parts, such as Oregon, Maine, etc. It does not appear to exist now in Virginia, although the German name of Virginian Fitch or Polecat implies that it once was found there. It is most probably extinct in this and many other States of the American Republic, where it was no doubt at one time abundant. A few are still found in South America, the skins from these parts having only hair.

The colour of the Fisher is dark brown, with longer and still darker hairs; it is lighter towards the head, which is short and thick; the ears are rather short; the tail is long, thickly furred, and tapering beautifully to a point; this appendage is usually dark brown or almost black, corresponding to the general colour of the body, and has sometimes a white tip. Many animals are of a light or pale colour over about half of the body, the tails in these cases being brown. In some of the thickly-wooded districts of Canada, Fishers are found which are almost black. White specimens are occa-

sionally met with; light brown, or fawn, and mottled are extremely rare. The pelt is in many instances very thick, especially in Columbia and British Columbia.

The fur of the Fisher is rich and valuable, and ranges in price from 2s. 9d. to 55s., but good dark skins often realize 70s. to 80s. when in great demand. It is principally bought for Russia, and the tail is largely used in France, England, and America for various purposes, the value being about 3s. to 6s. Small skins often realize as much as the large—an apparently anomalous fact, which is however accounted for by the Russian import duty being charged according to weight, and not to size; the smaller skins, having a thinner pelt, weigh less.

The finest fur comes from some of the more northern provinces of Canada Proper.

In 1891 the Hudson's Bay Company sold 5,658 skins; 2,955 were sold by other brokers, at prices ranging from 3s. 6d. to 77s. 6d.

In 1812 a Fisher's skin realized only 7s., and in 1816, 8s. to 14s.

The Fisher is also called the Wood-shock. The female has four teats.

Dr. Richardson, in the "North American Fauna" (page 53), thus describes its habits:—"The Pekan is a larger and stronger animal than any variety of the Pine Marten, but it has similar manners; climbing trees with facility, and preying principally on mice. It lives in the woods, preferring damp places in the vicinity of water, in which respect it differs from the Marten, which is generally found in the driest spots of the pine forests. The Fisher is said to prey much on frogs in the summer season; but I have been informed that its favourite food is the Canada Porcupine, which it kills by biting on the belly. It does not seek its food in the water, although,

like the Pine Marten, it will feed on the hoards of frozen fish laid up by the residents. It inhabits a wide extent of country, from Pennsylvania to Great Slave Lake, being thirty degrees of latitude, and I believe its range extends completely across the continent. It is found on the shores of the Pacific. It brings forth, once a year, from two to four young."

AFGHAN FISHER.

Mustela flavigula.

This Fisher, which is smaller than the above, has the tail nearly the same length; this appendage is black, and covered with hair, but, unlike that of the former, is of little or no value. The general colour of the body is light brown, but deeper and darker yellow towards the tail; the fur is shorter than that of the American Fisher.

The value of a skin is about 7s.; it would be a more serviceable fur if it could be procured in sufficient quantities. It inhabits Cashmere, Nepaul, and Northern Hindostan, and is said by Dr. St. G. Mivart to extend to Java, Sumatra, and Borneo. It is singular that a species so closely allied to the American Fisher should be found in Northern India, a district where another American species, the Racoon, is found.

The Afghan Fisher is very rare.

A similar variety is found in Japan; it is very much of the same colour as the Afghan Fisher, but it has a whiter throat; it is also very rare.

KOLINSKY.

Mustela sibirica.

French : Kolinski. German : Kolinski.

The Kolinsky, sometimes called the Red Sable, appears not to be mentioned in any work on Natural History in this country, and to be unknown to scientists, with the exception of the Russian Professors.

Its fur forms an article of commerce, but it is not so much in request as it was about twenty years ago. It is used both dyed and undyed; in the latter state it is much appreciated by the Quakers. Its chief value lies now in its tail, which is largely used for paint-brushes. These brushes are strong and of a very fine quality, and are sold under the name of Red Sable.

The price of tails fluctuates considerably, from 1s. 8d. to 4s. 6d. each. Many brushes are made out of one tail.

The fur is short, and rather dense; it is yellow or brownish-yellow, and the tail is of the same hue as the body; the ears are short; the throat is covered with patches of white.

The Kolinsky is rather a small animal, about 18 inches long, the tail being about 4 inches.

The price of this fur varies considerably; the high price of 7s. 6d. per skin was paid in 1872; now, in 1891, it is worth about 2s. About 50,000 to 80,000 animals are trapped annually in Siberia, many being sent to this country and to France.

The finest and largest skins come from Kusnetsk, but the tails of these have soft and weak hair. About 10,000 to 40,000 are collected there annually.

The skins from Yakutsk are large and strong, with coarse fur, but large and full tails, which are well adapted for brush-making. The Irschinsky and Tomsky are also well-known sorts.

The Amoor district produces skins of a worse quality, but the wooden skewers that are put through the tails reduce their value.

Civell is probably the ancient name of this fur.

The Kolinsky is also met with in Japan and China. The fur is very short and harsh, resembling that of a Mink; the tail has generally very short hair like a low-quality Mink. It is, however, used for brushes, but on account of its inferior quality is only worth 5d. to 8d.

About 15,000 skins are imported from Japan and China.

JAPANESE MARTEN.

Mustela melanopus.

This animal bears a certain resemblance to the American Marten, but has a closer affinity to the Kolinsky. It is of a beautiful light yellow colour, resembling the Kolinsky, but rather more yellow; the tail is fuller, the fur softer, longer, and thicker than the latter's; the under fur is almost white; the cheeks are white, and the ears short. The length is about 18 inches, slightly exceeding that of the Kolinsky. The fur is not in great request, and is only worth about 1s. to 1s. 8d., but 2s. 6d. was paid a few years ago. About two to five thousand skins are annually sold in London. These were recently imported in the dressed state by Chinese, Japanese, and other merchants, but are now more often sent raw.

RUSSIAN SABLE.

Mustela zibellina.

French : Martre zibelline. German : Zobel.

The Sable, which yields, for its size, the most costly fur of all animals, is found throughout Siberia. It is most abundant in Kamschatka, Yakutsk, the Amoor province, and the extreme north of China. It is also found in the Island of Saghalien.

The hunter has many a hard day of exposure and toil in these bleak inhospitable regions before trapping this small but valuable animal, whose tracks he barely discerns in the snow.

The Russian Sable is about 9 inches long, including the tail, which is 5 inches ; the ears are short, and as a rule of a lighter shade than the rest of the body ; the colour varies considerably, but not so much as in the Marten, brown and dark brown being the predominant shades. Light brown, silvery, and animals intermixed with silvery or white hairs, are by no means uncommon. A perfectly white example is rarely met with. There is, except in a few instances, no mark on the throat.

This animal is closely allied to the Baum and American Martens.

The choicest and most valuable furs are those which the rich fur-bearing province of Yakutsk produces. £33 per skin has been paid for prime black skins of the Crown Collection. The Okhotsky type is smaller, and inferior to these in colour, but yet furnishes a useful, marketable skin. Kamschatka produces, perhaps, the most abundant supply of this fur. The animals from

this part are large, and their fur full and good; the colour, however, is lighter, being in most cases brown, light brown, or silvery. Those from Amoor rank next in abundance. About 12,000 to 25,000 are caught annually. Many of the skins are used for Mandarin robes, and the tails are exported to this country. These, as well as the Saghalien Island skins, are of inferior quality, and consequently of little value; the tips of the fur are often dyed, or smoked by the Chinese; the prevailing colours are brown and dark brown; the ground is blue; and the tail is sometimes tipped with white.

Henry Lansdell says that the finest and blackest Sables are caught in the forests of the Vitim and Olekma in the province of Yakutsk. It is a curious fact that the North-eastern portions of North America and Asia should each produce the finest Marten and Sable respectively, and that immediately below this region the most inferior skins of each sort should be found.

The finest black skins are usually bought for Paris, London, and New York, and the silvery skins for Russia.

Part of these furs are imported by the Alaska Commercial Company, and part by other traders. 9,247 Sable skins were sold in London in 1891.

The tails are valuable (from 2s. to 6s.); they are made into boas, etc.

The usual prices of Russian Sable skins range between 10s. to 300s., according to colour and quality, the palest being the cheapest.

MINK.

Mustela vison.

French : Vison. German : Nerz.

The habitat of the Mink is very extensive. In North America it ranges from the Atlantic to the Pacific, and from Alaska and York Fort to Louisiana, Arkansas, and Kentucky.

The Mink is rather a small animal, of 6 to 18 inches in length, not including the tail, which is another 6 or 9 inches; the usual colour is various shades of brown, but albinos and nearly black, mottled, and drab-coloured examples are sometimes met with, as well as animals with white hairs sprinkled in the brown fur; there is often a white spot on the throat, somewhat similar to that of the Marten; a white line or spot is also sometimes found underneath, varying very much in length; the tail is generally brown or dark brown, of a darker shade towards the tip, and it is sometimes tipped with white; the whiskers are usually brown or dark brown; the ears are short; the under fur is usually dark bluish-brown, and in black animals, dark blue; sometimes the under fur is white. The Mink has six teats; there is a deeper ridge of colour on the back. Sometimes skins spotted with white are found.

The Mink is amphibious, but spending most of its time in the water, preying on fish, etc. It gives out a fetid smell, which is not, however, as strong as that of the Skunk. The largest animals are found in Alaska and the most northerly provinces of Canada. The blackest animals are found in the wooded districts of Canada, Nova Scotia, etc. Almost equally dark examples are met

with in the Eastern States of the American Republic. In the Central States, and on the Lakes, good medium dark Minx abound; and in Columbia and the Western States, large, coarse-haired animals. In the Southern States, such as Louisiana, Kentucky, and Tennessee, Minx are lighter in colour, coarser in the fur, and thicker in the pelt.

The tail of the South-western States animal is fuller and thicker than that of the Northern. The Kolinsky supplies us with a similar instance.

The immense province of Labrador produces only some fifty skins per annum. The fur, as in most other amphibious animals, is short; it is the very best for wear, lasting for many years, and sometimes for a generation or so. At one time it was much sought after, 30s. being paid for a single skin, but now it is generally considered to be a moderately-priced fur. However, we should never have supposed that the skins would be burnt in the Hudson's Bay Territory, as related by Dr. Richardson, to avoid the expense of carriage. He probably refers to some other animal.

In 1890, 362,675 Mink skins, imported from the United States and Canada, were sold in London; in 1891, 173,789 skins, besides 29,263 imported by the Hudson's Bay Company, were brought under the hammer, at prices ranging from 5d. to 21s. 6d.

These skins are usually manufactured into muffs, etc., both in the natural state and dyed and pulled to imitate Seal. They are also used for coat-linings, and the tails are made into capes, etc.

The pelt of the Mink is thick and heavy, like that of most aquatic animals. The skin of this animal was often adopted by the North American Indians as their "totem" or crest.

The Mink feeds on fowls, water-hens, etc. It pairs in March, and sometimes even earlier. Some years ago an attempt was made in the United States to breed Minks for the sake of the fur, but this enterprise ended in failure. These breeding establishments were called farms. As regards its habits, we think it best to quote Dr. Richardson (p. 49) in his own words :—

“The Vison passes much of its time in the water, and when pressed seeks shelter in that element in preference to endeavouring to escape by land, on which it travels slowly. It swims and dives well, and can remain a considerable time under water. Its short fur, forming a smooth, glossy coat . . . and the shortness of its legs, denote its aquatic habits. It preys upon small fish, fish spawn, fresh-water mussels, etc., in the summer, but in the winter, when its watery haunts are frozen over, it will hunt mice on land, or travel to a considerable distance through the snow in search of a rapid or fall, where there is still open water. . . . The Vison, when irritated, exhales next to the Skunk the most fetid smell of any animal in the fur countries. The odour resides in a fluid secreted by two glands situated at the anus. It is not very timid when in the water, and will approach near to a canoe out of curiosity, diving, however, instantly on perceiving the flash of a gun, or any movement from whence it apprehends danger. It is easily tamed and capable of strong attachment. In the domestic state it is observed to sleep much in the day and to be fond of warmth. It has four to seven young at a time.”

RUSSIAN MINK.—This variety of the Mink is found in Siberia. It is of medium size, with coarse, dark brown fur. Not so many skins appear now to be imported as in former years. The value was about 3s. 6d. to 4s. 6d.

Some Minks are still found in Germany, European Russia, Poland, and parts of Switzerland. A very few of a similar variety are found in Nepaul; the colour is reddish-brown, and the throat and upper part of the face are white.

FITCH, OR POLECAT.

Mustela putorius.

French: Putois. German: Ittiss.

This animal is known under many names, such as Fitchferret, Foulmart, Founard, and Foul Marten, these three latter being given it in distinction to the Sweet or Baum Marten. It derives these names from the very pungent and somewhat fetid odour which it exudes. It appears to be the European representative of the Skunk.

The Polecat has become scarce in this country of late years; it is not found now in parts of Kent and Yorkshire, and many other counties, owing probably to the ill-directed zeal of gamekeepers, who seem to have a craze for killing every animal or bird that preys upon game, not regarding the fact that game is generally stronger and more healthy where the *fère nature* are not exterminated. The weakly, sickly, and diseased fall an easy prey, and the healthy and stronger animals are left to perpetuate a hardy race.

The Polecat is still found in North Wales, Scotland, and parts of England and Ireland. It frequents woods, and preys upon young birds, Rabbits, frogs, etc. In capturing Rabbits it approaches its prey by springs or leaps, its victim uttering a piercing cry when killed. It

sucks the blood of its victim, but leaves its carcase. It will capture eels when travelling over the wet grass at night. It is often domesticated, and known as the Polecat Ferret, catching Rats with great skill, and is often preferred to the Ferret for this purpose, on account of its superior size and strength. It is advisable to keep it well secured, as otherwise it will commit ravages in the poultry yard. We heard of a Polecat escaping, and eating off part of a turkey-hen's head, when on her nest. The turkey recovered, but was seriously injured.

The Fitch, to call it by its commercial name, is about a foot long; the tail, which is covered with long black hair, is 5 to 8 inches long; the general colour is a beautiful shiny black; the under fur is abundant, and varies from light to deep yellow; the hairs along the back are very long; the ears are short and white; the head is broad, and covered with short fur; round the jaws the colour is white or yellowish-white; the nose and whiskers are black; the under part of the body is quite black, and the hairs are very short. In aged animals there are sometimes white hairs interspersed.

The English Polecat is rather smaller than the continental variety.

This animal is also found throughout a great part of Europe. The largest and finest skins come from Holstein. Bosnia and Germany produce a large number of skins. Those, however, from the latter country are not so valuable, the under fur being lighter.

Polecats of good colour are also found in Holland, and a few animals are still found in Switzerland. The fur is good, serviceable, and of a rich appearance. It is principally used in England for aldermen's and civic robes. The skins from North Wales are fine.

Very few Fitch skins are now imported from the continent. In 1827, 282,482 skins were imported. In 1814, 4s. 2d. to 4s. 4d. was paid for Dutch Fitch. About 100,000 skins are sold at the Easter fair at Leipsic, from 1s. 6d. to 3s. each. The price of a live Polecat is from 2s. to 5s.

R U S S I A N F I T C H.

Putorius evermanni.

The Russian or Siberian Polecat is a sub-species of the foregoing, but the fur is poorer in quality, and lighter in colour. The general colour is dark greyish-brown; the under fur is light yellow, and the longer hairs are darker; it is smaller than most of the other species, its length rarely exceeding 1 foot; the tail is about 4 inches long.

This fur has much depreciated of late years, and is now seldom imported, whereas many thousands were imported a few years ago. The present value is about 1s. a skin.

On account of the shortness of the fur, it is very suitable for coat-linings. It is sometimes dyed brown.

E R M I N E, O R S T O A T.

Mustela erminea.

French: Ermine. German: Hermelin.

The Ermine, which is distributed throughout the northern parts of both hemispheres, seems not to have

attracted much notice from scientists, having escaped being split up into species, which we find so often the case with other animals living in nearly the same latitudes. Take, for instance, the Hare, which has nearly as wide a range, and which is divided into several species, two alone of these, however, being well defined, whilst the Ermine, varying so much in many respects, and inhabiting three large continents, has only been described as one.

It inhabits North America, Great Britain, Ireland, Norway, Russia, and Siberia. The North American Ermine, which is found in Labrador, York Fort district, and province of Canada, is small and white; it is not particularly abundant: 5,417 skins were sold in London in 1891 by the Hudson's Bay Company.

The well-known English Stoat, which is found in most counties of England, is brown on the back and white underneath, and rarely assumes its white winter coat. In Scotland, however, it invariably changes in winter to a pure white, with the exception of the tip of its tail, which always remains black.

Siberia, where most of the Ermines are taken, produces examples of widely divergent sizes and characteristics.

The Barabinsky type is the largest; it is perhaps two or three times as large as the diminutive Slisky, which is even smaller than the American or Scotch.

Those found in the province of Irschim are larger and white, with rich fur.

The Tomskey and Baschirsky are well-known medium sorts.

Those from the province of Yakutsk are small, somewhat similar to its American cousin on the opposite

coast. The best skins from this part are collected as tribute to the Crown.

Viатka in Russia produces skins of small size.

The Ermine is from 5 to 12 inches long, not including the tail, which is about 4 inches; the fur is short, and is pure white in winter, with a black tip to its tail; the whiskers and the nose are black.

An Albino Ermine, with whitish coat in summer, and with no black tip to the tail, has recently been chronicled in the *Field*.

This fur is worn by the Queen, some of the judges and high officers of state, and is used for the state robes of the peers. It was once regarded as a princely fur, and only to be devoted to the use of royalty, but it has now become very much neglected, and a few years ago it was practically unsaleable. It still seems to be bought by the Chinese at the great fur-market of Kiatka.

The skins are very neatly tied up with bass in bundles of 10, 20, or 50. They are sold by the timber (40 skins). The present market value is 20s. to 30s. per timber, and a few years ago it was even less. The highest price recorded for good skins is 180s. per timber. 264,606 skins were imported into London in 1836; these were sent in the well-known bark-boxes, but on account of theft on the water, they were afterwards sometimes imported in large iron-bound cases, with peculiar Russian locks, which gave a musical sound on being opened.

The fur of the Ermine is the emblem of purity.

This fur is used for robes, mantle-linings, muffs, glove-linings, etc. It is one of the furs of heraldry.

The fur of the Ermine, with black spots instead of tails, is called Minever.

There are a good many skins called Greyback; they

are those which are just turning white, that is, with a few grey hairs on the back like the Russian Hare.

This animal is sometimes called the Clubster in England. It is said to be more destructive to game than the Weasel, although its numbers have been much reduced by gamekeepers. It preys on Rabbits, small birds, game, poultry, partridges' eggs, etc., and even captures the Mole. It has been known to continue fighting with its winged prey at a considerable distance from the earth. It swims well. It is asserted that it sometimes climbs trees. The Stoat is easily captured alive in long box-traps, and has occasionally been tamed. Like the cat, it carries its young by the nape of the neck to a place of safety. Many Stoats have been sent to New Zealand at considerable expense (about 5s. a head), in order to reduce the enormous quantities of Rabbits which are over-running parts of those islands; 3,000 Stoats and Weasels were sent from Lincolnshire at the beginning of December, 1885, and 4,000 pigeons were sent as food during the voyage.

Dr. Richardson, in his "North American Fauna" (page 47), says that, according to Indian report, the Ermine brings forth ten to twelve young at a time.

Fielden, in the "Voyage to the Polar Sea" (page 194), says:—"I obtained specimens in Grinnel Land as far north as $82^{\circ} 32'$, and several examples were shot near Discovery Bay. It is hunted and killed by the Arctic Fox."



WOLVERINE, OR GLUTTON.

Gulo luscus.

French : Glouton. German : Vielfrass.

This widely-spread species inhabits the northern parts of America, Asia, and Europe, Norway, Sweden and Russia being the chief habitat in the last-named continent.

The Wolverine is noticeable for the peculiar saddle or round mark on the back. A similar peculiarity is only found in the Abyssinian Monkey and Musk-ox. This saddle, or oval-shaped mark is usually of a dark brown colour, surrounded by longer fur of a lighter brown hue ; in the lighter-coloured animals the surrounding fur is nearly white ; in the darker animals the centre is almost black, and the encircling hair dark brown ; the

neck and head are grey or grizzly ; the tail is short, and covered with long bushy hair, which is longer and almost black at the tip, and shorter and browner at the base ; the throat has a few white marks or patches like the Marten ; the legs are usually very dark brown ; the feet are furnished with powerful claws, which are not retractile ; the under part is very dark brown, and covered with long coarse hair ; the snout is brown : it is from 3 to 4 feet in length ; the female has four teats.

In the American animal there is little fur on the head. This variety is large, especially in Labrador, and the Esquimaux Bay district, but it is not numerous, and is usually of a light colour.

The Wolverine is most abundant in the York Fort district.

The Columbian type is dark brown, rather coarse-haired, and large, somewhat resembling the very large, coarse-haired, and light-furred species of Kamschatka on the opposite coast.

The Wolverine is also found in Alaska.

The Siberian and Russian variety is smaller and darker than the American, and it differs from the latter in the extreme fineness of its fur. These rather divergent types have not been split up into different species.

In Albinos, which are very rare, the white saddle is scarcely perceptible. Almost black examples are not uncommon, especially in parts of Siberia.

The fur of the Wolverine is rich and valuable, and has much enhanced in value of late years, partly on account of its scarcity, and partly through greater appreciation of a very serviceable fur.

In London 1,388 skins were sold in 1891 by the Hudson's Bay Company, and 734 by other American traders, but this does not comprise the whole importa-

tion, as many Siberian skins are imported by other merchants; 30s. is not an unusual price paid for a good skin. In 1816 they only fetched 5s. to 7s. 10d.

Very handsome wrappers, capes, and trimmings are made from this fur, which is sometimes dyed black.

The Glutton is one of the wilder animals which is not likely to increase with civilization. It is extremely voracious, and the Reindeer is a favourite prey. Its gait is very peculiar. It is very fond of water. The young are covered with long whitish hair.

Dr. Richardson, in the "North American Fauna" (page 43), says:—"The Wolverine has great strength, and annoys the natives by destroying their hoards of provisions, and demolishing their Marten-traps. It is so suspicious that it will rarely enter a trap itself, but beginning behind pulls it to pieces, scatters the logs of which it is built, and then carries off the bait. It feeds also on meadow mice, marmots, and other rodentia, and occasionally on disabled quadrupeds of a larger size. I have seen one chasing an American Hare, which was at the same time harassed by a snowy owl. It resembles the Bear in its gait, and is not fleet; but it is very industrious, and no doubt feeds well, and is generally fat. It is much abroad in the winter, and the track of its journey in a single night may be traced for many miles.

"It brings forth from two to four young once a year. The cubs are covered with a downy fur, of a pale or cream colour."

CAPE ZORILLA.

Ictonyx zorilla.

This small animal resembles the American Civet Cat or little striped Skunk, and is also similar to the Skunk, but it has much coarser hair than either.

It is about 5 inches long, and its tail is nearly the same length ; the colour is black and white, and the tail is the same colour. It inhabits Cape Colony.

A few hundred skins are imported annually. In 1890 they fetched about 5d. to 7d.

RATEL.

Mellivora indica.

The Ratel is one of the few animals in which the belly is darker than the back. The former is black, and the latter black and white or grizzly, forming a striking contrast. The other animals which form exceptions to the general rule are the Hamster, Panda, and Badger. It is an inhabitant of India and Western Asia.

Its skin is of little value, and is usually imported with the Badger skins which come from Western Asia.

The Ratel climbs trees with facility.

CAPE RATEL.

Mellivora capensis.

This variety of the Ratel is occasionally met with, but it can hardly be classified separately.

AMERICAN BADGER.

Taxidea americana.

French : Blaireau d'Amérique. German : Amerikanischer Dachs.

The American Badger differs from the European species in the extreme fineness of its coat, and in colour. Its general colour is light yellowish-grey ; the under fur is soft, and of a light brown colour, and drab near the roots ; the fur is covered with longer black and white hairs, and white at the extreme tip ; the under part is white or light brown ; the tail is short, and covered with rather harsh hair of the same colour as the body ; the legs are dark, and sometimes almost black ; its feet are furnished with five strong claws, slightly curved inwards, about $2\frac{1}{2}$ inches in length, half an inch of which is embedded in the socket ; there is a white mark or line on the head, commencing between the ears, running down between the ears, along the back, and sometimes extending even to the tail ; this white line is more or less developed in different animals ; there is a characteristic white line on each side of the head ; the head is small, and the few whiskers are black. The fur is very long at the sides (about 2 inches), and shorter on the back, and is consequently well adapted to the manufacture of muffs. This peculiarity is also noticeable in the Asiatic Souslik.

It is not a particularly abundant animal. Two thousand four hundred and forty-five skins were sold by the Hudson's Bay Company in 1891, and 5,307 skins by United States traders, and others.

The fur is rather valuable, a good seasoned skin

being worth 6s. to 22s. 6d., according to demand. This fur is occasionally dyed dark brown. Few skins are adapted for brush-making, the hair being usually too soft for this purpose, except some from the Southern States of America. The heads are sometimes stuffed, and used for ornamenting sporrans. The best skins are exported to France, Italy, and Spain.

The smell of the skin is nut-like.

The colour of the American Badger is dark silver in the Southern States; it is much lighter in colour and larger in its northern range.

This animal is found in the York Fort district, and in many of the States of the American Republic; it is not found in Labrador, nor Alaska.

It burrows with facility, the formation of its powerful claws assisting it greatly.

It is said by the Rev. J. G. Wood to feed on prairie-dogs.

The following remarks are selected from a letter on the American Badger in the *Field*:—"When taken young, they are easily tamed, and make capital pets. As for their food, when in a wild state they will eat any carrion, preferring fresh meat, mice, beetles, gophers (an animal something like an exaggerated field-mouse, about the size of a rat), grasshoppers, snakes, frogs, and almost anything they come across."

Dr. Richardson, in his "North American Fauna" (page 39), says:—"Whilst the ground is covered with snow, the Badger rarely or never comes from its hole, and I suppose that in that climate it passes the winter from the beginning of November to April in a torpid state. Indeed, as it obtains the small animals on which it feeds by surprising them in their burrows, it has little chance of digging them out at a time when the ground is frozen

like a solid rock. Like the Bears, the Badgers do not lose much flesh during their long hibernation, for, on coming abroad in spring, they are observed to be very fat. As they pair, however, at that season, they soon become lean."

BADGER.

Meles taxus.

French: Blaireau. German: Dachs.

The Badger is an animal of quiet disposition and extremely cleanly habits, and although it gives out a certain pungent smell, it hardly deserves its stigma in the proverb "to stink like a badger." The other popular term of badgering a person is more appropriate, as the Badger possesses high courage, defending itself against odds to great advantage, even in the cruel sport of Badger-drawing, where it fights although minus its teeth.

The ancient name was Brock, and the Badger-dogs were called Brocksdogs. It is still found in many names of places, such as:—Brockdish, Brockholes, Brockswerth, Brockmoor, Brockley, Brockshill, Brocksfield, Broxbourne, Brockenhurst, Brocklesby, Brocksbridge, Brocksham, and Brockhampton. From this it will appear that the Badger was abundant in most counties of England; it is still found in Gloucestershire, Nottinghamshire, Staffordshire, Derbyshire, Devonshire, Yorkshire, Lincolnshire, and Cornwall. It is very rare in Sussex, and appears to be extinct in the greater part of Kent, although one was recently captured at Lydden, near Dover, and a few are found near Hythe. It is not uncommon in the Isle of Wight, where it attains a large

size. It also inhabits Scotland, North Wales, Switzerland, Greece, Russia, Poland, Bosnia, Western Asia, Siberia, but few are found in Germany and France.

The Badger is a nocturnal animal, leaving its den, which is made in the earth, at nightfall. It preys occasionally on poultry, and has sometimes been caught in fowl-houses. It is, however, very difficult to trap, and more so to dig out, as it burrows as fast or faster than a man can dig. They are sometimes drawn from their dens with brambles. In Devonshire and other parts it is shot on moonlight nights by persons concealed in trees. It is said to love warmth.

It feeds on fungus, roots of the wild hyacinth, and other plants, beech-nuts, acorns, fruit, honey of wasps, larvæ, insects, eggs, frogs, rats, and mice.

A writer in the *Field* says that Badgers are particularly fond of blue-bell roots and toads, and will occasionally capture young rabbits. According to another writer in the same paper, Badgers lie more closely underground in winter than in summer.

Foxes sometimes occupy Badgers' earths. When tamed, Badgers have been utilized for hunting rats. The weight of the English Badger varies from 26 lbs. 3 ozs. to 34 lbs., according to the *Field*.

This animal is of a brown, or rather of a grey colour; the under part is darkish; the hair is coarse, dark, and tipped with white; the hair is longer at the sides; the head has black and white stripes on it; the tail is short, and covered with bristly hairs; the young are thickly covered with long black and white hair, which is softer than in the adult animal. About three young are produced at a birth. White specimens are occasionally met with.

The English Badger is of a good dark colour, and the

hair is particularly adapted for brush-making, for which these skins are exclusively used. The quantity of skins produced, however, is too small to be of much value for commercial purposes. Those from North Wales are of especially good quality.

The Grecian and Asiatic skins are pale in colour, and weak in the hair, and there is more under-wool than in many of the others.

The Polish type has long hair.

The Russian and Bosnian are of good colour and size, being about 2 feet; and from the former country are procured most of the skins for brush-making.

The value of a skin is from 1s. to 2s., according to quality and demand.

Five hundred and eighty-four skins were imported into London in 1820, and 2,991 in 1830; but since the duty on skins has been removed, the quantity imported is difficult to ascertain. About 4,000 skins may be taken as the yearly importation. Two thousand two hundred and seventy-five skins were imported in 1883, and 3,487 in 1884, by one merchant only. In Prussia 5,098 Badgers were killed in the winter of 1885-6.

For brush-making the skins are first shaved, and then washed with alkali to remove the grease; the hair is then cut off close to the pelt, and sorted with great skill into sizes by women, tied up into neat bundles, and sold by weight.

The longest hairs are used for making graining-brushes, the medium for shaving-brushes, and the short for tooth-brushes. The pelt is only suitable for glue or manure.

Badger skins form a very durable and serviceable material, and were formerly used for making pistol-holsters. In Switzerland they are now used for

ornamenting horse-collars and whips. The covering of the Israelitish tabernacle was partly made of these skins.

The remains of Badgers have been found in the ruins of the Swiss lake-dwellings. Charles St. John relates that the fossil remains which have been found prove its race to have been co-existent with that of the mammoths and megatheriums which once wandered over our island, and that they are eaten in France, Germany, and other countries, and pronounced to make excellent hams. It is said that the ham resembles bear's-flesh.

CHINESE BADGER.

Meles leptorhynchus.

French : Blaireau de Chine. German : Chinesischer Dachs.

This animal is also called the Sharp-nosed Badger. It is of middling size, and pale colour. The under fur is rather thick, but the skin is of little value, except perhaps for brush-making. It is used for food in China, where it may be seen in the meat-markets by the dozen, exposed for sale. This is perhaps the species described by Dr. St. G. Mivart under the name of *Arctonyx*.

JAPANESE BADGER.

Meles ankuma.

French : Blaireau de Japan. German : Japanischer Dachs.

This Badger is similar to the foregoing, but it is darker, and the under fur is more abundant. It is

about $1\frac{1}{2}$ feet long, *i.e.*, rather smaller than the European species. The value of a skin is about 1s. to 2s., and very few are imported, but are sometimes used by furriers.

It is also called the Sand-Badger.

SKUNK.

Mephitis mephitis.

French : Skunk. German : Skunk.

The Skunk is perhaps better known for the very pungent and powerful fluid it exudes than for its rich black fur, which is of the finest natural black, almost rivalling the Russian Sable in appearance and depth of colour. If it were not for this powerful scent, which is not entirely got rid of even in the manufactured state, it would be a very valuable fur. This secretion is said by anatomists to be seated in the anus. The Skunk ejects this fluid when excited or attacked, and when pursued, squirts it into the faces of its enemies, almost blinding them. When a garment is tainted with it, it is quite valueless. Even when a train has run over a Skunk, it is placed in a siding for cleansing. This secretion is said to be especially efficient as a cure for rheumatism, but the patient has often more cause to complain of the scent of the remedy than of the pain which it relieves.

The general colour of the Skunk varies from jet black to almost pure white. The black examples have a white mark, line, or incipient fork on the head, and a white tip to the tail. An absolutely white animal is almost as rare as a perfectly black one. The intermediate sorts are black with white striped, more or less pronounced,

and are more abundant than the others. In these striped examples, lateral prongs are sometimes seen branching out from the main fork, and uniting with it again, but we have never seen the fork or stripe with more than two prongs. Sometimes the white stripe is continued down the tail. Rare instances are found of one long, and one short prong. The white mark on the belly is in the same ratio as the amount of white on the back. Specimens are often found of white hairs intermixed with the black. Drab or brown Skunks are occasionally met with; they are of a beautiful light brown colour, with a white fork more or less marked.

The length of the Skunk is about a foot, and the tail another 6 inches.

The tail is covered with long bristly hairs, 3 or 4 inches in length, especially towards the tip, where the ground is lighter.

In the striped varieties the tail is beautifully edged with white; in the white, the tail is pure white.

The skins collected in the Dominion of Canada are more striped than those from other parts, the northern range and cold climate producing, as usual, a large, thick-furred, and light-coloured variety. These are sometimes called the Hudson's Bay Skunk. The fur of this variety is about $1\frac{1}{2}$ inches long.

The Skunk is found in the Fort York and Moose River districts, about the same range north as the Fisher; it is not found in Alaska nor Labrador. As the southern range is approached, the size becomes smaller, and the colour darker. Michigan, Ohio, and New York produce the finest dark skins. New Jersey, Virginia, Illinois, Indiana, Iowa, and Missouri produce a greater number of black skins, but the fur is coarser and

inferior. The western skins have red pelts, and meet with little favour.

The skins arrive in New York covered with green fat, which is scraped off before shipping, an operation which is far from pleasant. The Canadian skins are cleansed and well handled by the Indians, and are therefore always sent in good condition.

The quantity of Skunk skins imported has increased considerably of late years. In 1891, 12,583 skins were sold by the Hudson's Bay Company, and in 1890, 678,191 by other traders, quantities which would have been considered enormous some years ago. Previous to 1840 Skunk skins were considered almost valueless, and were sold in the Sundry-lots of the Company's sale.

The value of a best black skin varies from 7s. to 10s. although 13s. is sometimes paid. White, and inferior skins fetch from 3d. to 2s., and striped realize from 2s. to 7s. This skin is used all over Europe and America, for muffs, capes, etc.

White skins are sometimes dyed black or dark brown.

The American Opossum and the Skunk occasionally interbreed, the pelt partaking of the thin texture of the Opossum, with a slight feeling of harshness, which is always found in that of the Skunk. The Skunk has been known to interbreed with the American Squirrel. The tail is sparingly covered with black hair, intermixed with white; the hair is short and of fine texture. The Skunk lives in burrows, and is nocturnal. It has twelve teats.

Dr. Richardson, in the "North American Fauna" (page 56), says:—"It breeds once a year, and has six to ten young at a time."

Dr. Mivart, in the "Proceedings of the Zoological Society," 1885, page 370, says:—"The Skunk is very

prolific, bringing forth eight or ten young. It is more gregarious than most creatures of the Weasel kind (Mustelidæ), more than one family congregating in one burrow. It eats worms, insects, birds' eggs, frogs, and mice, and sometimes rabbits, as also roots and berries; it occasionally robs the poultry-yard, and is said to be fond of milk. It falls a prey to dogs and the Great Horned Owl. Its bite sometimes produces hydrophobia; it can be readily semi-domesticated like a Ferret, and it is said sometimes to have had its anal glands successfully removed."

The flesh of the Skunk is often eaten by the Indians, and is even said by Americans to be good eating, white, tender, and sweet like chicken, as Dr. Merriam describes it; but by other authorities it is considered unpalatable, and not to be recommended.

CIVET CAT, OR LITTLE STRIPED SKUNK.

Mephitis putorius.

This animal is not so large as the foregoing, being only 6 to 8 inches long, without the tail, which is nearly as long as the body. Its range is not so extensive as the Skunk's. It is not found in the Dominion of Canada, and only in some of the central and southern states of the North American Republic. The largest skins are collected in the more northern districts, and the smallest, coarsest, and most fatty in the southern.

The colour is black, marked with white square-like patterns, a shape almost unique in nature. The markings of any two animals are never alike. The tail is black,

and covered with very long hairs; the tip is sometimes white, and sometimes black.

It does not appear to have any pungent ejection like the Skunk.

The fur of the Civet Cat is of little value; being at one time sorted into the third quality Skunk skins. The usual price is 6d. to 2s. 3d. per skin, according to quality. This fur is chiefly used for coat-linings. About 5,000 to 10,000 skins are imported annually. In 1891, 13,292 skins were sold.

SOUTH AMERICAN OR CHILIAN SKUNK.

Conepatus mapurito.

The South American Skunk does not attain the size of its North American cousin, nor does it seem to possess the same pungent smell.

It is a small animal, generally black with a white stripe. Sometimes the whole of the back is white, without any black central division, as in the North American species. A few animals are quite black.

The tail is very bushy, and is usually striped.

This Skunk inhabits the whole of the South American continent, Central America, Mexico, and the most southern of the United States, such as Tennessee, Kentucky, etc.

The fur is coarse, and of comparatively little value; it varies from 1d. to 2s. 6d. per skin. Only a few thousand skins are imported annually.

EUROPEAN OTTER.

Lutra vulgaris.

French : Loutre du pays. German : Land Otter.

The Otter was probably abundant at one time over the whole of the United Kingdom. It is now extinct in some counties, but abounds in others. Its former existence is shown by the names of places, towns, etc., such as Ottercap, Otterburn, Otterford, Upper Ottery, St. Mary's Ottery, Otterington, Otterhampton, Otterton, the river Otter, most of these places being in Devonshire; also Otterham in Norfolk, and Otterpool and Otterden in Kent. The Otter is occasionally found in the Thames.

There are eighteen packs of Otter-hounds in the United Kingdom: thirteen in England, four in Wales, and one in Scotland. Each pack consists of ten to twenty-five couples of hounds, which hunt two or three days a week. Fox-hounds are occasionally used, but rough-coated Otter-hounds of pure or mixed breed (dogs which bite and do not hold) are preferred. Packs are sometimes moved from county to county. The season is a summer one, from April to September.

Otter-hunting has increased in favour in the last few years, but not to the same extent as in the olden times, when this sport was extremely popular. The old-fashioned spear is not now used.

The Otter affords much sport at times, drowning the hounds by holding them under the water, and at others it escapes by hiding under a reed or rock, with merely its snout above water in order to breathe.

The Otter is web-footed, swimming and diving with great ease, and is able to remain under water for some time. It pairs under water, and its gestation lasts sixty-one days. It is not terrified by the bark of a dog, and other means have to be employed to drive it from its place of refuge. It will even attack a single hound.

Its food consists chiefly of fish, and it is very fond of eels and frogs. Crawfish, water-hens, young rabbits, mollusca, duck, and other water-fowl are also eaten by the Otter. It occasionally partakes of celery, and potatoes. When it has captured a fish, it usually begins eating it at the gills. It is said to be able to smell fish under water.

Otters have occasionally been tamed, especially young ones. These, when captured, may be fed on bread-and-milk, or brought up by cats or other foster-mothers.

The ordinary weight of a male Otter is from 12 lbs. to 22 lbs., and of a female about $15\frac{1}{2}$ lbs. The length is about $3\frac{1}{2}$ feet.

When Otters are abundant, fish are usually plentiful and in good condition, therefore anglers should look on the presence of Otters in streams with more favour.

These animals travel considerable distances over land during the night or early morning, and they have been met with twelve miles from the nearest water. It sheds its fur in spring. (*The Field*, October, 1888.)

The skull is flat and rounded, and the teeth short and stunted.

Otters are found nearly throughout the globe, with the exception of Australasia. All the various forms or sub-species are only climatic developments, and would probably all interbreed.

The English and Irish Otters are small, about 3 feet long; the general colour is dark brown, and lighter

under the neck and belly; the under fur is very thick; the tail is about a foot long; while spots are sometimes found in the under fur. In Norfolk the colour is lighter.

In France and Germany the Otters are more abundant and larger than the English. In Scandinavia they are of a fine dark brown colour, and much larger than the ordinary continental Otter, and have a richer and thicker fur; they resemble the Halifax species in thickness of fur, darkness of colour, and in the coarse pelt. Otter fur is much esteemed. About 10,000 skins are sold annually at the Easter Fair at Leipsic, and also a good number at the Frankfurt Fair. Four thousand one hundred and two Otters were killed in Prussia alone in the winter of 1885-6.

Remains of the Otter have been found in the Swiss lake-dwellings.

The value of a Land Otter skin is from 5s. to 30s.

In Scotland the skins are often used for making the well-known sporrans.

CHINA OTTER.

Lutra felisa.

The Chinese Otter is small, about 2 feet long; the neck is whitish; the hair is of a light grey or grizzly colour.

The skins are beautifully dressed by the Chinese, but the fur is of comparatively little value on account of its poor quality; it is sometimes imported in the pulled state, *i.e.*, with the top hair removed. The value of a skin is about 3s. 6d. to 7s.

INDIAN OR CALCUTTA OTTER.

Lutra leptonyx.

French : Loutre des Indes. German : Ostindischer Otter.

This is the smallest of all the Otters, with the exception, perhaps, of the South American. Its length is scarcely more than a foot, sometimes even less. The colour is light brown ; the fur short, and inferior in quality ; the neck is lighter in colour, almost white ; the belly is white.

The value of a skin is about 1s.

A similar variety is found in Cashmere, but it is rather larger and has thicker fur.

This species is sometimes called the Small-clawed Otter.

Another variety comes from Persia ; the fur is light, coarse, and abundant.

WEST AFRICAN OTTER.

The West African Otter is large—about 4 feet long. The fur, or rather hair, is hardly more than one-eighth of an inch in length, and is consequently almost valueless.

The cheeks are white, and the rest of the body brown. This Otter is very rare.

CAPE OTTER.

Lutra dedalandi.

This variety is small, of a light brown colour, with white cheeks and throat. It is similar to the foregoing animal, but the quality of the fur is hardly so poor. This Otter is also rare.

SOUTH AMERICAN OTTER.

Lutra brasiliensi.

This small animal is found in fair quantities. Its size is about 1 to 2 feet; the fur is tolerably good, but of a light brown colour. The cubs are scarcely larger than large Musk-rats.

The value varies from 1s. to 6s.

AMERICAN OTTER.

Lutra canadensis.

French : Loutre d'Amérique. German : Amerikanischer Otter.

This is the largest of all the Otters. It is found over the greater part of North America, including British Honduras. The colour varies considerably in the different districts from which it is taken. In Alaska it is of a quite light brown. The skins are large, and many of the pelts are painted red by the Indian trappers.

In the York Fort district the colour varies from light to dark brown. It is large, with thick fur, dark whiskers, and the tail about 18 inches long.

In the East Maine district the colour of the Otter is very dark—in fact, almost black. Some of the skins here are painted vermilion by the natives.

The skins from Canada, Nova Scotia, and Labrador are dark brown, very thickly furred and well flayed, and have clean pelts.

Halifax skins are dark, but rather coarse, and similar to the Norwegian.

In Columbia the Otter is very large. The skin is about 4 feet without the tail, which is 2 feet long.

Many Otters are found in the United States. In California and the Western States they are large.

In the Southern States, such as Louisiana and Tennessee, the skins are thick-pelted and of low standard, but the fur is dark.

In Georgia the skins are small and dark brown.

A silvery animal is very rare, as well as mottled, grizzly, and slate-coloured. White Otters are more often met with.

The feet of the Otter are small, and both hind and fore feet are slightly webbed, and furnished with five short claws. The legs are short. It has four teats.

According to Dr. Richardson, the American Otter produces one to three young about the middle of April. It swims and dives with great facility, and it feeds on fish. Dr. Merriam asserts that Otters in winter are fond of sliding down-hill in the snow head foremost, repeating the operation several times; and that they also slide on the ice. Dr. Richardson says they dive through the ice with great rapidity.

This fur is used both natural and dyed and pulled

to imitate Fur Seal, which it excels in quality. When unhaired or pulled, it is used by glovers, the short, thick under fur rendering it very suitable for glove-tops.

Many of the natural dark skins are used in Russia, the United States, and Canada, for coat-collars, etc.; and many pale skins in France, England, etc. A few skins are clipped.

In 1811, York Fort Otter skins fetched 13s.; in 1813, 99s.; and East Maine first large, in the same year, 105s. In 1889 Labrador skins realized 95s., but the ordinary price ranges from 30s. to 50s. for a good seasoned skin.

The yearly importations were as follows:—In 1891, 8,171 skins were sold by the Hudson's Bay Company, and 7,334 by the Alaska Commercial Company, and others.

Many skins from Nova Scotia have a singed appearance on the top hair. This is probably caused by their being dried too quickly by the fire or sun. This defect lessens the value considerably.

SEA-OTTER.

Enhydra lutra.

French : Loutre de mer. German : See Otter.

This animal, formerly called the Nootka Sound Otter, is much larger than the Land-Otter. It is about 4 to 5 feet long, not including its short tail, which is covered with thick fur, and is 6 inches to 1 foot long.

It lives in the sea, and feeds on clams and other shell-fish. The range of the Sea-Otter formerly extended from Washington Spring to Point Greenwich.

The chief habitat of the Sea-Otter is the Aleutian Islands and along the western shore of Alaska. It is also found in the Island of Kadiak and along the coast of Vancouver Island, but it is not so numerous here as formerly. A few are also found in Kamschatka and in Japan. Otter Island, in the Pribylov group, was formerly a favourite resort of this animal, but now it is never found there.

Elliott says that the Sea-Otter is most abundant on Saanak and the Chernaboor Islands, situate at the commencement of the Aleutian chain.

The colour is very varied, the general shade being dark brown. In many animals this verges into black, and in some to a light brown or mouse colour. The fur is generally interspersed with white hairs of greater length than the fur. According to the number of these white hairs, the skin is more or less valuable. Many animals have a white head, and are more or less white underneath. Some examples are too abundantly furnished with these hairs, and are therefore of less value.

There is no recorded instance of a wholly white Sea-Otter, but black and very dark brown are by no means uncommon. A peculiar and rare instance of colouring is a white bar of fur across the tail.

The young are covered with long white, fluffy, coarse hair, and have a much thinner pelt. In the adult animal the pelt is thick and heavy; the feet are webbed, covered with very short dark brown hair, and furnished with very short claws; the whiskers are usually white, and not very numerous; it has four teats; the fur is very rich and soft, consisting of an under fur of bluish colour, covered with slightly longer hairs.

The skins from Columbia and Vancouver Island are usually of a yellowish hue.

The skin of the Sea-Otter has greatly enhanced in value of late years, owing to its steadily decreasing numbers. £200 is the highest recorded price for a skin, and £100 is not considered an extraordinary price, although a few years ago £88 was considered phenomenal.

Two thousand three hundred and sixty-nine skins were imported by the Alaska Commercial Company and other traders in 1891, and nine by the Hudson's Bay Company. The amount of the Sea-Otter sale is about £100,000. The average price in 1888 was £21 10s. ; in 1889, £33 ; and in 1891, £57. According to Elliott, from 1772 to 1774, about 10,000 were captured annually, and 15,000 in 1804. He also says that Belcovsky is the chief trading station.

The skins are occasionally smoked, and are also dyed or topped. The Alaska or Aleutian skins are open at the end, and imported cased.

This fur is principally consumed in Russia, where it is used for collars of noblemen's coats. Small skins are used in France. A few skins are bought for the United States and Canada.

The import of Sea-Otter fur was formerly prohibited in Russia ; it is now subject to a high duty. It is said that this fur was formerly extensively used by the Chinese. Nearly every skin procured is sold in London.

The Sea-Otters on the North-west coast of America are hunted in canoes formed into a circle. When the animal is sighted, it is pursued and shot at. It then dives, remaining for some time under the water. When it reaches the surface, it is again pursued, and it dives once more to elude its pursuers. This is repeated many times, the dives being gradually shortened, until it is at last caught. The hunters generally meet the schooners

at a fixed rendezvous. It is sometimes speared, and the natives also kill it on shore with clubs, or net it in inlets of the sea.

H. W. Elliott, in "An Arctic Province" (pages 131 and 132), says:—

"The Sea-Otter seldom visits the shore, and then only when the weather is abnormally stormy at sea. Instead of being a fish-eater, like *Lutra canadensis*, it feeds almost wholly upon clams, crabs, mussels, and echinoderms, or 'sea-urchins,' as might be inferred from its peculiar flat molars of dentition.

"The Sea-Otter mother clasps her young to her breast between her fore-paws, and stretches herself at full length on her back in the ocean when she desires to sleep, and she suckles it also in this position. The pup cannot live without its mother, though frequent attempts have been made by hunters to raise them, for the little animals are very often captured alive and wholly uninjured; but, like some other animals, they seem to be so deeply imbued with fear or dislike of man that they invariably die of self-imposed starvation. The Enhydra is not polygamous, and it is seldom, indeed, that the natives, when out in search of it, ever see more than one animal at a time. The flesh is very unpalatable, highly charged with a rank taste and odour. A single pup is born, as the rule, about fifteen inches in length."

RACCOON.

Procyon lotor.

French : Marmotte. German : Waschbär or Schuppe.

The Raccoon, or Raccoon, is a well-known animal, inhabiting the United States and part of the province of British Columbia.

It is rarely taken by Hudson's Bay traders, except in the latter district, although it was a leading article of commerce in the time of the North-west Company, with which the Hudson's Bay Company was ultimately amalgamated.

It is difficult to account for the French name of Marmot, which the early settlers or trappers gave to the Raccoon, unless it is due to the similarity in colour. The German name of Wash-bear is more appropriate, as it washes its food in water before devouring it.

The best furred skins come from Wisconsin and Illinois, and almost equally good from Michigan. Nova Scotia also produces a few well-furred skins. Those from California and British Columbia are coarse, and covered with short fur of deep and bright colour. Missouri and the Western States produce skins of medium quality. Among the latter grade may be reckoned those from New Madrid, where a great part of the Raccoon skins are collected. These pelts are square-handled.

Kentucky, Arkansas, and other Southern skins are coarse, and of low value, but the worst of all are the Mexican.

The Raccoon is about 2 to 3 feet in length, without the

tail. Some species are much larger, especially the Northern.

The colour is grey or grizzly, with longer black and white hairs (about 3 inches); the under fur is abundant and dark blue; the nose is pointed and black; the ears are of medium length, and usually grey; the whiskers are scarce, and black and white; the tail is about 6 inches long, yellow, and ringed with black, the number of rings varying from four to six; the feet are thin, and covered with short hair; the face is marked with black and white stripes, and there is a black circle round the eye; the belly is usually light.

The leather of out-of-season skins is usually blue or dark in the centre of the back, as in most animals. An extremely rare occurrence is to find this dark mark in the shape of a half-moon.

White and light fawn Racoons are sometimes met with. The latter variety is very beautiful, the tail being ringed with bands of a slightly deeper shade.

A white spot is sometimes seen on the body, and sometimes there is a white tip to the tail. Black and dark brown specimens are somewhat rare; these are mostly taken in wooded districts; they command a high price, 30s. being sometimes paid. The usual assortment of Raccoon skins comprised twenty different sizes, colours, and qualities, ranging in price from 6d. to 10s.; now there are fewer sorts.

The greatest depth of colouring is in the Southern type.

This fur is used over the greater part of the civilized world, the cheaper sorts being used in Canada and Germany for coats, coat-linings, etc., and the better sorts in France, Russia, and England, for trimmings, capes, etc. The better pale skins are usually dyed black or brown.

When clipped, the skins are sometimes used for glove-tops. When pulled, *i.e.*, with the long hair removed, they are used as imitation Beaver. The heads are often used for ornamenting foot-muffs, and the tails for making rugs, mats, and boas. This fur is also used for the busbies of the Volunteer Artillery. About 500,000 are sold annually in London; 549,180 were sold in 1891.

The Raccoon is only partly carnivorous, and is extremely fond of Indian corn. Its flesh is said to be good eating.

It has six teats, and probably produces from four to six young. It is said to climb trees with facility. It appears sometimes to interbreed with the American Opossum. An allied species is met with in Honduras.

In an old work entitled "America," this animal is thus described:—"The Rackoone is a deep Furr'd Beast, not much unlike a Badger, having a Tail like a Fox, as good Meat as a Lamb. These Beasts in the day time sleep in hollow Trees, in a Moon-shine night they go to feed on Clams at a low Tide, by the Sea side, where the English hunt them with their Dogs."

Dr. Mivart, in the "Proceedings of the Zoological Society" (1885, page 347), quoting Dr. Clinton Hart Merriam, says:—"The Raccoons do not like the dense evergreen forests but more open woods; they are the most strictly nocturnal of all mammals, except Bats and Flying Squirrels, and yet they may sometimes be seen abroad on cloudy days. They are very expert in breaking down the stalks of corn, and stripping the husks from the ear, using their fore-paws as we do our hands. Though very sly, they are caught in traps. They are not swift runners, and if pursued take to a tree, when they may be readily killed. Though capable

of being made pets of, they cannot be let loose with impunity, on account of their great curiosity, which leads them to find their way, if possible, into their master's house, and there examine everything. They hibernate early, becoming active again in February or March."

SOUTH AMERICAN OR CRAB-EATING RACCOON.

Procyon cancrivorus.

This Raccoon is rather smaller than the North American species, but rather redder in colour. It inhabits South and Central America, and perhaps Texas, Kentucky, and the Southern States.

The fur is harsh, coarse, poor, and of much less value than that of the usual Raccoon. It is used for coat-linings.

CASHMERE RACCOON.

This extremely rare animal inhabits Cashmere, and the extreme north of India.

The head is ringed like the American Raccoon; the fur is rather darker, and the feet are furnished with sharper claws. The nose is pointed.

PANDA.

Ailurus fulgens.

French : Panda. German : Katzenbär.

The Panda is rarely met with, and but few skins find their way to London.

The fur is thick, close, and of some value, a perfect skin fetching from 7s. to 21s. It is most used for stuffing, ornamenting furriers' shops, and museums.

The belly is black ; the back and sides are covered with thick fur of a beautiful brownish-red colour, about $1\frac{1}{2}$ inches in length, and with a dark ground ; it is lighter at the shoulders ; the tail is moderately long (about 9 inches), of a yellow colour, and ringed with red ; the tail is very rarely red, with black rings ; the head is round and broad, and has white markings between the eyes ; the ears are of moderate length ; the tips of the feet are usually white, but are sometimes red ; the soles are covered with woolly hair as a protection from the cold ; the toes are short, and the nails rather long and blunted.

The Panda is an inhabitant of Nepaul, and North-east India. Dr. Mivart says that it is said to live amongst rocks and trees at a height of 7,000 to 12,000 feet.

It is one of the few animals, such as the Hamster and Ratel, in which the belly is darker than the back. It is a very beautiful animal, and it is a matter of regret that its rarity prevents its greater commercial utility.



WHITE OR POLAR BEAR.

Ursus maritimus.

French : Ours blanc. German : Eisbär.

The Polar Bear has a wide distribution. It is found on the western shores of Iceland, in Greenland, the northern parts of Norway and Sweden, St. Matthew Island in the Behring Sea, the Arctic circle of Canada and of Alaska, and throughout the Polar regions generally.

This Bear attains a very large size, and is perhaps the largest of all the Bears, some skins measuring 10 feet, and even more. The feet are furnished with long powerful claws. Both feet and legs are covered with long coarse hair, which gives it a peculiar appearance when emerging from the water. The tail is short

—about 4 inches long; the fur is white, and rather coarse, owing to living in the sea; the nose and eyes are black; the neck is longer than in the other Bears; the pelt is thick, harsh, and rather heavy; there is no hump of fur between the shoulders; the canine teeth are well developed; in the incisors of the upper jaw is a groove, into which the lower incisors fit, thus forming so firm a hold that its slippery prey is unable to escape.

The flesh of the Polar Bear was largely eaten by the seamen wrecked in the ship *Eira* when exploring in the region of San Josef Land.

It is of a bold disposition, fighting with tenacity, though not with the grim ferocity of the Grizzly Bear. It dives and swims well, and is often captured and sent to Europe. Whilst on board ship, it is generally enclosed in a cask. Captain Markham says that the Polar Bear is easily killed in the water, but it is more difficult to shoot on the ice.

Polar Bears are supposed to have opened the depôt of clothes and provisions left by Captain Beechey on Melville Island. The contents were scattered, and the cloth unrolled and torn into shreds. The spirit casks, however, were left untouched.

The White Bear feeds on fish, but Seals are its favourite food. It is also said to feed sometimes on grass, and at times to capture a Walrus.

It is occasionally taken by sealers on the look-out for Seals on the floes of ice in April. These skins are thinner and of poorer quality than those taken in the winter; these are generally salted by the seamen.

The best skins come from Greenland, where they are well flayed by the natives in prime winter condition. They are generally in perfect condition, and remain white, which is said to be due to the skins being dragged

through the snow after the process of flaying, thus preventing the oil from turning them yellow.

Thirty to a hundred skins are imported annually into Copenhagen by the Royal Greenland Company. The best are worth from £10 to £30. The skins (83 in 1891) sold in London by the Hudson's Bay Company usually fetch 35s. to 170s. They are generally collected from Esquimaux Bay, and York Fort, and Little Whale River districts. These are of little value, as they are badly flayed, being without paws and claws.

This fur is usually made into rugs and sleigh-robos. It is sometimes dyed black.

The value of a Polar Bear's skull is about 21s. The cub is very small when born.

“In the *Eira* Expedition to San Josef Land in 1881–82, many White Bears were killed, mostly males, and one measured 11 feet from the root of the tail to the nose. Female Bears were never obtained during the dark days. On examining the stomach we often found nothing but grass.”—(“Proceedings of the Zoological Society,” 1882, p. 654.)

Dr. Richardson, in his “North American Zoology,” (pp. 33 and 35), says:—

“The Polar Bear being able to procure its food in the depth of even an Arctic winter, there is not the same necessity for its hibernating that exists in the case of the Black Bear, which feeds chiefly on vegetable matters; and it is probable that, although they may all retire occasionally to caverns in the snow, the pregnant females alone seclude themselves for the entire winter.”

“Our seamen relish the paws of the Bear, and the Esquimaux prefer its flesh at all times to that of the Seal. Instances are recorded of the liver of the Polar Bear having poisoned people.”

“Their young, which are generally two in number, are not larger than rabbits, and make a footmark in the snow no bigger than a crown-piece.”

RUSSIAN OR SIBERIAN BEAR.

Ursus arctos.

French : Ours de Russie. German : Russischer-Bär.

This widely-distributed Bear is generally called the Brown Bear, but it is in reality a Grizzly, as it is of a greyish colour. It is darker, almost black, in some districts, and paler in others; but in nearly all specimens the black and white longer hairs are perceptible, and the white collar or spot on the neck is usually conspicuous.

This Bear inhabits the Pyrenees, the Carpathian Mountains of Austria, Transylvania (Görgey Sz Imre), Upper Hungary, and some parts of Switzerland. It is common in Russia, the Caucasus, and parts of Norway and Sweden. In the British Islands it is now extinct but many centuries ago it was abundant, and was hunted.

Bear-baiting then formed a favourite pastime of our forefathers, the English Bear, although small, being of the same ferocious nature as its Russian and Asiatic brother, and its cousin, the well-known Grizzly Bear of the Rocky Mountains. The Bear was tied to a post and allowed 40 feet of chain, within which limit no one was allowed to enter. It was then attacked by dogs, which were thrown at it, the Bear defending itself, and often hugging its opponents to death in its powerful arms. In 1665, the year of the Plague, Bear-baiting was pro-

hibited in the City of London, by order of the Lord Mayor and Aldermen.

This Bear is still hunted in Russia, being driven by beaters towards the sportsmen. In Scotland the Manes of the slain Bear was exorcised by the women. A somewhat similar custom is possessed by the North American Indians, called the "Bear Dance," but this is performed before the hunt of the animal.

This Bear is often exhibited.

The Russian Bear which was kept by Lord Dufferin during his viceroyalty in Ireland, throve well in that country.

The ears of this Bear are short, and the snout rather elongated; the feet are furnished with powerful claws; the tail is short; the fur is finer than that of the American Grizzly; the eyes small and brilliant; the general colour is pale brown, the longer hairs having often white tips. Many animals are black over two-thirds of the body, and again are often of a pale colour, all intermediate shades being found. The Pyrenean animal is probably paler. There is a characteristic hump or longer growth of fur between the shoulders; this is also found in the American Grizzly.

The Russian Bear is of moderate size.

The fur when pale is occasionally dyed or topped. It is used for trimmings, wrappers, rugs, sleigh-robos, boas, etc.

Many skins are imported into this country by fur-traders. The cubs are, as a rule, lighter in colour.

The young cubs play together in a rough-and-tumble fashion, occasionally making a buzzing sound of satisfaction.

This Bear is omnivorous, eating young buds and vegetable matter, and having a special liking for honey,

their thick skins protecting them from the revengeful stings of the bees. Remains of this Bear have been found in the ruins of the Swiss lake dwellings at Robenhausen, and other places. The teeth were pierced for ornaments.

SYRIAN BEAR.

Ursus syriacus.

The Syrian Bear is the Bear of the Scriptures. It appears to be merely a large light-coloured variety of the Russian and Siberian Bear, this difference being produced by the climate and the exposed regions in which it lives.

ISABELLINE BEAR.

Ursus isabellinus.

This is another variety of the so-called Brown Bear. It has thick, coarse, harsh hair or fur, in many cases almost white, and some light grizzly. It is found in Assam, Burmah, and North India, and is abundant in the Himalayas.

GRIZZLY BEAR (AMERICAN).

Ursus ferox.

French : Ours gris. German : Grauer Bär.

This Bear is in reality a variety of the foregoing species. It exceeds all others in ferocity and strength, attacking the hunters without fear, especially when

excited by wounds, and often dealing death with its powerful claws.

Many Indian chiefs and hunters used to be adorned with necklaces of these claws as emblems of their prowess. It was indeed a powerful foe to overcome in the days of bows and arrows, and even in those of the old flint-lock muskets; but now the modern breech-loader has considerably lessened the risk.

The settlers or hunters often call this Bear "Old Ephraim," sometimes "Caleb."

The Grizzly Bear often attains the size of 8 feet. The fur is rather harsh, of a dark grizzly colour, tipped with grizzly hairs in some examples, in others of a lighter hue; the young especially are lighter, and sometimes almost white. Yellow-grizzly are abundant, and, in fact, all shades of colour from pale to dark grizzly are found. A white or albino Grizzly is extremely rare. The tail is short; the claws are long and powerful, about $3\frac{1}{2}$ inches in length, 1 inch of which is enclosed in the flesh; the ears are short; the skin is thick and heavy. The hump of fur between the shoulders is well developed in this species, and in the best skins this adds considerably to their beauty and value.

The Grizzly Bear inhabits nearly the whole range of the Rocky Mountains, where it finds a suitable resort. The Bears inhabiting Mount Elias attain to a large size. It is abundant in the Alaska Territory and the Aleutian Islands, and a certain number are taken near York Factory, but it is not now found in the Missouri district, where it was abundant in the days of the old Fur Companies. It is not an abundant animal. In 1891, 175 skins were sold by the Hudson's Bay Company. A larger quantity are sold by other traders: 3,234 in 1891. The Grizzly Bear skin is of some value, about

150s. being paid for the best skins. They are chiefly used for sleigh-ropes, rugs, and wrappers. They are sometimes made into boas—cub-skins especially. In some specimens, when young, or in some of the early stages of the growth of the fresh coat, the colour is brown, and it is then very difficult to distinguish it from the Brown Bear (*Ursus americanus*).

The Grizzly Bear is said never to ascend trees like the Brown and the Black, except when it is young. It feeds occasionally on vegetables, but it is also carnivorous. It sometimes eats Reindeer, and has been known to kill and carry away a Bison. It feeds occasionally on salmon, catching them at the leaps with its paws, as they ascend the river.

Dr. Richardson, in his "North American Fauna" (page 28), thus describes the habits of the Grizzly Bear:—"The Grisly Bears are carnivorous, but occasionally eat vegetables, and are observed to be particularly fond of the roots of some species of psoralea and hedysarum. They also eat the fruits of various shrubs, such as the bird-cherry, choke-cherry, and *Hippophæe canadensis*. The berries of the latter produce a powerful cathartic effect upon them. Few of the natives, even of the tribes, who are fond of the flesh of the Black Bear, will eat of the Grisly Bear, unless when pressed by hunger. (Page 29): The young Grisly Bears and gravid females hibernate, but the older males often come abroad in the winter in quest of food."

H. W. Elliot, in "An Arctic Province" (page 89), thus writes:—"Everywhere throughout this large extent of Alaska the footpaths, or roads, of that omni-present ursine traveller arrest your attention. The banks of all streams are lined by the well-trodden trails of these heavy brutes, and offer far better facilities for progress

than those afforded by the paths of men. Not only are the swampy plains intersected by such well-worn routes of travel, but the mountains themselves and ridges, to the very summits thereof, are thus laid out."

A closely allied sub-species is found in Kamschatka, and the North-eastern coast of Asia; and Langsdorff, according to Richardson, says that it also inhabits the Aleutian Islands. It has been called *Ursus piscator* and Hairy-eared Bear. It is a Grizzly Bear, but is of a more golden or red colour than the *Ursus ferox*, and the tips of the longer hairs are whiter. The pelt is very thick and heavy, and is often painted red by the natives on the leather side. The fur varies very much, being sometimes harsh and coarse, and at others very fine. This Bear is not unlike the *Ursus arctos*, but is larger. Several hundred skins are imported by the Alaska Commercial Company through the United States.

THE HIMALAYAN OR THIBETAN BEAR (*Ursus tibetanus*). The German name is Kragenbär. It inhabits Northern India, China, and the Himalayas. It lives in caves, and is very difficult to dislodge. The colour is black, grizzly, or light grizzly. According to the *Field*, the Himalayan Bear is glossy black, the hair very thick and long about the back of the neck, marked with a white crescent on its chest, and having a patch of the same colour on its chin. From the same authority we also gather that, unless cornered, or with cubs, these bears very rarely show fight; that if they once get in rocks or a cave, it is almost impossible to drive them out; that they are found from the foot of the Himalayas up to the snows, but that during the winter they leave the higher ranges, and come down to the wooded valleys in search of food, which at that season consists principally of acorns; that

they generally feed on fruit, roots, the villagers' crops, and they sometimes take to killing animals; that the female has generally two at a birth.

BLACK BEAR.

Ursus americanus.

French : Ours noir. German : Schwarzer Bär.

This Bear, so well known, both to naturalists and to fur-traders, and also in a lesser degree to the general public, is of comparatively small size, rarely reaching 6 feet in length. It is of a quiet disposition, and is easily killed with a stick, rarely showing fight.

The Black Bear hibernates in winter, concealing the mouth of its den with a mass of twigs, to give it warmth. It leaves its winter quarters in the beginning of May. Its diet is principally of a vegetarian nature, such as blackberries, gooseberries, and other wild fruit. Its flesh is consequently good eating, and is much esteemed by the Indians. The paws are also relished by the settlers, as well as the ham from a young animal about two years old.

The Black Bear is often taken in traps, made of a board with a pike attached.

This Bear yielded the well-known Bear's grease, which was really the best pomade for the hair. With a preparation of this fat the Indians used to dress their black locks, which at times grew to the extreme length of 8 feet.

Before hunting the Bear, the Indians used to try to appease its spirit by the Bear Dance. This was one of

their characteristic dances. They mimicked the actions of the Bear, and wore masks of Bear-scalps.

The Black Bear is widely distributed in North America. It inhabits Alaska, the whole of the Dominion of Canada, including Labrador, Newfoundland, and Nova Scotia. It is also found in many of the United States, viz., Maine, Minnesota, Montana, Oregon, Washington, California, Texas, South Carolina, and Florida.

The best skins come from Canada. Those from Alaska are good, but slightly coarser. The Columbian skins are coarser in the pelt, which is often painted red by the Indians. The Southern are the blackest, but are very greasy, and of poor quality.

The colour is black, with a rich brown ground from some districts, but from others the under fur is darker. A white spot is often found on the chest, and it is sometimes in the shape of a crescent. The tail is short, about 3 inches long; the ears are short, black, and covered with thick short hair; the nose is pointed and brown, which is the general colour of the lower half of the face; the leather is thin, especially in the cubs and yearlings; in the Southern skins, however, the pelt is thick, coarse, and harsh. Blue examples are rare, three or four appearing at times in the annual sales. Black animals with white hairs (silvery) are more common. Albinos and Brown will be treated in the following article. It is very remarkable that in the island of Anticosti the Black Bear has a white muzzle and white ears tipped with black. There is no hump of fur in this Bear, neither does it associate with the Grizzly. The female Bear has four teats.

This fur is very valuable, it is fine to the touch, and the hair ranges from 1 to 4 inches in length. The best skins fetch £12. This quality is generally purchased

by army contractors for the bear-caps of the Grenadier regiments of the British Army. These, although of a good natural black, are dyed to make them uniform. Two caps are usually made out of one skin. The Belgian and old French Imperial Guards had skins of a less fine quality, and the Bavarian regiments used this fur to make the tufts or "Raupen" on their busbies. Many of the longer-furred skins are made into trimmings, capes, muffs, and boas.

The fur of the cubs is extremely soft, and is highly prized by Russians for the manufacture of coat-collars. Many of the lower grades are made into sleigh-ropes, and the fourth quality skins with no under fur are made into brushes in Germany. When tanned by the North American Indians, the skin makes extremely durable mocassins and hunting shirts.

The Black Bear is fairly numerous, but will probably decrease in number with the advance of the settlers. Eight thousand nine hundred and sixty skins were sold by the Hudson's Bay Company in 1891, and 8,049 by the Alaska Commercial Company and other traders.

Dr. Richardson, in the "Fauna Boreali-Americana" (page 17), relates that:—"The females bring forth about the beginning of January, and it is probable that the period of their gestation is about fifteen or sixteen weeks, but I believe it has not been precisely ascertained. The number of cubs varies from one to five, probably with the age of the mother, and they begin to bear long before they attain their full size."

Dr. Merriam says the young are not more than 6 inches long at birth, are not covered with hair, and do not open their eyes for forty days.

An old work named "America," describing New Amsterdam or New York, thus reads, page 172:—"There

are likewise many black Bears, fearful of human kind, but if Hunted, they run direct on those that pursue them: they sleep all the Winter, lying six Weeks on one side, and six on the other, and sucking their Feet all the time: They generally lurk among Brambles, or in the Concavities of some hollow Mountain."

BROWN BEAR.

Ursus americanus.

French: Ours brun. German: Brauner Bär.

The Brown or Cinnamon Bear is merely a variety of the foregoing species, being identical in length, fineness and fulness of pelage, and thickness of pelt, the only difference being the colour. Its habits are the same as those of the Black Bear, and it inhabits the same districts, with the exception of the Southern States, where it is not found. The colour varies considerably, from dark brown to brown, light brown, light yellow, and almost white. In fact, a few examples might be described as white Black Bears. The under fur of many skins, especially the dark brown, is of a deep purplish-drab colour.

Some fifty years ago there was a great demand for the trimmings made from the light yellow skins, which were called Isabella. Thirty pounds was often paid for a good skin, now about £13 is paid, and less than that for cubs and young animals. The fur of the Brown Bear is now much appreciated for boas and trimmings, especially by Australians and English. A few of the lower qualities are still used for rugs.

The Brown Bear is not so abundant as the Black.

One thousand four hundred and eleven skins were sold by the Hudson's Bay Company in 1891, and 1,515 by other traders.

The Brown and Grizzly Bears are readily distinguished, except when quite young. It is therefore surprising to note the difficulties and confusion which have arisen between these two species, as the texture of the fur, the thickness of the skin, and the size and habits of the animals are so widely different. According to Lewis and Clark, the Black and Brown Bears were classed together by the Indians under the name of Yackah, and the Grizzly were called Hohhost.

There are only three species of Bear in America, the White, the Black, and the Grizzly.

EAST INDIA BEAR.

Melursus ursinus.

French: Ours jongleur. German: Ostindischer Bär, or Lippen Bär.

The East India Bear, called also the Sloth Bear, is rather small, and is covered with long coarse black hair, more like bristles than fur. The feet are armed with long claws, and the legs appear to be bowed, giving the animal a rather clumsy appearance. There is occasionally a white mark on the throat. The Sloth Bear is sometimes captured alive, and exhibited, displaying antics similar to those of the European Bear. It is said to fight sometimes when attacked, but it often falls a prey to the Leopard. The flesh is said to be esteemed by the natives. It feeds on fruit, etc. It inhabits East India, and has its den in caves or jungles.

The skins are almost valueless, 5s. to 10s. being the usual price. They are usually brought over in small quantities by private collectors.

One thousand six hundred and sixty-eight Bears of all species were killed in British India in 1886.

The East India Bear would probably interbreed with the Black Bear of America, and if the offspring of these two Bears should prove fertile, it would necessitate their being classed as one species.

SOUTH SHETLAND FUR SEAL.

French : Loup marin. German : Seehund.

We now arrive at a most interesting group, that of the Otariidæ, and we shall first treat of the South Shetland Seal, which stands at the head of the family. It is one of the rarest species, as well as the producer of the richest Seal-skins. This Seal is an inhabitant of the South Shetland, South Georgia, and the Sandwich Islands in the Antarctic Ocean. It was very numerous some seventy to eighty years ago, the fur-traders then buying the skins by the cargo of 5,000 to 10,000 at about 4s. 6d. to 8s. each. But owing to over-catching, and indiscriminate slaughter of the young or "Black Pups," the race has been almost exterminated.

One million two hundred thousand skins were said to have been taken in South Georgia soon after its discovery, and nearly an equal quantity from the Island of Desolation, when the Seal trade was carried on in that region. In 1800, when the Fur Seal trade was at its highest, 112,000 skins were taken from the South Georgia Islands, 57,000 of which were captured by one

ship. In 1810, 21,367 South Sea Seal-skins were sold in London.

On the 5th of March, 1812, 2,500 were sold at 22s. 6d. to 25s. In 1816, 20,776 were sold at 6s. to 8s. In 1819, 11,923; and in 1821-2, 320,000 are said to have been imported from the South Shetland Islands.

The value of the skin has enhanced of late years. A few years ago 212s. was paid for large pups.

A few years ago a schooner or so left New London in the United States for South Georgia, sometimes returning with a few hundred or thousand skins, and sometimes with but six or eight. The supply has since been gradually diminishing, till only 200 skins were imported in 1887. The last few schooners seem to have started from Sandy Point in the Straits of Magellan, but for the last few years this fishery has been abandoned owing to the risks attendant on it. One year a crew was left a whole season in these inhospitable regions.

The general colour is light grey with a beautiful silvery hue; the cheeks and neck are whitish; the colour of the sides and belly behind the flippers is deep, bright, rich brown. The under fur is extremely thick and abundant, of a reddish or deep pink colour. In the smaller animals this under fur is white. The pelt is rather thick and spongy. The ears are short; the whiskers are strong; and the flippers placed about the centre of the body.

This Seal closely resembles that of the Kerguelen and Crozet Islands (*Otaria gazella*).

The South Georgian Seal is rather yellower than the South Shetland, having yellow cheeks; it appears to be intermediate between the South Shetland and the Crozet Island Seals.

CROZET ISLAND FUR SEAL.

Otaria gazella.

Under the title of Crozet Island, the Kerguelen Island Fur Seal is also included. Both these animals, with the foregoing and several others, were grouped under the general name of South Sea Fur Seals, which name is still given to many in the Southern Seas. Since the falling-off of these fisheries, this term is being fast supplemented in the trade by the name of Alaska, whence the chief supply of skins is now drawn.

This Seal is yellow on the cheeks and neck, and has a yellow belly. The hair is grizzly, the fur rich, and the under fur thick and abundant. It was probably at one time abundant on the Heard Islands.

The skins were worth 60s. to 100s. in 1885. A young Seal caught off Crozet Island was exhibited in London in 1848, but it only lived a short time. It was captured on an iceberg by Captain Triscott, of the *Mathesis*.

Kerguelen Land is a barren island in the Indian Ocean, and it was one of the islands which were visited in the early days of the trade. It would be a good project for some Government to annex this inhospitable island and regulate and foster the Seal-fishery there. It would probably prove a lucrative investment after a few years, but no Seals ought to be taken for some time.

Lieutenant Spry, in the "Cruise of H.M.S. *Challenger*" (page 127), narrates thus:—

"The manner in which the Seal-fishery is carried on in the surrounding seas is both extravagant and destructive, for at the time of the discovery of this

island it swarmed with Sea-Elephants, Whales and Fur-Seals. On this becoming known, it soon became a favourite cruising ground for those engaged in the 'trade.' This led, in an incredibly short space of time, to the reduction of all these species to a mere remnant; and in a few years their utter extinction is sure to follow, for it can hardly be expected to be otherwise. The men, engaged in such arduous avocations as they are in these wild and inhospitable regions, must be expected to make all they can; and they care for none who come after them, but kill old and young as they fall across them in their cruises."

This Seal is said to have increased, when Kerguelen Land was recently visited by H.M.S. *Wolverine*.

SAN LOUIS FUR SEAL.

Otaria gazella.

The San Louis Fur Seal inhabits Marion, Prince Edward, and St. Paul's Islands. It is very similar to the foregoing, and, in fact, nearly identical with it, and might be grouped with it. It is of the same yellowish hue, but the fur is not quite so rich in quality, and it is not quite so thick on the sides. The whiskers are white, thick, and strong.

The skins are imported in limited quantities of about 200 to 300, and were worth about 40s. to 60s. in 1884. They arrive in indifferent condition, on account of their bad preservation, being placed in the casks in an inferior large-grained salt.

These skins were brought to France a few years ago by French vessels, but the importer died a few years

after, and the fishery seems to have since been left undisturbed.

“Sealing-schooners have visited Marion and Prince Edward Islands from time to time from the Cape, but of late without any success.”—(“The Cruise of H.M.S. *Challenger*,” page 122.)

This Seal was very abundant at St. Paul's and Amsterdam Islands some years ago, but it is now practically extinct there. The glorious time of fishing in the earlier part of this century has departed with the injudicious and needless slaughter of the Seals.

ALASKA FUR SEAL.

Callorhinus ursinus.

French : Loup marin d'Alaska. German : Seehund.

The Alaska Fur Seal is the most numerous of all the eared Seals now existing. According to Elliott, there are about 4,500,000 annually visiting the Pribylov Islands. Until last year about 100,000 were killed annually, and were sold in London in October or November.

The old Royalty to the U.S. Government was two and a quarter dollars per skin.

The Alaska Commercial Company was bound by contract not to take more than 75,000 on St. Paul's Island, or more than 25,000 on St. George's; but the Secretary of the Treasury had power to alter the ratio. No dogs or vessels other than those in the employ of the Company were permitted to touch on those islands, or land persons and merchandise, except in cases of shipwreck or distress. In 1890 the catch of Seals was

restricted to 20,000, the contract having been obtained by another Company.

The skins taken are those of the bachelor Seals, from one to five years old. Since 1847 no females have been allowed to be killed; but sometimes a few are found amongst the number, evidently by mistake. In the early days of the Alaska Commercial Company, a few bulls, or "wigs," as they are called on account of the long hair at the back of the neck, were taken; but this has been discontinued for some years. Most of the skins are now taken in good condition, the animals being selected before slaughter. If the skins are not flayed at once, and the weather be warm, an hour to an hour and a half's delay will suffice to spoil a skin. They then become pinky, which condition is also brought about through the salt not being rubbed in sufficiently. Skins out of condition in the fur are called "stagey," *i.e.*, when the new hair grows up in the fur.

The skins are imported in batches of 200 to 300 casks, through San Francisco and New York, to London. Each cask contains 40 to 45 skins, rolled up separately, tied with cord, and packed in salt. In London they are stowed in the spacious vaults of the South-Eastern Wharf.

The skins are sorted into

Middlings,	}	4 to 5 years old.
Middlings and Smalls,		
Smalls,		4 years old.
Large Pups,		3 years old.
Middling Pups,	}	2 years old.
Small Pups,		
Extra Small Pups,	}	1 year old.
Grey Pups,		

The skins have a faint pungent odour. The average price of the Alaska Fur Seal-skin in 1888 was 78s.

The general colour of the males is dark grizzly, but sometimes yellowish, or of a light brown. The under fur is abundant, of a deep red colour. The snout is brown, the mane is light grizzly, the belly reddish, and under the ears the colour is lighter. The ears are small, about one inch long, pointed, and covered with short hair. The Fur Seal has four long flippers. In the hind flippers the five toes are much elongated; the three central ones are furnished with external nails. The five divisions of the flipper extend beyond the toes. The front flippers have no external nails. All the flippers are covered with an outer skin, resembling indiarubber, thick and ribbed in the exposed parts, which prevents its being injured by abrasion on the rocks, and thinner in the less exposed parts.

The tail is short. The whiskers are long and whitish. The skull is long and flat, very similar to that of an Otter. The canines are well developed, but, unlike the Felidæ, they are rounded towards the interior of the mouth, being sharpened outwards. Another marked peculiarity is the groove in the upper incisor teeth, into which the lower and sharp incisors fit, thus forming a vice from which it is almost impossible for a fish to escape.

The female is much smaller than the male, nearly half the size. She is of a bright silvery colour, light in the belly, and redder underneath the flippers. The young, when born, are black or very dark brown, with a light mark under the flippers. Their skins are almost valueless.

We have never seen a white Fur Seal, although Elliott says that such are sometimes found; we have

once seen one slightly mottled with white spots. Elliott states that a million Seals are born annually, of which one-half are males, and one-half females; as yearlings, only about 500,000 return the next year, but the following year the percentage lost is much less. He also says that 5,000 to 6,000 pups are killed annually by the natives for food, and that pigs feed on the bodies of Seals. The flesh is not esteemed by everybody, but when every particle of blubber has been removed, and it has been cut in slices, soaked in salt water, and fried in butter, it is very palatable. The liver is wholesome.

Fur Seals often avoid capture by throwing themselves over cliffs, which are sometimes 200 feet high; at 50 to 60 feet they appear to suffer no hurt. The average age of the males, according to Elliott, is 15 to 20 years, and of the females 9 to 10 years. It has recently been stated that the female Seal does not feed during the time she suckles her young.

The chief breeding-place of this Seal is the Hutchinson Hill Rookery on St. Paul's Island. It sleeps as often at sea as on land, floating on its back. It is in the finest condition from June 14th to August 1st.

The skins are usually bought for American, Canadian, French, and English consumption. In former times many were sold to the Chinese.

Elliott, in his "Seal Islands of Alaska," says:—"From the time of the first arrivals in May up to the first of June, or as late as the middle of this month, if the weather be clear, is an interval when everything seems quiet, very few Seals are added to the pioneers. By the first of June, however, or thereabouts, the foggy, humid weather of summer sets in, and with it the bull Seals come up by hundreds and thousands, and locate themselves in advantageous positions for the reception

of the females, which are generally three weeks or a month later, as a rule.

“The labour of locating and maintaining a position in the rookery is really a serious business for those bulls which come up last, and for those that occupy the water-line, frequently resulting in death from severe wounds in combat sustained.

“It appears to be a well understood principle among the able-bodied bulls that each one shall remain undisturbed on his ground, which is usually about 10 feet square, provided he is strong enough to hold it against all comers; for the crowding in of fresh bulls often causes the removal of many of those who, though equally able-bodied at first, have exhausted themselves by fighting earlier, and are driven by fresher animals back farther and higher up on the rookery.

“Some of the bulls show wonderful strength and courage. I have marked one veteran, who was amongst the first to take up his position, and that on the water-line, where at least fifty or sixty different battles were fought victoriously by him with nearly as many different Seals, who coveted his position, and when the fighting season was over, after the cows have mostly hauled up, I saw him covered with scars and gashes, raw and bloody, an eye gouged out, but lording it bravely over his harem of fifteen or twenty cows, all huddled together on the same spot he had first chosen.

“The fighting is mostly or entirely done with the mouth, the opponents seizing each other with the teeth and clenching the jaws; nothing but sheer strength can shake them loose, and that effort most always leaves an ugly wound, the sharp incisors tearing out deep gutters in the skin and blubber, and shredding the flippers into ribbon strips.

“They usually approach each other with averted heads and a great many false passes before either one or the other takes the initiative by gripping; the head is darted out and back as quick as flash, their hoarse roaring and shrill piping whistle never ceasing, their fat bodies writhing and swelling with exertion and rage, fur flying in air and blood streaming down, all combined, make a picture fierce and savage enough, and, from its great novelty, exceeding strange at first sight.

“In these battles the parties are always distinct, the offensive and the defensive; if the latter prove the weaker he withdraws from the position occupied, and is never followed by his conqueror, who complacently throws up one of his hind flippers, fans himself as if it were to cool himself from the heat of the conflict, utters a peculiar chuckle of satisfaction or contempt, with a sharp eye open for the next covetous bull or ‘ree-catch.’

“The period occupied by the males in taking and holding their positions on the rookery, offers a favourable opportunity in which to study them in the thousand and one different attitudes and postures assumed between the two extremes of desperate conflict and deep sleep—sleep so sound that one can, by keeping to the leeward, approach close enough, stepping softly, to pull the whiskers of any one taking a nap on a clear place; but after the first touch to these whiskers, the trifle must step back with great celerity if he has any regard for the sharp teeth and tremendous shaking which will surely overtake him if he does not.

“All the bulls now have the power and frequent inclination to utter four distinct calls or notes—a hoarse, resonant roar, loud and long; a low, gurgling growl; a chuckling, sibilant, piping whistle, of which it is impossible to convey an adequate idea, for it must be

heard to be understood ; and this spitting, just described. The cows have but one note—a hollow, prolonged, bla-a-ting call, addressed only to their pups ; on all other occasions they are usually silent. It is something like the cry of a calf or sheep. They also make a spitting noise, and snort when suddenly disturbed. The pups ‘bla-at’ also, with little or no variation, the sound being somewhat weaker and hoarser than that of their mothers for the first two or three weeks after birth ; they, too, spit and cough when aroused suddenly from a nap or driven into a corner. A number of pups, crying at a short distance off, bring to mind very strongly the idea of a flock of sheep ‘baa-aa-ing.’

“ Indeed, so similar is the sound, that a number of sheep brought up from San Francisco to Saint George’s Island during the summer of 1873, were instantly attracted to the rookeries, running in among the Seals, and requiring to be driven away to a good feeding-ground by a small boy detailed for the purpose.

“ The sound arising from these great breeding-grounds of the Fur Seal, where thousands upon thousands of angry, vigilant bulls are roaring, chuckling, piping, and multitudes of Seal mothers are calling in hollow, bla-a-ting tones to their young, which in turn respond incessantly, is simply indescribable. It is, at a slight distance, softened into a deep booming, as of a cataract, and can be heard a long way off at sea, under favourable circumstances, as far as five or six miles, and frequently warns vessels that may be approaching the Islands in thick, foggy weather of the positive, though unseen, proximity of land. Night and day throughout the season, the din of the rookeries is steady and constant.

“ The Seals have to suffer great inconvenience from a comparatively low degree of heat ; for with a tempera-

ture of 46° and 48° on land during the summer, they show signs of distress whenever they make any exertion, pant, raise their hind flippers and use them incessantly as fans. With the thermometer at 55° to 60° , they seem to suffer even when at rest, and at such times the eye is struck by the kaleidoscopic appearance of a rookery, on which a million Seals are spread out in every imaginable position their bodies can assume, all industriously fanning themselves, using sometimes the fore flippers as ventilators, as it were, by holding them aloft motionless, at the same time fanning briskly with the hind flipper or flippers, according as they sit or lie. This wavy motion of flapping and fanning gives a peculiar shade of hazy indistinctness to the whole scene, which is difficult to express in language; but one of the most prominent features of the Fur Seal is this fanning manner in which they use their flippers, when seen on the breeding-grounds in season. They also, when idling as it were off shore at sea, lie on their sides, with only a partial exposure of their bodies, the head submerged, and hoist up a fore or hind flipper clear of the water, whilst scratching themselves or enjoying a nap; but in this position there is no fanning. I say 'scratching,' because the Seal, in common with all animals, is preyed upon by vermin, a species of louse and a tick, peculiar to itself.

"All the bulls from the very first, that have been able to hold their positions, have not left them for an instant, day or night, nor do they do so until the end of the rutting season, which subsides entirely between the 1st and 10th of August, beginning shortly after the coming of the cows in June. Of necessity, therefore, this causes them to fast, to abstain entirely from food of any kind or water for three months, at least, and a few of them

stay four months before going into the water for the first time after hauling up in May.

“ This alone is remarkable enough, but it is simply wonderful when we come to associate the condition with the unceasing activity, restlessness, and duty devolved upon the bulls as heads and fathers of large families. They do not stagnate like Bears in caves ; it is evidently accomplished or due to the absorption of their own fat, with which they are so liberally supplied, when they take up their positions on the breeding-grounds, and which gradually diminishes while they remain on it. But still some most remarkable provision must be made for the entire torpidity of the stomach and bowels, consequent upon their being empty and unsupplied during this long period, which, however, in spite of the violation of a supposed physiological law, does not seem to affect them, for they come back just as sleek, fat, and ambitious as ever in the following season.

“ I have examined the stomachs of a number which were driven up and killed immediately after their arrival in the spring, and natives here have seen hundreds, even thousands of them during the killing season in June and July, but in no case has anything been found other than the bile and ordinary secretion of healthy organs of this class, with the exception only of finding in every one a snail or cluster of worms, from the size of a walnut to that of one's fist, the fast apparently having no effect on them, for when three or four hundred old bulls were slaughtered late in the fall, to supply the natives with bidarkee or canoe-skins, I found these worms in a lively condition in each paunch cut open, and their presence, I think, gives some reason for the habit which these old bulls have of swallowing small boulders, the stones in some of the stomachs weighing half a pound or so, and

in one paunch I found about five pounds in the aggregate of larger pebbles, which in grinding against one another must destroy, in a great measure, these intestinal pests. The Sea-Lion is also troubled in the same way by a similar species of worm, and I have preserved a stomach of one of these animals, in which there are more than ten pounds of boulders, some of them alone quite large. The greater size of this animal enables it to swallow stones which weigh two or three pounds. I can ascribe no other cause for this habit among the animals than that given, as they are of the highest type of the carnivoræ, eating fish as a regular means of subsistence; varying the monotony of this diet with occasional juicy fronds of seaweed or kelp, and perhaps a crab, or such, once in a while, provided it is small and tender, or soft-shelled.

“Between the 12th and 14th of June, the sea-cows come up from the sea; and the bulls signalize it by a universal, spasmodic, desperate fighting among themselves.

“The strong contrast between the males and females in size and shape is heightened by the air of exceeding peace and amiability which the latter possess.

“The cows appear to be driven on to the rookeries by an accurate instinctive appreciation of the time in which their period of gestation ends; for in all cases marked by myself, the pups were born soon after landing, some a few hours after, but usually a day or two elapses before delivery.

“The cows seem to haul in compact bodies from the water up to the rear of the rookeries, never scattering about over the ground; and they will not lie quiet in any position outside the great mass of their kind. This is due to their intensely gregarious nature, and for the sake of protection. They also select land with special

reference to the drainage, having a great dislike to water-puddled ground. This is well known at Saint Paul.

“ I have found it difficult to ascertain the average of cows to one bull on a rookery, but I think it will be nearly correct to assign to each male from twelve to fifteen females, occupying the stations nearest the water, and those back in the rear from five to nine. I have counted forty-five cows all under the charge of one bull, who had penned them up on a flat table rock, near Kee-keewee Point; the bull was enabled to do this quite easily, as there was but one way to go to or come from this seraglio, and on this path the Old Turk took his stand and guarded it well. At the rear of all these rookeries there is always a large number of able-bodied bulls, who wait patiently but in vain for families, most of them having had to fight as desperately for the privilege of being there as any of their more fortunately located brethren, who are nearer the water than themselves.

“ As soon as the pup is dropped (twins are rare if ever) it finds its voice, a weak husky bla-at, and begins to paddle about with its eyes open.

“ ‘ Hauling grounds ’ upon which the yearlings, and most all the males under six years, come out from the sea in squads from a hundred to a thousand, and, later in the season, by hundreds of thousands, to sleep and frolic, going sometimes a quarter to half a mile from the sea, as at English Bay. This class of Seals are termed ‘ hollus-chukie,’ or bachelor Seals, by the natives. It is with Seals of this division that these people are most familiar, since they are, together with a few thousand pups and some old bulls, the only ones driven up to the killing grounds for their skins.

“ The ‘ hollus-chukie,’ too, are the champion swimmers; at least they do about all the fancy tumbling and

turning that is done by the Fur Seals when in the water around the islands. The grave old bulls and their matronly companions seldom indulge in any extravagant display, such as jumping out of the water like so many dolphins, describing, as these youngsters do, beautiful elliptic curves, rising three or four feet from the sea, with the back slightly arched, the fore flippers folded back against the sides, and the hinder legs extended and pressed together straight out behind, plunging in head first, reappearing in the same manner after an interval of a few seconds.

“They have a peculiar smell when they are driven and get heated. It may be, perhaps, truly inferred that the bulls live to an average age of eighteen or twenty years, if undisturbed, in a normal condition; and that the cows attain ten or twelve under the same circumstances. I saw but three albino pups among the hundreds of thousands on Saint Paul’s, and none on Saint George’s. They did not differ in any respect from the other (normal) pups in size and shape. The hair in the first coat was all over a dull ochre; the flippers and muzzle were a flesh tone, and the iris of the eye sky-blue. The second coat gives them a dirty yellowish-white colour, but it makes them exceedingly conspicuous when in among the black pups, grey yearlings, and ‘hollus-chukie.’

“The Seals have neither increased nor diminished to any noteworthy degree from the date of their discovery in 1786–87.”

Selection and Rule in Killing.

“As the proportion of males and females is about equal at birth, the polygamous nature of these animals will allow of the killing of seven out of every ten males,

without any injury whatever to the rookeries, and leave still a large surplus of bulls for the breeding-grounds ; but a good margin should be left for the death-rate, which must be larger among the bulls, both on land and in the sea, by reason of their more adventurous and less timid disposition ; and also the great labour and unceasing vigilance which they insist upon assuming and maintaining on the rookeries, three and four months every year, must tend to render quite a large number partially or wholly impotent for the repetition of their duties.

“ In the early part of the season large bodies of the young bachelor Seals do not haul up on land very far from the water—a few rods at the most—and the men are obliged to approach slyly and run quickly between the dozing Seal and the surf before they take an alarm and bolt into the sea ; and in this way a dozen men, running down the long sea-beach of English Bay, on some fine driving morning early in June, will turn back from the water thousands of Seals, just as the mould-board of a plough lays over a furrow of earth. As the Seals are first startled they arise, and seeing men between them and the water, immediately turn, lope, and scramble rapidly back upon the land. The natives then leisurely walk on the flanks and in the rear of the drove thus secured, directing and driving them to the killing-grounds.

“ The Seals, when brought upon the killing-grounds, are herded there until they are rested and cool. Then squads or ‘ pods ’ of fifty to two hundred are driven out from the body of the herd, surrounded, and huddled up one against and over the other by the natives, who carry each a long, heavy club of hard wood, with which they strike the Seals down by blows on the head. A single

blow, well and fairly delivered, will lay any Seal out, but this whacking is repeated three or four times before the Seal's life is extinguished.

“The killing-gang, under the supervision of their chief, have, before going into action, a common understanding what grades to kill, sparing the others, which are permitted to escape and started off to the water as soon as the marked ones are knocked down. The men then drag the slain out from the heap in which they have fallen, and spread the bodies over the ground, finishing the work by thrusting a long, sharp knife into the vitals of the animal, so that the bodies will not ‘heat’ by lying one upon the other; and then another pod is started out, killed in this way, if a cool day, and so on until a thousand or two are laid out, or the drove is finished from which they have taken these squads.”

“The flesh of the Fur Seal, when carefully cleaned of fat, can be cooked and eaten by most people, who, did they not know what it was, might consider it some poor, tough, dry beef, rather dark in colour and overdone. The pup, however, while on the land and milk-fed, is tender and juicy, but insipid.

“The skins are taken from the field to the salt-houses, where they are laid out open, one upon another, ‘hair to feet,’ like so many sheets of paper, with salt profusely spread upon the fleshy sides, in ‘kenches’ or bins; then after lying a week or two salted in this style, they are ready for bundling and shipping, two skins to the bundle, the fur outside and strongly corded, having an average weight of about twelve to fifteen pounds when consisting of two or three-year-old pelts.

“The Government interest on these Islands represents the commercial value of twenty or twenty-five millions of dollars. The course which I have indicated in my

chapter upon the management of the Sealing business of gradually increasing the killing of the surplus males, with careful watch for effect upon the rookeries, year after year, and, on the other hand, of watching the market so as not to overstock it, will, I trust, be taken in hand very soon; but let this fact be noted: these animals are liable at any time to be terribly diminished in number by a visitation of plague or distemper, over which we can have no control, and to which, like all other congregations of animal life, as well as vegetable, are ever subject. The diminution may run on for many years before they shall recuperate and increase to their normal number. This may not happen for an indefinite time to come, or it may be apparent next year; and for this reason especially I lay such stress upon the necessity of mapping out and jealously watching the breeding-grounds every season, so that one past year may be accurately compared with the present one.

“The Seals suffer no loss from natural foes while they are in the vicinity of the Islands; for were they disturbed by Sharks, killers, etc., it would be observed. They meet with these enemies as they go south, during the summer, in the North Pacific. Should the weather, however, be stormy during the season that the pups begin to swim, the surf will drown thousands upon thousands of the awkward little animals. During the two seasons of my residence upon the Islands, the sea was quite rough, and no loss, of mention, was sustained by this class.”

The Fur Seal-skin, after being sold in the rough state, undergoes many processes before it appears before the public in the form of the well-known Seal-skin; in fact, if any uninitiated person were to see the skin in the salted state, he would not be able to recognize it in

the dirty, greasy, hairy mass. When the Seal-skins arrive at a Seal-dresser's factory they are counted and marked, and then they undergo the first process of "blubbering," which is that of placing the raw skin on a beam of wood placed at an angle in the ground, and removing with a blunt knife the strips of blubber or flesh which still adhere to the skin after the necessarily hurried flaying at the slaughter of the animals. The blubber, ears, and strips of skin are sold by the ton as a valuable manure, which is much prized by hop-growers.

The ears are then cut off, and the skins washed in a tank in warm water with a weak solution of alkali. When the skins are taken out of the water, they have a beautiful silvery grizzled appearance, but they soon lose this when dried. The skins are next stretched on iron hoops, and dried in warm rooms where currents of hot air pass. In the dried state skins will keep a considerable time. After this, the skins are soaked in water till the hair is loosened, but not the fur, one day being sufficient for some skins, and several days for others.

When ready the skins are warmed on the fur side in the stove room, and placed across the unhairer's beams, and the top hair is then removed with a blunt knife. The hair comes off in handfuls. The skins have to be kept warm during the whole process.

"Stagey" skins, as a rule, have to be unhaired from the pelt side. This is not such a difficult matter as might be supposed, as the hairs penetrate much deeper into the skin than the fur, which grows nearer the surface, the hairs thus being able to be extracted by the roots, without touching the roots of the fur. The skins now have only the fur left, which is of a light drab colour.

The skins are then tubbed, generally by machinery, in order to soften the leather, and shaved (old process), repaired, or sent as they are to the dyers.

The process of dressing takes from one to three months.

The dyeing process is nearly as intricate as the dressing. The skins are first limed, and then pasted back to back with a thicker layer of brown paper over the fur holes, in order to prevent the dye penetrating into the pelt, and thus damaging the skin. The ground coat of dye is then applied cold, and trodden in, after which they are dried gradually. They then have from nine to fourteen coats of colour brushed in, each coat drying before another is applied.

By the new process a darker top is acquired by dipping the skin in the liquid, which in this case must be warm, and the number of coats of colour is also less. English dyers have long been celebrated for their excellency in dyeing Fur Seals, and at one time were the almost exclusive dyers, but the French now dye them very well.

Some of the chief ingredients in the dye are gall-nuts, copperas, and camphor. The skins are sometimes dyed gold by means of sulphuric acid. The process of dyeing takes about six weeks to two months. This art was for many years a secret.

After being dyed, the skins are scraped or shaved, and then cleaned by being placed in a revolving drum or cage, in which there is a large quantity of clean sawdust. They are then beaten out, and afterwards trimmed and sorted.

There is a very ingenious invention for removing by machinery the small fine hairs, called water-hairs, from the dyed Seal-skins, which still remain after the

unhairing. The skins are placed by machinery across a fine edge of a board. The fur is then blown aside and divided by a current of air, and a pair of small knives descend, cutting the small hairs which stand upright. The knives are then lifted up, the skin is moved on, and the process is continued as before. This process, although it renders the skin softer and more beautiful, usually makes the fur thinner and less durable, and, in unskilful hands, some skins were cut and injured by the machine when first introduced.

The waste edges or trimmings from the Seal-skins are either used for the manufacture of caps of an inferior quality, hundreds of scraps being used for one cap; or the fur is cut off the edgings and made into felt.

VICTORIA OR NORTH-WEST FUR SEAL.

Callorhinus ursinus.

The Victoria Fur Seal, of which so much has been heard of late years through the recent diplomatic controversy about the close time for Fur Seals in the Behring Sea, comes now under our notice. For some years the American Government maintained that Behring's was a closed sea, and in 1886 the British schooners *Carolina*, *Thornton*, and *Onward*, and the American schooner *St. Jago*, were seized, and some of the crew were imprisoned for thirty days for catching Fur Seals. One seizure took place 500 miles west of Alaska, another 60 miles. The Judge ruled that the claim of the United States over the greater part of the Behring Sea was acquired by treaty with Russia.

This absurd contention has been now waived (1891) owing to the firm attitude of Lord Salisbury.

A great many of these seizures were made by the American steamer *Rush*. Some of the vessels which were seized in 1890 were ordered to Sitka, with a prize crew of one man each, but sailed to Victoria instead. The *Black Diamond* and the *Pathfinder* were two of the most celebrated vessels in these transactions.

Since the establishment of the close time, the English Government have sent three men-of-war to assist the three American vessels in maintaining the new regulations.

The number of vessels engaged in this fishery have increased from fifteen in 1886 to eighty in 1890. Many of these vessels carried Indians, who are very experienced hunters.

Most of these schooners, which are owned by Canadian firms, carry canoes, which are launched when a herd is discovered. If the animals should be asleep, they are speared, otherwise they are shot, but in the latter case many are lost, as they sink before the canoes can get up to them.

The shore-fishery is carried on by the Indians on the North-west coast of British Columbia. They go out a short distance from the shore in canoes, and spear the Seals when asleep, in the head or middle of the back.

All the Victoria Seal-skins taken are chiefly females, with the exception of a few old bulls, and are generally captured at a rather earlier period of the year than the Alaska Seals.

Behring Sea and the adjacent part of the Atlantic is the only known habitat of this Seal (female and young Seals of both sexes), after leaving the Pribylov Islands, which latter they inhabit for five months. The sea-

migration of the males, with the exception of a few aged males, is unknown.

The Hudson's Bay Company also take a small quantity of skins from Vancouver Island, about 800 to 1,000 annually. The above-mentioned schooners capture now about 30,000 to 50,000 skins.

The price of the skin of this Seal is about 20 per cent. less than that of the Alaska. In 1891 it was 30s. to 80s.

The shore-taken skins are nearly always of poor quality, and out of season. The other catches are better, but the flanks are less thickly furred than in the Alaska Seal, owing probably to their being females.

A few skins are imported dried by the Hudson's Bay Company and other traders. These are generally bought by the Russians for use in the hair, that is, with the hair unremoved, the silvery colour of the small skins being very beautiful, and much appreciated for gentlemen's coat-collars. About twenty-five years ago, when the salted Alaska skins were monopolized, many Victoria skins were imported in the dry state at a much lower price, and proved a source of profit, although dry skins require a special process before unhairing.

Most of the skins taken are those of the females; they take a much better dye than those of the males, but they are narrower at the head. The only males taken are a few "wigs" or old bulls of very large size, but no bachelor or adult males seem to be taken in the open sea.

The colour of the Victoria Seal is bright grizzly or silvery, with a paler belly, and with a red mark at the base of each fore flipper. The few males taken are of a deep grizzly colour. The throat of the female is light, and the chin and neck yellowish. The nose is dark.

Some of the females have a slight wig or crest on the head, and a few have a crest between the eyes as well, but both of these are very rare. The under fur is red, but in the small skins it is usually light.

The increase of the numbers of the Victoria skins imported is probably owing to the increase of general numbers on the Pribylov Islands. This is due to the restricted number killed there.

Most of the salted skins are bought by English, French, and American houses.

In 1891, a Bill was passed by both Houses of Parliament for establishing a close time in Behring Sea till next May.

COPPER ISLAND FUR SEAL.

Callorhinus ursinus.

Copper Island, which is the habitat of this Seal, is one of the Aleutian group, close to Kamschatka, and still belonging to Russia. The fur is inferior to that of the Alaska Seal, although it is probably the same animal taken at a different season of the year. The colour is also lighter, being usually dark brown, and the fur is generally not of such good quality. The quality of the fur varies considerably, owing probably to climatic influences, being sometimes almost equal to the Alaska, and at others vastly inferior. The habits are probably identical with those of the Alaska Fur Seal.

The yearly catch of these skins is about 40,000 to 50,000. The skins are tied up singly, a little salt being rubbed into the pelt, and packed in casks.

They are sorted in the same way as the Alaska. The

length of the under fur is greater than that of the Japanese Seal.

The price varies considerably, and is much less than the Alaska. The present price (1891), is from 31s. to 95s.

ROBBEN ISLAND FUR SEAL.

Callorhinus ursinus.

The Robben Island Fur Seal has short, even red fur, and the hair is yellower and coarser than the Alaska; towards the tail it is quite brown. Robben Island, or rather peninsula, is situated on the south of Kamschatka. This Seal seems to be intermediate between the Copper Island and the Japanese. The latter and the Robben Island produce a red under fur of shorter staple, but usually of better quality, and might be classed together, whilst the Copper Island might be classed with the Alaska.

About 1,000 to 2,000 skins are collected annually. This fur was at one time considered equal, and even superior, to that of the Alaska, but it is coarser and of worse condition, and is now of less repute, and lower in price.

JAPANESE FUR SEAL.

Callorhinus ursinus.

French: Loup marin de Japon. German: Japanischer Seehund.

The Japanese Fur Seal has only been known to the commercial world, to any extent, of late years. The chief characteristics of the females, of which sex most

of the skins are taken, are the yellow necks, cheeks, and sides of the mouth, and the shortness of the fur. The hair is short, and slightly grizzled, the ears are short, and the under fur abundant. The males are of a dull grizzly colour, and are lighter near the fins. The skins are usually taken with much blubber attached to them, and are preserved in fine salt, but skins are also taken in the stagey or out-of-season condition. They usually arrive about January, and vary from 2,000 to 12,000 skins. In 1890, there were 11,098 skins. A crest of longer hairs is occasionally found between the eyes. The young, or black pups, have a white mark under the fore flipper. This Seal, when young, has often been confounded by the older naturalists with the South Sea Seal.

The shortness of the fur is probably due to the new growth of fur not having attained its full length. The salt used for preserving these skins is afterwards sold, the Tramway Companies buying at times several tons. It is also sometimes sold for manuring lawns.

The skins, when prepared, are especially suitable for caps, and other small articles, where evenness and shortness of fur are desirable.

Although the Japanese Fur Seal resembles the Robben Island more closely than any of the others, the four varieties, Alaska, Copper Island, Robben Island, and Japanese might well be included under one species. The relative habits, the time of arrival at and departure from the various islands, deserve the attention which has been bestowed on the Alaska Fur Seal.

WEST COAST SEAL.

Otaria gillespie.

The West Coast Seal, called sometimes the Black Sea-Lion, has been classed as a distinct species, although to some extent similar to the Vancouver Island Seal, especially in the females and younger animals, which are of the same bright silvery colour, with red marks on the flippers. The bulls, and older animals, however, are almost black, being covered with black hair; the under fur is red, and very little fur is found on the larger animals, the habitat being too far south. The bulls attain a large size, about 9 to 10 feet. The bark is well sustained and loud.

This is the Seal which lived and bred in the Brighton Aquarium. Most of the eared Seals have been taught to perform tricks, climbing on chairs, etc. This Seal inhabits the Farralones Islands off San Francisco, and St. Barbara, and other islands on the coast of California. At Seal Point, about six miles from San Francisco, the Seals are considered one of the sights of California, and the capture or disturbing of them is forbidden by law.

Most of the skins are of poor quality, except on the back. They fetched a high price a few years ago, but are now rarely imported on account of the inferiority of the fur. They only pay when the price of other Fur Seals is very high. 72s. has been known to have been paid for these poor skins, but the actual value is from 5s. to 30s.

LIMA FUR SEAL.

The Lima Fur Seal produces the lowest quality fur of all the Otariidæ, and hardly any skins have been imported of late years. In 1886, after a lapse of several years, 993 skins were imported, the price realized being 3s. 6d. to 13s.

The hair is abundant and bristly, and in the adult animals is almost entirely black. The under fur is red and very scarce. The crest of the large bulls or "wigs" is light brown, and sometimes almost white. The females are very dark brown, almost black, like the small ones.

The range of this Seal is rather considerable, including the islands near Callao and other parts of Peru; probably also the Galapagos Islands. Some were killed by Alexander Selkirk during his sojourn in Juan Fernandez. According to Murray, he killed them from behind with a hatchet, escaping from their bites by his greater agility in turning. In 1798, a New York skipper is said to have filled his vessels with pelts obtained in the island of Masafuera, nine miles from Juan Fernandez, and to have taken them to Canton.

CAPE HORN OR LOBOS ISLAND FUR SEAL.

Arctocephalus falklandicus.

The habitat of this Seal extends from the Gulf of Tres Montes (N. of Wellington Island), and from perhaps even higher, to the Straits of Magellan. It is very abundant on the Cordova Peninsula (Straits of Magellan); also on the Lobos Islands, at the mouth of the Rio de la Plata, and the Falkland Islands.

The Cape Horn Fur Seal is of a yellowish, greenish-brown colour, with brown sides of a darker hue; the ears are mostly of a light speckled-brown. The bulls are of a lighter brown, having in many cases a yellow mane; they attain 8 feet in length, and fight with great stubbornness, tearing the skin off each other's cheeks and heads. Every sort of animal is taken, both sexes and all ages being slaughtered indiscriminately.

Most of the American vessels set out from Sandy Point, and the schooners fish up and down the Straits. A few Chilian vessels are also fitted out. Captain Temple says:—"The fishing commences about the month of July, and lasts until February of the following year, that is to say, about six months out of the twelve. It is very rarely that the female has more than one pup, and the time of gestation is about ten months. The pupping season is from October to March."

The under fur of this Seal is long compared with other species. The skins are easy to work, and, like the South Shetland, take the dye well and with great brilliancy. The number of the catch is very varied, sometimes amounting to many thousands, and sometimes only a few hundreds.

The skins usually arrive in London in time for the November and January sales. Many skins are imported in "pinkey" or unseasoned condition. The name pinkey is derived from a pink mould which comes on the pelt. In November, 1888, 13,333 skins were sold in London. Mr. Cunningham, in the "Natural History of the Straits of Magellan" (page 270), thus relates:—

"Near the Island of St. Magdalena, the water was populous with Sea-Lions, and other Seals, which, from being seldom disturbed by man, were apparently much astonished and little dismayed at our appearance. A herd of between thirty or forty of the former followed our boats at a few yards' distance, plunging beneath the water, and then raising themselves partially out of it, gazing at us with intentness, showing their white tusks, and occasionally uttering a cry intermediate between a growl and a roar; while many of the latter, bending themselves into a curve, leaped high out of the water in all directions. The herd on the beach allowed us to land, and then rearing up so as to display their manes, rushed into the water, from which they eyed us at a safe distance."

The Lobos Island Fur Seal appears to be more numerous, frequenting the islands at the mouth of the La Plata in great numbers, but it is to be feared that the indiscriminate slaughter of the young, more than half the number taken being yearlings or two-year-old animals, will end in extermination. The lease of these islands for the Seal fishery lasts only a period of four years; still, if the lessees would forego one year's catch, they would almost double their income in the following year, if they were to take only two-thirds of the quantity of the two years' total; nay, half the quantity ought to pay them, and in the third and fourth years

there would be a greater number of larger skins. The fishing would then be able to recover itself.

The small skins realize at times hardly more than the price of some of the Hair Seals, but a few shillings being paid for them. The large pups, *i.e.*, the three-year-old animals, fetch about 50s. to 60s. The "wigs" or bulls are very similar to the Cape Horn, and are worth only a few shillings, being fit for little more than leather. Skins with no fur are sometimes met with. The pelt of this Seal, like that of the Cape Horn, is thin and rather spongy. Many skins of both these Seals are washed, and exported to Russia for use with the hair unremoved. The Lobos Island skins arrive in London in October, November, and January. The Falkland Islands Seal, sometimes classed as *Otaria jubata*, attains to an enormous size, a good many reaching 20 feet, and the skins often weighing $65\frac{3}{4}$ pounds. These Seals delight in rough stormy weather. They are said to be becoming scarce. The price of the skins varies from 2s. 6d. to 15s. 6d. Several of this species have been taught to perform tricks in the Zoological Gardens. Many skins are used for leather, but some are used for fur purposes, the latter being mostly pups, while the large and heavy skins are used for leather. The aged males here appear to have an island to themselves wherein to end their days, like the *Callorhinus ursinus*, and Steller's Sea-Lion in the Pribylov Islands.

CAPE FUR SEAL.

Otaria pusilla.

The Cape of Good Hope Fur Seal inhabits the small islands round the Cape of Good Hope, and is also found in some rocky islands some forty miles from Port Elizabeth. It probably once inhabited Tristan d'Acunha, and Inaccessible Island.

This Seal is fairly abundant, but the fur, except in the young animals, is short and poor, and consequently of low value, only exceeding the Lima skins in price. Many skins have no fur on the flank, and only a small quantity on the back. Sometimes this is wholly wanting, and they are then called Hair Seals. The skins are as a rule indifferently cured, and the price varies from 4s. and 8s. to 30s. or more, according to demand. Several thousand skins are imported annually, and they are usually sold in London in November and January. The skins of the bulls are only fit for leather.

The colour of this animal is very light brown, with a grey shade on the back; the under fur is brown. The females have brown sides and belly, and the younger animals are of a more silvery colour, with a white hue on the head, and have under fur of a better quality, although it is sometimes white. The whiskers are black.

Many of these pups are used unhaired, or are washed and exported to Russia.

In captivity these Seals have been known to live to the age of fifteen years. It is advisable to feed the animals at short intervals, except perhaps in the breeding season.

The Seals on the islets near Algoa Bay are killed with clubs, the slaughter usually taking place on the slanting ground by which the animals arrive and leave these islands. A catch of 200 to 300 Seals is considered a good night's work. The old bulls sometimes fiercely attack the Sealers' boat. (*Field*, 1887, p. 649.)

NEW ZEALAND AND AUSTRALIAN FUR SEAL.

Arctocephalus forsteri.

This Seal is one of the less abundant species of this group, and is found in New Zealand and the southern parts of Australia.

The colour of the hair in the males is usually dark grizzly, the belly being dark brown. The female is yellow or light brown, with a brown belly. The whiskers are black, with the exception of those on the top of the mouth, which are white. The general colour of the under fur is red, and brown near the flippers. The under fur is abundant, except sometimes on the sides.

The fur of this animal is most beautifully curled, and is extremely well adapted for use in the undyed state.

This species seems also to be decreasing. It was very abundant in former times, but the quantity of skins now imported is unimportant. During the years 1814 and 1815 as many as 400,000 skins were imported from these parts. The skins are usually shipped from Adelaide.

The following localities were formerly frequented by these Seals :—The Seal Rocks near Port Stephens, New South Wales, the small Seal Islands near Port Albert,

Victoria ; also those near Doubtful Bay, West Australia ; Seals' Bay, King's Island, and Tasmania.

In Flinders' "Voyage to Terra Australis," page cxxix, it is stated that in 1798, at Passage Point, to the north-east of Van Diemen's Land, "The number of Seals exceeded everything we had any of us before witnessed ; and they were smaller, and of a different species from those which frequented Armstrong's Channel. Instead of the bull-dog nose, and thinly-set sandy hair, these had sharp-pointed noses, and the general colour of the hair approached to a black ; but the tips were of a silver-grey, and underneath was a fine, whitish, thick fur. The commotion excited by our presence, in this assemblage of several thousand timid animals, was very interesting to me, who knew little of their manners. The young cubs huddled together in the holes of the rocks, and moaned piteously ; those more advanced scampered and rolled down into the water, with their mothers ; whilst some of the old males stood up in defence of their families, until the terror of the sailors' bludgeons became too strong to be resisted. Those who have seen a farmyard well-stocked with pigs, calves, sheep, and oxen, and with two or three litters of puppies, with their mothers in it, and have heard them all in a tumult together, may form a good idea of the confused noise of the Seals at Cone Point. The sailors killed as many of these harmless and not unamiable creatures as they were able to skin during the time necessary for me to take the requisite angles ; and we then left the poor affrighted multitude to recover from the effects of our inauspicious visit."

(Page cxxxiii) : "The Hair Seal appears to frequent the sheltered beaches, points, and rocks ; whilst the rocks and rocky points exposed to the buffeting of the

waves are preferred by the handsomer and superior species, which never condescends to the effeminacy of a beach. A point or island will not be greatly resorted to by these animals unless it slope gradually to the water, and the shore be, as we term, steep too. This is the case with the islet lying off Cape Banen, and with Cone Point; with part of the Passage Islands, and the south end of Clarke's Island; and at these places only did I see Fur Seals in any number."

The shape, attitude, and colour of this and other Fur Seals must not be judged by the ill-mounted, badly stuffed, faded, and sometimes moth-eaten specimens, which are sometimes seen in museums. These are too liable to mislead the public, whose ideas on Seals are sometimes already confused, classifying the eared and earless Seals all under one term of Seal, and thinking that the Hair Seals of the Asiatic Seas produce the well-known Seal-skin. Even amongst scientists, the knowledge of the habitats of Seals is somewhat uncertain, H. W. Elliott, the Government Inspector of the Seal Islands of Alaska, however, being a marked exception, his notes and works on the subject being most excellent, and true to nature.

NEW ZEALAND AND WEST AUSTRALIAN HAIR SEAL.

Otaria cinerea.

This Seal inhabits New Zealand and the West coast of Australia, and in former times Kangaroo Island, and Waterhouse Isle.

This is not a well-defined species. The colour of this

Seal in the warm season is light brown or yellow, with slightly darker hairs on the back. The bulls have a crest of long white hair. The young appears to be brown or dark brown. The skin is thin, and almost valueless, except for leather. It is, as a rule, devoid of fur, when imported, but sometimes there is a scant covering. One-half of the skins of a shipment are sometimes worth 40s. to 50s., while the other half fetch only 4s. to 6s. The majority of the skins are washed for use in Russia, but if taken in the proper season, it is very probable that the greater part might be used for fur purposes.

Flinders writes, page cxxviii, that on the north-east point of Clarke's Island, "these rocks were also frequented by Hair Seals, and some of them (the old males) were of enormous size, and of extraordinary power. I levelled my gun at one, which was sitting on the top of a rock with his nose extended towards the sun, and struck him with three musket-balls. He rolled over and plunged into the water; but in less than half an hour had taken his former station and attitude. On firing again, a stream of blood spouted forth from his breast to some yards' distance, and he fell back, senseless. On examination, the six balls were found lodged in his breast; and one, which occasioned his death, had pierced the heart; his weight was equal to that of a common ox." At Floe Hummock Island Mr. Ross landed. "The Seals were of the usual size, and bore a reddish fur, much inferior in quality to that of the Seals of Furneaux Islands."

(Page 91): In speaking of *Recherches Archipelago*, South coast of Australia, A.D. 1802, he relates:—"All the islands seemed to be more or less frequented by Seals; but I think not in number sufficient to make

a speculation from Europe advisable on their account; certainly not for the China market, the Seals being mostly of the hair kind, and the fur of others as were seen was red and coarse."

In the Investigator's group, page 125: "The beaches were frequented by Seals of the hair kind. A family of them, consisting of a male, four or five females, and as many cubs, was lying asleep at every two or three hundred yards. Their security was such that I approached several of these families very closely; and retired without disturbing their domestic tranquillity, or being perceived by them."

(Page 184): "One of the sailors having attacked a large Seal incautiously, received a very severe bite in the leg, and was laid up."

(Page 89): "In Goose Island Bay a few Hair Seals may be procured, probably at all times."

MACQUARIE ISLAND SEAL.

Otaria hookeri.

Very little is known of the Macquarie Island Fur Seal, which appears to be now almost extinct, although it was at one time very numerous. In 1811, 80,000 were killed in Campbell's and Macquarie Islands, but in 1887, only 179 skins were imported. A few of this species still inhabit Campbell's, Macquarie, Ross, and Auckland Islands, the last named being still visited by sealers.

A cargo of these skins arrived in London in a rotten state, on account of want of salt, and they had to be dug out of the hold, and sold for manure.

Three fine specimens of this species have lately been

presented to the Zoological Society. They were driven into a narrow creek, their escape was cut off, and they were then captured by means of thick nets.

The quality of the skin of this Seal was no doubt good. The colour is yellowish-grey in the males, with yellowish-white chest, brown belly, and darker grizzly back. The females, and young animals, are light yellow-grey, almost white. When the new growth appears, the



males are very yellow, and have little or no fur, except on the back, where it is very dense. - The flippers are shorter than those of the *Otaria jubata*.

The eyes are dark brown and limpid; they are round, and easily moved in their sockets, thus enabling the Seal to see under water. The ears are rather short, as in the *Otaria jubata*, and probably all the other species

of Eared Seals. There is a constant discharge of water, or watery liquid, from the eyes, even when asleep. This is probably a provision of nature to keep the eye moist, and to remove foreign substances.

STELLER'S SEA-LION.

Eumetopias stelleri.

This large Seal is chiefly valuable for its skin, which is used by the natives for covering their boats. Very few skins are imported into this country, commonly about ten to twenty, and these are brought by the Hudson's Bay Company and other North-West traders. The price of 4s. 6d. hardly pays for the importation. This Seal inhabits the Aleutian and Pribylov Islands, and the North-West coast of America, and Elliott says it is also found off the Island of Kadiak.

The following are extracted from Elliott's Report on the Pribylov Islands:—"The Sea-Lion rookery will be found to consist of about ten to fifteen cows to the bull. The cow seems at all times to have the utmost freedom in moving from place to place, and to start with its young, picked up sometimes by the nape into the water, and play together for a spell in the sea-wash, a movement on the part of the mother never made by the Fur Seal, and showing in this respect much more attention to its offspring."

"The natives have a very high appreciation of the Sea-Lion, or Sea-Vitchie, as they call it, and base their regard upon the superior quality of the flesh, fat, and hide, for making covers for their skin-boats, bidarkies, and bidarsaks."

"As I have before said, the Sea-Lion seldom hauls

back far from the water, generally very close to the surf margin, and in this position it becomes quite a difficult task for the natives to approach, and get in between it and the sea unobserved, for unless this silent approach is made, the beast will at once take the alarm and bolt into the water.

“Those that go for the water are of course lost, but the natives follow the land leaders and keep urging them on, and soon have them in their control, driving them back into a small pen, which they extemporize by means of little stakes with flags, set around a circuit of a few hundred square feet, and where they keep them until three or four hundred, at least, are captured, before they commence their drive of ten miles overland to their village.

“After the drove has been brought to the village on the killing grounds, the natives shoot down the bulls and then surround and huddle up the cows, spearing them just behind the fore flippers.”

This is not a well-defined species. It appears very like a large Alaska Fur Seal; it is about 10 feet long, and is of the same grizzly colour. We are inclined to the opinion that this species may prove to be the aged animals of the Alaska Fur Seal. According to Elliott, it has similar habits, being divided into classes, taking the alarm so readily, and arriving at and leaving the islands at the same time; it has the same length of flipper. The colour and the habitat are also similar. The decrease of the Sea-Lions on St. George Island being simultaneous to the increase of the Fur Seal is a remarkable fact. !!

The flesh certainly seems to be different, being of a better flavour; but this may perhaps be owing to the greater amount of blubber. Where the fur is abundant,

the flesh would consequently lose its flavour and be less palatable.

The affection of the mother for its offspring, however, is a noteworthy trait, which seems to point to the contrary.

COMMON OR HAIR SEAL.

Phoca vitulina.

French : Veau marin, vache marine. German :
Kofferseehund.

This Seal, as well as all that follow, have no external ears; the toes are joined, not distinct as in the Fur Seals or Otariidæ; and the hind flippers are shorter.

This lively and beautiful Seal inhabits the shores of Great Britain and Ireland; the north-western shore of North America as far north as Akoon Island in the Aleutian chain, Yakutat Bay, and other parts of Alaska.

The skins are exported from these latter districts as an article of commerce, but those from the former seem to be thrown away, not being found in sufficiently large numbers to be worth collecting. The oil is said to be used by old people in Scotland as a physic.

The Hair Seal is found in the Island of Harris, on the south coast of Wales, the north and south coasts of Devon, the extreme north coast of Cornwall (Tintagel Head), and Lundy Island. One was captured at The Needles in 1884, and lately a specimen was seen in Loch Awe.

Hair Seals were probably once found in Sutherland, and on the south coast of England. Selsey (Sussex) derives its name from this fact, being originally Seals' ei

or Seals' Island, and fishermen still living there can remember having seen a few specimens, but there is no other record of Seals having been found there. This was probably at the time when Selsey was an island, and the communication with the mainland was by means of a ferry near the little village of Siddlesham.

About 3,000 skins are exported from North-West America. These are sorted into extra large, large, middling, small, and small well marked.

The large animals vary considerably in colour, many being light brown, and but slightly spotted, while others are lighter still and better marked. The smaller animals are very beautiful; many of them have grey backs spotted with black and blue, and a lighter belly, covered thickly with dark or black spots. Others are of a light colour all over the body, but they are also spotted. The eyes are large and expressive. The length varies from one to five feet. Like all the other Hair Seals, it closes its hind feet together, when in the water, and propels itself with them, as a whale or porpoise does with its tail. On land it advances by means of a half jump, half wriggle, except when driven, and its rate of progression is consequently very slow; but it has been known to travel across country in winter as far as thirty miles.

If shot in the head, whilst in the water, its carcase will not sink for a short time.

This is the Seal seen in Heraldry.

The young Seals are small, and covered with white hair, and are called Whitecoats.

The large skins are sometimes used for the manufacture of leather, but the smaller are used for

covering boys' knapsacks and tobacco-pouches, for hats, covering trunks, etc.

The value of an extra large skin ranges from 5s. to 5s. 3d.; 4s. to 4s. 6d. is the price of a large one; 2s. 9d. to 3s. of a middling; and 2s. 3d. to 5s. for a small one.

The larger skins weigh about 4 lbs.

The skins are usually dried, but a few arrive in the salted condition. The greater part are bought for France, and a few for Norway. A few years ago, when the fashion for Hair Seal hats was introduced into England, they were much sought after. The large skins are almost always purchased by English tanners for leather.

This Seal is sometimes taken in nets during the winter months, in pursuit of herrings and other fish. When captured, it is exhibited at a small charge in the seaport town, and then perhaps sold to a Zoological Collection for about £5. When in captivity, the ease and grace with which it swims is remarkable. It turns on its back, and swims just as readily in that position. It is taught many tricks, such as ringing a bell.

This Seal is extremely fond of music.

The Caspian and Balkan Hair Seals appear to be local varieties of this species. They exist in considerable quantities, and are captured by means of nets. Whitecoat skins, probably of these varieties, are sold at the Nijni-Novgorod Fair.

GREENLAND HAIR SEAL.

Phoca greenlandica.

French : Phoque. German : Schwarzseitige Seehund.

The Greenland Seal is also called the Saddle-back or Harp Seal, from the very peculiar dark mark on the back of the male animals. This mark has been called a saddle or harp, but the former term is more correct. The German name of Black-side is by no means inappropriate, as the mark is irregular, and thicker at the sides. The mark varies considerably, no two skins being exactly alike.

The general colour of the hair is light, and the saddle is almost black. The female is of a light brown colour, and yellow on the belly. The adult females, as well as the young animals, have a few large black spots or patches, which are especially noticeable on the belly. It has no external ears. On each foot there are five toes, which are furnished with five rather long claws; the two outer toes are much longer than the three interior ones. The feet are partially webbed, and covered on the upper side with coarse hair. The hind feet or pes are covered with yellowish hair like the rest of the body, and are stretched out behind. The fore-arms or manus are short, and placed well forward in the body. The eyes are dark and expressive. The few longer hairs in the whiskers are white, but all the others are black. According to Clutterbuck, the Greenland Seal is shy.

The young Greenland Seals about four to six weeks old are called Whitecoats, from the long white fur or

hair with which they are covered, before they take to the water, and which corresponds to the fluff or down on young birds. At this age the Whitecoat is about three or four feet long; the tail is short—about two inches; and it has two black spots over the eyes. At this age it looks very docile. It is called the Wool Seal by the Americans from the woolly nature of this yellowish-white fur. At the age of four or six weeks, the young Seal, which has hitherto been nourished by its mother, begins to take to the water. It now loses its fat; the white fur begins to fall off, commencing at the head; the dark spots appear, and it increases rapidly in weight, but the skin decreases in this respect. As the long fur disappears, the animal gradually changes into what is called the “small spot.” At two years old it has become a “middling spot” or “bedlamite.”

Since the close time was established in 1876 by convention between the English, Norwegians, and Germans, the Whitecoats taken are mostly large, and the fur consequently not so thick; but this respite is most beneficial to the Seal, and more “spots” (the name given to the older animals, which are spotted) are taken. The close time ends on April 3rd, and the penalty for killing Seals before this date is £500. If the later suggestions of Captain Grey, the famous Arctic sealer, for extending the close time be adopted, but few Whitecoats will be taken, and a great number of the older Seals will have to be shot with the rifle, as they will have taken to the water.

The Greenland Seal inhabits the Arctic Seas in the neighbourhood of Jan Mayen Island, and Greenland, and the coasts of Labrador and Newfoundland. The immense area over which this fishery extends lies

between the parallels of sixty-seven and seventy-five degrees north latitude, and the meridian of five degrees east, and seventeen degrees west longitude. This fishery is prosecuted principally by English, Norwegian, and German vessels, the English taking perhaps the most skins, and the Norwegians excelling in the flaying. The steamers leave Dundee, Hamburg, and Norway in March. A few also start from Greenock, and from St. John (New Brunswick). There are about sixty vessels in all. Those from Newfoundland are not allowed to clear before March 10th.

This is a very important fishery; over 132,762 skins from Greenland, and 274,995 from Newfoundland, together 407,757, were imported in 1891: this is a marked improvement to the last few years. The catch varies considerably from year to year. Sometimes large quantities are taken, owing to the facility with which the sealing steamers get at the herds; while at other times, though the Seals are abundant, it is impossible to approach them on account of the closeness of the ice floes, and the vessels are detained several weeks, and at the end of that time many of the younger animals have taken to the water. The risk incurred is considerable, the vessels being sometimes enclosed by the floes, and the sailors have to keep a good look-out from the crow's nest at the top of the mast. Approach is sometimes made to the Seals by the steamers ramming the ice with their prows. The Dundee Seal and Whale Fishing Company lost the *Resolute* in this way in 1886, and the Dundee steamer the *Eagle* was wrecked off the coast of Newfoundland in 1887; the crew, consisting of 250 men, being all lost. The skins, already piled together, have sometimes to be abandoned on the ice, as the floes begin to close in.

On the coast of Newfoundland most of the Seals are taken on shore with nets, women and children helping to catch them. The season is looked forward to in Newfoundland, as the harvest is in more temperate regions, and the prospects are discussed in the same manner. Bonavisto Bay is a celebrated fishing-ground. The Newfoundland Sealing and Whaling Company, St. John's, is one of the firms chiefly engaged in this fishery. In Labrador the Seals are also taken on land by means of nets. These are called Shore-taken skins; they are better flayed than those taken on the ice. These Seals breed on the ice, and sleep there, plunging in the water at the first sound of alarm. They feed in the sea. The young Seals are despatched by the seamen with clubs on the ice. The flaying is necessarily hurried, but it is to be regretted that it is done so clumsily, as some of the skins are injured. The sojourn on the ice is so short and uncertain, and the low price of the skins prevents special skilled hands being employed in this work, as they are in the case of the Fur Seals. An instance has been recorded of a Seal which had been flayed, recovering from the effects of the blow on the head, and escaping to the water, but such instances are fortunately rare. It is extremely seldom that a case of intentional cruelty occurs, and the statement that Seals are flayed alive for the sake of adding brilliancy to the hair is unfounded.

The larger skins of the Greenland Seal are, as a rule, imported in the wet or salted state, but a few arrive dry from Labrador, and several hundreds by the Greenland Company. The Saddlers fetch from 7s. 6d. to 9s. 8d.; the large spots 7s. 9d. to 10s. 8d.; and the middling spots 5s. to 6s. 3d. These are manufactured into leather of fine quality, which is used for the bands of

machines, etc. The Whitecoat skins are of uncertain value, the large well-furred skins from Greenland fetching from 5s. to 8s., and those from Newfoundland, which are of inferior quality, rather less. But in 1890, when the catch was small, 12s. 3d. to 18s. was paid for a skin. The lower qualities of the Whitecoats, like the Saddlers, and large spots, are used for tanning. The female skins are much preferred to the male, as the latter are so much bitten at the fore flippers by the males fighting. The majority of the skins are sent to London for sale, but some are also sold in Liverpool, Dundee, and Hamburg.

The Whitecoat skins are blubbered, washed, and dried, like in the first stages of the Fur Seal. The thickness of the skin is sometimes reduced by passing the skins over an emery wheel, worked by machinery. They are then dyed black or brown, the former being used for military purposes (Hussar or Fusilier busbies), and also a few for fur, such as edgings for robes, etc. The brown skins are used for fur purposes, and the inferior qualities find a ready market in France.

The oil of this and other species taken on the ice is very valuable, and they appear to be mixed together. The skins are removed with the blubber attached, and on arrival at St. John's, the blubber is removed from the skins, which are then salted. The blubber is melted in vats, and the oil is extracted, and sampled in long, thin phials, the buyers judging of its quality by tasting a little on the back of the hand, or by smelling it. Seal oil varies in colour from white to dark brown, or almost black, the pale oil fetching £25 to £28 a tun, and the yellow rather less. It is generally used mixed for illuminating, as lighthouse lights, etc., and also for dressing jute in Dundee. There is a duty on Seal oil in the United States.

RINGED OR FETID SEAL.

Phoca fertida.

French : Phoque commun.

This Seal is called Fetid, on account of the peculiar odour it exudes, and Ringed, from the numerous circular markings on its back. Its small size has also earned for it the name of Floe-rat, and another name is the Floe Seal.

The Ringed Seal inhabits Labrador, Anticosti Island, the east coast of Hudson's Bay, the coasts of Greenland and Newfoundland, and Esquimaux Bay. It has been also met with in the Hudson's Bay territory, and as far north as Smith's Sound. Elliott says it is also found on the northern shores of Alaska.

Many skins are imported in the salted state from the trading steamers, and are sold exclusively for leather, the small fetching 3s. to 4s. 2d., and the extra small 2s. to 2s. 11d.

About 8,000 to 40,000 dry skins are sold by the Greenland Company; these are likewise used for leather. A few skins are also imported from Labrador in the dry state, and are sometimes dressed by the natives. The Hudson's Bay Company import about 1,000 skins from the east coast of Hudson's Bay; these are sorted into large, middling, and small spots, the last being the most numerous. The Whitecoat skins, though small, are of a suitable quality for dyeing. They usually arrive dry from the Hudson's Bay coast, but in the salted state they are mixed with those of other species, and are found among the small sizes.

The Fetid Seal is the smallest and most numerous of the Phocidæ. The length of the adult animal is from $2\frac{1}{2}$ to 4 feet. It is of a bluish-grey colour, the circular marks on the back being dark; the belly is almost white. The Whitecoat is about 18 inches in length, and some skins taken are only 6 inches; it is thickly covered with very dense coarse hair, almost like wool.

This species is found farther north than any other Seal, and it keeps its breathing holes open even when the surrounding ice is frozen to a considerable depth.

The Esquimaux take a certain number of these Seals through holes which they cut in the ice, protecting themselves from the piercing northern winds by a wall of snow erected near the opening. In fact, this animal is almost invaluable to them; it furnishes them with food and lamp-oil, and from the skins they make boats, coats, trousers, and boots. The skins are beautifully dressed by them. In making boats, the hair is removed, and several skins are sewn together, and stretched so tightly over the framework of wood as to render the boats impervious to water.

The female is said to erect a small habitation of snow over the hole in the ice through which it breathes.

According to Clutterbuck, the kidneys of this Seal are good eating.

GREY SEAL.

Halichærus grypus.

The Grey Seal, called also the Square Flipper, is the largest of all the true Seals in the northern hemisphere, but it is by no means numerous. It occasionally visits the English coast, but usually breeds in the northern part of Norway. Its chief habitat is Norway, but it is also found in Hudson's Bay, where the skins are used by the hunters for making shoe-leather.

Few animals are captured by Norwegian and Greenland sealers.

The length of the adult male is about 10 to 12 feet. The young or Whitecoat is very large, about 4 to 5 feet in length, and is very thickly furred, but the skin is very rarely met with in commerce. We have once seen a Whitecoat, probably of this species, which measured as much as 5 feet.

The few skins that are imported are bought by tanners. The Hudson's Bay Company import a few skins; in 1886 the number was 42.

Mr. Collett, in the "Proceedings of the Zoological Society" (1881, pp. 382-387), says:—

"After the lapse of three weeks the young one has entirely lost its woolly hair. The Seals probably begin to breed at the age of four years, or at the earliest three years, and give birth to only one young one annually. The food of the Seals on the Fro Islands seems to be principally fish; halibut appears to be a delicacy to them."

According to the same author, these Seals breed at the end of September, and are polygamous, a male having from two to five females.

BEARDED OR GROUND SEAL.

Erignathus barbata.

This Seal has obtained the name of Bearded from the abundant bristly whiskers with which it is furnished. It is one of the largest Seals, being about 6 feet long, and is spotted. It inhabits the Greenland Seas, and is one of the species for which a close time has been provided by Act of Parliament. It was met with in Smith's Sound by the Polar Expedition of Sir G. Nares. The tail is short and stumpy, and is 3 to 4 inches long. The hind feet are about 12 inches in length, furnished with nearly straight claws about $1\frac{1}{2}$ inches long. The claws of the manus or front feet are long and grooved, the second claw being the longest. The neck is long compared to the rest of the body.

The skins, weighing from 39 to 45 lbs., are principally used for leather; the large skins fetch from 9s. 7d. to 13s. 6d., and the extra large 20s. 11d. to 23s. 8d.

BLADDER-NOSED SEAL.

Cystophora cristata.

German: Klappmütze.

The Bladder-nosed Seal is well known, and the males are easily recognized by the appendage on the nose, which they are able to distend at pleasure. It is also called the Crested or Hooded Seal for the same reason. A similar appendage is found in the Saiga Antelope, but

it has not yet been ascertained to what purpose it serves.

This Seal inhabits the Greenland Seas, especially round Jan Mayen Island and Iceland, also Newfoundland and Anticosti Island. In the latter it is said to be possible to take it in the summer as well as the spring.

The Bladder-nosed Seal is one of the three chief and most abundant species of the Seals which are protected by a close time established by Government. The animals are captured in the same way as the other species of Seals, on the ice, and many are taken off the shores of Newfoundland with nets.

The general colour of the adult animal is light brownish-yellow, with large black blotches or patches scattered over the back, which is light blue. Many are irregularly marked bluish-black, no two animals being exactly alike. The length is about 8 feet, and the tail is short—about 2 inches. The flippers are placed very far forward. The skins of the adult animals are sold chiefly for leather purposes, as imitation morocco, etc. These skins require to be soaked in the tan-pits six weeks.

In the second year this Seal becomes light blue on the back, and is hence called the Blueback. The belly is lighter, almost white. The blue hair of the back is about two-thirds of an inch long, and a white spot is occasionally found on it. In the earlier growth, the blue is of a deeper shade. At this age many skins are taken, the hair being short, bristly, strong, and durable. A few skins are sometimes dyed with spots in imitation of Leopard skins, but most are dyed black or brown, and used in the manufacture of shoe-trimmings, gloves, muffs, etc. Dyed black skins are also used for busbies and caps for the military in Canada, and some of the

volunteer regiments in England. A few Blueback skins are also used for imitation morocco, the surface being tightened up by means of cork. The Greenland skins are larger than the Newfoundland, and are a deeper blue on the back. About 500 in the dry state are sold in Copenhagen by the Greenland Company. The weight of a salted Blueback skin varies from $5\frac{1}{4}$ to $6\frac{1}{2}$ lbs., and the price ranges from 3s. 6d. to 7s. 4d. (1891). After two years, when the animal is adult, the Blueback begins to lose its rather short hair, which has now turned almost yellow, and is succeeded by a much shorter growth of sleek hair. It is now blue on the back, and black spots appear on the head and sides. The fore-feet are short, and furnished with five short, strong, sharp claws. The hind flippers are longer and webbed, the two outer toes being longer than the three middle. The toes are covered with short thick hair, and the nails are about an inch long. At this age the skins are called middling spots, large, and extra large spots.

The young are covered with white hair or fur, and are called Whitecoats. The whiskers are generally of a very light brown, but sometimes they are black; they are bristly and granulated, or notched. A small proportion of Whitecoat skins are imported, but they can hardly be distinguished from the more abundant young of the Greenland Seal, unless perhaps by their being thicker in the wool.

The skin of the Bladder-nosed Seal is often made into coats and trousers by the Greenlanders. The Polar Expedition under Captain Nares was furnished with coats made out of Bluebacks. This skin was probably chosen as being one of the only cheap furs at that time, but in other respects it was not a judicious choice. The skins were extremely heavy, and liable to get damp,

owing to the difficulty in thoroughly extracting the salt from the pelt, except by a more expensive process ; and, besides, afforded little warmth to the wearer, owing to the spare amount of fur on the skin. Third or fourth quality Mink, Yearling Sheep or Tuluppen, Koala or Wallaby, would have combined lightness with durability and warmth, and were also cheap ; or perhaps the Reindeer skins as prepared by the Esquimaux would have surpassed them all.

The skins, on arriving at a dresser's factory, are blubbered, that is, the fat remaining on the skins and the dirt are removed ; they are washed in large tubs of alkali and soap, wrung dry, stretched on hoops, and dried in the hot room. They are next softened, and the final process, before or after dyeing, is shaving and cleaning, which is performed with sharp two-bladed knives like tanner's paring knives.

According to Lady Blake (*Nineteenth Century*, p. 577), Hoods and Harp Seals are never found in the same floe. Hooded Seals are always found to the eastwards of Harps, but the young are born two or three weeks later.

SEA-LEOPARD.

Leptonyx weddelli.

The Sea-Leopard is the largest of all the Hair or true Seals, being from 8 to 15 feet long, and its skin is very valuable for leather purposes. It inhabits the South Shetland and Auckland Islands, and the Antarctic Ocean. The general colour is yellow with numerous small spots, both dark and light, these markings being beautifully contrasted, and extending to the belly. A

specimen of this Seal was exhibited some years ago in London as the "Talking Fish." The Sea-Leopard has become very rare of late years, and, according to some authorities, it is almost extinct. A few hundred skins are imported from time to time.

Another species of Seal, which is now extinct, is the Saw-toothed Seal of the South Seas.

MAMMALIA.

INSECTIVORA.

MOLE.

Talpa europæa.

French: Taupe. German: Maulwurf.

The common Mole is widely distributed in Great Britain, being found in almost every county, except in parts of Scotland and in the Channel Islands, and is also abundant on the Continent.

Although it causes a certain amount of inconvenience to gardeners, spoiling the walks and uprooting plants, it has a beneficial effect on meadows, by devouring the larvæ of insects, especially those of the Crane-fly, or Daddy-long-legs (*Tipula gigantea*), which causes so much destruction to the roots of grass in many places near town, where recourse has to be had to artificial remedies in order to get rid of these pests. It is very fond of moist localities, where it is of great utility in draining the land, but it is also found in hills. The presence of the Mole in meadows is also said to prevent the foot-rot in Sheep, by draining the sub-soil, but care should be taken to distribute the Mole-hills several times in the year, otherwise the field will have a patchy appearance.

The Mole is about 4 inches long. The eyes are extremely small, and scarcely discernible, and are protected by thick fur, which prevents the earth from entering them when it is burrowing. The snout is long and naked, and furnished with a few black whiskers. It has no external ears, but the orifices are readily distinguished just above the fore-feet. The

paws are short, and the fore-feet, which are large, are furnished with five strong, sharp claws, turned outwards. The tail is small, from two-thirds of an inch to one inch long, and covered sparingly with bristly hairs, which are rather more abundant at the tip. The senses of smelling and hearing are well developed. The Mole swims well. The general colour is shining black on the back, and lighter underneath. The fur is short, and extremely fine, but almost black at the extreme tip, and the ground-colour is deep blue. Moles that are white, fawn, mottled white and black, buff with grey spots on the back with orange belly, and even tortoise-shell, are occasionally met with.

Mole-skins are of little value as fur, on account of their small size. They are mostly made into waist-coats, for which the short fur is especially adapted. Several thousand skins are collected annually, and their value is about 1d. to 1¼d.

The provincial name of Mold-worp seems an adaptation from the German name of Maulwurf (mouth-thrower). The Mole makes long passages under the earth, which are very visible, as well as its nest, which it forms by throwing up the earth in the shape of a hillock with its fore-feet. In its subterranean dwelling it is attacked by a species of flea, which, like its victim, is nearly blind. The Mole does not hibernate, and continues its excavations in winter.

The Mole usually feeds early in the morning, and in the evening, boring long tunnels in pursuit of its prey. It may be taken before eight in the morning, and after six o'clock at night, by a person watching it throwing up the earth, and placing a spade a few inches below where it is working, and then catching it with the hand. Many thousands are captured with

spring-traps, and the carcasses of the poor ill-used Mole may be seen hanging up by scores on hedges and stiles. In some parts of England Mole-catching is a regular business.

The Weasel succeeds in capturing the Mole, and the Kestrel is also said to seize it when above ground.

The food of the Mole is entirely of an insectivorous nature. It is said sometimes to feed above the ground. According to the *Penny Magazine*, the Mole has 4 to 5 young, usually in the month of April.

In the drought of 1887 many Moles are said to have died for want of food, the earth, especially in clay soils, having become so hard that even digging was impossible. In severe frosts, the Mole often retreats to the shelter of hedges.

There are about 5,000,000 to 6,000,000 Moles in the British Isles, and the Rev. J. G. Wood mentions that the most conspicuous varieties are the Shrew, Changeable, Cape, and Star-nosed Mole.

The following lines are taken from Paley's "Natural Theology" (p. 155):—"The plush covering which, by the smoothness, closeness and polish of the short piles that compose it, rejects the adhesion of almost every species of earth, defends the animal from cold and wet, and from the impediment which it would experience by the mould sticking to its body. From soils of all kinds the little pioneer comes forth, and clean. Inhabiting dirt, it is of all animals the neatest.

"But what I have always most admired in the Mole is its eyes. This animal, occasionally visiting the surface, and wanting, for its safety and direction, to be informed when it does so, or when it approaches it, a perception of light was necessary. I do not know that the clearness of sight depends at all upon the size of

the organ. What is gained by the largeness or prominence of the globe of the eye, is width in the field of vision. Such a capacity would be of no use to an animal which was to seek its food in the dark. The Mole did not want to look about it; nor would a large advanced eye have been easily defended from the annoyance to which the life of the animal must constantly expose it. How, indeed, was the Mole, working its way under ground, to guard its eyes at all? In order to meet this difficulty, the eyes are made scarcely larger than the head of a corking pin; and these minute globules are sunk so deeply in the skull, and lie so sheltered within the velvet of its covering, as that any contraction of what we may call the eyebrows not only closes up the apertures which lead to the eyes, but present a cushion, as it were, to any sharp or protruding substance which might push against them. This aperture, even in its ordinary state, is like a pin-hole in a piece of velvet, scarcely pervious to loose particles of earth."

RUSSIAN MUSK-RAT OR DESMAN.

Myogale moschata.

German: Russischer Bisamratte.

This small animal is chiefly conspicuous by its long proboscis. It is aquatic, living in holes in the banks of rivers. It is also called the Wuychuchol, and the Musk-shrew. The length of the body is about 5 inches, not including the tail, which is about another 4 inches. The fur is short, very fine and soft, and of a dark purplish-brown colour on the back. It is a beautiful

silvery-white on the belly, and the under fur is dark blue. The whiskers are very abundant at the base of the mouth.

The fur of the Russian Musk-rat is appreciated to a certain extent in this country for mantle trimmings, and sometimes for glove-tops, but it meets with more favour in America. From 7,000 to 12,000 skins are collected annually, and the price varies from 6d. to 1s. 6d. per skin. The tails are sold to perfumers at 1d. to 1½d. each. By some naturalists the tails of this animal have been confounded with those of the American Musk-rat. This skin was supposed to keep away moths from articles of clothing, but this idea is erroneous, as it is itself very subject to attacks from this destructive insect.

This animal is found abundantly in Russia, and a few are met with in the Pyrenees.

MAMMALIA.

RODENTIA.

COMMON SQUIRREL.

Sciurus vulgaris.

French : Ecureuil ; Commercial, Petit gris. German :
Eichhörnchen ; Commercial, Feh.

This lively and graceful animal, so agile in its movements, and amusing in its antics, is found in a great part of the British Isles, wherever woods and forests exist, but few are met with in Scotland. It is found in Ireland, and is abundant in the counties of Kent, Sussex, and Surrey, and is met with as near London as Shooter's Hill. Squirrels formerly abounded in Richmond Park and the New Forest ; in the former place they had to be killed off, on account of persons shooting them on Sundays. In some parts, where it is very abundant, and is left undisturbed, it becomes almost tame, and will approach the dwellings of man, and even enter by the windows, more especially in the winter-time. Cats have been known to bring up young Squirrels, and it is said to be sometimes found in Rabbit-warrens.

The Squirrel is arboreal in its habits, making its nest, a large collection of twigs, resembling a Magpie's nest, and sometimes called a "drey," at the top of a tree, and sometimes in a hole in the trunk. It sometimes leaves the shelter of the trees, and feeds at several yards' distance from them, but at the first sound of alarm it bounds by small springs, rather than runs, to the nearest tree, placing itself behind it, in the same way that creepers and some other birds do. When in the

woods, the Squirrel jumps from branch to branch, and from one tree to another, with the greatest ease. Its special favourites are the pine, fir and beech trees. The cry of the Squirrel is of a chuckling character, and, when disturbed, it erects its ears, and bristles up its tail. At times it becomes the prey of the Goshawk, or Cat.

It is diurnal in its habits; it makes hoards, and partly hibernates, awaking at intervals to partake of its stores. It swims well. Dr. Buckland says its flesh is very good eating.

It is a favourite pet, but it is cruel to keep it constantly revolving in a circular cage, as is so often the case. The price of a live Squirrel is 3s. to 5s.

The food of the Squirrel consists of fir cones, walnuts, acorns, beech and other nuts, buds of the larch and young trees. It is said to be very fond of fruit, such as raspberries and strawberries, and some naturalists say it eats young birds. It picks off the husks of nuts with its powerful incisor teeth.

The Squirrel breeds from February to April.

The young, when born, are blind, and destitute of hair, and look like young rats. It has 6 to 8 teats, and produces 3 or 4 young at a time.

The Squirrel in England, and some parts of the continent, is from 6 to 8 inches long, not including the long bushy tail, which is another 6 inches. The ears are long and bushy. The feet are furnished with sharp claws. When adult, the colour is deep reddish-brown, and lighter underneath; when young, the back is red. The long hairs of the tail are lighter than the rest of the body, and sometimes even white. In the north of England the animal assumes a grey coat in winter, as it does in Russia. White specimens are sometimes found, and black are by no means uncommon.

A white Squirrel was captured in Norfolk in 1885, and a pied one was seen in 1888 in the same county. Drab varieties are sometimes met with in the Siberian Squirrel.

The skin and the tail might both be used for commercial purposes in this country, but a great drawback is the high cost for collecting them.

The Squirrel in former times was called the Calabar in commerce. It is found in large quantities in Sweden, Lapland, Russia, and Siberia, where it forms an extensive article of commerce, being exported to Germany, France and England in the form of linings. The skins and tails are also exported unmanufactured.

America also consumes a large quantity of Squirrel skins, and China is at times a large buyer. In fact, this serviceable fur is used nearly all over the world, being justly appreciated for its lightness, warmth, and at the same time low price. Squirrel skins are still collected as taxes or tribute in parts of Siberia, where they are taken in snares.

The fur of the Squirrel was formerly extensively used for boas in England, a few millions being imported annually. In 1839, 2,730,826 skins were imported, but this trade seems gradually to have declined, the Germans surpassing every one in dressing and preparing this fur. The Weissenfels dressers seem now to have almost monopolized this trade. This is chiefly owing to the advantages Weissenfels possesses in the various clay and salt deposits available near the town. There are about 20 firms engaged in this trade in Weissenfels, employing 300 dressers, 500 workmen, and from 5,000 to 6,000 women and children for sewing and piecing. By some firms 500,000 skins or more are dressed annually. The skins are sorted and matched

by them with consummate skill, and the backs are cut away from the bellies, and tied up in bundles of twenty.

The Russian dressing is much inferior.

Squirrel tails are extensively used in the manufacture of boas, fringes of mantles, and paint-brushes (so-called camels' hair). They are very suitable for the latter purpose, being soft to the touch, especially those from Kazan in Russia.

The raw tails are usually sold by weight; 6 lbs. being the recognized weight of 1,000 tails; when dressed, they are sold by the hundred.

The bellies of the skins are manufactured into those beautiful blue-white fur-linings, so much esteemed for opera-cloaks, etc. The backs are also made into similar articles, the more subdued grey colour rendering them more suitable for elderly persons. In Russia, the head, neck, and ears are also made into beautiful linings by themselves, labour in that country being so cheap.

The backs are also used for capes, glove-linings, trimming, and sets.

This skin is rarely dyed, except the large skins of Telautka, to imitate Marten.

The fur is occasionally used for felting, that is, making felt hats.

The Squirrel, which is red in England, becomes grey as we approach the East, growing darker and darker, till it reaches black in Japan.

The province of Kazan in Russia yields red, and reddish-grey skins, Viatka and Kargopol still greyer, and the eastern side of the Ural Mountains, as at Obskoi, grey. Then light blue skins are found in Yeniseisk, and near the river Lena blue, and still farther east, in the provinces of Yakutsk, Okhotsk, and Sakaminoi, dark blue and black, the ears and tails of these being almost

black. The only exception is the Tobolsky, which are dark blue, and to the east of the Ural Mountains. The very dark skins are of greatest value. Many are sent to Germany, but some reach the London market directly. The Okhotsk skins, from 50,000 to 100,000 (in 1891, 43,235 skins) arrive in London through Japan, or are imported by the Alaska Commercial Company *viâ* San Francisco. Each district producing a somewhat different variety, the price varies accordingly. It requires a good judge to distinguish the various sorts.

The chief sorts are as follows :—

Kazan	Odnoutsky
Viatka	Nertehinsky
Kargopol	Kolinsk
Obskoi	Irkutsky
Tobolsky	Podgomay
Yeniseisky	Altaisky
Lensky	Beisky
Petchorsky	Okhotsky
Sakaminoi	Podgrodin
Telautka	Kusnetsky
Tabaikalsky	Nominsky
Irschikorsky	Zardinsky (Kazan)
Ingaisky	Tinkiauky
Olekminsky	Kinisky
Wilmsky	Sawodsky
Sabaikalsky	Syrainksy

JERELANG SQUIRREL.

Sciurus bicolor.

This Squirrel inhabits Nepaul, and other parts of India. It is rather large, being about 18 inches in length, including the tail. The fur is thick and abundant, about an inch long, and of a deep brown shade with a darker ground. The belly is light. This species is rare.

MALABAR SQUIRREL.

Sciurus maximus.

The Malabar Squirrels exceed all the species of this family in size, the body being about 14 inches long, and the tail 16 inches. The colour is very peculiarly distributed; it is black on the shoulder, then deep red at the centre of the body, and the remainder black; the head is dark brown; the chest and fore-paws are light brown; the lower part of the hind legs is red, but the paws are brown; the belly is brown. The tail is long, and covered with long black bristly hairs. The fur is rather harsh, and is about three-quarters of an inch in length. The feet are furnished with strong claws. In some districts the colour of the Malabar Squirrel is red, with the exception of the hinder part of the body, which is black. The black tail in these specimens is tipped with white.

This Squirrel inhabits Southern India. Too few skins are imported to give a fixed value to this fur, which is, however, serviceable for small articles.

This species thrives very well in the Zoological Gardens of London.

EAST INDIAN OR THREE-STRIPED SQUIRREL.

Sciurus tristriatus.

French : Ecureuil des Indes. German : Ost-indisches Feh.

This small Squirrel is about 5 inches long, not including the tail, which measures 3 inches. It inhabits East India and Ceylon, and, as would be expected of an animal living in so warm a climate, its skin is of little or no value, barely fetching a few shillings per hundred when imported. The colour of the back is brown, divided by three long longitudinal white stripes; the belly is light brown. The hair is harsh, short, and coarse. The tail is covered with harsh hairs of five different shades, yellow-brown at the base, then black, then white, another band of black, finishing with white at the tip of the tail. A few hundred skins are occasionally sent to this country.

AMERICAN GREY SQUIRREL.

Sciurus cinereus.

The American Grey Squirrel is as large as the European and Siberian Squirrel, to which it is probably closely allied. The fur, however, is coarse, and of a light or deep grey colour, not the characteristic blue of the Siberian variety. The belly is slightly red. The tail is bushy and grizzly. It is rarely met with in commerce, although living animals are often to be seen in the Zoological Gardens. The black variety is by no means uncommon, and is at times imported. It inhabits a small portion of the Dominion of Canada, where it is sparingly distributed.

HUDSON'S BAY SQUIRREL.

Sciurus hudsonius.

This Squirrel is smaller than the foregoing, and is certainly a distinct species. It is about 4 inches long, with the tail of the same length. It is of a grizzly chestnut colour, or greenish colour, with a band of red on the back. The tail is thinly covered with coarse greyish hairs. The teeth are set in a circular socket.

This Squirrel is exclusively an inhabitant of the Hudson's Bay Territory, and has been called the Chickaree.

Six thousand skins were sold by the Hudson's Bay Company in 1885, at 3s. 6d., 4s. 6d., and 7s. per 100. In 1886, 8,441 skins were imported by the Company, but in 1891, only 473, which sold at 3s. 9d. per hundred.

Its fur, as may be seen from the above prices, is of little value, and is hardly worth collecting. It is sometimes made into linings. The skins are probably taken with those of other animals.

Dr. Richardson, in his "Northern Zoology," p. 187, says:—"It digs its burrows generally at the root of one of the largest and tallest trees it can select, and forms four or five entrances, around which very large quantities of the scales of spruce-fir cones are in process of time accumulated. It does not come abroad in cold or stormy weather, but even in the depth of winter it may be seen, during a gleam of sunshine, sporting amongst the bark of its tree. In the fur countries it subsists chiefly, if not entirely, on the seeds and young buds of the spruce-fir."

"The flesh of this Squirrel is tender and edible, but that of the male has a strong murine flavour."

RED-BELLIED FLYING SQUIRREL.

Pteromys magnificus.

This Squirrel inhabits Nepaul, Cashmere, and other parts of the Himalayas. It is about eight inches in length, and the tail another six. The colour is deep red, and covered sparingly with white hairs; the belly is lighter in colour; the tail is long and bushy. The skin is of little value.

AMERICAN FLYING SQUIRREL.

Sciuropterus volucella.

The American Flying Squirrel is about the same size as the foregoing, being 8 inches in length, not including the tail. The fur, as in all flying animals, is extremely fine and soft; it is of a darkish grey colour on the back; white and very soft on the belly; the tail is dark grey and bushy.

This is a rare animal, and is found in the Dominion of Canada. Its power of leaping or flying from tree to tree, with its lateral membranes distended, is very great.

AFRICAN FLYING SQUIRREL.

Anomalurus beccrofti.

This large Flying Squirrel inhabits the West Coast of Africa, and its skin is sometimes found in importations from that country. The length of this animal is about

3 feet, including the long black tail. The back and upper part of the parachute are black or dark brown; the under part is white. The fur is soft, and the parachute well developed. It is a very rare animal, and the skins are practically valueless for commercial purposes.

EUROPEAN SOUSLIK.

Spermophilus citillus.

The European Souslik measures about 6 inches, with a short tail of 2 inches in length. The general colour is yellowish-brown, covered with lighter spots. The tail is sparingly covered with short black bristly hairs about an inch long, white at the tip, and with a yellow ground. The hair is very short and harsh, about one-eighth of an inch, and tipped with white; the belly is almost bare, but the hair is longer at the sides, like the American Badger. The female has 4 teats.

The larger animals have a yellowish tinge, especially at the neck; the smaller are browner.

It inhabits the south of Russia, where it is found in large quantities, and causes considerable loss to the farmer by the great damage it does to the crops.

The Souslik is known commercially as the Kaluga or Susliki. It has only become an article of commerce the last few years. It is imported in the form of linings, and is chiefly utilized for making low-priced mantles.

It is said to burrow 9 feet deep.

There is an American variety of the Souslik, very similar to this animal, but rather larger. It is said to inhabit the western side of the Rocky Mountains.

RUSSIAN MARMOT.

Arctomys bobak.

French : Marmotte. German : Murmelthier.

This large Marmot is about a foot to a foot and a half in length, and exists in large quantities in Southern Russia, consuming grass and other crops, and also annoying the farmer by the hillocks which it throws up.

The burrows descend to a depth of 7 to 10 feet, and hillocks are raised outside by the earth which is removed. The Marmots make a hole to escape besides the main entrance ; they hibernate in winter, and have many habits in common with the Prairie Marmot or Dog of North America, such as sitting on its haunches, whistling, etc.

The colour is generally yellow, with longer, darker, bristly hair ; the belly is yellow, and the colour of the under fur dark. Many animals, however, especially when the fresh coat of fur begins to grow, are very dark, almost black. A fawn or dun variety is not uncommon. It has 8 teats. The fur is generally harsh, and not of much value, 2d. to 6d. being the usual price per skin. About 30,000 were imported one year.

Many skins are manufactured into rugs, and some are dyed brown, and used for capes, etc.

The Russian Marmot begins to hibernate in October, having previously laid in a store of hay for the winter. Mr. E. P. Thompson says the ordinary temperature of the Marmot is 102°, but during hibernation it is only 43°. Their fat is said to be used for machinery (*Field*, March 13, 1886). The Marmot, when captured young, makes an excellent pet.

The Alpine Marmot (*Arctomys marmotta*) is a well-known variety.

QUEBEC MARMOT.

Arctomys monax.

The Quebec Marmot is called the Weenusk by the Cree Indians, and also in commerce. By Richardson it is described under the name of the Woodchuck, and the name of the Whistling Marmot has also been given to it.

This Marmot is but very slightly smaller than the preceding species, being about a foot in length. The under fur is rather abundant, soft, and of a dark colour, and covered sparingly with long black and white hairs. A few long coarse reddish hairs are scattered over the belly, which is almost bare. The tail is from 3 to 4 inches long, and is also sparsely covered with bristly hairs. It produces nine young in a litter. Its food consists of vegetables, and in captivity it feeds on carrots and cabbages, and, like other Marmots, erects itself on its hind legs, and burrows in the ground. Black and drab specimens are met with not infrequently.

The Quebec Marmot inhabits the Dominion of Canada, especially Fort York district, and is also found in the United States.

The general colour of the fur is rather similar to that of the Grey Fox, and has a rusty tint. Its fur is of little value, the usual price being 5d. to 7d. a skin. About 400 or 500 skins are imported annually by the Hudson's Bay Company.

In 1891, 424 skins were sold, and fetched only 2d. each.

CASHMERE OR HIMALAYAN MARMOT.

Arctomys caudatus.

This Marmot, also called the Long-tailed Marmot, is very similar to *Arctomys bobak* in size, and in the deep grey hue of the fur, but it has not the very yellow hue of the latter.

CHINESE MARMOT.

The Chinese Marmot shows a marked similarity to the preceding variety, with the exception of the colour. It is a regular drab, with a white mark on the chest, and a white tip to the tail. These skins are sometimes imported (several thousands at a time), but the fur is of little value, not realizing more than 1d. to 2d. a skin.

PRAIRIE MARMOT OR DOG.

Cynomis ludovicianus.

The well-known Prairie Dog, or Wish-ton-wish, only finds a place in this volume on account of its being very similar to the Russian Marmot in size, habits, etc. Its skin is, however, only casually imported, and is of a dark grey or yellowish colour.

As regards their habits, we think it best to quote the following graphic description by Catlin, in his "North American Indians," vol. i. p. 76 :—

“The Prairie Dog of the American Prairies is undoubtedly a variety of the Marmot; and not probably unlike those which inhabit the vast Steppes of Asia. It bears no resemblance to any variety of dogs, except in the sound of its voice, when excited by the approach of danger, which is something like that of a very small dog, and still much more resembling the barking of a grey squirrel.

“The size of these curious little animals is not very far from that of a very large rat, and they are not unlike in their appearance. As I have said, their burrows are uniformly built in a lonely desert; and away both from the proximity of timber and water. Each individual, or each family, dig their hole in the prairie to the depth of 8 or 10 feet, throwing up the dirt from each excavation in a little pile, in the form of a cone, which forms the only elevation for them to ascend; where they sit to bark and chatter when an enemy is approaching their village. These villages are sometimes of several miles in extent; containing (I would almost say) myriads of these excavations and little dirt hillocks, and to the ears of their visitors the din of their barkings is too confused and too peculiar to be described.

“The holes leading down to their burrows are four or five inches in diameter, and run down nearly perpendicular; where they undoubtedly communicate into something like a subterraneous city (as I have formerly learned from fruitless endeavours to dig them out), undermined and vaulted; by which means they can travel for a great distance under the ground, without danger from pursuit.

“Their food is simply the grass in the immediate vicinity of their burrows, which is cut close to the ground by their flat shovel teeth; and, as they some-

times live twenty miles from any water, it is supposed that they get moisture enough from the dew on the grass, on which they feed chiefly at night; so that (as is generally supposed) they sink wells from their underground habitations, by which they descend low enough to get their supply. In the winter, they are for several months invisible; existing, undoubtedly, in a torpid state, as they certainly lay by no food for that season—nor can they procure any. These curious little animals belong to almost every latitude in the vast plains or prairie in North America.”

This Marmot, according to Elliott, is also found in Alaska, but few skins are imported. It would dye well, and would be serviceable as a low-priced fur if it were not for the cost of trapping. The fur, or rather hair, is of a harsh character, and of a darkish grey colour. The Prairie Dog breeds well in captivity in this country. It is about 1 foot in length.

It is very difficult to secure the body of the Prairie Dog when shot, as it disappears so quickly into its burrows. Like the Hamster and Marmot, it is constantly erecting itself and sitting on its hind feet.

The Prairie Dog is found in most of the Central States of America, such as Texas, etc.

BEAVER.

Castor canadensis.

French : Castor. German : Biber.

The well-known Beaver, the largest Rodent in existence, furnishes one of the most important furs in the world. In the old days of the fur trade, its pelt was the

standard by which all barterers were settled: so many blankets went to a Beaver skin, so many Mink or Muskrat skins, more or less, were considered equal to a Beaver, and a certain number of Beaver skins to a gun. The Beaver skin, in fact, throughout British North America passed currency. We must, however, receive with a certain amount of doubt the story of the exchange of a musket for Beaver skins, which transaction is said to have taken place on the Peace River, and the Beaver skins are stated to have been heaped up to the height of the musket standing on end.

The Indians now are mostly paid in cash, instead of in kind. They know the value of the skins, and although they still bring the bulk of their collection to their old friends, the Hudson's Bay Company, yet they are open to an advantageous bid from a private trader.

The Beaver has been adopted as the crest of the coat-of-arms of the Dominion of Canada, and was formerly depicted on the old postage stamps of the province of that name.

The Beaver measures from 1 to $2\frac{1}{2}$ feet long, but a few exceed 3 feet. The tail, which is flat, scaly, and devoid of hair, is about 9 inches long. The incisor teeth are extremely strong and well developed, and are set in a circular socket. The hind feet are webbed, but the front are not. The upper part of the fore-paws are protected with harsh hair. The claws are very strong. The nails on two of the toes of the hind feet are double, the use of which has not yet been discovered. The colour of the fur varies from light to dark brown; in many cases it is almost white. Pure white, fawn, brown with silvery hairs, mottled, and grizzly Beavers are rarely met with, only about twenty animals of these colours being found annually in the large importation of

about 80,000 skins of the Hudson's Bay Company. Black specimens are more abundant ; from 200 to 500, and sometimes even 800, are taken in one year ; these are chiefly from the Moose River district, and Columbia. The under fur is about two-thirds of an inch long, thick, dense, soft, and of a beautiful drab colour ; it is shorter and denser on the belly than on the back, to protect it from the cold water. The longer hairs on the back, called water-hairs, are from 2 to 3 inches long. The tail of the Beaver was considered a great delicacy in the time of the old fur-trading companies, and was one of the dainty dishes of the board. The flesh is also good eating, and even the pelts have been eaten by the trappers, when other provisions have failed, the fur being cut off, and preserved.

The Beaver inhabits the greater part of North America, the range extending farther north than most other fur-bearing animals, except the Hare, Lemming, Polar Bear, Arctic Fox, and Ermine. It was once extensively found in Alaska, where the animals are large, and light-coloured, but of late years they have much decreased in numbers there. Those from the district of Nooshagak are the best. The Beaver is sparingly found in Labrador. Fort George produces very large animals, about 3 feet in size ; these, as well as those from Moose Factory (a very important producing district), are very dark brown in colour. It is also found in the Lakes, Nova Scotia and California. The Beavers inhabiting Oregon and the Rocky Mountains are of a very light colour, almost white ; this is probably owing to the altitude at which they live, and the animal should not be classed as a different species. Mexico, Arizona, and others of the Southern States, are also habitats of this animal, but the skins from these parts are of poor

quality, being heavy in the pelt and pale in colour. The Mexican have a glazed appearance on the pelt. The Beaver formerly inhabited England, and it was abundant in Wales at a comparatively recent period. Mr. E. P. Thompson says (*Standard*, 18th October, 1887) that the name of Beverley in Yorkshire appears to have been derived from the Beaver, and in the arms of this town occur three Beavers. Beverage in Worcestershire, Bevercotes in Nottinghamshire, Beverstone in Gloucestershire, and Beversbrook in Wiltshire are similar names.

A few Beavers still exist on the Rhone in France, a specimen of which is occasionally white, and it is still found, though in very reduced numbers, in Austria, Russia, Norway, and Prussia. In the winter 1885-86 seventeen Beavers were killed in Prussia. Two Beaver colonies have lately been discovered at Amlid near Christiana Sound, where it is said to feed on the bark of birch and aspen trees.

The Beaver has the wonderful power, which no other animal possesses, of felling trees; this it effects by gnawing through the wood with its powerful chisel-like teeth, and it causes the tree to fall in the direction required by gnawing one side lower than the other. They swim with the pieces of wood, and place them in position. They erect dams across a valley, getting a body of water to collect in what would otherwise be small streams, thus forming the fertile Beaver meadows, with the moisture and alluvial soil collected by the dam. The Beaver also causes the water of a lake to rise, by building a dam at the outlet. It only works at night. Beavers erect circular dwellings of logs, mud, and stones, plastered down with mud on the roof, and with an entrance on the water side. Beavers generally live in

companies ; when living singly, it sometimes lives in a hole in the bank. The usual manner of capture is by trappings, but they are sometimes taken in nets, or their houses are broken into, and when the animals take refuge in holes in the banks, they are speared. When a Beaver is surprised in the water, it gives the alarm by striking the surface with its tail.

The Beaver, both male and female, has two glands, situated in the hinder part of the body, and filled with a secretion resembling sealing-wax, known in the crude state as Castorum. This is highly appreciated as a drug, fetching from 38s. to 45s. 6d. per lb. according to the brand and quality. The Hudson's Bay Company import about 2,000 lbs. of Castorum annually, which is sold in December and January, and is briskly competed for. A smaller quantity is imported by other traders from the United States, and Canada from time to time. In 1891, 1,486 lbs. were sold in London. Castorum is chiefly purchased for Germany, and the continent. The districts that produce the largest quantities are Fort York and Moose River. The sort most valued is that with a reddish hue. It has a peculiar, but not disagreeable smell, and, when it is sold, is quite hard, and has somewhat the appearance of the green fig when ripe in this country. On the death of the animal, the two glands, or, more correctly, the double gland, must be extracted at once.

The quantity of skins imported is considerable. Beaver skins, as well as Musk-rat, are always sold by the Hudson's Bay Company in January. This Company sold 63,419 Beaver skins in January, 1891. They vary in price from 5s. 3d. to 69s., according to size and quality.

The quantity seems not to have materially decrease

since 1743, in which year 127,080 skins were imported into La Rochelle in France, the French then enjoying the monopoly of the fur trade. Before that period, when New York was occupied by the Dutch, Beaver skins were sent to Amsterdam. Beaver skins in those days were sold for wampum, which was then the means of barter. According to Adrian Vander Donk, 80,000 skins were taken yearly in the State of New York.

The incisor teeth of the Beaver were used by the North American Indians, as well as by the earlier inhabitants of Britain, as cutting instruments.

Many skins are sold with the long top or water-hairs removed, thus showing the beautiful soft under fur. This process is called pulling, and is performed with a long wooden knife, and is chiefly the work of women. Another method, which is called unhairing, is to soak the skins, and then remove the upper hairs by scraping with a knife.

Some skins are dyed brown or black, either with or without these water-hairs. In the dyed state, the skin is sometimes furnished with white hairs to imitate the Sea-Otter fur, and many pulled and unhaired skins are silvered with acid.

Beaver skins are made into sets of trimmings, cuffs, or muffs, according to the prevailing fashion, and a few clipped skins are used in the glove trade.

Many skins are exported to France, Germany, Russia, and America, but a large quantity are also used in this country.

In the days of the Beaver hat trade, Beaver skins, which felt very well, were exclusively bought for cutting and felting, and were sold by the pound, but now this trade has almost ceased, owing to the introduction of silk hats. Messrs. Christy & Co., in the last 10

years, have only bought some of the smaller skins at the public auctions, and now buy scarcely any. At the collapse of this trade, some houses went into the leather trade, whilst others devoted their energies to the fur trade.

In the olden times, much care and capital were devoted to the manufacture of the Beaver hat: the skins were first washed to remove the grease; then pulled, that is, the top hairs were removed; the fur was then cut off the pelt by machinery, and blown to remove the coarser hairs, and afterwards worked on the nap of the hat, and dyed.

The following are some of the prices paid for Beaver fur in 1857:—

	Cleaned.	Uncleaned.
Black Beaver, per lb.	32/-	...
Brown " "	36/-	...
" " cut	38/-	..
" " rosy	36/-	37/-
" " rosy cut	38/-	39/-
White "	34/-	32/-
" " cut	36/-	34/-
" " rosy	34/-	32/-
" " rosy cut	36/-	34/-
Pale	36/-	...
" " cut	38/-	...
Silvery "	50/-	...
" " cut	52/-	...
" " superior	58/-	...
Rocky Mountain Beaver	70/-	...

The Beaver, as might be inferred from its having formerly inhabited England, breeds in captivity in this country. The food of the Beaver is of a vegetable nature, and it is often fed on bread and cabbage in

captivity. Those introduced by the Marquess of Bute thrive very well near Rothesay in the Isle of Bute. A similar attempt was also attended with success in Suffolk in 1872.

Dr. Richardson narrates, in his "Northern Zoology," p. 107:—

"The Beaver attains its full size in about three years; but breeds before that time. According to Indian report, it pairs in February, and after carrying its young about two weeks, brings forth from four to eight or nine cubs, towards the middle or end of May. Hearne states the usual number of young produced by the Beaver at a time, to be from two to five, and that he saw six only in two instances, although he had witnessed the capture of some hundreds in a gravid state. The female has eight teats. In the pairing season the call of the Beaver is a kind of groan; but the voice of the cubs, which are very playful, resembles the cry of an infant."

In an old work on America (p. 174), we find that, speaking of New York, "The Beaver live in the Water and on the Shore in great Companies together, in Nests built of Wood, which deserve no small admiration, being made after this manner: The Beaver first gather all the loose wood, which they find along the banks of the Rivers, of which, if there be not enough, they bite the Bark off from the Trees in the neighbouring Woods, then with their Tusks, of which two grow above and two below in their Mouths, they gnaw the main body of the tree so long that it drops asunder. Their nests, very artificial, are six Stories high, cover'd on the top with Clay to keep out Rain; in the middle is a passage which goes to the River, into which they run so soon as they perceive a Man; to which purpose one of them stands

Sentinel, and in the Winter keeps open the Water from freezing, by continual moving of his Tail, which is flat without hair, and the most delicious Meat that can be had.”

BEAVER RAT.

Hydromys chrysogaster.

The Beaver Rat, or, as it is sometimes called, the Golden-bellied Beaver Rat, is one of the few mammals of Australia which possesses a thick under fur. It is of a grizzly colour, like a Rat; the belly is either of a golden colour, like a Musk-rat, or of a light grey. The hair or fur is short, and the under fur abundant.

The tail is about 6 inches long, dark or black in colour, and the part nearest the top is white.

The length of the body is from 6 to 8 inches.

This animal inhabits Australia, and from 50 to a 100 skins are imported amongst sundry other skins from that continent; but they are not of much value owing to their scarceness.

HAMSTER.

Cricetus frumentarius.

French : Hamster. German : Hamster.

The Hamster inhabits Germany and Russia, where it is found in considerable numbers, causing great destruction to crops by the amount of grain it consumes.

It is exclusively a vegetarian. It burrows in the earth, and hibernates. Like the other Rodents that hibernate, it awakes at intervals during the winter to feed on its store of food. It is a prolific animal, but some years it is more abundant than in others. Mr. E. P. Thompson says that its cheeks are furnished with pouches which hold about two ounces of grain each.

The Hamster, which somewhat resembles a Rat, is about 8 to 10 inches in length, not including the short tail, which is 1 to $1\frac{1}{2}$ inches long, and almost bare of hairs, especially at the tip. The general colour is brownish-grey, and the under fur is blue. The cheeks are irregularly marked with red, with a white patch immediately below. The ears are short, and nearly bare. The throat is white, and there is a yellowish-white patch on the fore-leg, and another close to it on the side. The belly and legs are black, but the feet are white, and are furnished with small white claws. The middle toe is the shortest, and the two exterior toes the next shortest. The whiskers are sparse and black. The incisor teeth are long, especially those of the lower jaw. Like other Rodents, it has the power of raising itself on its hind feet.

As a fur it is of little value, except for linings, for which purpose it is well adapted by the lightness of its pelt, and the beautiful contrast of colours on the back and sides, part of the belly being cut away. Many thousands are imported annually into England in this shape. Two collections take place annually, in May, and in September and October, the former catch being the better, like the winter catch of the Musk-rat.

Black examples are sometimes met with, and white, or light fawn, are by no means uncommon.

WATER VOLE.

Arvicola amphibius.

French : Rat d'eau, or Campagnol amphibie.

The Water Vole, or Water Rat, as it is commonly called, is a fur-bearing animal, although the skins are not used for fur purposes.

It is aquatic, and vegetarian in its diet, living on the roots of plants, bark of trees, fallen apples and pears, etc. It dives with great rapidity, and lives in holes in the banks of rivers and ponds, in the same way that the Beaver does in Europe. The Water Vole carries its young in its mouth to a place of safety (*The Field*). It is of a greyish-brown colour, and the under fur is blue like that of the Musk-rat. Black specimens are occasionally found, and instances of white ones are from time to time recorded in the *Field*, but they are not common.

The Water Vole inhabits England and France, and is killed by the Weasel, and the common Black or Norwegian Rat.

The resemblance of this animal to the Musquash is very striking, both in form and habits, and it may even prove to be the same animal. It would be interesting to be able to ascertain whether in ancient times the Water Vole lived in mud dwellings like the Musk-rat. Probably, like the European Beaver, the habit of dwelling in holes in river-banks is an acquired one, and was adopted in order to escape from the attacks of hunters, who are able to destroy an earthen mound with greater facility.

LEMMING.

Myodes lemmus.

French : Lemming. German : Bellichmaus.

The Lemming, which is only about 3 or 4 inches in length, bears great similarity in colour to the Hamster, being brownish-grey, and a lighter brown underneath. It also resembles it in the abundance with which it is found in certain seasons, moving in thousands from place to place, until at last they are stopped by the sea or some other natural obstacle. The food of the Lemming is entirely vegetarian. Its flesh is said by the Rev. J. G. Wood to be good eating. This fur is of little value, except as a lining, and the skin is barely worth a penny.

The Lemming inhabits Norway and Sweden, and a similar species is found in the extreme North of America.

MUSQUASH.

Fiber zibethicus.

French : Rat musqué. German : Bisamratte.

The Musquash, or Musk-rat as it is sometimes called, especially in America, derives its name from the pungent odour which its skin exudes. It was also known at one time under the name of Besam, which was probably a corruption from the German.

The size of the Musquash is from 6 to 12 inches, some large specimens exceeding one foot; this does not include

the tail, which is another 8 inches. This appendage is dark, scaly, and almost destitute of fur, having only a few short hairs, which are ranged chiefly along the edges; it is not rounded like a rat's tail, but is blunt and flat. The general colour is brown, but the back is, as a rule, darker; the cheeks are lighter, and the belly, although sometimes of a chestnut brown in the Canadian districts, is almost white in others, but in the majority grey, and speckled. The ears are very short, and hidden in the fur. The whiskers are long, black, and few in number. The fore-feet are short, but the hind legs are long, and the feet slightly webbed. The female has ten teats, six of which are situated near the fore-legs, and the others near the hind legs. In the Northern districts the skin is thin, but in the Southern States the pelt is very thick, like that of most other aquatic animals. The fur on the back is rather short and soft, and covered with longer hairs, called water-hairs; on the belly the fur is very much shorter. The ground-colour of the fur is generally blue, but in some cases it is whitish. Situated near the tail are two glands, containing the musk-like secretion.

The Musk-rat is aquatic, or rather amphibious, in its habits, living in the water, and diving with great quickness as soon as it is observed. It erects circular huts, somewhat after the style of a Beaver. Its food, like the Water Vole of Europe, is vegetarian. Musk-rats bite each other to a great degree, and in times of famine it is said that they will devour one another.

The Musk-rat is found throughout the Dominion of Canada, with the exception of the Barren Lands, and it attains its largest size in the province of Canada. A certain quantity are found in Alaska, and a few in Labrador and Nova Scotia. It is most abundant in

Minnesota and Red River Settlements, and extends from New York to California, Wisconsin, Virginia, Pennsylvania, and Delaware.

The skins from Labrador and Nova Scotia are a very fine colour. In Alaska and the Mackenzie River district, the Musk-rat is of small size, owing no doubt to the scarcity of vegetarian food, but the fur is extremely fine and of a light silvery colour; the belly is almost white. Skins from these districts were much sought after when Beaver hats were in fashion.

The black variety, although sometimes found in the Western States and in Canada Proper, exists only in considerable quantities in the more Southern States, such as New Jersey and Delaware. In this variety the long hair of the back is of a beautiful black; the under fur is black, with a bluish ground; the fur on the belly is short and of a speckled whitish-grey colour, with a black stripe in the centre; the cheeks are dark and speckled. These skins are chiefly used in Russia for coat-linings, but a few are sometimes used in this country and in France for cloaks, etc., and with the top hairs removed for gloves. No black Musk-rats are found in the extreme north, they therefore furnish an instance of greater depth of colour being found more south. The present price (1891) is from 1s. 3d. to 1s. 11d. for No. 1 large skins; in January, 1875, 3s. 11d. was paid for this sort. White Musquash are uncommon, and fawn and mottled are sometimes met with, as well as skins with silvery hairs, but these are very rare.

The skins are stretched in various ways; those from Alaska and Columbia are turned inside out, and are nearly closed, looking like little pieces of dried flesh or skin. Others are cut quite open or flat, and are then of less value. Others, again, are only cut at the head, and

stretched into a flat circular form ; these are called bags or pockets, and are abundant in the western districts of the United States, and a few also in Canada Proper. Skins that are "doubled wrong," or folded sideways, called by the French *bonnets d'évêque*, are now rarely met with. The usual way is to open them at the head and tail, turn them inside out, and fold the back against the belly. A few are sent, hair outwards, from Nova Scotia and Canada.

The Musquash is a very prolific animal. "In latitude 55° it has three litters in the course of the summer, and from three to five young at a time. They begin to breed before they attain their full growth" (Northern Zoology). The enormous quantities in Minnesota and Red River district are perhaps due to the abundance of water ; but extreme frosts, which freeze up the entrances to their huts, and also diseases at times, carry them off by thousands.

Most animals are trapped, but some are also speared and shot. There are two collections in the year, one in the autumn, which consists of the half-seasoned summer skins, and the other in the spring, consisting of the winter skins, which are of better quality, and bring a higher price. The latter catch is sometimes shortened by the severity of the weather.

This fur is one of the best known furs, and is extensively used in Europe, America, and Australia. From 3,000,000 to 4,000,000 skins are imported annually. In 1891 the Hudson's Bay Company sold 554,104 skins.

These skins are used almost exclusively for fur, either in the natural state, or dyed black, and light and dark brown. They are sometimes pulled and dyed to imitate Seal, and are made into boas, capes, jackets, muffs, bags, etc., the bellies being especially suited to

this purpose. Many are also used for coat-linings, kittens or the young animals being especially suitable.

At one time this fur was only used for cutting, that is, for making hats. The late Sir William H. Poland was the first to have these skins dressed in any quantities, and he purchased two entire importations of the Hudson's Bay Company for this purpose.

In 1857 the following prices are quoted for Musquash fur :—

White Musquash	26s. per lb.
Silvery	27s. „
„ superior	28s. „
„ Mackenzie River	30s. „
„ cheek	30s. „
„ „ superior	34s. „
„ „ Mackenzie River	38s. „

The price of Musquash fluctuates very much. The usual price for the best from Canada is from 1s. to 1s. 6d. Second and third quality and small skins are much cheaper. In January, 1875, 2s. 6d. was paid for No. 1 large brown Canada, and in 1806, 2s. 9d. was even paid per skin.

By some white people, the flesh is said to be esteemed good eating, and to resemble wild duck.

In an old work on America the following account of the Musquash is given (p. 147) :—

“The Musquash is much like a Beaver for shape, but nothing near so big; the male hath two stones, which smell as sweet as Musk, and being killed in Winter never lose their sweet smell. The skins are no bigger than a Coney skin, yet are sold for five shillings a piece, being sent for tokens into England; one good skin will perfume a whole house full of Clothes if it be right and good.”

(P. 173) : "This Country (New York) breeds many Musk Cats, especially in Marshy Grounds. These Beasts are beautiful to the eye, having black Speckled Skins, their Mouths full of sharp teeth, and their tails being long trail after them."

According to this work, the Musk-rat seems also to have inhabited Tobago. This local variety is thus described.

(P. 382) : "The great Musk-rats are as big as a Rabbet, and like them live in holes made in the ground, but resemble an European Rat, only their skins are black, except one part of their bellies, which are white ; they smell so strong of Musk that it overcomes those that carry them."

Dr. Richardson, in his "Northern Zoology," p. 117, says that "their flesh is eaten by the Indians, and when it is fat they prize it for a time, but are said to tire of it soon : it somewhat resembles flabby pork."

COYPU RAT, OR NUTRIA.

Myopotamus coypus.

French : Rat gondin. German : Affe.

This large Rodent, next in size to the Beaver, is only found in Brazil, and the Argentine Republic.

The Coypu Rat is about 2 feet long, not including the tail, which is from 9 to 10 inches in length. The general colour is a speckled yellowish-brown ; the cheeks and belly are yellowish, the whiskers white. Many are a light brown colour all over, some are nearly white, and others are very dark on the back. The ears are short. The water-hairs are long, about 3 inches, speckled, and bristly. The tail is long, and covered with bushy hairs.

The under fur is dense, except on the back. The food of the Nutria is strictly vegetable. It brings forth about 6 or 8 young at a time. The teats, which are about 8 in number, are placed on the side of the back, thus enabling the young to feed without diving.

The Coypu Rat is an aquatic animal, swimming and diving with great ease. It is very abundant in its native country.

It is said to be readily tamed, and breeds well in captivity in England.

The skins of this Rodent are exported from Buenos Ayres and the Brazils, chiefly to New York, where the annual importations vary from 46 to over 900 bales. The annual collection varies considerably from year to year, the average quantity being from 300,000 to 500,000 skins.

A certain quantity are also exported annually to Hamburg and France, and from 50 to 100 bales to England.

Like most other Rodents, its fur is used for cutting, or hat purposes, and is sold by the lb.

The following are the prices of Nutria fur in 1857 :—

Side	.	.	.	.	28s.	per lb.
„	XX	(superior)	.	.	30s.	„
Back	.	.	.	.	29s.	„

The Nutria skin is also used as a good durable fur. It is pulled or unhaired, and the under fur is dyed dark brown, when it is one of the best imitations of Fur Seal, for caps, muffs, and other small articles. This skin is also dyed black, and brown, with the hair unremoved, and it is also pulled and silvered in imitation of Beaver.

The best way to flay the Nutria is by opening it up the back, as by this means the good short fur of the belly is obtained in one piece.

CHINCHILLA.

Chinchilla brevicaudata.

French : Chinchille. German : Chinchilla.

This beautiful creature, so well known on account of its soft fine fur, is an inhabitant of Peru and Bolivia, the best skins coming from the mountainous districts near Arica. During the late war between Chili and Peru but few skins were imported. The usual quantity sent to this country ranges from 5,000 to 80,000, and the price varies from 6s. to 240s. per dozen for large skins, according to demand, the general value being 89s. Middling-sized and small skins are cheaper.

Chinchilla fur is justly appreciated, being the finest and most delicate of all furs. The skin is thin and light, and the fur is about two-thirds of an inch in length. These skins are used in England, France, and America, and a few also in Canada, Australia, and Italy.

The Chinchilla, like most of the Rodents, lives on vegetable matter. It is about 9 inches long, and the tail from 5 to 6 inches. The ears are rather large, broad, silky, and almost devoid of hair. The whiskers are from 2 to 3 inches long, and bristly, some being white and some black. The general colour of the fur is grey, and varies from light slatish-white to dark blue along the back; the belly is lighter; and the ground-colour of the fur is blue. The tail is covered with long, bristly, coarse, grey hairs, which are thicker towards the tip. The female has two teats.

White varieties are rarely found, and drab are extremely rare.

CHILI CHINCHILLA.

Chinchilla brevicaudata.

The Chili Chinchilla resembles the foregoing, but it is slightly smaller, and much lighter in colour, and its fur is consequently of less value. It fetches 10s. to 45s. per dozen, according to demand. Many of the skins are greasy. The fur is long. Its food is vegetable. It is an inhabitant of Chili, and is a variety of the foregoing Chinchilla.

BASTARD CHINCHILLA.

Chinchilla lanigera.

French : Chinchille bâtard, or de la Plate. German :
Bastard Chinchilla.

The Bastard Chinchilla is more numerous than either of the foregoing varieties, but is much smaller, being about 6 inches long, and the tail about 4 inches.

This pretty animal inhabits La Plata.

The fur is short, although from some districts it is longer and thicker, and is very soft to the touch. The general colour of the fur varies from light to dark blue or grey, like the real Chinchilla. The whiskers are long, grey or white. The tail is bristly, and thicker at the tip. It produces from five to six young at a birth.

The price of a dozen skins varies from 3s. 6d. to 30s., according to demand; the present value is about 8s. A large quantity of skins is sometimes imported, some

arriving in London, and some *viâ* le Havre in France. This fur is chiefly used in England and the United States, and a few in Germany. It is manufactured into sets of trimmings, muffs, capes, boas, etc. Many skins are shipped with pepper to preserve them from moth or worm.

CHINCHILLONE, OR LAGOTIS.

Lagotis curieri.

One would naturally infer from the Spanish name Chinchillone, or small Chinchilla, that this animal was very small, but it is, on the contrary, almost double the size of the Chinchilla proper, being about 1 foot long, not including the 8 inches of the tail.

The fur is long, fine, and rather thick, but being ragged, is consequently of little value, and but a few hundred skins are imported annually, fetching about 5s. per dozen.

The Lagotis is yellower than the Chinchilla ; it is of a dingy purplish-drab, yellower at the neck, and there is a ridge of black running down about one-third of the back. The ears are rather long and upright, like those of a wild Rabbit. The tail is covered with bristly hairs similar to the Chinchilla. There is said to be a black variety of this animal, but we have never seen one.

The Chinchillone inhabits Buenos Ayres, and other parts of South America—perhaps Bolivia and Peru.

By some persons this animal is supposed to be a cross-breed between the Rabbit and Chinchilla.

VISCACHA.

Lagostomus trichodactylus.

German : Biscacha.

The Viscacha, or, as it has sometimes been called, the Vizcacha, or Biscacha, is at times described in the catalogues of skin and hide sales under the name of Deer.

It is rather a large Rodent, being about 2 feet long to the root of the tail. The colour is dark brown or black, with a white belly, and a light under fur. The head is long, thick, and broad, and closely attached to the body. There is a black line across the eyes, and another along the mouth. The hair is long and bristly, with very little under fur. The whiskers are black and abundant. The ears are short. The short tail, measuring about 6 inches, is sparsely covered with short bristly hairs. The skins of this animal are sometimes imported in rather large quantities, but they are of little or no value, except for leather.

The Viscacha breeds very readily in captivity, and thrives and breeds well in the Gardens of the Zoological Society.

It is an inhabitant of South America.

Mr. W. H. Hudson, in the "Proceedings of the Zoological Society," 1872, thus describes the habits of the Viscacha :—

(P. 822) : "The Vizcacha in the pampas of Buenos Ayres live in societies, usually numbering twenty or thirty members. The village (called here 'Vizcachera') is composed of a dozen or fifteen burrows or mouths; for

one entrance often serves for two or more distinct holes. Often, when the ground is soft, there are twenty or thirty or more burrows in an old vizcachera, but on stony, or 'tosca,' even an old one may have no more than four or five burrows. They are deep, wide-mouthed holes, placed very close together, the entire village covering an area of from 100 to 200 square feet of ground."

(P. 828): "It is probably a long-lived, and certainly it is a very hardy animal. Where it has any green substance to eat, it never drinks water; but after a long summer drought, where for months they have subsisted on bits of dried thistle-stalks, and old withered grass, if a shower falls they will come forth from their burrows even at noonday and drink eagerly from the pools.

"It has been erroneously stated that they subsist on roots. Their food is grass and seeds; but they may sometimes eat roots, as the ground is occasionally seen washed up about the burrows. In March, when the stalks of the perennial cardoon or castle-thistle (*Echinops ritro*) are dry, the Vizcachas fell them by gnawing about their roots, and afterwards tear to pieces the great dry flower-heads to get the seeds imbedded deeply in them, of which they seem very fond. Large patches of thistle are often found served thus, the ground about them literally white with the silvery bristles they have scattered.

"The strongest instinct of this animal is to clear the ground thoroughly about its burrows; and it is this destructive habit that makes it necessary for cultivators of the soil to destroy all the Vizcachas in or near their fields.

(P. 829): "The Vizcachas are cleanly in their habits; and the fur, though it has a strong earthy smell, is kept exceedingly neat."

(P. 830): "The language of the Vizcacha is wonderful for its variety. When the male is feeding he frequently pauses to utter a succession of loud, percussive, and somewhat jarring cries; these he utters in a leisurely manner, and immediately after goes on feeding. Often he utters this cry in a low grunting tone. One of his commonest expressions sounds like the violent hawking of a man clearing his throat. At other times he bursts into piercing cries, which may be heard a mile off, beginning like the excited and quick repeated squeals of a young pig, and growing longer, more attenuated, and quavering towards the end. After returning alarmed into the burrows, he repeats at intervals a deep internal moan."

(P. 831): "It is a very unusual thing to eat the Vizcacha, most people, and especially the Gauchos, having a silly unaccountable prejudice against their flesh. I have found it very good, and while engaged writing this paper have dined on it in several ways. The young animals are rather insipid, the old males tough, but the mature females are excellent, the flesh being tender, exceedingly white, fragrant to the nostrils, and with a very delicate game flavour."

SPRING HAAS.

Helanys capensis.

The Spring Haas reminds one of the Lagotis, but it is larger, being about 18 inches in length. The tail is long, nearly the same length as the body, and is covered with hair, which is black at the tip. The hair is bristly, and the general colour is light brown, but the belly is pure white. The skin is of little or no value. This Rodent inhabits South Africa.

COMMON HARE.

Lepus europæus.

French: Lièvre. German: Hase.

The Hare in England is coursed by Greyhounds, and hunted with Harriers. It shows great apprehension when being chased, and, when seized, utters a piercing cry. It is a comparatively inoffensive, harmless creature, living in fields and open country, and rarely doing damage to crops or vegetation, except in the winter, when, if the winter be severe, it enters gardens, and gnaws the bark of young trees and shrubs. When the snow is very deep, the Hare avails itself of this means to reach the higher twigs or branches. We cannot therefore see the reason of its having been included in the Ground Game Act, its powers of destruction, and increase being so limited in comparison to the Rabbit, and its numbers have considerably declined since the passing of this measure.

The Hare is protected by a close time in Ireland, commencing April 20th, and ending August 11th. Hare-hunting begins in England on October 28th, and continues till February 28th, but many are shot before the hunting season, and some are killed in March by Harriers.

Hares are hunted two or three days a week, with packs of from 12 to 55 Hounds.

	There are 99 packs of Harriers in England ;
	,, 6 ,, ,, in Scotland ;
and	,, 25 ,, ,, in Ireland.

Hares sometimes take to the sea when hunted, and

they have also been known to take refuge in a hole or burrow when close pressed. We have seen a strong Hare, surrounded by a pack of 12 Hounds, escape from their clutches by leaping, and very fine dodging. The Hare has been known, when escaping from the Hounds, to have rushed against a Sheep unnoticed in its fright, and to have been killed by the collision. The hind legs of the Hare being so much longer than the fore, enables it to travel with great speed, and thus elude the attacks of its enemy, the dog. Its habit of crouching at times on the ground is the reason of its being coursed with two Greyhounds. In turning down Hares, 8 to 10 does should be found to one buck.

The Hare is about $2\frac{1}{2}$ to 3 feet in length, and its average weight is 7 or 8 lbs. An enormous English Hare is recorded in the *Field* to have weighed $13\frac{1}{2}$ lbs. The teeth are highly developed, and are placed in a circular socket in the skull. The upper lip is divided. The hind feet are thickly padded. The general colour of the fur is brownish-grey of a rather warm shade; the cheek is rather yellower, and the belly whiter. The under fur is of a whitish hue. The ears are long, and tipped with black. The tail is short, white underneath, and black above. The eyes are large and dark. The fur is rather short and thick. In winter the white of the belly extends to the sides, and the ears, cheeks, and haunches also become whiter, especially if the winter be severe, and in northern regions the grey gradually, but wholly, disappears. The average life of a Hare is said to be from six to seven years. It is in best condition in January and February. Black varieties, although very rare, are sometimes found. One was shot in Suffolk in 1848, another was coursed and killed at Enville in 1853, and several have been shot near Rugby. Parti-coloured

and pied examples are sometimes met with; fawn-coloured are great rarities.

The Hare does not live in a burrow like the Rabbit, but in a hollow or depression in the surface, which is called its "form." It pairs in March. One, two, or five young are produced at a birth, but the latter quantity is not often met with, and two is the most usual. The young are born in April, May, June, July, or August. They are born with their eyes open, and are called leverets. The Hare chews the cud, and, like other Rodents, is able to raise itself on its hind legs. This animal is sometimes tamed, and exhibited at shows, beating drums, etc.

The flesh of the Hare is highly esteemed; it is close-grained, and rich in flavour. It is easily digested, and nutritious, although somewhat dry. The liver and kidney are excellent eating, but the heart has, as well as the marrow in the hind leg, less flavour. The price of a Hare varies from 3s. 6d. to 5s.

The wool or fur is extensively used by fur-cutters, who remove the fur from the pelt, and use it for felting. Many Turkish skins are used for this purpose. A certain number of the best skins are carotated, *i.e.*, brushed with acid, when it becomes of a carrot colour, as after this process they felt more easily. Some skins are dressed and lined with red cloth, and are sold for chest protectors. Hare's feet are used by costumiers for putting on colour, the effect being unattainable by brushes.

The Hare is found in the United Kingdom, with the exception of the Shetlands and Faroe Islands, France, Germany, Switzerland, Scandinavia, Russia, Turkey; in fact, throughout almost the whole of Europe, but the size and quality vary considerably in the various lati-

tudes. The Hare has been introduced into New Zealand, but, as was to be expected, the fur has become very poor on account of the mild climate. The skin of the Brown Hare fetches from 3d. to 5d. The supply in England and Scotland is considerable, the latter producing the finest skins, but flesh of less flavour and value.

In the winter of 1885-6 as many as 2,373,499 Hares were killed in Russia.

The Brown Hare has been known to cross with the Blue or varying Hare in Scotland.

POLAR OR WHITE HARE.

Lepus glacialis.

The Polar Hare can only be regarded as the same species as the ordinary European Hare.

This animal is larger than the Brown Hare, being usually about 26 inches long, and sometimes as much as 29 inches. The skins of the latter are called Köpfe and Oberköpfe, and are all furnished with a leather stamp. The ears are tipped with black, and the whiskers are white. The tail is short, and pure white. The legs are very thin near the junction to the body, and are covered with long bristly hairs, with very little fur. The feet are well padded with very thick fur to protect them from the snow. This Hare has six to eight teats. Like the foregoing variety, it is very good eating, and changes its coat in winter.

The Polar Hare inhabits Scandinavia, Russia, Siberia, and Labrador, and a few other districts, such as Fort York. It varies considerably in character and numbers in these different localities, the Scandinavian being extremely fine and white, and the Labrador, which are

very scarce, being very thickly furred. The White Hare was met with in the late Polar Expedition as far north as $82^{\circ} 27'$. A burrow, about 4 feet in length, was discovered, which had been dug out horizontally in a snowdrift.

This Hare is grey in summer, growing whiter in the autumn, and in the winter it is pure white. The ground-colour changes by degrees from the drab and red shades to faint slate and pink, and then merges into pure white.

The chief quantities of Hare skins imported are those of the Russian Hare (*Lepus glacialis*), from 2,000,000 to 5,000,000 being collected annually. Many of these are sent from Siberia, and have mostly their thick white winter coat, but some are grey or red grounded, and are only suitable for cutting. Others, again, have the merest vestige of grey hairs.

From 50,000 to 100,000 carcasses are sent to this country annually, with the skin on, the bodies being used for food. A 20s. fine is imposed when it is sold out of season. A large quantity of these skins are used for fur purposes, both natural white, in imitation of White Fox, and dyed lynx colour, brown, dark brown, black, and snowflake. The peculiar dye called snowflake is effected by passing a solution of wax over the points of fur, and then dyeing the under fur a beautiful brown. The tips of the hairs thus retain their natural white colour. The wax covering is removed, the skins are cleaned, and the fur has then a beautiful appearance, somewhat like the Silver Fox.

Many skins are clipped, and then dyed black, brown, and snowflake.

The dyeing is chiefly done in France and Leipsic.

Some Hare skins are made into linings in Russia and China, and in the latter country a few are dyed in imitation of Kitt Fox.

AMERICAN HARE OR RABBIT.

Lepus americanus.

French : Lapin d'Amérique. German : Amerikanischer Kanin.

The American Hare, called also the Wood Hare, has for many centuries been called the American Rabbit by the Hudson's Bay officials, and other fur-traders. It is perhaps the only instance of a misnomer among fur-traders; such errors, however, are common amongst retailers, and are not infrequent even with scientists.

This Hare is from 9 to 12 inches long. In the summer it is brown like the English Hare, but the under fur is blue instead of white. In this state of pelage it closely resembles a Rabbit, especially as its ears are short. In winter it assumes a whitish or white coat of long fur, the under fur just below turning brown, but retaining the blue colour close to the skin. The ears are tipped with black. The skin is very thin.

The flesh of this animal is not much esteemed by man, but it is a favourite prey of the Lynx.

The American Hare is rather numerous, but the quantity of skins imported varies considerably, being very abundant in one year, but not in another, when its enemy the Lynx is more numerous. 36,256 skins were imported in 1891 by the Hudson's Bay Company from Fort York, Moose River, East Maine, and Esquimaux Bay, and about 50,000 by other traders. The skins imported from East Main are tied up neatly into bundles with bass.

The summer skins are used for cutting, the winter are

dyed light brown, black, etc., to be used as fur. The usual price is 1s. to 1s. 6d. per dozen skins, but in some years they have realized the high price of 6s. per dozen; in 1814 15s. per dozen was paid.

The American Hare inhabits Newfoundland, Nova Scotia, Manitoba, and the Hudson's Bay Territory, but very few are found in Labrador. Its range is more southern than that of the Polar Hare. The Albany skins are the best.

Dr. Richardson ("Northern Zoology," p. 217) says regarding the habits of this animal:—"The American Hare does not burrow. In the northern districts it resides mostly in willow thickets, or in woods where willows or dwarf birch constitute much of the under-wood. The bark of the willow forms a great part of its food in the winter, but in the summer it eats grass and other vegetables. It is reported to do much damage in cultivated districts, to fields of cabbage or turnips."

This Hare is closely allied to the Varying Hare of Scotland, and is probably the American type of the same species.

VARYING HARE.

Lepus variabilis.

The Varying, called also the Blue or Mountain Hare, is smaller than the English Hare; its weight is also less, the ears are shorter, and its flesh is not of such excellency. It is larger than the American Hare, which it somewhat resembles, especially in the similarity of appearance to a Rabbit.

The fur is brown in summer, and turns a whitish hue in December. It inhabits Scotland and Ireland, where

many are shot by sportsmen. The Irish Hare is protected by a close time from April 20th to August 12th.

Hybrids between this and the Brown Hare have occasionally been recorded.

According to a correspondent of the *Field*, the average weight of a doe is $7\frac{1}{2}$ lbs., and of a buck 7 lbs.

The price of the body of a Varying Hare ranges from 1s. 9d. to 2s. The skins are worth about 2s. per dozen, several thousands being collected annually.

RABBIT.

Lepus cuniculus.

French : Lapin. German : Kanin.

The Rabbit is extremely numerous in this country. In the wild state it is from 10 to 12 inches long. The general colour is greyish-brown, with slightly longer grizzly hairs, the latter, however, being black on the back, and more numerous towards the tail. The belly and throat are whiter, and between the ears it is fawn-coloured. The under fur is blue. The tail is short, black above, and white underneath. The ears are short, about $2\frac{1}{2}$ inches long, and are covered with very short hairs. The whiskers are black. The upper lip is divided. The incisor teeth are long, and set in a circular socket. The toes are short. The skin of the buck is thicker than the doe's. An unusually heavy weight for a wild Rabbit is $5\frac{1}{2}$ lbs. Rabbits are said to be able to swim well. They run with a short quick step for a few paces, and then enter their burrows, leaving their white tails visible at the end of each run. The incisor teeth sometimes grow erratically to a great

length, twisting upwards or downwards, and at times even endangering the sight of the eyes.

The wild Rabbit inhabits the British Isles, France, Belgium, and Germany, and also abounds in the Falklands, and Ascension Island.

The Rabbit dwells in burrows, about 4 to 6 feet deep, generally excavated in dry loose soil or sand, and often in banks and slightly elevated situations. It is adverse to marshy and wet districts. It loves positions near the sea-side, such as dunes, and is often found on the edge of dry sandstone cliffs, even on the edges of precipitous cliffs, and among rocks, such as the Bass Rock. It thrives best on sandy and dry soils. It usually quits its burrow to feed in the early morning, and just before twilight. It is not nocturnal, but is averse to the scorching heat of the sun. Stock-doves, Wheat-ears, Sheldrakes, and Puffins often inhabit the same burrow as the Rabbit.

The Rabbit feeds on most vegetable food, and is sometimes carnivorous. It is especially fond of cow's parsley, and nibbles the gorse bushes very close, causing this plant to grow into fantastic shapes, almost like the figures in a Dutch garden. It sometimes nibbles the furze bushes into a series of flat shelves or platforms one above the other. The ravages it commits in corn-fields and hop-gardens is considerable, but wire netting is a very effectual remedy. The Ground Game Bill has acted beneficially in this instance; but it was anticipated to a certain extent in Kent by the tenants being allowed to kill this animal on the land they rented before this Bill was passed. In severe winters, when the snow lies thick on the ground, the Rabbits are thus enabled to reach the thin twigs in hedges and copses, and after the snow has disappeared, the white marks, where they have

peeled the branches, become visible, often 3 to 6 feet from the ground, and in a fairly straight line.

The wild Rabbit was often killed in former times by hawking, but now it is usually shot, being dislodged from the burrow by Ferrets. It is also sometimes slain near hedges, by Terriers working on each side of the hedge. It is very quick for a short distance, requiring a good quick marksman to kill it. When alarmed, the Rabbit signals the danger by stamping with its hind foot on the ground. By the recent Game Act, tenants are allowed one gun to shoot Rabbits, but they may use any number of traps. Rabbits have recently been coursed by dogs, a decidedly cruel sport, as they stand very little chance of fair play. Foxes and Cats prey on this animal to a great extent.

The Rabbit is extremely prolific, more so than any other animal. It has two, four, or six young, which are born blind. The period of gestation is one month. The female lines its nest with the fur from her own body.

In turning down Rabbits, five or six does to one buck will be found most conducive to success.

The flesh of the Rabbit is white, when cooked. The wild Rabbit is good eating, but the tame variety often tastes insipid or rank. The flesh of the leg is more succulent than that of the back, which is closer grained. The kidneys, although small, are tender and palatable, and the liver, though not so delicate in flavour, is still nutritious and good.

The fur of the wild Rabbit is chiefly utilized by fur-cutters for felting or hat purposes. The skins are collected in enormous quantities in this country; in fact, the Rabbit is the great fur-producing animal of the kingdom. The skins are called Wilds, and are sorted

into wholes and halves, quarters, racks, and suckers, the northern districts producing, as usual, the largest, best furred, and most expensive skins.

The skins for felting are first cut open, then washed, the longer hairs then pulled off by women furnished with long wooden knives. The fur is then cut off by machinery, and afterwards sorted, and blown by air. The fur of the back, ribs, cheeks and tail is sold separately, and by the pound. The price for the best Coney back wool is 5s. to 7s. 6d. per lb.

The pelt is sold for making gelatine, jujubes, etc.

Coney wool is chiefly used in New York for the manufacture of felt hats. It felts, or adheres together, with great readiness. The fur is placed in small handfuls into a tray, whence it passes through the blower, which drives the fur on to a revolving copper disc. The fur gradually accumulates, and forms a thick covering, which is removed, and washed, and is then ready for making soft felt hats.

A certain number of skins are "carroted" or silvered; that is, brushed with acid before cutting.

About 2,000,000 Rabbit skins are used annually for cutting. Fur-cutting was practised as early as the year 1667.

About twenty to thirty years ago, wild Rabbits were introduced into Australia, Tasmania, and New Zealand.

At first a few bales of skins were sent to London annually, but now from 400 to 1,500 bales are sold by public auction six times a year. In October, 1891, there were as many as 2,025 bales offered. As each bale of fair quality skins contains 200 to 250 dozen skins, and inferior bales contain many more on an average, the enormous quantity of 15,000,000 to 20,000,000 skins is imported annually.

The skins are sold by the pound, and only the samples are counted, as the cost of counting the skins would render the business unprofitable. The best skins weigh $1\frac{5}{8}$ lbs. per dozen; the fair average $1\frac{3}{4}$ to $2\frac{1}{8}$ lbs.; the medium $1\frac{1}{2}$ to $2\frac{1}{2}$; and the suckers $\frac{1}{8}$ to $\frac{1}{4}$.

The following list shows the number of bales of Rabbit skins from Australia and New Zealand offered for sale in London during the last twelve years:—

In 1880 ...	3,250 bales	In 1886 ...	3,858 bales
„ 1881 ...	3,930 „	„ 1887 ...	6,033 „
„ 1882 ...	5,610 „	„ 1888 ...	5,800 „
„ 1883 ...	5,250 „	„ 1889 ...	6,153 „
„ 1884 ...	6,891 „	„ 1890 ...	8,088 „
„ 1885 ...	5,488 „	„ 1891 ...	8,198 „

The Rabbit exists in the greatest quantities in New Zealand. Vast numbers are killed for tinning by the Meat Preserving Companies, and it is asserted that these even refuse to take more than 2,000 pairs a day. They are tinned with the small bones, and are consequently more palatable than most other tinned meats. Large quantities of these tinned Rabbits are imported, and are much appreciated by seamen.

The numbers in New Zealand are so prodigious, that extensive tracts of pasture-land have become useless, and unsaleable.

A correspondent of *Nature* thus writes;—“The Rabbit plague has become so severe that 1,346,554 acres have been surrendered to the Crown on account, the loss of revenue being £32,803. The Rabbit has simply devastated whole tracts of country, rendering the land unfit for pasturage. During August, 1887, the Rabbit Inspectors travelled 20,202 miles, and destroyed 2,069,128 Rabbit scalps, and from January 1st to August 1st they destroyed 10,538,778 scalps.”

It is said that 1s. 3d. is the price for killing a Rabbit in Australia, and 690 persons are said to be engaged in this way. Sums of £40,000 and £50,000 have been paid annually to exterminate them, and matters have become so serious that a Rabbit Department has been for some years in existence in the colony. In 1887, the sum of £25,000 was offered by the Government of New South Wales for any method for the effectual extermination of Rabbits not previously known. 1,400 schemes were brought out, but none seem to have met with success.

Weasels, Stoats, and Cats have been imported at considerable expense, but with no permanent benefit. Mr. Pasteur suggested the plan of spreading chicken cholera among the Rabbits, but on experimenting it was found that the infection did not spread to other animals. A recent effort has been made to reduce the numbers by suffocating them in their holes with gas, and bisulphide of carbon has also been tried. A plan that has been attempted with a certain amount of success, is to kill the does, and liberate the bucks, the latter then fighting together, and killing one another. Wire-netting fences seems to be the best remedy. It is said that Australian Rabbits have recently developed the power of climbing trees, and of making their nests in shrubs, and the claws are said to have become longer and more slender.

New Zealand produces skins of good quality, but the fur of Tasmanian and Australian skins is much inferior to English and Scotch. The hair on the back has become much darker in most districts, but the general colour is lighter, and the skin much thinner than the English Rabbit.

The majority of Australian skins are used for felting,

but some are dyed black. The New Zealand skins are shipped from Port Otago or Dunedin, and the Tasmanian from Hobart Town, the latter being the only skins imported with the head and ears.

The Silver-grey Rabbit was also introduced into Australia, but the fur in some districts has become lighter than the English variety. The skins of these are used exclusively for fur.

Fawn-coloured wild Rabbits are occasionally met with in England. Many black animals are found, and are especially numerous in Gloucestershire, and parts of Surrey. In Lincolnshire many warrens of the Silver-grey variety, called Silvers, are found, and they are surrounded with brick walls to prevent intermixture with the ordinary grey. There is an extensive one at Normanby, near Brigg, Lincolnshire, formerly belonging to Sir R. Sheffield, and now owned by Colonel Ingles. This variety is grey, or black, more or less beautifully furnished with longer white hairs; the under fur is blue. This colour is called "Silvers," when the top white hairs are abundant; "Sprints," when there are a few vestiges of white hairs; and "Blacks," when these are altogether absent. An extremely rare very light-grey variety, called "Doves," is sometimes found in these warrens.

The skins of the Silver-grey Rabbit were at one time in great demand for China and Russia, the price then realized being very remunerative, but now they are almost unsaleable in these markets.

In France, and also in England, there is a very peculiar variety called "Jardinière;" this is half black, half deep grey, the peculiar distribution of colour being quite unique.

Silver-grey Rabbits, probably tame, of large size, and of a beautiful light colour, are produced in the centre of

France. The skins are bought and dressed by French houses, and sold to English, French, and German merchants. Many of these animals seem almost to revert to the white type, and are called "Millers."

Blue Rabbits are extensively met with in France, and Belgium.

Fawn varieties are common in all the fore-mentioned countries.

White Rabbits are very abundant in Poland. In this country they are generally called Himalayan Rabbits. They are quite wild, and are kept in large warrens. They are small, and generally have a smut on the nose or tail; the tail is drab, or dark drab, and is brown, and sometimes black, at the tip. They are sometimes marked with grey spots. The Polish skins are produced in large quantities, and are used for coat-linings, linings of shoes, gloves, etc., and for making boas. Many are also used for clerical vestments in England, instead of Ermine. The Australian skins, except those from Melbourne, are opened at the head and tail, the ears are removed, and the skins are stretched on wire, cleaned, and dried.

The Tame or Hutch Rabbit is much larger than its wild brother, and it varies more in colour, mottled, black and white, black, white, fawn, grey, and silver-grey being very abundant. The fawns have usually white bellies, and a white under fur. Dove and drab-coloured animals are very rare, and have usually white bellies. Lynx-coloured and dark tabby are still rarer, especially the former; scarcely one is found in 4,000 skins. In these the ground-colour is deep blue, and the top hairs are yellow and white.

In the domesticated state the ears grow longer, and become pendant, and this formation has become a fancy, some ears even measuring $23\frac{1}{2}$ inches in length, and $6\frac{1}{4}$

in breadth. The lops and half lops were once much admired, but the fancy seems to have languished of late years. Many of the old-fashioned Rabbit Clubs are now defunct, and the size of the Rabbit has depreciated in consequence. Rabbit-rearing is a favourite pastime with many people, especially boys. The very fine lop ears are rather delicate, and are often kept warm by means of gas stoves. The open-hutch rearing of Rabbits appears not to be very successful. These hutches are open at the bottom with the exception of wire netting, and are placed on the grass. The position has to be changed from time to time, as occasion requires. The females have a special compartment for breeding. A Rabbit-hutch is easily made out of an old cask or case, a division being made for a sleeping apartment, and an aperture being made at the back to keep it sweet, and to enable it to be cleaned. The hutch scrapings furnish an excellent manure. Hutches are sometimes made in tiers. Tame Rabbits should be handled as little as possible.

The food of the tame Rabbit consists of cabbages, lettuces, parsley, sow-thistle, dandelion, grass, and, in fact, everything of a vegetable nature. These may be varied with oats and bran, and, when kindling, a few tea-leaves will be of great advantage to the doe. Water should rarely be given. The tame Rabbit lives to the age of eight or nine years. The doe breeds when six months old, and makes her nest in a circular form, lining it with the fur torn from her own breast. The young are born quite naked and blind. When disturbed, the mother often devours her offspring. The time of gestation is thirty days, and there are four to six, sometimes eight or ten, and even eighteen in a litter. Differently coloured young are often found in the same litter

of tame Rabbits. The buck is a strong animal. He fights with courage, and deals severe blows to his adversary; when jumping over his back, pieces of fur often being knocked out. We have witnessed a very curious fight between a Cock and a tame silver-grey buck Rabbit, the latter invariably getting the best of the encounter.

Rabbits are subject to several diseases in captivity, amongst which snuffles is one of the commonest. This is caused by wet and damp, and dry food and warmth are the best remedies. They are sometimes made ill by over-feeding, and diarrhœa is also prevalent in damp localities. The price of a tame Rabbit varies from 1s. to 6s., but good lops and superior sorts fetch 5 to 20 guineas each.

The old-fashioned Rabbit-man, with dead Rabbits slung on a stick across his shoulder, is now rarely seen.

The quantity of tame Rabbit skins imported into this country is very great. From 50,000 to 80,000 dozen dyed skins are imported into London from France and Belgium, and, besides this, many are sent direct from these countries to the United States, Germany, etc. The total annual collection of French and Belgian skins is about 2,000,000; but these are not all of Flemish origin, as many skins are exported in the raw state from England and Scotland, the cost of dressing and dyeing being so much less abroad. The annual collection of English skins is about 30,000,000. About 110,000 cwt. of Rabbit carcasses are imported annually, the value of which is about £30,000.

The Belgian skins are taken off the bodies of the Ostend Rabbits, so familiar to the Londoner as an article of food. Many thousands of these tame Rabbits are imported annually, but, although large, the flavour is insipid.

Most of the above-mentioned skins are dyed brown or black. They are sometimes clipped and dyed dark-brown as imitation Fur Seal, or clipped and dyed black, or they are dyed as imitation Beaver, and a few are dyed light-brown; in fact, the fur of the Rabbit is used more extensively than any other fur, except that of the Musk-rat and Squirrel. It exceeds these in size, is very cheap, and is of almost universal use, being employed on the Continent, in North America, and some also in Australia. The fur is, however, not otherwise desirable, as it soon wears out. Some white skins are clipped and dyed Snowflake, the ground of the fur being dyed, and having the tips of the hair white.

Rabbit fur is used for capes, trimmings, caps, boas, muffs, imitation Seal bags, and edgings for boots and gloves. Some are also made into round balls for fringes to garments, and hat and bonnet ornaments. Natural skins, blue and white, are used for hats, glove-linings, and other purposes. Many skins are used for cutting; and the clipped skins, dyed brown, are used for the mantles and caps of watermen in England. Some skins are exported to the United States, Canada, and Japan.

The fur of the tame Rabbit varies in strength in the various colours; thus the grey are the strongest, the fawn rank next, then the mottled, the black, and last of all the white.

When collected by the scavenger, or rag and bones collector, a skin is exchanged for a halfpenny, or orange, or at most a penny. A certain number being thus obtained, they are sold to collectors, who sell them again to dyers or merchants.

It is quite a sight to enter the warehouse of a Rabbit-skin collector. Thousands of skins hang from the roof,

and the piles of sorted and unsorted skins are striking in their numbers. Raw skins have a peculiar, rather nauseous odour.

Rabbit skins are sorted into wholes, halves, quarters, racks, and suckers, or very small skins. The half-seasoned have a small black patch on the pelt. The quarters are three-quarters black, and the racks are quite black.

The English flayed skins, both wild and tame, are merely cut halfway down the belly, and turned inside out, forming a sort of pocket. The price of Coney wool (Rabbit Fur) is 5s. to 7s. per lb. for best Coney back.

A curious custom practised in olden times at Biddenham, a village in Bedfordshire, was mentioned some time ago in the *Standard*. It took place on September 22nd, which was called Rabbit Day, and the last celebration is believed to have been in 1840.

“ A little procession of villagers carry a white Rabbit, decorated with scarlet ribbons, through the village, singing a hymn in honour of St. Agatha. All the young unmarried women who chance to meet the procession extend the first two fingers of the left hand pointing towards the Rabbit, at the same time repeating the following doggerel :—

‘ Gustin, Gustin lacks a bier,
Maidens, maidens, bury him here.’

This ceremony is said to date from the year of the first Crusade.”



BUFFALO, OR AMERICAN BISON.

Bison americanus.

French : Bison. German : Büffel.

The Buffalo, so well known and so abundant some twenty to thirty years ago, is now hardly more numerous than the European type (*Bison bonasus*). This latter, misnamed the Aurochs, is now confined to a few forests in Lithuania, one herd at Bielostock in Poland, and a few are still seen in a wild state in the Caucasus, and perhaps in the Urals. It is very similar to the American Bison, but is decidedly taller and larger.

The total quantity is not reckoned at more than 400. The American Bison is reduced to a few scattered herds

in the Dominion of Canada, such as a partly domesticated herd at Stony Mountains; there 127 animals have recently been sold to Mr. Jones, Kansas city, and perhaps a few near Peace River. In the United States about 300 are said to exist in the Yellowstone Park in the province of Wyoming. There are also still a few remaining in the Indian Territory; a few Wood-buffalo are occasionally seen near the Great Slave Lake; and some are still found in the mountainous parts of Mexico. In 1889 there were said to be barely 500 Bison in the United States, and 1,000 in Canada. The Buffalo formerly existed in countless herds in North America, although, like the Red Indian, it has been driven east of the Mississippi, or exterminated some eighty years ago. The yearly migrations or wanderings of these mighty beasts tended to intermingle the breed, and continue the race. Many were, however, drowned in crossing rivers. Their diminution was chiefly caused by the hide-slaughterers, who recklessly killed this noble animal, not merely for the sake of its robe, but also for the leather, leaving the carcase to rot on the plains. The majority were killed in the summer. All the many years of hunting by Indians and white men did not make such havoc as the railways and hide-slaughterers. From 1871 to 1874 it is estimated that between 4,000,000 and 4,500,000 animals were killed. In 1881 to 1882, 250,000 hides were taken in Montana, and sent chiefly from Miles City. In 1884, a large trade was done by collecting and selling the heaps of Buffalo bones found on the prairies, and which they piled at the railway stations. These piles were often 20 feet high, and 50 to 60 feet long. These bones were sold for grinding for manure, and other purposes. In the regular Fall hunts, a great many hunters banded

together, and took carts with them. These hunted and killed the Bison by thousands, in order to obtain the meat and robes. During the construction of the Kansas Pacific Railway, many were slaughtered to feed the labourers. This line divided the large Buffalo herd into two portions.

The male Buffalo is from $4\frac{1}{2}$ to 5 feet high at the shoulders, but the hind-quarters are much lower. The tail is rather short, and furnished with a thick tuft of black hair. The head and shoulders are covered with a dense mane of rather curly dark brown hair, giving to the Bison a grand and savage appearance. In some animals the hair grows between the horns to the great length of $15\frac{1}{2}$ to 16 inches, and in some the side hair extends down to the knees. The beard or dewlap is rather long, generally from 3 to 5 inches, and in aged animals it is grizzled. The horns are short, and but slightly curved. They vary somewhat in length, some being stunted, and only 5 to 6 inches long, whilst others attain nearly a foot. In some males the horns are much worn and blunted. The skull is broader than that of the domestic cattle, and the muzzle is short and broad. The general colour is drab-brown. The hair is thick, rather coarse, and covered with longer dense hairs. In summer the coat is lighter. The female is smaller, fleeter, and more gentle in appearance than the male, and has also horns, but only a very slight mane.

The Bison bears a certain resemblance to the Sussex and Devon cattle, in shortness of tail, large size of fore-quarters, and in colour, especially to the Sussex.

Schoolcraft says that the Bison works excellently when broken to the plough. It has a peculiar habit, similar to the Reindeer, of scraping away the snow with

its hoofs to get at the dry grass underneath. The Buffalo has been known to live over twenty-five years in captivity.

The fur or hair is very warm, and was much prized and used by the Red Indians for robes, tent-coverings, boats, mocassins, etc.; by the white man it was considered as the most serviceable sleigh-robe, even if not the warmest.

Dr. Richardson says that the hair has been woven into excellent cloths or wrappers; a Company was started in 1822 at Winnipeg, called the Buffalo Wool Company, the capital of £2,000 was nearly subscribed, but the Company soon became bankrupt.

The yearly collection of Buffalo robes was very large; in Catlin's time it reached 150,000 to 200,000 annually; subsequently the quantity fell to 130,000. One firm, that of Pierre Chouteau and Co., collected alone 50,000 annually. The Hudson's Bay Company's collection amounted to about 30,000 per annum; these were usually sold in Montreal. In 1879 the collection in the United States was 50,000 robes. In the same year 2,239 raw Buffalo skins were imported into London, besides 439 dressed robes. The former sold at 6s. to 10s. each, but since that date no raw skins have been sent. In 1885 only 1,000 skins were collected in the North-west.

This extensive trade has now entirely ceased.

The North American Indian excelled all others in dressing these skins. The hides were first steeped in a liquid, they were then shaved with the scapula bone of the Buffalo, the squaws rubbing in the brains at the same time to soften it. Beautiful designs and figures were often painted on the skins.

The price of a Buffalo robe was about 20s. to 35s.; the few now collected realize about £4.

Bison heads are also much sought for.

Taking the number of horned cattle in the United States as about 50,000,000, and as about 3,500,000 in the Dominion of Canada, we should estimate at a guess that on the discovery of America there could not have been less than 60,000,000 Buffaloes at that time, probably even 80,000,000.

Extensive cattle ranches now occupy the vast tracts which were the chief home of the Bison. To these cattle, more or less fierce, pedigree shorthorns were introduced to improve the breed; but as their constitution was not well adapted to the climate, this cross has been superseded by the Hereford, which has in its time given way to the Aberdeen or Angus. The cross with this latter breed would probably suit the climate best, owing to their thicker coat and more robust frame. The ranches owners' losses would then be lessened, which are now very great in a severe winter.

The flesh of the Buffalo is very good; the hump is excellent, and the flesh of the cow is even more succulent and juicy. The tongue is delicious. Some fifteen or twenty years ago, a few tongues were imported, and though they were sold at 5s. each, they were considered a great delicacy, the flavour being very rich and delicate. Some thirty or forty years ago, a few humps were imported, but they are now quite unknown.

The Bison appears to be merely a woolly variety of the domestic cattle. It interbreeds freely with the Gayal and domestic cattle, and the offspring from these crosses is fertile; and as the Gayal also interbreeds with the domestic cattle, it might be argued from these results that they are all varieties of the same species.

The North-west Buffalo Breeding Company was formed in the United States in 1886. The object was to inter-

breed with selected native or Scotch cattle, and the chief points aimed at were superiority of the flesh, coat, and head.

A white Buffalo was very rare. A skin of this colour was highly prized by the Indians, who would pay several horses for it.

The Buffalo was killed or captured in several ways by the Indians, who sometimes pursued them on horse-back, sometimes drove them into pounds, usually constructed in winter, at others clothed themselves in white Wolf skins, and approaching the herd in this disguise, picked out the best animals. In winter they glided over the snow in pursuit of the Bison on snow-shoes, and then killed their huge victims, who were floundering slowly through the drifts. The Buffalo was then everything to the Indian—out of his flesh he made pemmican (pounded flesh, mixed with melted fat, and enclosed in Buffalo-skin) ; out of the hide he made tent-coverings, robes, etc. ; the bones were used for spoons and the manure for fuel. The Buffalo Dance was one of the characteristic dances of the Indians. They put on Buffalo heads, and imitated very cleverly the movements of that animal. This dance was continued day and night, until the Buffalo appeared. Spreading a Buffalo-robe on the ground was a sign of peace.

Catlin, writing in 1866, in his "North American Indians" (vol. i. p. 248), says :—

"These animals are, truly speaking, gregarious, but not migratory—they graze in immense and almost incredible numbers at times, and roam about and over vast tracts of country, from East to West, and from West to East, as often as from North to South ; which has often been supposed they naturally and habitually did to accommodate themselves to the temperature of

the climate in the different latitudes. The limits within which they are found in America, are from the thirtieth degree to the fifty-fifth degree of North latitude ; and their extent from East to West, which is from the border of our extreme Western frontier limits to the Western verge of the Rocky Mountains, is defined by quite different causes than those which the degrees of temperature have prescribed to them on the North and the South. Within these twenty-five degrees of latitude the Buffaloes seem to flourish, and get their living without the necessity of evading the rigour of the climate for which Nature seems most wisely to have prepared them by the greater or less profusion of fur with which she has clothed them.

“ It is very evident that as high North as Lake Winnipeg, seven or eight hundred miles North of this, the Buffalo subsists itself through the severest winters ; getting its food chiefly by browsing amongst the timber, and by pawing through the snow for a bite at the grass, which in those regions is frozen up very suddenly in the beginning of the winter, with all its juices in it, and consequently furnishes very nutritious and efficient food ; and often, if not generally, supporting the animal in better flesh during these difficult seasons of their lives than they are found to be in, in the thirtieth degree of latitude, upon the borders of Mexico, where the severity of winter is not known, but during a long and tedious autumn the herbage, under the influence of a burning sun, is gradually dried away to a mere husk, and its nutriment gone, leaving these poor creatures, even in the dead of winter, to bask in the warmth of a genial sun, without the benefit of a green or juicy thing to bite at.

“ The place from which I am now writing may be

said to be the very heart or nucleus of the Buffalo country, about equidistant between the two extremes; and, of course, the most congenial temperature for them to flourish in. The finest animals which graze on the plains are to be found in this latitude; and I am sure I never could send from a better source, some further account of the death and destruction that is dealt among these noble animals, and hurrying on their final extinction.

“The Sioux are a bold and desperate race of horsemen, and great hunters; and in the heart of their country is one of the most extensive assortments of goods, of whiskey, and other valuable commodities, as well as a party of the most indefatigable men, who are constantly calling for every robe that can be stripped from the animals’ backs.

“These are the causes which lead so directly to their rapid destruction; and which open to the view of the traveller so freshly, so vividly, and so familiarly, the scenes of archery—of lancing, and of death-dealing, that belong peculiarly to this wild and shorn country.

“The almost countless herds of these animals that are sometimes met with on the prairies have often been spoken of by other writers, and may yet be seen by any traveller who will take the pains to visit these regions. The ‘running season,’ which is in August and September, is the time when they congregate into such masses in some places as literally to blacken the prairies for miles round. It is no uncommon thing at this season, at these gatherings, to see several thousands in a mass, eddying and wheeling about under a cloud of dust, which is raised by the bulls as they are pawing in the dirt, or engaged in desperate combats, as they constantly are, plunging and butting at each other in the most furious

manner. In these scenes, the males are continually following the females, and the whole mass are in constant motion ; and all bellowing (or 'roaring') in deep and hollow sounds; which, mingled altogether, appear, at the distance of a mile or two, like the sound of distant thunder.

“During the season, whilst they are congregated together in these dense and confused masses, the remainder of the country around for many miles becomes entirely vacated ; and the traveller may spend many a toilsome day and many a hungry night, without being cheered by the sight of one ; whilst, if he retraces his steps a few weeks after, he will find them dispersed, and grazing quietly in little families and flocks, and equally stocking the whole country. ‘A bull in his wallow,’ is a frequent saying in this country ; and has a very significant meaning with those who have ever seen a Buffalo bull performing ablution, or rather endeavouring to cool his heated sides, by tumbling about in a mud-puddle.

“In the heat of summer, these huge animals, which no doubt suffer very much with the great profusion of their long and shaggy hair or fur, often graze on the low grounds of the prairies, where there is a little stagnant water lying amongst the grass, and the ground underneath, being saturated with it, is soft, into which the enormous bull, lowered down upon one knee, will plunge his horns, and at last his head, driving up the earth, and soon making an excavation in the ground, into which the water filters from amongst the grass, forming for him in a few moments a cool and comfortable bath, into which he plunges like a hog in his mire.”

Washington Irving, in his “Astoria” (Missouri River), p. 96, narrates :—

“The bodies of drowned Buffaloes floated past them in vast numbers ; many had drifted on the shore, or against the upper ends of the rafts and islands. These had attracted great flights of Turkey-buzzards.” Richardson and other writers state that there is a wood variety of this species ; there is also a mountain variety in the province of Zacatecas in Mexico ; these, as would be supposed, have long and thick hair or fur on the belly ; tail like the Yak, very thick and full. This might well be inferred from the elevated regions where they live. A similar example is the Guerza or Abyssinian Monkey.

Chateaubriand, p. 351, narrates—

“That the Bison has irregular times of migration : one does not know where it goes, but it appears that it goes further North in summer, since it is found on the confines of the Great Slave Lake. Perhaps it also reaches the Rocky Mountains of the West and the plains of New Mexico on the South. The Bisons are so numerous on the green steppes of the Missouri that, when they migrate, the herd take several days defiling, like an immense army ; their footsteps are heard several miles off, and one feels the earth tremble.”

The Bison does not thrive very well in this country, a dry climate suits it best ; it suffers very much from fogs. A magnificent bull lived for many years in Manchester.

A similar variety of cattle, also called Bison by many, but more generally known as the Gaur (*Bos Gaurus*), inhabits the Himalayas and other parts of India ; it resembles the American type in its short curled but blacker hair ; its horns are longer and nearly as thick ; its legs are, however, white.

YAK.

Poephagus gunniens.

French : Yack. German : Grunzochse.

The Yak inhabits Nepaul, the mountains of Tibet, and other mountainous parts of the Chinese Empire.

It is a peculiar, and somewhat ungainly-looking beast, this appearance being partly caused by the thick growth of long hair under its body. This undergrowth is no doubt produced by the snow, and protects its body from the cold ground. The Yak, like other cattle, is sometimes horned and sometimes polled. It resembles the North American Bison in having the fore-quarters considerably higher than the hind, and it has also a slight hump on its back. The colour is black, white, or grey. The tail is extremely thick and bushy, and the hairs are of great length, about 25 inches long. Many tails are imported for the manufacture of wigs, etc., about 3,400 animals being killed annually. The white are in greatest demand, being used for white perukes and for the tassels in the harness of cavalry, and are worth 2s. 6d. to 3s. 6d. The black and grey are less in request for wigs, and fetch 4s. and 2s. respectively. The hair is sold for commercial purposes; the hide also is used in trade.

The Yak is sometimes ridden, or used as a beast of burden, and its milk is very good. It breeds in confinement in this country, and is readily crossed with other cattle, such as Gayals, Zebus, Bison, etc.

The grunt of the Yak is very like that of the Pig.

MUSK-OX.

Oribos moschatus.

French : Bœuf musqué. German : Bisamstier.

The Musk-Ox approaches so closely to the Sheep in its habits, that, until a specimen has been dissected, it is impossible to rightly determine its place in a work of Natural History. It may probably be found to be a large northern woolly variety of Sheep, of the original brown colour, such as is seen in the Shetland and Iceland Sheep. The texture of the wool of all these also resemble one another in the intermixture of long hairs in the wool. The so-called Musk-Ox inhabits the extreme northern portion of North-East Greenland, and the Dominion of Canada, including Chesterfield Inlet and Melville Island. It is not very abundant, yet is only surpassed in numbers in these regions by the Hare, and Lemming, and perhaps the Arctic Fox.

This animal is from 3 to 4 feet high. The general colour is dark brown. The body is covered with long, thick, brown wool, with extremely long dark brown hair on the flank, head and tail, these hairs reaching almost to its feet. The feet are generally white. The Musk-Ox has probably the thickest, densest covering of any living animal, being almost impenetrable to the cold. The skin is thick. The horns are rather short, curved, and very thick at the base. There is often a beautiful hump of fur on the shoulders, about 4 inches long. The flesh is highly prized by the northern explorers,

although at certain seasons it is said to have a musk-like flavour.

In Grinnell Land, 100 animals were killed by the Greely Expedition, whilst as many as 200 were seen; this would therefore seem a favoured locality. The dwarf willow grows here one inch high, and dense masses of saxifrage, and the Musk-Ox thrives on both of these. Many Musk-Ox were also met with in the Nares Expedition, and they were sometimes found in herds of nine animals. 1,358 skins were sold by the Hudson's Bay Company in 1891, fetching 6s. to 120s. The skin of this animal is much appreciated, and deservedly so, by the Canadians for the manufacture of fine sleigh-ropes. The hair was once made into excellent gloves, but is now too expensive to be of any practical use. In the Barren Lands, the Musk-Ox is said to be hunted by the Esquimaux with dogs, who collect them into a herd.

H. W. Fielden, in his "Voyage to the Polar Sea," vol. ii. p. 200, says:—"In the month of August, 1875, we met with abundant traces of the Musk-Ox in the valley of the Twin Glacier, leading inland from the shore of Buchanan Strait. I noticed where these animals had been sheltering themselves under the lee of big boulders, as sheep do on bleak hill-sides, and that the same spots were frequently occupied was shown by the holes tramped out by the animals, and the large quantities of their long soft wool which was scattered around.

"It is an animal by no means fitted to travel through the deep snow which blocks up the heads of all these valleys. On one occasion, in Westward Ho! Valley, in the month of May, Lieutenant Egerton and I came across fresh tracks of this animal in soft snow, through which it had sunk belly-deep, ploughing out a path and

leaving fragments of wool behind in its struggles. Its progression under such circumstances is similar to that of a snow-plough. We noticed that spots on hill-sides where the snow lay only a few inches deep had been selected for feeding-grounds, the snow having been pushed away in furrows banked up at the end, as if the head and horns of the animal had been used for the task; a few blades of grass and roots of willow showed on what they had been feeding. The dung of the Musk-Ox, though usually dropped in pellets like sheep or deer, is very often undistinguishable from that of the genus *Bos*. No person, however, watching this animal in a state of nature, could fail to see how essentially ovine are its actions. When alarmed they gather together like a flock of sheep herded by a collie dog, and the way in which they pack closely together, and follow blindly the vacillating leadership of the old ram is unquestionably sheep-like. When thoroughly frightened they take to the hills, ascending precipitous slopes, and scaling rocks with great agility."

Dr. Richardson, "Northern Zoology," p. 277, says:—"Its foot-prints are very similar to those of the Caribou, but are rather longer and narrower. These oxen assemble in herds of from twenty to thirty, rut about the end of August and beginning of September, and bring forth one calf about the latter end of May or beginning of June."

WEST AFRICAN STRIPED DEER.

The skins of this small and beautifully marked animal have only been met with during the year 1887.

It probably inhabits Sierra Leone and the West Coast of Africa.

Its general colour is brown, with fourteen or fifteen long and rather triangular black stripes; the two last, nearest the tail, are joined by a black bar; the hair is short and harsh.

HARNESSED ANTELOPE.

Tragelaphus scriptus.

This Antelope is about $2\frac{1}{2}$ feet high, and $3\frac{1}{2}$ feet in length. The colour is a beautiful rich orange-brown, marked with white irregular markings disposed somewhat in the form of a square, and from which it derives its name of Harnessed Antelope. The horns are small and triangular. The ears are long. There is a white spot underneath the eyes. There are also two white spots on the neck, one at the knees of the fore-legs, and two just above each hoof, all these giving the animal a very beautiful appearance.

A few skins of the Harnessed Antelope are imported with Monkey skins, and they are principally used for leather, although, from the quaint markings, it would make up well for fur.

This animal, which is also called the Harness Deer, inhabits the West Coast of Africa.

SPRING-BOK.

Gazella euchore.

The Spring-bok, or Springer Antelope, is a very beautiful and graceful creature. It inhabits the Cape and southern parts of Africa in rather considerable numbers. It is still numerous within the boundaries of the colony, and is fairly abundant on the Great Karroo, and Great Bushman land; in the former country the herds consist of 25,000 to 30,000 animals.

The Spring-bok is about 2 feet in length, and is beautifully marked. The general colour of the back is a delicate light brown, terminating in a dark brown horizontal stripe on each side; beyond this the belly is pure white. There is a ridge of long, white, bristly hairs, from 3 to 4 inches long, running along the hinder part of the back. The tail is black. The horns are short, ringed, and curved inwards like a lyre.

The Spring-bok derives its name from its power of leaping. One mode of hunting these animals is to drive them towards the sportsmen.

Some 10,000 skins or more are imported annually.

Many skins are made into excellent glove-leather, and a few are manufactured into robes. The price of good skins is about 9d. per lb., amounting to about 1s. 3d. per skin.

SNOW ANTELOPE.

Keruas hodgsonii.

The Snow Antelope is also called the Chiru. It is a very rare and curious animal, inhabiting the high mountainous ridges of Nepal, and part of the Himalayas. As might be expected, from these elevated and exposed regions, the hair is brittle, coarse and thick. It is of a greyish-white, which is also the general colour of the body. The head is marked with black, and the forepart of the legs is also black. The horns are very long and beautiful, about $2\frac{1}{2}$ feet, ringed at the base, and curving slightly forwards; they spring in a slanting direction from the head; these, seen in profile, give the appearance of one horn. The nose is thick, and is covered with short hairs. The ears are short and sheep-like. The skin is thick, and there are two peculiar glands on the shoulders. The upper incisors are wanting, and are replaced by a plate of bone; the under incisors are numerous.

INDIAN ANTELOPE.

Antelope cervicapra.

This small, graceful Antelope inhabits India, where it is tolerably abundant. It is about 2 feet in height. The male is of a dark brown colour; the belly and insides of leg are white; the top of the head and ears are a light fawn colour; the muzzle whitish; there is a white mark above and around the eyes, and the rest of the head is deep maroon. The tail is short. The colour of

female is light brown. The horns are about 1 foot in length, ringed and beautifully twisted. We have seen a very fine specimen which measured $25\frac{1}{2}$ inches in length. Some of the skins imported are used for tanning; a few are dressed and sometimes used by furriers.

The Indian Antelope is often hunted in India by Cheetahs; both male and female are hunted, and the flesh is good eating. It is the regimental crest of the 6th Royal Warwickshire Regiment, and is sometimes called the Black Buck.

BLESS-BOK.

Alcelaphus albifrons.

This rather large Antelope was once much more numerous than it is at the present day, and it is said to be now extinct in Cape Colony. Its habitat is South Africa. A comparatively small number of skins are now imported; in fact, this skin has almost ceased to be an article of commerce. The colour is dark pink on the back, merging into a drab-brown, and the belly is lighter.

The Bonte-bok has often been described under this name.

The skins of the Bless-bok make excellent leather, and at one time were chiefly bought by skin-merchants, but they are now in the hands of hide and leather brokers.

In 1873, 12,000 skins were sold in London, and 3,915 in 1886. These fetch about the following prices:—

Large skins, 50 to 65 lbs.	per doz.,	9d. to 11d.	per lb.
Middling „ 33 to 43	„ „	8d. to 9d.	„
Dry damaged 23 to 30	„ „	6d. to 7d.	„

GNU.

Connochætes taurina.

The Gnu, so quaint in its shape, is also called the Brown or Brindled Gnu. The hoofs are divided, like those of a Stag. The horns are curved or hooked, and are rather thick. The tail is like that of a horse. There is a brush of hair above the nose, and another between the fore-legs, and it has a bristly upright mane. It was at one time abundant in South Africa, but its area is now much restricted.

The White-tailed Gnu (*Connochætes gnu*) is a closely-allied species.

The hides of the Gnu were at one time much sought after. They are sorted into best heavy, best light, etc., and are sold by the pound, the average price being $5\frac{1}{4}$ d.

The Gnu is said to have been broken to the plough.

COMMON GOAT.

Capra hircus.

French : Chèvre. German : Ziege.

The Goat is found abundantly in Europe, as well as in many other parts of the globe; in fact, it inhabits most civilized countries. In England it is tolerably numerous, and large herds exist in South Wales, and are sold in the market-places at certain seasons of the year. It might, however, be advantageously reared in greater numbers, as it thrives well on poor land, such as

railway embankments, etc. On the Continent special sheds are sometimes erected for Goats.

293,920 is the statistical amount of Goats in Ireland for 1888 ; in France there were 1,505,670 in 1889 ; and 2,826,827 in Spain. The importation of Goats is prohibited into Tasmania.

The colour, character; and size of the Goat vary considerably. Black, white, fawn, and mottled are among the predominant colours, and while some are smooth-haired, others have the hair very long and coarse. A few are hornless, and others, again, have long glands or wattles on the neck. The horns vary considerably in size ; some are quite short, others are long, and others are thick, close together at the base, and branching out beautifully to the length of about 2 feet. Most Goats have a beard of long hair, and in some this appendage grows to about 7 inches.

Many have a growth of long shaggy hair on the hind legs, and in the Levant Goat this measures as much as 15 inches.

The hair is very bristly ; the new growth in the summer is bright and coarse, but as the hair increases in length, it becomes finer. The teats of the she-Goat are long, and usually two in number. It has generally two or three kids at a birth ; four is uncommon, and five extremely rare. The tail is short and bristly, and the ears are soft, and not very long, and are sometimes lopped or pendant. The Goat, especially the male, has a habit of erecting its hair when excited or disturbed. The he-Goat has a strong pungent smell, probably to attract the female when at a distance.

Goats' milk is rich and nutritious, and in Germany they are often kept in small stalls. In Switzerland, and many other parts of the Continent, cheeses are

made from Goats' milk, two of the chief kinds being Gruyère and Camembert. Those manufactured in Germany are highly odoriferous, and hardly as palatable to strangers as to the natives; these are kept in special attics and other airy places.

The food of the Goat is vegetable. It grazes, and also browses on shrubs, and it does great injury to young plantations by peeling the bark from the saplings.

It thrives on water-hemlock and meadow-sweet, both of which are injurious to cattle. It is very particular in what it eats, smelling the proffered food, and rejecting anything tainted. It eats bread, apples, and even paper with avidity.

The Goat chews the cud.

The flesh of the kid and young Goat is very palatable, either roast or stewed, and the old Goat may even be eaten stewed, but is not to be so highly recommended.

The duty on live Goats imported into the United States used to be 6d. from the British Dominions, and 1s. from other countries, but this duty has since been repealed.

This animal is a splendid climber, and is very sure-footed. It loves high and rocky districts, and on low ground it is sometimes subject to foot-rot.

The kid is extremely frisky and playful.

The call or cry of the she-Goat is peculiar but distinct, and that of the kid resembles it. The voice of the he-Goat is like a low grumbling. It is sometimes dangerous to approach the latter, as it will butt, or raise itself on its hind legs, and charge.

The skin of the Goat is largely used in commerce. In order to be used for morocco and other leather, the skins are soaked in lime-pits, and are then drawn out

with long poles and pincers, and placed in other pits successively. When the hair is sufficiently loosened, the skins are taken out and unhaired, dyed various colours with sumach, and then finished.

Goat leather is used for a great variety of purposes, such as coach-linings, chair-covers, book-covers, etc. Morocco leather is so called, as the skins were originally imported from that country.

The skins of kids are dressed with eggs and plaister of Paris, and made into gloves, boots, etc.,

The skins of the common Goat are rarely used for rugs.

The curtains of the Israelitish tabernacle were made of Goats' hair. Babies' hair-brushes are made of white Goats' hair. Goats' wool is used for shawls, etc.

Several million pounds of Goats' hair or wool are imported annually into this country.

Other Goats used for leather are the Madagascar, Arabian, Javan, and East India. Of the latter as many as 7,259,212 were imported tanned in 1891.

RUSSIAN GOAT.

Capra hircus.

French: Chèvre de Russie. German: Russischer Ziege.

The Russian Goat, called also the Bear Goat by the French (*Chèvre ours*), differs from the foregoing in the greater abundance of hair, and the thickness of the under-wool. Many are long-haired, and the predominant colours appear to be dark brown, black, and mottled. The majority of skins imported for fur purposes are dyed, and used for mats, rugs, etc. Many are also used for leather, about 20,000 being imported annually.

ITALIAN GOAT.

Capra hircus.

The hair of this Goat is rather long, and silky. Many were dyed black some ten or twelve years ago, and sold in imitation of black Monkey, when the latter was in such great demand. These skins are now chiefly used for leather.

NORWAY GOAT.

Capra hircus.

The hair of this Goat is especially adapted for the manufacture of sporrans, on account of the length of the hair.

ANGORA GOAT.

Capra hircus.

French: Chèvre d'Angora. German: Angora Ziege.

This beautiful Goat, which produces the mohair of commerce, inhabits the dry mountainous districts of Asia Minor. It is rather larger than a common Goat; the horns are long and white; the hoofs are also white; but its chief characteristic is its long, curly, and silky white fleece, from 3 to 7 inches in length, hanging so luxuriantly from the shoulders and flanks.

Black specimens are rare, and a few are occasionally met with of a light fawn or grey colour; but these are

not numerous. About 3,000, sometimes more, skins are imported annually into London; the annual collection is 10,000.

The value of a skin is about 12s. Some twenty years ago 20s. was paid; at the beginning of the century even 90s. was reached. The longer-woolled skins are used for trimmings and tassels for opera cloaks; the shorter-woolled are used for rugs.

For the manufacture of these skins it is essential that no particle of grease should remain in the hair. The skins, on arrival at the dresser's, are therefore soaked, and, when moist, stretched on frames and then limed. The pelt is afterwards shaved with a circular knife, and the next process is that of bleaching. The skins are then either finished off, and dressed, or dyed black, brown, or grey, as the case may be.

The bleaching of the sun is, however, far preferable to that of the bleaching-house.

The import of mohair into London is about 190 bales.

The Angora Goat has for some years past been introduced and acclimatized at Cape Colony. The quality and length of fleece has much depreciated on account of domestic and other influences. A certain quantity of skins are imported annually, but the price is low. 3,071,527 Angora Goats were in Cape Colony in 1889. In the wild state the Angora Goats are branded at the flank.

The Field, of 8th June, 1878, remarks:—"The climate and soil of Central Asia Minor are of extreme dryness, with an average elevation of 2,500 feet above the level of the sea, and an abundant growth of oak, either in the form of trees or scrub bush, the leaves of which furnish the Goats with their favourite food, not only whilst green in summer, but dried for winter

fodder. In addition to the varieties of oak mentioned, these plateaus grow a scanty supply of short tufted grass. During the intense heat of summer this meagre herbage is burnt up; but the Goats thrive and find sustenance where any other animal would perish."

"The flesh of mohair Goats in good condition much resembles mutton."

According to the same authority, about 50,000 lbs. of mohair are imported into this country, the best quality bales consisting of 170 lbs.

THIBET GOAT.

Capra hircus.

French : Chèvre de Thibet. German : Thibet Ziege.

The Thibet Goat resembles the Angora in the fineness of its fleece, but the length of the wool is not so great, 3 to 4 inches being the usual length. It also varies more in colour, the chief shades being white, black, and brown. The hair is extremely fine and soft, and it is said that the celebrated Cashmere shawls are made from this wool. The value of a skin varies from 3s. 6d. to 6s., according to demand. These skins are chiefly used for rugs and mats, and a few of the shorter-woolled skins for dolls' hair. About 500 to 1,000 skins are imported annually, but the supply is spasmodic. These skins take a dye very readily, and are dyed black, blue, red, and brown.

CAPE GOAT.

Capra hircus.

The Cape Goats are descended from the Angora, which were imported. As they have deteriorated, they are now used chiefly for leather, but the better skins are called Cape Angoras, and are used for rugs and mats, although they cannot compare with the beautiful fine fleeces of the Asia Minor Angoras.

Several hundred thousand skins are imported annually. In 1891 there were 1,423,030 sold in London. The majority of the skins for leather are bought for France and America. The Cape Angoras are chiefly consumed by the Americans and English.

In 1889 there were 2,065,940 live Goats in Cape Colony.

CHINA GOAT.

Capra hircus.

French: Chèvre de Chine. German: Chinische Ziege.

The skins of the China Goat have only become prominent as an article of commerce the last seven to ten years, although before that time they arrived in small quantities.

The hills and mountains of the interior of the southern provinces of China, and of Manchooria, are covered with vast herds of Goats. These vary considerably in colour—grey, black, white, and fawn being predominant, and mottled, grizzly, and bronze being also met with. The length of the hair also varies

considerably, and in some he-Goats the hair is bristly and coarse, whilst in others it is long, shaggy, and poor in quality, reaching even to 7 or 8 inches. Others, again, in the mountainous districts, have a thick, fine fleece, although of a lighter colour. 272,709 China Goat skins were sent to London in 1891, and sold there, to be used in the manufacture of good leather, but the majority are imported in the shape of rugs. In 1886 about 400,000 Goat and Kid rugs were imported, for which supply about 1,000,000 Goats were said to be killed.

Two skins are usually made into one rug. The Chinese dress the skins beautifully.

The grey rug is used extensively in Canada, England, the United States, and France, chiefly for sleigh-ropes, and also for perambulator rugs, theatrical purposes, etc. The natural black skins are used in Canada for sleigh-ropes, and the very low qualities in France for aprons. When the black skins are dyed squirrel-tail colour or dark brown, they make very excellent boas, and the inferior black skins dyed black are used for common rugs. Grey skins dyed black are used for coachmen's collars, etc. White Goat skins are used for a variety of purposes; when dyed blue they make excellent boas.

The black and grey Kids are usually imported in the form of Mandarin robes, or crosses, as they are called. These make excellent light boas, and the lower qualities are used for coat-linings. The hair of the Kids is extremely soft and silky.

The under fur or wool of this Goat is largely used in commerce, and is sometimes even extracted from the rugs.

MONGOLIAN GOAT.

Capra hircus.

German : Kosoll.

It is only of recent years that the Mongolian Goat has been at all widely known or used in trade. The skins of these Goats were first imported about seven or eight years ago, as robes, which fetched £4 to £10 each, but in the last few years the importation of these skins has increased to a very large extent. About 30,000 to 80,000 skins are now imported annually *viâ* Russia, and range in price from 5s. 6d. to 13s. They are misnamed Mouffons and Llamas, and are more correctly called Mongolians. By the Germans they are named Kosoll. These skins are always imported in the dressed state, and with the top hair removed. The under-wool thus left is very fine and silky. White, light and dark brown, and drab are the predominant colours. This fur takes a very bright dye, such as blue, salmon colour, beaver, and bronze. These dyes seem to eradicate the unpleasant smell which is prevalent in the undyed skins. The pelt is of light weight, and is consequently very suitable for trimming muffs, etc. The Yearling Goat yields the best fur. This fur is used in England, though not so much as formerly, and is now in most favour in the United States.

SHEEP.

Ovis aries.

French: Mouton. German: Schaaf.

The Sheep is perhaps of greater service to mankind than any other animal. It is to the Englishman what the Buffalo was to the North American Indian, and the Reindeer to the Laplander. From its wool clothing is made; its skin is used for gloves, hat-leathers, etc.; in fact, there are few persons who are not clothed with a portion of it; almost every part of its body is used for food. Frozen mutton is imported in large quantities from Australia and New Zealand, and 1,038,965 live Sheep were imported in 1886.

The Sheep is extremely docile, but somewhat foolish, following the leader unhesitatingly whether it be into danger or not. It lives in a semi-wild state in the Highlands of Scotland and Wales, cropping the scant herbage in elevated positions where one would imagine it could not find foot-hold. These mountain Sheep leap with great agility, and can clear a wall of six feet high at a bound, or four feet without touching. The Sheep stands about two feet high, and is about four feet long. The coat is composed of a thick coat of wool, of greater or less length in the various breeds. The usual colour of domestic Sheep, with the exception of some cases to be treated later, is white, but black and parti-coloured Sheep are by no means rare. The wool is a wonderful protection to the animal in cold and damp weather. In summer, if it is not shorn, it sheds its coat, thus relieving it from the heat, which it does not well

support. The tail is rather long, from six to eight inches, but this is usually removed at a few weeks old, leaving only the stump. In Wales, and the Highlands of Scotland, where there is great difficulty in catching the lambs, the tails are often suffered to remain. The Sheep chews the cud. It is both polled and horned. In some breeds of domestic Sheep, the rams alone have horns, whilst in the mountainous districts, such as Scotland, Wales, and Devon, both sexes are horned. The celebrated Southdown Sheep are polled. The horns of the rams are long, well curved, and much finer than those of the ewes. The Devonshire ram horns are thick and beautifully curved. Horns are usually of larger size in high latitudes.

The milk of the Sheep is rich, and of an oily appearance. The Sheep is milked in Heligoland and St. Kilda. In the latter island the Sheep are generally black, with four or five horns: they are small, and the wool is said by the *Field* to be good, and the flesh excellent.

Sheep feed in flocks, and graze very closely: in winter they are penned and fed on turnips and swedes. They will eat hemlock without injury. In damp or ill-drained localities Sheep are liable to foot-rot. They are also liable to foot-and-mouth disease, which is extremely infectious. The Sheep has generally one or two lambs in January, February, or March, but this last month is late. Lambs are sometimes born when frost or snow is on the ground, but they suffer more from damp than from great cold. Lambs are frisky and frolicsome, and their bleat is prolonged and plaintive. Screens of straw hurdles are placed to shelter the young from the wind. During the lambing season, the ewes are fed with swedes, beet, etc., with occasionally some dry food, such as hay.

Sheep washing and shearing have been practised since time immemorial. We read of Judah going to shear his sheep. In this country the washing usually takes place in May, but in cold seasons, in June. After this the Sheep are shorn, and are then re-marked with red ochre or other substances. In Scotland the washing-pools are circular, and are formed in the hills and mountains by the side of a brook. Although washing has been discontinued to a great extent in Australia, it is still most desirable it should be continued in England, on account of the superiority of the fleece. If the Sheep in the London parks were washed from time to time, it would benefit the animals, improve the wool, and give a brighter aspect to the dreary landscape. A steam-shearing machine has recently been introduced into Australia; although slower than a first-class shearer, it is said to have the advantage of never cutting the skin.

Sheep, before being admitted into Tasmania, have to undergo ninety days' quarantine, and various declarations are also required from the owners, veterinary surgeons, and captains.

The wool of the Sheep forms an important industry in this country. The total clip of wool in the United Kingdom, not including the Isle of Man, was estimated in 1886 by the *Bradford Observer* at 136,544,876 lbs., which, taken at 11d. per lb., amounts to £6,258,300. Five to six classes of wool are found on each animal.

The best wool in England is that of the Super-South-down. That of the Scotch, Welsh, and Devonshire breeds is also very fine and good. In Devonshire the clip is packed in long bags or bales, and then conveyed to market in the carts peculiar to that country. This is sold to the wool-staplers, who re-sell it to manu-

facturers. About a million and a half bales of colonial wool (Australian and Cape) are imported yearly, and as the average price of a bale is £15, it makes a total of over £20,000,000.

There are various sales of wool in London, which are held at the Wool Exchange in Coleman Street. The wool is exposed for view in the extensive and well-lighted wool warehouses of the London and St. Katherine's Dock Company. The bales are well arranged on extensive floors, between which communication is effected by slides, etc. The sales take place at four o'clock in the afternoon of the day on which they are viewed. The price of wool ranges from 4d. to 2s. per lb.

A sort of soap has been extracted from the oily matter in the wool. In Bradford and other towns the wool-sorters are subject to a disease called wool-sorter's disease, or anthrax (internal form). This is caused by the particles of dust or bacilli being taken in by the lungs, and attacking the intestines, and often proves fatal. One of the chief preventives is a diet of animal food and weak spirits and water; beer and vegetables should not be taken. The tumour should be treated, and cut out at once by a surgeon. The coat should be changed after sorting, and food should on no account be touched with unwashed hands.

Leeds is now the chief seat of the wool trade, but some years ago the West of England was celebrated for its cloth.

The Sheep inhabits the greater part of the civilized world. In 1891 there were 33,533,088 live Sheep and Lambs in the United Kingdom. The losses by severe weather are sometimes enormous: 8,000 to 10,000 were frozen in one winter on the Welsh hills. They are

sometimes suffocated by the snow, but at others they have been discovered grazing under the deep drifts, having thawed an open space under the snow with the heat of their bodies.

An instance is known of Sheep having been found alive after being thirty-eight days under the snow, but they had eaten each others' wool.

In France, in 1889, there were about 22,000,000 Sheep. In Spain, in 1889, there were about $16\frac{1}{2}$ millions. In the Australian colonies there were about 80 millions.

In Australia the flocks number about 2,000 each, and are herded. In New Zealand they number 10,000 to 20,000, and are rarely herded, but are allowed to wander about, and are penned once or twice a year.

In the United States there are about 43,000,000 Sheep, and in the Dominion of Canada about 3,000,000.

On the whole globe there are about 500,000,000 Sheep and Lambs.

In England the well-known Lincoln and Leicester Sheep furnish the heaviest fleeces. These skins are collected annually in December and January.

The length of the wool ranges from 5 to 9 inches, 10 inches being an exceptional length. The price ranges from 10s. to 14s. per skin. On arrival at a Sheepskin dresser's factory, the skins are counted, then struck on the head and every part of the skin where any fatty or meaty substance still adheres, in order to loosen it. The skins are then washed, dried, and limed; they are next stretched on frames in hot rooms, causing the grease to absorb the lime, and are then allowed to cool. In this state they may be stacked for months or even years.

To finish the skins they are again washed, and stretched on frames, fleshed with a circular knife, and

bleached either by the sun (which is the best bleacher) or in the bleaching-room, then dried off and paired.

After washing, the skins, which so readily absorb the water, are wrung out by the wringer: this machine, a revolving disc, is very efficacious, and saves a great deal of labour.

For dyeing, logwood, galls, etc., are used. Sheepskins are dyed black, brown, and grey, and also many fancy colours. The black colour is rather dull compared with that of the Goat.

Long-woolled Sheepskins are very curly, and are used for fringes, lamp mats, tassels for opera cloaks, etc., and many are exported to the Continent.

The short-woolled skins are used for door mats, carriage mats, etc., and the shortest of all are used for saddle-cloths for the Household Cavalry and Hussars.

Many skins of not so good a quality, called Butchers' skins, are sold in London. Many thousand woolled skins are also imported annually from the Australian colonies.

The Tabernacle of the Israelites was covered with Ram skins dyed red.

The collars of most of the French dray horses are covered with dyed blue Sheepskins, which seem to correspond well with the round form of the French horse.

A good Lincoln Ram will fetch from £8 to £15 when alive, and one was even known to realize 25 guineas.

The skins of English Lambs are very soft and thick in the wool, and many are used for boas (so-called Lapland boas), and a few for rugs.

The skins of Slink Lambs, that is, those that are still-born, or die soon after birth, are used for glove-linings, and trimmings and linings of shoes. The English skins

are very curly and good. The yearly collection is about 120,000 to 200,000, and the price ranges from 1s. 6d. to 6s. per dozen, according to demand. The longest-woolled Slink Lambs are sometimes dyed grey, light brown, etc. The majority of Slink Lambs are sent raw from Buenos Ayres to France and Germany, where they are dressed, the cheap labour and process quite supplanting the English dressers.

The horns of Highland and other breeds make beautiful mounts.

For leather purposes the skins, after various processes, are split into two by machinery. The top part is called *Skivers*, and is dyed and used for book-binding. The under part is very soft, and is called *chamois* or *wash-leather*, and is used for domestic purposes. Many thousand salted pelts (skins without wool) are imported from New Zealand, and find a ready sale. The chief supply of mutton-tallow sent to this country comes from Australia and New Zealand. Many thousand casks are imported annually. The samples are drawn from each cask, looking like tallow-candles without a wick, and are classified according to colour and quality. The samples are shown to the buyers on large slate tables. The sales are held in the *Baltic Sale-rooms*, usually on Fridays. The price is about 21s. to 30s. 6d. per cwt. A large quantity is used for the manufacture of soap, and some is even sold as butter or margarine. A great deal of English tallow is also used.

ICELAND SHEEP.

The Iceland Sheep is not so large as the ordinary English Sheep. It resembles more the Shetland in colour, size, and texture of the wool. The predominant colours are black, white, brown, and mottled. Grey (blue), black-spotted, dark brown, dark brown-spotted, and brown animals with black bellies are not uncommon. The wool is not quite so fine as in the Shetland Sheep, but it is long and beautifully curled, and the under-wool is dense. The skins are not of much value, being chiefly used for low-priced wrappers. A year or so ago they were used for muffs and boas, and many were dyed fancy colours; the skins then realized much higher prices. The yearly collection of skins ranges from 16,000 to 77,000, and the usual value is from 2s. 6d. to 5s. a skin, but when the demand is abnormal the price is much higher. The skins are generally imported salted, and shipped in bundles of two skins. A few are also imported dry. The Sheep are slaughtered in October, and the skins arrive in November, December, and January. About 20,000 live Iceland sheep are imported into this country annually. In Iceland there are about 500,000 to 600,000 Sheep. The horns of this breed are conspicuous by their number, six being not uncommon; eight, however, are very rare.

The Sheep are not shorn in Iceland, and the wool is said to be pulled off the animals, when it is just becoming loose in the late spring.

Mr. D. F. G. Macdonald informs us in his work, "Cattle, Sheep and Deer," p. 532: "For milk, as well as for their warm fleece, these patient and hardy

animals, as has been observed, are a great boon to the poor, snow-covered Icelanders. The wool forms the material of the long, hair-like articles before described ; and also the under covering of fine downy wool."

Iceland Lamb-skins are imported dry ; they are of the same colour as the adult animal : white is the predominant colour. They are fine, silky, and beautifully curled. The best are used for children's jackets, etc., and the commoner ones for glove-linings. The yearly collection of skins varies from 12,000 to 20,000, and the price ranges from 3d. to 1s. 6d. per skin. Many of these Lambs are killed by Foxes and Eagles.

CHINA SHEEP.

Nearly all the China Sheep-skins imported are white. The generality are rather coarser than the Iceland, and some are very short in the wool and coarse. On the other hand, some of the best are nearly equal to the English in quality. Many thousand rugs are imported annually from China, and range in price from 3s. to 6s. 6d. These are generally bought by Manchester warehousemen, and are cleaned and dyed various colours. A few thousand skins are imported raw for leather. The wool of the China Sheep affords also an important article of commerce, and is shipped from Shanghai to London.

The China Lamb is generally imported as Mandarin Crosses, many skins being used to form one Cross. The wool of these is very coarse, and in very small curls, and these Crosses are worth 15s. to 20s. each, and are dyed various colours.

ARABIAN SHEEP.

The Arabian Sheep has long and very coarse wool. The principal colours are black, mottled, and white. The skin is not of much value, but about 40,000 or more are imported, and made into good leather.

The Lamb-skins, however, are used for fur purposes. These are generally black, rather coarse, and curly, and are usually sold to Canada for the manufacture of cheap coats. They are generally imported salted, and fetch about 6d. to 1s. A few years ago many thousand skins were imported from Bussorah, as the fur was supposed to be the same as the Persian Lamb, but the result was very disappointing to the owners. 7,700 Arabian Sheep were delivered to Jehoshaphat as a tribute by the Arabians; it is also recorded that many were sold in Tyre.

BOKHARAN LAMB.

The Lamb-skins collected in Bokhara are very similar to the Astracan, but they are larger, rather coarser and thicker in the wool, and better curled. They are dyed black in Germany, and treated like the Astracan skins. They are chiefly purchased by Canadians, and a few are bought by English furriers. The price of a dyed skin is about 2s. to 5s.

SHIRAZ, OR HALF PERSIAN.

German : Schiraz.

The Shiraz, or half Persian Lamb-skin is collected in the province of the same name situated in the south of Persia.

According to Professor Vambéry, the flesh of this animal makes excellent mutton.

The colour of this Lamb is generally black, but it is sometimes brown ; the hair, although finer than that of the Bokharan, is coarser than that of the Persian Lamb, to which it has certain points of resemblance as to curl, but it is more woolly.

The annual collection of skins is about 130,000 to 150,000, and the price ranges from 2s. 6d. to 5s., according to demand. The skins imported are painted with Persian characters, and are generally dyed black.

The commoner skins are used for military purposes, and the better sorts by furriers.

A small skin similar to the above is known as Salz Persianer, or Salt Persian ; these are so named from being dried in salt.

THIBET LAMB.

The skins of this Lamb are white, extremely fine and silky, and rather long in the wool. They are made into beautiful Mandarin robes or coats. The former, when imported, are called Crosses, and fetch from 50s. to 110s. The coats realize 100s. to 170s.

Some dressed skins are also imported from China, and

about 10,000 are sent overland *viâ* Russia to Leipsic. These skins take a beautiful dye, such as black, grey, pink, yellow, light brown, and other fancy colours. They make beautiful boas, and are now much in fashion in France for trimmings.

PERSIAN LAMB.

French : Persianne. German : Persianer.

The Persian Sheep is said to be the most ancient breed of Sheep; from its colour (black) and general appearance it would be difficult to upset this statement; it is very akin to the Shiraz and Bokharan Sheep, which are also very ancient types. The colour of the Persian Sheep is black, brown, or white; the wool is very coarse and dense.

Unlike its parent, the skin of the Persian Lamb is very soft and beautifully curled; the prevailing colour is black, but a few are mottled with white; occasionally a grey or brown skin is met with, but all skins, of whatever colour, are dyed black in Canada or Germany: the water of the English rivers does not seem to be suitable for this dye.

This skin or fur is often known by retailers under the name of Astracan; it is much admired in this country, Canada, and France, and to a lesser extent in the United States, and is one of the few furs worn by men as well as by ladies.

It is used for caps, muffs, coat-facings, and other articles.

The value of a raw skin is from 7s. to 15s., according to demand and quality; these are imported in bales of

200 to 300, and are often marked in figures or drawings with red or blue designs.

The annual collection of skins is from 200,000 to 700,000 ; in 1891 it was about 500,000.

Unlike many Lamb-skins, the Persian Lamb takes a brilliant dye. The Afghan Lamb is similar to the foregoing, the curl is rather larger, and the hair coarser ; the price is about 20 per cent. less than that of the Persian Lamb.

THE BROADTAIL, OR BREITSCHWAUZE, is probably the Slink or unborn Persian Lamb ; it is undoubtedly the skin about which so much nonsense has been written, as to slaying the parent Sheep for the sake of its skin, although the popular fallacy is attributed to the Persian Lamb.

When dyed, this skin has the appearance of watered silk, and is worth from 2s. to 12s., according to fashion, etc. Few are used in England or in the United States.

PINHEADED PERSIAN LAMB.

The skin of this animal is also called Danadar ; it is grey, with extremely small and numerous curls, and the value is about 7s. to 10s., according to demand.

ASTRACAN LAMB.

French : Astrakan. German : Astracan.

The skins of the Astracan Lambs are collected by thousands in the province of Astracan in the South of Russia ; the annual collection is about 600,000, or rather

exceeds this number; these are generally sold in the cleaned state at Moscow or Nishni-Novgorod, and the price ranges from 8d. to 2s., according to demand, and are mostly bought by German firms. The skins are sent to Leipsic, and are dyed black in the well-known dyeing establishments on the Pleisse. This dye cannot be equalled in Europe for giving brilliancy or suppleness to leather. When finished, the skins are chiefly bought for Canada and the United States, although at one time many were used in this country, when Astracan jackets were in fashion.

The Astracan Lamb is not more than 6 to 12 inches long. The usual colour is brown; a few are white, and some are black.

The larger Lambs and half-grown skins are not so valuable; these are usually made into coat-linings, and are partly dyed, and are called Taluppen; these are bought by Canadians for low-priced coats, for use in the North-west Territory. Similar coats are worn in Afghanistan and Beloochistan; there they are worn pelt out, and the hair is turned outside when the weather is wet or snowy.

UKRAINER LAMB.

The Ukrainer Lamb equals the Persian in size, and is much larger than the foregoing; it may be considered to be a medium-sized Lamb.

Nearly all the skins collected (about 20,000) are black, although sometimes a white spot is found in the skin. The price of a skin ranges from 3s. to 6s.; these are usually dyed black in Leipsic. When dyed, the wool, which is short and curly, has rather a dull appearance;

it, however, wears well, and for this reason it is probably used for cavalry saddles (officers) in England, although a few of the higher class are used by furriers.

The Ukrainer Sheep appears to be an ancient type.

CRIMMER, OR CRIMEAN LAMB.

It would hardly be supposed that in going from one province to another, such a marked difference would be found in the colour of the Sheep, but this is the case; for although some black Crimmer skins are collected, the majority are grey; sometimes this grey is of a dark slate colour, and at other times it is much lighter, and is almost white; the curl also varies considerably; sometimes it is large and bold, at others it is very small and coarse; of course most skins are between these two extremes.

About 65,000 to 70,000 skins were collected in 1891, and the price ranges from 3s. 6d. to 7s. 6d. (raw) according to demand, fashion, supply, etc. These are chiefly in vogue in Canada and the United States (especially for juvenile wear), but a few are used in this country for capes, ladies' caps, cavalry saddle-cloths, etc.

Some skins are imported brined or dry-salted.

The Crimean Lamb derives its name from the celebrated Crimean Peninsula.

TRANSYLVANIAN LAMB.

The skins of the Transylvanian Lamb are black, and the wool is dense and coarse, but they are very warm, and well suited for coat-linings. The value is a few

shillings each. On account of their cheapness and durability, they are in constant demand.

Black Sardinian Lambs, Corsican, Calabrian, and other Italian skins are used for similar purposes, and are sold in Leipsic.

SPANISH SHEEP.

Several thousand skins are imported. These are very coarse, and are white.

The wool of the Slink Lambs has a larger curl than the English, and the skins are used for glove-linings. A few of the Spanish Lamb-skins are black, and fetch 4½d. to 5d. per lb.

SHETLAND SHEEP.

Shetland Sheep are usually of a brown, or light brown colour. They are noted for the fineness of the fleece; in fact, like the Musk-ox, many long hairs are found in its fine coat. Both the male and female have horns. A similar variety lives in the Faröe Isles; the colour varies, but is chiefly black. The fleece is more like hair than wool. The chief time for slaughter is in November. The flesh, when hung, is considered a delicacy.

The wool of the Shetland Sheep is made into beautiful shawls, and the skins are used for rugs.

RUSSIAN SHEEP.

The Russian Sheep is usually either grey or grizzly, but some are brown, and a few black. The hair or wool is short, coarse, and close. The skins are chiefly used for sleigh-ropes in Canada, but a few are sometimes used for theatrical garments. Several thousand skins are imported occasionally, the value being about 3s. to 4s. Many thousand Lamb-skins are also imported. These are of little value, and are chiefly used for leather.

Besides the fore-mentioned Sheep, there are several varieties whose skins are used exclusively for leather.

The skins of the Cape (Good Hope) Sheep are imported in large bales bound with iron, and are sold now in original packages, and realize $1\frac{1}{2}$ d. to $5\frac{3}{4}$ d. per lb., according to quality. The commoner, lighter weighted skins are used by glovers; the wool of these is short and thick. Enormous quantities are imported; in 1891, 3,978,640 skins were sold in London.

The skins of the East Indian Sheep are imported in the tanned state; these are sold at low prices, from 1s. to 4s. per lb., and are used when dyed for many purposes.

In 1891, 5,613,996 skins were sold in London.

Dindigul is one of the chief tanneries.

The East Indian Sheep is thin, and has a poor carcase.

Several thousand Falkland Island Sheep-skins are also imported.

R E D D E E R.

Cervus elephas.

French : Le Cerf. German : Hirsch or Edelhirsch.

The Red Deer is the largest Deer now living in the British Isles. At one time it ranged over nearly the whole of these countries, but it is now only found wild on Exmoor, although still preserved tame in many parks in England. The Red Deer has been exterminated in the Shetland and Orkney Islands, but it is still numerous in a wild state in the extensive deer-forests of the Hebrides and other parts of Scotland. These deer-forests are almost devoid of trees, and, like Exmoor, are merely extensive tracts of elevated moorland. The Rothiemurchus Forest (Inverness) is one of the largest, consisting of 17,000 acres. These forests, which comprise altogether about 2,000,000 acres, are rented at prices from £500 to £3,000 per annum, and it is estimated that every stag shot costs the lessee about £50. About 4,600 stags and the same number of hinds are killed every year. The quantity of Deer ranging in these forests is estimated at 225,000.

The Red Deer was hunted in the New Forest, and the Andrida Silva. In the former forest the last Red Deer were shot a few years ago, on account of the depredations of poachers. In Ashdown Forest, north of Sussex, the last remnant of the Andrida Silva, a few fine Deer are still found. The last Red Deer (a hind) in Hainault Forest was shot in 1825, but this fine forest is now a thing of the past.

The Red Deer inhabits France, Germany, and Norway,

as well as the British Isles, but none are found in the Isles of Wight, Man, and Lundy, nor in the Channel Islands, although, in the time of the Roman occupation, it was abundant in the first-named island.

The stag is of a reddish-brown colour; the legs are dark brown; the tail and buttocks are whitish, or very light brown. The beautifully-formed head is pointed. The eye is large, dark brown, and expressive, with a lighter shade of colour round it. The under-jaw is also light. In summer the head is often lighter. There is a dark mark along the back. The hind is rather lighter, and has a more pointed nose. The period of gestation is about eight months, and the young is called a calf.

The male sheds his horns every year about the month of March, and in April the new horns begin to grow. During this growth he eats largely. The new horns are soft, being covered with a velvety substance, and are full of blood-vessels. If the horns are injured at this early stage the animal often bleeds to death. The horns harden gradually, and in September the velvet falls, or is rubbed off.

The points of a stag's head increase year by year till the animal is full-grown, which is at twelve years; after that age the horns decrease and grow thin. The heads of wild stags are hardly so grand as in former times; in Fontainebleau, Exmoor, and in Scotland the heaviest have seldom more than twelve to fourteen tines; ten tines is considered a good head. In captivity, and in parks where Deer are well fed, heads of sixteen to twenty points are not so uncommon.

In Germany the heads are much finer, and at the Castle of Moritzburg one is shown with eighty or ninety tines; also two pairs of horns interlocked when fighting, the stags dying of hunger.

A royal stag has twelve points, six on each antler. Deer often eat the shed horns.

Hammels, or hornless males (called Notts or Havers), are sometimes met with; these are said to fight as well as their horned brethren.

In the month of October the necks of the males swell, and the rutting season begins; fierce combats occur between the males, who during that time do not eat; at the end of the season they consequently are thin and in poor condition; previously they were very sleek and fat. In Australia and New Zealand, where Red Deer have lately been introduced, the rutting time is in March.

Cross-breeding with English Red Deer has been tried in Scotland with the best results; another judicious step would be to import a few German or French stags with good heads, to breed them with English, and then to introduce the cross into Scotland. In turning down Deer there should be about one to the acre, in the proportion of one male to two females. Red Deer are very hardy, and live where Sheep would perish.

There is no close time for Red Deer in England and Scotland. In Ireland male Deer are protected from January 1 to June 9. In England stag-hunting begins about August 10, and finishes about the end of October.

There are thirteen packs of Stag-hounds in England and two in Ireland; these, with the exception of Devon and Somerset, and the New Forest pack, which follow the Fallow Deer, hunt carted Deer, which have their antlers sawn off; this style of hunting is scarcely sportsmanlike, as it is unfair to the Deer, which are without their natural defence. The only part of the United Kingdom where the Red Deer is hunted in its wild state is in Devonshire and part of Somersetshire.

Stag-hunting commences in August and hind-hunting in November; both stags and hinds lie very close till aroused, and will swim out to sea when hard pressed. The English Stag-hound appears to be extinct; the hounds now used are large Fox-hounds, selected for size and strength. Blood-hounds were employed by Lord Wolverton a few years ago. The French still possess a few fine Stag-hounds of the ancient Poitou breed; these are large, fine hounds, with good noses and deep dew-laps, but somewhat slow. Drafts of large English Fox-hounds are also used in Fontainebleau. In England the huntsman has the skin and the master the head of the Deer taken.

In the month of May we have seen two Red Deer stand on their hind-legs and play with their forefeet.

The value of a live Red Deer is about seven to ten guineas for stags and five guineas for hinds and young stags. The skins are made into excellent leather. The horns are made into knife-handles, etc.; in ancient times the antlers were used as picks and hammers.

The Hon. John Fortescue, in "Records of Stag-hunting on Exmoor," says (p. 107) that "hinds consort with the stag in the second year of their age, and, as a rule, produce but one calf at a time." "It has also been several times asserted that a hind never has twin calves; but this, again, has been decisively disproved." "Dr. Collyns lays it down that hinds invariably drop their calves between the 7th and 21st of June, and he can adduce but two exceptions to this rule, the calf having been, in both the excepted cases, born in the month of September."

(P. 109): "The calf, male or female, is at the time of birth white-spotted like a Fallow Deer, and remains so up to the age of three or four months, when the

spots disappear and the colour of the true Red Deer asserts itself. Calves remain with the hinds often till they are nearly two years old, though, of course, they are able to take care of themselves much earlier."

WAPITI.

Cervus canadensis.

This noble stag, the largest of the Cervidæ now living on the globe, is an inhabitant of North America. It formerly existed in large herds throughout the northern continent, but now it is much restricted in range and reduced in number. However, it is still fairly abundant in Oregon, California, Montana, Wyoming, and in Vancouver Island, in Canada. Very few now exist east of the Mississippi.

The Wapiti has been called the Red Deer by some naturalists, and is still known by this name by some Hudson's Bay traders, and, although a larger and more powerful animal, it is no doubt identical.

The Wapiti, or Elk as it is called by the Americans, is about 5 to 6 feet high; the legs are dark brown, the body and back lighter; there is a ring of light brown round the eyes, and two light brown spots over the nostrils; the buttocks and the short tail are white.

The male, when adult, has a mane or ridge of hair on the throat, and another on the back; the ears are moderately long, and brown; the eyes are dark brown.

A full-grown stag is really a magnificent spectacle; no one can fail to admire its grace and the symmetry of its figure, and the ease with which it carries its horns.

The hind is about 5 feet high, and lighter in colour

than the male; the nose is more pointed, and the eyes are large, fine, and plaintive. The male makes a whistling noise. When the horns are growing, the stags eat a large quantity of food; in the rutting season, on the contrary, they eat very little.

The Wapiti sheds its horns in March or April; the new pair begins to grow shortly afterwards. Like the Red Deer, the size and number of the tines increase by good feeding.

The splendid animal in the Zoological Society's Gardens has a remarkable head; the brow and bay antlers have grown to an abnormal length of 2 or 3 feet; some tines are, however, imperfect, growing knotty and misshapen, probably on account of confinement.

No two pairs of horns of the Wapiti are exactly alike: some heads are beautifully symmetrical and regular, each point almost exactly matching its fellow on the opposite antler. The brow and bay tines are usually thrown forward and slightly curved upwards; we have seen them perfectly straight and almost perpendicular; others, again, are hooked.

The top tines in a full-grown animal are thrown out boldly forwards and backwards in graceful curves; in only one example have we seen a tine which has grown out laterally; the top tines are sometimes very long and beautiful; rarely are they small and numerous at top, like Red Deer, but this is sometimes the case.

Once we saw a head with no brow nor bay points, but it is not uncommon to find only one wanting. The usual number of points is twelve, but thirteen and fourteen are not uncommon.

In a remarkably fine head the length between the top tines was 4 feet 9 inches, between the third tine from the top 4 feet 2 inches; the third left tine was nearly 2 feet

long, and edged like a blunt sword; the horn of this magnificent head was granulated. In another fine specimen the bay tine grew downwards, thus protecting the neck on each side.

The most interesting, perhaps, were the antlers of a very fine old stag; these were extremely thick, every point broken off by fighting, and had a small hook which grew from the back of one of these horns. Excrescences, knobs, and small hooks are seen on or at the base of the tines.

Heads from Oregon and the Western States have the antlers shorter, thicker, and wider apart than those from the more eastern parts; the horns are heavier at top, the tines shorter, and the colour deeper.

The value of a good pair of horns is from £3 to £9 15s., according to perfectness of horn, skull, etc., and demand. About twenty to forty pairs are imported into London annually.

The Wapiti is found "in dense forests, in boggy swamps, and amongst thick pines" (*Field*). It trots very fast, but when it breaks into a gallop it is soon exhausted.

Wapiti is an Indian name, meaning "stinking head." The female brings forth one young once a year.

From 80,000 to 100,000 skins are imported annually, and are made into excellent leather.

Richardson writes, "North American Fauna," p. 252: "The flesh of the Wapiti is coarse, and is little prized by the natives, principally on account of its fat being hard like suet. It seemed to me to want the juiciness of venison, and to resemble dry but small-grained beef."

A closely-allied variety or species is Lohdorp's Deer (*Cervus lohdorfi*); this Deer interbreeds freely with the

Wapiti, to which it has a great resemblance ; it is, however, rather smaller and lighter ; its horns are also more tapering, like those of the Red Deer.

Luhdorf's Deer inhabits Amoorland and the eastern part of Siberia.

EAST INDIAN DEER, OR AXIS.

Cervus Axis.

This graceful and beautiful creature inhabits India, and is well known for its well-marked light brown coat, which is spotted with numerous white spots ; these, however, change into white lines at the belly ; there is a ridge of hair along the back, which is much darker.

There are usually three points on the antlers, which are thrown forward, with the exception of the second tine, which points backwards. This trait is characteristic of the Axis.

The East Indian Deer is a rather abundant animal ; 53,922 skins were sold in London in 1891. These skins are made into excellent leather. Some years ago many were bought by fur merchants for the Bavarian market, it then being the fashion for the peasants to wear buckskin leggings ; this trade no longer exists. A few skins are sometimes bought for the United States, also a few by English furriers for foot-muffs, etc. ; but the majority are now purchased for leather. The skins are sorted into large, middling, small, extra small, and dry damaged ; a few years ago these were sold by the dozen, and now by the pound. A good large skin is worth 6s. to 7s.

The horns are largely imported for the manufacture of

knife-handles ; 424 tons weight were sold in London in 1891, and realized 20s. to 260s. per cwt. The horns are sorted into large, medium size, small, and very small, these latter commanding the highest price.

F A L L O W D E E R.

Dama vulgaris.

French : Daim. German : Dammhirsch.

This Deer is probably better known to the general public than any other Deer, and is seen in many parks in this country, where it is a general favourite, on account of its small size and docility. The Fallow Deer is found in the greater part of Europe, but it is not indigenous to the country. The dark-coloured variety is said to have been introduced by James I. from Norway ; by others it is asserted to have been imported long before that date, perhaps by the Romans.

The usual colour of this Deer is light brown, spotted with white ; the tail is black and tipped and edged with white ; the inside of the legs is of a beautiful fawn colour, and the ears are light brown. In the dark variety the colour verges on black ; the legs and points are brown, and the tail is black. It seems altogether to be a larger and heavier animal than the spotted variety ; the head is short and well formed, the nose is full and round, and the eyes are dark and expressive. Pure white animals are not uncommon.

The horns are rather palmated at the top, with a few rugged points, which are usually turned backwards ; the brow and tray antlers are well developed. The horns fall off in April, sometimes a little later. In July and

August the bucks get rid of the velvet from the new growth by striking the branches of trees, sometimes raising themselves on their hind legs for this purpose, in order to get rid of this troublesome exterior.

The value of a good pair of horns is about 20s. to 60s.

The rutting season is in September, when the males fight and roar, though not with the fierceness of Red Deer; at this season the males seek out the females; at other times the bucks and does generally congregate in separate herds. The does bring forth in May one or two young.

In this country the Fallow Deer is only hunted in the New Forest. Like the Red Deer, it is aroused by "tufters." The value of a live Fallow Deer is about 30s.

There is no close time for Fallow Deer in England and Scotland. In Ireland it extends from September 29 to December 31.

The skin is made into excellent leather, called buckskins, and is much used for hunting breeches. The flesh is much esteemed for venison.

MOOSE OR ELK.

Alces machlis.

French : Élan. German : Elenthier.

This quaint and interesting animal inhabits the northern portion of North America, *e.g.*, Nova Scotia, Manitoba, Alaska, and New Brunswick, being especially abundant in the last province. It is also found, although less abundantly, in parts of Europe, such as East Prussia, Russia (the Government Forest near Moscow), Norway,

and Sweden ; besides these, it is found in Siberia, and its range is said to extend as far as North China. Recently a Moose has been shot in Galicia, which had probably wandered from a more northern district.

The American and European varieties, which previously were classed as two species, are now described as one.

The Moose is about 5 to 6 feet in height. Its length of leg and shortness of body render its appearance very striking. The general colour is dark brown ; and it is lighter on the belly. The head is large and massive in appearance. The nose is also large, thick, and projecting. The eyes are large and expressive. The ears are rather long, and brown. There is a small mane of dark brown hair, more or less developed, and there is also a beard under the chin of the male animals. The neck is thick and short, rendering it incapable of grazing, but it reaches with ease the twigs and brushwood on which it feeds. The hoofs are large and broad. In spite of these peculiar dimensions, the Moose cannot be said to be ugly.

The horns of the male Elk are very handsome ; they are large, solid, and palmated, with one or two separate tines on the brow. Those of the American Moose are larger and finer than those of the European, although neither can compare with the horns of the extinct Irish Elk, some of which have 8 feet expanse of antlers.

The Moose generally produces one at a birth, and twins are a rarity. The young are easily tamed. A pair of female Elks were driven in a sledge at the Montreal Winter Carnival. According to the *Field*, the Moose does not attain to maturity until nearly nine years of age. In the rutting season, the males fight almost as savagely as Wapiti ; and, like most Deer, the horns

sometimes become interlocked, when the combatants die of starvation.

The pace of the Moose is not extremely fast ; its trot is, however, a long, swinging stride, with which it proceeds at a good speed. It was formerly used in sledges in Sweden, but as so many convicts escaped by this means, its use is now prohibited.

Like other large game, its numbers have decreased of late years. It is protected in parts of Sweden and Russia, and by a recent Act of the Ontario Legislature, the shooting of this animal is prohibited in that province until 1895, as it had almost become extinct there. In America generally, it appears to prolong its existence by its extremely acute sense of smell, and by its ability of keeping some time under water, rendering it difficult to capture except in the rutting season, when its combative-ness overcomes its prudence. It is attracted by the Birch-bark call of the Indian hunter, who imitates the note of the cow Elk, and is thus enabled to approach the quarry. In Alaska and Nova Scotia it is sometimes killed in the water by the Indians. In Russia, it is hunted by the sportsmen approaching in semi-circles, who thus strike the track at intervals, whilst keeping to the windward of the chase. In Norway, a dog is used to track the Elk, but it is led in a leash. In Sweden, Elk are driven and hunted in battues, or stalked with dogs at liberty. On September 5, 1885, the forest of Huneberg (14,000 acres) was shot over by the King and Crown Prince of Sweden, the Prince of Wales, and others. The Elk had been preserved there for over thirty-five years, and had increased to over 100 head. Fifty-one Elks were shot on that occasion. On September 14, 1888, this forest was again shot over by the King and Crown Prince of Sweden, and the Prince of Monaco, and

sixty-six Elk were killed, this being the largest quantity known to have been killed in Scandinavia. The Elk is said not to be shy in Sweden, and to approach farms, and play with cattle and horses, and they are also said not to call to each other as they do in America. Many of the Elk-forests in Norway belong to the Crown.

In America it is pursued by packs of wolves, who drive it over precipices. The wolves then descend and devour the carcase ; but in winter-time the Moose make spaces in the snow, called Elk-yards, which they tread down, and are thus able to move about with freedom, and defend themselves easily from the wolves.

Its flesh is excellent eating, preferable to that of all other Deer. In Norway and Sweden, the carcase is the property of the man on whose land the animal is killed, the sportsman reserving the head, and sometimes the skin, for himself (*The Field*).

A few Elk heads with horns are imported annually, and realize from £12 to £16. The hide is very large and valuable, and makes excellent leather. A few hundred skins are imported from Russia from time to time. In 1890, 910 skins were offered in public sales in London. The Hudson's Bay Company at one time purchased these for the Indians. In Alaska the Indians use these skins for their tents or lodges, which are usually made double to exclude the piercing cold of these regions.

In an old work on America, it is stated that the Moose was abundant at one time in the State of New York.

(Page 172) : "Towards the South of New York are many Buffles, Beasts which (according to Erasmus Stella) are betwixt a Horse and a Stag ; though they are of a strong Constitution, yet they die of the smallest wound, and are subject to the Falling-sickness. They have broad branchy

horns like a Stag, short Tail, rough Neck, Hair colour'd according to the several Seasons of the Year, broad and long Ears, hanging Lips, little Teeth, and Skin so thick as not easie to be pierced : The Females differ from the Males, for they have no Horns ; both may easily be made tame : when hunted they vomit out a sort of scalding Liquor on the dogs : they have great force in their Claws, for they can kill a Wolf with the same at one blow : their Flesh, either fresh or salted, is a good Diet : their Claws also cure the Falling-sickness."

NORTH AMERICAN OR VIRGINIAN DEER.

Cariacus virginianus.

The Virginian Deer, called also the White-tailed Deer, is widely distributed, but has of late much diminished in numbers. It formerly inhabited the Eastern States of America in vast quantities, and is still found in Montana. It also exists in large quantities in the islands of Alaska, but very few are now found in Canada.

This Deer is of a light grey colour, sometimes marked with small spots, especially on the hind-quarters. The hair is rather short and bristly. The horns are small, branched, and abruptly curved forward ; the points are sometimes abnormally abundant, as many as forty being found on one head.

The skins of the Virginian Deer were imported in great quantities, and exported from London to Germany, where they were used in the manufacture of leather leggings for the Bavarian peasants.

Like other Deer, the horns of the males get interlocked when fighting.

Albinos, or rather almost pure white varieties of this Deer, are sometimes met with.

BLACK-TAILED OR MULE DEER.

Cariacus macrotis.

The Mule Deer has been so called from the great length of its ears. It inhabits Montana, the Western Coast of North America, and parts of Canada.

This species is rather larger than the White-tailed Deer. The general colour is reddish-brown. The tail is black and bushy. The horns are small; they curve forward and branch into four or five points on each antler. The value of a pair of horns varies from 3s. 6d. to 12s. 6d., and rises even to 25s. when in great demand.

Mule Deer bucks may be shot from July 1st to November 1st (*Field*).

The Black-tailed is more numerous than the Virginian Deer, and a few thousand skins are imported by the Hudson's Bay Company. These skins are used extensively for leather, and are now chiefly bought by German leather traders for export to the Continent. In 1784, 227,000 Deer skins were imported, but these included Virginian and other Deer.

REINDEER.

Rangifer tarandus.

French : Renne. German : Rennthier.

The Reindeer is invaluable to the inhabitants of the Arctic regions, whether of Europe, Asia, or America. It inhabits the northern portions of these three continents, being found as far north as Spitzbergen, and although differing somewhat in these parts, it has been classed as only one species. In former times the Reindeer was abundant in Scotland, especially in the Orkneys, but attempts to re-introduce it have ended in failure. In Germany similar attempts have been made, mostly without success. It was successfully introduced into Iceland in 1770, and a few are found wild in that country.

In Norway, and other countries, the Reindeer is quite domesticated, some farms owning herds of 2,000 head. It is harnessed and used for sledging; the females yield abundance of milk; the flesh, especially the kidneys, is excellent eating, and the tongue is considered a great delicacy. The Reindeer is also ridden, the seat being on the neck, instead of on the back.

The Reindeer is about 3 to 4 feet high. The general colour is light buff or brown, and a lighter shade on the belly and head, but this varies considerably; in Labrador it is almost white; a few mottled examples are found in Russia; and pure white are often met with in Lapland.

The hair is brittle, extremely bristly, and abundant, thus protecting the animal well from the severe cold of

the regions in which it lives, and the great breadth of the feet enables it to walk on the snow with ease. When the feet are raised the hoofs close together, making a peculiar noise. The canine teeth are little developed; and it has twenty-four molars, six on each side of the upper jaw, and six on each side of the lower. The horns are peculiar, and vary more in formation than those of any other Deer, no two pairs being alike. They nearly always curve forward, and usually consist of two branches radiating into many points. The majority of the males have a brow antler, which is a triangular growth of horn called the spatula, reaching between the eyes, and hanging over the nose. This antler springs sometimes from the right horn, sometimes from the left, and in rare cases a spatula springs from each horn. It is said to make use of this antler to scrape away the snow from the moss on which it feeds. There is no tray antler in the Reindeer, and a good head possesses as many as thirty-seven points. The female has horns as well as the male.

About 30,000 Reindeer horns are imported annually into Denmark from Greenland, and about 8,000 from Russia, the latter realizing from £13 to £14 7s. 6d. per ton. The principal food of this animal is lichens, and Reindeer-moss.

The hair of the Reindeer is said to have high floating qualities, superior even to cork, and life-belts and buoys are sometimes made of it.

In Alaska this Deer is hunted from August 10th to the middle of September. At certain seasons of the year it crosses to the Island of Oommak, in the Aleutian chain. In Norway it is driven into pounds and shot.

The skin of the Reindeer is made into excellent coats

by the Esquimaux, for which it is very suitable, being both light and impervious to cold. It is also used for sleeping bags by the natives. By Europeans these skins are generally used for leather. Some are made into leather gloves, which are both pliant and durable. By the Indians they are used for making snow-shoes.

Several thousand skins are imported annually from York Fort; these are described as winter or summer skins, and are sorted into three or four qualities. Shaved skins are also sold from time to time. The summer skins fetch a higher price, the pelt being stouter at that season. The skins of Labrador Reindeer are very good, and about 800 are collected annually; these are sold in London, and sent to Germany to be dressed. Some Russian Reindeer skins are imported *viâ* Archangel from time to time.

The skins of the young animals are made into excellent linings in Russia, called Pijiky; they are light, warm, durable, and of a dark brown colour. The neck and belly are sometimes made up separately. Several thousand Reindeer tongues used to be imported annually by the Hudson's Bay Company, but the importation has ceased of late years, probably owing to the low prices recently obtained (about 2s. to 6s. per dozen). The flavour of these tongues was excellent.

The Reindeer is very much troubled with the attacks of the gadfly or tick, which in the summer lays its eggs in its coat. These ticks form boils, or circular masses of matter in the Reindeer's skin, causing great pain to the animal, and reducing its condition, besides lessening the value of the skin.

The horns of the Barren Land Caribou, or American Reindeer, are much larger than those of the usual type.

The Caribou has decreased considerably in Newfoundland, owing to the indiscriminate slaughter of both males and females in former years. The hunters used to station themselves at the peninsula of Avalon, and shoot the Reindeer as they passed across it. It is now stalked in this island by visitors and other hunters.

LLAMA.

Lama peruana.

French : Lama.

This peculiar animal belongs to the Camel tribe. It is about 3 to 4 feet in height. The neck is extremely long. The usual colour is white, black, or brown, the legs in the two latter cases being black. The hair is long, coarse, and very dense, giving it an extremely peculiar appearance. In the young Llama, the hair is very soft and silky.

The Llama is an inhabitant of Peru, where it is used by the natives as a beast of burden. Its wool is used in this country.

VICUNA.

Lama vicugna.

French : Vigogner.

The Vicuna, or Vicuna Sheep, is also an inhabitant of South America, where it is most abundant in the southern portions.

Including its very long neck of about $2\frac{1}{2}$ feet, the

Vicuna is about 6 feet high. The colour is light fawn, with a whiter belly. The tail is short, tufted, and fawn-coloured. The wool is rather long, thick, and close, with a few longer hairs projecting beyond it, and is especially well adapted for the manufacture of light woollen garments.

The skin is very suitable for sleigh-ropes, and the fur, being soft and light, pelts extremely well, but its costliness prevents it being used more extensively for this purpose. It is usually prepared raw.

The Vicuna is hunted by horsemen with the bolas, or two balls tied together, which are swung round the rider's head.

GUANACO.

Lama huanacos.

The Guanaco, or Huanaco, is tolerably abundant in Patagonia, and other parts of South America. It is a very quaint animal with a long neck, and is probably the same species as the Vicuna. The colour is light brown or fawn.

Large robes of fine quality are made from the skins of the young animals, and the pelt is painted red by the South American Indians.

Mr. P. O. Cunningham, in his "Natural History of the Straits of Magellan," thus describes its habits, p. 109 :—

"Their cry is very peculiar, being somewhat between the belling of a deer and the neigh of a horse. When at a distance, and fired at with the rifle, they in general go through some very singular antics, ducking down their heads, and as it were falling on their knees on the

ground—a habit which often at first induced our men to suppose they were severely wounded, when they were in reality perfectly intact. Mr. Darwin has commented on the singular habit which they possess of depositing their droppings on successive days in the same defined heap, and this I have likewise frequently observed. It would be difficult to over-estimate their numbers on the Patagonian plains; for in whatever direction we walked we always came upon numbers of their skeletons, and detached bones. Their two principal enemies are the Patagonian Indians and the Puma, as they constitute the principal food of both. The flesh is somewhat dry, and with very little fat, but is very palatable, particularly in the absence of other fresh provisions; and the skin is invaluable to the Patagonians, as furnishing the material from which their long robes are constructed. Occasionally bezoar stones are to be met with in the stomach, which are regarded by the Patagonians as of medicinal value.”

MAMMALIA.

EDENTATA.

GREAT ANT-EATER.

Myrmecophaga jubata.

French : Fourmilier. German : Armeisenbär.

This quaint animal, which inhabits South America, is noticeable for its very long narrow neck, its long tongue, the dense bristly hair of its bushy tail, and the triangular band of short black hair across the chest and fore-legs. The toes are armed with two curved claws of equal length, and a lesser one on the side. Its mode of progression is in consequence peculiar, as it walks on the joints of its toes. The Ant-eater has no teeth, and, as its name implies, feeds upon ants.

The value of a skin is about 5s.

MAMMALIA.

MARSUPIALIA.

MAUGE'S DASYURE, OR NATIVE CAT.

Dasyurus maugei.

This pretty little animal, called also the Spotted Cat of Australia, is tolerably abundant in that continent. It is about 9 to 10 inches long, including the tail of 4 to 5 inches. The colour is either light yellowish-grey, or black marked with beautiful white spots. These spots are very varied, both in size and in quantity, no two skins being alike. The tail is tipped with white, and is composed at the top of long bristly hairs. The eyes are black, and prominent; the nose is pink, and soft.

Maugé's Dasyure is carnivorous and nocturnal.

The fur being soft, the skins are very suitable for lining garments, and for making small articles.

The value of a grey skin in 1890 was 5¼d. to 6¼d., and of a black 10d. to 1s., but now the price is somewhat less.

From 2,000 to 5,000 skins are imported annually. Those from Sydney are generally larger and finer than those from other districts in Australia.

SPOTTED-TAILED DASYURE.

Dasyurus maculatus.

This second marsupial, or pouch-bearing animal, of which we treat, is much larger than the preceding, being about 2 feet in length, including its long tail.

The hair of this animal is coarse and harsh to the touch.

The colour is of a dirty dusky-brown, with a few white spots at the sides. The tail is spotted with white.

This Dasyure inhabits Queensland, New South Wales, and Tasmania.

Its skin is of little value.

LONG-TAILED DASYURE.

Dasyurus macronis.

This Dasyure is the rarest of the three species described, and its skin is very rarely seen.

It is remarkable for the great length of its tail, which is about a foot. About half of the tail nearest to the tip is black, and the half nearest to the body brown. The legs are light brown, and the feet are furnished with small sharp claws. The length of the body slightly exceeds a foot.

The general colour is brown, a little deeper than in Maugé's Dasyure, and it is likewise spotted with white. The white spots are more abundant on the head, and the colour of the belly is lighter.

The whiskers are black, and the ears are brown, and almost bare. It has 24 molars, which are joined to the canines.

BANDED BANDICOOT.

Perameles fasciata.

This small animal, of 6 inches in length, is remarkable for the length of its ears, and the length and slenderness of its legs and feet.

The hair with which it is covered is very harsh and short, and grizzly in colour. This Bandicoot is marked with three black bands just above the tail, whence it derives its name.

It is an inhabitant of Australia; and there is also a white variety.

The skin is, practically speaking, of no value.

LONG-NOSED BANDICOOT.

Perameles nasuta.

This Bandicoot is larger than the preceding, and is about the same colour, without the black bands, but the ears are shorter.

It is likewise an inhabitant of Australia.

The hair is very harsh.

RABBIT-EARED BANDICOOT.

Perameles lagotis.

This very curious and most peculiar animal has also been called the Chæropus, or Rabbit-eared Perameles.

It is a rather small animal, of about 12 inches in length.

The ears are very long, soft, and bare like a Rabbit's, but longer for its size. The fur is silky, long, and fine, but not thick in texture. The great contrast of colour is remarkable; it is of a beautiful pink on the upper part, and of a pale slaty-ash hue on the hinder parts, and the belly is white. The tail is brown at the base, then about half of it is black, and the other half, near the tip, white. The forefeet are furnished with three long claws, and the hind-feet with only one, which is extremely long. The pelt is very thin.

About 20 to 50 skins are imported annually among the Australian sundries. If this animal were more numerous, its fur would be better appreciated in commerce.

MYRMECOBIUS.

Myrmecobius fasciatus.

The Myrmecobius is a small marsupial of 4 to 6 inches in length, and is very quaint in appearance.

The shoulders are red; the hinder part is dark brown, striped with darker bands; and the tail is rather bushy.

Skins of this animal are found among the sundries,

but are of little value, the hair being very coarse and bristly.

It is an inhabitant of Australia, and is sometimes called the Banded Ant-eater.

Mr. Nichols says the Myrmecobius feeds upon ants and other insects, and climbs with facility.

PHASCOGALE.

Phascogale penicillata.

The skin of this small animal is rarely met with, except amongst the sundries. The fur is extremely short, and of a blue or grey colour ; the tail is covered with long black, bristly hairs.

This animal also inhabits Australia, and the skins are, practically speaking, of no value.

AMERICAN OPOSSUM.

Didelphys virginiana.

French: Opossum d'Amérique. German: Amerikanischer Opossum.

The American Opossum is one of the few marsupials found out of Australasia. It varies from 4 inches to about 3 feet in length, according to age, but these dimensions do not include the long bristly tail. The average size is 14 to 18 inches.

The ears of the American Opossum are small, black, wide, and bare. The whiskers are black. The general colour is grey or grizzly. The under wool is white,

slightly darker at the tip, and in some specimens almost black. The longer hairs are grey or whitish. The belly is very sparingly covered with short hair of a drab-brown colour, with a white line running from the centre, which becomes yellow near the neck. The tail is long, scaly, devoid of fur, and about two-thirds of it towards the tip is white.

White specimens are by no means uncommon, but fawn are much rarer. We have only once seen a mottled grey and white skin, which is extremely rare.

The fur, although rather coarse, is thick and good in the full-seasoned animal, and a skin varies in price from 1s. to 2s. 8d. (1891), according to size and quality. This fur forms an important article of commerce, being used in the natural state, and also dyed black, brown, and grey, for capes, muffs, etc. About 200,000 to 300,000 skins are imported annually.

The pelt is generally very greasy, owing to the fatty nature of the Opossum.

This Opossum appears to have increased considerably with the advance of the settlers in America.

It inhabits the United States exclusively, and is never found in Canada, and its principal habitats are Ohio, Pennsylvania, Virginia, Kentucky, Tennessee, Illinois, Indiana, and Honduras.

The flesh of this animal is said to be good eating.

In an old work on America, p. 329, the Opossum is thus described :—

“The Opossum is as big as a Cat, hath a sharp Mouth, the upper jaw-bone hanging over the lower, long, straight, and broad Ears, and a very long Tail, bald at the end, which winds in a Circle ; on its Back black Hair sprinkled with grey Spots, and with its sharp Claws climbs up the Trees, where it feeds on Fruit, and some-

times preys on Fowls. Nature hath furnish'd this Beast with a strange Bag under its Belly, whereof the inside hath a far softer Down than the outside, in which the young ones lie and suck, after which the Bag opening, they creep out upon the Ground. The Males have also a Bag, which serves onely to carry their Young in, for they and the Females carry them by turns."



KOALA.

Phascolarctus cinereus.

French : Koala.

To this peculiar animal the name of Australian or Native Bear has been given, probably on account of its being the largest Australian mammal living on trees. It is very unlike the Bear, both in its habits, which are

nocturnal, and its size and colour, and resembles the Sloth in its habits and slow movements.

The size of an adult Koala is from 18 to 24 inches. The general colour is light grey, the tips of the coarse hair being white; the upper part of the belly and chest are white, as well as the insides of the legs; the lower part of the belly is reddish-brown, of various hues, approaching at times to dark brown or dark purple. The fur on the hind-quarters is much shorter, and has patches and spots of white. From some districts, such as Melbourne, the shoulders are quite brown, and there are sometimes a few white spots on the lower part of the back and chest, whilst other specimens are quite dark brown, verging on black, and those from Adelaide are dark purple. The ears are very short, broad, and tufted on the inside with longer white hairs. The head is very broad and short, and surrounded with a fringe of hair. The nose is bare, and whiskers are absent. The formation of the feet is singular; the claws of the fore-paws are five in number, the two inner ones being opposable to the other three; on the hind-paws the first toe is very short, and is opposable to the other toes like the thumb of a man to the fingers; the next two toes are small and joined together; the fourth is the longest, and is separate; the fifth is likewise separate, but rather shorter. The Koala has no molar teeth, neither has it a tail.

The whiskers are black, and the ears almost bare and brown. It has 24 molars, which are joined to the canines.

The Koala is a vegetarian, and lives in the giant Eucalyptus or Blue Gum trees, on the foliage of which it feeds. It is said to be rather stupid, and to be easily killed with a stick.

Mr. Arthur Nicols says that "the voice of the Koala

is plaintive, and unvaried, but by no means unpleasant, and frequently repeated in three syllables."

The Koala is tolerably abundant, and from 10,000 to 30,000 skins are imported annually. In 1889 the large quantity of 300,000 were sold; and in 1890, 190,000. The present value (1891) of a good skin is about 5d. to 1s. In 1871 and 1872, 1s. 6d. was paid, but the price fell later to 2½d. to 5d. These skins are made into perambulator mats, sleeping and travelling bags, coats, rugs, and many other articles for which a cheap, durable fur is required. Some are dyed brown, and a few are clipped and used for glove purposes.

The skins from Sydney and other mountainous districts are generally large, fine, and light in colour.

AUSTRALIAN OPOSSUM.

Phalangista vulpina.

French : Opossum d'Australie. German : Australischer Opossum.

This abundant and well-known animal is also called the Vulpine Phalanger. It is found in the greater part of Australia; it lives on the great blue gum trees of this continent; and, as it is nocturnal in its habits, it is usually shot on bright moonlight nights, when its position can be most easily perceived.

The Australian Opossum, like the Musk-rat, Skunk, and American Opossum, seems to have increased in the last few years; it increases in semi-settled countries, living on the corn crops, fruit trees, etc., introduced by the newcomers, which give these semi-wild animals a better supply of food.

Some twelve or fifteen years ago a few thousand skins were imported annually, now the annual supply exceeds two million skins, which realize from 2d. to 1s. 5d. according to demand, colour and quality. It is now justly appreciated for its cheapness, light weight, pretty grey colour, and general usefulness. It is made into rugs, perambulator mats, capes, boas, &c., and the tails are made into mats ; many are dyed black and dark brown,



some are also used for glove tops, either brown-topped or clipped in imitation of Beaver.

England, Germany, France, and America, are the chief buyers of this fur ; the skins usually begin to arrive in London in October.

The colour of the Australian Opossum is a beautiful grey, with longer and darker, or dark grey, hairs on the back ; the under fur is blue, except in the redder animals,

when it is red at the shoulders. The tail is two-thirds black towards the tip, and one-third grey like the rest of the body ; the belly is yellowish, and has very short, fine fur ; there are a few long black whiskers on the mouth.

THE TASMANIAN OPOSSUM is the largest of this species, and nearly the rarest except the Victorian Opossum ; a large skin of this animal, which we measured, was 36 inches long, body 25 inches, tail 11 inches.

This Opossum inhabits exclusively Tasmania, and is much sought after for its large size. The grey-coloured variety is not generally so blue as the Opossums from other parts of Australia ; its colour is yellower, and fur much longer and thicker, the ears grey tipped with white, the tail very bushy and black for about two-thirds from the tip ; the tip on one side is devoid of fur, and this bare space enables it to cling to twigs and branches with great facility. The value of skin, good No. 1, is from 1s. 4d. to 2s. 6d. according to demand. The large black or dark brown variety, called the *Black Tasmanian Opossum*, exists in larger proportion in this colour than in any other region, such as Sydney and Melbourne. The qualities of skins which are imported vary considerably ; sometimes a few hundred, sometimes 5,000 to 10,000 are sent, but since 1889 the killing of the Tasmanian Opossum has been prohibited. This fur is much esteemed by furriers in all countries, especially Herzegovina. Prices vary for a large No. 1. skin from 3s. 6d. to 6s. 6d. according to demand.

The colour of this animal is a rich black-brown ; some specimens are much redder. A few of dark skins have a white belly.

VICTORIA OPOSSUM.—This variety is nearly as large as the Tasmanian. The colour is of a clear dark grey-

blue, of a much darker and richer shade than other Opossums; the under fur is deep blue, the belly white, the ears dark, the tail thick and bushy; the fur on back is often blacker. A black variety, the Black Victorian, is sometimes met with. The value of a good blue skin is about 2s. 6d.

Its skin is scarcer than that of any other Opossum, and is much esteemed by the English and Canadian trade.

SYDNEY OPOSSUM.—The Sydney Opossum is less in size than either of the foregoing, but exceeds that of the Melbourne and Adelaide types. The tail sometimes measures 12 inches; the usual length is about 8. The colour is usually of a bluish-grey, the tail generally tipped with black; but occasionally a white tip is found to this appendage, and sometimes a white spot is found in the fur of the body.

The fur is from $1\frac{1}{2}$ to 2 inches in length, blue in under fur but occasionally red, and redder principally at the necks, sometimes almost white when in full-seasoned skins; the upper fur is mingled with larger and coarser dark hair. Some skins are nearly red in colour, except the hind-quarters. The whiskers are rather long and black, the ears are grey with a white spot on them, the nose and fur on face is very soft and delicate.

Many of these animals are shot, more so than in Tasmania, Melbourne, and Adelaide; the best time for this sport is on a fine moonlight night, when it is clear enough to see them on the branches of trees. The fur of many is spoilt just above the tail by friction with the bark of trees when sitting on their haunches; or when taking hold of the branches with their tails, which are bare on one side near the top.

The Sydney Opossum appears to interbreed with

the Koala, and sometimes with the Brush-tailed Kangaroo (Rock Wallaby), partaking of the nature of both of these.

Most of the Sydney skins are obtained from the mountain regions about that part, thus accounting for the rich and thick fur.

White Opossums are uncommon, but not scarce.

THE MELBOURNE OPOSSUM exceeds all other varieties in number; in size it is smaller than the Sydney type, which it resembles much in colour. Its length is about 16 inches including the tail; this is generally black for two-thirds of its length, but is sometimes grizzled, though this freak of nature is extremely rare. Dark brown Opossums with white bellies and albinos are sometimes met with; jet black animals are very rare; we have once seen a dark drab skin.

The fur of the Australian Opossum takes a brilliant dye, and becomes very soft and silky in the process.

The Australian Opossum breeds well in confinement. About 3,000,000 skins of all sorts of Australian Opossums were sold in London in 1891.

THE ADELAIDE OPOSSUM is the smallest in size of this species, but its colour is the best, being of a very decided blue; the majority of skins are of this description, having an abundance of longer black hair on the back, giving it the appearance of a Chinchilla.

A certain number are, however, red.

The fur is short, $\frac{3}{4}$ to 1 inch in length; the tail rather thin in fur, and often having a white tip; sometimes it is even white for half its length.

The West Australian and Swan River Opossums resemble the above, but they are more mousey, redder

in colour, and also much smaller. Many of the tips of these tails are also white. Black and brown varieties are by no means uncommon, often described by naturalists under other names, such as *Phalangista Lemuroides*.

ROCK OPOSSUM, OR SHORT-EARED PHALANGER.

Phalangista cannia.

This Opossum is the rarest of the family, and inhabits the rocky parts of New South Wales.

It exceeds slightly in size the Sydney Opossum, but is inferior to the Tasmanian.

The colour is of a red hue, especially towards the head ; the back is covered with darker hair, rather greyer. The value of a skin is about 1s.

There are occasionally dark brown varieties.

RING-TAILED OPOSSUM.

Phalangista cooki.

This Opossum is also called Cook's Phalanger, and was probably first noticed by this celebrated navigator. It is a small animal, of about six inches long, with a long tail which measures as much as 13 inches, and is slightly thicker at base ; it is white for about two-thirds from the tip. In one example we have seen a ring of black in this white portion ; from such a rare specimen the name of Ring-tail has probably been derived. The Ring-tailed Opossum of Adelaide is the most numerous of

this species, about 2,000 to 6,000 skins being imported annually. The colour is of a rich blue, with darker hair on back, like a dark Chinchilla.

The fur is short, fine, and soft; the belly is pure white. The ears are very short and white. The value of a skin is from 2d. to 6d. according to demand: especially suitable for boas, children's muffs, and other small articles.

There is a black variety of the same animal which is very beautiful, and called *Phalangista herbertensis* by some collectors; in fact, the colour of Cook's Opossum varies very much, quite light, whitish-looking specimens are met with; yellowish, steel, dark grey, like Victorian grey, are also not uncommon.

The Sydney Ring-tailed Opossum is light brown in colour, not nearly so pretty, and its skin is not so much appreciated. It is sometimes called *Phalangista archeri*. The tail of all varieties of Cook's Opossum is broader at the base, and white at the tip.

SQUIRREL-LIKE PHALANGER.

Belidens Scirreus.

This very small animal has soft fur. It is short-headed, and has dark lines at the neck. It is nocturnal.

GREAT FLYING PHALANGER OR OPOSSUM.

Petaurus australis.

This nocturnal animal is very diversified in colour ; the general hue is a light brown or grey with a dark stripe running down the back ; the fore legs and edge of the parachute are dark brown ; the hind legs are only dark brown on the low parts ; the head is dark brown ; the whiskers are sparse, short, and black ; the eyes are dark ; the tail is long, dark brown half way from the end ; the lower half near the root is fuller, lighter, with a brown stripe at the top ; the neck and belly are yellowish ; the ears are long, broad, and almost bare of fur, and the claws are sharp and hooked ; the fur is very soft, and that on the flying membrane or parachute is extremely so, and very short.

In black varieties the belly is white, the tail of these sometimes exceeds 2 feet ; white varieties are also occasionally met with.

According to Mr. Nichols this animal feeds on moths, leaves, and berries.

Like all other flying mammals, the skin is too thin to allow this fur to be used for any other purpose than as mounted specimens.

RED KANGAROO.

Macropus rufus.

We now arrive at the large and important family of the Kangaroos. All are noticeable for great length of hind legs in comparison to the fore legs; long, thick and tapering tail, which is used as a support when resting on the hind legs—a favourite position of all Kangaroos; the fore legs are very short and small, and are rarely used except when feeding.

The hind legs are furnished with three strong claws, the centre of which is longest, and which inflict fearful wounds on hounds when at bay.

The Red Kangaroo is one of the largest species, and is only surpassed in this respect by the Great Kangaroo.

Its fur is red; at one season of the year light slate-blue or reddish-blue: on account of its wooliness and harshness it is not sought for by furriers, and its skin is not liked by tanners, as it is too harsh for leather.

The Red Kangaroo is one of the most numerous sorts. Several thousand skins are imported annually.

Its food, like all other Kangaroos, is essentially vegetable. The Red Kangaroo is sometimes called the Sand Kangaroo.

All the Kangaroos possess a pouch, into which the young get when alarmed. The young are born very small, and pass the beginning of their existence in this pouch.

BLUE KANGAROO.

Macropus erubescens.

The blue, roan, or grey Kangaroo is not so numerous as the foregoing, and is not quite so large.

Its colour varies from very light pinkish-yellow, in fact almost white, to light blue with longer white hairs, and then to dark blue and dark brown-blue, the colour of a dark blue Fox; the belly is white.

The fur is long and rather soft; the under fur or ground is pink or light blue.

The tail is brownish or light yellow, but the tip is browner and slightly bristly; the feet are dark brown, and white underneath.

The pelt is soft and thin; in the raw state it has a glazed and fresh appearance, and is appreciated by tanners. When used as a fur it is made into boas, rugs, &c., and its value is about 1s. to 3s.

The skins of this animal are imported with those of other Kangaroos. The yearly collection is therefore difficult to ascertain; it would perhaps amount from 30,000 to 40,000.

WALLAROO.

Macropus robustus.

The Wallaroo is still smaller, and is perhaps the most scarce of all the Kangaroos.

Its colour is whitish-grey, with a yellow or white mark on each side of the tail; the tail is greyish, and the hair is very short and harsh.

The skin of the Wallaroo is only suitable for making into leather; it is, however, often found in the sundry lots of the Australian furs.



GREAT KANGAROO.

Macropus giganteus.

French : Kangourou. German : Känguruh.

This large animal is also called the Boomer, Forester, or Old Man Kangaroo. It appears not to have decreased much since the settlement of the country; its numbers have certainly been considerably diminished in the proximity of towns, but on the other hand its numbers have increased on the sweet pasture and cultivated grounds of the newly-settled districts, and does there a certain amount of damage. It is said in "Marsupial Reptiles" that its increase is due to the destruction of the Dingoes. The Boomer is the most numerous of all the Kangaroos; the full-grown animal is about 4 to 5 feet high when sitting on its haunches.

It is hunted by means of dogs, and is very difficult to capture on broken ground on account of the long

jumps which it takes on its hind legs, its usual means of progression when chased. When at bay it defends itself by means of its claws, seizing the hounds with the front paws, and ripping them open with the hind ones. The ordinary mode of progression is a series of leaps.

The colour of the Great Kangaroo is dark brown or drab, or light drab with whiter top hair; the belly is lighter, almost white, and the fur is longer and thicker underneath; the tail is long, and tipped with black; the ears are long; the fur is not very dense except in the younger animals, which are more serviceable for furriers, and used for wrappers, rugs, coats, etc., and low quality skins are made into linings. The larger skins are usually bought by tanners and leather-dressers, and are japanned or tanned for leather, and used in the manufacture of shoes, etc. The larger skins are also much appreciated by the American leather trade.

Kangaroo skins are now sold in auction by weight, and as large skins weigh about 2 lbs., and as the price often reaches 3s. per lb. or more, a large skin is worth about 6s., but the extra small are not worth more than 3d. to 9d. About 100,000 skins are sold annually in London.

In 1885,	57,294	skins	} These include all species of Kangaroos.
„ 1886,	165,690	„	
„ 1887,	146,354	„	
„ 1888,	116,372	„	
„ 1889,	368,480	„	
„ 1890,	308,456	„	
„ 1891,	126,673	„	

Kangaroo flesh is said to be excellent eating, especially that of the young; the tails are made into excellent soup. Like most animals, the Kangaroo swims well.

White Kangaroos are sometimes met with ; these are very beautiful, and have pink eyes ; black varieties have been described as a different species of the black-faced Kangaroo (*Marcopus melanops*).



YELLOW WALLABY, OR YELLOW-FOOTED
ROCK KANGAROO.

Petrogale xanthopus.

This animal is of rather small size, about $1\frac{1}{2}$ to 2 feet long ; the tail, however, is another 2 feet long, hairy and ringed ; the head is narrow, and the ears long, as is usual in all Kangaroos or Wallabies.

The fur is soft, long, dense, and fluffy ; it is of yellow hue generally ; the back is of a light brown, with a black stripe down the centre ; there is a white mark on each side. It inhabits South Australia.

This species is not very numerous. Some hundreds of skins are imported annually from Adelaide ; the value

ranges from 1s. 4d. The Yellow Wallaby has bred in the Zoological Gardens of London.

ROCK WALLABY.

Petrogale pencillata.

The Rock Wallaby, or Brush-tailed Kangaroo as it is also called, is more numerous than the foregoing. Several thousand skins—about 5,000 to 15,000—are imported annually, and are mostly bought by furriers and fur traders for use in England, France, Germany, and Canada.

The fur, which is tolerably thick, is also about $2\frac{1}{2}$ inches long and of a reddish-brown silvery hue, somewhat like a red Lynx; the top hair is rather longer; the belly is brownish; the colour of the fur is red, brown towards the tail, and grey-speckled on top of the back; the under fur is blue; the fore legs are short, and the five toes of the front feet are covered with fur. The tail is very long, about 2 to $2\frac{1}{2}$ feet long, and covered with bristly brown hair.

The eyes are black, and there is a black line between them. Occasionally there is a white spot in the brown fur.

The Rock Wallaby dwells amongst rocks, and is an excellent jumper, easily clearing six to eight feet at a bound; it appears to interbreed with the Australian Opossum, and thrives well in captivity in this country. The usual value of a good skin is from 3d. to 9d., but sometimes they have been driven up to 1s. 3d., which is beyond its real value. It is a serviceable skin for coats, capes, etc., and is sometimes dyed.

The Rock Wallaby inhabits New South Wales and Victoria. The skins shipped from Sydney are the best.

BENNETT'S WALLABY, OR BUSH KANGAROO.

Halmaturus Bennetii.

Another name for this Wallaby is Bennett's Wallaby; it is also sometimes called the Hill Wallaby or Kangaroo; and is one of the more numerous species, but the exact quantity of skins imported is difficult to ascertain, as so many species are sold under the general name of Wallaby or Kangaroo; probably 20,000 to 30,000 of this sort are imported. The fur, or rather hair, is short, grizzly, and harsh and thin, like a common Raccoon in colour, but rather redder. The tail is grizzly like the skin, but the tip is black.

The skin is only fit for common wrappers or coats (as an imitation of common Raccoon), or for making into leather. Its value is from 4d. to 1s.

There is a white variety of this species. The Bush Kangaroo is said to swim well. It inhabits New South Wales and Victoria.

SWAMP WALLABY.

Halmaturus walabutus.

The Swamp or Black Wallaby is the largest of the Wallaby family; it is about $2\frac{1}{2}$ to 3 feet long. This measurement does not include its tail. The general colour is a deep reddish-brown, rather redder towards the tail. The under fur, or hair, is coarse, and covered with long, black, harsh hair; the belly is brown.

The ears are long and brown and the feet are black. In some examples there is a white spot in the fur. The

fur, although so harsh, is strong and good, and is much appreciated in Canada for coats, and a few are sometimes used dyed in Europe. The larger skins are made into leather.

Some 10,000 or 20,000 skins are imported yearly into London, and the price ranges from 6d. to 1s. 9d., but in 1889 3s. 2d. even was reached.

BLACK-STRIPED WALLABY.

Halmaturus dorsalis.

This small Wallaby is very numerous ; many thousand skins are imported and bought by tanners for leather. The hair is short, sparse, and grey, with a black stripe running down a great part of the back. It is also called the Hill Wallaby. Most of the foregoing Wallabies are said to be very good eating.

SHORT-TAILED WALLABY.

Halmaturus brachyurus.

This small Wallaby is also called the Wood Wallaby, or Kangaroo. It probably lives in trees, and it gets over the ground very quickly, its pace being between a hop and a run.

Its length is about 12 inches to 18 inches, not including the tail. The general colour is dark brown but rather grizzly, and redder underneath ; the tail is speckled. The fur is short and tolerably dense, and is well adapted for making into coats ; its value is about from 6d. to 1s., some 5,000 to 10,000 skins forming the annual importation.

BRIDLED KANGAROO.

This small Kangaroo is sometimes called the Paddy Melon. The fur is very short and flat, and is speckled-grey in colour, the tail is also speckled. There is a characteristic stripe round its head, from which it derives its name of bridled. The skin of this animal is very serviceable for lining coats, but not more than a few hundred skins are sent to this country. It appears to be a scarce animal.

KANGAROO RAT.

Hypsiprymnus rufescens.

The Kangaroo Rat is a small animal, rather larger than a Musk-rat, its length, without the tail, rarely exceeding 12 inches. Its fur is reddish with longer white hair, the under fur blue and tolerably abundant. The skin is thin and light, and for this reason makes one of the lightest and most serviceable coat-linings. The belly is white, and there is generally a white tip to the tail.

WOMBAT.

Phascolomys wombat.

This large marsupial is sometimes called the Australian Badger. It lives in burrows in the ground, and is nocturnal in its habits. It is about 4 feet long, and is covered with dark brown, bristly hair. The skin has no use as a fur and is simply good for leather. It is an inhabitant of Australia.

MAMMALIA.

MONOTREMATA.

PLATYBUS.

Ornithorhynchus anatinus.

French : Ondatras.

This most singular of all animals is also called the Duck-billed Platybus. It has the bill of a Duck perforated with two holes at the base for nostrils ; the fore feet are webbed, and besides this deep web they are furnished with five long nails ; the hind feet are webbed, but in a less degree. The claws are longer and project beyond the web. They are also furnished with a longish spur like that of a game cock, but not so long ; there is a small hollow duct running through the spur ; by some this is said to contain poison. The tail is short and bristly, but like the rest of the body. The fur is short, dense, and silvery-brown ; the under fur is extremely dense and fine, and blue in colour. It is the richest of all under furs, excelling that of the Fur Seal. The belly is lighter, almost white in some specimens. There is a white mark round the eyes. Like all water animals its pelt is thick, fur short. The Platybus has no external ears. The vent is like that of a bird, and its internal organisms are very similar. It lives in the water and makes its holes in the bushes. It has been said to lay eggs ; this, however, seems never to have been proved. It probably, like the Echidna, produces broken shells at the same time that the young are born.

The Platybus has no teeth, but their place is taken in

the jaws by flat, long plates, which are adapted to crush the small molluscs and crustaceans on which it feeds.

The *Platybus* inhabits Australia; a few skins—not more than a hundred or so—are imported annually. Pulled and dyed they excel Fur Seal in quality, and are well adapted for caps and small ornaments. When pulled and silvered, they are used for glove tops, and in the natural state for capes, trimmings, etc. The value of a skin is from 1s. to 2s. 6d., according to size and demand. There are several local varieties of *Platybus*, some of which have finer fur. The *Platybus* lives in long burrows near the water. The flesh is said to be eaten and relished by the Australian natives.

Mr. J. Nichols says that the *Platybus* excavates burrows 20 to 40 feet deep, and that it has two entrances to its nest, one on the land and one under water (p. 126). The young are born hairless and blind, and totally unlike the full-grown animal. That which becomes the duck bill in the adult is a pair of short fleshy lips, with which they obtain the milk. The female has no pouch: the eye possesses the third eyelid or “nictitating membrane.”

ECHIDNA.

Echidna hystrix.

French: Echidné.

This small but interesting animal is only surpassed in quaintness by the foregoing. Its body is covered with small and abundant bristles or quills of about 1 inch to 2 inches long, and black or light brown in colour. On account of these quills it has been called the Australian

Porcupine. The tail is also composed of quills. The general colour is brown; it, however, varies in different parts of Australia. In specimens from some localities the under wool is abundant, and have consequently been described as different species by some authorities.

The head has a long bill but no teeth; the animal feeds solely on ants, which it obtains by means of its long tongue.

The Echidna is an inhabitant of Australia. Its skin is of little value for any purpose.

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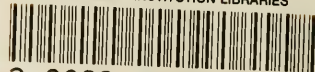
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