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NATURAL HISTORY.

THE LION.

The figure of the lion is bold, his motions are stately, and his voice is terrible. He has a very broad face, surrounded with a long mane, which gives him a grand and majestic appearance. His eyes are bright and fiery, and though he has a generous look in general, yet, when he is angry, his looks are furious and terrific. When his roaring is heard in the night, and re-echoed from the mountains, it is like the sound of distant thunder. Goldsmith says, that "when the lion is excited by opposition, he summons up all his terrors, and nothing can be more formidable. He then lashes his sides with his long tail, which is alone strong enough to lay a man level: his mane seems to rise, and stand like bristles round his head; the skin and muscles of his face are all in agitation; his huge eye-brows half cover his glaring eye-balls; he discovers his terrific teeth and tongue, and extends his claws, which appear almost as long as a man's fingers. Prepared in this manner for war, even the boldest of the human kind are daunted at his approach, and there are few animals that dare attack him."

It is said, that when the lion is seeking his food, and finds men and other animals in the same field, he will attack the animals, and will never meddle with men, unless they provoke him to engage. His teeth are so strong, that he easily breaks the bones of his victims, and swallows them with the rest of the body.

This fierce animal may be tamed without much difficulty, and it is curious to see how calm and gentle he is to his keepers. He will allow them to play with him, to pull out his tongue, and even to put their heads into his mouth, without the least attempt to do them an injury.

The lion is generally found in Africa and the East-Indies: these hot climates seem to be best suited to his habits.—The most usual way of taking these animals, is when they are little cubs; and being then brought up in a domestic manner, they are tame and gentle. Sometimes, however, lions are taken in pit-falls, or deep holes made in the ground, and covered over slightly with sticks and earth, so that they give way beneath the weight of the lion, and he sinks to the bottom, and cannot escape. Lions, like Elephants, are said to remember, after many years, those who have been kind to them, and to shew surprising signs of affection and gratitude.

COMMON THINGS.

No. 4.—ALKALIES.

Potash, soda and ammonia are called alkalies. The two first are used in one form or another every day in every family in civilized society. The last is much more extensively used in agriculture and the arts than is generally supposed. Potash and soda are both used for making soap: the one for soft, the other for hard soap. We are, of course, indebted to them in no small degree for the means of cleanliness, which are essential to comfort and decency, and in days of cholera to health and safety.

Potash is a part of salt petre, also of other salts, and of many rocks, and other minerals. Soda constitutes a part of table salt, and a large part of some other substances.

Ammonia is commonly, if not always produced, where there is fermentation and decay of animal matter, and is perhaps one of the most efficient aids to farmers in giving them abundant crops.

Lime and magnesia have some of the properties of alkalies, and are hence called alkaline earths.

The principal object in introducing the acids and alkalies at this time, is to show their relation to each other, which is intimate and intimately connected with our daily comfort and even our existence. The most prominent and interesting point in this relation is, their strong attraction for each other.—In nature they are almost always united. It is even difficult to separate them. Indeed the most direct, if not the only way, in which an alkali can be induced to give up the acid with which it is associated, is, to present it with another which it likes better. The potash in saltpetre will discharge the nitric acid, which has been its associate perhaps for centuries, if it can have the society of sulphuric acid, for which it uniformly has a stronger partiality. Sulphuric acid will also induce the soda, in common table salt, to discharge the muriatic acid which has been its most intimate, and almost only friend from their youth, even for five or six thousand years, on condition of the society of the new comer. Pearlash will immediately discharge the carbonic acid which it has taken into compact, when madam vinegar presents herself, though not without some struggles and commotions, between the three, which chemists call effervescence; and it would be well for society, perhaps, if effervescence between old friends and associates, was confined to acids and alkalies.

Acids and alkalies, when alone, are corrosive, and disposed to attack many things

coming in their way; but when united, they are both so far softened in their character, and appeased in their wrath, as to be harmless and exceedingly kind and serviceable.

For example, potash and nitric acid, which compose salt petre, and soda and sulphuric acid, which compose glauber salts, when pure and alone, are some of the most biting, corrosive things in the world; when united, both are mild and comparatively harmless, and for many purposes highly important. This softening down of the character of acids, alkalies, and many other substances, by uniting them, is what chemists call *neutralizing*. If the asperities of living, acting, talking things, could be more frequently neutralized, by some kind of friends, it would be for their own peace and credit, and for the quiet and happiness of those around them.

Acids and alkalies, being in daily and almost constant use in every family, it could hardly fail of being a source of great interest, as well as practical utility, to have their properties and relations as familiar as the names of the common household furniture. It is not uncommon for accidents to occur, and sometimes life is destroyed, or a wretched existence prolonged by a mistake, in using an acid or alkali for some other substance. Three fourths of the evil arising from these mistakes might be prevented by a knowledge of the remedy which is almost always at hand: a knowledge, too, which can be acquired in a few hours, or a few days at most.

For example, if a person, by accident, drink a solution of potash, pearlash, or common lye, a knowledge that it was an alkali and of course neutralized by an acid, would direct him or a friend to the vinegar cruet. If an acid were taken, he would go directly to the pearlash bottle, or throw some ashes into water and make some quick ley which he would drink.

If an acid or an alkali is spilt upon a garment and in danger of producing a stain or destroying its texture, if the other be applied, the evil in nine cases out of ten, will be prevented.

More of these two classes of bodies, with their relations and uses in the domestic and useful arts, in the future numbers.

THE ARTS.

The general operations of mechanics or artists are to separate bodies, and again unite them, or change them into the different forms. They resort to mechanical and chemical operations, both in separating and uniting bodies.

Some of the instruments for mechanical separation are, the hammer, saw, axe, knife,