

REPORT CONCERNING A NEW METHOD FOR THE PROPAGATION OF GRAIN,
AND OF THE BENEFIT RESULTING FROM IT,
NAMELY, THAT IN THIS METHOD OF SOWING,
MUCH LESS SEED IS SOWN THAN IN THE USUAL METHOD

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Translated from the Russian¹⁾ by STACY G. LANGTON, University of San Diego, 2006

1. A certain distinguished gentleman, having for several years carried out experiments on the propagation of grain, concluded finally that he had found a most useful method of attaining this objective. He performed that trial in the town of Berlin; having myself witnessed it, I afterwards found by experiment in my garden at Charlottenburg that, with this new pattern of sowing, much more grain is produced. When this matter became known, although some rural landholders raised great objections, nevertheless many thought that such a matter should be examined in greater detail, to see whether remedies could be found for the aversion stemming from the difficulties connected with it. For this reason, in accordance with my obligation, I communicate to the Most Highly Esteemed Free Economic Society a circumstantial report concerning this experiment.

2. This experiment concerns the winter grain in particular, and requires, first, that the seeds be sown before St. John's Day,²⁾ and consequently some months before the usual time. Second, the land must be cleared of all weeds by plowing, and must be well manured. Next, the seeds are not to be sown, but planted in the ground at a depth of half an inch, and at a distance of roughly four inches from one another; moreover, it is necessary to take care that the seeds be ripe and healthy.

3. When the seeds have sprouted, and, still before winter, the grass begins to form stalks, then the growing grass must be cut, which may happen three or four times in one year; but the cut grass provides excellent fodder for livestock.

4. This cutting not only does not allow the grass to form stalks, but the root of the plant develops better because of it and spreads out into sprouts. With the coming of the autumn frosts, when the grass will stop growing, all these roots which have developed into sprouts must be pulled out of the ground, as was done when the experiment was performed: for it was noticed then, not without astonishment, that many of them could be divided into 12 or 15 separate parts, although there were a few which had only three or four separate sprouts.

5. If all these sprouts are divided in this way (so that the number of new sprouts or seedlings which have developed will be at least six times the number of seeds which were planted), then they are to be replanted in previously prepared ground at a distance of three inches from one another: and thus for the sowing of a large field with such sprouted roots barely the hundredth part will be required, in comparison with the usual method.

6. And when the grass comes up in the following summer, then it can be cut again; for as a result of this cutting the root develops better, and, furthermore, from each seedling more stalks will form, which will be stronger and more succulent, so that more seeds will form in the ear.

¹⁾ The *Opera Omnia* prints this article in Russian, as well as in a somewhat free German translation (E341a, OO, III.2, pp. 387–389). I have consulted the German, but I have here translated the Russian text. *Tr.*

²⁾ The Feast of St. John the Baptist, June 24. *Tr.*

7. If they begin to sow the grain in this way, then without doubt a great yield will result, because not only can each field be sown with a hundredth part in comparison with the usual method of sowing, but from the healthy matured seedlings a much greater number of ears will ripen; for from each seedling usually three, four or more ears will grow at once. But the planting and transplanting of the seeds were considered by many rural landholders as an insurmountable difficulty, so that no one was willing to carry out the trials on a large scale. The inventor answered this objection by saying that this method of disseminating grain requires no more labor than the growing of tobacco, which latter appears perfectly reasonable to the farmers, that in this method the grain saved from sowing can repay all the efforts devoted to it, and especially that this work can be carried out by the women and children.

8. But that this new method of disseminating grain requires barely a hundredth part of the seed, in comparison with the usual method, the inventor demonstrated in the following way. He supposes that six separate sprouts will grow from each seed, from each sprout, five ears, and to each ear he reckons forty seeds; and thus, from each seed that is planted, multiplied first by six, then by five times forty, 1200 seeds come into being. But let us assume only 1000 seeds: it follows from this that to sow a field which produces 1000 bushels¹⁾ of crops, only one bushel is required. But if for the usual method of sowing we figure that a field yields tenfold more harvest than was sown (which does not happen in many places), then to grow 1000 bushels, 100 bushels of seed are required. From this it clearly follows that this new method requires a hundredfold less seed than the usual method.

9. So since to grow a thousand bushels of grain it will be enough to sow one bushel of seed, and thus there will always be 99 bushels left over, in comparison with the usual method of sowing, the whole matter then amounts to this: can the 99 bushels of grain saved repay this labor, that is, the planting of all the seeds, of which in one bushel there are more than a million? The inventor affirms that this will be the case, believing that he has found ways of alleviating this work. But unless a sufficient number of people can be found for this work, then these returns cannot be expected.

10. Since in that case it wouldn't be necessary even to mention the transplantation, nevertheless it would still be worth the effort to determine by experiment whether it would not be possible with the usual method of sowing to gain a great advantage by a single cutting of the grass; and whether the newfangled plows, which themselves sow the seed at a predetermined distance and at the proper depth, could in any case be used with great advantage. For this, it would be necessary to sow at a much earlier time than usual, and, by cutting the grass, not allow it to develop stalks before winter. But by cutting the grass which has come up not only would there be excellent fodder for the livestock, but the roots remaining in the ground would develop greater strength, and would produce more stalks in the following summer, and in this way a richer harvest would result. Thus this benefit for cultivation would be of truly great significance.

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¹⁾ The word translated "bushel" is осмина (osmina; also spelled осьмина), an old Russian unit of dry measure, equal to about three of our bushels. *Tr.*