

THE IBEX.

Of the genus *Capra*, which includes several species, the ibex or steinbok is a familiar and excellent example.

This animal, an inhabitant of the Alps, is remarkable for the exceeding development of the horns, which are sometimes more than three feet in length, and of such extraordinary dimensions that they appear to a casual observer to be peculiarly unsuitable for an animal which traverses the craggy regions of Alpine precipices. Some writers say that these enormous horns are employed by their owners as "buffers," by which the force of a fall may be broken, and that the animal, when leaping from a great height, will alight on its horns, and by their elastic strength be guarded from the severity of a shock that would instantly kill any animal not so defended. This statement, however, is but little credited.

To hunt the ibex successfully is as hard a matter as hunting the chamois, for the ibex is to the full as wary and active an animal, and is sometimes apt to turn the tables on its pursuer, and assume an offensive deportment. Should the hunter approach too near the ibex, the animal will, as if suddenly urged by the reckless courage of despair, dash boldly forward at its foe, and strike him from the precipitous rock over which he is forced to pass. The difficulty of the chase is further increased by the fact that the ibex is a remarkably enduring animal, and is capable of abstaining from food or water for a considerable time.

It lives in little bands of five or ten in number, each troop being under the command of an old male, and preserving admirable order among themselves. Their sentinel is ever on the watch, and at the slightest suspicious sound, scent, or object the warning whistle is blown, and the whole troop make instantly for the highest attainable point. Their instinct always leads them upward, an inborn "excelsior" being woven into their very natures, and as soon as they perceive danger, they invariably begin to mount toward the line of perpetual snow. The young of this animal are produced in April, and in a few hours after their birth they are strong enough to follow their parent.

The color of the ibex is a reddish brown in summer, and gray-brown in winter; a dark stripe passes along the spine and over the face, and the abdomen and interior faces of the limbs are washed with whitish-gray. The horns are covered from base to point with strongly marked transverse ridges, the number of which is variable, and is thought by some persons to denote the age of the animal. In the female the horns are not nearly so large nor so heavily ridged as in the male. The ibex is also known under the name of bouquetin.

Preservative of the Dead.

The United States Consul-General at Berlin, Mr. Kreismann, has communicated to the Department of State a new process patented in Germany for preservation of the dead. The liquid used is prepared as follows: In 3,000 grammes of boiling water are dissolved 100 grammes of alum, 25 grammes of cooking salt, 12 grammes of saltpeter, 60 grammes of potash, and 10 grammes of arsenic acid. When cool it is filtered. To 10 liters of this liquid 4 liters of glycerine and 1 liter of methylic alcohol are added. The process of embalming is by saturating and impregnating the bodies with it. From 1½ to 5 liters of the liquid are used for a body.

Volcanic Products at the Bottom of the Pacific.

The Abbé Renard and Mr. J. Murray communicated to the Geological Section of the British Association, at Sheffield, the results of an examination of the materials brought up by the Challenger's instruments from the bottom of the central Pacific. The area from which the materials submitted to the Abbé Renard were derived extends from the Sandwich Islands to 30° S. lat., having the Low Archipelago approximately in its center. Volcanic matter was found to play an important part in the formation of the bottom, being present in the form of lapilli and ashes distributed in great abundance in the "red clay," of which we have heard

so much. The lapilli nearly all belong to the basaltic type, passing from felspathic basalt to allied rocks, in which the vitreous base acquires greater and greater development, until it almost entirely displaces the crystalline constituents of the basalt, when the fragments become mere glassy rocks of the basic series, generally containing some crystals of peridote, innumerable crystallites, the latter sometimes grouped in opaque granules, sometimes arranged regularly around the peridote microlites. From the forms of these volcanic fragments, which are often coated with manganese, their association with volcanic ash, and their lithological constitution, they cannot be derived from submarine flows of lava. They are rather incoherent volcanic products, or lapilli, the accumulations of which in the Pacific form a series of submarine tuffs.

One of the most remarkable facts, brought to light by these soundings in the Pacific, is the large share taken in the formation of these sedimentary deposits by palagonites, perfectly identical in lithological characters with those of Sicily, Iceland, and the Galapagos islands. Many are in

which they are developed is easily understood if we bear in mind the lithological nature of the basic tuffs and of their products of decomposition.—*Nature*.

NATURAL HISTORY NOTES.

THE BEHEADING OF FLIES BY A WESTERN PLANT.—In the *Bulletin de la Société Botanique de France* (vol. xxiv.), says Professor Asa Gray, there is an account by M. J. Poisson of his observations upon *Mentzelia ornata* as cultivated in the Jardin des Plantes, Paris, and the very singular mode in which it causes the destruction of flies. It is so curious that the essential points of M. Poisson's communication are here recapitulated, in the hope that observations may be made in this country, either by the few who are able to cultivate this ornamental plant with success, or by those who can examine it in its native stations. It is well known that the roughness of this and some related *Loasaceæ* is owing to the stiff bristles of the surface being provided with an armature, at certain points along their length, of retrorse barbs. There are three or four whorls of these barbs, and four or five barbs to each whorl, on the larger bristles; in the smaller there is only a terminal whorl of barbs, in the manner of a glochidiate bristle. Mixed with these harpoon-like bristles are some soft ones, tipped with a capitate gland, which secrete a viscid matter attractive to insects. It appears that flies so attracted thrust in their proboscis between the thickly-set glochidiate bristles to feed upon the secretion of the glands between and below. The retrorse barbs interpose no obstacle to this; but when the proboscis is withdrawn, its dilated and cushion-like tip catches in the barbs, and holds all fast. The harder the backward pull, the firmer and more extensive the attachment to the sharp barbs. The wounded and impaled organ becomes congested and swollen, and the insect is seldom able to disengage it. Especially is this the case with the larger flies. Some perish by exhaustion; but more of them, passing round and round in a circle, and in one and the same direction, come to an end by twisting off their heads. Insects too small to be impaled on the barbs are held fast by the viscid secretions of the glands, and likewise perish. In these respects the arrangement comes under the head of those recently illustrated by Kerner, for the exclusion of unwelcome guests from the blossoms. And this may be extended to the flies also, which might reach the blossom on the wing, but are attracted rather to the glands beneath, to their own destruction. Professor Gray requests those who have good opportunities of obtaining *Mentzelia ornata*, and its much more common relative, *M. nuda*, both of which occur in the Western prairies and plains, to investigate the matter and ascertain whether this charge of cruel behavior is well founded.

CACTUS SPINES.—The spines must, says Moseley in his "Notes of a Naturalist," be a most efficient protection to the cactus from being devoured by large animals. "I have often noticed that if one approaches one's hand slowly toward some of the forms with closely set long spines, doing it with especial care to try and touch the end of one of the spines lightly without getting pricked, one's hand always does receive a sharp prick before such is expected, the distance having been miscalculated. There seems to be a special arrangement in the color of the spines in some cases, possibly intended directly to bring about an illusion, and cause animals likely to injure the plant to get pricked severely before they expect it, and thus to teach them to shun the plant. While the greater length of the spines next the surface of the plant is white, the tips are dark colored or black. The black tips are almost invisible as viewed at a good many angles against the general mass as a background. The spines look as if they ended where the white coloring ends, and the hand is advanced as if the prickles began there, and is pricked suddenly by some unseen black tip. The experiment is easily tried in any cactus house at home."

HYBRID SHAD.—Mr. Seth Green has recently called attention to the fact that it has been customary for the last four



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fact glasses of the basic series, either consisting of sideromelane, or decomposed into a red resinoid substance. The small lapilli of two or three inches in diameter are cemented by zeolites, showing the crystalline forms of christianite. The presence of these readily alterable basic glasses at once reveals the source of the clayey matter with which they are associated, as wherever rocks of this type occur their decomposition into clay is observable.

Among the minerals present in the volcanic ash are rhombic tabular crystals of plagioclase, augite, magnetite, and a little sanidine or hornblende. It is singular that quartz grains are practically absent, in striking contrast to coast deposits. This fact, however, is not so unexpected as the formation of zeolites in the free state. Minute fibrous radiated spherules are formed in the mud, possessing the crystallographic characters of christianite.

Besides these zeolitic spherules, other crystals of the same kind occur in the form of minute prisms, and in such prodigious numbers that they make up about one third of the red clay. These and the zeolitic spherules are regarded by the authors as belonging to one mineral species, and they remark that the formation of these and of the red clay in