

ergotted flour of rye are correct. Tessier, who has paid great attention to the subject, mentions a case which came under his own observation. A family were in a state of great destitution, and the father begged of a neighbouring farmer a quantity of ergotted rye to supply the urgent calls of his distressed family for food. The farmer gave it him, but added that he was afraid it was not wholesome. Still the calls of hunger prevailed; and in the face of this caution it was eaten. The result was the death of the father, mother, and five of the children out of seven. Two survived, but one of them became subsequently deaf and dumb, and, besides, lost a limb which actually rotted off, precisely in the same way as the limbs of the animals which were compelled to swallow the experimental ergot. Professor Henslow has published a series of remarkable extracts from the parish register of Wattisham, in Suffolk, in the year 1762. It records the sufferings of several persons from an unusual species of mortification in the limbs, the symptoms of which were very similar to those of the people under the influence of ergotted rye in France. Indeed there seems a great probability that their maladies were due to the same cause, except that, in the Suffolk cases, the ergot was that of wheat instead of rye. Wherever it is perceived in samples of wheat it ought to be carefully picked out, and might be sold to medical men, since in judicious hands it may be applied medicinally with great success. But it should never be made use of, except when prescribed by those who are, from profession and practice, well aware of its properties, and skilled to apply them when required.

The whole range of our physiological knowledge does not afford a more wonderful instance of a natural chemical transmutation, under certain circumstances, than the present. By the agency of some unknown cause the nutritious corn is changed into an altered unsightly form, and endowed with properties perfectly the reverse of its original wholesomeness.

It is more than probable that many disorders have been produced by this curious abortion, the origin of which has hitherto remained unsuspected. Let search be made for it in localities where gangrenous diseases of the limbs abound, with a view to prevention. Moreover, it is well worthy of the farmer's attention, inasmuch as his cattle may have suffered much from the same cause, when he has never even dreamed of its existence. The author knows, at this moment, of certain low meadows, where all the cattle that were turned into them at one time, were sure to be taken ill. They have been since judiciously drained, and in 1845 were searched in vain for ergot in the grasses. But in places adjacent the author gathered large quantities. These meadows now afford excellent food for the cattle, and no complaint appears as heretofore, when the occupant was actually afraid to turn any animal into them. Although this fact may not be perfectly decisive, it affords a strong presumption in favour of the idea that ergot did greatly tend to promote the evils complained of. A careful examination of the grasses growing near many hedge-rows, will enable an inquirer in the autumn to discover more ergot than he may imagine. In 1844 and 1845, there was a great deal to be found in such places; and it is notorious to numbers that pigs running about the lanes became diseased.

These inquiries are undoubtedly of great importance, and their value is further enhanced by the fact, that there is reason to believe that in some localities in France, where pains have been taken to prevent ergot being sent to the mill with the good rye, the epidemics formerly so prevalent have diminished. Indeed, it is said, that they have been nearly removed by this judicious care. It is to be hoped that this matter will receive more attention in parts of our own country, where morbid and unaccountable disorders prevail amongst the poor. Ergot is not unlikely to be the unsuspected source of much suffering hitherto baffling inquiry.

The specimens of ergot of rye drawn for this section, were gathered by the author in September, 1845, in a sort of peaty soil, with a stiff cold subsoil. The rye was late, and pretty nearly every other ear was more or less ergotted. In the previous September, he found exactly the same thing in the next field. The general opinion seems to be, that any wet hard

land is suitable to its development. But the singular thing is, that so few people notice it. Threshers in barns will declare they never saw it, till it is pointed out to them. A farmer of great activity, eighty years of age, assured the author he had never seen it. He soon gathered a piece of ergotted rye-grass and showed it to the old man, who said, "Well, in all my life, I never saw such a thing before!" Indeed, by the men who work in our barns, it is probably often mistaken, when on the floor, for the dung of rats and mice, which it not a little resembles.

The prevalence of ergot in those fields where the drainage is imperfect, and its disappearance from such as have been thoroughly well drained, seems to point to this as its chief preventive. After searching in vain over a large well-farmed parish for ergot in wheat, during the autumn of 1844, the author requested a small farmer to look over some that was grown on a wet clayey spot close to a ditch adjoining a marsh. He was soon presented with three or four specimens from the suspected place, one or two of which had the chaff scales still adhering to them. This seems to confirm the supposition as to its favourite localities, and at once to suggest the best method of getting rid of it. Professor Henslow appears to be of the same opinion, and hints that when ergot is wanted for medicinal objects, it might probably be always obtained if grown where such conditions of soil present themselves.

The fungus, before said to accompany the disease, and to which it has been attributed, is called *ergotetia*. The mere fact, however, of coincidence, does not prove cause and effect. It has a nasty smutty appearance, and the author has seen the *cladosporium herbarum*, previously noticed, growing with it on the chaff scales of the ergotted ears of rye. Such a transmutation of nutritious bread-corn into a violent poison, cannot fail to remind the reflecting reader, that the scriptural statement of the word of truth—the seed of eternal life, becoming a "savour of death unto death," instead of "a savour of life unto life,"—has a striking analogy in this extraordinary natural phenomenon.

THE CULTURE OF THE TURNIP.

BY MR. A. S. MOFFAT.

The third head leads us to consider the inorganic constitution of the turnip, and some of the manures generally employed, as regards their capability of contributing to the wants of the plant, and maintaining the permanent fertility of the soil. The following table is so arranged as to exhibit side by side, the quantity of inorganic constituents required by 24 tons of entire turnips, roots, and shaws, calculated from the average of the most recent investigations of Professor Way, of Cirencester. I have assumed 20 tons of roots per acre, and the quantity of shaws upon the 20 tons to be 4 tons, which is rather within than beyond an average crop—the quantity of each substance, that an acre of the soil, whose composition I stated at the beginning of this paper, can furnish without manure, assuming that the depth from which the fibres of the turnip derive their chief support is usually seven inches, which depth over an acre of land will weigh somewhere about 700 tons. The average quantity of mineral matters contained in 15 tons of fully rotten farm-yard dung is also given, along with those furnished by 4 cwt. of ordinary guano, which is rather an extra dose.

	24 Tons of Turnips.	An acre of Soil.	15 Tons farm dung.	4 cwt. of Guano.
	lbs.		lbs	
Silica	13.2	550. tons.	2,473.4	7.02
Phosphoric acid	45.6	439. lbs.	108.19	67.14
Sulphuric acid.....	60.24	Trace.	58.0	16.38
Lime.....	90.24	5.2 tons.	214.0	53.87
Magnesia.....	14.6	560. lbs.	17.36	3.6
Peroxide of iron	4.32	32.9 tons.	29.76	..
Potash	147.41	Trace.	103.0	20.11
Soda	59.87	Trace.	46.8	0.25
Chlorine	35.53	Trace.	22.63	7.87
Total	470.57	3,075.14	176.24

Now it will be observed from this table, that the turnip is a plant which draws a large amount of mineral matters from the