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AGRICULTURAL RESEARCH IN RELATION TO THE COMMUNITY[1]

IT is a common reproach that agriculturists have not made the same use of science as have those engaged in the other great industries—that farming is still a rule of thumb process carried out by methods which have their origin in the dark backward and abyss of time. In some respects this is indeed true. One has only to read Cato or Columella to realize that the Italian peasant of to-day is working and living in very much the same way as his Roman forebears, and even the more highly organized farming of Great Britain or Denmark or Holland is carrying on many of the essential operations of cultivation on lines that were laid down by the first great civilizers—the Romans. It is easy in fact to trace modern agriculture to a Roman ancestry; in Britain, for example, by the transplantation from the fifteenth century onwards of the traditions and practices that persisted through the dark ages in the Low Countries.

None the less progress has taken place and scientific development is going on. Under medieval systems of agriculture the yield from England's land was of the order of six to eight bushels of wheat to the acre. The enclosure of common lands, the introduction of a recuperative clover crop into the rotation and of forage crops like turnips for the winter feeding of cattle and the making of farmyard manure, the return to Roman methods, in fact, raised the level of production to about twenty bushels of wheat per acre. This was about the average when agricultural science dawned nearly a hundred years ago—say about 1840, when Liebig exposed his theory of plant nutrition and Lawes began his experiments at Rothamsted. Growing scientific knowledge and the introduction of fertilizers raised the level of English production by 50 per cent. during the next generation, so that by 1870 the average yield of wheat per acre in England had become thirty-two bushels. At that level it has more or less remained down to the present day because a new factor then came into play, the importation of cheap wheat through the opening up of the middle west, of Argentina and of Australia. The economic factors of gold scarcity and rising costs of labor cooperated to limit the profit attached to high farming: the English farmer had to cheapen his production and lower his standard so that he only obtains the same yield to-day, though the acreage under wheat has shrunk on to the better land. Latterly we have seen

[1] An address delivered before the Graduate School of the U. S. Department of Agriculture, January 26, 1925.