

Document No. 10.

REPORT

OF THE

State Superintendent and Inspector

OF

WEIGHTS AND MEASURES,

OF THE

STATE OF NEW JERSEY,

For the Year 1872.

REPORT.

To His Excellency Joel Parker, Governor, and to the Honorable, the Legislature of the State of New Jersey :

After six months preliminary work, the State Superintendent and Inspector of Weights and Measures would respectfully render the following *report*, asking, however, that (at this time and at this point of progress in a work at once tedious, difficult, and full of responsibility), it may be regarded in its true character as introductory only.

In seeking to be fully informed in regard to the letter, purpose and intent of the law, and in ascertaining the actual and exact wants of the State, counties and municipal precincts in the direction indicated by the act, the following facts are developed :

The State of New Jersey received her quota of standard *weights and measures* from the United States, as provided by joint resolution and direction of Congress, dating in 1838. Six years subsequently, and immediately following their delivery, New Jersey accepted them ; they were adopted as the legal standards, and formed the basis of a law similar in title to the present act, and also of second act dated two years later (in 1846). Both acts authorize and direct the distribution to the several counties of the State of sets of standard weights and measures for proof and adjustment. The Legislature in 1846 re-enacted the whole of the law of 1844, and added an additional compulsory clause, requiring that the distribution named be accomplished within about ten months. While some of the counties attempted the work, most of them utterly failed to avail themselves of the provisions of the law. Disappointment and demoralization, loss, inconvenience and embarrassment have prevailed in our business relations to an extent not in an aggregate appreciated. Among the twenty-four States which had taken action before 1857, and ordered copies of the standards distributed to their several counties, there are not wanting other instances of misfortune from inaccurate and unscientific work under laws experimental and defective.

No legislative action of general application or of an important character in relation to weights and measures, seems to have been taken since 1855, and at that time fixing only the weight in bushels of grain, seeds, potatoes, &c.

The recent act of March, 1872, repeals all former laws and sup-

plements, and re-establishes carefully and in an eminently practical manner the mutual rights of *protection* and general interests of the citizens of our State, in an accurate, just and uniform system of weights and measures. The officer of the State charged with the duty of carrying into effect its elaborate provisions, will require time and continued cheerful co-operation. It is believed that the use (in retailing goods) of *small cast iron weights, entirely inaccurate* and damaging to both buyer and seller, might be remedied by imposing restrictions upon manufacturers of, and dealers in weights not made conformable to the State standards.

Again: A fixed legal quantity for each *basket or package of fruit* to be offered or sold in market, would contribute both directly and indirectly to the interest of producer and consumer. While securing a measure of uniformity and protection at home, the prestige and reputation accruing inevitably to our enterprising fruit growers when offering their produce in the markets of neighboring cities, would result in enhanced prices and larger profits, and be in no respect a bad bargain in exchange for the license and irregularities now prevailing.

The following table will show the legal standards of weights and measures as they were delivered to New Jersey by the United States:

AVOIRDUPOIS WEIGHTS.			TROY WEIGHTS.		
Pounds	50	In Order	Pounds	1	In Order
do	25	do			do
do	20	do	Ounces,	10	do
do	10	do	do	6	do
do	5	do	do	5	do
do	4	do	do	4	do
do	3	do	do	3	do
do	2	do	do	2	do
do	1	do	do	1	do
And Ounces,	8	do	Fractions,	0.5	do
do	4	do		0.4	do
do	2	do		0.3	do
do	1	do		0.2	do
Fractions,	0.5	Missing.		0.1	do
	0.4	do			
	0.3	do		0.05	Missing.
	0.2	do		0.04	do
	0.1	do		0.03	do
	0.05	do		0.02	do
	0.04	do		0.01	do
	0.03	do			
	0.02	do		0.005	do
	0.01	do		0.004	do
	0.005	do		0.003	do

AVOIRDUPOIS WEIGHTS.

Fractions	0.004	Missing.
	0.003	do
	0.002	do
	0.001	do
	0.0005	do
	0.0004	do
	0.0003	do
	0.0002	do
	0.0001	do

TROY WEIGHTS.

Fractions	0.002	Missing.
	0.001	do
	0.0005	do
	0.0004	do
	0.0003	do
	0.0002	do
	0.0001	do

LIQUID MEASURES.

1 Gallon,	In Order.
$\frac{1}{2}$ do	do
1 Quart,	do
1 Pint,	do
$\frac{1}{2}$ do	do

DRY MEASURES.

$1\frac{1}{2}$ Bushel,	In Order
1 Peck,	Missing.
4 Quarts,	In Order.
2 do	do
1 do	Missing.

Also 1 yard measure complete. 3 Even balances of different sizes, for the adjustment of heavy, medium and light weights.

The possession by the State of the last named articles is a subject of congratulation. For great strength, beauty of construction and accuracy, they are seldom equaled.

These standards are by the late act legally in the keeping of the Secretary of State, and are temporarily stored at the Arsenal in Trenton, waiting the completion of a room in the State House in which they may be permanently located. The foregoing table will show two things more than are noted in its preface, viz: 1st. Loss and actual deficiencies. 2nd. Condition of standards remaining.

The loss of a valuable part of the standards is not a thing of recent date. It is supposed to have occurred from inadvertently leaving them exposed during the temporary occupancy of the State House for purposes incident to the late war. Duplicates will be furnished at an early day at an expense to the State of the actual cost (to the Department) of their construction.

In view of the rights and interest of New Jersey in an act of Congress dated in April, 1866, (the State being entitled by said law to a full set of weights and measures of the "metric system"), a correspondence with C. S. Pierce, Esq., Superintendent in charge of Coast Survey Department, Washington City, has elicited the assurance that the requisition of New Jersey will be honored by the prompt delivery to the order of her Executive of the first set called for by any State. It has not been thought best to have them sent forward until arrangements now in progress shall have been completed, and a suitable and permanent place provided for them. The State Superintendent confidently expects to be able in his next report

to refer to this among other accomplished facts, and to point the Representatives and citizens of our State to an attractive and practical illustration of New Jersey's earnest interest in correct weights and measures.

The State Superintendent has after conference with others filling similar official positions, decided that for practical purposes the county standards should consist of the following articles:

One set dry measures, $\frac{1}{2}$ bushel to 1 quart.

One set liquid measures, 1 gallon to one gill.

The above to be made of heavy plate copper, with bands welded at top and bottom.

One set avoirdupois weights, 4 lbs. to 1-16 oz.

One set Troy weights, 50 ozs. to 1-16 oz.

The above to be made of solid brass, in covered black walnut case with lock, cloth lined sockets for each weight, and the capacity of each stamped upon its surface in indented figures.

One even balance testing beam on standing column.

One 7 lb. weight, }

One 10 lb. weight, }

One 20 lb. weight, }

Of iron, with fixed handles.

Ten 50 lb. iron weights, stamped U. S. and N. J., standard 50 lbs. and name of county.

One graduated one yard measure of brass, in walnut case.

One brass beam scale of sufficient capacity to test heavy weights or small articles in bulk.

One surveyor's chain, in case.

One case for storage of standards.

One set tools for adjusting weights and stamping metallic proofs, for surveyors' chains.

Such portion of the standards heretofore supplied to any of the counties of the State, and now in condition to be used without disregarding claims to a degree of uniformity, and such as may prove accurate when tested, will be incorporated into the quota provided for the county to which they belong, thus reducing expenses where it is practicable.

In hope of making terms with the Department of Weights and Measures at Washington City for a partial supply for the counties and thus secure the advantage of scientific knowledge and experience, an application to that effect was made by the State Superintendent, but failed of favorable consideration.

Contracts have been made with manufacturers only of standing and responsibility, and from direct personal attention and supervision, satisfactory results are being secured.

The fact that every article used and required in carrying out the provisions of the law must from necessity be made to order, and the advanced price of metals used in their construction, were obstacles which it is believed have been successfully met.

The first instalment of weights, as provided in section 2 of late

law, has been completed, thoroughly tested, approved officially, and delivered to the twenty-one counties. They consist of ten weights of the capacity of fifty (50) pounds each, marked U. S. and N. J. Standard (50 lbs.), with the name of the county to which they belong cast upon each weight in raised letters. Bills for the above have not been received, but the contract price and expense to each county has been forty dollars per set, the manufacturer meeting all cost of design, pattern, material and work.

A part of the second instalment (now being made), has been finished but not yet proved and accepted, because the State Superintendent has been unable to complete at this date the proof set required by section 7, which is to be duly compared with the State standards at Trenton, and then used in testing the county and city standards before they are delivered.

This difficulty will be removed with little delay, and the distribution to the counties will at once proceed without preference, except so far as counties which have been entirely deficient are concerned; or in regard somewhat to the order in which requisitions for quotas due the several counties may have been received by the State Superintendent.

Copies of the law, chapter 333, and of the supplement approved April 4th, 1872, have been furnished to the Clerks of the several counties, and the official oath prescribed and required in section 11 duly executed by the State Superintendent and nearly every other officer designated, and the oath filed as directed in the office of the Secretary of State.

It is not possible at this date to furnish any financial statement for work in process of accomplishment for the State, or for any of the counties of the State, no bills having as yet been received by the State Superintendent.

Such current and incidental expenses as have been paid by the State Superintendent in furtherance of the business required of him, will be furnished in detail to the State Comptroller at as early date as possible. One-half year's salary has been received from the State Treasurer.

The provisions of the supplement, approved April 4, 1872, (requiring the State Superintendent to procure at the expense of the counties of the State a surveyor's chain of standard measurement, to be kept for purposes of proof and verification in the office of the county clerk of each and every county), has received at the hands of the State Superintendent the care and critical attention which its importance demands. Four samples of modern construction (more or less approved), are now in the hands of the State Superintendent. It is expected that a contract on favorable terms will be closed within ten days, providing also for the completion and delivery for inspection of the number required within thirty days thereafter.

An examination into the condition of the scales in use by the railway lines of the State, as provided in section 14, has resulted in so

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far as the following roads are concerned in gratifying evidence of care and attention in this important particular on the part of superintendents and agents in charge :

New Jersey Division of Pennsylvania Railroads.

Central Railroad of New Jersey.

Morris and Essex Division of Delaware, Lackawanna and Western Railroad.

New Jersey Midland.

Sussex Railroad, and New Jersey West Line Railroad.

As time is afforded, other lines will have like attention.

Complete records are kept of inspection and condition, and reports furnished to officers of railroad companies when applied for.

The State Superintendent hopes to enter upon the other duties named in the section last referred to with the coming year, and give the hay, coal, grain and mill scales of the State the required attention.

Respectfully submitted,

WM. P. NICHOLAS,

State Superintendent and Inspector of Weights and Measures.

November, 1872.