

Place. Elevation.

Berenboden 6225. Though neither the soil nor exposure were favourable, Larches, a foot and a half in diameter, and sixty feet high, grew here; the Siberian Pine and common Fir also flourished; 600 feet higher, some of these trees were seen growing on the top of a rock, probably the loftiest spot at which they will vegetate. Neither the Alpine Pine nor Aquatic Alder were to be found here; only some wild Medlar trees. None of these, with the exception of the larch, appeared degenerated; while on the mountains of Berne, forest trees grow stunted; and perish gradually, in proportion to the height at which they are found.

7400. At the highest point of the Pass of Fluella, forest vegetation had ceased. Abundance of *Poa alpina*, however, was growing; and this is invaluable in a country where, owing to the mountainous nature of the pastures, the crop of fodder is always small and precarious, and every blade of grass has to be collected with the utmost care. It is common to plant those kinds of trees, whose foliage and young branches afford the most nourishing food. In places inaccessible to cattle, the Swiss peasants may be sometimes seen making hay with crampons (hooks to prevent them from falling) on their feet.

The grass is cut, not three inches high, in some places three times a year, and in the valleys the fields are as close shaven as a bowling-green, all the inequalities being cut with a pair of scissors. In Switzerland, as in Norway, for the same reason, the art of making hay seems to be carried to its highest state of perfection. In Iceland, the poor people are often seen on their knees scooping out the grass with a clasp-knife, from between the interstices of the rocks. A little below the highest point of the Pass of Fluella, in a southern aspect, the first Firs, mixed with Juniper plants, were to be seen; whereas on the northern side, only Azaleas grew, whose rusty-coloured foliage indicated the extreme severity of the climate.

The distance which usually intervenes on the Alps between the growth of trees and the limits of perpetual snow, is 2700 feet; the tree that is found nearest the snow being the *Pinus Abies*, or Spruce Fir. *Ericinæ* and *Rhododendron ferrugineum* (fig. 398.), commonly called the Alp Rose, do not attain a greater height than 7020 feet, and the distance between the snow and the culture of corn is 4200 feet. Plantations on mountains in England seldom succeed at a greater elevation than 1200 feet.



Alp Rose.

### SUBSECT. 3.—Zoology.

The zoology of Switzerland participates in the singularity of its geographic features, and exhibits several native animals designed by Providence to live only in the wild recesses of mountainous districts. Among these, the Ibex (*Capra Ibex*) (fig. 399.) is the most singular, and deserves particular notice. Although not much larger

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Ibex.

than a domestic goat, its horns are enormous, measuring sometimes two feet and a half long; and are so formidably robust, that the observer wonders how an animal apparently so heavily encumbered, can at the same time be possessed of such surprising activity. Around these horns are cross ridges, or knots, the number of which generally indicates the age of the animal. The Swiss hunters assert that the horns do not reach their full size until the twelfth year. The Ibex dwells only among the highest and most inaccessible precipices of the Alps, particularly those of the Tyrol, and appears to delight in frequenting the frightful regions of eternal snow; yet even here they are pursued by their adventurous hunters; and their numbers both in Savoy and Switzerland are much diminishing, while they are almost extinct in the Pyrenees. The chamois, somewhat less wild, yet apparently formed for more activity, inhabits the same mountainous ridges. The descent of the domestic goat from the Ibex has been asserted with too much confidence: it rests, like many other similar questions, on mere supposition.

The Alpine Marmot (*Arctomys marmotta*) is another of the most remarkable European quadrupeds. Although thick and ungraceful in appearance, it is endowed with surprising

instinct. These animals live among the mountains in families, and form under-ground burrows; when they quit these retreats for procuring food, one of the number, as a guard, ascends an elevated spot near their common habitation. If this sentinel observes an enemy, or any unusual object, he utters a shrill cry, upon which the whole company run to their retreat; or, if too far, instantly seek a hiding-place in an adjacent cleft or hole. Such and so various are the modes by which Almighty Providence enables its weakest creatures to guard against dangers they are otherwise unable to escape from. These marmots pass the whole winter in a deep lethargy, during which time they take no nourishment. The fur is thick, warm, and well known as a valuable article of dress. The wolves of the Alps are both numerous and formidable, and the foxes live undisturbed by the huntsman.

The ornithology of Switzerland has received much attention from the naturalists of Geneva; among whom Professor Bonelli is most celebrated. The large vultures of Germany are occasionally seen; but there is another, called the Bearded Vulture, or Vulture of the Alps (*fig. 400.*), more peculiar to this country. It is a noble bird, partaking more of the



Bearded Vulture.

courage and sanguinary nature of the true falcons, than of the vultures, to which group, from the structure of the bill, it nevertheless more strictly belongs. Its length is above four feet seven inches; the neck is covered with pointed feathers, and under the bill there is a tuft of stiff setaceous feathers, not unlike a brush. Its strength is so great, that it attacks sheep, lambs, and young stags, and even the chamois and ibex fall victims to its rapacity. It builds in such inaccessible precipices that its nest is very rarely seen. A smaller species of the same family, the *Vultur percnopterus*, although more properly an inhabitant of the south, extends its range to Geneva, where it is not uncommon.

The insects of Switzerland are more numerous than the face of the country, so thinly clothed with wood, might lead us to suppose; and many peculiar species of trout and salmon abound in the lakes.

Of the domestic animals, there is a good race of draught horses, some being not unfit for the carriage. They are generally compactly made, vigorous, and sober; while, to fit them for enduring the severe cold they are so frequently exposed to, nature clothes the head, limbs, and feet with an unusual quantity of long hair. The cattle are said to be of a large size, but the particular breed has not been mentioned.

The alpine Spaniel (*fig. 401.*) is a remarkable variety of the Spanish breed, preserved



Alpine Spaniel.

with much care by the humane monastics on Mount St. Bernard. These beautiful dogs are generally two feet high, and full six feet long; the eyes have a peculiar appearance, attributed by some to the snow, and the high windy regions they inhabit. They are kept for the preservation of those unfortunate travellers who are so often lost in crossing the pathless snows of these dangerous mountains. Two of these dogs are sent out in severe weather, to scour the mountains, one with a warm cloak fastened to its back, the other with a basket holding a cordial and provisions. Their instinct and sagacity are so

great, that it is said they will discover persons perishing with cold and fatigue; and if too exhausted to proceed, they will lie close to these unfortunate travellers, to afford them warmth from their own bodies, and assist their resuscitation.

### SECT. III.—*Historical Geography.*

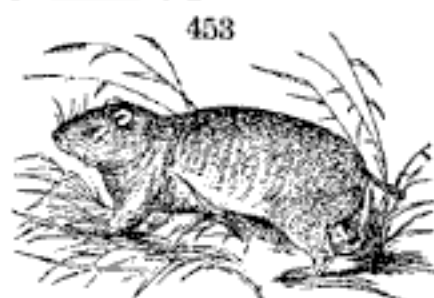
Ancient Helvetia was celebrated among the Romans for the boldness of its natural features, and the rude valour of its people. The Helvetians were fully made known by the grand expedition undertaken with a view to make themselves masters of Gaul, and the discomfiture of which formed the first military exploit of Caesar. They were soon afterwards reduced to the state of a conquered people, when, like the rest of their neighbours, they found compensation for the loss of their valour and liberty by a culture and civilisation which had before been unknown to them.

During the middle ages, Switzerland shared the fate of the rest of Europe, being over-run by the Huns, Burgundians, Franks, and other barbarous invaders. By them it was formed into a number of feudal possessions, under the supremacy, first of Charlemagne, then of the house of Burgundy, and lastly of the house of Hapsburg, which, having seated itself on the imperial throne, rendered Switzerland an appendage of the German empire. These invasions,

graphic distinctions would be unsuitable to this work; we shall, therefore, confine ourselves to a brief notice of those animals which appear more peculiar to European Russia.

The quadrupeds are numerous. The dreary regions of Nova Zembla are frequented by the great white bear, which seldom passes beyond the limits of eternal snow: arctic foxes, and all the polar animals, are likewise met with. Towards the central provinces, wolves, brown bears, and the other European animals, abound in the forests; but the wild oxen, once known to inhabit Lithuania, are now extinct.

Three of the most remarkable quadrupeds, all of a smaller size, are, the Bobac, the Soulsk, and the Alpine or Calling Hare. The first is sometimes called the Poland Marmot (*Arctomys Bobac*) (fig. 453): it is rather larger than the hare. Its habitations are not so lofty



Poland Marmot.

as those of the common Marmot; it prefers a dry soil, in which it digs very deep burrows; and so careful is it to secure warmth, that it amasses as much dry grass in a single burrow as will feed a horse for one night. The celebrated Pallas relates, that, when the bobacs have occasion to transport a quantity of provisions to their burrow, one of the party, lying on its back, is laden by the rest in the manner of a cart, and then all proceed in a party, drawing their companion by the tail to the common magazine. It must be confessed this story appears so incredible, that the illustrious name of Pallas alone induces us to repeat it.

The Soulsk, or variegated Marmot (*Spermophilus Citellus*), is the most elegant of its genus; being spotted, or waved, with white on a brown ground. It is partially carnivorous; birds and small quadrupeds having been found in its hoards.

The Alpine Hare, or Pika, inhabits only the highest mountains of northern Europe, in the thickest and most sequestered forests. The instinct for amassing provision against winter is highly developed in these defenceless little animals. About August, they cut and collect large parcels of grass, which they spread and dry, and, in effect, convert into hay: this they collect into stacks about seven feet high; they then excavate a subterraneous passage from their burrow, which opens under the stack, and this road is used to give them access to their provision, during those months that a Siberian winter buries every thing under the snow.

Several birds, common in Russia, are but rarely seen in other parts of Europe. Among these may be mentioned the Cock of the Rock, the largest known species of grouse, nearly as big as a small turkey. The beautiful Rose-coloured Ouzel, or Starling, is not uncommon in the provinces bordering upon Asia; while the Pine Finch, the Cross-bill (fig. 454), and a few others of less note, inhabit the dreary pine forests. In the plains has been found the Cream-coloured Plover, so rare a bird in Britain, that a specimen, shot in Devonshire, was once sold for nearly 30*l*.



The Cross-Bill.

This is now in the British Museum. The European Bee-eater is said to breed in great numbers in the banks of the southern rivers.

*Domesticated animals.* No recent information has reached us on the present breeds of the horse, ox, and sheep. The first are said to be large, strong, and even beautiful; but the ponies of Archangel are not larger than those of Shetland. The flocks of sheep appear to be numerous, and many of the breeds excellent.

Whether the camel is really used in the southern provinces, as a common beast of burden, appears somewhat doubtful. The Russian greyhound has long and bushy hair, and the tail forms a spiral curl.

### SECT. III.—Historical Geography.

The southern part of Asiatic Russia was known, under the name of Scythia, to the Greeks and Romans, who applied to it especially that appellation which was afterwards so widely extended. The expedition of Darius showed the Scythians to be exactly what the rudest Tartars now are,—a roving, nomadic race, constantly on horseback; who fought flying, and by their rapid movements, baffled, usually in a disastrous manner, every attempt of regular armies to subdue them.

The monarchy of Russia seems to have been first formed about the ninth and tenth centuries, under the reigns of Ruric and Vladimir the Great. At that time it held some intercourse with the court of Constantinople, and was converted to the Greek church, which has ever since been the established religion.

The invasion by the Tartars, under the successors of Zingis, in the twelfth century, formed a fatal era in the Russian annals. The whole country was over-run, its capital reduced to ashes, and the people completely subjugated under the yoke of Oriental despot-

*Dispersia lapponica*, and some alpine kinds of *Myosotis*, and a *Gymnandra*, clearly indicate the prevailing character of its productions. The naturalists who have visited this island remarked, however, that, on their arrival, they gathered more flowers there in the first few minutes, than during many weeks' investigation on the range of islands comprising Radack, &c., situated between the tropics. Here grow *Alnus incana*, in a very diminutive state, and *Spiræa chamædrifolia*, both of which are natives of Kamtschatka, but not of Oonalashka; and which a severer atmosphere seems to have banished from St. Lawrence's cove. An *Orobanche* and a *Pinguicula* are among the plants of this island. *Cineraria palustris* vegetates with remarkable luxuriance in the well-watered slopes formed at the base of the mounds of ice; while *Betula nana* (fig. 682.) is seen even on the very shores. The plain country of this island is free from snow throughout the summer.

### SUSSECT. 3.—Zoology.

Our knowledge of the Zoology of Siberia and of Asiatic Russia is chiefly derived from the researches of the celebrated Pallas. The ungenial nature of the climate, the sandy and arid steppes and rocks by which these regions are everywhere intersected, and the total absence of umbrageous forests, at once account for the paucity of species appropriated to this immense territory. The assertion, therefore, made by Pennant, that Siberia is hardly less interesting than America, in the number and novelty of its animals, is singularly inaccurate: the proportion not being more, probably, than one to fifteen. There scarcely appears, in fact, either among the quadrupeds or birds of Siberia, one genus which is not common to the European zoological region: although the following list of quadrupeds will exhibit several species apparently confined to the eastward of the Ural mountains and the shores of Lake Baikal.

The Quadrupeds more particularly belonging to Siberia are the following:

|                                                 |                                               |                                                 |
|-------------------------------------------------|-----------------------------------------------|-------------------------------------------------|
| <i>Urocyon sibiricus</i> . Siberian Weasel.     | <i>Arvicola altarius</i> . Garlic Mouse.      | <i>Georychus leucopus</i> . Ringed Leming.      |
| <i>Canis sibiricus</i> . Siberian Dog.          | <i>Arvicola rufilans</i> . Red Mouse.         | <i>Mus cornica</i> . Cornice Rat.               |
| <i>Phoca lepturus</i> . Hare Seal.              | <i>Arvicola gracilis</i> . Baikal Mouse.      | <i>Mus aguricus</i> . Siltie Mouse.             |
| <i>Otus ussurus</i> . Sea Owl.                  | <i>Arvicola socialis</i> . Social Mouse.      | <i>Mus sibiricus</i> . Siltie Mouse.            |
| <i>Otus jubata</i> . Sea Lion.                  | <i>Arvicola anglica</i> . Siberian Leming.    | <i>Cricetus migratorius</i> . Siberian Hamster. |
| <i>Arvicola arvalis</i> . Field Mouse.          | <i>Phoca gothica</i> . Baikal Seal.           | <i>Cricetus arvensis</i> . Sand Hamster.        |
| <i>Arvicola montana</i> . Economic Field Mouse. | <i>Phoca sibirica</i> . Siberian Seal.        | <i>Cricetus songarus</i> . Songar Hamster.      |
| <i>Arvicola saxatilis</i> . Rock Mouse.         | <i>Georychus talpinus</i> . Mole-like Leming. |                                                 |

In addition to the above, travellers enumerate several others, common alike to the two Russias and the neighbouring regions, as the Rein-deer, Elk, Bear, Wolf, Fox, Marmot, Martin, &c.; but these have been already noticed as inhabitants of Europe.

The Economic Mouse, as one of the most interesting animals, deserves a particular notice. These little creatures form burrows, with wonderful skill, in soft turfy ground. There are sometimes near thirty different entrances to the principal chamber; close to this are other caverns, used as granaries for their winter provisions. These stores they gather in summer, and in damp seasons will frequently bring them out to dry in the sun; they will not touch these hoards until the time of need, living in the interim on such other food as can be

supplied from over-abundance. On the approach of winter, the male and female, who have hitherto been separate, mutually retire to their well-stored dwelling, and pass this rigorous season in ease and plenty, living upon the fruits of their former industry and forethought.

Of the aquatic Quadrupeds, the *Phoca grælandica* (fig. 683.), and numerous other Seals, appear on the frozen shores of the North and



Greenland Seal.

White Seas, and different varieties on those of Lake Baikal. The northern *Stellerus* (*S. borealis* Cuv.), long confounded with the Manati of India, represents that unwieldy animal in the seas of Kamtschatka.

An immense species of Elephant, now extinct, appears to have formerly belonged to the

frozen regions of Siberia; an entire specimen having emerged, not many years ago, from a mass of ice on the shores of the White Sea. Its skeleton is now in Russia, and proves it to be distinct both from the Indian and the African species. The enormous tusks occasionally found, and said to weigh, sometimes, 600 lbs., have been inconsiderately assigned to the wild boar; but they no doubt belonged to this, or some fossil species of equally gigantic size.



Swallow-tailed Pratincole.

Of the Birds, our information is very defective. Pallas enumerates several, unknown to Europe; but they are small, and not generally interesting. The Great Bustard of Europe is spread over the deserts, with the Swallow-tailed Pratincole (fig. 684.), a restless and clamorous bird, of rare occurrence in Europe. Partridges, Quails, and the smaller gallinaceous birds, are common; but the larger and more splendid Pheasants begin only to appear on the confines of central Asia and towards Persia.

The Domestic Animals are much the same as those of European Russia.