

been in the habit of draining the hotbeds of his master. His mode of constructing them was to wrap a lump of clay round a mandril, and rub it smooth with a piece of flannel. Mr. Parkes showed one of these pipes to Earl Spencer, saying, "My Lord, with this pipe I will drain all England." The Council, on his Lordship's motion, gave John Reade a silver medal for his idea, and in the year following offered a premium for a tile-making machine. A great deal of money was wasted in attempts, and many patents were taken out for the purpose with indifferent success; but in 1845, at Shrewsbury, Thomas Seragg received a prize for a machine which triumphed over the difficulties, and pipes can now be made quite as fast as kilns can take them.

The work from that hour went rapidly forward. In 1846 Sir Robert Peel, whose management of his own property had made him thoroughly alive to the national importance of the subject, passed the Act by which four millions sterling were appropriated toward assisting landowners with loans for draining their land, with leave to repay the advance by instalments extending over twenty-two years. Nearly the whole of the first loan was absorbed by canny Scotch proprietors before Englishmen had made up their minds to take advantage of it. But the four millions of Government-money was small in comparison with the sums furnished by private enterprise for the execution of an improvement which on the worst class of wet land gave visible proofs of its value by immediate profits. Another circumstance stimulated the work. About the period that the system of deep draining was perfected, the great landowners were anxious to encourage their tenants, depressed by the approaching free trade in corn, and thorough draining became the most fashionable improvement. The sheepfolding Norfolk rotation had done great things for light land, brought the cultivation of roots to a high pitch, and proportionately increased the live-stock on every light-land farm. The owners of strong retentive soils were anxious to imitate their light-land neighbours, and to grow the roots which were seen to afford such profits in beef and mutton. Deep drainage enabled them to realize these aspirations.

For centuries the farmers of clay soils had been engaged in trying various expedients for saving their corn crops in wet seasons. The land was laid up in "lands," "backs," or "steches," that the rain might flow off into intervening surface-drains, a few inches deep, and which were formed of turf, bushes, and stones. Not unfrequently an anxious farmer would traverse his cornfields after heavy rains, spud in hand, and try to lead the stagnant little pools to the neighbouring ditches. In favourable seasons the clay usually gave excellent crops of corn, but a wet season destroyed the husbandman's hopes. These stiff soils had been preferred, until light heath-land had been brought by sheepfolding, marling, and root-growing into profitable culture. The introduction of thorough drainage restored them to their ancient pre-eminence. Hundreds of thousands of acres, formerly condemned to remain poor pasture, or to grow at long intervals uncertain crops of corn and beans, have been laid dry, rendered friable, and brought into a regular rotation, in which roots find their place. Sheep-stock thrive where previously a few dairy cows starved; the produce has been trebled, the rental raised, and the demand for labour increased in proportion. In the neighbourhood of Yorkshire manufactories, moorland not worth a shilling an acre has been converted into dairy-farms worth two pounds. When it is remembered that the principle upon which these results depend was not enunciated till 1843, it will be seen how rapid and mighty has been the recent progress in agriculture. A second public loan of four millions was granted in 1856, and it has been estimated that in the ten previous years upwards of sixteen millions had been invested by the nation, and by private companies and individuals, in thorough drainage. There is no longer truth in the saying that the capital and soil of the country have never been acquainted. All the branches of farming business felt