

PRODUCTION OF WHEAT.

THE continued low price of wheat is a subject of much discussion in both the technical and general newspaper press. There are those who entertain the view that some day in the near or distant future we will experience a period when, at least, comparatively high prices will once more prevail. The MILLER has several times pointed out of late that the burden of evidence would seem to establish much more clearly, that a high-level of prices is something that we can hardly hope for unless by reason of an unusual and extraordinary phenomena. The Commercial, of Winnipeg, has discussed the question at some length, and holding to the view of the MILLER, gives a number of reasons, which seem to indicate that an era of prices on a permanently low level has set in. Our Manitoba contemporary says: "In the first place we have to recognize the fact that nearly all staple commodities have reached a lower plane of values, with the prospect that prices will permanently remain lower than they were a few years ago, though there may be some reaction from the very bottom prices which now prevail. Most other commodities being lower, it is only reasonable to expect that wheat will remain lower, and indeed, the fact that other goods are lower in price, will make possible the profitable production of wheat at lower values than formerly ruled.

"The next thing we have to look at is the wide area of territory where wheat can be produced to advantage. Wheat is being harvested somewhere almost every month in the year, and new territories are constantly being opened up by the advance of civilization and progress of the world, which are adapted to the production of wheat. Only the other day, it was announced that a large area of country in Africa, hitherto inaccessible, had been discovered to be well adapted to wheat. The cultivation of wheat has become so general, that a short crop in one country will hardly now affect the supply of the world, and to materially advance prices, there would have to be a crop failure over a very large area. It is even doubtful if a sharp advance in prices by reason of a short crop would be beneficial to wheat growing countries, for it might result in such an expansion of the wheat area generally as would quickly lead to immense over production, to be followed by lower prices than have yet been experienced.

"The third factor we will consider as contributing to lower prices for wheat, is the cheapening of transportation. There has been a wonderful decline in the cost of transportation by water during recent years, which has led to increased competition. It was stated that a cargo of California wheat was sold at Liverpool a short time ago at a price which would aggregate less than the freight rate alone would have amounted to twelve years ago. Few people realize what a factor the reduction in the cost of transportation has been in reducing the prices of commodities. Prices have been reduced and equalized in different parts of the world by the cheapening of transportation. Remote regions are now brought into active competition with near by countries in importing markets, with little or no disadvantage in the cost of transportation."

Then giving to the subject a local application the Commercial adds: "There is a large area of Western Canada, which is admirably adapted to the cultivation of wheat. What seems to be the natural product of the country, and can be grown to better advantage than any other crop, prices being at all equal. The question is, will we be compelled to cease producing wheat, for which the country is peculiarly adapted? We think not. We are at a disadvantage with some competitors on account of our inland position, but we have other advantages which should enable this country to produce wheat in large quantities. While it is evident that our farmers must diversify their operations and go more into stock-raising, dairying, etc., than they have in the past, we must still endeavor to keep in the race in the production of wheat. Instead of giving up wheat, we must study how to make it profitable at the lower prices now ruling, and endeavor to remove every obstacle to profitable production. Already considerable progress has been made in this direction. Through the great cheapening of agricultural implements and other articles necessary to the farmer, which has taken place in Manitoba during recent

years, our farmers should be in a position to grow wheat very much more cheaply than they could a few years ago. Further reduction in the cost of growing wheat may be made by improved methods of agriculture. Customs taxation must be reduced. Manitoba, as an agricultural country, is in open competition with the world. Tariffs cannot do anything to protect our farmers and enable them to compete to better advantage with the world, but tariff taxation can do a great deal to handicap our farmers in this competition. Burdens of this nature must be removed. The cost of transportation must be reduced, and we believe will be very materially reduced. We have a northern and eastern water route, either of which are capable of great things for the country. The eastern water route is now of incalculable service, and is capable of further considerable improvement. Altogether, we have no reason to despair of being able to produce wheat at a profit, in competition with the world."

CURRICULUM OF GERMAN MILLING SCHOOL.

AS is well known there is in Chemnitz, Germany, what is called a millerschule, or school for millers, being a branch of the State Polytechnic Institute, wherein the pupil is educated in technical science and the practical knowledge of milling and millwrighting. The course of study in this school is as follows:

FIRST TERM.

1. Milling in general (four hours). Practical part—the system of measures, weights, and standards in the other countries most important to the trade; estimates of price according to quality of grain; statistics of granaries and grain trade. Technical part (continued as mill-building in second term of No. 10)—systems of grinding, with their special arrangement of machinery and transportation; transporting, lifting, and weighing appliances of mills; effectiveness and expenditure of power of different milling apparatus; machines for cleaning the grain, etc.; fanning, hulling, and brush machines, etc.

2. History of milling products in nature (two hours). Treatment of the elements and chemical treatment most important to plant life; analysis of grains, microscopic examination of their structure; flour, dough-making, and baking processes; determination of gluten and flour inspection.

3. Mathematics and mechanics (eight hours). Logarithms; elements of plane trigonometry; theory of curves so far as necessary to understanding of mechanics; theory of equilibrium and motion of material points and of rigid bodies; frictional resistance; strength. (Treatment elementary and limited by the demand of the practical application.)

4. Physics (four hours). Theory of heat.

5. Machine theory. (Same as Werkmeisterschule, No. 9.)

6. Machine drawing (eight hours). Preparation of working drawing of simple transporting and milling machine parts.

7. Free-hand drawing (two hours).

8. German language (four hours). Exercise in preparation of business papers; technological descriptions, etc.; exercises in extempore speaking, with taking notes, most important sections of history of German literature.

9. Field and water surveying (four hours). Handling of the simplest surveying instruments for laying out mill pits, mill ponds, etc.; leveling water surveying through gauges, floats, etc.

SECOND TERM.

10. Mill-building (four hours). Pulverizing machines, cylinders, swing mills, mill stones; setting up, adjusting, and cutting millstones; grinding and rifling machines for cylinders; cylinder sieves, etc.; machines for cleaning the meal, mixing, and packing flour; transporting apparatus, with reference to the motor and grinding system.

11. Mechanic (four hours). Same as Werkmeisterschule, No. 15; also weirs and mill pits.

12. Machine theory (six hours). Continuation of No. 5; valves; shafts; toothed wheels; water wheels; turbines; steam boilers; steam engines.

13. Machine drawing (eight hours). Drawing from examples and plans of different milling machinery and tools; water wheels; plans of mill apparatus from drawings.

14. Free-hand drawing (two hours). Continuation of No. 7; making and shading drawings from plaster models.

15. Building (one hour). Window openings, stone ceilings, simple arches; chimneys, wood-jointing, sleepers, beams, etc., and their supports; roofs, with their supports; roof construction with truss and strut frames, etc.; stairs; building site; foundation.

16. Building drawings (one hour). Drawings of small buildings from given designs and original.

17. German language (two hours). Continuation of No. 8.

18. Business bookkeeping (two hours). Points most important to the students.

Students are also admitted to certain departments of the Werkmeisterschule

THE ESSENCE OF MODERN TRADING

ADAPTABILITY, says the Miller (London), is the essence of modern trading. Had not our millers adapted themselves to the altered condition of science, the fine flour which we use must have become the product of Hungarian or Minneapolis mills, and had not the difficulties raised by the free importation of various grades of American flour been grappled with there would be far fewer English mills now open than is to-day the case. But the farmer declines to adapt himself to his environment. He sows wheat for quantity when quality is his best chance for profit, he grows it on land which is too highly rented for a crop which gives at best four quarters at 26s. 6d. per quarter. The higher and more philosophical way of looking at the farmer's position would justify his tenacity. It is not to the national advantage that the farmer should be regarded as a trader pure and simple. Willingly or unwillingly he must also be regarded as insuring us a minimum of supplies in case of foreign complications. He has a function to the State to perform in raising a certain quantity of bread food. That is the view of the farmer which prevailed in ancient times, which the middle ages endorsed, and which is vigorously endorsed by all Continental nations and by the United States. Even the most advanced of English statesmen would hesitate to meet it with a clear denial. Yet it cannot be denied that had the English farmer shown since 1879 that adaptability to the circumstances of trade advantage which his friend and neighbor the English miller has known, the cultivation of wheat in the United Kingdom must needs have become extinct.

Thus it is that the end of one year and the beginning of another finds us confronted with varied but not uniformly unprofitable milling fortunes, with unvaried and unprosperous farming fortunes. As millers, we hope the English farmer will go on providing us with the soft and easy-working grain which tempers the steely wheat of Chili, the hard and ricey Indian, the varying qualities of different climes. But, as economists, we cannot honestly advise the agriculturist to go on doing anything of the kind. He is at present losing on every sack of English wheat that he brings to market, and there exists very little reason for price recovery in any future discernible from such vantage ground for outlook as the 1st of January, 1894, may afford.

TRICK OF A SAFETY VALVE.

AN engineer recently observed his steam gauge indicating a higher pressure than his safety valve spring was set for. He slackened the spring, but the gauge kept rising and the steam did not blow off. He slackened the spring further, still the steam did not blow. When the pressure rose to 200 pounds he became alarmed, and as he could not start the engine he started the injector and opened the water blow-off cock. The damper being closed, this had the effect to prevent further increase of pressure. On examining the safety valve it appeared that the brass seat of the valve was a bushing put into an iron casting, that it had become loose and that the steam had pressed it up against the valve. As the valve rose the seat followed it, and there could not have been a release of steam until the bushing was pushed out of its hole. Some serious accidents have occurred from this cause. It is not good engineering to so construct safety valves that it is possible for the valve-seat to become detached.