

bran contained only 4.571 per cent. of gluten instead of 15.019 by the ordinary process. The flour made by M. Mège Mouries' process contained 15.672 per cent. of gluten, as compared with 9.795 in the ordinary flour. By merely taking off the outer covering of the grain, which is perfectly valueless as an article of food, instead of following the ordinary process, which takes off at least 11 per cent. of bran, fully ten per cent. was added to the food portion of wheat, while the nutritive value of flour was increased by about 60 per cent. This upon the wheat consumption of the kingdom—say 20,000,000 of quarters—was a matter of considerable importance. Another important advantage was secured by M. Mège Mouries' process in regard to the storage and preservation of wheat. It appears that the outer covering—the epidermis—absorbs moisture far more readily than the regular cellular tissue of the inner layers, and thus renders the grain more or less liable to mould and other injuries by keeping, unless great care be taken by occasionally shifting, &c. By the process of decortication this is entirely removed, and a hard smooth surface given to the grain, from which every particle of deteriorating matter, in the shape of dirt, smut, &c., has been removed, diminishing its bulk, and leaving it ready for the miller whenever it may be required. The following is the method adopted for the preparation of the grain by M. Mège Mouries' process:—

"Wheat is carried up to the topmost floor, then passing through a screen or riddle, it falls through a

spout into a second cylinder, where it undergoes the same process; and, finally, is carried into the drying chambers, composed of a series of iron troughs, along which the grain is propelled by screw shafts, a current of dry warm air being driven along them in an opposite direction. It then, quite dry, receives its last friction in the polishing cylinders, where the friction is limited to that of the grains themselves, and leaves it in a dry, smooth, rounded form. As this generates a considerable elevation of temperature, it requires to undergo a cooling process before sorting or using. This is effected by carrying it up to the upper floor, and allowing it to fall down inclined planes through a flat shoot, up which the blast of cold air is driven."

Cirencester Agricultural College.

The accompanying illustration represents what may be aptly termed the English "School of Ceres." It is situated near the River Churn or Quern, whence comes the other name of Cirencester, or Cirencester in the county of Gloucester, and within the precincts of the broad vale of King Alfred's White Horse. "The Royal Agricultural College," it is almost needless to say, is a fine Elizabethan building, possessing its Gothic Chapel and its eighty feet tower. The

ing the mouths of living animals. The laboratory is also an interesting sight, and is one of the best arranged and best furnished branches of the establishment. The names of Way, Voelcker, and Church have lent a lustre to its Chemical department, and it is now the birthplace of a recently discovered mineral, a compound of cerium, named after its discoverer Churchite. The botanic garden is another great feature in the advantages and facilities presented for scientific study at Cirencester. The methods of instruction are admirably described by a correspondent of *The Farmer* (Scottish). He writes:—"I made out that nothing fanciful or pedagogic, nothing of mere book-learning separated from practical application, is permitted in the teaching of this College. Your chemical lectures you reduce to practice in the laboratory; every student going steadily through analyses of soils, manures, and feeding materials, and obtaining experimental acquaintance with all that chemistry has done for farming. Your botanical lectures you make practical to yourself in the garden, the park, and the farm fields. Your course of geology you apply in long geological excursions, observing dips, strikes, and anticlinal axes, faults and cleavages, dykes and curvatures, and rummaging every quarry, gravel-pit, and railway-cutting for fossils. Your veterinary lectures you make available in the College Veterinary Hospital, which, with its boxes, dissecting rooms, and pharmacy, stands about a quarter of a mile from the College. Your mensuration and surveying class fits you for actual field-work with



ROYAL AGRICULTURAL COLLEGE, CIRENCESTER, ENGLAND.

hopper into a long narrow trough which contains water, and is traversed through its length by an Archimedian screw. This carries the wheat slowly along the trough to the discharge end, where it now in a moistened state falls down a tube to the unbranning or decorticating cylinders. These are formed of cylinders of cast-iron, ridged on their interior diameters and with closed ends. A screw shaft traverses the centre of them, carrying broad arms or floats set at an angle diagonal or 'aslant' to the face of the cylinder and with a diameter so much less than that as to cause friction, but to allow the grain to pass without crushing. A rapid rotation is given to this central shaft, and, owing to the angle at which the floats are set, a slight progressive motion is given to the grain. The friction causes a large proportion of the true bran—epidermis, epicarp, &c. to be separated, and this is removed as it is separated by a blast driven through the cylinder in a direction contrary to the motion of the shaft, which also has the effect of drying the excess of moisture of the grain. It then passes along a

dormitories are neat and airy, and the private apartments, long rows of studies, libraries, reading rooms, large dining hall, are constructed on the most approved principles and heated by hot water pipes. The business of the institution is conducted on sound collegiate principles. Breakfast at the regular hour, after the short prayers in the chapel, dinner, with precision to a minute; tea at six o'clock; and then your final meal before bed-time. The museum is well furnished with everything requisite in the way of geological, chemical, botanical, and veterinary specimens and models. Indeed, some of the best sources of information are displayed here, such, for instance, as the abundant samples of grains and seeds of all sorts, from a mixture of which the students can pick out all the several grasses, weeds, &c., in a manner surprising to the uninitiated. This power of discrimination is invaluable to the farmer in the seed markets. Again, the casts of the mouths of animals, exhibiting their dentition at different ages, form a fine preparatory study before investigat-

chain and theodolite, for timber-measuring, and so on, around the neighbourhood. Then, while strict science is drilling and disciplining your mind, a large share of your time is engaged in the more strictly professional part of your studies. Drawing and account-keeping are, of course, items of great importance; keeping note-books of farm operations is another, and daily there is the practical "farm-class" instructed by the Agricultural Professor in some manipulation of tillage, some field or farmstead process, some detail in the management or commercial valuation of live stock. For the College has not only retained a few fields under its own control, for experimental purposes, but has the privilege of walking over and inspecting every inch of the 500 acres of what was (till lately) "the College Farm." Everything that goes on is open to the observation of the students, and everything receives its practical explanation on the spot."

Such an institution cannot fail of dispensing innumerable advantages to a community.