

their charge. The time is coming when leaders will have to be leaders, and the world will not be governed or trammelled by shams. The recognition of the importance of the fine arts and practical science in the late speech from the throne is a promising sign of the times, and the proposed Industrial and Artistic University will be looked forward to hopefully. The application of art to the manufactures of the country, and the general advancement and elevation of the industrial population, is no longer a matter of preference, or otherwise, but one of vital necessity. If we stand still, other countries will not, and we shall be passed in the race. The mind must be set to work to aid the hand. As the Duke of Newcastle truly said at the late meeting of the Sheffield School of Design—"These are days in which education is no longer one of the luxuries of life; it has become one of its greatest necessities, for all classes and for all grades of society."—*The Builder*.

THE ORIGINAL HAYMAKER.—The hare is only noticed for its extreme timidity and watchfulness, and the rabbit for the burrows which it excavates for its own habitation, and as a nest for its young; but there is an animal related to them, the rat-hare, which is gifted by its Creator with a very singular instinct, on account of which it ought rather to be called the haymaker, since man may or might have learned the part of the business of the agriculturist, which consists in providing a store of winter provender for his cattle, from this industrious animal. Professor Pallas was the first who described the quadruped exercising this remarkable function, and gave an account of it. The Tungusians, who inhabit the country beyond the lake of Baikal, call it Pika, which has been adopted as its trival name. These animals make their abode between the rocks, and during the summer employ themselves in making hay for a winter store. Inhabiting the most northern districts of the old world, the chain of altaic mountains, extending from Siberia to the confines of Asia and Kamtschatka, they never appear in the plains, or in places exposed to observation; but always select the mid-st and most elevated spots, and often the centre of the most gloomy, and at the same time humid forests, where the herbage is fresh and abundant. They generally hollow out their burrows between the stones and in the clefts of the rocks, and sometimes in the holes of trees. Sometimes they live in solitude, and sometimes in small societies according to the nature of the mountains they inhabit. About the middle of the month of August these little animals collect, with admirable precaution, their winter's provender—which is formed of select herbs—which they bring near their habitation, and spread out to dry like hay. In September they form heaps or stacks of the fodder which they have collected under the rocks, or in other places sheltered from the rain or snow. Where many of them have laboured together, their stacks are sometimes as high as a man, and more than eight feet in diameter. A subterranean galley leads from the burrow, below the mass of hay, so that neither frost nor snow can intercept their communication with it. Pallas had the patience to examine their provision of hay, piece by piece, and found it to consist chiefly of the choicest grasses, and the sweetest herbs, all cut when most vigorous, and dried so slowly as to form a green and succulent fodder; he found in it scarcely any ears, and blossoms, or hard and woody stems but some mixture of bitter herbs, probably useful to render the rest more wholesome. The stacks of excellent forage are sought out by sable hunters, to feed their harnessed horses, and the (Jakutes) natives of the part of Siberia, pilfer them, if they may so call it, for the subsistence of their cattle. Instead of imitating the foresight and industry of the pika, they

rob it of its means of support, and so devote the animals that set them so good an example to famine and death.—*Kirby's Bridgewater Treatise: Bohn's Scientific Library.*

PRESERVING FRUITS WITHOUT SUGAR.—At the New York State Fair at Rochester, there were exhibited thirteen bottles of fruit so preserved by William R. Smith, of Wayne County, viz:—five of cherries, two of peaches, one of strawberries, three of different varieties of currants, one of blackberries, and one of plums. They were examined by a committee, and found of fine flavor; and the committee expresses the opinion that the art of preserving fruit in this manner is practicable and valuable, and that the fruit, when carefully put up can be made to keep as long as may be desirable.

The method of preserving them is thus given to the New York State Society by Mr Smith. They are preserved by placing the bottles, filled with the fruit, in cold water, and raising the temperature to the boiling point as quickly as possible: then cork and seal the bottles *immediately*. Some varieties of fruits will not fill the bottle with their own juice. These must be filled with boiling water and corked as before mentioned, after the surrounding water boils.

TO MANAGE A REARING HORSE.—In preference to the dangerous experiment of pulling a rearing horse backward, I recommend the adoption of the following method:—Whenever you perceive a horse's inclination to rear, separate your reins and prepare for him. The instant he is about to rise, slacken one hand, and bend or twist his head with the other, keeping your hands low. This bending compels him to move a hind leg, and of necessity brings his fore feet down. Instantly twist him completely round two or three times, which will confuse him very much, and completely throw him off his guard. The moment you have finished twisting him round, place his head in the direction you wish him to proceed, apply the spurs and he will not fail to go forward; if the situation be convenient, press him into a gallop, and apply the spurs and whip two or three times severely. The horse will not, perhaps, be quite satisfied with the first defeat, but may feel disposed to try to the mastery. Should this be the case, you have only to twist him, &c., as before, and you will find that in the second struggle he will be much more easily subdued than on the former occasion; in fact you will perceive him quail under the operation. It rarely happens that a rearing horse, after having been treated in the way described, will resort to his trick a third time.—*The Sportsman*.

LOSS ON STOCK DRIVEN TO MARKET.—Several days used formerly to be occupied in driving to the London market from the county of Norfolk only, it was found that on an average, a sheep lost 71lbs weight, and 3lbs inside fat, and a bullock 23lbs. These weights were ascertained by a series of trials, average animals being killed and weighed on the farm, and compared with the weights of similar animals when slaughtered in London. This difference of weight was waste, entirely lost to everybody. On the quantity of stock annually sent out by Mr Hudson of Castle Acre, a distinguished Norfolk farmer, this loss was equivalent in value to upwards of £600 a year, nearly the whole amount of which now finds its way to market, as the stock are put into the trucks in the morning, and reach London in the afternoon without fatigue.—*Caird's Agriculture*.

VEGETABLE POISONS—It is all quackery to talk about harmless vegetable medicines. The most violent poisons are derived from vegetables. Nicotine from tobacco; Aconite from Wolf-bane; Strichnine from Nux vomica; Prussic Acid from various vegetables; besides the deadly alkalis of all plants.