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AGRICULTURE IN GERMANY.

S. W. Johnson, a foreign correspondent of the *Country Gentleman*, writes from Heidelberg, as follows:—

"Heidelberg—Rape, its Culture and Use—Beet Sugar—Prof. Bunsen—Cooking Vegetables.

Heidelberg lies on the Neckar, some miles above the confluence of that river with the Rhine. From the heights above the top, the view northward and westward extends over the fertile Rhine and Neckar valley, and the courses of the two streams may be plainly traced. The vegetation of this and the neighbouring valley, was far more advanced at the date of my visit, April 23, than that of Bavaria and Wirttemberg. The spring field-operations seemed nearly completed and winter crops were well up. My notice was particularly arrested by the winter rape (*Brassica napus-oleifera*). I was astonished to find that while grass had attained at most, a height of three to four inches, this plant was two or even three feet high, and already in blossom. It is chiefly cultivated for the sake of the oil obtained from the seeds, which is one of the most common means of illumination in Germany. The oil has a greenish yellow colour, is free from disagreeable odour, burns clearly, and is greatly preferable to whale oil. The rape cake, or residue after the expression of the oil, constitutes a highly nutritious food, valuable as an addition to coarse fodder, especially for fattening animals. It has a peculiar taste, which is at first disagreeable to cattle, but they shortly get accustomed to it, and learn to relish it. It is then equal in every respect to linseed-oil cake. When there is a deficiency of food in the spring, the green plant is often used as fodder. This plant is said to be of easy cultivation, and appears worthy of extended trial in the United States.

The soil of the Rhine and Neckar valley is good, and the tillage is admirable. One of the chief pro-

ductions of this country is the sugar beet, from which immense quantities of sugar are annually fabricated.

I have lately observed in our agricultural papers, inquiries concerning the manufacture of beet sugar in the United States, viz., whether it could be carried on profitably there. In your columns, articles have appeared representing the success of the manufacture there as highly problematical. From what I can learn, these opinions are perfectly just. The fact that sugar costs more here than in the United States, and the production here is protected by duties on foreign sugars, sufficiently show the true state of the case.

In Europe field labourers are abundant, and receive but small wages; hence the cultivation of the beet can be carried on very cheaply; besides, all other sources of a supply of sugar are distant. With us the matter is reversed, labour is dear, and the sugar cane is grown profitably in our southern States. The extraction of sugar from the cane is a simpler process than its preparation from the beet; and it is a well ascertained fact that as much sugar is yielded by a crop of beet roots of moderate size and medium weight, as when the roots are of mammoth dimensions. In fact beets are not bought by measure, the price paid diminishes in proportion as the yield exceeds a certain limit. The cane furnishes itself the fuel necessary for the evaporation of the juice, while the beet does not. The farther north the cane is cultivated, the less sugar and the more salts are contained in its sap. The presence of salt diminishes again the quantity of crystallized sugar obtainable from the sap, since, in their presence, the sugar is converted into molasses, during the processes of manufacture. In tropical countries the most beautiful sugar is often obtained directly from the juice of the cane without any purification and without the formation of molasses. To the north, as in Louisiana, the quantity of molasses formed during the manufacture (it does not exist in the fresh juice) is very considerable, except when the most refined methods are employed. Finally, other things being equal, still more loss occurs in making sugar from the beet in colder climates; and