

Have the results of the year justified the existence of the leagues? The review of their work leaves no room for doubt that they have. It is not only what the organizations accomplish in any one year, but the accumulative effects of their efforts for a number of years that must be considered when judging the value of their labors.

## SOME TENDENCIES OF RECENT MILK LEGISLATION

BY HARLEAN JAMES

*Baltimore, Md.*

MANY of us can remember a time when, even in our large cities, milk was dipped or poured from cans into receptacles set out by purchasers. In that day the cows usually stood (when they were given shelter from pasture) in a general-purpose barn covered with dust and cob-webs. Cows were seldom groomed. The hired man, in soiled woolen clothes, milked into an open-top milk pail which had been rinsed with cold water from the well and poured the milk into cans which were transported by wagon direct to the consumer. Refrigeration was not dreamed of.

Since that day the bacteriological origins of many diseases have been discovered. Milk, the scientists tell us, is an ideal medium for the rapid multiplication of bacteria. By means of contaminated water used in washing utensils, through the introduction of particles of manure, through the handling of milk by "typhoid-carriers," disease bacteria may reach the trusting consumer by the milk route. Milk has been in the past, and too often in the present is, exposed on its journey from cow to consumer to the deadly machinations of the house and barn fly.

The working hours of bacteria, however, are very irregular. A farmer may truly say that he and his wife and seven children have thrived on milk produced in the old way. But city health officials in recent years have realized that they must endeavor to protect the public from the possibility of disease carried by milk.

The first efforts of cities to control their milk supplies were mainly in the direction of preventing adulterations. The time-worn farmer jokes concerning water in the milk reflected an all-too-prevalent custom. The tendency of milk to sour quickly in warm weather brought preservatives into common use. Some of these were distinctly harmful; others, less so, if we may believe certain chemists; but it is now generally against the law to put preservatives of any kind in milk. The federal pure food movement to insure proper labeling also has had its effect in local laws setting up chemical standards for whole milk in order that consumers

may be informed concerning their purchases of whole and skimmed milk.

These precautions are all desirable and necessary to-day; but, in the light of recent scientific knowledge, they do not properly protect the public health. The city ordinances and regulations which have been put into effect during the past few years seem to indicate distinctly new tendencies.

The larger cities have been compelled to draw their milk supplies from increasingly long distances. Since milk is peculiarly sensitive to deterioration due to age and high temperature, the long haul has multiplied the difficulties of protecting the health of the consumer.

There are two schools of sanitarians: those who believe that infants should be fed on pure raw milk and those who believe that pasteurization is a necessary form of insurance against disease. Most public health officials now agree, however, that the general milk supply of large cities must be pasteurized if the public health is not unnecessarily to be endangered. Pasteurization, little more than a decade ago, was in the public mind a sporadic business experiment, discredited by scientists. To-day, in many cities, it is a recognized requirement for some part of the milk supply.

Methods of pasteurization were at first crude. It was the custom to use the "flash" method of heating the milk for a few seconds or few minutes. The temperature used was often so high that the cream line was destroyed and the taste affected. Later the "holding" process came into vogue. By this method the milk is heated to a temperature of some 145° for about thirty minutes. This kills practically all of the pathogenic organisms and greatly reduces the numbers of all bacteria.

By inspection and instruction of dairy farmers city health officials have endeavored to secure better practices on the farm. Clean cows, clean barns, clean milkers and clean utensils together with immediate cooling of the milk have operated to bring better milk to the city. Wherever possible, the word "clean" is used in its technical sense of "sterile." Utensils, especially, are held to be "unclean" if they are not washed in boiling water or its equivalent.

When the practice of pasteurization came into general use, it was feared by some sanitarians that the producers of milk would become careless in their methods and argue that, since pasteurization would kill the disease germs, all the trouble and expense to secure cleanliness on the farm were wasted.

Experiments made by Dr. Park in New York city have shown that, even when recognizable disease germs are not present, large numbers of bacteria in raw milk (indicating dirt, age or high temperature) will, after pasteurization, often cause intestinal diseases in infants. For this reason, in addition to the elaborate systems of "farm scoring" and "city dairy scoring" based on equipment and practice as recommended by the

bureau of animal industry of the United States department of agriculture, some of the large cities have adopted a system of "graded" milk, which divides the supply into two or more classes according to its *sanitary* character and the purpose to which it is safe to put it. By this method the dairy farmers are classified into groups with the result that good equipment and careful practice may command the price which it costs to secure them and poor equipment and careless practice will suffer an economic penalty.

The results of grading are even more satisfactory to the consumer. With the growth of large distributing companies, the practice of mixing all the milk—good, bad and indifferent—in the same vat has immensely increased the dangers from bad milk. Typhoid fever germs in one farmer's milk may easily contaminate the milk of a hundred farmers when mixed with it. It is true that *effective* pasteurization will kill these germs, but sanitarians are forced to realize that commercial pasteurization of large quantities of milk in bulk is not uniformly successful. If the commissioners of health in those cities that have tried "graded" milk may be believed, "grading" has stimulated the production of cleaner milk when pasteurization, though necessary, might easily have worked exactly the opposite result.

In smaller towns, publicity in the form of printed dairy scores and bacterial counts in the newspapers or health bulletins, or free access of the public to dairy examinations and records, has brought similar results. "Grading" is simply a device for meeting conditions in the large cities where the consumer would only be confused by the enormous mass of detail necessary for individual dairy publicity.

In September, when the newly organized milk producers in Maryland requested an increase in price for their product, the organized dealers of Baltimore made answer that they would be forced to pass any increase on to the consumer, which would bring them into further unequal competition with cheap raw milk of low sanitary quality. Both organizations approached the milk committee of the Baltimore women's civic league for assistance.

The milk committee had made an intensive study of the cost of producing milk in Baltimore and Frederick counties in the summer of 1915. Since, at that time, the average cost of producing a quart of milk in Frederick county was 3.5 cents and the selling price was 3.8 cents, showing an average profit of  $\frac{3}{10}$  cent, and since the average cost in Baltimore county was 4.5 cents and the selling price 4.2 cents, showing an average loss of  $\frac{3}{10}$  cent, the milk committee felt justified in backing the request of the producers.

The committee also backed the request of the dealers in a hearing before the mayor, who promised to use his best efforts to pass an ordinance excluding unsanitary milk from Baltimore and providing better

methods for handling the admitted supply. At the request of the milk committee, the mayor invited Dr. William H. Park of the research laboratories of the New York health department to address a hearing in his office. As a result of this the mayor appointed an advisory committee to recommend provisions for the proposed ordinance. This committee, headed by Dr. William H. Welch, has on it the city solicitor, representatives from the city health department, state board of agriculture, women's civic league and seven councilmen.

The proposed Baltimore ordinance is not yet completely drafted, but it is hoped that its provisions will be in line with the recommendations of the national commission on milk standards and the tendencies of recent ordinances and regulations in other cities where similar conditions of climate and milk production prevail.

The following table shows the tendencies in pasteurization, grading and bottling of milk in six cities that have recently changed their ordinances or regulations:

City	Ord. or regulation	Pasteurization	Bottling	Grades	Bacteria per cc.	Chemical standards	Farm score	T-T	Phy. ex. cows	Delivery after milking or pasteurization
Albany	Reg. pub. 10/1/13.	158° 3 m. to 140° 20 m.	Sealed container req. B. Dip'd milk prohibited after 4/1/17.	Selected A. Pasteurized.	50,000 b. 500,000 a. 50,000	3.5% f. 3% fat 11.5 sol. 88.5 wat.	80	t-t	x	
	Revised 9/1/15.			A-Raw. A-Past. B-Raw. B-Past. C-Raw. C-Past.	500,000 300,000					
New York	Reg. revised to 3/30/15.	142° to 145° not less than 30 m.	Req. A. Permitted for B. Prohibited for C.	A-Raw.	60,000		75	t-t	x	36 h. a. M.
	Grades revised to 12/21/15.			A-Past. B-Past. C-Past. or boiled 2 m.	200,000 b. 30,000 a. 500,000 b. 100,000 a. 300,000 for past. outside city.		68 55 40			
Newark	Ord. 12/2/13.	Permit A. Reg. B. 140° 30 m. cooled to 50°.	Req. Guar. and A. Permit B. Prohibit C. 20 qt. min.	Certified. Guaranteed.	30,000	13% sol. 3.5% f. 11.5 sol. 3% fat 8.5% s. not f.	85	t-t		
	Amend. 3/4/14.			A-Inspected B-Past. C-Cooking and Ind. heated 200° Certified. A-Raw. A-Past. B-Past. C-Boiled.	100,000 { 1,000,000 b. 50,000 a. } 500,000 1 yr. then 100,000 { 200,000 b. 30,000 a. } { 1,000,000 b. 50,000 a. }		65 40 40			
Philadelphia	4/27/09 Amend. 6/9/11.	142° not less than 30 m.	Dip'd milk forbidden exc. dealers dairy products.	Raw—Inspected. Certified. Pasteurized.	50,000 a.	88% wat. 12% sol. 3.25% f.	80 50	t-t	x	

City	Ord. or regulation	Pasteurization	Bottling	Grades	Bacteria per cc.	Chemical standards	Farm score	T-T	Phy. ex. cow	Delivery after milking or pasteurization
Rochester	Gov. St. Sanitary Code. Reg. effective 11/16/14.	145° not less than 30 m.	Sealed container req. A.	Certified. A-Raw. A-Past.  B-Raw. B-Past. C-Prohibit'd.	60,000 { 200,000 b. 30,000 a. } 200,000 { 300,000 b. 100,000 a. }	{ 25 equip. 50 meth. 43 meth.  23 eq. 37 meth. 20 eq. 35 meth.		t-t		36 h. 36 h.  36 h. 36 h.
Kansas City	Ord. ap. 7/7/15.	140°-145° 20-30 m.	Final container req.  A-Raw.	Certified. A-Raw. A-Past. B-Raw. B-Past. C-Past.	100,000 50,000 a. 300,000 100,000 a.	8.75% s. 3.25% f.	{ 25 equip. 50 meth. 20 equip. 40 meth.			

## COMPARATIVE COSTS OF EUROPEAN AND AMERICAN POLICE

BY LE GRAND POWERS

*Washington, D. C.*

IN THE April REVIEW<sup>1</sup> the writer presented some comparative statistics of British and American cities which indicated a much greater relative cost for the cities of the United States than for those of Great Britain. Since the publication of the article, the writer has received a number of inquiries as to the factors of this greater cost. Some of the correspondents have called attention to the different salaries paid all classes of employes in the two countries and inquired how far this difference explains the higher governmental costs noted. The answer to these inquiries has come to hand, with reference to costs of municipal police, in two recent publications. They are (1) a book published by the Century Company of New York entitled "European Police Systems," written by Raymond B. Fosdick, former commissioner of accounts of New York city, and (2) a volume on general municipal statistics issued by the census bureau as for the fiscal year of 1915, although most of the figures presented relate to the calendar year 1914. From the two publications is compiled the following table of minimum and maximum salaries of patrolmen of twelve European and thirteen American cities:

City	Minimum salary	Maximum salary	City	Minimum salary	Maximum salary
London:					
Metropolitan force .	\$336.96	\$436.80	New York . . . .	\$1,000.00	\$1,400.00
City of London . . .	355.68	549.12	Chicago . . . . .	900.00	1,320.00
Liverpool . . . . .	336.96	449.28	Philadelphia . . .	821.00	1,095.00
Manchester . . . . .	336.96	449.28	St. Louis . . . . .	780.00	1,080.00
Glasgow . . . . .	313.04	436.80	Boston . . . . .	730.00	1,400.00

<sup>1</sup> See NATIONAL MUNICIPAL REVIEW, vol. v, p. 252.