

CHOPPED FODDER.—Every farmer should provide himself with the implements requisite for cutting the food given to his stock, whether hay, straw, corn, or roots. Cutters, for this purpose, are now on sale at most of our agricultural warehouses, and are generally so cheap and durable as to render the cost, compared with their utility, an objection of small weight, especially to those who are desirous of economizing their time, and the amount of feed required for their stock during winter. Roots should never be fed out whole. Cattle are often choaked by attempting to swallow whole potatoes, turnips, &c., and the loss of a single animal will be more than sufficient to pay the expence of a machine, and the cutting of all the root feed required for a stock of ordinary number, during a whole year. Root cutters, when properly constructed, are easy and efficient in their operation—seldom requiring expensive repairs, and a great saving of food besides.

TOOLS.—You can now look over your farming implements, construct new ones, if needed, and mend such as may be out of repair. In this way, a great saving may be effected, and your implements put in a condition for instant use when wanted in the spring. All large tools, such as wheels, carts, harrows, cultivators, rollers, drags and ploughs, should be housed.

MULTUM IN PARVO.

The Chinese invented gunpowder about the time of Christ, and used it in cannon. The force of explosion of gunpowder, when closely confined, is $8\frac{1}{2}$ tons to a square inch. Four grains of opium are equal to a tea-spoonful or 100 drops of laudanum. The microscope enables us to detect animalcules the 10,000th of an inch long. The film of a soap-bubble, about to burst, is about three-fourths of the millionth of an inch in thickness. The Royal Library at Paris contains a Chinese chart of the heavens, made about 600 years before Christ, in which 1460 stars are correctly inserted. The organ was invented by a barber of Alexandria, about 100 years B. C. The piano-forte was invented in London, about 1766, by a German. In the arctic regions, persons can converse at more than a mile distant, when the thermometer is below zero. The first voyage around the world was completed in 1522. Japan was discovered in 1542. The army with which Napoleon intended to invade England, consisted of 160,000 soldiers, 10,000 horses, 17,000 sailors, and a fleet of 1300 vessels. Ancient soldiers were trained to fight with either hand. The Greeks and Romans had no standing armies in time of peace. The European nations have had in service, at different periods, the following armies:—Russia and Austria, 500,000 each; Prussia, 350,000; Great Britain, 300,000; France, 650,000; Spain, 150,000; Turkey, 450,000.

REASTY BACON.—In answer to one of your correspondents enquiring how to avoid this evil, I beg to state that I have had the experience of many years; that we used to have reasty bacon at our house, although home cured, and that we have none now; and that the secret is simply this—dry it thoroughly and keep it dry. The best place for a slice is on a rack immediately over the kitchen fire, but above the immediate influence of its heat; but I have insisted upon my bacon when dry being cut into pieces, and packed in sand dried in the oven, or dried bran, or dried fowl Barley, or, in fact, anything which will keep it dry and unexposed to atmospheric changes, which are the cause of the evil. We have long eschewed smokes drying. I know an excellent farmer who makes his own malt and keeps his hams (capital eating they are) in the malt;—*H., Oxford.*

AMELIORATING CROPS.—“Such crops as are supposed to improve the lands on which they are cultivated. The most common ameliorating crops are carrots, turnips, artificial grasses, and most others of the green or fallow class; yet though some of them occasionally ameliorate land, by altering the chemical condition of the soil, by choking weeds, and by intermixing with the soil a very large amount of manure, they rarely benefit land by their direct influence, but, in general,

are merely the occasion of improvement by manuring and cleaning. An ameliorating crop either destroys weeds by taking entire possession of the soil; or occasions weeds to be destroyed, oxygen to be absorbed, and inert matter to be decomposed, by frequent workings of the soil; or exhausts mischievous excrementitious deposits of preceding cereal crops; or makes such excrementitious deposits of its own as are useful to succeeding cereal crops; or occasions a thorough preparation of the soil, by means of previous manuring and a series of ploughings for subsequent cereal crops; or brings large contributions of manure, and a great amount of useful mechanical pressure, by its being fed off; or contributes the whole of its own substance to the dung-heap of the farm-yard.”

LEISURE HOURS.—It was a beautiful observation of the late William Hazlitt, that “there is room enough in human life to crowd almost every art and science in it. If we pass no day without a line—visit no place without the company of a book—we may with ease fill libraries or empty them of their contents. The more we do, the more we can do; the more busy we are, the more leisure we have.”

WHY DO NOT SAVAGE POPULATIONS INCREASE?—H. I.—Their increase is limited by their means of existence. It has been remarked, by a great authority on this subject, that “A nation of hunters, on a limited space, is utterly incapable of increasing its numbers beyond a certain point, which is soon attained. The carbon necessary for respiration must be obtained from the animals, of which only a limited number can live on the space supposed. These animals collect from plants the constituents of their organs and of their blood, and yield them, in turn, to the savages, who live by the chase alone.—They, again, receive this food, unaccompanied by those compounds, destitute of nitrogen, which, during the life of the animals, served to support the respiratory process. In such men, confined to an animal diet, it is the carbon of the flesh and of the blood which must take the place of starch and sugar; but 15lbs. of flesh contain no more carbon than 2lbs. of starch, and while the savage with one animal and an equal weight of starch could maintain life and health for a certain number of days, he would be compelled, if confined to flesh alone, in order to procure the carbon necessary for respiration, during the same time, to consume five such animals. It is easy to see, from these considerations, how close the connexion is between agriculture and the multiplication of the human species. The cultivation of our crops has ultimately no other object than the production of a maximum of those substances which are adapted for assimilation and respiration, in the smallest possible space. Grain and other nutritious vegetables yield us; not only in starch, sugar, and gum, the carbon which protects our organs from the action of oxygen, and produces in the organism the heat which is essential to life, but also in the form of vegetable fibre, albumen, and caseine, our blood; from which the other parts of our body are developed.—*Maidstone Gazette.*

THE USE OF LIME.—“I hear many people praise lime highly—whilst others contend that lime is of no use whatever. Now I am about to break up a piece of rough land, and should be glad if you can furnish me with any information on the subject.—A FARMER.” The following extract from a prize essay on the reclaiming of waste land, by Mr. Robt. Elliott, of Dumfriesshire, will throw some light upon this subject.—Lime seems by this to be favorable for green and root crops, but must be used lightly for white crops.—“Lime I look upon as almost indispensable for all newly improved land when dry, though I have found on light soils, especially on moor with a black surface, and moss, it may easily be overdone. On some parts of this description, which I lined, for a trial, with 120 bushels imperial measure per acre, the corn was worthless, not from want of straw—for the crop was bulky—but it was seized with blight, scarcely a pickle being in the heads, and every yard could be traced where the lime was put on of that thickness; and on the parts which were lighter done, and those which had none, the ears were well filled. In the tur-