

of the Agricultural Extension Department of the Harvester Company; Prof. Holden is the directing force behind the work; Holden says that labor without thought is worth one dollar and fifty cents a day, but the value of what is stored in a man's head is determined by its efficiency in meeting the demands of commercial and industrial necessity. Success is in knowing how to be of service in the world's work. Service is the heritage of good citizenship.

It is not Prof. Holden's object, as director of the educational work of the Harvester Company, to supplement the work of any educational institution or organization but to co-operate with all in a spirit of helpfulness. Holden says:

"You can't make a mathematician out of a boy by working his problems for him; he must work them out for himself." If people are to succeed, they must work out their own problems; but the department will do all that it can to help in whatever stands for the betterment of town and country, for that which will tend to raise the social, physical, and financial standards of the people throughout the country.

Holden maintains that the home is the center of the world interests, and that all industries, all lines of human endeavor are of value only as they tend to safeguard and improve the home and home life. He stands for education which stands for people.

### WASTE IN EDUCATION

Some few months ago there was published in this Journal an article on Waste in Education. This has been commented upon freely, and the subject is now being investigated in many localities. One of the finest contributions is an article in the Columbia Teachers' Review for September, in which Miss Sarah E. Chase tells of Waste in Arithmetic.

First, she tested some classes in 9th Grade and over, as to their knowledge of mensuration. She gave out sheets on which were drawn square, rectangle, shomboid, triangle and circle, and asked pupils to determine the avas. Of the 123 pupils, 40 per cent. could get none of the answers, and most of the remainder less than three. Ninety-three per cent. failed on the shomboid, 98 per cent. on the circle, 97 per cent. on the triangle and 50 per cent. on the square. The same test was given to a class that had just finished a course in mensuration. Of the 38 children, one got all, 24 per cent. got none. When the solution was right in principle 18 per cent. were wrong in multiplication.

A test was then made as to the use of this knowledge in life. The result was surprising. Most of the knowledge was declared to be useless. Teachers

of drawing, cooking and manual training were equally pronounced in condemning most of the knowledge as useless. Men and women engaged in various occupations were asked to fill out slips of paper the measurements not used since school days. Most of the knowledge was declared of no value. For instance, the men and women using the various measurements were represented by the following figures: Square, 66 and 27; rectangle, 61 and 26; triangle, 42 and 8; circle, 33 and 12; rhomboid, 11 and 3; surface of cube, 38 and 8; cylinder, 24 and 5; volume of cube, 39 and 9; cylinder, 36 and 6.

In the light of all this it is stating the conclusion somewhat mildly to say that if nothing more can be offered than the usual reasons for the teaching of mensuration in the grades, then the amount of time commonly devoted to this topic is hardly justified. Since their multiplication of very simple mixed numbers gave these pupils a poor foundation indeed for higher mathematics; since their confusion in regard to perimeter dimensions, area and square inches made any assistance thus gained toward a rational interpretation of the universe doubtful; and since the majority could not make any practical