held in Toronto to discuss the best standard and scale of points for use in the future. Those who have raised most unreasonable objections to the one adopted last year were conspicuous by their absence. The agitation and discussion is doing good. Indifference and apathy do not imply progress ; the opposite may indicate preparation for advancement along the right lines.

JAS. W. ROBERTSON.

The Dairy Test Again.

BY D. E. SMITH, CHURCHVILLE, ONT.

Dear Sir,—Kindly allow us space to answer Observer. It seems evident that Observer has *observed* that Stockman could not successfully defend the Shorthorns, else he would not have made such a big attempt to assist him. He has also *observed* that the Holsteins are rapidly becoming the farmer's and breeder's general favorite, hence his misleading and ill-disposed remarks about them.

He says that what we said about the origin of Shorthorns was not true, and then expects your many intelligent readers to believe that the blank assertion of one who styles himself Observer should be taken without question. Let us consider the matter without prejudice and get at the truth.

In a previous letter we quoted from the Consular Reports, which are prepared by the United States government. Albert D. Shaw, U. S. Consul, in England, says, at the introduction of this Report, dated Manchester, Feb. 19th, 1884 : "I was most fortunate in securing the services of James Long, of Netchin, England, a well known authority, both in England and on the Continent * * *. It will be found that great care and attention have been given to this report, and that its impartiality and fairness are beyond question." Further on he says, "prepared by one who is perfectly free from bias in any respect."

We took our quotation from Mr. Jas. Long's report, and will quote it again for Mr. O.'s consideration, as we believe it to be *impartial, fair and free from bias* : "These cattle (from Holland) were of larger bulk, and the cows better milkers than were then known. The new breed formed by the admixture and crossing of these imported animals soon asserted their superiority over all other races. Such was the origin of the Shorthorn." In these same reports we find that Holland, the home of the Holsteins, sent to England alone $4,342,002 worth of cheese and $124,924,128 worth of butter in a year, and in these products beat the world. Yet, Mr. O. tries to leave the impression that their milk is not good.

Mr. O. next quotes from a speech of Prof. Robertson's : "The cow that was most profitable to a farmer was an animal that produced first calves, second milk, third beef." We thank Mr. O. for making more widely known the above quotation, as it very well suits the Holsteins. First, calves : For strong, healthy and thrifty calves, we think every one who has seen or owned a Holstein calf cannot help admitting that they are all that any farmer or breeder could desire. Second, milk : Everyone now admits that Holsteins are the best milkers in the world, except, perhaps, a few such persons as Mr. O. or Mr. S., who would object to anything that was not a Shorthorn. Third, beef : Hitherto, we have not strongly claimed much for the Holsteins in beef production, as we believe they are pre-eminently a dairy breed, and we are anxious to see them remain so. But, as Mr. O. has forced us to speak out we will do so, though briefly. Holsteins have been developed in the hindquarters — that is about the udder—and hence are strongly wedge-shaped, so when they are fattened they put most beef on the hindquarters, just where it is best.

We will quote from the Breeders' Gazette of Nov. 20th, 1889, about Holsteins at the Fat Stock and Dairy Show, Chicago : "The heifer, Spot, showed the remarkable weight of 1,010 pounds at 322 days, an average gain per day of 3.13 pounds, one of the very largest developed by the entire show, and she was as smooth and neat as she was ripe. The steer calf, Ohio Champion 2nd, with a weight of 765 pounds at 195 days, had to his credit a gain per day of 4.13 pounds."

Milk Legislation and Standards.

BY WM. THOMPSON.

From Provincial and Dominion official quarters come recommendations to establish a legal standard of fat and other solids in milk. What are the objects of milk legislation? Three occur to me :—1st. To secure *honest* milk ; 2nd. *Wholesome* milk ; 3rd. Milk of *good quality* for whatever purpose used. Existing legislation in Canada, such as the Dominion Milk Act, the Ontario Act to "provide against frauds in the supplying of milk to cheese and butter manufactories," and municipal milk control under local Boards of Health, is not based upon an arbitrary standard of "legal limits" or a percentage of total solids or fat alone below which, if a vendor's milk fell, he would be liable to fine or imprisonment. Is it wise that such a principle be adopted? Will it best tend to secure the three objects in view?

Now, in the first place, as a guage in valuing milk, the percentage of butter fat seems to be the most readily measurable. Hence it is the element to which experts naturally turn, many methods more or less simple for determining it being in vogue. Fat is moreover conceded to be the most variable element in milk. The percentage varies in different cows and with different foods, treatment, health and conditions of weather. In 138 samples of pure milk analyzed by Dr. MacFarlane, Dominion Analyst, the fat ranged from 2.67 to 6.13 ; solids, other than fat, from 8.10 to 9.61, and the total solids from 10.86 to 15.54. The variations in fat, for example, in the product of the same cow, under different conditions or feeding, are remarkable and may often be beyond the owner's control. At Cornell University Experiment Station two lots of good cows, well bred, well cared for and well fed were in an experiment to test the effect of grain rations on pasture. Now, while the analyses for a certain period showed the average for both lots to be 13 56 per cent. total solids and 4.58 fat, on one day the milk of one lot fell below the 12 per cent. standard and on several others this percentage came dangerously near the "dead line." Had a sample been taken on the one day specified the State authorities might have fined the Station people $200 and subjected them to six months' imprisonment. A citizen of one State was imprisoned because his milk was below the legal standard. Manifestly such laws are unjust. Prof. Roberts admits that. Prof. Ladd says :—"A law that declares any milk falling below an arbitrary standard as having been adulterated is unwise." Prof E. W. Stewart warns Canada against falling into the error that States have made in this matter. Mr. Geo. Abbott, before the American Guernsey Cattle Club, said :—"No legal limits should be established ; to do so is unwise, impractical, unjust and worse than useless."

There is another objection. Such a law affords no encouragement to the man who keeps good cows, treats them kindly and feeds them well, producing milk containing 4.25 per cent. fat, when he has to pool it or sell it at the same price as a neighbor whose fluid is just up say to 3.25 per cent. standard. The only incentive he has is to dilute his rich milk down to the legal limit or else be imposed upon.

The Provincial Milk Act, sustained by the Court of Appeal, prohibits watering, skimming, or keeping back strippings and authorizes the owners or managers of cheese or butter factories to take samples from the cows when such practices are suspected, for purpose of test. In this way each cow or herd is its own standard and no "legal limit" is necessary in such a case. This act also prohibits milk tainted or partly sour being sent to factories.

The enlightened dairy thought of the day is converging to this idea—*to pay for milk according to its contents in fat or total solids.* Ontario creamery men use the oil test churn to determine the quantity of churnable fat in every patron's cream. If a Butter Extractor, or a DeLaval Separator with butter-making attachment is used the patron's milk goes in and the butter comes out to tell its own story on the scales. No "standard" needed there.

The Medical Health Officer of London, Ont., whose first aim is to secure wholesome milk, after several inspections yearly of every milk vendor's premises and cows, and analyses of his milk, publishes the result in the city papers, scaling the milkmen according to fat percentages, highest coming first. Condition of cows, stables, food, etc., is also reported. Citizens can see who sells the best milk and can buy accordingly. In three years that system has raised the average percentage of fat from 3.43 to 3 90. True, the Board named first a 3.25 per cent. fat standard and this year put it at 3.59, but it is merely nominal. The milkmen are educated away above it and find it to their dollar and cent interest to keep above it. If any deluded man is caught watering or skimming he is liable to penalty.

With regard to cheese factories, assuming that the contents in fat were agreed on as a fair measure of the value of milk, then by the systematic use of such methods as those of Short, Parsons, Patrick, Friiyer and Willard, Cochran or Babcock the pay of patrons could be equitably divided. Under the pooling system this is not done. The speediest, simplest and most economical test is the centrifuge-sulphuric acid method recently invented by Dr. Babcock, of the Wisconsin University Experiment Station, by which, after samples are taken, 60 tests can be made and bottles cleaned in one hour at a trifling cost.

I recently assisted in testing the milk of over 60 patrons at one factory and the range of butter fat in honest samples was from 3 50 to 4.50 per cent. (rather high range). The intelligent readers of the FARMER'S ADVOCATE can see the injustice of such a pool as that without further comment.

To conclude : Does it not seem clear that a lowest "legal limit" standard, if too low, will be worse than useless, if too high an injustice to some honest men, that it is unnecessary and in the main wrong in tendency? If any legislation be required should it not tend to promote the sale of milk according to the actual value of what it contains of which the weigh scale or quart measure are not complete guages?