

FATTENING FOWLS.

From a letter in the *Live Stock Journal*, giving accounts of methods of fattening poultry in Europe, we take the following extracts:

In France two principal methods of fattening are employed, viz: with solid or semi-fluid food; the latter being now preferred, at least for finishing off with. In either system, as carried on by the best feeders, each bird is penned in a compartment narrow enough to keep it from turning round, and the bottom of which is of open bars, to allow of all offensive matter falling through. It is also necessary to keep together fowls at the same stage of fattening, and not to have fowls of different sexes near each other; for though they may only hear each other's voices, it is found to retard fattening. Under the coops it is usual to have a floor of dry earth, which is frequently raked clean.

Madame Millet Robinet (it is remarkable how much is done by women in this business in France), states that the best food for solid cramming is buckwheat flour mixed with sweet milk into a dough. This is rolled the size of a finger, and cut into pellets two inches and a half long. Barley or oatmeal are not found so good, and my own opinion is that much of the transparent whiteness of French poultry is due rather to the use of buckwheat than any peculiarity of race. In cramming, the operator dips each pellet in water before administering it, and pushes it down with the end of the finger. At first only two or three pellets are given, but this is rapidly increased to 12 or 15. But here is an important point in all cramming of poultry. The birds must of course be in perfect health, first, or they will only get ill with the confinement. They should then be fasted some hours before any food is given at all, so as to take their first meal with a good appetite, which is kept up by the first scanty rations. After that the crop is felt at each meal. If any is left, a meal must be missed, and less given next time; for one atom too much retards the process seriously, or may make the bird "go off" altogether. Two meals per day are given in this method, 12 hours apart; and the time, again, must be exactly kept, for if either fed before or after, the fowl suffers by fretting or indigestion. It is chiefly in these apparently small details English operators fail. The process is complete in 15 to 25 days; occasionally it can be carried on for 30, but when the desired point is once reached, the fowl goes back and rapidly deteriorates, or may even die, consequently, it requires good judgment to preserve every advantage.

Semi-fluid food is mixed about as thick as very thick arrowroot. Mr. Laeque says that barley meal with the bran sifted out will answer for this, and it is mixed with equal parts of milk and water. If more milk is used, the fowls turn sick in a few days. Some breeders add a little maize meal and a portion of lard; others, again, employ a portion of rice meal. The original method of giving this food was to place a tin funnel down the bird's throat, into which the food was poured from a spoon; but large feeders now employ machines, which hold the pap in a large cylinder, and force it out through a flexible tube by the pressure of a piston. Fowls crammed with semi-liquid food are fed three times a day, or every eight hours, such food being more quickly digested. The process is also quicker than the other, few fowls requiring over 20 days. Cleanliness and quiet are of the utmost importance; but above all stands that constant watch on the state of the birds already alluded to. The fowls rarely struggle after the first two or three meals, but on the contrary, look out eagerly for their feeder. In Sussex, where fattening is carried on to perhaps its greatest perfection as regards England, the chickens are generally reared on white oats ground fine, and sold in good condition to fatters. By these latter they are mostly finished off with the same food mixed with milk into a thick gruel, and during the last weeks

only, enriched with a little finely chopped nut-ton suet. As a rule they are only fed twice a day, and when not crammed by machine, this food is given in clean troughs. The most successful feeders, Mr. F. Crook once told me, prefer sheda, the walls of which are made of faggots or thick brushwood, which keep off the draft, but give abundance of fresh air.

It cannot be too often repeated, however, that the success of French feeders chiefly depends on constant observation and careful adjustment of the food to what the bird at its stage then will bear. A pellet or a spoonful too much at once impairs digestive power; while too little, though not so injurious, loses time. All this supposes a certain amount of "natural gift," keen observation, and long experience, and it has been perfected in France by generations of practice.

THE AUSTRIAN SYSTEM OF MILLING.

[From Prof. KICK'S new work on Milling.]

High milling—or, as it is also called, Vienna, Austrian, Hungarian, Prague, or Saxony milling—is that method of grinding wheat which, by a gradual reduction of the grains of wheat, aims at producing the largest quantity of middlings, which, being cleaned, reground, and again cleaned, etc., and consequently gradually reduced, is finally manufactured into flour. This system of grinding, which originated in Vienna, produces the most beautiful and the whitest, and generally the finest kinds of flour, in proportionately larger quantities. In the Austrian system of grinding, the stones are placed at such a distance from each other that the first time the grain passes through them it is only slightly rubbed and broken. In this operation the beard and parts of the cuticle would be rubbed off, if this was not done before by the hulling machine. This operation is called ending, (Spitzen), or, in case the stones grind more coarsely (Hochschrotten), inasmuch as in this coarse grinding the grain is broken along the entire length of the furrows, so that the produce therefrom is mixed with flour, branny particles, and germ that have been scraped off. The products are separated by sieves, and the result is dark flour, poor bran, and coarse middlings. The latter product is passed through stones placed more closely together, and is subjected to the first grinding, that is to say, it is further broken, and we obtain particles varying in size, flour, *dunst* (which is analogous to flour), middlings, and a still coarser commodity called *schrot*. After this product has passed through the sieves, the different sorts are graded according to their size, consequently all those branny particles, which are of equal fineness with the flour mingle with the flour, and those of the same size as the so-called *dunst*, with the *dunst*, etc. It is scarcely possible to separate from the flour the equally fine branny particles; this is done, however, as far as the middlings and *dunst* are concerned, by means of middlings purifiers.

The question now is, of which parts of the grain of wheat does the several products consist? The flour obtained from the first grinding (Schrotten) will be better, in other words, will contain fewer branny particles than that obtained by the operation *Hochschrotten* above described, but it will nevertheless contain a great number, seeing that the stone exercises a breaking action upon the grain, and more or less reduces the cuticle.

Dunst and fine middlings are mostly composed of small fragments of the flour substances, and in the process of breaking fall from the inner as well as from the innermost part of the grain, and become polluted by the admixture of branny particles of equal fineness. If these are removed by the middlings purifier we obtain pure middlings, which in consequence of being derived from the innermost part of the grain, are called *core-middlings* (Kerngrüsse), or, because they are

used for making the finest flours, *Auszugmehle* and *Auszuggrüsse*.

The coarser middlings (Auflosungen), and the still coarser *schrot*, are fragments which, the larger they are, the more certain are they to be overlaid with portions of the layer of gluten, of the skin of the germ and the grain, and are, consequently, of a much darker color than pure middlings. The coarse middlings and the coarser *schrot* are put through the purifying machine, in which they are gradually reduced. If during the preliminary grinding (Hochschrotten) germs get loosened from the grain, they get knocked off especially during the first grinding, and arrive in proportion to their size, for the most part uninjured, among the coarse middlings, to which they impart, by their yellow color, a speckled, yellow appearance. The product of the preliminary grinding is separated, and the middlings and finer middlings purified.

It is exceedingly difficult, nay, even impossible, to give to non-practical men anything like a clear idea of the nature and appearance of the various milling products either by description or illustration. The only way in which he can become acquainted with them is by seeing them in a well conducted mill, where high milling is practiced.

The first rough grinding is followed by a second, the second by a third, and the third by a fourth, but the number of these is not in all mills alike. We must not imagine, however, that in these successive divisions or breaking up of the grain, that in the preliminary grinding (Hochschrotten) the grain is broken in two, and by the first grinding (Schrotten), it is broken into four pieces, etc., on the contrary, the division when the stones are rightly placed, is so managed that at each successive operation the several parts gradually lose their polyhedrous or spherical shape, and assume a lamelliferous form. In the first, second and third rough grindings, the greater part of the grain is consequently reduced to flour and middlings, and the material which undergoes fourth grinding has become so far triturated that no coarse middlings can be got from it, but only dust mixed with numerous particles of outer husk. Along with these we obtain flour as well as coarse and fine husks. There are scaly particles consisting of gluten, and the cuticle of the germ and the grain, to which a perceptible number of starch cells adhere. In many mills these scaly particles are called *stripes*, in fact those remaining after the fourth and fifth grinding, *white stripes*; and after once more grinding *black stripes*. The fine and coarse roughs are in many mills ground together, in others separately. The former go also by the name of *Haupps*. By ground roughs and ground *Haupps*, we understand those scaly parts, which, by their repeated passage through the stones, are freed from the particles of flour adhering to them, which serve as fodder for cattle and horses, and are distinguished by the general name of *bran*.

THE TEETH.—As the result of numerous trials made by the exposure of recently-extracted teeth to the exposure of various substances, M. Maurel comes to the conclusion that if various medicinal substances are injurious in their action on the teeth, others in still larger numbers prove, in their habitual employment, quite inoffensive. Thus, if we are required to take great precautions respecting citric acid, tannic, chlorides of zinc and antimony, perchloride of iron, sulphate of copper and alum, we may continue to employ with complete safety arsenious and carbolic acids, vinegar, corrosive sublimate, chloride of potash, alcohol, tincture of benzoin, essence of mint, tincture of quinine and can de cologne. Tobacco, whether used in chewing or smoking, does not injure the teeth beyond their discoloration.

SIXTY-THREE years of age is said to be the grand climacteric or turn of life, a critical period for masculine humanity, more men dying at that age, or near it, than at any other, leaving accidents and violent deaths aside. A like critical period for feminine humanity is 47 years.