

training up the rising generation of farmers upon a sound foundation; and they would especially urge on farmers generally the importance of securing to their children, intended for the same occupation, the great advantage to be derived from the kind of education provided by such an institution."

The following observations by Earl Hardwicke, at the meeting of the Royal English Agricultural Society, are deserving the attention of our Canadian politicians. A difference in political feeling does not appear to prevent men in England from uniting for the public good:—

"They had the pleasure of seeing around them men of all shades of political opinion, who were united for one common object; and he took that opportunity of saying that, in his opinion, they were under the deepest obligation to their noble president, Earl Spencer, for having come to the manly resolution of refusing to accede to the demands of those who could have but little understood the nature and constitution of that society when they called upon him to resign his present position because he differed from them on a political question (*cheers*). Oh, what a state would this country be reduced to if there were no resting-place from party strife, no neutral ground where they could meet for the common good of the country (*hear, hear*). That neutral ground they had now got in this society—a ground where no political animosities were allowed to intrude; and they were deeply obliged to Lord Spencer for having had the manliness to confirm, by his determination, the spirit of the laws of the society, thus setting the question at rest for ever, and sealing the destination of the society as a lasting and enduring institution for the public good (*cheers*)."

DESTRUCTION OF RATS.—Dr. Ure, F.R.S., communicated through Mr. Pusey, M. P., the following results of experiments on the best mode of preparing phosphorus as a poison for rats:—"In the Journal of the Royal Agricultural Society there was published, several months ago, a prescription for preparing a poison for the above purpose, by an English gentleman resident in Germany. That preparation consisted essentially of phosphorus mixed with flour and sugar. It has been tried by a friend of mine in Derbyshire who has a most extensive farm, and has been found to answer the purpose well; but there is a great difficulty in preparing it, from the insolubility and even immicibility of phosphorus in water, attended with no little danger of fire. The process I have found to succeed perfectly is as follows:—Melt hog's-lard in a bottle plunged in water heated to about 150° F.; introduce into it half an ounce of phosphorus for every pound of lard, then add a pint of proof-spirit whiskey; cork the bottle firmly after its contents have been heated to 150°. taking it at the same time out of the water-bath, and agitate smartly till the phosphorus becomes uniformly diffused, forming a milky-looking liquid. This mixture being cooled, with occasional agitation at first, will afford a white compound of phosphorus and lard, from which the spirit spontaneously separates, and may be poured off to be used again, for none of it enters into the combination; but it merely serves to comminate the phosphorus, and to diffuse it in very fine particles through the lard. This fatty compound, on being warmed very gently, may be poured out into a mixture of wheat-flour and sugar incorporated therewith, and then flavoured with oil of rhodium, or not at pleasure. The flavour may be varied with oil

of aniseed, &c. This dough being made into pellets, is to be laid in rat-holes. By its luminousness in the dark, it attracts their notice, and being agreeable to their palates and noses, it is readily eaten, and proves certainly fatal. They soon issue from their lurking places to seek for water to quench their thirst and bowels; and they commonly die near the water. They continue to eat it as long as it is offered to them, without being deterred by the fate of their fellows, as is known to be the case with arsenical doses. My friend in Derbyshire bought a pot of Mr. Meyer's rat-poison, and found it to be an analogous phosphoric preparation. The present mode of preparing it is the result of my own experiments, made with the view of diffusing phosphorus through a flour and sugar, &c., without the risk of fire."—The paper in the Society's Journal, referred to by Dr. Ure, will be found in the third volume, page 428, and was communicated to the Society by Captain Stanley Carr, Tuschenbeck, near Lubeck, in the Duchy of Lauenburg. It may be an easy guide for those members of the Society who are desirous of following Dr. Ure's prescription, and may not have a thermometer at hand, to know that a temperature of 150° of Fahrenheit is equivalent to a degree of heat mid-way between that at which (according to Schubler) white of egg coagulates and wax melts.

Mr. Miles, M. P., stated the success with which Captain Carr's remedy for destroying rats had been tried by himself and others, in Somersetshire, and the extraordinary manner in which the rats came to eat it.

What a curious hallucination that is which supposes the SAP OF TREES TO FALL, or settle, in winter into the roots! One would have thought that the notorious difficulty of cramming a quart of water into a pint measure might have suggested the improbability of such a phenomenon. For it certainly does require a very large amount of credulity to believe that the fluids of the trunk and head of a tree can, by any natural force of compression, be compelled to enter so narrow a lodging as the root. The idea, however, has established itself in some persons' minds, and, we presume, in connection with that other old vulgar error, that the sap is in rapid motion in the spring time, in the roots of a tree, before it begins to flow in the branches.

These whimsies took their origin in days when the world was contented to accept assertions upon trust, and when hypotheses and vain imaginings formed the debased paper currency of science. But now men have found out the value of a golden standard, both for money and for knowledge; they call for facts before theories; and the result, already, is a wonderful disturbance in the crowded ranks of scientific as well as historical legends.

We shall assume the word SAP to signify the fluids, of whatever nature, which are contained in the interior of a tree. In the spring this sap runs out of the trunk when it is wounded; in the summer, autumn, and winter, it does not, unless exceptionally, make its appearance. But in truth the sap is always in motion, at all seasons, and under all circumstances, except in the presence of intense cold. The difference is, that there is a great deal of it in the spring, and much less at other seasons.

When a tree falls to rest at the approach of winter, its leaves have carried off so much more fluid than the roots have been able to supply, that the whole of the interior is in a state of comparative dryness, and a large portion of that sap which once was fluid has become solid in consequence of the various chemical changes which it has undergone. Between simple