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Wisconsin State Agricultural Society
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1895

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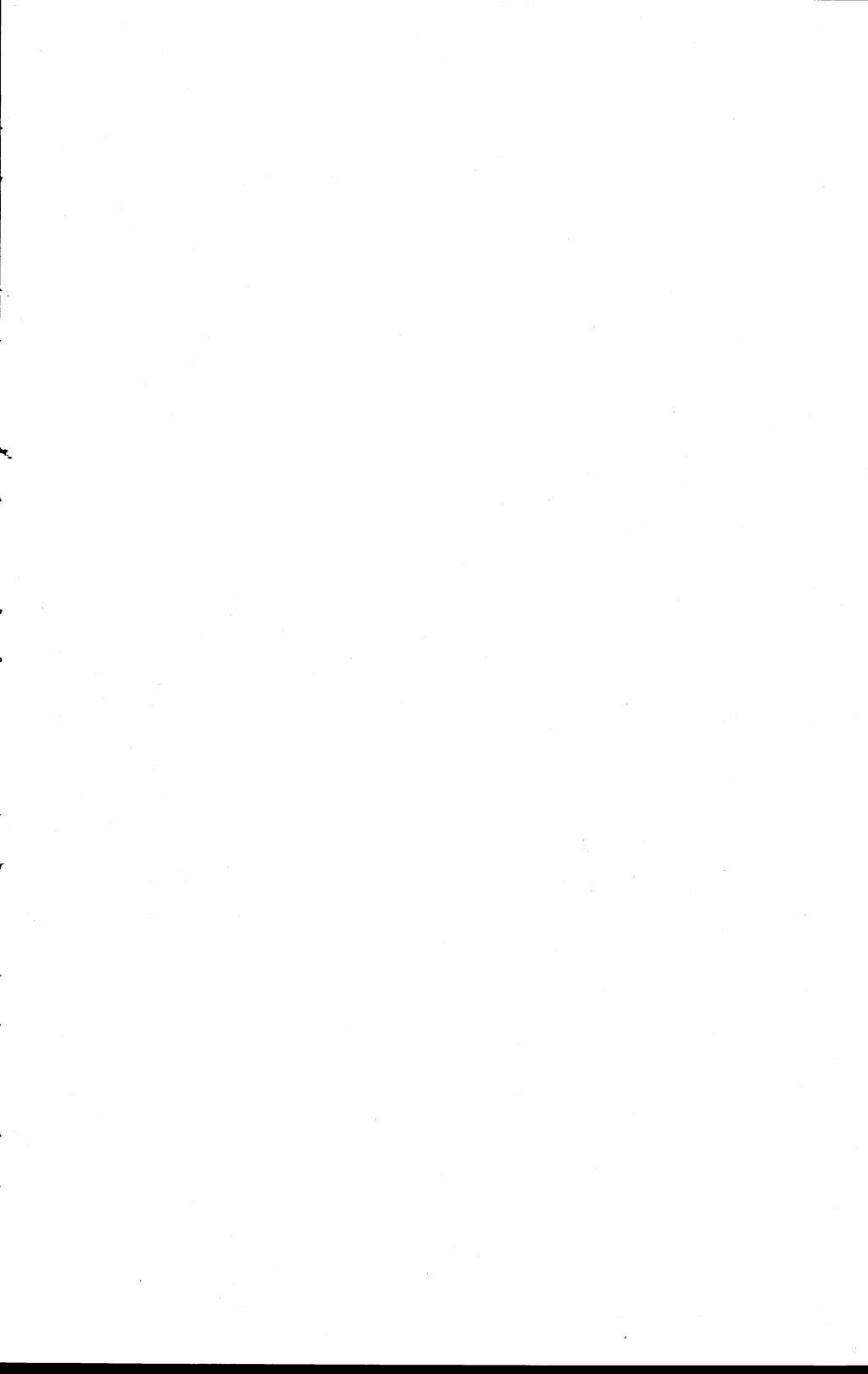
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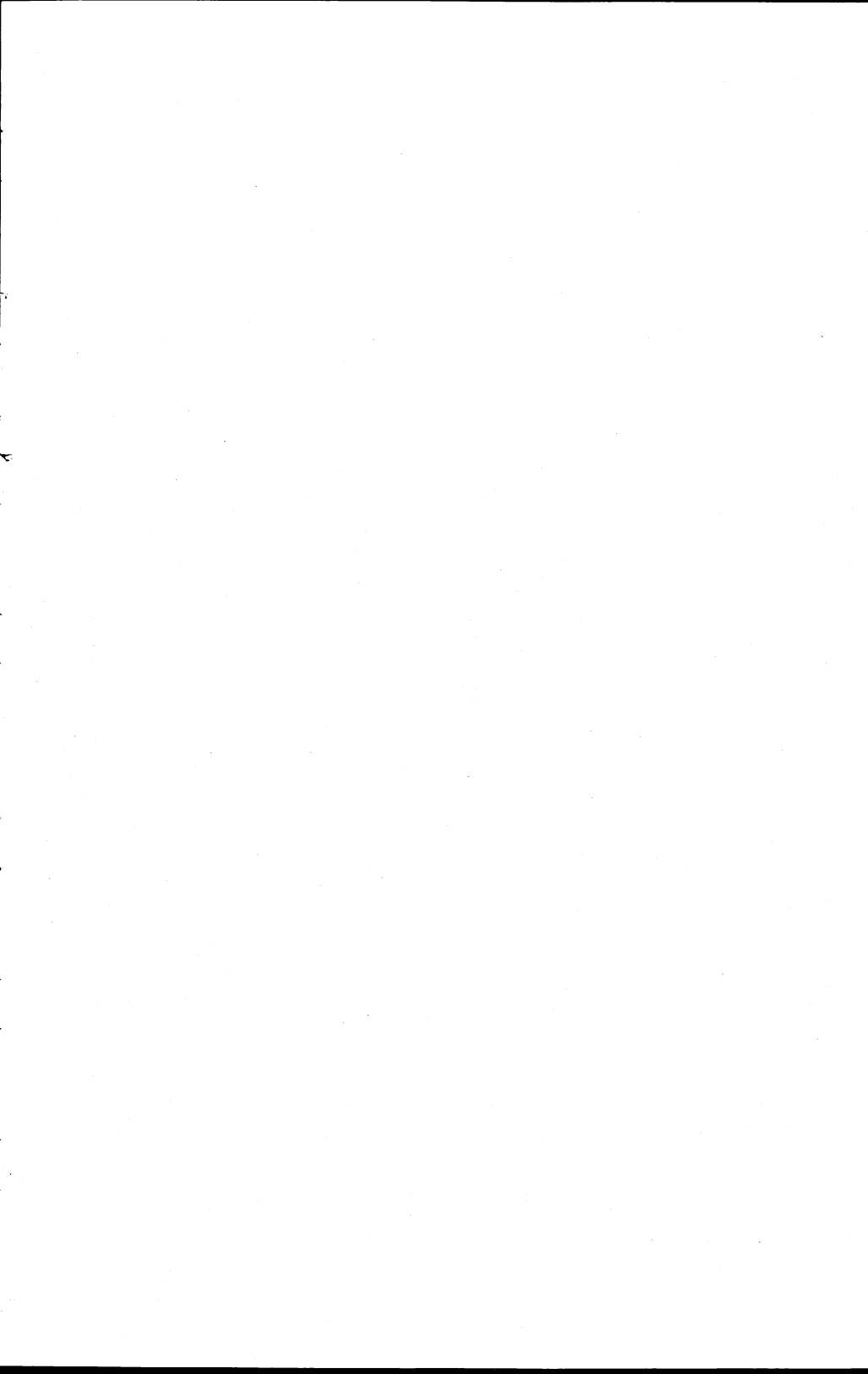
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TRANSACTIONS

OF THE

WISCONSIN

State Agricultural Society

TOGETHER WITH SHORT-HAND REPORT OF ANNUAL
CONVENTION.

VOLUME XXXIII.

COMPILED BY

T. J. FLEMING, Secretary.



MADISON, WISCONSIN:
DEMOCRAT PRINTING CO., STATE PRINTER.
1895.

LETTER OF TRANSMITTAL.

To his Excellency, WM. H. UPHAM,

Governor of the State of Wisconsin.

Have the honor of herewith transmitting to you my annual report of the Wisconsin State Agricultural Society for 1895, ending December 5. Have deviated from past precedents as regards time of compilation as the report of 1895 should contain the proceedings of the Society for that year. It is gratifying to be able to report the financial status of the Society in a flourishing condition. During the year there have been invested in substantial improvements and beautification of grounds approximately thirty-five thousand dollars (\$35,000), thirty thousand dollars of which have been paid by the State Park Jockey Club, a corporation holding a limited lease of grounds and paying for same an annual rental of two thousand dollars. Have paid five thousand dollars in premiums and purses in excess of any previous year, thereby offering substantial inducements to stock breeders and exhibitors.

We have a sufficient amount on hand to begin the fair of '96 with great hope and renewed vigor. Appreciating the favorable legislation by the legislature of '95, and hoping for a continuance of same, I have the honor to remain

Very respectfully,

T. J. FLEMING,

Secretary.

37,07
4 S '96

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McDonald, A.....	Alloa	Meinecke, Jr., A.....	Milwaukee
McFetridge, E. C.....	Beaver Dam	Mendell, H. M.....	Milwaukee
McGeoch, A. N.....	Milwaukee	Merrill, Alf.....	Madison
McGiveran, John T....	Green Bay	Mergler, Wm.....	N. Greenfield
McGordon, Chas. Menomonee, Mich		Mertz, Edgar F.....	Milwaukee
McGrath, J. E.....	Marinette	Meyer, Aug. R.....	N. Greenfield
McHenry, M. E.....	Freeport, Ill	Meyer, W. H.....	Milwaukee
McKenzie, D. J.....	Alma	Meyer, Dr. Wm.....	Milwaukee
McKerrow, Geo. H.....	Sussex	Meyers, Joe A.....	Milwaukee
McKinney, H. D.....	Janesville	Myers, A. V.....	Milwaukee
McLaughlin, Martin....	Milwaukee	Millett, Chas. O.....	Beloit
		Millard, A. F.....	Milwaukee
		Miller, Chas. B.....	Madison

Miller, Roswell	Chicago	Olcott, John D.	Milwaukee
Miller, John	Milwaukee	Oliver, Joseph B.	Milwaukee
Miller, B. K.	Milwaukee	Olney, C. W.	La Cygne, Kas
Miller, Jr., B. K.	Milwaukee	Osborne, W. H.	Milwaukee
Miner, Cyrus	Janesville	Otjen, C. S.	Milwaukee
Miner, Geo. B.	Milwaukee	Ott, Geo. V.	Lawty, Fla
Mitchell, J. L.	Milwaukee		
Mitchell, Stanley G.	Milwaukee	Pabst, Fred	Milwaukee
Mock, B.	Milwaukee	Pabst, Jr., Fred	Milwaukee
Mohr, Oscar	Milwaukee	Pabst, G. G.	Milwaukee
Mooney, R. D.	Brown Deer	Paine, Cassius M.	Milwaukee
Moore, B. F.	Fond du Lac	Paine, O. W.	N. Greenfield
Morden, Edward	Madison	Palmer, J. S.	Baraboo
Morgan, Win. J.	Milwaukee	Palmer, O. M.	Oregon
Morgan, Thomas	Milwaukee	Palmer, Henry	Verona
Morgan, James	Milwaukee	Palmer, H. L.	Milwaukee
Mueller, Louis J.	Milwaukee	Park, W. J.	Madison
Mueller, Oscar	Milwaukee	Parkinson, A. C.	Madison
Mullen, James	Chicago	Parmley, Ira	Center
Murphy, John T.	Milwaukee	Patten, L. F.	Janesville
Murphy, J. W.	Milwaukee	Patton, Jos. E.	Milwaukee
Myers, A. B.	Milwaukee	Paul, Edward J.	Milwaukee
		Paulson, Aug. A.	New Holstein
Nash, C. D.	Milwaukee	Payne, Wm.	Janesville
Neacy, M.	Milwaukee	Payne, H. C.	Milwaukee
Needham, J. P.	Wauwatosa	Peck, Geo. W.	Milwaukee
Nelson, C. B.	Madison	Peffer, Kate F.	Pewaukee
Neuser, Henry	Milwaukee	Pember, R. T.	Johnstown
Newton, J. S.	Middleton	Perry, B. F.	Madison
Newton, T. L.	Beaver Dam	Pereles, Thos. J.	Milwaukee
Newcomb, S. B.	Cold Spring	Pereles, Jas. M.	Milwaukee
Newcome, C. W.	Milwaukee	Petley, James	Milwaukee
Nichels, L. T.	Berlin	Petit, L. J.	Milwaukee
Neiman, L. W.	Milwaukee	Pfister, Chas.	Milwaukee
Norton, J. B.	Madison	Phillips, A. J.	West Salem
Norris, C. W.	Milwaukee	Phillips, Thomas.	Milwaukee
Nowell, W. A.	Milwaukee	Phillips, W. H.	Waupun
Nunnemacher, Rob't.	Milwaukee	Pierce, C. L.	Milwaukee
		Pierce, F. R.	Root Creek
Oberman, Geo. J.	Milwaukee	Pierce, A. E.	Milwaukee
Ogilvie, R. B.	Madison	Pilgrim, D. T.	Wauwatosa
Olcott, J. B.	Oshkosh	Pilgrim, Jr., D. T.	Wauwatosa

Pilgrim, J. H.	Wauwatosa	Rogers, E. E.	Milwaukee
Pinney, S. U.	Madison	Rogers, C. C.	Milwaukee
Pleiss, Aug.	Milwaukee	Rohlfing, Wm.	Milwaukee
Plumb, J. C.	Milton	Rose, D. S.	Milwaukee
Plumb, T. D.	Madison	Rosenkranz, O. L.	Milwaukee
Plummer, B. G.	Wausau	Rowe, W. E.	Mazomanie
Polzinsky, Jas.	Milwaukee	Rowe, Richard W.	Madison
Poppert, Geo.	Milwaukee	Rucker, A. M.	Milwaukee
Porth, Geo. W.	Milwaukee	Rust, Julius.	N. Greenfield
Porter, G. E.	Eau Claire	Rust, Herman F.	N. Greenfield
Porter, Wm. H.	Marshall	Rust, Henry.	N. Greenfield
Pratt, Oris.	Spring Prairie	Rust, John L.	N. Greenfield
Preusser, C.	Milwaukee	Ryan, T. E.	Waukesha
Prichard, M. E., Miss.	Janesville	Ryder, James K.	Waterloo
Quinn, Jeremiah.	Milwaukee	St. John, J. W.	Janesville
Rademacher, Wm.	Milwaukee	St. Pet. Val. F. C. .	Springfield Cor
Rand, H. H.	N. Greenfield	Salisbury, R. W.	Paoli
Raymond, S. O.	Geneva Lake	Salisbury, D. F.	Oregon
Ray, Chas.	Milwaukee	Salisbury, Abraham.	Milwaukee
Razall, H. G.	Milwaukee	Sanger, Casper M.	Milwaukee
Resague, A. C.	Janesville	Sanborn, Jas. S.	Milwaukee
Reynolds, John.	Ranney	Sanderson, H. B.	Milwaukee
Richardson, D.	Middleton	Saveland, John.	Milwaukee
Richardson, H.	Janesville	Sawyer, H. W.	Hartford
Richardson, R. J.	Janesville	Sawyer, James.	Milwaukee
Richmond, A.	Whitewater	Schoeffel, Geo. J.	Milwaukee
Rich. A. W.	Milwaukee	Schweitzer, Theo.	Milwaukee
Richards, Griffith.	Racine	Schmidt, P. J.	Milwaukee
Richter, Fredrich.	Milwaukee	Schoonmaker, Harry.	Wauwatosa
Rice, E. M.	Whitewater	Schuengel, Edward M.	Milwaukee
Rilling, Geo. F.	N. Greenfield	Schultz, H. F. W.	N. Greenfield
Ring, M. C.	Neillsville	Seamans, S. H.	Milwaukee
Roberts, C. B.	Milwaukee	Seaver, J. E.	Darien
Roberts, R. W.	Milwaukee	Seville, Jas.	Lodi
Roberts, D. M.	Milwaukee	Sexton, Wm. F.	Milwaukee
Robinson, Chas. C.	Milwaukee	Shaw, Chas. H.	Wauwatosa
Robinson, Geo. I.	Milwaukee	Shackman, L. A.	Milwaukee
Rogers, H. G.	Milwaukee	Shannon, P.	Milwaukee
Rogers, J. S.	Burlington	Sherman, Amaziah.	Janesville
Rogers, D. G.	Milwaukee	Shea, Edward.	Milwaukee
		Sheldon, A. H.	Janesville

Sheldon, S. L.....	Madison	Steele, Chester.....	Milwaukee
Shipman, S. V.....	Chicago	Stephenson, F. M.....	Marinette
Sholes, Chas.....	Milwaukee	Stephenson, I.....	Marinette
Sieben, John.....	Milwaukee	Stephenson, I.....	Menomonie
Simpson, E. B.....	Milwaukee	Sterzinger, Joseph....	N. Greenfield
Simonds, Wm. L.....	Milwaukee	Stewart, G. H.....	Col. Springs
Simons, C. J.....	Monroe	Stevens, B. J.....	Madison
Simonson, Andrew.....	Racine	Steinmueller, F.....	Milwaukee
Skiles, G. W.....	Milwaukee	Stickney, Chas.....	Wauwatosa
Skinner, Geo. J....	Sioux Falls, S. D	Stilson, Adelbert.....	Oshkosh
Skinner, E. W.....	Sioux City, Ia	Stilson, Edgar.....	Oshkosh
Sloan, I. C.....	Janesville	Stone, G.....	Beloit
Smith, A. E.....	Milwaukee	Stone, Jesse.....	Watertown
Smith, Angus.....	Milwaukee	Stone, T. H.....	Milwaukee
Smith, Winfield.....	Boston	Storm, Wm.....	Madison
Smith, E. C.....	Markesan	Stowe, LaFayette....	Spirit Lake, Ia
Smith, J. M.....	Janesville	Stoltz, H. L.....	Milwaukee
Smith, S. B.....	Verona	Stockman, John.....	Milton Junction
Smith, A. A. L.....	Milwaukee	Stelper, Chas.....	Milwaukee
Snell, H.....	Madison	Sutton, J. J.....	Columbus
Snyder, E. A.....	W. Granville	Sutherland, C.....	Madison
Snyder, Fred.....	Milwaukee	Surles, W. H.....	Milwaukee
Somers, Thos. F.....	Milwaukee	Swan, O. J.....	Wauwatosa
Somers, Peter J.....	Milwaukee	Swan, N. J.....	Wauwatosa
Spaulding, D. J....	Black River Falls	Swan, E. A.....	Wauwatosa
Sprecher, John.....	Madison	Swain, W. W.....	Madison
Specht, J. A.....	Milwaukee	Sweet, B.....	Milwaukee
Spencer, John C.....	Milwaukee		
Spencer, James C.....	Milwaukee		
Spencer, R. C.....	Milwaukee	Tainter, L. S.....	Menomonie
Spiegel, A.....	Milwaukee	Tanner, A. L.....	N. Greenfield
Sprinkmann, Fred.....	Milwaukee	Taylor, E. T.....	Mukwonago
Squire, Thomas B.....	Waterloo	Taylor, Wm. R.....	Cottage Grove
Stadler, L. C.....	Milwaukee	Taylor, H. A.....	Madison
Stark, Edward J.....	Milwaukee	Taylor, John G.....	Chebanse, Ill
Stark, Chas. G.....	Milwaukee	Tenney, H. A.....	Madison
Starke, Conrad.....	Milwaukee	Tenney, Samuel A....	N. Greenfield
Stapleton, J. A.....	Milwaukee	Tenney, D. K.....	Chicago
Stafford, H. H.....	Milwaukee	Terwilliger, Jas.....	Madison
Stickney, J. S.....	Wauwatosa	Terwilliger, Sid.....	Madison
Steensland, H.....	Madison	Thayer, M. A.....	Sparta
Stelloh, Henry.....	Root Creek	Theurer, Fred. J.....	Milwaukee
Stelloh, Geo.....	Root Creek	Thompson, H. M.....	Mosinee

Thorsen, John.....	Milwaukee	Vilas, Chas. H.....	Chicago
Thomas, W. H.....	Pewaukee	Vogel, Aug. H.....	Milwaukee
Thomas, E. P.....	Milwaukee	Wackerhagen, E.....	Racine
Tibbits, Geo. M.....	Milwaukee	Wagner, Julius G.....	Milwaukee
Todd, J. G.....	Santa Cruz, Cal.	Walsh, Michael..	Milwaukee
Tolford, J. W.....	Neillsville	Wall, E. C.....	Milwaukee
Tower, O. R.....	N. Greenfield	Walken, F. W.....	Milwaukee
Townley, John.....	Moundville	Walker, W. A.....	Milwaukee
Tratt, F. W.....	Whitewater	Warren, J. H.....	Albany
Treat, Geo. E.....	Milwaukee	Warren, J. D.....	Wauwatosa
Treat, R. B.....	Chicago	Webster, S. R.....	Danville
Trowbridge, W. E.....	Milwaukee	Wehr, Henry J.....	Milwaukee
Trowbridge, Henry.....	Milwaukee	Weiner, Jacob.....	Milwaukee
True, J. M.....	Baraboo	Weigel, August.....	Milwaukee
Tucker, Joseph F.....	Chicago	Welch, Wm.....	Milwaukee
Turner, W. J.....	Milwaukee	Wellauer, Jacob.....	Milwaukee
Tuttle, A. G.....	Baraboo	Weston, John.....	Burnett
Tweedy Jr, J. H.....	Milwaukee	West, Henry.....	Verona
Twining, M. S.....	Monroe	West, Walter A.....	Elkhorn
		Wettenkamp, Fred....	Wauwatosa
		Whaling, J. M.....	Milwaukee
		Wheelock, W. G.....	Janesville
Uehling, Otto C.....	Milwaukee	Wheelwright, Jesse.....	Middleton
Uihlein, Alfred.....	Milwaukee	Wheeler, L. A.....	Milwaukee
Uihlein, Henry.....	Milwaukee	Wheeler, Geo. F.....	Waupun
Uihlein, Aug.....	Milwaukee	Wheeler, M. F.....	Wauwatosa
Usher, Ellis.....	La Crosse	Wheeler, Guy.....	Janesville
		Whitcombe, H. F.....	Milwaukee
		Wicks, Thomas.....	Chicago
Van Brunt, W. A.....	Horicon	Wightman, H.....	Denver, Col
Van Cott, Albert B.....	Madison	Wilcox, C. G.....	De Pere
Van Etta, Jacob.....	Madison	Wilcox, C. T.....	Janesville
Van Norman, G. B.....	Milwaukee	Wilkins, A. W.....	Superior
Van Orden, J.....	Baraboo	Wilkin, T. S.....	Milwaukee
Van Ryn, H. J.....	Milwaukee	Wilson, William.....	Wausau
Van Schaik, J. W.....	N. Orleans	Williams, Chas. H.....	Baraboo
Van Slyke, N. B.....	Madison	Williams, D.....	Darien
Vance, Flank L.....	Milwaukee	Williams, S. B.....	Madison
Vance, David.....	Milwaukee	Williams, Daniel.....	Summit
Vannaman, A. L.....	Milwaukee	Wiley, O. S.....	Chicago
Vaughn, A. W.....	Lodi	Wollager, F.....	Milwaukee
Vernon, Ralph C.....	Madison	Wolf, W. H.....	Milwaukee
Vilas, Wm. F.....	Madison	Wolcott, H.....	Milwaukee

Wootton, Robert.....	Madison	Wyman, C. D.....	Milwaukee
Wood, J. W.....	Baraboo	Yewdale, Merton H.....	Milwaukee
Work, H. A.....	Milwaukee	Youmans, C. A.....	Neillsville
Whiting, W. F.....	Waukesha	Zinn, A. C.....	Milwaukee
Wright, Josiah T.....	Janesville	Zimmerman, G. J.....	Milwaukee
Wright, J. S.....	Emerald Grove	Zimmerman, V.....	Milwaukee
Wright, D. H.....	Madison	Zoehrlaut, Ed.....	Milwaukee
Wurster, Jacob.....	Milwaukee	Zuetusch, Otto.....	Milwaukee
Wylie, Geo.....	Leeds		
Wylie, Geo.....	Elkhorn		

HISTORY OF WISCONSIN

Date.	Location of Fair.	President.	Secretary.
1851.	Janesville.....	E. W. Drury, Fond du Lac.....	A. C. Ingham, Madison.....
1852.	Milwaukee.....	H. M. Billings, Highland.....	A. C. Ingham, Madison.....
1853.	Watertown.....	E. W. Edgerton, Summit.....	A. C. Ingham, Madison.....
1854.	Milwaukee.....	E. W. Edgerton, Summit.....	A. C. Ingham, Madison.....
1855.	Milwaukee.....	E. W. Edgerton, Summit.....	G. O. Tiffany, Madison.....
1856.	Milwaukee.....	H. Danke, Kenosha.....	G. O. Tiffany, Madison.....
1857.	Janesville.....	J. F. Willard, Janesville.....	G. O. Tiffany, Madison.....
1858.	Madison.....	J. F. Willard, Janesville.....	D. J. Powers, Madison.....
1859.	Milwaukee.....	J. F. Willard, Janesville.....	D. J. Powers, Madison.....
1860.	Madison.....	B. R. Hinkley, Summit.....	J. W. Hoyt, Madison.....
1861.	No fair held.....	B. R. Hinkley, Summit.....	J. W. Hoyt, Madison.....
1862.	No fair held.....	B. R. Hinkley, Summit.....	J. W. Hoyt, Madison.....
1863.	No fair held.....	B. R. Hinkley, Summit.....	J. W. Hoyt, Madison.....
1864.	Janesville.....	B. R. Hinkley, Summit.....	J. W. Hoyt, Madison.....
1865.	Janesville.....	D. Williams, Walworth.....	J. W. Hoyt, Madison.....
1866.	Janesville.....	D. Williams, Walworth.....	J. W. Hoyt, Madison.....
1867.	Madison.....	K. A. Darling, Fond du Lac.....	J. W. Hoyt, Madison.....
1868.	Madison.....	K. A. Darling, Fond du Lac.....	J. W. Hoyt, Madison.....
1869.	Madison.....	B. R. Hinkley, Summit.....	J. W. Hoyt, Madison.....
1870.	Milwaukee.....	B. R. Hinkley, Summit.....	J. W. Hoyt, Madison.....
1871.	Milwaukee.....	B. R. Hinkley, Summit.....	J. W. Hoyt, Madison.....
1872.	Milwaukee.....	B. R. Hinkley, Summit.....	J. W. Hoyt, Madison.....
1873.	Milwaukee.....	W. R. Taylor, Cottage Grove.....	W. W. Field, Boscobel.....
1874.	Milwaukee.....	W. R. Taylor, Cottage Grove.....	W. W. Field, Boscobel.....
1875.	Milwaukee.....	E. Stilson, Oshkosh.....	W. W. Field, Boscobel.....
1876.	Milwaukee.....	E. Stilson, Oshkosh.....	W. W. Field, Boscobel.....
1877.	Janesville.....	E. Stilson, Oshkosh.....	W. W. Field, Boscobel.....
1878.	Madison.....	N. D. Fratt, Racine.....	G. E. Bryant, Madison.....
1879.	Madison.....	N. D. Fratt, Racine.....	G. E. Bryant, Madison.....
1880.	Madison.....	N. D. Fratt, Racine.....	G. E. Bryant, Madison.....
1881.	Fond du Lac.....	N. D. Fratt, Racine.....	G. E. Bryant, Madison.....
1882.	Fond du Lac.....	N. D. Fratt, Racine.....	G. E. Bryant, Madison.....
1883.	Madison.....	N. D. Fratt, Racine.....	C. Babbitt, Beloit.....
1884.	Madison.....	N. D. Fratt, Racine.....	C. Babbitt, Beloit.....
1885.	Madison.....	A. A. Arnold, Galesville.....	C. Babbitt, Beloit.....
1886.	Milwaukee.....	A. A. Arnold, Galesville.....	C. Babbitt, Beloit.....
1887.	Milwaukee.....	C. M. Sanger, Milwaukee.....	T. L. Newton, Beaver Dam.....
1888.	Milwaukee.....	C. M. Sanger, Milwaukee.....	T. L. Newton, Beaver Dam.....
1889.	Milwaukee.....	J. L. Mitchell, Milwaukee.....	T. L. Newton, Beaver Dam.....
1890.	Milwaukee.....	J. L. Mitchell, Milwaukee.....	T. L. Newton, Beaver Dam.....
1891.	Milwaukee.....	A. C. Parkinson, Columbus.....	J. M. True, Baraboo.....
1892.	Milwaukee.....	A. C. Parkinson, Columbus.....	J. M. True, Baraboo.....
1893.	No fair held.....	A. C. Parkinson, Columbus.....	J. M. True, Baraboo.....
1894.	Milwaukee.....	S. D. Hubbard, Mondovi.....	J. M. True, Baraboo.....
1895.	Milwaukee.....	S. D. Hubbard, Mondovi.....	T. J. Fleming, N. Greenfield.....

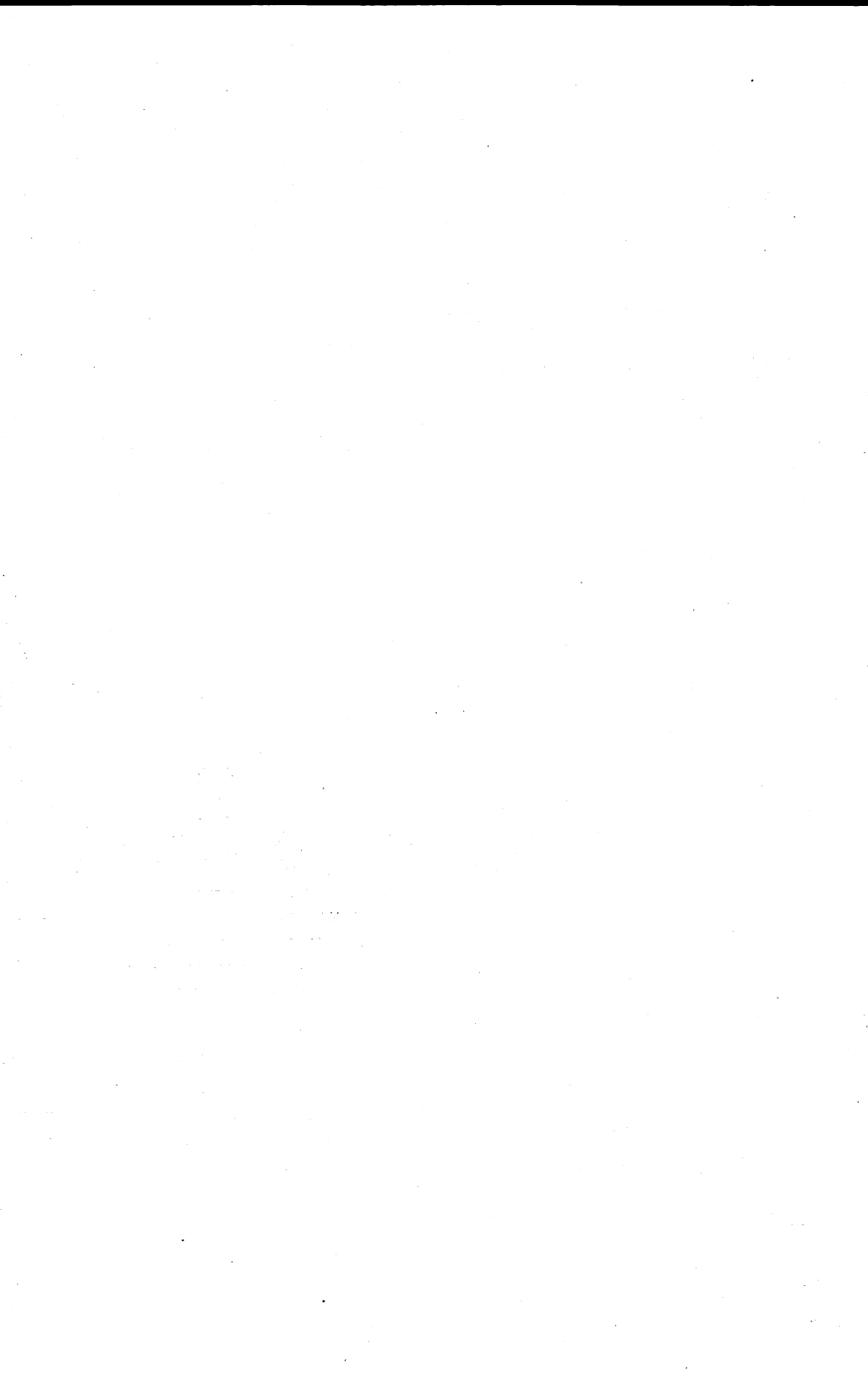
STATE FAIRS, 1851-1895.

Treasurer.	Total Receipts.	Annual State Appropriations.	Paid Premiums.
C. Abbott, Madison.....	\$570 31	.....	\$140 00
S. Mills, Madison.....	2,748 45	\$500	876 04
S. Mills, Madison.....	2,542 17	1,000	415 00
S. Marshall, Madison.....	5,638 00	3,000	1,137 09
S. Marshall, Madison.....	7,542 95	3,000	2,015 00
D. J. Powers, Madison.....	8,378 63	3,000	2,355 00
D. J. Powers, Madison.....	8,804 63	3,000	2,701 11
D. Atwood, Madison.....	11,795 90	3,000	2,641 00
D. Atwood, Madison.....	11,677 07	3,000	2,333 50
D. Atwood, Madison.....	13,737 81	3,000	2,826 26
D. Atwood, Madison.....	3,369 50	3,000	No Fair.
D. Atwood, Madison.....	1,618 26	712 20	No Fair.
D. Atwood, Madison.....	4,986 46	.....	No Fair.
D. Atwood, Madison.....	7,759 19	.....	.....
S. Mills, Madison.....	11,404 90	.....	.....
D. Atwood, Madison.....	14,971 09	.....	3,343 00
D. Atwood, Madison.....	16,542 53	.....	4,031 50
D. Atwood, Madison.....	12,857 64	.....	5,412 33
D. Atwood, Madison.....	12,711 31	.....	.....
D. Atwood, Madison.....	23,495 23	.....	5,378 05
H. Ludington, Milwaukee.....	27,747 47	.....	7,109 29
H. Ludington, Milwaukee.....	19,658 68	.....	6,906 30
H. Ludington, Milwaukee.....	21,316 53	2,000	7,752 80
F. J. Blair, Milwaukee.....	23,756 88	2,000	7,224 00
F. J. Blair, Milwaukee.....	25,026 73	2,000	8,923 00
F. J. Blair, Milwaukee.....	15,593 33	2,000	3,960 35
F. J. Blair, Milwaukee.....	20,524 30	2,000	10,561 00
C. Miner, Janesville.....	19,001 29	2,000	5,227 56
C. Miner, Janesville.....	17,500 41	2,000	6,087 50
C. Miner, Janesville.....	16,517 16	2,000	5,576 73
C. Miner, Janesville.....	14,337 27	2,000	7,013 20
C. Miner, Janesville.....	14,719 15	.....	5,415 78
C. Miner, Janesville.....	25,169 99	6,480	8,579 29
C. Miner, Janesville.....	21,251 62	2,000	7,038 47
C. Miner, Janesville.....	19,104 95	4,000	4,673 52
C. Miner, Janesville.....	31,334 70	4,000	6,611 59
C. Miner, Janesville.....	34,590 23	4,000	11,594 80
C. Miner, Janesville.....	36,690 42	4,000	11,278 20
C. Miner, Janesville.....	29,541 22	4,000	10,606 97
C. Miner, Janesville.....	37,626 98	4,000	12,243 00
C. Miner, Janesville.....	42,793 25	4,000	16,691 00
C. Miner, Janesville.....	*198,088 73	4,000	14,068 00
C. Miner, Janesville.....	36,859 22	.....	No Fair.
C. Miner, Janesville.....	36,339 49	8,000	18,100 30
M. R. Doyon, Madison.....	43,361 57	.....	23,629 00

*State loan, etc.

WISCONSIN FAIRS 1895.

Name of Society.	Fair Held At.	Secretary.
Ashland Co. Agr. Soc.	Ashland	R. F. Spencer.
Barron Co. Agr. Soc.	Chetek	Jos. E. Cartwright.
Bayfield Co. Agr. Soc.	Iron River	Byron Ripley.
Buffalo Co. Agr. Soc.	Mondovi	Alex. Lees.
Burnett Co. Agr. Soc.	Grantsburg	A. A. Anderson.
Calumet Co. Agr. Soc.	Chilton	L. D. Dorschel.
Chippewa Co. Agr. Soc.	Chippewa Falls	Jesse R. Sharp.
Clark Co. Agr. Soc.	Neillsville	Chas. M. Bradford.
Columbia Co. Agr. Soc.	Portage	Kennedy Scott (Rio).
Crawford Co. Agr. Soc.	Seneca	Fergus Mills.
Dane Co. Agr. Soc.	Madison	W. W. Harrington.
Dodge Co. Fair Assn	Beaver Dam	C. W. Harvey.
Douglas Co. Agr. Soc.	West Superior	James S. Bishop.
Dunn Co. Agr. Soc.	Menomonie	Geo. Galloway.
Grant Co. Agr. Soc.	Lancaster	T. A. Burr.
Green Co. Agr. Soc.	Monroe	R. W. Etter
Iowa Co. Agr. Soc.	Dodgeville	John M. Reese.
Jackson Co. Agr. Soc.	Black River Falls	H. J. Ormsby.
Jefferson Co. Agr. Soc.	Jefferson	J. L. Kearney.
Juneau Co. Agr. Soc.	Mauston	I. C. Baldwin.
Kewaunee Co. Agr. Soc.	Kewaunee	Adolph Ebel.
La Crosse Co. Agr. Soc.	West Salem	O. S. Sisson.
La Fayette Co. Agr. Soc.	Darlington	Geo. F. West.
Langlade Co. Agr. Soc.	Antigo	F. Hayssen.
Marathon Co. Agr. Soc.	Wausau	E. B. Thayer.
Manitowoc Co. Agr. Soc.	Manitowoc	G. H. Torison.
Marquette Co. Agr. Soc.	Westfield	Harry Cochrane.
Outagamie Co. Agr. Soc.	Hortonville	H. T. Buck.
Ozaukee Co. Agr. Soc.	Rhineland	A. M. Rogers.
Pepin Co. Agr. Soc.	Cedarburg	D. E. McGhinley.
Pierce Co. Agr. Soc.	Durand	J. J. Morgan.
Folk Co. Agr. Soc.	Ellsworth	F. D. Lord.
Portage Co. Agr. Soc.	St. Croix Falls	Fred Hudson.
Price Co. Agr. Soc.	Amherst	John Een.
Richland Co. Agr. Soc.	Phillips	John T. Ruff.
Rock Co. Agr. Soc.	Richland Center	J. G. Bonnell.
St. Croix Co. Agr. Soc.	Janesville	D. W. Watt.
Sauk Co. Agr. Soc.	Hudson	H. F. Dinsmore.
Shawano Co. Agr. Soc.	Baraboo	John S. Hall.
Taylor Co. Agr. Soc.	Shawano	Louis C. Bold.
Trempealeau Co. Agr. Soc.	Medford	T. M. Miller.
Vernon Co. Agr. Soc.	Galesville	F. C. Davis.
Walworth Co. Agr. Soc.	Viroqua	F. W. Alexander.
Washington Co. Agr. Soc.	Elkhorn	S. Mitchell.
Waukesha Co. Agr. Soc.	West Bend	Joseph Ott.
Waupaca Co. Agr. Soc.	Waukesha	W. H. Smith.
Wausara Co. Agr. Soc.	Weyauwega	A. L. Hutchinson.
Southwestern Wisconsin Industrial Assn.	Wautoma	J. F. Ellarson.
Blakes Prairie Agr. Soc.	Mineral Point	W. H. Bennett.
West Wisconsin Agr. Soc.	Bloomington	Wm. H. Glasier.
Seymour Fair and D. P. Assn.	Glenwood	H. C. Ficks.
Oshkosh Fair Assn.	Seymour	H. J. Van Varen.
New London Agr. and Industrial Assn.	Oshkosh	C. E. Argell.
La Crosse Inter State Fair Assn.	New London	Henry Cannon.
Eastern Monroe Co. Agr. Soc.	La Crosse	R. L. Reid.
Cumberland Agr. and D. P. Assn	Tomah	M. L. Hineman.
N. W. District Fair	Cumberland	H. S. Comstock.
Boscobel Agr. and D. P. Assn	Green Bay	D. W. Flatley.
Arcadia Agr. and D. P. Assn.	Boscobel	Jud. P. Walker.
Trempealeau Co. Ind., Agr. and D. P. Assn.	Arcadia	Frank R. Paine.
Merrillan Agr. and D. P. Assn	Whitehall	H. H. Scott.
	Merrillan	E. B. Sanders.





LAWS RELATING TO THE SOCIETY.

The Wisconsin State Agricultural Society was organized March 8, 1851, and incorporated by

CHAPTER 5, LAWS OF 1853.

SECTION 1. The Wisconsin State Agricultural Society is hereby declared a body politic and corporate, and by that name it shall be known in all courts and places whatsoever.

SECTION 2. The objects of the society being to promote and improve the condition of agriculture, horticulture, and the mechanical, manufacturing and household arts, it shall be allowed for these purposes only, to take, hold and convey real and personal estate; the former not exceeding ten thousand dollars.

SECTION 3. The said corporation shall possess all the powers and privileges conferred, and be subject to all the liabilities imposed upon corporations by the revised statutes of this state, so far as the same may be applicable.

SECTION 4. For the purpose of organizing said society under this charter and for the transaction of such other business as may come before it, the executive committee of the society may call a meeting of the same at such time and place as they may deem proper, first giving due notice thereof.

CHAPTER 40, LAWS OF 1854.

SECTION 2. It shall be the duty of the executive committee of said Wisconsin State Agricultural Society, to keep an accurate account of the manner of expenditure of said sum of money hereby appropriated, and transmit the same, together with the vouchers therefor, to the governor of the state, in the month of January in each year, to be by him laid before the legislature.

SECTION 3. It shall be the duty of said executive committee of the Wisconsin State Agricultural Society to collect, arrange and collate all information in their power, in relation to the nature, origin and preparation of soils; the cultivation and growth of crops; the breeding and management of stock; the application and character of manures and fertilizers; the introduction of new cereals and other grains; and other agricultural sub-

jects; and report the same, together with a statement of their own proceedings, to the governor of this state, in the month of January in each year, to be by him laid before the legislature.

CHAPTER 53, LAWS 1858.

SECTION 3. The principal officers of the Wisconsin State Agricultural Society shall have full jurisdiction and control of the grounds on which the society may exhibit, and all of the streets and alleys and other grounds adjacent to the same, during all such exhibitions, so far as may be necessary to preserve and keep good order, and so far as may be necessary to exclude therefrom all other exhibitions, booths, stands or other temporary places for the retail or sale of any kind of spirituous or fermented liquors or other article or articles that they might deem objectionable or offensive to said exhibition. The president of the society or in his absence, any vice-president acting in his stead, shall have the power to appoint any necessary policemen to assist in preserving the peace, quelling any disturbance or arresting offenders and conveying them to jail for trial, and all such policemen thus appointed shall be vested during the continuance of such exhibition with the ordinary powers and authority of common constables, and be entitled to similar fees for any services rendered or duty performed. Any person or persons who shall wilfully and without leave enter any fair grounds during an exhibition, that are duly enclosed with a proper fence, not less than six feet high, either by climbing over, or under, or through said fence, or by fraudulently receiving and using the tickets or badge of another, or passing the gate-keeper without the proper payment and compliance with the rules of said grounds, shall be deemed guilty of a misdemeanor, and upon conviction thereof before any court, shall be liable to a fine of not less than five nor more than twenty-five dollars; and in case of non-payment, to imprisonment in the county jail not less than one nor more than ten days. Any such offender may be tried before any justice of the peace, or police justice most convenient to be found.

JOINT RESOLUTION NO. 7, SESSION LAWS OF 1866.

Resolved by the assembly, the senate concurring, That the rooms on the north side of the west wing of the capitol, to-wit: The rooms just made vacant by the removal of the attorney general and the superintendent of public instruction, be prepared by the superintendent of public property, for the use of the Wisconsin State Agricultural Society, and that the said society be and hereby is allowed the use of the same until otherwise ordered by the legislature.

CHAPTER 95, LAWS OF 1870.

SECTION 1. Joint stock associations formed under the laws of this state for the encouragement of industry by agricultural and industrial fairs and

exhibitions, may purchase and hold such real and personal property as shall be necessary for fair grounds, and such property while used exclusive for such fairs and exhibitions, shall be free from taxes. Provided, that the quantity of land so exempt shall not exceed forty acres.

CHAPTER 159, LAWS OF 1875.

SECTION 2. The superintendent of public property is hereby authorized to furnish the office of the Wisconsin State Agricultural Society with stationery upon the order of the secretary of said society, the same as other officers in the capitol are supplied.

CHAPTER 65, LAWS OF 1877.

SECTION 1 provides: That nothing in this act shall be construed to prevent any citizen of any other state from becoming a member or officer of any agricultural society or industrial association which is now organized or may hereafter be organized under or by virtue of any law of this state.

CHAPTER 215, LAWS OF 1877.

AN ACT to donate the cereals and other centennial exhibits made by the state, to the State Agricultural Society.

SECTION 1. The cereals and other seeds and glass globes in which said cereals and seeds were exhibited by the state at the centennial exposition; one agricultural map of the state; one case samples fine wool; one picture of the state capitol, and three pictures of centennial buildings, are hereby donated to the above named society, to be by them kept in the agricultural rooms in the capitol.

CHAPTER 199, LAWS OF 1880.

SECTION 1. The secretary of the State Agricultural Society is hereby authorized to procure for the use of his office the necessary amount of postage stamps or stamped envelopes for the payment of the postage of the official correspondence of his department. The account therefor shall be audited by the secretary of state upon the presentation thereof in the manner hereinbefore provided, and paid out of the state treasury.

CHAPTER 194, LAWS OF 1885.

SECTION 1. There is hereby annually appropriated to the Wisconsin State Agricultural Society the sum of four thousand dollars. *Provided*, that no warrant shall be drawn by the secretary of state for the payment of the sum of money hereby appropriated, except upon the presentation of a sworn statement, signed by the president and secretary of the said Wisconsin State Agricultural Society, certifying that the sale of intoxicat-

ing liquors has been prohibited and prevented upon the fair grounds of said society during the year for which the appropriation is made.

SECTION 2. It shall be the duty of the several agricultural societies entitled to the state aid of one hundred dollars in this state, to send their president or other representative to the state fair, where the annual election of officers is held, there to act on committee of award, and to cast the vote for the county in the aforesaid election.

SECTION 3. On arrival of the president or other representative at the state fair he shall report to the secretary thereof, and on the certificate of the secretary of his attendance and performance of the duties named in section 2 of this act, the treasurer shall pay to him two dollars per day for the time he has been in attendance, not exceeding five days, and six cents per mile, one way, over the nearest traveled route from his home to the place where the state fair is held.

SECTION 4. This act shall take effect and be in force from and after its passage.

CHAPTER 423, LAWS OF 1889.

AN ACT to appropriate to the Wisconsin State Agricultural Society ten per cent. of its paid premiums.

SECTION 1. There is hereby annually appropriated to the Wisconsin State Agricultural Society ten per centum of its paid premiums.

SECTION 2. On the presentation of the sworn statement of the secretary of said society, setting forth the amount due each year under this act, the secretary of state shall issue his warrant for the same which shall be paid by the state treasurer out of any money in the state treasury not otherwise appropriated.

CHAPTER 526, LAWS OF 1893.

AN ACT to provide for and regulate the printing, binding and distribution of the reports of state officers, departments, institutions and societies.

SECTION 5. And further, there shall be printed annually upon the approval and order of the commissioner of public printing, ten thousand copies of the transactions of the Wisconsin State Agricultural Society, the same to embrace the reports of the county and other agricultural societies, and such matter pertaining to the agricultural industries of the state as shall be deemed important; provided, the whole number of printed pages shall not exceed four hundred. Seven thousand copies of the transactions of the Wisconsin State Horticultural Society; the same to embrace such abstracts of reports of county and other horticultural societies, and such matters pertaining to the horticultural interests of the state as shall be deemed important, provided that the whole number of printed pages shall not exceed two hundred. Eight thousand copies of the transactions of the State Dairymen's Association, the same to embrace such other matters

pertaining to the dairy interests of the state as shall be deemed essential; provided, that the whole number of printed pages shall not exceed two hundred. Twelve thousand copies of the report of the Agricultural Experiment station of the state university; provided, that the whole number of printed pages shall not exceed two hundred and fifty. Two thousand copies of each of said reports to be bound separately in cloth, all others singly in paper.

SECTION 6. The reports provided for in the preceding section shall be distributed as follows, through the superintendent of public property: Fifteen copies to each member of the legislature, fifty copies to the State Historical Society, ten copies to each county agricultural society and district industrial association, which embraces two or more counties and furnishes the State Agricultural Society a report of its proceedings, to each of the four societies named in the preceding section, fifty copies of the reports of the other three societies, twenty-five copies of each of the reports to the library of the state university, to the governor, lieutenant governor, secretary of state, state treasurer, attorney general, state superintendent of public instruction, railroad commissioner and insurance commissioner twenty-five copies each; to the state superintendent of agricultural institutes fifty copies; to the superintendent of public property, commissioner of labor statistics, adjutant general, quartermaster general, state board of health, each ten copies; to each public library in the state two copies; to each state normal school two copies; to each of the state charitable and penal institutions, one copy, and the remaining copies to the respective societies for distribution by their secretaries.

SECTION 7. In no case shall the number of printed pages in any report provided for in the act exceed the maximum number specified, except upon written request of the officer submitting the same, and then only upon previous written approval of a majority of the commissioners of public printing, such application and approval to be filed with the secretary of state.

CHAPTER 331, LAWS OF 1891.

AN ACT to authorize the commissioners of public lands of the state of Wisconsin to loan a portion of the trust funds of the state of Wisconsin to the Wisconsin Agricultural Society for the purchase of lands near the city of Milwaukee, and the erection of suitable buildings thereon.

The people of the state of Wisconsin, represented in senate and assembly, do enact as follows:

SECTION 1. The commissioners of public lands, with the approval of the governor of the state of Wisconsin, are hereby authorized, in their discretion to loan of the trust funds of the state a sum not exceeding one

hundred and fifty thousand dollars to the Wisconsin State Agricultural Society, to be used by such society for the purchase of not less than one hundred acres of land situated within ten miles of the county court house in the city of Milwaukee, provided, the lands so to be purchased shall first be approved by the said commissioners as to the quality and price; and provided further, that the amount so loaned by such commissioners shall not exceed two-thirds of the purchase price of the lands to be purchased by said society. And the said Wisconsin State Agricultural Society is hereby authorized to borrow such amount of said commissioners and to issue to the state of Wisconsin, by the proper officers thereof, bonds therefor. Such indebtedness shall bear interest at the rate of four per cent. per annum, payable annually, and the principal so loaned shall be paid twenty years from the date of such bonds, and such bonds shall mature and be fully paid within twenty years of the date of their issue.

SECTION 2. Said bonds shall be secured by a first mortgage upon the real estate so purchased, which shall be free and clear from any and all lien or incumbrances prior to said mortgage. Such bonds and mortgage shall be in form to most fully protect the state in every contingency and shall before acceptance, be approved as to form and execution by said commissioners. And said mortgage shall contain proper provision for the keeping of the buildings of said society upon such lands, insured for the benefit and protection of the state at all times during the pendency of such mortgage.

SECTION 3. This act shall take effect and be in force from and after its passage and publication.

Approved April 22, 1891.

CHAPTER 184, LAWS OF 1893.

AN ACT to authorize the commissioners of public lands of the state of Wisconsin to loan a portion of the general funds of the state of Wisconsin to the Wisconsin State Agricultural Society, for the purposes therein named.

The people of the state of Wisconsin, represented in senate and assembly, do enact as follows:

SECTION 1. The commissioners of public lands, with the approval of the governor of the state, are hereby authorized and directed to loan of the general fund of the state the sum of thirty thousand dollars to the Wisconsin State Agricultural Society, to be used by such society for the payment of its present unsecured indebtedness, and the balance, if any, to be expended in improving said grounds, and the said Wisconsin State Agricultural Society is hereby authorized to borrow such amount of said commissioners, and to issue to the state of Wisconsin, by the proper officers thereof bonds herefor, and to execute such mortgages and conveyances as the

commissioners shall deem necessary. Such indebtedness shall bear interest at the rate of four per cent. per annum, and the principal so loaned shall be paid ten years from the date of such bonds, and such bonds shall mature and be fully paid ten years from the date of their issue.

SECTION 2. Said bonds shall be secured by mortgage upon the real estate of said Wisconsin State Agricultural Society, which shall be free and clear from any and all liens or incumbrances prior to such mortgage except a mortgage now held by the state of Wisconsin and a mortgage held by E. C. McFretridge covering said property. Such bonds and mortgages shall be in form to most fully protect the state in every contingency and shall before acceptance be approved as to form of execution by such commissioners, and such mortgage shall contain proper provisions for the keeping of the buildings of said society upon such lands insured for the benefit and protection of the state at all times during the pendency of this mortgage.

SECTION 3. Before any money appropriated by this act shall be drawn from the state treasury as herein provided, the president, secretary and treasurer of said Wisconsin State Agricultural Society shall make and execute to the state of Wisconsin a bond in the penal sum of thirty thousand dollars with two or more good and sufficient sureties, who shall severally justify their liability under oath, such sureties and bond to be approved by the governor, and such bond shall be conditioned upon the faithful and honest application of all moneys appropriated by this act and received by such president, secretary and treasurer, or either of them, for the uses and purposes in this act specified, and a contract and verified statement of the indebtedness of said society otherwise than its indebtedness secured by mortgage, and such bond, when so made, executed and approved, shall be placed on file in the office of the secretary of state.

SECTION 4. This act shall take effect and be in force from and after its passage and publication.

Approved April 15, 1893.

CHAPTER 295, LAWS OF 1895.

AN ACT to appropriate to the Wisconsin State Agricultural Society the sum of three thousand dollars.

The people of the state of Wisconsin, represented in senate and assembly, do enact as follows:

SECTION 1. There is hereby appropriated to the Wisconsin State Agricultural Society a sum not exceeding three thousand dollars for the purpose of paying a special tax levied on the Cold Spring property in the city of Milwaukee while said society had possession of the same, provided said society is liable for the payment of such tax or any part thereof in the

opinion of the attorney-general of the state, and the amount certified by said attorney-general as the extent of such liability shall be paid over to the treasurer of said society under the provisions of this act, and no more.

SECTION 2. This act shall take effect and be in force from and after its passage and publication.

Approved April 19, 1895.

CHAPTER 339, LAWS OF 1895.

AN ACT to amend sections 2 and 3, of chapter 526, laws of 1889, and section 5, of chapter 249, laws of 1891, entitled, "An act to provide for and regulate the printing, binding and distribution of the reports of state officers, departments, institutions and societies."

The people of the state of Wisconsin, represented in senate and assembly, do enact as follows:

SECTION 1. Section 2, of chapter 526, of the laws of 1889, is hereby amended by striking out the word "three" where it occurs in the seventh line of the same section and insert in lieu thereof the word "five;" strike out the words "the report of the insurance commissioner, one hundred pages," where they occur in lines 12, 13 and 14 of section 2, by substituting for the words "supervisors, two hundred" in the fifteenth line, the words "control, three hundred and fifty;" and by eliminating the words, "the report of the state board of charities and reform, one hundred and fifty pages," in the sixteenth and seventeenth lines, so said section shall read as follows: Section 2. The biennial reports of the several state officers, departments and institutions shall be limited in number of pages as hereinafter specified: The report of the secretary of state, including the report of the commissioners of public printing and the report of the superintendent of public property, not exceeding five hundred pages; the report of the state treasurer, not exceeding one hundred pages; the report of the state superintendent, two hundred and fifty pages; the report of the railroad commissioner, two hundred pages; the report of the state board of control, three hundred and fifty pages; the report of the commissioners of public lands, fifty pages; the report of the board of university regents, fifty pages; the report of the board of normal school regents, fifty pages; the report of the commissioner of labor statistics, three hundred pages; the report of the adjutant general, fifty pages; the report of the quartermaster general, twenty-five pages; the report of the commissioners of fisheries, twenty-five pages; the report of the industrial school for girls, twenty-five pages; the report of the state supervisor of illuminating oils, twenty-five pages; the report of the state board of health, two hundred pages; the Milwaukee county insane asylum, fifty pages.

SECTION 2. Section 3, of chapter 526, of the laws of 1889, is hereby

amended by adding after the word "thousand" in the ninth line of said section the words "five hundred;" strike out the words "of the insurance commissioner one thousand five hundred copies" where they occur in lines 14 and 15 of said section 3; by changing the word "supervision" in the fifteenth and sixteenth lines to "control;" by eliminating the words "of the state board of charities and reform, one thousand copies" in the sixteenth and seventeenth lines; by changing the word "one" in the sixteenth line, to "two;" and by changing the word "three" in line thirty-one to "nine;" so said section when amended shall read as follows: Section 3. Within ten days after the biennial reports of the several state departments and state institutions shall have been placed in the hands of the commissioners of printing, and by them approved as provided by law, the same shall be delivered to the state printer, through the secretary of state, who shall immediately proceed to print as follows: Of the report of the secretary of state, three thousand five hundred copies; of the state treasurer, one thousand five hundred copies; of the state superintendent, one thousand copies, and eight thousand copies of his condensed reports; of the railroad commissioner, one thousand copies; of the state board of control, two thousand copies; of the commissioners of public lands, five hundred copies; of the regents of the university, one thousand copies; of the commissioners of fisheries, seven hundred and fifty copies; of the state supervisor of illuminating oils, five hundred copies; of the adjutant general, one thousand copies; of the commissioner of labor statistics, ten thousand copies; of the Milwaukee county insane asylum, five hundred copies; of the industrial school for girls, five hundred copies; of the regents of the normal schools, one thousand copies; of the state board of health, nine thousand copies; and further, there shall be printed two thousand copies of the message of the governor to the legislature, next to convene after the delivery of said biennial reports.

SECTION 3. Section 1, of chapter 249, of the laws of 1891, is hereby amended: Strike out the words "two hundred" where they occur in the eighteenth line of the same section, and insert in lieu thereof the words "two hundred and fifty," and by striking out the word "seven" where it occurs in the tenth line of said section and inserting in lieu thereof the word "six," and by striking out the word "ten" where it occurs in line three and inserting the word "seven," and by striking out the words "the same to embrace the reports of the county and other agricultural societies" where they occur in lines five and six of said section, and by adding the words "shall contain" after the last word "and" in the said sixth line of said section, and by inserting after the word "society" where it occurs in line five, the words "all of which shall be bound in cloth," so that said section when so amended shall read as follows: Section 1. And further there shall be printed annually and upon the approval and order of the commissioners of public printing, seven thousand copies of the transactions of the

Wisconsin state agricultural society, all of which shall be bound in cloth, and shall contain such matters pertaining to the agricultural industries of the state as shall be deemed important; provided, the whole number of printed pages shall not exceed four hundred. Seven thousand copies of the transactions of the Wisconsin state horticultural society, four thousand of which shall be bound in cloth, the same to embrace such abstracts of reports of county and other horticultural societies and such matters pertaining to the horticultural interest of the state as shall be deemed important; provided, that the whole number of printed pages shall not exceed two hundred and fifty. Eight thousand copies of the transactions of the state dairyman's association, the same to embrace such other matters pertaining to the dairy interests of the state as shall be deemed essential; provided, that the whole number of printed pages shall not exceed two hundred. Fifteen thousand copies of the report of the agricultural experiment station of the state university; provided, that the whole number of printed pages shall not exceed three hundred and fifty. Except as otherwise provided, two thousand copies of each of said reports to be bound separately in cloth, all others singly, in paper.

SECTION 4. The printing commissioners are authorized and empowered to secure the printing of half tone and other cuts in the university bulletins and reports, and such other documents as they may deem proper; if the printing of the same is not provided for in the contract with the state printer the printing commissioners are authorized to fix the price for such printing at the lowest current rates. The printing commissioners are also authorized and empowered to have made a reasonable number of cuts for illustrating the university bulletins which may be printed by authority of law.

SECTION 5. All acts and parts of acts inconsistent with or contravening the provisions of this act are hereby repealed.

SECTION 6. This act shall take effect and be in force from and after its passage and publication.

Approved April 19, 1895.

CONSTITUTION.

ARTICLE I.

OF THE NAME AND OBJECT OF THE SOCIETY.

This society shall be known as the "Wisconsin State Agricultural Society." Its object shall be to promote the advancement of agriculture, horticulture, and the mechanical and household arts.

ARTICLE II.

OF THE MEMBERS.

The society shall consist of life members, who shall pay, on subscribing, twenty dollars, and of honorary and corresponding members, who shall be elected by a two-thirds vote of all the members of the executive board at any regular meeting. The presidents of county agricultural societies shall be members *ex officio*, entitled to the same privileges as life members, and together shall be known as the general committee of the society.

ARTICLE III.

OF THE OFFICERS.

The officers of the Society shall consist of a president, one vice-president for each congressional district of the state, a secretary, a treasurer, and seven additional members, who shall hold their respective offices for a term of one year from the first day of January next succeeding the date of their election, and until their successors shall have been elected, and all of whom, together with the ex-president latest in office, and the president and general secretary of the Wisconsin Academy of Sciences, Arts and Letters, shall constitute the Executive Board.

ARTICLE IV.

OF THE POWERS AND DUTIES OF OFFICERS.

The president and vice-presidents shall perform such duties as are common to such officers in like associations, as may be required by the Executive Board.

The secretary shall keep the minutes of all meetings, and have immediate charge of the books, papers, library and collections, and other property of the Society. He shall also attend to its correspondence, and prepare and superintend the publication of the annual report of the Society, required by law.

The treasurer shall keep the funds of the Society and disburse the same on the order of the president, or vice-president, countersigned by the secretary, and shall make report of all receipts and expenditures at the regular meeting of the Society in December.

The executive board shall have power to make suitable by-laws to govern the action of the several members thereof. They shall have general charge of all of the property and interests of the Society, and make such arrangements for the holding and management of general and special exhibitions as the welfare of the Society and the interests of industry shall seem to require.

The general committee shall be charged with the interests of the Society in the several counties where they respectively reside, and constitute a medium of communication between the executive board and the public at large.

ARTICLE V.

OF MEETINGS AND ELECTIONS.

The annual meeting of the Society for the transaction of general business, shall be held in its rooms at Madison, on the first Wednesday in December, at nine o'clock A. M., in each year, and ten days' notice thereof shall be given by the secretary in one or more papers printed in the city of Madison.

The election of officers of the Society shall be held each year during and at the general exhibition, and the exact time and place of the election shall be specified by the secretary in the official list of premiums, and in all the general programs of the exhibition.

Special meetings of the Society will be called by order of the executive board, on giving twenty days' notice in at least three newspapers of general circulation in the state, of the time, place and object of such meetings.

At any and all meetings of the Society, ten members shall constitute a quorum for the transaction of business, though a less number may adjourn from time to time.

ARTICLE VI.

OF AMENDMENTS.

This constitution may be amended by a vote of two-thirds of the members attending any annual meeting; all amendments having been first submitted in writing at the previous annual meeting, recorded in the minutes of the proceedings, and read by the secretary at the next succeeding meeting for the election of officers. All amendments proposed shall be subject to amendment by a majority vote at the meeting when presented, but not thereafter.

BY-LAWS.

SECTION I.

OF OFFICERS.

The officers of the Society shall, *ex-officio*, fill the corresponding offices in the Executive committee.

SECTION II.

OF THE DUTIES AND POWERS OF OFFICERS.

The duties of the President, in addition to those defined by the constitution and the by-laws regulating the duties of the permanent committee shall be as follows, to-wit:

1. To inspect the fair grounds after they shall have been prepared for the annual exhibition by the special committee of arrangements, appointed for that purpose, and suggest such modifications or further preparations as he may deem necessary.
2. To formally open the annual fair of the society at such time as the Executive committee may prescribe, with an appropriate address.
3. As the executive head of the Society, to have a general supervision and control of the entire exhibition, subject only to the authority of the Executive committee.

The duties of the Secretary, more especially defined than in the constitution, shall be as follows:

1. To make a faithful record of each meeting of the Executive committee and keep such record in a condition for the convenient reference of any member thereof, at any time; also to make a record of every order drawn on the treasurer, and delivered to parties in whose favor they were so drawn — separately entering and numbering the orders drawn to pay premiums and those to pay general expenses, and so defining them — and of all moneys due the Society; in all cases holding the parties so indebted responsible therefor until they shall have presented him a certificate from the treasurer showing that the same has been paid.
2. To open and carry on such correspondence as may be advantageous to the Society or to the common cause of agricultural improvement, not

only with individual agriculturists and eminent practical and scientific men of other industrial pursuits, but also with other societies or associations whose objects are kindred to ours, whether in this country or foreign lands, and to preserve a journal of such correspondence in the archives of the Society.

3. To collect and arrange for convenient examinations, standard agricultural works and periodical publications, together with such models, machines and implements as may be donated to, or otherwise acquired by the Society.

4. To investigate as far as practicable, the nature of fertilizers, indigenous and cultivated plants, insects injurious to vegetation, etc., and to collect and preserve such specimens thereof, as will illustrate the natural history and agricultural resources, conditions and progress of the state.

5. To institute and collect reports therefrom, needed experiments relative to the preparation of the various soils of the state for economical culture, the cultivation of different grains, fruits and garden vegetables, the breeding and raising of stock, etc.

6. To visit, by the advice of the executive committee, or as his own judgment may direct, the various portions of the state, and to give lectures on the science and practice of agriculture, wherever and whenever they may be deemed most necessary and desirable.

7. To co-operate with the superintendent of public instruction and the agent of the normal school board, for the introduction and use in the schools of Wisconsin, of standard works on agriculture and other industrial arts and sciences.

8. To attend as many as possible of the industrial exhibitions of this country, particularly the county fairs of Wisconsin; to co-operate with the president and special committee of arrangements for the judicious preparation and management of our state exhibition; and to have the sole supervision and control of the offices of entry thereat.

9. To carefully prepare and superintend the publication of the annual report of the Society to the governor of the state, embodying therein the proceedings of the State Agricultural Society, an abstract of the reports of the incorporated county agricultural societies of the state, and such reports, essays and addresses, or other matters of information, as may be calculated to enhance the value of said report.

Finally, it shall be his duty, not only by the means above named, but also through such other instrumentalities as he may devise, and the committee approve, to devote himself faithfully and unreservedly to the promotion of the industrial interests of the state.

It shall be the duty of the Treasurer—

1. To receive primarily and exclusively all moneys due the Society, from whatever source.
2. To keep a full and faithful record of all receipts of moneys coming into his hands, and of the sources whence derived, in a book specially furnished by and belonging to the Society, and to have the same open at all reasonable times, to the inspection of any person or persons authorized by the executive committee to make such examination.
3. To likewise keep an exact record of every order by him paid, and such record must be verified by the proper vouchers showing that the sums therein named have been by him so paid.

SECTION III.

OF MEETINGS.

The Executive Committee shall meet annually, on the day preceding the day on which the annual meeting of the Society is held, on Monday preceding the first Tuesday of February, and again on the first day of the annual fair.

They shall also meet at the call of the secretary—the president and a vice-president of the Society concurring—and may adjourn to any stated time.

SECTION IV.

OF A QUORUM.

At any meeting of the executive committee, four members thereof shall constitute a quorum for the transaction of business.

SECTION V.

OF PERMANENT COMMITTEES.

There shall be two permanent committees of the Executive committee which shall be respectively styled the *Standing Committee* and the *Finance Committee*.

The Standing Committee shall consist of the president, the secretary and the treasurer, who shall have the power in the recess of the Executive committee to draw orders on the treasurer for all necessary current incidental expenses. But the Executive committee shall have authority, and are hereby required to revise the proceedings or transactions of said Standing committee, and endorse or disapprove the same.

The Finance Committee shall consist of the president and treasurer, and it shall be their duty to suggest means for increasing the revenues of the Society.

They shall also have authority to invest any portion of the funds of the Society that may from time to time be set apart by the Executive committee for investment, disposing of such funds upon such terms and conditions as may be prescribed by the said Executive committee.

Each of the above-named sub-committees shall be responsible for the faithful discharge of their duties to the Executive committee, to whom an appeal may at any time be taken from their acts or decisions.

The auditing, adjusting, allowing or rejecting of all bills, claims or demands, of whatsoever nature, against the society, and the issuing of orders upon the treasurer for payment of the same—except for the current incidental expenses of the Society, as by this section already provided for—shall devolve upon the Executive committee; and it shall be the duty of said committee to annually examine the books, papers and vouchers of the treasurer and secretary, and to compare the same, and adjust the accounts between those officers and the Society, and report thereon at the annual meeting in December.

SECTION VI.

OF THE ORDER OF BUSINESS.

The following order of business shall be observed at all meetings of the Executive committee:

1. Reading of the minutes of the preceding meeting.
2. Reading of the minutes and reports of the Standing committee.
3. Reading of the minutes and reports of the Finance committee.
4. Report of Auditing committee.
5. Reports from special committee.
6. Communications from the secretary.
7. Communications from members of the committee.
8. Unfinished business.
9. Miscellaneous business.

The order of business may be suspended, however, at any time by a vote of the majority of the members present.

SECTION VII.

OF THE FISCAL YEAR.

The fiscal year of this Society shall commence on the first Wednesday of December in each year, and all annual reports of the year previous shall be made up to that time.

SECTION VIII.

OF THE EXPIRATION OF TERMS OF OFFICE.

The terms of office of all the officers of this society shall expire on the 31st day of December of each year.

SECTION IX.

OF AMENDMENTS.

These by-laws may be amended at any regular meeting of the Executive committee by a vote of eight of the members thereof.

TREASURER'S REPORT.

To the Executive Board of the Wisconsin State Agricultural Society:

GENTLEMEN:— I have the honor to submit the following report, showing the receipts and disbursements of your society for the year ending Dec. 5, 1894.

Respectfully submitted

CYRUS MINER, Treasurer.

State Agricultural Rooms, Madison, Dec. 5, 1894.

RECEIPTS.

Amount of balance over	\$259 12	
Amount from sale of certificates	2,589 66	
Amount from rent of grounds	2,000 00	
Amount from membership	40 00	
Amount from state	9,810 03	
Amount from sale of tools	250 66	
Amount from fair receipts	21,390 02	
Amount from other sources .....	.....
	\$36,339 49	

DISBURSEMENTS.

Paid secretary's warrant accounts	\$31,288 19	
Unpaid warrants	416 07	
	31,704 26	
Balance on hand	\$4,635 23	\$4,635 23

SECRETARY'S WARRANT ACCOUNT, 1894.

No.	To whom and for what paid.	Amount.
1	N. D. Frat', expens s.....	\$24 81
2	A. A. Arnold, expenses.....	13 30
3	C. & N. W. Ry. Co., freight on World's Fair exhibit.....	36 26
4	Cyrus Miner, salary, expenses.....	107 47
5	Louise Hart, treasurer's clerk.....	5 00
6	Gordon H. True, assistance in Secy's office.....	25 00
7	Winkler, Flanders, Smith & Co., a'torney's fees.....	25 00
8	John M. True, salary, December.....	150 00
9	John M. True, paid drayage, telegrams and expenses.....	13 75
10	John M. True, salary, January.....	150 00
11	Gordon H. True, assistance in office.....	30 00
12	John M. True, paid for printing.....	8 00
13	Gordon H. True, assistance in office.....	15 00
14a	S. D. Hubbard, expenses.....	17 90
14b	John M. True, salary, February.....	150 00
15	John M. True, expenses.....	8 50
16	W. U. Tel. Co., messages, February.....	55
17	Rudolph Wiedman, moving granery.....	30 00
18	Gordon H. True, assistance in office.....	15 00
19	S. D. Hubbard, expenses.....	32 90
20	Andrus Thayer, livery.....	5 00
21	Rosenkrans & Thatcher, repairing die.....	30 00
22	Void.	
23	— — —, taking down and loading World's Fair pavillion.....	85 83
24	— — —, express and terminal freight, Chicago.....	40 00
25	C. E. Clough, work on pavillion and cases.....	63 87
26	C. W. Graves, advance paymnt on removing pavillion, etc.....	50 00
27	Gordon H. True, assistance in office.....	25 00
28	John M True, paid extra expenses.....	12 50
29	John M. True, salary, March.....	150 00
30	Co. Treas. Mil. Co., taxes, 1893.....	31 98
31	C. E. Clough, work on pavillion, etc.....	125 00
32	Smith Premier Typewriter Co., typewriter.....	125 00
33	S. D. Hubbard, expenses.....	28 40
34	Nat. Trotting Assoc., dues.....	25 00
35	C. F. Nobles, team work.....	7 50
36	W. J. Griner, work on pavillion.....	69 12
37	Eddie Fagan, work.....	6 50
38	Garret Fagan, work.....	35 00
39	C. E. Clough, work on pavillion.....	78 00
40	C. E. Clough, board of workmen.....	43 00
41	J. E. Patton & Co., paints.....	13 38
42	Gordon H. True, assistance in office.....	15 00
43	J. E. Patton & Co., paints.....	2 95
44	Geo. H. Bresee, work in office.....	50 00
45	John M. True, salary, April.....	150 00
46	John M. True, extra expenses, April.....	5 75
47	W. U. Tel. Co., messages, April.....	65
48	S. D. Hubbard, expenses.....	20 30
49	W. G. Lenderson, mimeograph.....	18 00

TREASURER'S REPORT.

No.	To whom and for what paid.	Amount.
50	J. E. Patton & Co., paints	\$1 84
51	D. E. McGinley, Mem. fee Wis. Fair Assoc.....	2 00
52	Hoffman, Billings & Co., pipe.....	88 86
53	J. E. Patton & Co., paint and oil.....	198 91
54	C. & N. W. Ry. Co., freight.....	5 86
55	King, Fowle & Co., premium lists.....	250 00
56	John M. True, expenses.....	7 00
57	Geo. H. Bresee, work in office, May.....	40 00
58	John M. True, salary, May.....	150 00
59	C. E. Clough, work on fair grounds.....	69 00
60	Guy Clough, work on fair grounds.....	10 70
61	E. Henderson, work on fair grounds.....	12 50
62	Hect & Launnach, paints.....	10 28
63	Fair Pub. House, books.....	22 50
64	W. U. Tel. Co., messages.....	2 05
65	Boynton, Taylor & Co., lumber.....	120 02
66	Peter Brown, work on fair grounds.....	45 00
67	John M. True, salary, June.....	150 00
68	John M. True, expenses.....	11 25
69	Geo. H. Bresee, work in office, June.....	40 00
70	C. H. Nobles, work on fair grounds.....	28 00
71	Guy Clough, work on fair grounds.....	5 00
72	C. E. Clough, work on fair grounds, June.....	48 00
73	Guetzkow Bros., lumber.....	12 89
74	Central Label Co., stickers.....	12 50
75	W. U. Tel. Co., messages, June.....	1 20
76	State Journal Printing Co., entry blanks.....	10 00
77	Adolph Pries, mowing weeds.....	10 00
78	W. J. Davis, mowing weeds.....	15 00
79	Wilmanns Bros., complimentary tickets.....	40 00
80	Dan Armour, livery.....	4 00
81	John M. True, salary, July.....	150 00
82	John M. True, expenses, July.....	9 75
83	Geo. H. Bresee, work in office.....	40 00
84	Gung'er Lith Co., lithographs.....	299 07
85	C. E. Clough, work on fair grounds.....	50 00
86	Guy Clough, work on fair grounds.....	20 00
87	C. F. Nobles, road tax.....	14 00
88	C. F. Nobles, gravel.....	31 00
89	W. U. Tel. Co., messages, July.....	50
90	Sackett Wired Tag Co., 12,000 tags.....	19 20
91	D. S. Harkness & Co., printing.....	21 00
92	S. D. Hubbard, expenses.....	20 00
93	J. E. Patton & Co., glass and putty.....	9 62
94	C. & N. W. Ry. Co., freight.....	2 28
95	Gordon H. True, work in office.....	20 00
96	B. J. Castle, advertising, Black River Falls.....	75
97	M. Smith, advertising.....	75
98	P. Derroy, advertising.....	1 00
99	John Youmans, advertising.....	1 25
100	W. W. Wilcox & Co., police badges.....	12 00
101	Paul Schumann Est., ribbons.....	83 00
102	A. L. Greengo, refunded entry.....	2 50

No.	To whom and for what paid.	Amount.
103	T. A. Burr, advertising, Lancaster	\$1 25
104	F. T. Leutner, advertising	80
105	D. S. Harkness, printing	10 00
105	J. C. Mitchell, advertising, Kaukauna	63
107	T. Cordingly, advertising, Plattsville	76
108	W. W. Chadwick, advertising, Monroe	1 75
109	W. H. Stoddard, advertising, Chippewa Falls	1 08
110	S. E. Richards, advertising, Delavan	2 50
111	Fred Schmidt, advertising, Menomonie	1 14
112	Hoffman & Bilings Mfg Co., plumber's supplies	16 18
113	John M. True, paid for expenses	10 75
114	Gordon H. True, work in office, August	30 00
115	John M. True, salary, August	10 00
116	Nauscauwen Bros, advertising	1 50
117	Higgindorf, Kellogg & Co, hardware	70 28
118	H. V. Benzie, advertising, Augusta	1 25
119	Geo. H. Bresee, work in office, August	40 00
120	Angell & Hastrieter, directory	3 00
121	Jas. E. Moseley, rubber stamp	1 25
122	Jas. Petley, extension motor railway	500 00
123	A. E. Sheriff, advertising, Marshfield	2 00
124	J. H. Yewdale & Sons, printing	146 25
125	A. D. Barnes, advertising, Waupaca	1 25
126	Martin Puemer, advertising, Jefferson	2 86
127	Breeders Gazette, advertising	21 00
128	S. H. Hunt, work on fair grounds	9 50
129	Albert Abbott, work on fair grounds	38 75
130	Fred Abbott, work on fair grounds	26 25
131	C. F. Nobles, work on fair grounds	28 50
132	E. Henderson, work on fair grounds	37 00
133	Guy Clough, work on fair grounds	20 00
134	T. M. McConnell, work on fair grounds	10 00
135	C. E. Clough, work on fair grounds	50 00
136	C. R. Cross, iron work	1 00
137	C. F. Nobles, team work	39 35
138	Milwaukee Harvester Co., iron work	1 75
139	W. W. Wilcox & Co., superintendent's badges	12 00
140	M. J. Cantwell, printing	25 70
141	W. U. Tel. Co., messages, August	2 90
142	Karl Stussy, advertising, Eau Claire	2 44
143	Geo. W. Evans, advertising, Watertown	1 64
144	R. B. Ogilvie, ribbons	5 35
145	J. H. Mallory, advertising, Green Bay	2 24
146	John M. True, expense	9 75
147	Gordon H. True, work in office	15 00
148	Sumner & Morris, padlocks	1 00
149	M. J. Cantwell, printing	1 75
150	Democrat Printing Co., advertising	5 00
151	Journal Printing Co., advertising	5 00
152	Madisonian, advertising	2 00
153	Fairbanks, Morse & Co., scale part	4 32
154	John Esch & Son, repairing water tank	5 75
155	R. H. Odell, press reporter	20 00

TREASURER'S REPORT.

No.	To whom and for what paid.	Amount.
156	John Rooney, work on fair grounds.....	\$3 12
157	Fred Johers, work on fair grounds	6 25
158	H. M. Benjamin, coal	7 50
159	Geo. A. White, live y	4 50
160	Aug. Anderson, work on fair grounds	1 50
161	S. McDonald, work on fair grounds	17 82
162	Albert Abbott, work on fair grounds	19 65
163	S. D. Hubbard, expenses.....	10 00
164	Hartford Band, music.....	26 20
165	Louis Karrister, work on fair grounds.....	6 80
166	John W. Decker, conducting state dairy test.....	88 95
167	L. J. B. Easton, purs	160 00
168	Frank Brown, work on track.....	8 25
169	Chas. Eckstein, work on grounds	11 25
170	C. W. Behuke, purse, races.....	160 00
171	C. C. Saam, foot race.....	25 00
172	John S. Eastman, work	10 00
173	Phil. Ottman, purses.....	360 00
174	Geo. A. Fuller, purses.....	335 00
175	Peter Wakem, payment on premiums.	75 00
176	J. H. Lamson, purse.....	80 00
177	Hayes & Dettloff, purse	100 00
178	Void.....	
179	Geo. P. Anderson, rep. del. Polk Co.....	25 20
180	G. W. Sword, judge swine dept	29 14
181	M. T. Grattan, judge horse dept	75 00
182	Geo. Bain, rep. del. Columbia Co.....	14 00
183	John Stephenson, rep del. La Fayette Co.....	15 00
184	C. P. Goerich, judge dairy cattle	16 72
185	John S. Cant, rep. del. Marquette Co.....	13 50
186	Baraboo Band, Music	108 20
187	Sam Hunt, work on fair grounds.....	34 00
188	Francis Davis, judge beef cattle.....	25 00
189	W. H. Rose, judge poultry	24 75
190	J. M. Bayer, purse.....	450 00
191	D. E. Kelly, purse.....	160 00
192	D. Waffer, rep. del. Waupaca Co.	16 08
193	Thomas Thomas, rep. del. Iowa Co.....	13 80
194	W. A. McHenry, partial payment on premiums.....	50 00
195	E. J. Neebe, work on track.....	24 50
196	A. Bourquin, partial payment on premiums.....	30 00
197	C. W. Redhead, partial payment on premiums.....	50 00
198	F. W. Alexander, rep. del. Vernon Co	18 00
199	P. J. Ryan, rep. del. Pepin Co.....	24 50
200	Adolph Ebel, rep. del. Kewaunee Co	12 90
201	John Gough, rep. del. Ozaukee Co.....	9 68
202	Geo. Wylie, supt. swine dept	50 82
203	Ed. F. Carpenter, purse.....	150 00
204	P. Crego, purse.....	60 00
205	Sotham & Co, partial payment on premiums.....	41 00
206	F. H. Merrell, part payment on premiums	29 00
207	T. W. Hunt, partial payment on premiums.....	55 00
208	A. L. Padgett, purse.....	80 00
209	W. F. Morse, partial payment on premiums.....	75 00

No.	To whom and for what paid.	Amount.
210	J. S. Harris, judge, horticulture.....	\$20 00
211	J. G. Robiusion, asst. supt. horticulture.....	15 00
212	Griffith Richards, judge, draft horses.....	19 00
213	George R. Doyle, purse.....	120 00
214	B. E. Rogers, judge, poultry.....	5 00
215	M. Schulte, work.....	14 37
216	John A. Keypers, rep. del. Brown Co.....	8 54
217	C. G. Wilcox, supt. poultry dept.....	50 24
218	Eph. Blakeslee, rep. del. Little Baraboo fair.....	17 00
219	Joseph Ott, rep. del. Washington Co.....	9 92
220	R. J. McGeehan, rep. del. Brown Co.....	10 50
221	W. W. Flinn, rep. del. Barron Co.....	27 50
222	Zeigler & Weed, purse.....	100 00
223	L. A. Downs, purse.....	12 50
224	W. A. Jones, expenses supt. dairy dept.....	20 00
225	H. S. Weil, rep. del. S. W. Assn.....	17 12
226	Cosgrove Live Stock Co., partial payment on premiums.....	50 00
227	C. M. Clark, supt. sheep dept.....	49 00
228	John Dean, rep. del. Seymour Driving Assn.....	16 70
229	Cornelius Madson, rep. del. Manitowoc Co.....	12 62
230	B. Tillman, purse.....	25 00
231	T. L. Newton, supt. machinery dept.....	50 59
232	Geo. Martin, supt. agricultural dept.....	65 04
233	C. E. Holden, rep. del. St. Croix Co.....	26 04
234	C. E. Holden, judge, agricultural dept.....	15 00
235	E. Dillon, asst. supt. manufactures.....	27 00
236	Chas. Eckstein, work.....	8 75
237	E. G. Roberts, partial payment on premiums.....	50 00
238	Edwin Reynolds, partial payment on premiums.....	50 00
239	Arthur Babbitt, clerk.....	36 00
240	A. E. Pierce, clerk.....	15 00
241	C. H. Johnson, clerk.....	30 00
242	Geo. Harding, services and expenses, supt. horticultural dept.....	37 96
243	Ina L. Bates, clerk.....	30 00
244	Geo. B. McGilvra, asst. supt. agricultural dept.....	15 00
245	M. E. Chadwick, clerk.....	42 00
246	J. H. Sullivan, wild west show.....	100 00
247	A. A. Arnold, supt. cattle dept.....	46 55
248	Edward Crummy, asst. supt. cattle dept.....	21 00
249	E. D. King, partial payment on premiums.....	35 00
250	C. F. Hawley, clerk.....	33 00
251	Charlotte A. Pritchard, clerk.....	30 00
252	Frank Brewer, work.....	12 75
253	Thos. Stevenson, work.....	19 00
254	H. A. Ellinwood, rep. del. Baraboo Valley Assn.....	16 40
255	John Carey, Jr., rep. del. Blake's Prairie Assn.....	15 00
256	Harry C. Gale, asst. dairy dept.....	21 00
257	G. T. Hodges, rep. del., Green Co.....	12 30
258	John S. Hall, clerk.....	33 00
259	John S. Hall, rep. del., Sauk Co.....	13 56
260	J. C. Chadwick, purse.....	55 00
261	Void.	
262	Sherman St. M. E. Church, redeemed meal tickets.....	2 45

TREASURER'S REPORT.

No.	To whom and for what paid.	Amount.
263	Ralph C. Vernon, marshal, police and horses.....	\$288 50
264	M. J. Haisler, supt. of gates and gate keepers.....	182 00
265	J. E. Seaver, asst. supt. machinery dept.	33 00
266	M. J. Doyan, asst. treasurer.....	30 00
267	Ed. Waters, attendants at closets.....	17 50
268	LeGrand Lippett, work on grounds.....	21 55
269	O. L. Glazier, work on grounds.....	18 00
270	G. F. Rilling, redeemed meal tickets.....	1 45
271	H. K. Loomis, asst. supt. dairy dept.....	43 00
272	Chas. Scott, work, fine arts dept.....	12 00
273	Edith Scott, asst. supt. fine arts dept.....	31 50
274	H. C. Adams, supt. fine arts dept.....	46 55
275	T. M. Blackstock, supt. manufactures dept.....	64 25
276	F. C. Chamberlin, purse.....	200 00
277	C. C. Fuller, purses.....	630 00
278	Mrs. Chas. Johnson, judge, woman's work.....	3 00
279	Helen Howells, work, woman's work.....	5 00
280	Mrs. L. L. Disbro, judge, woman's work.....	6 00
281	Genevieve Bartles, asst. supt. woman's work.....	24 00
282	Mrs. A. J. Bartles, work, woman's work.....	16 00
283	Mrs. Netta Holmes, judge, woman's work.....	3 00
284	C. B. Conrad, ticket seller.....	21 00
285	F. G. Miner, ticket seller.....	21 00
286	J. C. Brownell, ticket seller.....	21 00
287	Arthur Jenkins, ticket seller.....	21 00
288	E. B. Heimstett, ticket seller.....	21 00
289	Hiram Murdock, ticket seller.....	21 00
290	Edward Fifield, ticket seller.....	21 00
291	Cyrus Miner, treasurer.....	37 20
292	Eliza Young, judge, woman's work.....	3 00
293	Addie F. Doe, judge, woman's work.....	9 00
294	Jas. B. Weaver, work, woman's work.....	12 00
295	J. B. Weaver, watch, fine arts hall.....	6 00
296	Kate F. Pepper, supt. woman's work.....	41 30
297	John W. Ganes, asst. secy. at fair.....	87 00
298	T. M. Blackstock, paid judges in manufactures dept.....	10 00
299	E. C. True, clerk and assistance.....	60 00
300	Sentinel Co., advertising.....	89 00
301	Journal Co., advertising.....	68 00
302	News Pub. Co., advertising.....	64 00
303	Evening Wisconsin, advertising.....	67 00
304	Herold Co., advertising.....	57 85
305	P. V. Duester, advertisi g.....	53 40
306	Abend Post, advertising.....	38 40
307	Wis. Vorwuerts, advertising.....	35 00
308	Mil Telegraph, advertising.....	12 50
309	M. Kruska, advertising.....	15 00
310	Wis. Patriot Co., advertising.....	8 00
311	Saturday Star, advertising.....	5 06
312	Catholic Citizen, advertising.....	5 00
313	South Mil. Journal, advertising.....	5 00
314	Germania Pub. Co., advertising.....	24 80
315	R. H. Odel, press agent.....	80 00
316	Robt. Carnathan, purses.....	390 00

No.	To whom and for what paid.	Amount.
317	G. C. Cox, expenses, asst. marshal.....	\$3 90
318	C. W. Potter, rep. del. Juneau Co.....	15 80
319	T. K. Gillette, partial payment on premiums.....	100 00
320	Jacob Thomas & Sons, purse.....	40 00
321	J. W. Thomas, returned entry money, races.....	25 00
322	R. B. Jones, purse.....	185 00
323	E. P. DeWolf, purse.....	225 00
324	C. A. Niles, purse.....	160 00
325	Garret Fagan, work.....	14 68
326	James Fagan, work.....	10 62
327	Sam Taylor, work.....	6 25
328	Plankinton House, board.....	174 90
329	S. D. Hubbard, services and expenses.....	61 00
330	Boynton, Taylor & Co., lumber.....	820 83
331	Boynton, Taylor & Co., lumber.....	20 00
332	A. W. McElroy, starting judge, races.....	75 00
333	N. J. Morehouse, purse.....	40 00
334	A. P. Ellinwood, supt. of privileges.....	70 00
335	G. O. Garrity, purse.....	360 00
336	J. E. Faber, work.....	13 75
337	Geo. W. Garrett, purse.....	360 00
338	C. C. Pearce, purse.....	30 00
339	O. Breikreutz, rent of tent.....	25 00
340	F. H. Colby, returned entry money.....	10 00
341	P. B. Stratton, redeemed meal tickets.....	58 80
342	Mil. Y. M. C. A., rent of hall.....	10 00
343	Stemper & Co., livery.....	5 50
344	Arthur Babbitt, assistance.....	6 00
345	T. J. Dunbar, purse.....	248 00
346	T. J. Dunbar, purse.....	110 00
347	Andrus & Thayer, livery.....	20 00
348	Geo. Schaffer, redeemed meal tickets.....	3 85
349	Racine Band, music.....	60 00
350	J. H. Yewdale & Sons Co., printing.....	30 00
351	E. J. Kempf, advertising, Saeboygan Co.....	11 00
352	Riverside Printing Co., posters.....	360 00
353	Aug. Erickson, advertising, La Cross Co.....	2 34
354	Delorme & Quentin, flags.....	50 00
355	J. Langenberger, work.....	21 00
356	A. W. Ramsey, advertising, Grand Rapids.....	1 20
357	G. Patek, rope.....	1 20
358	W. D. Hoard, advertising.....	30 00
359	Wis. Agriculturist, advertising.....	55 00
360	J. J. Disch, advertising, Kenosha.....	8 65
361	Hoffman & Billings, pipe.....	60 40
362	Cream City Bill Posting Co., advertising, Milwaukee.....	104 55
363	L. J. Mueller, repairing boxes.....	16 43
364	E. L. Palmer, advertising, Oconomowoc.....	2 42
365	J. A. Hosch & Bros., caps for gate keepers.....	12 00
366	F. H. Sporleder, lumber.....	83 20
367	C. A. Youmans, supt. horse dept.....	58 20
368	R. M. Campbell, ass't supt. horse dept.....	24 00
369	Geo. Howard, purse.....	160 00

TREASURER'S REPORT.

No.	To whom and for what paid.	Amount.
370	Geo. W. Spear, purse	\$200 00
371	M. Foley, hay	167 64
372	D. J. Leonard, work	30 00
373	Mil. Telegraph Pub. Co., advertising	12 50
374	Yenowine's News, advertising	25 00
375	J. E. Patton Co., oils and paints	19 59
376	State Park Co., team work, etc.	62 00
377	Peter Wakem, bal. of premiums	62 00
378	John M. True, Sept. salary	53 60
379	Geo. H. Bresee, clerk	45 00
380	Gordon H. True, work in office, Sept.	50 00
381	Gertrude Page, premiums	16 00
382	R. B. Ogilvie, premiums	275 00
383	E. A. Hartman, advertising, Manitowoc	2 70
384	Mil. Buggy Co., rent of tent	25 00
385	John Reiner, advertising, Madison	1 08
386	Carolina Tompson, redeemed meal tickets	1 40
387	Fort Atkinson Band, music at fair	32 49
388	Wisconsin Farmer, advertising	48 00
389	C. E. Dav's, advertising, Luke Mills	1 50
390	Wm. Bothe & Sons, feed	148 12
391	W. C. Tiede, advertising, Racine	14 15
392	W. U. Tel. Co., messages, Sept.	2 54
393	S. H. H. Barnhart, advertising, Appleton	1 83
394	John W. Corse, advertising, Racine	5 00
395	M. J. Haisler, teams and labor	23 00
396	Jas G. Boyd, supt. transportation	45 00
397	Barney Davis, asst. supt. of transportation	30 00
398	C. E. Clough, redeemed meal tickets	142 85
399	C. E. Clough, paid for supplies	22 69
400	C. E. Clough, paid for work	61 50
401	Ross Kellogg, work	20 75
402	D. H. Armour, livery	8 00
403	W. R. Chase, whitewashing	19 20
404	E. Henderson, work	8 00
405	C. F. Nobles, work	35 00
406	C. F. Nobles, team, work	22 25
407	C. E. Clough, work, September	65 00
408	Guy Clough, work	23 00
409	Albert Tanner, work	2 50
410	C. E. Clough, freight on hay	11 40
411	E. J. Neebe, work on track	7 50
412	John M. True, salary, September	90 40
413	J. E. Gleason, Rep. Del. Rock Co	10 68
414	O. B. Dickinson, premium	20 00
415	Void.	
416	H. A. Briggs, premiums	101 00
417	Hadden, Scott & Mouatt, premiums	219 00
418	Hadden, Scott & Mouatt, premiums	26 00
419	Fred Pabst, premiums	155 00
420	Geo. Klein, premiums	177 00
421	E. B. Thomas, premiums	162 00
422	Jacob Heyl, premiums	102 00

No.	To whom and for what paid.	Amount.
423	F. H. Colby, premiums.....	\$80 00
424	W. G. Miller, premiums.....	12 00
425	August Uihlein, premiums...	40 00
426	Chas. Pfister, premiums.....	157 00
427	Sam'l Breese, premiums.....	16 00
428	Geo. B. Van Norman, premiums...	30 00
429	J. G. Boyd, premiums.....	20 00
430	J. N. Chamberlain, premiums...	15 00
431	T. W. Hunt, premiums.....	100 00
432	Geo. Harding and Son, premiums...	197 00
433	S. P. Clark, premiums.....	231 00
434	Redhead Bros, premiums.....	90 00
435	Sotham & Co., premiums.....	40 00
436	Cosgrove Live Stock Co, premiums..	101 00
437	W. F. Morse, premiums.....	194 00
438	Geo. W. Stafford, premiums.....	30 00
439	Wm. Ewins, premiums.....	95 00
440	J. W. Martin, premiums.....	108 00
441	J. C. Murray, premiums.....	256 00
442	Gillett & Son, premiums.....	213 00
443	Rust Bros, premiums.....	176 00
444	Geo. Garvins, premiums.....	15 00
445	Geo. C. Hill & Son, premiums.....	163 00
446	F. W. Tratt, premiums.....	194 00
447	R. S. Kingman, premiums.....	278 00
448	Morrill & Hainsworth, premiums..	65 00
449	H. H. King, premiums.....	113 00
450	O. W. Paine, premiums.....	15 00
451	Hinkley & Greengo, premiums.....	13 00
452	A. Bourquin, premiums.....	51 00
453	Edw. Reynolds & Son, premiums.....	60 00
454	W. A. McHenry, premiums.....	137 00
455	J. J. Finger, premiums.....	60 00
456	E. Finger, premiums.....	9 00
457	E. D. King, premiums.....	62 00
458	D. B. Jones, premiums.....	17 00
459	J. H. Pitcher, premiums.....	11 00
460	M. H. Walworth, premiums.....	46 00
461	Ira J. Hiller, premiums.....	96 00
462	Geo. McKerrow, premiums.....	248 00
463	Geo. Allen, premiums.....	170 00
464	Chas. Best, premiums.....	4 00
465	Gibson & Walker, premiums.....	106 00
466	Ed W. Monnier, premiums.....	18 00
467	C. W. Rowe, premiums.....	49 00
468	Jos. Gordon, premiums.....	49 00
469	A. Selle, premiums.....	30 00
470	Wm. Harvey, premiums.....	19 00
471	Hughes Bros. & Rundle, premiums.....	16 00
472	Void.	
473	W. H. Reed, premiums.....	4 00
474	Willis Whinnery, premiums.....	233 00
475	Palmer & Noblet, premiums.....	58 00

TREASURER'S REPORT.

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No.	To whom and for what paid.	Amount.
476	S. W. Ewins, premiums.....	\$19 00
477	Fred Tschudy, premiums.....	26 00
478	W. A. Hoyt, premiums.....	22 00
479	Mark H. West, premiums.....	163 00
480	Frank R. Pierce, premiums.....	4 00
481	H. P. West, premiums.....	215 00
482	C. H. Murphy, premiums.....	7 00
483	Geo. Cheatele, premiums.....	28 00
484	R. D. Warner, premiums.....	16 00
485	A. J. Benedict, premiums.....	6 00
486	Fred L. Clark, premiums.....	3 00
487	Wm A. Bartlet, premiums.....	101 50
488	J. R. Brabazon, Jr., premiums.....	155 00
489	E. G. Roberts, premiums.....	99 00
490	John Brabazon, premiums.....	105 00
491	J. R. Love, premiums.....	28 00
492	V. Kinney, premiums.....	2 00
493	Yorge & Rich, premiums.....	13 00
494	Geo. T. Reed, premiums.....	7 00
495	Dobberphel & Leubke, premiums.....	14 50
496	LeGrand Lippitt, premiums.....	42 00
497	Nelson Greengo, premiums.....	33 00
498	John Haus, premiums.....	10 00
499	Mrs. John Haus, premiums.....	5 00
500	J. H. Pilgrim, premiums.....	13 00
501	E. A. Perry, premiums.....	7 00
502	Mrs E. A. Perry, premiums.....	23 00
503	A. M. Johnson, premiums.....	12 00
504	L. L. Olds, premiums.....	28 00
505	Horace Blodgett, premiums.....	3 00
506	H. E. Nicholai, premiums.....	26 00
507	Void.	
508	W C Tasca, premiums.....	2 00
509	John Linst-ad, premiums.....	5 00
510	H W. J. Tesch, premium.....	11 00
511	J. M. Wheeler, premium.....	2 00
512	C. Wynobe, premiums.....	30 00
513	Ingersoll Bros., premiums.....	6 00
514	John Grape, premiums.....	30 00
515	Fred Wilkins, premiums.....	7 00
516	C. J. Frazier, premiums.....	9 09
517	H. S Rust, premiums.....	4 00
518	Mrs. H. S. Rust, premiums.....	10 30
519	M. C. Foley, premiums.....	3 00
520	Geo. Acker, premiums.....	68 00
521	Chas H. Green, premiums.....	70 00
522	Peter Ammon, premiums.....	70 00
523	Thomas Johnson, premiums.....	20 00
524	Fred. Widder, premiums.....	14 62
525	E. Peebles, premiums.....	25 00
526	Chas. J. Breित्रich, premiums.....	10 00
527	E. Widder, premiums.....	35 00
528	Dassow & Blank, premiums.....	25 34
529	W. J. Kohl, premiums.....	14 62

No.	To whom and for what paid.	Amount.
530	Blair Trading Association, premiums	\$35 00
531	McCanna & Fraser Co., premiums	35 00
532	Honey Creek Creamery Co., premiums.....	20 00
533	Marcy E'gin Creamery Co., premiums	10 00
534	Burwood Farm, premiums	25 00
535	Mrs. N. E. Allen, premiums	20 00
536	Mrs. L. C. Tenney, premiums	35 00
537	Fred. Fenner, premiums	4 00
538	Mrs. J. M. True, premiums.....	2 00
539	Chas. Hirschinger, premiums	44 00
540	Geo. J. Kellogg, premiums	69 00
541	Jay S. Palmer, premiums.....	96 00
542	Geo. Townsend, premiums	22 00
543	F. H. Chappell, premiums	65 00
544	D. W. Howie, coal.....	47 02
545	Geo. W. West, refunded entry money, races.....	12 50
546	J. H. Cullen, advertising, Janesville	3 09
547	Mr. C. L. Tenney, premiums.....	1 00
548	Hadden, Scott & Mouatt, premiums.....	25 00
549	W. U. Tel. Co., messages.....	1 70
550	E. A. Swan, premiums.....	6 00
551	Geo. Jeffry, premiums	35 00
552	Mary Jeffry, premiums.....	5 00
553	Mrs Geo. Jeffry, premiums	25 00
554	P. S. McGowan, premiums	47 00
555	Henry Tarrant, premiums	8 00
556	Curt. R. Plumb, premiums.....	19 00
557	Currie Bros., premiums	82 00
558	John M. Dunlap, premiums.....	36 00
559	Alex. Klokner, premiums	4 00
560	Geo. W. Ringrose, premiums	22 00
561	Mrs. J. G. Kestol, premiums	38 00
562	Mrs. C. H. Root, premiums.....	47 00
563	Mrs. E. J. Jeske, premiums.....	3 00
564	Schwartz & Fuhrman, premiums	10 00
565	Eagle Horse Shoe Co., premiums.....	2 00
566	Staver & Abbott Buggy Co., premiums	31 00
567	Henry Buggy Co., premiums.....	16 00
568	Milwaukee Buggy Co., premiums	28 00
569	Wallace Carriage Co., premiums	5 00
570	Thompson Wagon Co., premiums	10 00
571	Abbott, Rowland Buggy Co., premiums	3 00
572	Sterling Mfg. Co., premiums.....	5 00
573	Stoughton Wagon Co., premiums.....	11 00
574	John Dorsh, premiums.....	31 00
575	John Esch & Son, premiums	5 00
576	F. J. Bluff, premiums.....	8 00
577	Hanson's Empire Fur Co., premiums	10 00
578	Roebke & Rheinhardt, premiums	125 00
579	Mrs. Orris Pratt, premiums	58 00
580	Zella Foote, premiums	5 00
581	Ha'tie Foote, premiums.....	11 00
582	Mary Brown, premiums.....	12 00

TREASURER'S REPORT.

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No.	To whom and for what paid.	Amount.
583	F. A. Lydston, premiums	\$18 00
584	C. Tredupp, premiums	72 00
585	Jennie Loyd, premiums	23 00
586	Mrs. E. H. Bohn, premiums	5 00
587	Col. J. B. Lagrange, premiums	36 00
588	Henry Hess, premiums	10 00
589	Chas. Reimann, premiums	28 00
590	Martha Patitz, premiums	8 00
591	Mrs. Geo. Cressy, premiums	21 00
592	Anna E. Pierce, premiums	25 00
593	Thos. E. Hutchins, premiums	8 00
594	Jennie B. Knight, premium	5 00
595	Mrs. W. A. Clapp, premiums	15 00
596	Mrs. A. Kingsbury, premiums	24 00
597	Mrs. J. F. Holman, premiums	9 00
598	Julia Brown, premiums	8 00
599	Cassie Baerwald, premiums	18 00
600	Hattie Hess, premiums	13 00
601	Mrs. G. E. Talbot, premiums	15 00
602	Mrs. Paul Ooppermann, premiums	4 00
603	Mrs. J. A. Chadwick, premiums	19 00
604	Mrs. Ida Windish, premiums	19 00
605	Mrs. Julia Thomas, premiums	6 00
606	Mrs. J. J. De Garis, premiums	5 00
607	Mrs. B. Shaal, premiums	34 00
608	Mrs. A. J. Struthers, premiums	4 00
609	Ella Leonard, premiums	46 00
610	Elizabeth Patitz, premiums	11 00
611	Bertha Reuk, premiums	13 00
612	Mrs. A. T. Stebbins, premiums	2 00
613	Mrs. Geo. Guenther, premiums	20 00
614	Mrs. M. P. Carpenter, premiums	1 00
615	Mrs. Chas. Schley, premiums	3 00
616	Florence White, premiums	3 00
617	Mrs. M. E. Warren, premiums	22 00
618	Mrs. M. Schmidt, premiums	1 00
619	Anna Burmeister, premiums	4 00
620	Rosa Weidmann, premiums	2 00
621	Mrs. H. Carr, premiums	5 00
622	A. M. Kroizeks, premiums	2 00
623	Grace M. Rand, premiums	2 00
624	Nora Bell, premiums	8 00
625	Mrs. M. C. Foley, premiums	7 00
626	Mrs. Nellie Leonard, premiums	4 00
627	Pearl H. Campbell, premiums	12 00
628	Evening Wisconsin, printing	3 75
629	Bert McConnell, hay and straw	134 30
630	C. C. Deits & Son straw	40 00
631	John Le Feber, straw	68 13
632	Henry Vogel, straw and oats	144 37
633	Mrs. J. G. Kestol, premiums	2 00
634	J. M. Wheeler, hay	96 92
635	C. Taylor, straw	40 55
636	Herb Steiner, hay	85 87

No.	To whom and for what paid.	Amount.
637	W. E. Fisher, hay and straw.....	\$77 86
638	C. T. Fisher, supt. forage dept. and freight paid.....	74 00
639	W. E. Fisher, assistant superintendent forage.....	24 50
640	C. T. Fisher, paid for help in department.....	74 50
641	John Barnekow, rent of engine.....	30 00
642	Void.	
643	J. R. Love, premiums.....	6 00
644	Ed. W. Monnier, premiums.....	4 00
645	Mrs. H. M. Carr, premiums.....	1 00
646	Mrs. A. Kingsburry, premiums.....	2 00
647	Geo. H. Bresee, work in office.....	20 00
648	M. J. Cantwell, order books.....	7 00
649	Henry Saran, advertising, Oshkosh.....	2 30
650	W. A. Hoyt, bal. premiums.....	7 00
651	John M. True, salary, October.....	150 00
652	John M. True, paid for advertising.....	5 00
653a	E. B. True, assistance in office.....	10 00
653b	Cyrus Miner, expense and salary.....	193 13
654	Koch & Loeber, supplies.....	1 00
655	B. E. Button, advertising, Elkhorn.....	1 08
656	C. E. Angell, advertising.....	10 00
657	Enterprise Box & Lumber Co., sawdust.....	7 00
658	John Whittett, rep. del. Jefferson Co.....	12 02
659	R. H. Wilson, advertising, Beloit.....	3 00
660	Chicago Horsemen, advertising.....	22 50
661	Standard Adv. Co., horse fly covers.....	212 50
662	O. L. Rosencrans, medals.....	54 00
663	P. B. Haber, advertising, Fond du Lac Co.....	11 30
664	W. U. Tel. Co., messages, October.....	1 95
665	Nelson Nobles, work on fair grounds.....	5 00
666	Fred Abbott, work on fair grounds.....	10 00
667	Guy Clough, work on fair grounds.....	15 00
668	C. E. Clough, work on fair grounds, October.....	50 00
669	H. D. McKinney, returned entry money, races.....	253 00
670	Hughes Bros. & Rundle, premiums.....	6 00
671a	H. D. McKinney, returned entry money.....	125 00
671b	Hilgendorf & Kellogg, hardware, etc.....	115 32
672	Ernest B. True, assistance in office.....	15 00
673	E. C. Eldridge, supt. fine arts.....	10 00
674	Gazette Printing Co., printing, speed dept.....	55 50
675	John M. True, salary, November.....	150 00
676	John M. True, expenses, fair assoc. con.....	17 00
677	State Journal Printing Co., advertising annual meeting.....	75
678	H. E. Nicolai, pr miums.....	10 00
679	John Gevart, work.....	1 75
680	D. J. Leonard, work.....	15 00
681	C. E. Clough, work, November.....	50 00

TREASURER'S REPORT.

To the Officers and Members of the Wisconsin State Agricultural Society:

GENTLEMEN — I have the honor to hand you herewith treasurer's annual report, showing the financial transactions of your society for the year ending December 4, 1895.

M. R. DOYON, *Treasurer.*

Dated at Madison December 5, 1895.

RECEIPTS.

Balance received from Treasurer Miner.....	\$4,229 93	
Rent of park to Dec. 5.....	1,500 00	
Life memberships.....	2,000 00	
Entry fees and stall rent.....	1,086 50	
Forage.....	529 31	
Speed.....	2,461 55	
Tickets sold during fair.....	22,351 25	
State of Wisconsin, 10 per cent. of paid premiums.....	2,302 90	
Privileges and miscellaneous from secretary.....	6,900 13	
Total.....		\$43,361 57

DISBURSEMENTS.

Paid secretary's warrant accounts.....	\$39,123 22	
Cash on hand.....	4,238 35	
Total.....		\$43,361 57
Warrants drawn but not presented.....	\$223 60	

SECRETARY'S WARRANT ACCOUNT FOR 1895.

No.	To whom and for what paid.	Amount.
1	S. D. Hubbard, expense on committee before legislature.....	\$14 00
2	Arthur Babbitt, salary for January.....	63 00
3	T. J. Fleming, salary for January.....	150 00
4	Cyrus Miner, expense attending W. & E. Fair Assn. at Chicago.....	20 40
5	E. B. Heimstreet, attending board meeting.....	5 60
6	T. L. Newton, attending board meeting.....	9 34
7	C. M. Clark, attending board meeting.....	7 00
8	G. T. Hodges, attending board meeting.....	8 00
9	Geo. Wylie, attending board meeting.....	4 64
10	C. G. Wilcox, attending board meeting.....	15 40
11	Geo. Martin, attending board meeting.....	14 00
12	M. D. Kelly, attending February meeting as speaker.....	9 30
13	G. C. Cox, attending board meeting.....	9 50
14	Allen P. Weld, attending February meeting as speaker.....	17 50
15	C. P. Goodrich, attending February meeting as speaker.....	1 75
16	C. H. Everett, attending February meeting as speaker.....	6 00
17	T. J. Van Matre, attending February meeting as speaker.....	4 00
18	A. A. Arnold, attending board meeting.....	14 92
19	S. D. Hubbard, expense at February meeting and before legislature.....	50 20
20	John High, attending February meeting as speaker.....	8 00
21	John M. True, attending board meeting.....	4 72
22	J. C. Chadwick, purse winnings at fair of 1894.....	25 00
23	A. E. Kimberly, purse winnings at fair of 1894.....	53 33
24	J. C. Pfeiffer, purse winnings at fair of 1894.....	53 33
25	F. S. Gorton, purse winnings at fair of 1894.....	53 33
26	H. D. McKinney, 1st money in 2 year old stake at fair of 1894.....	200 00
27	J. N. Flower, winnings at fair of 1894.....	23 33
28	H. Cheeseman, winnings at fair of 1894.....	53 33
29	O. S. Norsman, transporting chairs to city hall, February meeting.....	4 50
30	Uihlein Bros., 3d money in 2-34 trot, fair of 1894.....	50 00
31	T. J. Fleming, attending Chicago meeting. St. Paul R. R.....	12 00
32	Wis. Mar. & Fire Ins. Co. Bank, overdraft for 1894.....	125 00
33	West. Union Tel. Co., telegrams.....	95
34	First Nat. Bank, winnings for J. B. Morrison, 1894.....	33 33
35	First Nat. Bank, winnings for Isaac Stephenson fair of 1894.....	53 33
36	Geo. H. Seeley, winnings at fair of 1894.....	53 33
37	Arthur Babbitt, February salary.....	83 33
38	T. J. Fleming, February salary.....	150 00
39	N. D. Fratt, attending board meeting.....	9 18
40	Thos. Convey, attending February meeting as speaker.....	4 00
41	H. J. Van Keulen, painting banner.....	2 50
42	John S. Douse, taxes for 1894, town of Wauwatosa.....	47 09
43	M. J. Cantwell, printing program for February meeting.....	17 75
44	W. W. Swinyer, consecutive numbering stamp.....	10 25
45	T. J. Fleming, March salary.....	150 00
46	S. D. Hubbard, expense attending the legislature.....	36 00
47	Arthur Babbitt, March salary.....	83 33
48	First Nat. Bank, Mrs. Chas. Schley, premium for 1894.....	3 00
49	First Nat. Bank, warrant drawn by J. M. True to P. B. Haber, 1894.....	11 30
50	Sec'y Agr. Fair Assn. of Wis., annual membership.....	2 00

TREASURER'S REPORT.

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No.	<i>To whom and for what paid.</i>	<i>Amount.</i>
51	A. F. Menges, subscription to Milwaukee Sentinel.....	\$2 00
52	T. J. Fleming, legislative expenses 1895	70 00
53	Arthur Babbitt, April salary.....	83 33
54	T. J. Fleming, April salary	150 00
55	Adams Stamp & Stencil Co., rubber stamp.....	1 75
56	M. J. Gillen, expenses to Evanston foot-ball game.....	7 84
57	Geo. McKerrow, attending Feb. meeting.....	5 00
58	Arthur Babbitt, May salary	83 33
59	T. J. Fleming, May salary.....	150 00
60	Dennison Mfg. Co., catalogue tags.....	7 10
61	Theodore Egelhoff, pump and 39 feet of pipe.....	15 68
62	Geo. Schimmel, repairs on the house.....	55 00
63	M. J. Cantwell, printing catalogue blanks.....	7 50
64	M. J. Cantwell, printing entry blanks and cards.....	13 75
65	A. H. Gardner & Co., dynamite, fuse and caps	52 80
66	M. Laffey, work on the house.....	4 10
67	John Zelinka, repairing and cleaning the house.....	11 50
68	Theodore Briver, labor in blasting stumps.....	20 26
69	A. H. Gardner & Co., dynamite.....	19 35
70	Arthur Babbitt, June salary.....	83 33
71	S. D. Hubbard, expense visiting grounds during improvements.....	36 00
72	T. J. Fleming, June salary.....	150 00
73	N. J. Parker, labor on sidewalk.....	5 40
74	G. Holler, work on infield.....	15 00
75	T. L. Kelly & Co., premium ribbons.....	64 76
76	James Morgan & Co., premium ribbons	112 22
77	Theodore Briver, cleaning up infield.....	8 75
78	Adam Klehm & Son, repairing windows and doors on grounds ..	10 68
79	Arthur Babbitt, July salary.....	83 33
80	T. J. Fleming, July salary.....	150 00
81	A. J. Patterson, labor on sidewalk.....	5 55
82	T. L. Kelley & Co., premium ribbon.....	2 55
83	G. R. Rilling, work on sidewalk.....	6 00
84	Adam Klehm & Son, 6½ kegs of spikes.....	15 12
85	R. H. Kellog, laying water pipe.....	10 00
86	A. J. Patterson, work on sidewalk.....	8 70
87	Fred Koeppel, repairing pump.....	10 00
88	Wauwatosa Stone Co., twelve yards of screenings.....	8 40
89	Boynton-Taylor Co., lumber in building sidewalk	400 00
90	John S. Eastman, expenses in advertising.....	50 00
91	John Le Feber, expenses in advertising.....	50 00
92	G. Holler, cutting noxious weeds.....	9 75
93	G. R. Rilling, 8 days, 7 hours, work on sidewalk.....	17 40
94	S. D. Hubbard, expenses visiting grounds.....	20 00
95	Albert Abbott, laying water pipe.....	16 05
96	A. McMath, labor laying sidewalk.....	7 20
97	M. Laffey, expenses in advertising	50 00
98	G. Holler, work on grounds, per order of Patterson.....	5 00
99	Boynton-Taylor Lumber Co., lumber in sidewalk.....	241 85
100	John LeFeber, expenses in advertising.....	50 00
101	G. R. Rilling, carpenter work on buildings.....	18 00
102	A. J. Patterson, work on grounds	9 00
103	Arthur Babbitt, August salary.....	83 33

No.	To whom*and for what paid.	Amount.
104	T. J. Fleming, August salary	\$150 00
105	C. C. Sheldon, work on building.....	6 75
106	Ross Kellog, work on water pipes.....	15 00
107	J. E. Keane, telegrams	2 68
108	Ross Kellog, work on boiler.....	10 00
109	G. R. Rilling, carpenter	24 00
110	M. Cheaney, by order of Patterson, work on grounds.....	12 28
111	C. Sheldon, work on barns.....	15 00
112	Ross Kellog, work on water pipes	10 00
113	J. S. Eastman, advertising the fair	50 00
114	Fred Wright, work on the track.....	20 25
115	Ross Kellog, work on grounds.....	15 00
116	C. Nobles, per order of Nagel, for shingling.....	6 00
117	C. Nobles, per order of A. W. Blanchard, work on buildings.....	14 35
118	C. Nobles, per order of R. Cole, work on barns	11 90
119	J. Stevanson, 8½ days carpenter work	14 85
120	Jos. Cheaney, per order of J. Patterson, labor	30 00
121	Jos. Cheaney, per order of D. Gaffney, watching at water tanks.....	12 40
122	Jos. Cheaney, per order of Bert Hardey, carpenter work.....	8 40
123	Jos. Cheaney, per order of Wm. Nobles, carpenter work.....	8 40
124	Jos. Cheaney, per order of D. Gaffney, carpenter work.....	12 75
125	L. S. Learned, 20 days 1 hour carpenter work.....	35 18
126	Geo. D. Learned, 13 days 2 hours carpenter work.....	23 10
127	Arthur Babbitt, September salary.....	83 33
128	T. J. Stephenson, 20 days carpenter work.....	35 00
129	F. Brower, man and team one day.....	3 50
130	T. J. Fleming, September salary.....	150 00
131	T. J. Fleming, 10 days team and sprinkler, 41 days work with team hauling crushed stone, preparing football grounds, covering water pipes and general teaming	188 50
132	Bcynton-Taylor Lumber Co., lumber.....	1,388 87
133	G. H. Tepel, 10½ days asst. supt. mfg. dept.....	36 75
134	J. E. Hausen, 10 days supt. mfg. dept	50 00
135	Wm. Millard, rent of Lincoln hall for annual meeting	15 00
136	Am. Exp. Co., express on tickets from Chicago.....	3 83
137	George Stelloh, 42 yards of wire fence.....	20 40
138	A. B. Brook, carpenter work.....	14 00
139	F. Stewart, work.....	15 75
140	J. Dold, carpenter work	11 05
141	P. Nickel, carpenter work.....	2 25
142	T. Senthraf, work.....	32 40
143	Fred Smith, carpenter work.....	32 40
144	W Fingan, work.....	11 82
145	T. Barnecow, work.....	10 35
146	Geo. Jeffery, work on barns	6 00
147	Void.	
148	Alex. Lockhart, 1st money in 2:30 pace	225 00
149	Parker Bros, 2d money in stake No. 5.....	99 00
150	Jenny Jamison, ju 'gs in culinary class.....	11 00
151	J. G. Taylor, Joe Patchen	1,500 00
152	M. E. McHenry, John R. Gentry.....	1,500 00
153	Void.	
154	Parker Bros, winnings, 2:24 trot, stake No. 7.....	270 00

TREASURER'S REPORT.

No.	To, whom and for what paid.	Amount.
155	Chas. Lawrence, services and expenses as swine judge	\$15 79
156	J. A. Countryman, services and expenses as swine judge	34 69
257	S. D. Hubbard, feed and grain	269 82
158	Jesse J. Johnson, delegate La Crosse Co. Agr. Soc.	15 60
159	J. E. Burns, 1st money in 2:11 pace	360 00
160	C. L. Hood, 3d money in No. 5, 2d in No. 7 and 3d in No. 9 stake	187 00
161	Geo. Castle, 2d money in 2:11 pace	160 00
162	John Gough, delegate Ozaukee Co. Agr. Soc.	9 86
163	Geo. Bain, delegate Columbia Co. Agr. Soc.	14 00
164	J. G. Meadows, delegate Walworth Co. Agr. Soc.	9 12
165	James H. Agen, delegate Douglas Co. Agr. Soc.	34 00
166	L. E. Hart, 1st money in stake No. 2	225 00
167	T. J. Fleming, rebate paid to D. W. Willis, 3d and 4th money in 2:14 pace	45 00
168	Void.	
169	G. Howard Davison, premiums dept. C.	94 00
170	P. J. Ryan, delegate Pepin Co. Agr. Soc.	30 00
171	George Wylie, services and expenses as supt dept D.	50 80
172	John S. Eastman, rebate on amount advanced to H. J. Marbold, 3d money in No. 2 stake	50 00
173	J. M. Bemis, delegate, Langlade Co. Agr. Soc.	23 20
174	W. W. Nygren, 2d money in No. 9 stake	85 00
175	Wm. Lea, 4th money in No 7 stake	12 00
176	Wm. Lea, 4th money in 2:30 pace	25 00
177	J. C. Curry, 2d money in class No 12, 1st in class No. 13	380 00
178	R. A. Moore, delegate Kewaunee Co. Agr. Soc.	18 40
179	The Milwaukee Telegram, advertising	28 50
180	C. M. Clark, services and expenses as supt dept C	44 00
181	C. P. Goodrich, judge and expenses in dairy classes	25 00
182	Earnest B. True, services and expenses as ass't supt. dept. A.	31 62
183	John M. True, services and expenses as supt. in dept A	44 84
184	E. B. Roys, 3d money in class No. 13	80 00
185	James T. Brownlee, delegate Buffalo Co Agr. Soc.	20 80
186	A. Hanson, 1st money in stake No. 5	164 00
187	John A. Craig, services as judge of sheep	35 00
188	D. R. Grover, premiums in dept. E.	9 00
189	John Carey, delegate from Blakes Pr. Agr. Soc.	17 10
190	C. H. Williams, premiums dept. C.	92 00
191	C. H. Williams, premiums dept. D.	28 00
192	Goodwin & Judy, premiums dept B.	209 00
193	E. B. Heinstreet, expenses of art dept.	170 70
194	H. F. Brown, premiums dept. B	228 00
195	J. S. Harris, services and expenses as judge of fruits	26 65
196	A. H. Cooley, premiums dept. B.	177 00
197	G o. S. Redhead, premiums dept. B	52 00
198	T. J. Dunbar, 2d money in class 13	187 00
199	Tnos. Clarke, premiums dept. B.	183 00
200	H. J. Fluck, premiums dept. B.	32 00
201	Bascom & McMurray, premiums dept. D	109 00
202	J. R. Sturgeon, premiums dept. D.	56 00
203	Ralph C. Vernon, total expenses of marshal's dept.	429 30
204	T. H. Inman, premiums dept. B.	158 00
205	E. Reynolds & Son, premiums dept. B	121 00
206	Palmer & Palmer, premiums dept. B.	26 00

No.	To whom and for what paid.	Amount.
207	T. F. B. Sotham, premiums dept. B	\$114 00
209	J. S. Hall, de'egate Sauk Co. Agr. Soc.	18 16
203	I. J. Hiller, premiums dept. C	80 00
210	I. J. Hiller, premiums dept. C	68 00
211	J. W. Martin, premiums in dept. B	201 00
212	Jacob J. Finger, premiums dept. B	51 00
213	Hadden, Scott & Mowatt, premiums dept. A.....	177 00
214	S. P. Clark, premiums dept. B	216 00
215	W. A. Jones, premiums dept. D	51 00
216	Metcalf Bros., premiums dept. D	133 10
217	M. R. Doyou, acct. J. R. Lamson, 2d money in class No. 15	100 00
218	F. A. Heubner, delegate Manitowoc Co. Agr. Soc	11 40
219	Metcalf Bros., premiums dept. C	92 00
220	W. F. Morse, premiums dept. B	292 00
221	Geo. B. McGilvra, judge and expenses in dept. F.....	24 00
222	Thos. Clark, premiums dept. B.....	3 00
223	Geo. Matthews, 9½ days fencing in grand stand.....	14 25
224	Henry Fader, fencing in hog and sheep pens.....	7 50
225	Wm. Bishoff, fencing in hog and sheep pens.....	6 00
226	J. J. Jones, fencing and de'ivering wire.....	12 75
227	Wm. Lindmeyer, carpenter work and fencing grand stand.....	15 75
228	Ferdinand Kaska, 4 days fencing in hog and sheep pens	6 00
229	W. A. Hoyt & Co., premiums depts. B and D.....	24 75
230	T. E. Brameld, premiums dept. A.....	211 00
231	Shafer & Hicks, advertising, putting up banners in Milwaukee.....	10 00
232	John F. Weaver, premiums dept. B.....	3 00
233	C. A. Thompson, 1st money in class No. 11, 1st in No. 16 and 3d in No. 14.....	510 00
234	Edward Crummy, asst. supt. dept. B.....	21 00
235	Alex. A. Arnold, supt. dept. B	54 25
236	R. F. Livingston, 4th money in class No. 15	25 00
237	J. F. Wegge, premiums dept. E	12 00
238	Void	
239	J. L. Cameron, 3d money in class No. 15	50 00
240	S. E. Wurst, premiums dept. E	63 00
241	Geo. McKerrrow, acct. M. Barham, delegate Crawford Co. Agr. Soc.....	21 50
242	Geo. McKerrrow, supt. dept. H	30 00
243	James Weaver, five days work dept. H	11 00
244	C. G. Wilcox, money advanced to M. E. McElroy	80 00
245	R. N. Sanderson, 1st money in stake No. 4.....	225 00
246	Max Scheuring, services as flagman	6 00
247	L. G. Kellogg, services as asst. supt. dept. H.....	27 59
248	Geo. W. Brown, winnings No. 10, No. 7 and No. 9.....	232 00
249	W. M. Workman, 10 days as asst. in speed dept.....	41 54
250	John S. Eastman, money advanced for the payment of gate men.....	154 00
251	F. H. Meekin, premiums dept. C.....	48 00
252	Cooley Strong, labor on grounds	4 20
253	Cooley Strong, labor Marshall's dept	2 00
254	Chas. A. McGee, ticket seller	21 00
255	A. C. Jenkins, ticket seller.....	21 00
256	E. A. Hyde, ticket seller.....	21 00
257	Geo. Angell, ticket seller.....	21 00
258	Frank Billings, ticket seller.....	7 50
259	C. B. Conrad, ticket seller	21 00

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No.	To whom and for what paid.	Amount.
260	I. C. Brownell, ticket seller	\$21 00
261	C. J. Myhr, ticket seller	21 00
262	Edwin Fifield, ticket seller	21 00
263	Frank Farnsworth, ticket seller	21 00
264	R. R. Kropf, ticket seller.....	21 00
265	H. D. Murdock, ticket seller.....	21 00
266	Void.	
267	W. W. VanSant, exchange of check.....	115 00
268	Sid. Terwilliger, ticket taker.	18 00
269	Mark H. West, premiums dep't D	63 00
270	Void.	
271	F. H. Merrill, premiums dep't B.....	79 00
272	J. R. Love, premiums dep't E.....	36 00
273	H. S. Weil, delegate to S. W. Ind. Ass'n	19 18
274	H. Glass, 1st money in class 12	270 00
275	H. D. Sells, 3rd money in class 16	60 00
276	Chas. McGordon, 2nd money in class 16	90 00
277	Void.	
278	T. L. Newton, 13 days services and clerk hire dep't J	75 00
279	C. F. Chamberlain, premiums dep't E.....	12 00
280	Otis Colburn, labor speed dep't.....	2 00
281	Mary E. Chadwick, services as entry clerk 11 days.....	38 00
282	C. G. Wilcox, sup't dep't speed and expenses.....	66 54
283	J. E. Seaver, ass't sup't dep't J.....	49 46
284	John T. Ruff, delegate Price Co. Agr. Soc	27 34
285	Frank Crobb, delegate Brown Co. Agr. Soc.....	10 64
286	Geo. Martin, sup't dep't F and expenses	50 32
287	R. J. McGeehan, delegate Brown Co. Agr. Soc.....	10 54
288	Henry Dinsmore, delegate St. Croix Co. Agr. Soc.....	25 10
289	John Duffy, sup't track.....	32 00
290	John Duffy, money advanced to employees.....	6 25
291	M. J. Gillen, foot ball game.....	300 00
292	F. J. R. Mitchell, foot ball game.....	300 00
293	R. B. Ogilvie, premiums dep't A.....	274 00
294	Wm. Armstrong, 2nd money in class No. 10	100 00
295	Eugene Belden, delegate Pierce Co. Agr. Soc.....	19 15
296	M. J. Gillen, balance due on foot ball game	200 00
297	Fred. Wilkins, delegate Vernon Co. Agr. Soc.....	22 00
298	W. A. Hall, policemen's meals.....	20 00
299	T. J. Dunbar, Vera Capel in special.....	220 00
300	Wm. Jones, work in the office 8 days	28 00
301	Edwin Scheftels, work in the office 10 days.....	35 00
302	Mrs. Truss, attending closets 6 days.....	12 00
303	Frank Burmeister, teaming on fair grounds.....	6 20
304	Wm. Burmeister, labor at fair	2 63
305	Ralph C. Vernon, marshall's expenses	22 40
306	Hotel Pfister, account of James Nelson & Son, speed dep't.....	165 00
307	A. R. Myer, attending water closet in grand stand.....	46 80
308	A. R. Myer, 18½ days work at \$1.50	27 75
309	Stemper & Son, livery for five days, acc't sup't of gates.....	7 50
310	Chris Bach, music, buss and banners.....	253 50
311	Jos Cheaney, work on buildings.....	6 00
312	Adonis McMath, 17 days, 3 hrs work on buildings	25 95

No.	To whom and for what paid.	Amount.
313	Fred Schultz, police work during fair	\$12 00
314	Wm. Quigley, police work during fair	10 00
315	Jacob Marx, watching secy's. office	12 00
316	G. Holler, work on buildings and cleaning barns.....	39 00
317	Mike Schulte, cleaning buildings and work on pumps.....	30 75
318	J. H. Steinkoff, canvas around kennel show	40 00
319	G. C. Cox, sup't. transportation and expenses.....	73 00
320	S. D. Hubbard, time at and before the fair.....	80 00
321	Belle Kayser, 2 weeks work in office.....	42 00
322	Ida Herfurth, stenographer.....	140 00
323	Henry Murphy, driving team and labor	12 75
324	D. Carey, work on pump.....	12 00
325	J. S. Eastman, to balance account, advertising.....	87 50
326	Fred Sell, work on ball grounds.....	12 60
327	Jos. C. O'Malley, press work.....	31 50
328	M. H. O. Williams, work in office 4 days.....	14 00
329	H. B. Nelson, 7 days work in the dairy dep't.....	14 00
330	Chas. Bash, 4 days work on barns.....	7 20
331	John Kelly, watchman on midway.....	11 20
332	E. B. Naish, judge in dep't G.....	25 00
333	T. H. Lyons, 10 days, 3 hrs attending the engine.....	20 60
334	John LeFebe, to balance account, advertising	87 50
335	Jennie Kayser, 1½ days work in speed dep't.....	5 25
336	G. T. Hodges, sup't dep't G. and R. R. expenses	51 30
337	R. A. Etter, delegate Green Co. Agr. Soc.....	12 30
338	T. H. Lyons, 13 days and 5 hrs. work on barns	20 25
339	Lizzie Insey, two weeks work in office	42 00
340	Florence Foley, two weeks work in office.....	42 00
341	Hotel Pfister, board for sec'y.....	45 79
342	Hotel Pfister, board for treasurer.....	21 00
343	Hotel Pfister, board for president.....	42 30
344	Geo Klien, premiums dep't A.....	93 00
345	E. B. Thomas & Son, premiums dep't A.....	110 00
346	Robert Morton, premiums dep't A	25 00
347	Hornig Bros., premiums dep't A	60 00
348	James Hopkins & Son, premiums dep't A	65 00
349	Geo Klien, bal. premiums dep't A.....	72 00
350	Matt Johannes, premiums department A.....	21 00
351	Uihlein Bros., dept. A	139 00
352	Geo. Harding & Son, premiums awarded in dept. A.....	10 00
353	A. M. Grau, premiums, dept. A	20 00
354	Frank R. Pierce, premiums, dept. A	8 00
355	Geo. G. Brew, premiums, dept. A.....	8 00
356	Jacob Heyl, premiums, dept. A.....	240 00
357	Geo. Harding & Son, premiums, dept. B.....	109 00
358	J. N. Chamberlain, premiums, dept. B.....	59 00
359	Wm. Ewins, premiums, dept. B	77 00
360	Gillett & Son, premiums, dept. B.....	175 00
361	Geo. Garvens, premiums, dept. B.....	25 00
362	Rust Bros., premiums, dept. B	156 00
363	Geo C. Hill & Son, premiums, dept. B.....	213 90
364	F. W. Tratt, premiums, dept. B	159 00
365	R. S. Kingman, premiums, dept. B.....	116 00

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No.	<i>To whom and for what paid.</i>	<i>Amount.</i>
366	E M Barton, premiums, dept. B	\$226 00
367	Fred Tschudy, premiums, dept. B	71 00
358	D, B. Jones, premiums, dept. C	44 00
369	J. H. Pitcher, premiums, dept. C	12 00
370	Geo. Harding & Son, premiums, dept. C	141 00
371	Geo. H. McKerrow, premiums, dept. C	90 00
372	Geo. Allen, premiums, dept. C	103 00
373	E. W. Weaver, premiums, dept. C	1 50
374	Coffland & Lybrand, premiums, dept. C	6 00
375	Geo. H. McKerrow, premiums dept, C. (\$100 refunded, overpaid).....	250 00
376	Geo. Harding & Son, premiums, dept. C	65 00
376	Geo. Harding & Son, premiums, dept. C	181 00
377	H. P. West, premiums dept. D	92 00
378	Geo. F. Davis, premiums, dept. D	7 00
379	Chas. T. Hill, premiums, dept. D.	8 00
380	A. J. Benedict, premiums, dept. D	12 00
381	Geo. Cheatle, premiums, dept. D	62 00
382	Ed. W. Monnier, premiums, dept. D	46 00
383	Joseph Gordon, premiums, dept. D	6 00
384	Silas Doubleday, premiums, dept. D	4 00
385	C. W. Rowe, premiums, dept. D	43 00
386	M. W. Reed, premiums, dept. D	133 00
387	Palmer & Noblet, premiums, dept. D	26 00
388	Wm. W. Vaughn, premiums, dept. D	2 00
389	Fred Tschudy, premiums dept. D	3 00
390	A. A. Arnold, premiums, dept. D	132 00
391	J. R. Brabazon, premiums, dept. E	186 00
392	E G. Roberts, premiums, dept. E	12 00
393	Palmer & Noblet, premiums, dept. E	178 00
394	J. R. Brabazon, Jr., premiums, dept. E	6 00
395	Geo. T. Reid, premiums, dept. E	10 00
396	Yorgey & Rich, premiums, dept. E	5 00
397	J. C. Brown, premiums, dept. E	20 00
398	George Stelloh, supt. construction of wire fence	35 00
399	C. T. Fisher, supt. forage dept.	35 00
400	H. T. Mower, asst. supt. in forage dept.	13 50
401	Aug. Schildt, 9 days in forage dept.	15 00
402	Herb. Steiner, 10 days in forage dept	18 00
403	C. T. Fisher, 9 days team work	3 50
404	John Spitzel, 1 day team	15 00
405	W. E. Fisher, 7 nights watching forage dept	80 50
406	M. J. Cantwell, printing catalogue work, etc.	14 00
407	Edward Quinn, entry books	10 00
408	Ross Kellogg, taking up water pipes	21 00
409	Joe O'Malley ticket seller	15 00
410	M. H. O. Williams, ticket seller	11 00
411	J. R. Fleming, livery during fair	49 88
412	P. V. Deuster & Co., advertising fair	57 00
413	B. Mock & Son, horse and buggy 5 days, 6 carriages to grounds	6 00
414	Ed Crawford, bill posting	21 33
415	R. E. Haeger, judging in poultry dept.	130 00
416	M. Laffey, advertising fair on road and 2 weeks work in office.	15 00
417	Henry Roemain, 5 days at ticket office.	250 00
418	John Callahan, kennel club show	

No.	To whom and for what paid.	Amount.
419	L. M. Crump, 4th money on New Era	\$40 00
420	Alex. Galbraith, judging in dept. A.....	25 00
421	Sam Wilke, one days work during the fair.	1 50
422	Horse Review, advertising races in Wis. circuit.....	66 72
423	John Ganvart, teaming and labor on grounds.....	21 64
424	Adam Klehm & Son, hardware for seven barns.....	155 73
425	Ross Kellogg, taking up water pipe.....	13 33
426	W. U. Tel. Co., telegrams.....	11 07
427	B. M. Weil, insurance.....	1,242 50
428	Chicago Horsemen, advertising speed dept.....	55 00
429	John Barnekow, use of engine running machinery at fair.....	30 00
430	Henry W. Schreck, posting bills, Manitowoc Co.....	8 24
431	W. W. Chadwick, asst. and expenses in dept. G.....	36 05
432	Robert Philip, cleaning up fair ground.....	30 00
433	Wis. Farmer, advertising the fair.....	25 00
434	Theo. Egelhoff, cleaning springs, cistern and pump.....	8 00
435	Nase, Kraus & Koken, two ladies' toilet signs.....	1 03
433	Evening Wisconsin Co, advertising the fair.....	48 00
437	Geo. F. West, delegat., Green Co. Agr. Soc.....	17 80
438	Mil. St. P. R Co., rebate on paid fares.....	799 35
439	C. H. Lunderland, asst. in dept. F.....	732 30
440	Ed Keogh, printing prem. list and speed dept.....	572 95
441	H. A. Clum, asst. in dept. E.....	11 80
442	C. E. Angell, supt. dept. E.....	59 18
443	Void.....	
444	H. P. West, premiums dep't F.....	97 00
445	Nelson Greengo, premiums dep't F.....	19 00
446	J. S. Hall, premiums dep't F.....	55 00
447	Wm. F. Pilgrim, premiums dep't F.....	19 00
448	M. E. Spring, premiums dep't F.....	8 00
449	J. H. Pilgrim, premiums dep't F.....	15 00
450	Geo. Jeffreys, premiums dep't F.....	20 00
451	E. Norma, premiums dep't F.....	3 00
452	Mrs. John Hans, premiums dep't F.....	27 00
453	Thos. Fountaine, premiums dep't F.....	8 00
454	A. M. Johnson, premiums dep't F.....	8 00
455	Frank Whitehead, premiums dep't L.....	7 00
456	M. Chittenden, premiums dep't F.....	4 00
457	Mrs. H. G. Tuttle, premiums dep't F.....	4 00
458	Mary L. Putnam, premiums dep't F.....	8 00
459	Mrs. E. B. Stebbins, premiums dep't F.....	3 00
460	Nora Bell, premiums dep't F.....	3 00
461	Mrs. A. L. Tenney, premiums dep't F.....	1 60
462	Mrs. A. LeFeber, premiums dep't F.....	6 00
463	Mrs. E. A. Perry, premiums dep't F.....	19 00
464	Mrs. C. H. Root, premiums dep't F.....	11 00
465	Mrs. H. M. Beacroft, premiums dep't F.....	2 60
466	Wm. Pommerich, premiums dep't F.....	2 00
467	Mary L. Foley, premiums dep't F.....	3 00
468	W. E. Pickering, premiums dep't F.....	2 00
469	Robert Pilgrim, premiums dep't F.....	26 00
470	Warren H. Barber, premiums dep't F.....	16 00
471	Geo. Acker, premiums dep't F.....	55 00

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No.	<i>To whom and for what paid.</i>	<i>Amount.</i>
472	J. J. Ochsner, premiums dep't F.....	\$27 00
473	Mrs. V. Kinney, premiums dep't F.....	5 00
474	Mrs. N. Leonard, premiums dep't F.....	7 00
475	Mrs. J. A. McBride, premiums dep't F.....	12 00
476	Mrs. J. Michelstetter, premiums dep't F.....	2 00
477	Mrs. W. A. Clapp, premiums dep't F.....	2 00
478	Ella Leonard, premiums dep't F.....	20 00
479	Mrs. M. C. Foley, premiums dep't F.....	4 00
480	Mrs. A. P. Stafford, premiums dep't F.....	19 00
481	John Gevaart, 4¼ days team and 1 day labor on track.....	17 25
482	Chas. Liebenthal, blacksmith bill.....	23 25
483	T. R. Fleming, coal for fair.....	23 45
484	Riverside Printing Co., bill rendered.....	1,729 52
485	G. F. Rilling, work on new barns.....	25 60
486	Wis. Marine and Fire Ins. Co. Bank, overdrafts.....	16 25
487	Adler & Mauer, meals for Gov. staff at fair.....	10 00
488	C. G. Wilcox, expenses and advertising.....	125 55
489	Wis. Agr. Co., advertising.....	200 00
490	A. McMath, 83 hours work on new barn.....	12 45
391	M. B. Potter, oats and rye, straw forage dep't.....	94 46
492	C. T. Fisher, rye straw.....	45 15
493	Albert Farres, oat straw.....	46 23
494	J. Scholtka, oat straw.....	37 86
495	Chas. Falk, oat straw.....	14 40
496	Bert McConnell, oat straw.....	37 12
497	Helgeson & Pitcher, feed as per bill.....	146 83
498	Fred Steimmue'ler, feed as per bill.....	56 58
499	T. J. Fleming, bran as per bill sup't forage.....	14 30
500	J. E. Keane, freight charges on boxes to Madison.....	2 20
501	Wauwatosa Stone Co., 6 yds. of screenings, cross walks.....	4 20
502	P. B. Stratton, two days' work.....	3 00
503	E. E. Rogers, rebate on life membership.....	4 00
504	Herold Co., advertising.....	73 15
505	Sentinel Co., advertising.....	85 00
506	Abend Post Printing Co., advertising.....	50 00
507	Ross Kellogg, 2 days 6 hours work.....	3 90
508	Arthur Babbitt, October salary.....	83 33
509	T. J. Fleming, October salary.....	150 00
510	M. R. Doyan, salary 1895.....	100 00
511	Uihlein Bros., balance 4th money No. 11 trot.....	30 00
512	M. R. Doyan, 8 days during fair.....	40 00
513	Theo. Nilson, 2d money in 2:35 pace.....	100 00
514	H. M. Bock, 1st money in 2:26 trot.....	225 00
515	The Journal Co., advertising.....	54 60
516	South Milwaukee Journal, advertising.....	4 00
517	Germania Publishing Co., advertising.....	66 30
518	Milwaukee Daily News, advertising.....	50 00
519	D. W. Howie, coal.....	22 09
520	Hoard's Dairyman, advertising.....	65 50
521	L. H. Gregg, 2½ tons showing kennel show.....	12 50
522	Louis Hennes 3 admittances to grounds L. M.....	1 50
523	Yenowines News, advertising state fair.....	40 00
524	Hoffman & Billings, mdse per bill rendered.....	80 27
525	G. R. Rilling, 10½ days work on barn.....	21 00

No.	To whom and for what paid.	Amount.
526	J. E. Keane, freight charges on cut hay	\$1 65
527	Robert Phillip, work on barn and grounds.....	30 00
528	John Skinner, work on grounds.....	10 00
529	Geo. C. Phillips, work hort. dept	22 00
520	Dobberpuhl & Luebke, premiums dept. E.....	23 00
531	Mrs. C. Williamson, premiums dept E.....	13 00
532	Koelsch Bros., premium dept. E.....	1 00
533	Mrs. L. H. Jansen, premiums dept E.....	12 00
534	Mrs. Wm. Harper, premiums dept E.....	4 00
535	Richard G. Frackleton, premiums dept. E	12 00
536	L. L. Olds, premiums dept. F.....	12 00
537	J. M. Smith, premiums dept. F.....	23 00
538	Fred S. Thompson, premiums dept. F.....	22 00
539	J. M. Wheeler, premiums dept. F.....	3 00
540	Ingersoll Bros., premiums dept. F.....	13 00
541	John Grape, premiums dept. F.....	15 00
542	H. W. J. Tesch, premiums dept. F.....	7 00
543	C. Wynoble, premiums dept. F.....	9 00
544	Robert Wolf, premiums dept. F.....	5 00
545	Wm. Wilson, premiums dept. F.....	13 00
546	Geo. J. Kellogg, premiums dept. F.....	2 00
547	Clement Venn, premiums dept. F, nine.....	9 00
548	Taylor Exhibit Co., premiums dept. F	2 00
549	H. J. Noyes, premiums dept. G.....	35 00
550	F. H. Stresau, premiums dept. G.....	35 00
551	Wm Zwicky, premiums dept G	30 00
552	Lewis Frick, premiums dept G	40 00
553	F. Sette, premiums dept G	30 00
554	H. E. Austin, premium dept G	20 00
555	A. Schoenmann, premiums dept G	20 00
556	E. D. Widder, premiums dept G	20 00
557	Luchsinger & Elmer, premiums dept G	20 00
558	H. Belgrien, premiums dept G.....	30 00
559	Peter Ammon, premiums dept G	20 00
560	A. E. Chivers, premiums dept G	10 00
561	John Fricke, premiums dept G	10 00
562	A. B. Hoyt, premiums dept G	35 00
563	W. C. Dodge, premiums dept G	35 00
564	Mrs. A. B. Hoyt, premiums dept G.....	25 00
565	M. A. Bucklin, premiums dept G.....	20 00
566	Mrs. A. L. Tenney, premiums dept G	15 00
567	John Fricke, premiums dept G	5 00
568	Barker Bros., premiums dept G	20 00
569	Roach & Sieber, premiums dept G	20 00
570	C. Thorp, premiums dept. G	15 00
571	Hobbs Bros., premiums dept G	15 00
572	J. E. Patton, premiums dept G.....	3 00
573	Blair Trading Ass'n, premiums dept G	10 00
574	H. A. Decker, premiums dept G	10 00
575	F. C. Curtis, premiums dept G.....	10 00
576	Mrs. A. L. Tenney, premiums dept G	5 00
577	A. J. Phillips, premiums dept H.....	63 00
578	Jacob Korn, premiums dept H.....	32 00

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No.	To whom and for what paid.	Amount.
579	F. H. Chappel, premiums dep't H.....	\$8 00
580	Geo. J. Kellogg, premiums dep't H.	50 00
581	Geo. Jeffrey, premium dep't H.....	100 00
582	W. E. Killops, premiums dep't H.....	19 00
583	Jos. Zette, premiums dep't H.....	8 00
584	Mary E. Warren, premiums dep't H.....	2 00
585	Otto Pietsch, premiums dep't H.....	5 00
586	John G. Stein, premiums dep't H.....	10 00
587	Currie Bros, premiums dep't H.....	80 00
588	J. M. Dunlop, premiums dep't H.....	46 00
589	Wm. Toole, premiums dep't H.....	5 00
590	Mrs. C. H. Root, premiums dep't H.....	46 00
591	Mrs. W. A. Clapp, premiums dep't H.....	7 00
592	Mrs. J. G. Kestol, premiums dep't H.....	7 00
593	John Grape, premiums dep't H.....	50
594	Mrs. P. Jeske, premiums dep't H.....	18 00
595	G. W. Ringrose, premiums dep't H.....	5 00
596	Mrs. Orris Pratt, premiums dep't L.....	88 00
597	Bessie C. Mann, premiums dep't L.....	27 00
598	Mrs. L. M. Buell, premiums dep't L.....	48 00
599	Carl Reimann, premiums dep't L.....	69 00
600	Mrs. A. B. Chamberlain, premiums dep't L.....	32 00
601	Cornelia Salentine, premiums dep't L.....	10 00
602	Mrs. A. E. Pierce, premiums dep't L.....	27 00
603	Mrs. J. C. Lloyd, premiums dep't L.....	9 00
604	Anna A. Helberg, premiums dep't L.....	12 00
605	George Niedecken, premiums dep't L.....	10 00
606	Gertrude Paige, premiums dep't L.....	39 00
607	Miss M. Patitz, premiums dep't L.....	25 00
608	Mrs. R. R. Coon, Jr., premiums dep't L.....	4 00
609	Mrs. W. A. Clapp, premiums dep't L.....	3 00
610	Mrs. P. O'Carroll, premiums dep't L.....	2 00
611	Miss E. Kehler, premiums dep't L.....	46 00
612	Taplin & Kroes, premiums dept L.....	14 00
613	Mrs. L. J. Gray, premiums dep't L.....	33 00
614	Miss A. O'Keefe, premiums dep't L.....	2 00
615	H. P. West, premiums dep't L.....	5 00
616	Pierce Co. Agr. Soc, premiums dep't L.....	3 00
617	C. Hennecke Co., premlums dep't L.....	10 00
618	Sig Ornstine, premiums dep't L.....	3 00
619	Mrs. G. E. Talbert, premiums dep't L.....	20 00
620	Mrs. H. Schneider, premiums dep't L.....	2 50
621	Hattie Hess, premiums dep't L.....	18 00
622	Mrs. P. Opperman, premiums dep't L.....	7 00
623	Mrs. L. Fuermann, premiums dep't L.....	2 00
624	Mrs. J. G. Kestol, premiums dep't L.....	19 00
625	Mrs. H. Mason, premiums dep't L.....	6 00
626	Miss Emma Ritter, premiums dep't L.....	3 00
627	M. Chttenden, premiums dep't L.....	9 09
628	G. C. Hill & Son, premiums dep't B.....	9 00
629	Mrs. C. Bierwald, premiums dep't L.....	15 00
630	Hattie Haskins, premiums dep't L.....	17 00
631	Nellie Manchester, premiums dep't L.....	27 00

<i>No.</i>	<i>To whom and for what paid.</i>	<i>Amount.</i>
632	Mrs. A. Kingsley, premiums dept' L	\$13 00
633	Mrs. H. G. Tuttle, premiums dept' L	5 00
634	Florence A. White, premiums dept' L	7 00
635	Mrs. E. Askew, premiums dept' L	2 00
636	Mrs. E. B. Stebbins, premiums dept' L	2 00
637	Mrs. Hillmantel, premiums dept' L	1 00
638	Anna C. Brady, premiums dept' L	15 00
639	Ella Leonard, premiums dept' L	2 00
640	Mrs. John Nicholson, premiums dept' L	28 00
641	Mrs. L. Penwarden, premiums dept' L	5 00
642	Mrs. J. Thomas, premiums dept' L	2 00
643	Mrs Geo. Jeffry, premiums dept' L	13 00
644	Mrs. A. L. Tenny, premiums dept' L	7 00
645	Mrs. J. Manchester, premiums dept' L	5 00
646	Mrs. J. H. Hanson, premiums dept' L	20 00
647	Miss Jessie B. Bryden, premiums dept' L	2 00
648	Mrs. John Hannon, premiums dept' L	4 00
649	Mrs. H. Holton, premiums dept' L	2 00
650	H. W. J. Tesch, premiums dept' L	1 00
651	Mrs. F. Mosher, premiums dept' L	4 00
652	Mrs. M. Nelson, premiums dept' L	3 00
653	Mary E. Warren, premiums dept' L	9 00
654	Mrs. Wm. Sweeney, premiums dept' L	2 00
655	Mrs. J. W. Stocher, premiums dept' L	2 00
656	Mrs. H. M. Beacroft, premiums dept' L	7 00
657	Mrs T. P. Leonard, premiums dept' L	1 00
658	Geo. H. Wilcox, ticket seller	12 00
659	Molly Hyland, work in the office	11 62
660	Emma Hyland, work in the office	16 60
661	Stanley B. Parkinson, work in the office and ticket seller	32 00
662	Lee Parkinson, ticket seller	12 00
663	Mrs. J. A. McBride, premiums dept' L	2 00
664	Arthur Babbitt, rebate money advanced to D. Atwood, office work	4 50
665	Mrs. V. Kinney, premiums dept' L	4 00
666	Geo. Harding & Son, premiums, dept. A	15 00
667	Geo. G. Brew, premiums, dept. A	10 00
668	Miss Rhode, premiums, dept L	4 00
669	Nora Bell, premiums, dept. L	2 00
670	Mrs. H. E. Lunde, premiums, dept. L	6 00
671	Mary Love Putney, premiums, dept. L	14 00
672	Pearl H. Campbell premiums, dept L	17 00
673	Eunice M. True, premiums, dept. L	2 00
674	Miss Helen Kinney, premiums, dept. L	1 00
675	Chas. F. Netzow, premiums, dept. L	10 00
676	Miss M. Hayden, premiums, dept. L	1 00
677	E. J. Kempf, bill posting, Sheboygon Co	12 00
678	F. W. Payne, bill posting. Monroe	3 84
679	Wm. Millhaupt, bill posting, N. Holstein	3 00
680	G. Haugen bill posting, Orfordville	3 00
681	F. W. Learned, bill posting, Saukville	1 92
682	Henry W. Schreck, bill posting, Pt. Washington and near towns	8 28
683	Chas. E. Ranger, bill posting, Columbus	1 08
684	Alfred Dunbar, bill posting. Sparta	1 44
685	Barton Hall, bill posting, Allen's Grove	1 00

TREASURER'S REPORT.

No.	To whom and for what paid.	Amount.
686	Byron Button, bill posting, Elkhorn	\$2 88
687	Howard R. Bulger, bill posting, Necedah.	2 00
688	C. J. Courtney, bill posting, Sun Prairie.	1 50
689	T. Cordingley, bill posting, Platteville	1 42
690	J. S. Campbell, bill posting, Clinton	1 50
691	P. H. Cole, bill posting, Milton Jct.	50
692	Jacob Dietrich; bill posting, Cedarburg	3 75
693	Frank Freeman, bill posting, Lima Center	50
694	Henry Gille, bill posting, Gratiot	2 00
695	D. A. Kingsley, bill posting, Fox Lake	1 44
696	Wm. Lanning, bill posting, Stoughton	2 16
697	Willson Bros., bill posting, Edgerton	1 50
698	S. J. Nelson, bill posting, Rhinelander	72
699	R. A. Richards, bill posting, Tomah.	1 44
700	L. E. Richards, bill posting, Delavan	1 44
701	W. C. Tiede, bill posting, Racine.	3 65
702	Morris Smith, bill posting, Darlington.	72
703	George Brezee, rent of typewriter.	2 50
704	Albert Olson, pig on judge	5 00
705	Thomas Thomas, delegate Iowa Co	16 10
706	Geo. Garvens, rebate on stall rent.	3 00
707	Miss M. Hayden, premiums dep't L.	5 00
708	Mrs. Wm. Swaen-y, premiums dep't L.	2 00
709	C. Wynobie, premiums dep't F	2 00
710	J. H. Pitcher, on premiums dep't C	2 00
711	E. W. Weaver, on premiums dep't C.	2 50
712	Martha Pal tz, premiums dep't L	2 00
713	Mrs. A. LeFeber, premiums dep't F	1 00
714	Miss Hattie Hess, premiums dep't L.	3 00
715	John Hans, premiums dep't L.	2 00
716	Frank Whitehead, premiums dep't A.	2 00
717	C. W. Rowe, premiums dep't D	5 00
718	Mrs. L. M. Buell, premiums dep't L.	5 00
719	Void.	
720	Ira J. Hiller, premiums dep't C.	42 00
721	J. H. Pilgrim, premiums dep't F	11 00
722	J. R. Brabazon, Jr., premiums dep't E.	5 00
723	Richmond Lith. Co., foot ball cards advertising.	25 00
724	Jesse R. Sharp, delegate Chippewa Co. Agr. Soc.	18 00
725	F. R. Dittmar, delegate Seymour Fair & D. P. Assn.	17 10
726	J. E. Gleason, delegate Rock Co. Agr. Soc	10 20
727	F. H. Scribner, premiums dep't B.	18 00
728	Mrs. Isaac Sharp, premiums dep't L	4 00
729	J. W. Martin, premiums dep't B	31 00
730	T. L. Kelly & Co., ribbon.	10 90
731	Vcid.	
732	M. Thierbach & Co., making press badges.	5 05
733	R. B. Ogilvie, judge in d. p't B.	25 00
734	James Morgan & Co., per bill rendered.	63 90

PROCEEDINGS.

ANNUAL MEETING.

Milwaukee, Wis., Sept. 20, 1894.

Pres. Hubbard in the chair. Minutes of last meeting read and approved.

On motion of Col. E. W. Keyes the secretary was instructed to cast the vote of the Society for S. D. Hubbard for president for the coming year. Ballot so cast, and Mr. Hubbard was declared elected.

On motion of Mr. Arnold the Society proceeded to the further election of officers.

Chair was instructed to rule that voting by proxy will be considered irregular.

Proceeded to an informal ballot for secretary, with the following result:

Whole number of ballots—258.

Necessary to election—130.

H. C. Adams received 65; John W. Ganes received 63; T. J. Fleming received 108; E. B. Heimstreet received 5; John M. True received 17.

Mr. True declined to be considered a candidate for election.

On third formal ballot T. J. Fleming received a majority of ballots cast, and was declared elected.

On motion of A. A. Arnold a vote of thanks was tendered to the retiring secretary for past services.

On motion of Mr. Hansen the secretary was instructed to cast the vote of the society for M. R. Doyon for treasurer for the coming year.

Ballot cast and Mr. Doyon declared elected.

Vote of thanks extended to the retiring treasurer, Mr. Miner.

On motion, life members and representative delegates for the several congressional districts of the state were requested to nominate vice presidents for their respective districts, and a committee composed of E. W. Keyes, H. A. Briggs, Arthur Babbitt, T. L. Newton and John M. True were named by the president to report a list of additional members of executive board for the coming year.

The following named gentlemen were reported from the several congressional districts as vice presidents:

- 1st District—N. D. Fratt, Racine.
- 2d District—T. L. Newton, Beaver Dam.
- 3d District—John M. True, Baraboo.
- 4th District—M. J. Haisler, Milwaukee.
- 5th District—Geo. McKerrow, Sussex.
- 6th District—C. E. Angell, Oshkosh.
- 7th District—A. A. Arnold, Galesville.
- 8th District—C. G. Wilcox, De Pere.
- 9th District—F. M. Stephenson, Marinette.
- 10th District—Geo. Martin, Hudson.

And the several gentlemen were duly elected.

The committee to report a list of additional members named the following gentlemen:

- H. C. Adams, Madison.
- E. B. Heimstreet, Janesville.
- J. E. Hansen, Milwaukee.
- Geo. Wylie, Leeds.
- Ralph C. Vernon, Madison.
- Geo. C. Cox, Mineral Point.
- C. A. Youmanns, Neillsville.
- C. M. Clark, Whitewater.
- T. M. Blackstock, Sheboygan.
- G. T. Hodges, Monroe.

The report of the committee was accepted and the gentlemen named duly elected.

JOHN M. TRUE,
Secretary.

ANNUAL MEETING.

Madison, Dec. 5, 1894.

Meeting called to order by the president. Quorum present.

On motion of True, Messrs. Favell, Cox and Haisler were appointed auditing committee.

Recess.

Committee submitted the following report:

Your committee have examined the stubs and vouchers of the secretary's warrant account, in connection with the paid warrants returned, and find them to correspond so far as such warrants have been returned by the treasurer, but in the absence of that officer and on account of certain matters not being fully explained by his statement rendered, we think it best not to attempt to report definite statements and balances with reference to present financial standings.

S. FAVILL.

G. C. COX.

M. J. HAISLER.

Report accepted. Committee continued with request to complete their investigations at a meeting Dec. 31st and to report at February meeting.

Resolution by Mr. Wilcox: That article five of the constitution be amended so as to read as follows:

"The annual meeting of the Society for the transaction of general business shall be held in its rooms at Madison on the first Tuesday in January, at nine o'clock a. m. in each year, and ten days' notice thereof shall be given by the secretary in one or more papers printed in the cities of Madison and

Milwaukee. And the fiscal year shall hereafter correspond with the calendar year, and further, that all parts of the constitution conflicting with this amendment be also amended to agree with the same."

Laid over under the rules.

Committee on legislation appointed—Messrs. Hubbard, Fleming and True.

Adjournment.

JOHN M. TRUE,
Secretary.

AGRICULTURAL ROOMS, MADISON, WIS.,

Feb. 4th, 1895, 8 P. M.

Meeting called to order by Pres. S. D. Hubbard.

Minutes of last meeting read and approved.

The report of H. D. McKinney, superintendent of speed department, for 1894 was read by the secretary and on motion of C. G. Wilcox was referred to a committee of three to be appointed by the president.

The president appointed as such committee C. G. Wilcox, C. E. Angell and G. C. Cox, and instructed the committee so appointed to report Feb. 5th, 1895.

Superintendents' reports were read by A. A. Arnold, C. M. Clark, Geo. Wylie, C. G. Wilcox, Geo. Martin and T. L. Newton. The report of H. C. Adams was read by the secretary.

Recess.

T. J. FLEMING,
Secretary.

AGRICULTURAL ROOMS, MADISON, WIS.,

Feb. 5th, 1895, 9:30 A. M.

Meeting called to order by President S. D. Hubbard.

Reports of Superintendents Peffer and Loomis read.

On motion of J. M. True it was decided to let such of the superintendents of departments who had not read their reports, file them with the secretary of the society.

The auditing committee composed of Stephen Faville, G. C. Cox and M. J. Haisler, made the following report which was adopted by the society:

To the Executive Board of the State Agricultural Society.

Gentlemen—Your auditing committee beg leave to make the following supplemental report:

At our adjourned meeting of Dec. 31st we examined the account of Treasurer Miner and found the amount of unpaid warrants as given by his report to be \$863.15, which amount was left in his hands.

Since that time warrant No. 671, issued to H. D. McKinney for \$125.00, was found to have been omitted. The Wisconsin Marine and Fire Insurance Co. Bank paid this warrant, which is still unpaid to the Wisconsin Marine and Fire Insurance Co. Bank for want of funds in the hands of Treasurer Miner.

Your committee would recommend that Secretary Fleming be instructed to draw a warrant on the present treasurer for \$125.00 payable to the order of the Wisconsin Marine and Fire Insurance Co. Bank to pay the said warrant, and that the warrant drawn by Secretary True be the present secretary's voucher for the same.

Your committee would further recommend that all moneys received in the several departments be paid to the secretary, who shall give his receipt for the same and be paid by the secretary of the society to the treasurer of the society; that no disbursements be made other than by warrant issued by the secretary on the treasurer.

Your committee would further recommend that the secretary furnish the treasurer with a statement showing the source from which all moneys paid to said treasurer by said secretary came, and that the said treasurer be instructed to

open an account with each department showing the amount received from the same, also the treasurer shall furnish a statement showing amount received from gates and amphitheater in separate amounts at our annual meeting.

STEPHEN FAVILLE,
G. C. COX,
M. J. HAISLER.

Superintendents were elected by ballot for the different departments as follows:

Horses—John M. True.

Speed—C. G. Wilcox.

Cattle—A. A. Arnold.

Sheep—C. M. Clark.

Swine—Geo. Wylie.

Poultry—C. E. Angell.

Agriculture—Geo. Martin.

Dairy—G. T. Hodges.

Fruits and Flowers—Geo. H. McKerrow.

Machinery—T. L. Newton.

Manufactures—J. E. Hansen.

Fine Arts and Woman's Work—E. B. Heimstreet.

Marshal—Ralph C. Vernon.

Gates—M. J. Haisler.

Forage—C. T. Fisher.

Transportation—G. C. Cox.

On motion it was decided to consolidate the fine arts and the woman's work departments into one department under one superintendent.

On motion of T. L. Newton the president, secretary, and treasurer were allowed the privilege of filling any vacancy that might occur among the superintendents of the different departments.

On motion of H. C. Adams it was decided to move the dwelling house on the fair grounds to the location of the present

secretary's office and that the present officers shall determine the use of the building when moved.

The following resolution introduced by J. M. True was adopted:

Resolved, That the division of the premium list and the appointment of judges be left to the president and secretary and the superintendents of the respective departments and that the names of the judges be published in the premium list and that the rules adopted last year barring all protests of judges' action be continued for the coming year.

Recess.

T. J. FLEMING,
Secretary.

AGRICULTURAL ROOMS, MADISON, WIS.,

Feb. 5th, 1895, 2 P. M.

Meeting called to order by Pres. S. D. Hubbard.

On motion of J. M. True the recommendations of the Eastern and Western Fair Managers' Association were adopted except that stall rents were fixed as follows: For horses \$1.00 to \$3.00, for cattle \$1.00, for sheep and swine pens \$.50, and that all exhibitors in stock departments be furnished with an exhibitor's ticket free of charge.

On motion of M. J. Haisler it was decided that upon the payment of \$100.00 Mr. Philips be released from his advertising contract.

On motion of John M. True the superintendent of forage was instructed to buy forage at the best possible rate and to sell it to the exhibitors at cost.

On motion of John M. True it was decided to give third prizes in all live stock departments.

On motion, the date recommended by the Eastern and Western Fair Managers' Association, viz., Sept. 16th to 21st, for holding the Wisconsin State Fair of 1895 was adopted.

On motion it was decided to give ribbons in all case where a breeders' association gave a special prize to the amount of \$25.00 or more.

On motion of J. M. True the following resolution was adopted:

Resolved, That the executive officers be instructed to grade a $\frac{1}{4}$ mile track for exhibiting of cattle and ring horses, such track to be in field in front of cattle and horse barns."

The following rules were offered by A. A. Arnold and were adopted by the society:

1. There shall be a display of horses and cattle each day of the fair except the first.

2. No animal shall be allowed to compete for premiums unless they are led out when directed by the superintendent of their respective department unless excused.

3. The president shall name an hour in each day when the stock shall be exhibited and the secretary shall advertise the same before and on each day of the fair.

The following resolution introduced by Geo. Martin was adopted:

Resolved, That red polled cattle to be eligible to entry for competition must be registered in the English Herd Book or the American Herd Book, issued under the incorporation of the Red Polled Cattle Club of America now in operation."

On motion of T. L. Newton the following resolution was adopted:

Resolved, That superintendents of departments shall receive \$5.00 for each day's service from the time they report for duty at the fair grounds by order of the secretary, until the close of the fair, together with railroad fare to and from their residence to Milwaukee, and one assistant superintendent for each department shall receive \$3.50 for each day's service during fair week, together with railroad fare to and from Milwaukee; provided, however, that in the Fine Arts and Woman's Department and in the Marshal's Department there shall be two

assistant superintendents with the same pay and railroad fare as in the other departments. Board members shall be entitled to their railroad fare to and from the place where the board meeting is held, also to his hotel bill during the time that he is in attendance at a board meeting."

On motion it was decided that the president and secretary in conjunction with the superintendent of speed prepare the speed program.

On motion of M. J. Haisler the auditing committee were discharged.

On motion of Ralph C. Vernon, Arthur Babbitt was made the assistant secretary of the society at an annual salary of \$1,000.00.

The committee to whom was referred Mr. McKinney's report, reported that they were unable to make anything out of it.

On motion of T. L. Newton it was decided that Mr. McKinney make a further report to Mr. Wilcox.

On motion of T. L. Newton it was decided to leave the matter of the termination of the present State Park lease and also the matter of re-releasing the grounds to the discretion of the president and secretary.

On motion of Ralph C. Vernon it was decided that all superintendents' reports be filed with the secretary 10 days before the annual board meeting and that all such statements contain an itemized account of the expense of the respective department.

Adjourned.

T. J. FLEMING,
Secretary.

PFISTER HOTEL, MILWAUKEE, WIS.,

Sept. 16th, 1895.

Meeting called to order by Pres. Hubbard.

Mr. A. A. Arnold introduced the following resolution:

Resolved, That if any officer or officers of this society has undertaken to make a contract or contracts permitting the sale of beer on the State Fair Grounds during the State Fair, he was never instructed to make the same.

Resolved, That any and all contracts for the sale of beer on the Fair Grounds at the Fair and during the progress of the Fair, are hereby ignored and declared to be without authority from the executive board and that the society is in no way responsible for the same.

Motion by H. C. Adams of indefinite postponement of resolution seconded by Mr. Wilcox. Indefinite postponement carried.

Adjourned.

LINCOLN HALL, MILWAUKEE, WIS.,
Sept. 19th, 1895, 8 P. M.

Meeting called to order by Pres. S. D. Hubbard.

On motion of H. C. Adams the calling of the roll was omitted.

On motion of E. W. Keyes it was decided that in case there be but one candidate in connection for the office of president, that the secretary cast the vote of the society for S. D. Hubbard.

The secretary cast the vote of the society for S. D. Hubbard as president thereof.

The following motion was introduced by Mr. Bass:

"I move that we proceed to a ballot for secretary. I move that the president appoint eight tellers who shall stand in the aisles and that the secretary shall call the letters of the alphabet; first the letter A and all members whose names begin with A shall stand until the tellers take their votes and that then the letter B shall be called and that we proceed to elect in that way."

Above motion carried.

T. J. Fleming and C. H. Everett put in nomination.

Result of the ballot was as follows:

Total number of votes cast, 404; J. M. True received 1; C. H. Everett received 73; T. J. Fleming received 330.

T. J. Fleming declared elected secretary of the society.

On motion the secretary was instructed to cast the vote of the society for M. R. Doyon as treasurer of the society.

Secretary cast the vote of the society for M. R. Doyon as treasurer thereof.

Mr. Arnold—With the permission of the chair I will present the following resolutions:

A resolution amending article 5 of the constitution of the Wisconsin State Agricultural Society:

Resolved, That the election of the officers of president, secretary and treasurer shall be by ballot. Said election shall be held each year during and at the general exhibition at and on the State Fair Grounds, in the southeast quarter of section 33, town of Wauwatosa, Milwaukee county, Wisconsin. The executive board shall appoint three judges and two ballot clerks to act as judges and clerks of the election.

The executive board shall cause a suitable booth to be erected on the State Fair Grounds, with bulletin boards, upon which there shall be placed the name of each candidate, with the office for which each candidate is nominated. The name of each candidate shall be presented to the secretary in writing at least two days before the polls shall be open, and the secretary shall post on the bulletin boards at least one day before the opening of the polls, the names of the candidates, their residence, and the office for which each candidate is nominated. The polls shall be open at ten o'clock a. m. and closed at five o'clock p. m. on the day selected by the secretary as election day. The day of the election shall be notified by the secretary in the official lists of premiums and in all the legal premiums of the exhibition. The vice presidents and seven additional members shall be elected each year during and at the general

exhibition, and the exact time and place of the election shall be notified by the secretary in the official lists of the premiums, and in all the general premiums of the exhibition.

On motion of S. Henderson the following resolution was introduced as a substitute and adopted:

Resolved, That it is the sense of this meeting that the constitution of the society be so amended as that the three principal officers (president, secretary and treasurer) be elected by ballot, a box being open on Thursday of the State Fair and kept open from 10 a. m. until 4 p. m., and that the president of the society shall name five men (members of the society) as a board of canvassers and that they shall declare the result of the election as soon as the votes are counted, the said officers to qualify as now on the first of January following."

Vice presidents and additional members were elected as follows:

Vice presidents—N. D. Fratt, Racine; A. F. Noyes, Beaver Dam; G. C. Cox, Mineral Point; G. G. Pabst, Milwaukee; Geo. McKerrow, Sussex; C. E. Angell, Oshkosh; A. J. Phillips, West Salem; C. G. Wilcox, De Pere; W. A. Brown, Marinette; Geo. Martin, Hudson.

Additional members—C. M. Clark, Whitewater; E. B. Heimstreet, Janesville; H. C. Adams, Madison; W. A. Jones, Mineral Point; John F. Burnham, Milwaukee; A. L. Vannaman, Milwaukee; Eugene M. Anderson, Hartland; C. L. Hill, Rosendale; Geo. Wylie, Leeds; G. T. Hodges, Monroe.

CLUB ROOM, PFISTER HOTEL, MILWAUKEE,

Sept. 20th, 1895, 8 P. M.

Meeting called to order by Pres. S. D. Hubbard.

On motion a committee of five, consisting of C. M. Cottrell, Jas. Morgan, T. L. Kelly, and the president and secretary of the society, were appointed to call upon the county board of Milwaukee county and urge the passage of the resolution now

pending before that body for the purpose of issuing bonds for the building of a viaduct across Menomonee valley.

On motion of Geo. H. McKerrow the secretary was instructed that in the case of Metcalf Bros. that if said Metcalf Bros. present American certificate for sheep shown at fair of 1895 the premiums awarded will be paid, provided the same are furnished by Dec. 1st, and in case they were not furnished the premiums were to be withheld and given to the next highest in award.

On motion of M. R. Doyon it was decided that all premiums be paid as judged.

Adjourned.

AGRICULTURAL ROOMS, MADISON, WIS.,

Dec. 3d, 1895, 7:45 P. M.

Meeting called to order by Pres. Hubbard.

Minutes of last meeting read and approved.

On motion of M. R. Doyon a committee of three were appointed to compare the vouchers of the secretary and treasurer.

President appointed as such committee: N. D. Fratt, G. T. Hodges and George Martin.

Adjourned to 9:30 a. m., Dec. 4th, 1895.

To the Executive Board of the Wis. State Agricultural Society:—

Your secretary begs leave to make the following report:

Since January 1st, 1895, I have issued seven hundred and thirty-six (736) orders or checks on the treasury amounting to \$39,346.22, one of which being a duplicate for \$42.00, making an actual draft upon the treasury of 39,304.22. I hold receipt through bank book for \$43,361.57 with approximately \$1,500 yet to be received from reliable sources.

T. J. FLEMING,

Secretary.

AGRICULTURAL ROOMS, MADISON, WIS.,

Dec. 4th, 1895, 9:30 a. m.

Meeting called to order by Pres. S. D. Hubbard.

The committee appointed by the president last evening made the following report:

“Your committee appointed to settle with the treasurer and secretary begs leave to report

Total receipts of the year to be.....	\$43,361 57	
Warrants paid by treasurer.....		\$39,123 22
Warrants drawn but not presented for payment. .		233 60
Balance on hand.....		<u>\$4,238 35</u>

N. D. FRATT,
GEORGE MARTIN,
G. T. HODGES.

On motion the above report was adopted.

On motion of M. R. Doyon a committee of three was appointed to recommend a change of by-laws to be presented at the February meeting.

The President appointed as such committee H. C. Adams, N. D. Fratt and George Martin.

The following communication was read from the governor.

Executive Chamber, Madison, Wis., Dec. 4, 1895.

S. D. Hubbard, Esq.,

President State Agricultural Society, City.

Dear Sir:—Your Society now being in session, I desire to present for your consideration the feasibility of your vacating

the room occupied as a place of exhibition of seeds. The business of the state has increased to such a degree that some of the officers who should have places on this floor are compelled to occupy rooms up stairs, which makes it inconvenient for them to attend to their business and for the people who desire to see them.

If in your judgment it will not interfere with the efficiency and operation of the business needs of your Society, I wish that the room occupied by this exhibit might be turned over to the superintendent of public property for occupancy by some appointee of the state.

Any expense in removing seeds or placing them where you desire will be borne by the state.

Respectfully yours,

W. H. UPHAM.

On motion of A. L. Vannaman the above communication was placed on file and the secretary instructed to make reply as follows:

HON. W. H. UPHAM,

Governor of the State of Wisconsin.

Dear Sir:—Acting under the direction of the State Agricultural Society, permit to say in reply to your communication requesting for the use of the state the room now occupied by the State Agricultural Society and containing a seed exhibit, that the State Agricultural Society occupies rooms assigned to it by a joint resolution passed by the legislature in 1866. It is the intention of the society to remove the seed exhibit as the room is needed for the purpose of agricultural meetings. It has always been customary to grant the use of our room for the use of legislative committees and for other public purposes whenever requested by the executive department, but to give them up entirely would interfere seriously with our winter meetings, at which time the room which we already have is entirely insufficient.

Whatever we can properly do to accommodate the state will be promptly done, but we hardly feel warranted in giving up rooms which are needed in the society work and which were granted to us by a special legislative act.

Respectfully yours,

T. J. FLEMING,

Secretary.

W. A. Brown introduced the following motion which was passed by the society:

"I move that the secretary be instructed to remove the grain exhibit to some suitable building on the fair grounds where it may be properly stored and exhibited."

On motion a committee of three, one member of which was to be the president, was appointed by the president to report a revision of the constitution at the next annual meeting.

The president appointed as the other two members of such committee N. D. Fratt and T. J. Fleming.

On motion of A. L. Vannaman the following proposed amendment to the constitution was introduced:

To amend article No. 5 of the constitution which reads as follows: "The election of officers of the society shall be held each year during and at the general exhibition, and the exact time and place of the election shall be specified by the secretary in the official list of premiums, and in all the general programs of the exhibition," so that when amended it shall read as follows: The election of the officers of the society shall be held biennially and at the general exhibition and the exact time and place and manner of the election shall be signified by the secretary in the official list of premiums."

Adjournment.

REPORTS OF SUPERINTENDENTS.

SPEED DEPARTMENT.

To the Executive Board of Wisconsin State Agricultural Society.

Gentlemen—The speed department of 1895 was a success far beyond my expectations in view of the fact that it has been an off year, perhaps the worst ever known among horsemen and track associations. The speed department is conceded to be the most difficult department of the fair and it was with some misgiving and reluctance that I accepted the superintendency.

Early in the year all indications pointed to a successful season but after the June and July meetings horsemen became discouraged and shipped their stables home, throwing their horse out of training. Then there immediately sprung up sharp competition among track managers all over the country to secure entries. (I saw no less than twelve secretaries or superintendents of speed at one race meeting.) In consequence all sorts of inducements were held out and promises made, resulting of course in financial loss to either track associations or horsemen and in many instances to both, thousands of horses were suspended and many of the oldest and strongest associations in this country became bankrupt. In conjunction with Fond du Lac, Oshkosh and Green Bay a circuit was formed. The latter part of February we opened 12 stakes to close April 1st. (Fond du Lac afterwards drew out and held no meeting.) None of the stakes filled. I therefore reopened 12 more to close June 1st, 5 of these filled. To this

I added 7 class races and 2 specials; the total amount of money hung up was \$10,400; of this \$3,000 was for the special race between the pacing kings, John R. Gentry and Joe Patchen. I believe this was a good investment as the grand stand receipts that day were several hundred dollars more than ever before. Perhaps I might add that the grand stand receipts for the four days will far more than pay the entire net cost of the 12 class and stake races. The grand stand Wednesday and Thursday was a sight never to be forgotten, packed from end to end, overflowing on to the spacious cement walk and paddock. The most experienced and oldest patrons of racing meetings say that they never saw such a sight before, certainly no such crowd of people ever attended a race meeting or fair in Wisconsin as assembled at the state fair during that week. The meeting opened auspiciously Tuesday. Sixteen heats were trotted and paced to decide three events while there was always a good field of horses. There was prompt starting and no collisions; Providence favored the entire meeting. There was 55 heats trotted and paced. The best time made in a stake race was 2.16 $\frac{1}{4}$; class race, 2.09 $\frac{3}{4}$; special, 2.05 $\frac{1}{4}$. The average time of stake and class races was 2.18 $\frac{1}{2}$ of special 2.06. The net cost to the society of the 12 races, exclusive of the special, was about \$2,300. There was about \$800 worth of suspensions from which we should receive something, at the lowest estimate enough to reduce the amount below \$2,000. A tabulated statement of receipts, suspensions and payments in each race was filed with the secretary Oct. 10th. Every winner was paid on the grounds (save 3 who were not present). I believe all of the horsemen and visitors went away satisfied, which simply confirms my belief that there is but one way to conduct a satisfactory and harmonious race meeting, namely, to apply the rules in every instance regardless of whose interests are concerned. This satisfies the public and is all any genuine horseman asks. In conclusion I will say, that owing to the bad year the work and expense of advertising has been

greater than usual and the showing not as good as I would like to have made, yet in adverse conditions prominent horsemen and representations of turf papers concede ours to have been the most successful and harmonious race meeting held during the season of 1895. This gratifying result is due more to a kind Providence, a generous public and the hearty support of the press and the offices of this association than to any efforts of mine.

I desire to extend thanks to all of them, including the horsemen, for the uniform courtesy and consideration that I met with everywhere.

Respectfully submitted,

C. G. WILCOX,
Superintendent Speed.

HORSES.

To the Executive Board of Wisconsin State Agricultural Society.

Gentlemen—The depressed condition of horse interests throughout the country was manifested at the fairs of 1895, by a general failure of importers and breeders to exhibit. As a result the show of horses at our state fair was one of the smallest within the recollection of your superintendent. And it is also to be admitted that in many instances the animals presented were not of the best quality.

Excellent exhibits of animals in their respective classes were made by R. B. Ogilvie of Madison, Hadden, Scott and Monatt of Janesville, Uihlein Bros. of Milwaukee, and Jacob Heyl also of Milwaukee. Judging in all classes was very satisfactorily done by Mr. Alex. Galbraith of Janesville.

For the benefit of his successor your superintendent would respectfully urge the grading of the one-fourth mile track in front of horse barn, contemplated in the past, and absolutely

necessary to the proper showing of ring horses, also that some booth or shelter be provided to shield the superintendent and clerk from sun and storm while stock is being shown.

The arrangement of premium list seemed to give complete satisfaction to exhibitors, except possibly an objection to classifying Cleveland Bays and Hackneys together, an objection that is doubtless well founded, there being little in common between these two families of coach horses.

Respectfully submitted,
JOHN M. TRUE,
Superintendent Horse Department.

CATTLE.

To the Executive Board of Wisconsin State Agricultural Society.

Gentlemen—As superintendent of department "B" cattle for the state fair of 1895 I desire to say, that so far as I know everything passed off satisfactorily to the exhibitors. The exhibition was better than usual at state fairs. We had 327 head on exhibition. There was strong competition in the favorite breeds, and the animal that got the white ribbon was often so nearly equal to the red or blue that good judges might have placed them differently. As I shall probably never be in charge of this department again, I desire to thank the exhibitors for their uniform courtesy to me as the superintendent of this department for 14 years and trust they will observe the same manly characteristics with future superintendents.

Very truly yours,

ALEX A. ARNOLD.

SHEEP.

To the Executive Board of Wisconsin State Agricultural Society.

Gentlemen—The display in department C (sheep) was excellent, in quality I think exceeded all its predecessors; nearly all the improved breeds were represented. In class of merinoes the exhibitors were: D. B. Jones of Weiner, 14 head; J. H. Pitcher of Eagle, 15; Mr. Benedict, 25; total, 54. Geo. Allen of Allerton, Ill., showed 58 Shropshiers, 8 Oxfords, 9 South Downs; Geo. McKerrow of Sussex, Wis., 26 Oxfords, 20 South Downs; J. J. Miller, Four Towns, Mich., 15 Hampshire Downs, 6 Leicesters, 3 Lincolns; Geo. Harding, Waukesha, 36 Cotswolds, 11 Lincolns. G. H. Davidson of Millbrook, N. Y., showed some very superior Shropshires. Horn Dorsets were shown by Metcalf Brothers of New York, and F. H. Meekin of Fond du Lac, Wis.

Some new features adopted for the management of the department, namely, making entries and securing pens, through the secretary, and judging (with suitable pen arrangements) in the open space front of barns, proved very satisfactory. I recommend a continuance of the same.

Respectfully submitted,

C. M. CLARK,
Superintendent.

SWINE.

To the Executive Board of Wisconsin State Agricultural Society.

Gentlemen—The swine exhibit for the year 1895 occupied seven barns, and for quality and numbers exceeded any show of swine ever made in Wisconsin. Mr. J. E. Countryman of Lindenwood, Ill., assisted at times by Chas. Lawrence of Dan-

ville, Wis., made the awards, I will not say with universal satisfaction, but as near that as can be expected until human nature changes, or the millenium dawns. I wish to call the attention of the board to the advisability of inaugurating some system of veterinary inspection in this department. Stock is now brought to our fair from many different localities, in many cases to be sold and again sent into other sections. It will readily be seen that none but animals in the best of health should be allowed on the grounds.

Exhibitors from other states complimented the management of our fair as furnishing exhibitors with the finest premium ribbons of any state fair in the union. The offering of a third prize was also commended by all as being a step in the right direction. I would recommend separate classes for Chester whites and Jersey reds, as at present they are classed together, and being somewhat different in character unsatisfactory work is made in placing the awards.

Respectfully submitted,
GEO. WYLIE,
Superintendent Swine Department.

POULTRY.

The exhibit of poultry at the state fair of 1895 taxed the capacity of the department to its utmost and attracted a liberal amount of attention, in fact the narrow passages were wholly inadequate to accommodate visitors without inconveniencing exhibitors. All the prominent breeders and fanciers in the state were represented, as were also several large yards from neighboring states, in which connection the exhibits of S. E. Wurst, Elyria, Ohio, who had 130 entries, deserves special mention.

J. R. Brabazon, Jr., Delavan, Wis., and E. G. Roberts of Ft. Atkinson also had 130 entries each, which included the entire

classification of fowls. Palmer & Nobles, Springfield, Wis., J. R. Love, Waukesha, Mrs. C. Williamsen of Milwaukee, and Yorkey & Rich, Horicon, were also large exhibitors, and carried away substantial recognition in blue and red ribbons.

Nine hundred and thirteen entries were made in this department, representing a total of 1,189 fowls and 278 pigeons and homers. The display of homers is deserving of special mention, the largest exhibitor being R. G. Frackelton of Milwaukee, Wis.

The task of R. E. Haeger, judge in this department, was an arduous one, the entire four days being required to complete the work, which it seemed to us gave very general satisfaction.

C. E. ANGELL,

Superintendent.

By H. A. Clum, Assistant.

AGRICULTURE.

To the Executive Board of Wisconsin State Agricultural Society.

Gentlemen: I am glad to be able to report a magnificent display in the agricultural, culinary and apiary departments, the exhibit having been largely in excess of former years both in quantity and quality. The county exhibits of several of our northern counties were a great credit to the counties and to the representatives who had then in charge. They were quite an attraction, adding much to the general agricultural exhibit.

I would recommend that the society prepare suitable banners or diplomas and send to each county that made an exhibit, and that the society offer a liberal premium for county exhibits for the next fair.

I would also recommend that the shelving of the world's fair pavilion be lowered to the same height as the other shelving of the building; also that the glass case used by the culinary

department be overhauled and put in convenient shape for said exhibit. All can be done with small expense and would greatly increase the appearance of the building and the general exhibit.

Very respectfully yours,

GEORGE MARTIN,

Superintendent.

DAIRY.

To the Executive Board of Wisconsin State Agricultural Society.

Gentlemen—Your superintendent of the dairy department begs leave to submit the following report, and recommends its adoption:

There was a noticeable increase in the number of entries in this department over last year, as shown by the following table:

1894—		1895—	
No. entries, cheese.....	19	No. entries, cheese.....	30
No. entries, butter.....	30	No. entries, butter.....	73
Total entries.....	49	Total entries.....	103

Thus making an increase of more than double the number of entries of last year.

As this department represents the most important industry of our state, there is no reason why it should not be one of the most important departments of the state fair, but as a matter of fact it is far behind other departments of much less importance.

The facilities for taking care of and showing the exhibits are very inadequate, and unsatisfactory to all concerned. Exhibitors do not as a rule bring their products solely for the purpose of obtaining the money which is offered as premiums, but to have their exhibits reach the highest possible grade of

excellence, and this object can only be attained by having the exhibits marked and judged by competent and experienced judges. Exhibits should be judged according to points, and the result clearly marked so that both exhibitor and spectator can see wherein they have failed in, in what particular points they excel.

In this way I claim that all can be benefited by bringing the produce of the exhibitor up to a higher and better standard, and showing the spectator and consumer how they can be guided in the purchases of butter and cheese.

I would recommend putting in a large refrigerator to extend the whole length of the building, with a passage way on both sides, having glass doors and windows so that spectators may have the best possible view of the exhibits.

All of which is respectfully submitted,

G. T. HODGES,
Superintendent of Dairy.

REPORT OF SUPERINTENDENT OF THE HORTICULTURAL AND FLORAL DEPARTMENTS.

Owing to the severe and untimely frosts in the spring of 1895 and the excessive drouth of the summer, the horticultural exhibit was hardly up to the standard of a good Wisconsin exhibit. The few exhibits made were very good when the above mentioned drawbacks were considered. The floral exhibits were of a very high standard of excellence for which the exhibitors in both departments receive our thanks.

I would recommend that if possible more rigid rules separating the professional from the non-professional exhibitors be made and enforced, and that a committee of the horticultural society be requested to more clearly define the meaning of a floral exhibit than now appears in the premium list.

By personal solicitation several public-spirited individuals

offered special prizes for young people's exhibits that were not entered for and for which at this time I wish to thank these firms and individuals for their generous offers.

All of which is most respectfully submitted,

GEO. MCKERROW,
Superintendent.

REPORT OF E. B. HEIMSTREET, SUPERINTENDENT OF
ART HALL AND WOMAN'S WORK FOR FAIR OF 1895.

My first work in the spring was to write to the secretaries of all the county societies in the state and get the names of all exhibitors in the art and domestic departments of their respective fairs. I met with a generous response and had hundreds of names sent me. I wrote letters and set premium lists to all these and other parties who I thought would be interested. The result of this work is shown by the entries in this department, which I think were larger than any former fair. In 1894 the exhibitors numbered 75, with 778 exhibits. In 1895 there were 115 exhibitors and 1,397 exhibits or almost double that of 1894. In 1894 the expenses of this department were \$228.25. In 1895, expenses \$170.70. The items of expense are as follows:

E. B. Heimstreet, Supt., and expenses.....	\$59.20
Edith Scott, Asst. Supt., and expenses.....	29.30
Jessie Schley, Asst. Srpt., and expenses.....	24.40
Frank Enders, Judge.....	10.00
Eva Fratinger, Judge.....	10.00
Eva Fratinger, Helper.....	6.00
S. Heimstreet, Helper.....	8.00
S. Heimstreet, Judge.....	10.50
Postage	3.70

Stationery	1.00
Errand Boy .....	.50
Cartage	3.00
	<hr/>
Total	\$170.70

Receipts and vouchers enclosed.

It would have been policy to have had one more assistant superintendent and one helper, as goods could have been arranged in less time, but as it was, the assistants worked so well that everything was in order before the judge came to work.

RECOMMENDATIONS.

The roof must be fixed, as a shower would damage hundreds of dollars worth of goods as the roof is now.

The large case used for fancy work should have a tight top as it leaks badly, also the doors of both cases need repairing.

Your superintendent and all the exhibitors in this department ask that one end of the building and sides be enclosed in glass, viz., a glass front about eight feet high and four feet wide and covered back to the wall with about four doors. In this way the finest goods can be placed on exhibition with no fear of damage, judges will have better chance to judge, and superintendents will be able to keep track of goods far better. It will result in a much larger exhibit than ever before in this department.

It should be printed in the premium list that all articles should have tags attached before they are turned over to the superintendents and that goods sent in with no one to look after them should be turned over to a helper hired for this purpose, and a fee should be charged the exhibitor for attending to such work. Last year boxes were received containing from 20 to 40 articles, no tags or tickets with them, and hours were spent in finding the proper entries. A small fee from each one would pay for the extra labor.

THE PREMIUM LIST FOR 1896.

As this department did so well the past year, we ask for an extra appropriation not to exceed one hundred dollars for premiums. Immediately after the fair, your superintendent sent copy of premium list to each superintendent and judge who had acted in this department, with request that they revise the same while it was fresh in their minds, the result being that we have already an almost complete list for the coming year, and one that all think will please exhibitors. In conclusion would say, there was a general good feeling in this department, no goods were lost, the display of china and fancy work was even better than had been anticipated.

E. B. HEIMSTREET,
Superintendent.

REPORT OF FORAGE DEPARTMENT.

Total amount of hay and grain used in forage department, cost.....	\$477.00
Selling the same for.....	519.31

Making a gain.....	\$42.31
Bills not received but have been rendered respectively:	
George Harding, Waukesha.....	\$5.40
W. S. A. S. hay and oats (Vernon).....	.64
Cox (Teamster Burmeister Hay).....	.75
Hay to Asylum for Acute Asylum.....	140.63
Amount paid to treasurer.....	335.00
By cash paid for freight on car straw (Cloughs).....	8.25
By Hoyt's bill collected at secretary's office.....	15.25
By livery and expense.....	2.65
By cash on hand.....	5.11
Total amount of straw received, 46 tons 360 lbs., costing	283.48

C. T. FISHER.

DEPARTMENT OF TRANSPORTATION.

To the Executive Board of Wisconsin State Agricultural Society.

Gentlemen—Your superintendent reports that he employed from three to six teams and from six to ten men. Commencing on Friday before the opening of the fair and finishing on the Monday after the closing of the fair we collected from all sources one hundred and forty-six dollars, and paid out for teams and men one hundred and forty-eight dollars. We charged from 50 cts. to 75 cts. per load, and a few very heavy loads we charge \$1.00. We heard of no complaints from the exhibitors and think the department very necessary for the protection of the exhibitors. As the position of superintendent of this department was new to me, I desire to extend thanks for the uniform courtesy and consideration that I met with everywhere from the exhibitors.

Respectfully submitted,

G. G. Cox,
Superintendent.

REPORT OF MARSHAL.

To the Executive Board of Wisconsin State Agricultural Society.

Gentlemen—I hereby submit the following report of the marshal's department at the State Fair in 1895:

I had employed in my department from twenty to thirty men during the week.

The following is an itemized statement of money expended in my department:

Dan Armor, horse hire, six days.....	\$12 00
J. R. Flemming, horse hire, five days.....	10 00
T. J. Fleming, horse hire, 5 days.....	10 00
Bears, horse hire, 4 days.....	8 00

REPORTS OF SUPERINTENDENTS.

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F. C. Billings, police service, six days.....	\$12 00
M. Slegline, police service, five days.....	10 00
Z. O. Gordon, police service, ten days (three nights and extra work for G. Cox).....	20 00
R. B. Davidson, police service, six days (\$2.00 extra for George Cox).....	12 00
John Howard, police service, five days.....	10 00
A. P. Swenson, police service, five days.....	10 00
E. E. Davis, police service, six days.....	12 00
L. M. Palmer, police service, five days.....	10 00
Chas. Dainer, police service, five days.....	10 00
Dan Conners, police service, one and a half days.....	3 00
G. V. Roosch, police service, four days.....	8 00
D. O'Keef, police service, five days.....	10 00
R. W. Reid, police service, five days.....	10 00
Joe Marks, police service, five days.....	10 00
Sam Haak, police service, five days.....	10 00
Tom McCowen, police service, four days.....	8 00
H. Smith, police service, four days.....	8 00
Peter Foley, police service, four days.....	8 00
E. Bernicaw, police service, two days.....	4 00
B. M. Bruce, police service, four days.....	8 00
G. Clough, police service, three days.....	6 00
Geo. Leonard, police service, eight nights.....	16 00
Dennis Leonard, police service, eight nights.....	16 00
Sam Wilkie, police service, five days.....	10 00
M. C. Otis, police service, three days.....	6 00
John Deagen, police service, five days.....	10 00
Hamilton, police service, one-half day.....	1 00
John Ward, police service, three days.....	6 00
Dan Amour, detective, six days.....	30 00
Jas. O'Brien, assistant, six days and mileage.....	24 20
E. L. Hubbard, assistant, six days and mileage.....	37 20
R. C. Vernon, marshal, ten days and expenses.....	56 30
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Total	\$451 70
Received of T. J. Fleming.....	\$451 70
<hr/>	
	\$451 70 \$451 70

We must not lose sight of the fact that, through the courtesy of the mayor of Milwaukee, the society has had the benefit of a very efficient city police protection and service free of any charge to the society during the whole week of the

fair, and much credit is due Mr. A. O. Nirdner (roundsman) for the efficient manner in which he managed and placed his men to be of the most service to the society, and to the men for their efficient work.

The city police adds very much to the general discipline on the fair grounds and I think the courtesy should not go unheeded. I would therefore advise the marshal, through the president and secretary, to arrange with the mayor for this protection some days before the fair.

All of which is respectfully submitted.

RALPH C. VERNON,
Marshal.

ANNUAL CONVENTION,

Held at Madison, Wis., commencing February 5, 1895.

8 P. M.

President Hubbard in the chair.

PRESIDENT HUBBARD'S ADDRESS.

Ladies and Gentlemen—The first thing will be a few remarks by myself. We have again assembled to take a retrospective view of the past, to carefully consider the present and guide our future course by the experiences of the past coupled with the present condition.

Three years ago the first fair was held upon grounds owned by the society. Owing to the vast amount of work to be done everything was in a crude condition and some parts of the ground and buildings were unfinished. Still through the energy and perseverance of President Parkinson and Secretary True, with the unstinted cooperation of the heads of the different departments, a very successful fair was held.

Two years ago the Columbian exposition at Chicago absorbed the energy of the northwest and our society made no exhibit. Last year with grounds and buildings in proper condition, one can say, without fear of contradiction, a most successful exposition of the society was given. But for the prevalence of small pox in the city of Milwaukee it is safe to assume the exhibit and the attendance would have been much larger. As it was we found ourselves without adequate facilities for taking care of all the stock.

The untiring energies that turned night into day, displayed by the superintendent of the cattle and swine department, obviated to a great extent these difficulties since the holding of the first fair.

The transportation facilities by the completion of the moter line from Milwaukee have been greatly improved. We have good reason to believe that by next September such additional improvements will be made in this direction, that the public will have no further grounds for complaint. The transporting of thirty to forty thousand people from the city to the fair grounds and return in six to eight hours is a task that taxes all avenues to their fullest extent. We have only words of commendation and praise for the courtesies extended by the railroads and the ability manifested in transporting this vast number of people. While we have secured a home, and can truthfully congratulate ourselves upon possessing grounds which if not the best are second to none, with superb track, a magnificent amphitheater with a seating capacity of ten thousand, with flowing wells from which water is carried to all parts of the grounds, the society and the people of the whole state of Wisconsin have the best of reasons and pardonable pride in congratulating themselves upon the ample provisions made for a display of the varied and increasing products of the Wisconsin mechanic, artisan and farmer. But like many a Wisconsin farmer we find ourselves with an incumbrance upon our property.

Four years ago when we asked the state to donate an amount sufficient to accomplish in part what we have done, she, through her representatives, declined; but in lieu thereof loaned to us a sufficient amount to accomplish the object. Neither the interest nor any part of the principal has been paid. Extending and holding out every inducement to the Wisconsin farmer that it was possible to make in order that the state might be justly proud of the exhibit and cast no discredit upon the northwest, we find ourselves without means to

meet these obligations. No star in the galaxy of states shines with more resplendancy than our own. With that mighty river upon our western border; the chain of lakes commencing on the north and extending around the entire eastern side with numerous navigable streams extending into the interior; with its commodious harbors upon which are situated some of the most beautiful cities in the world; its railroads running in all directions throughout the length and breadth of this great commonwealth furnish us with the choice of many productions and many means of independence. With these vast natural and artificial means of communication and conveyance we are blessed with a climate conducive to health and a soil unsurpassed in fertility and productiveness. Our inhabitants, representing every nationality on the face of the globe, have shown by their indomitable perseverance, fertility of resource and untiring energy that we are surpassed by no sister state in the union. When we contemplate that the forests upon which vast amounts of labor have been expended and from which immense fortunes have been accumulated, will during the present generation disappear, then and only then can we realize the advantages, both natural and acquired, that we possess as an agricultural state.

This vast territory denuded of its timber, with a soil indigenous to all the cereals and grasses necessary to the successful prosecution of dairying, with its pure and never failing springs, will eventually be dotted all over with the home of the intelligent farmer and prosperous dairyman. The choicest products of the farm and the finest fruits of the dairy will be brought out by the citizens of our state. These products, through the wholesome laws that this legislature will enact, will be sold upon their merits, without fear of competition from any limitation. Our state will then have become what nature intended, one of the great, if not the greatest, agricultural and dairying states of the northwest. The State Agricultural Society has laid a foundation broad enough, with

grounds sufficiently ample for all these exhibits during the present generation. It only remains for you, gentlemen of this legislature, to exercise in part the liberality displayed by your sister states, and this Society in conjunction with the farmers throughout the state, can rejoice with you on being able to show to the assembled multitudes the products of the Wisconsin farm, in a manner creditable to the society, instructive to the people and useful to the state. Properly you have provided at a cost of millions of dollars for the education of the youth of our land, and connected with this institution we have the school for the agriculturist and dairyman. While you have done this at this vast expense, of which no one complains and at which all have reason to rejoice, the benefit of which is appreciated and realized in all parts of the state, you could not for a moment think of depriving our Society of the proper facilities for displaying the fruits of your labors through this school.

Therefore with the fullest confidence that you will unhesitatingly respond, and with a reasonable assurance that our labors have not been in vain, we ask at your hands a clearance of all incumbrances from that beautiful park we now possess near the commercial metropolis of our state, and that it may forever be dedicated to an exhibition of the products of the Wisconsin farmer. Do this at this session, and generations hence some successor of yours, rising in his place, will bless and praise and thank God that he is a citizen of Wisconsin whose forefathers builded wiser than they knew, and that that emblematic word "forward" is emblazoned all over the escutcheon of our great commonwealth.

The President, Ladies and Gentlemen:—We will now listen to an address by His Excellency, the Governor.

ADDRESS BY GOV. UPHAM.

Mr. President, Ladies and Gentlemen and Fellow Farmers:— I assure you the only part I have in being present here this evening is a printed notice laid upon my desk by my friend Hubbard which said I was to be present. That is all the voice I had in the matter.

Now, you may apprehend that I am not a farmer, but if I am not I can assure you that I am a part of a farm, for I have been somewhat harrowed this winter. (Laughter.)

But in talking here about what is called the producing class, I disclaim that the farmer is the only producer, because he is not. All of us who are busy are producers, whether it is as lawyers, mechanics, medical men or members of other occupations. But of all the producers the farmer is the only one who eats his own produce; and he has got to be shrewder than all the others because it is necessary for him to accumulate on his farm something above what is needed for himself and family to eat in order to buy the other necessaries, otherwise he eats all of his surplus and he has nothing left. But we are all in the producing class.

My experience as a farmer is somewhat limited. I remember that in the catechism the first question asked was, "Who was the first man?" and the answer was, "Adam." Now, if you should ask me, who was the first dairyman, I should say, Fratt, of Racine. In 1852 the rich man owned the cow and the poor man bought his milk. In those days I was the poor man and bought a quart of milk a day from your honored member, N. B. Fratt, who peddled it from house to house. I thought then and think still that Fratt milked the cow himself.

There is one peculiarity about the farmer of today which I have been trying to discover during this week. I think I have shaken hands with nearly all the members of this Society this week, and I have looked for the hard callous spots in the

hands which they say the farmer possesses. It cannot be that the farmer of today has quit farming and gone to playing cards while the cows eat grass. (Laughter.)

There is this which occurs to every fair minded man, that in all the vicissitudes of business, whatever may occur, the farmer has one last living resource. He can go out upon the land and in some way make a living. Though the living may not be very good, he knows that "seed time and harvest shall never fail."

Our state is peculiarly situated and is favored in a great many respects. Years ago I heard a lecture delivered by Joseph Cook, in which he described this great valley between the Alleghany and the Rocky mountains, and he told of the vast clouds of vapor rolling westward from the Atlantic until reflected back by the Rocky mountains to the east. This produced rain and the moisture produced grass. As a result of these rains there was much fatness of earth here, making a veritable garden of this great Mississippi valley.

In looking over your last report made I find the farmers have been tolerably busy. The report states that they had:

Horses.....	377,607
Cattle.....	1,151,535
Sheep.....	807,714
Hay, tons.....	1,497,339
Wheat, bushels.....	9,457,130
Corn, bushels.....	25,661,940
Oats, bushels.....	43,649,998
Barley, bushels.....	10,857,774
Rye, bushels.....	2,549,488
Potatoes, bushels.....	11,424,858
Cheese, lbs.....	54,365,220
Butter, lbs.....	25,791,513
Mules and asses.....	4,341
Swine.....	570,937

Yet the state has so grown and progressed in the milk industry that they now claim from the factories in this state the

production of butter and cheese without the intervention of the cow. (Laughter.) They hasten the product of the grass to butter and cheese.

The farmers in this state have done well. They have displayed brains in their work. As times have changed and conditions have changed they have changed their industry until they have created a great dairy state.

But there is one business which this Society has not yet engaged in, and I would recommend that the Society take it up as a part of its agricultural duty. With the brains and energy which they have developed in becoming the farmers here in the state of Wisconsin, I wonder they have not. And in the discussion I want to first call attention to this fact:—the area in this state is 35,000,000 acres. Of this 16,000,000 acres are owned as farms, and of these 9,000,000 are under cultivation, showing 25 per cent. of the land of the state under cultivation. With the ambitious energy which the American citizen always had, it is a wonder to my mind why this Society has not developed itself into a land trust.

It is shown that 75 per cent. of the land of the state is uncultivated. But those who have lived years in the wilderness, you who have probably taken the farms and cleared them of the forest, know how difficult it is for a new settler to enter upon a piece of land and make a living. It would mean a great deal for Wisconsin if the brains and energy and money could be put to work; if we could take the surplus population of the state and put them upon the lands where they could have homes and make a living. But they are not able to do this as individuals. Yet, if you could separate a community of them and form what you might call a co-operative farm, town or township, where 40 acres was in charge of the man having improved that farm as a member of the co-operative society, after five years they would accumulate enough that each land owner would own nearly the value of his farm, because he had done his work in the most profitable and economical manner.

Now they send him into the wilderness where there is no road. He gets 40 acres upon which he is to make a living for his family, with a single cow, a calf and a yoke of oxen, and it means 10, 20 and 25 years of hard work. When he is an old man and his boys are grown up and he comes to die, he ends under but little more encouraging circumstances than when he began.

But this suggestion of using the surplus population on unoccupied lands I think is worthy not only of this Society but of every thinking man in the state. Cannot the land of the northern part of the state, anywhere in the state, be settled so as to produce wealth, thereby not only adding to the wealth of the community where that land exists but also to the wealth of this great commonwealth??

I thank you for your attention.

THE DUTY OF THE STATE TOWARD THE COMMON SCHOOLS.

M. D. Kelley.

Much has been said concerning the duty which the common school owes to the state; but little has been said, comparatively, of the duty which the state owes to the common school, and indirectly to itself. We may sum up the duty of the common school, that has been mapped out for it, by saying that it must turn out young people with the necessary preparation to discharge the duties of an American citizen properly and intelligently and above all patriotically. That is, if our schools do not create and stimulate a strong desire, on the part of the pupils, to become all that is meant by "good citizens," they are not doing their duty toward the youth of this land, nor are they fulfilling the purposes of their creation. "Good citizenship" has been the shibboleth of the many who support (by

voice and pen) the common school so enthusiastically, at times. But education means more than good citizenship and it is possible to conceive of a nation conducting its schools with this one end in view and yet be also sowing the seeds of political and social disaster. The world seems to be fashioned after the plan of the mysterious Trinity, and man is no exception to the rule. He has a head, a heart and a body and education means the harmonious and symmetrical development of all these. The man whose education is simply a development of his mental faculties becomes a cold, unfeeling dyspeptic—

“Sicklied o’er with the pale cast of thought,”

a being wearing the shape of manhood and yet lacking the prime requisites of the true man, viz., sympathy, charity and philanthropy of soul. The man who gives himself up to his feelings, gives up his life to a series of lights and shadows. He becomes a visionary enthusiast, incapable of either realizing his ideals or idealizing his reals. He lacks the stern utilitarian qualities which enable us to take things as they are and to try to make them as we wish them to be.

The man who cultivates his physique alone becomes a sorry spectacle of weakness—even in his supposed strength. The pugilist who stands before the wind-bag and delivers such powerful and rapid blows that he inspires us with awe and even fear when we contemplate our own emaciated frame and flabby muscles is yet far from being a truly strong man or an ideal of true strength.

Education then means not the intemperate development of either the mental, the moral or the intellectual nature, but it means mental faculties, controlled and directed by high spiritual ideas, the whole working machinery supported by a sound and healthy body—without which neither mind nor heart can reach its highest development.

Let me protest against the hackneyed expression that it is the business of the common school “to make good citizens,” and to substitute for it the only logical one that it is the business of

the common school to educate the children of our land so far as it lies in its power to do so. If this be done—along the lines that I have suggested—good citizenship “must follow as the night the day.” We are continually reminded that the school must teach “patriotism,” and patriotism is defined as love of country. Now, at the risk of incurring the censure of some truly good people, I wish to say that in my opinion, patriotism of this kind is the most natural of all the inspirations that can come to anyone. You might as well try to teach a child to love its parent; it must naturally do so if the parent deserves it.

To love one's own home more than any other place is a most natural thing, in fact we can not well avoid it. It is as natural for the German child, or for the Irish child, living under their respective forms of government, as for the American child in this great republic. And we strongly suspect that the African Hottentot is more attached to his native woods and jungles than to any other spot on earth, at least those who have consented to leave them have done so only through the persuasion of the slave hunter armed with chains and shackles. But there is another kind of patriotism that is born of intelligence and toleration which must come to every true hearted individual, boy or girl, who comes to an appreciation of the vast scheme of the brotherhood of man, upon which this government is founded. It is not taught successfully, nor implanted in any lasting manner by the vain braggadocio that is indulged in many of the little minds who speak so glibly about the patriotism of our common schools; it is not implanted by flaunting an American flag from every school house—which fad is just at present running its course. This kind of patriotism has become the cloak of the hypocrite and the shield of the demagogue. True patriotism is not planted by continually telling the child what is not true; viz., that he is enjoying the advantages of the best system of common schools in existence, for he will upon investigation learn that other nations have quietly and patiently builded up systems of public education that are far superior—at least in many respects.

Do not understand me to mean that we are not to teach to the minds of our young people, high, patriotic ideals or that I deny the existence of the virtue of patriotism. There is such a virtue and when it is founded upon the broad truths which our constitution first successfully proclaimed and set in operation it is one of the highest inspirations that can come to men. But the genius of man was never, of itself, given the power to create such a grand scheme for the government and protection of men in an organized state as is set forth in our National Constitution. It is the fruit of two thousand years of teaching, with the Christian ideals as a model. From the days when the spiritual equality of men was first preached by Jesus of Nazareth, on the shores of Gallilee, it was assured that the time must surely come, when a great nation would rise, without any king, and which would teach by what is more powerful than precept, by its example, that men are born with certain inalienable rights among which are numbered life, liberty and the pursuit of happiness. From the day that this nation was first launched forth on the sea of human experiment it has been an accomplished fact.

Go where you may over this bounteous land of richness and plenty and where can you find any considerable number of men, who have grievances, who seek to right them except through and under the law. We have no nihilists under the stars and stripes; and why? Simply because of the equity of the constitution and laws under which we seek the goal of human prosperity and the happiness of the life beyond the grave, are fashioned so nearly after the golden maxim that we turn to the great arms of our noble country, as a child to its father, knowing that if we present our claims in the name of justice that the compact of the constitution will be kept sacred, for it has been sealed in the blood of heroes and the tears of widows. It has been said that the American republic is the nation of promise that is spoken of in Holy writ and that the constitution is the sermon on the mount crystallized and put into actual

being. This may seem extravagant and to some who hold lightly the blessings of stable and equitable government, but when we contemplate for a moment the awfulness of the disaster that would overtake each and every individual were we to lose the heritage of our union and peace, we can not speak too highly of what we enjoy. May we not give the immortal framers of our constitution the credit for special inspiration to do a great task? Safe it is to say that they gave us a scheme of government so perfect that it has withstood the blasts of over a hundred years and we have heard no cry for the repeal of any of its essential provisions. No government on earth has had the same experience, during the same time. In France monarchies have been displaced and succeeded by republics, and these, in turn, replaced by empires. In Germany we have witnessed the expulsion of certain classes, wars both offensive and defensive, and today the government—supported as it is—by the most perfect standing army in Europe, often trembling for its safety and making frantic appeals to all kinds of conservative forces to quell the oncoming tide of disunion and even anarchy. Before the English parliament have been urged the claims of human right, and concessions have been wrung from a stolid and prejudiced government only when it was in imminent danger of its own existence. And yet there exist classes, who, though under the sway of English law, are yet outside the pale of her constitution.

In America, alone, we see a great and stable government, founded upon a sacred covenant, (the keeping of which is a Christian duty and brings the same rich rewards) whose every clause has been sacredly kept and the necessity for only fifteen amendments has ever been felt. At this rate the American republic could last for 1000 years and still its constitution, the basis of all the laws for the whole realm, would not be too voluminous for every school boy to commit to memory; so familiar will have become the practice of all the provisions which will be founded upon the Christian teachings and the Christian commandments. But our constitution is not destined to grow

into so voluminous a document. A few commandments, only, like those of the decalogue will suffice, and the history of our great men will constitute the Books of the Apostles. We may point to their lives as models of right living and duty to the state and humanity well performed. But we must not rely too much upon the enactments of law or the provisions of the constitution for the perpetuation of what we have and the giving to posterity of something of what we are.

Constitutions are a sham and law is a mockery unless we sustain and enforce the one and support the other. We might take our constitution, perfect though it is, and found upon it a despotism as unjust and oppressive as any that ever incumbered the old world, without changing a single line. Those words which so charm the American ear, constitution, republic, law and liberty, may yet become but the dry bones of the ghastly skeleton of our glorious republic, as we know it, if we forget the teachings of Lincoln, of Washington and the Christian doctrines. We all carry a sacred commission, who have the happiness to be American citizens, to teach the difference between citizen and subject. We all come in lawful succession from Washington, who, though confronted with the opportunity to assume a crown and become monarch of the whole of the New World, refused the proffered gratitude of a worshipping people and took the road to the higher honor of citizenship. He is no longer with us in the flesh, but his spirit still teaches the world. Suppose he had been made of the same brazen and ambitious clay as Napoleon and Alexander; what would have been the result? He might have led his conquering eagles from the Bering sea to Terra del Fuego, but his empire would have fallen apart, even while it was being subjugated, and into how many warring fragments no man can tell.

What would have been the result to you and me and upon what might we base our hopes in the future? To contemplate it opens up a wide range of speculative horrors upon which I cannot dwell, but the study of which causes the heart to cling

more closely to the Great Character who has gone before, yet whose presence we still feel and enjoy. The state owes it to itself, as well as to posterity, to make use of all the means within its power to make clear to every individual citizen, as well as to the world, the difference between American patriotism and the Englishman's or the German's patriotism or any other ism of which we know. Great stress is laid upon the idea that we must assimilate the large number of foreign immigrants who come to our shores. These are often characterized as "vast hoardes," "ignorant and superstitious foreigners," and other like epithets, and some even proclaim that in the future the gates of Castle garden should open outward instead of inward. It is almost needless to add that this class reserve to themselves the right to select the black sheep from the white and sit in judgment on every man's conscience and be the sole arbitor of his fitness to be an American citizen. The spirit often shown is wrong and the day that sees the doors of America shut against the honorable entrance, to the blessing of our union and peace to any honest class of men, no matter what may be their nation or creed, will mark its decline; it will have forgotten Washington and ceased to accept the gospel of the early fathers of the republic. There is but one class to which we can turn for hope in the future, and into whose hands we may intrust, with all safety, the affairs of state so that they may continue in the unbroken line of progress into which they have been launched, and that class is the children of our state and nation. How often has this been said and under what varied circumstances! And yet how little has it been heeded by many. The function of law is not so much to punish crime as to prevent it. You can not wield and mould sere and hardened characters into new and beautiful perfections, with little effort. The world has never successfully solved the problem of keeping souls and hearts pure and undefiled, as they are when they come fresh from the Creator, much less correct them when once they have been led astray. Are we today doing all that we can, not only to make the chil-

dren good, but to keep them so? Are we doing all that we ought to insure to every child the opportunity to become the very best that he is capable of becoming? Someone has said that "the very best there is is only just good enough for children." Are they getting it? From my experience with the school system in Wisconsin I am prone to say that they are not.

I must now improve the opportunity that is offered to speak in plain words. For if there be any member of our honorable body of legislators who does me the honor to listen let him hear for it is his ear that I would reach. It lies within your power to do something for the children of this state by doing something for the common school. A great prophet has said: "Remember those sportive groups of youth in whose halcyon bosoms there sleeps an ocean, as yet scarcely ruffled, but which soon may burst forth with a tempest's strength. Remember the hand which today first lifts the tiny bauble before that hand shall scatter firebrands, arrows and death. Remember the innocent lips which now scarce lisp a father's name before those lips may whisper sedition in secret or thunder treason at the head of an armed band. The misfortunes which have overtaken governments in the past have always been traceable to their own outrages and injustice, to the fact that they have forgotten the true purposes for which governments exist. Rome and Greece each lasted a much longer time than we have yet seen and for many years they foresaw, for themselves, only continued growth and prosperity. If we are to last it must be by the general consent of all classes, for if the day ever comes when any considerable number of the American people conscientiously question the integrity of this government, the true Republic, as we know it will cease to exist. To outward appearances it might continue but within would exist a species of dry rot that would, soon or late, dissolve the glorious structure.

A report in Sunday's Sentinel credits Pres. Adams, of the

university, with asking the legislature for appropriations for the different departments of the university, which in the aggregate reach over \$200,000. Now, no true citizen can question that this would be a most laudable thing for Wisconsin to do or impute to Pres. Adams any but the highest of motives in asking for it. We are all proud of our magnificent university and we point to it as the institution of its kind that has made most progress during the past few years. This has never been so true as since Dr. Adams assumed the presidency. But we all wish that more of the young people of the state could take advantage of the opportunities which it offers, but statistics show that less than 3 per cent. of the children who become enrolled in the common schools ever get into the university or other higher institutions of learning.

Were cognizance taken of those who enter the parochial schools the percentage would be yet small. Is the state, then, justified in lavishing its support upon the higher colleges while the common school—the college of the people—is left to struggle with comparatively little support from the state? True, the state has done much for the common school, but how many of you have not noticed this phenomenon: that people often prefer to send their children to some private boarding or grammar school rather than to our common schools, *to get even a common school education.*

I truly believe that the normal schools and the high schools have taken to themselves the task of teaching many branches and doing much of the work that belongs to the common school. Fifty years ago the extremely young pupils were poorly cared for, 'tis true, but the older pupils were much better provided with the opportunities to get a common school education. You stop me and ask, "Why do you go back so far into the dark days of the public school?" Were those the dark days of the school? They were the days that produced the Longfellows, the Whittiers, Bryants, Websters and Clays. Those were the days when the larger boys and girls were not ashamed to be

found in the common school. But go now, from school to school, through this state and rarely do you find the larger boys and girls who were formerly found there and who lent vigor and inspiration to the work. Some few of them may be found at the local high school in the next village and perhaps an occasional vigorous one may find his way to a state normal or some college. Many of the pupils in the common school leave it because of its incapacity, and go out into the world to win or lose in the struggle of life and we may safely predict that they are handicapped in no small degree. The common school of this state has not kept pace with the progress of higher education and universal advancement. It is the duty of the state to care for the common school first of all and the higher institutions of learning afterward if we proceed on the principle of the greatest good to the greatest number. Under present conditions the common school is a necessity; the university more in the nature of a luxury. Side by side with the public schools of this and other states has grown up a system of private or parochial schools that is already in competition with them. If the common school is not to die from desertion it must be kept superior to all other systems. The parochial school has taken a large share of the vigor and genius that is to be found among immigrants and sons of immigrants.

The school question can never be settled by villification and abuse nor by the demagoguery of a political campaign. The eternal law that the fittest must survive will prevail here as elsewhere. Many and loud are the boasts that are made concerning the common school, but this does not constitute the support that it most needs. Quiet, systematic and effective work has characterized those who have undertaken the support of the private school system. In passing let me observe that although the state can not afford to subsidize these efforts it can not but look with an eye of favor upon them, and do justice to itself.

The trouble with our common public school lies in the fact that too many young and inexperienced people are placed in charge. If the purpose of our schools is to build up character as well as to cultivate familiarity with the crafts of business and trade, then none but mature and strong characters should be placed in charge of young people during the period when their characters, which must be worn through life, are moulded to good or evil. How can a girl of 16 or a boy of 18, whose character is not yet fully matured and strong, exercise a strong positive influence for good. At present no adequate attention, no special training, no general and authoritative credentials, are demanded.

A profound ignoramus if endowed with assurance is in no way excluded from teaching, or superintending either, in case the annual or biennial election turns favorable to him or his retainers. It may be urged that all these things can not be remedied by legislation. But the thoughtful, earnest teachers of this state have for years been asking for legislation in behalf of the common school, to which a deaf ear has been turned. It may be urged that legislation is not the true stimulant, but what would be the result in case all legislative enactments of a mandatory nature were removed from our statute books and the support of the common school left to local option? Into whose hands would education then fall if not into the hands of those who now, through great personal sacrifice, contribute to the support of both public and private schools?

Why do we continue to say that intelligence is the prime requisite for the success of our state and yet take no steps toward making teaching a profession? Why leave the training of children to impensists who use the opportunity that is offered as a stepping stone to something which the world calls higher. Too many of those who enter upon the business of teaching get more out of it for themselves than they ever give to it. The state should recognize no higher, and protect no nobler, profession than that of teaching.

I refuse to argue the proposition that it is too expensive.

Gold should not be weighed in the balance against immortal souls and strong, sincere and intelligent minds. Many of the great characters whose lives have marked epochs in our country's history started as humble country school teachers. Let Garfield, Grant, Sherman and Lincoln bear witness. Why do not more of these men remain at teaching? Because superior advantages await them in the great fields of activity outside. And just so surely as water seeks its level so do brains and true worth seek theirs.

To sum up once more let me say that on all grounds of theoretical justice and expediency the state owes its first duty to the common school. We have outgrown the little red school house and it should be supplanted by a large one of the purest white, typical of the virtues to be implanted therein.

Do not forget that the teacher is a great contributor to the world's welfare. He occupies an eminently honorable and responsible position. Quietly and peacefully the schoolmaster brings light to darkness, knowledge to ignorance, and virtue to vice. His onward movement is not with the pomp, pride and circumstance of war; no banners herald his victories; no cannons proclaim his work. But his road is far more brilliant than the conqueror's. Persevering, resolute, enthusiastic and high-minded should be the members of the teaching profession. Their lives are lives of service to others. They may with just pride walk among the grand things which the brain of man has created and say, "These are my products." The school is our greatest work shop: the source of our culture, our refinement, our wealth, our progress, and our greatness. As the school is so will the nation become.

Thus the work of the teacher and his influence is far-reaching; it connects him with posterity. The teachers of the land must rule the country and the goodness of the ruling will testify their power and ability if you give them a chance. The state should do the fair thing by its teachers for it demands much of them. It should cry down no one so much as he who enters the work from purely financial considerations.

It should be the aim of all teachers to pursue and to practice the highest truths; to master fully the Christian science of right living; it should be their aim to build up strong, manly characters and true womanly natures. By doing this they will give back to the state all, and more than it has ever expended in their behalf; wealth shall be ours if we know how to use it and honors if we know how to bear them.

Tuesday Morning, February 6, 1895, 9:30 A. M.

President S. D. Hubbard—The first number on the program this morning will be a talk by Mr. C. H. Everett on "Saving and Applying Manures."

SAVING AND APPLYING MANURES.

C. H. Everett, Beloit.

Mr. President and Gentlemen—I feel that I am laboring under some disadvantage this morning in addressing this audience on this subject because, in the first place, the older men in this audience possess more wisdom than I do on this subject, and my only hope is to benefit perhaps some of the younger men that I see here. Perhaps many of them are short course students, and what I say may be of benefit to them. I feel also handicapped in not being able to make any illustrations by the use of charts, and have got to make those illustrations by remarks, which are never as clear and never give that strong impression that we get when we have charts, and I am very sorry that we have not got them this morning.

I first wish to call your attention to the manurial value of feeds as well as of the feed. Feeds have two values, feed value and manurial value. Feed value is the animal growth. Those feeds that we might call proteine, albuminous foods, those foods that make animal growth, the lean meat of the animal,

the hide, hair, hoofs and the horns,—that class of feeds is rich in fertility. In speaking of those feeds as rich in fertility we call them nitrogenous. In speaking of those feeds in the line of feeding value we would call them rich in proteine foods, they are the same thing, rich in albumen.

Now, then, we are after something in this matter of fertility. We have a distinct purpose in view. In the first place we are trying to feed the soil, and it goes without saying that the fertility of a man's farm is like his bank account from which he can draw cash in the shape of harvests, but he cannot continue to draw from that bank account without making additional deposits. Too many farmers have drawn from this fertility until their checks have come to be dishonored. Many a farmer has spent season after season in hard work on his farm and has found a constant decrease in the yield per acre, because he has exhausted his bank account. Farmers everywhere, in this state and elsewhere, are surprisingly careless of the value of fertilizers in their barnyard manures. Few of the farmers have a thorough appreciation of the value of manures.

In the eastern states farmers have resorted to commercial fertilizers for this purpose independent of the barnyard and animal industry, but to the average farmer the stock kept on his farm constitutes the source to which he must look for fertilizers.

The farmers in Wisconsin have not been forced to that point yet, and if we take good care of the animals on the farm, feed with intelligence, use good clover and pay attention to the matter of rotation of crops, the time is far distant when the Wisconsin farmer will have to buy commercial fertilizers to put on the farm in order to return him a net profit.

The foods that are rich in fertility and that are rich in growth, the proteine foods that we can raise on our farms,—first I will place clover, clover is a fertilizer. Then oats, which is a fairly good feed, peas, oil meal and cotton seed meal are

very rich in this proteine element and very valuable for manure.

We should aim to produce as largely as possible of them on our farms. If I had the charts here this morning I could make some very clear illustrations to you along the line of the fertility of the farm, why the dairy farm has the fertile soil and why the grain-growing farmer is the man who impoverishes his soil, and in time fails to find feed for himself. When a ton of wheat sold off from the farm carries from the farm \$10 worth of fertility, a ton of butter carries forty-eight cents worth of fertility. A ton of wheat in the market today is worth something like \$17, and a ton of butter \$400. The butter has not robbed the soil of any fertility, but the wheat has carried off considerable, and the farmer is selling off the richness of his soil by the bagful.

Now we want wheat, clover, bran oats and peas, those foods that give us good satisfaction in the growth of the animal. Remember, that corn and timothy hay are carbonaceous food—rich in carbon. If we want to make fat we feed of those foods. Coal is almost pure carbon and the diamond that you wear in your shirt bosom is pure carbon. The engineer and fireman shovel the coal into the locomotive for the purpose of heat, and that coal as used, passes off in heat. It has gone into heat to make the steam, and in that way we burn food in our bodies, and the animal the same. The carbonaceous food supplies the system. It contains but very little fertility. So we need to economize along the line of proteine just as much as possible.

After we have studied this matter closely, after we have come to understand the value of the feed, the manurial value of the feed, so that we are able to feed with intelligence and able to have manure on the farm, that is good manure, then the important question which I am about to speak of more particularly than any other is, what shall we do with it and how shall we apply it? We see all methods as we go over the state, some of them are good and some bad. Some of them

denote, to my mind, not perhaps ignorance on the part of the farmer, but carelessness. We see manure thrown out of the barn and we see manure piled in the field, sometimes quite an acreage, a field of five or six acres will be covered with manure and that manure has been thrown out in the field and left in little bundles until the next spring. We also see manure out in the barnyards and scattered over the yards, some places it may be six inches or a foot, and some places four feet, and the stock allowed to run over it, and it remains there until after harvest, when it is drawn to the field.

There are all kinds of methods, some good and some, to my mind, not good. It is not for me to say which is the best. It is not for me to say which is the best for you to adopt. You must determine that, but I will outline some of the methods I have found to be good.

In the first place look to the liquid portion of the manure because there is more nitrogen in it and because it is all valuable as a fertilizer, and because all manures must be reduced to a liquid to be absorbed by the roots of the growing plants. Plants do not feed on coarse manure. It has to be reduced so that the liquid portion of the manure is all valuable as plant food, and it is ready the moment the plant root is ready to use it. That is the portion which is most easily lost because it is water. It runs through the cracks of the floors and is lost on every hand. That portion is the most valuable, it is the portion we are most liable to lose. We must save that, and it is quite easily done. We only have to have tight, suitable floors, and they are easily made of plank. It requires no extra expense to make tight stable floors, they soon become tight after being used. Then we must use something to absorb the liquid, and I have used horse manure, which makes a very good absorbent if it is convenient. You can use it in the gutters of the cow stable. Road dust makes a good absorbent, procured in the dry time and stored away in barrels. And another absorbent which gives me better satisfaction

than any other is leaf-mold. It is dry earth. You go into the woods where the leaves are thick and take the top sod. It is rich of itself. Road dust is an impoverished substance. A man does not need to save large quantities of this leaf-mold if he keeps an average amount of stock. Then there is a value escaping from manure, this is nitrogen or ammonia which escapes by evaporation. You know after you have cleaned out a horse stable there is a strong smell of ammonia. A little land plaster will take up this odor. Land plaster is only valuable as an absorbent of this escaping ammonia, which it holds, so that we do use the land plaster. I sprinkle it in the horse stable, cow stable and calf stable for this purpose, and if we are feeding steers, in that stable also. Ammonia is a valuable element of fertility and should not be allowed to waste in this manner. Then, too, the stables are kept fresh and sweet by the use of landplaster, and it is the best way we can handle that manure. We feed steers much in the same way as sheep, dehorn them and feed them loose. In the cow stable we have to handle manure differently. It must go out of the cow stable each day. The best method for manure of that kind is to draw it on the field each day, that is the best for me. There will be a loss by any method that we may adopt, but of course we are looking for that method that will give us the least loss. There is nothing gained in fertility by rotting or composting manures. The only benefit is to reduce the bulk and make it more available. While it is undergoing this process of decomposition there is always a great loss.

Now there are two ways by which manure loses its value. One is by leaching and the other by heating. You should avoid either. If you wish to make soap you pour some water on ashes in a hogshead. Leached wood ashes are not good as a fertilizer; in fact, I believe on the kind of soil that I have leached ashes are a detriment. You have leached the potash out of those ashes to get the lye.

You can get the lye out of the leaves by the same process.

If you pile manure away from the building and take pains to pile it up in good shape.

In piling it, put straw on the ground first. If there is some leaching the straw will absorb a portion of it. Pile this straw to the height of three or four feet and add landplaster.

Never drain the liquid manures from the stables into the yard or under the barn as you not only lose the most valuable part of the manures but also cause a disagreeable odor in the barn and yard and in the case of the cow stables make it extremely difficult to make good butter.

It is the best plan to haul the manure out daily, but if you have a very rolling farm or when there is two or three feet of snow on the ground, I would not advise any one to draw and spread manure on that snow every day. I would endeavor to manure the rougher portion when it is bare. We have frequently applied manure when we have had to set stakes in the snow in order to see where to apply it. The field is where we want this manure and the sooner we can get it on the grass land the better results we will get from that manure. We always apply it to grass land. It is not advisable, in my judgment, to apply it in stubble or corn land because the loss would be greater in the spring from washing away. The grass land always has a rough edge and there is greater chance for the liquid to be absorbed. Then we apply it to clover for another reason, we want to feed the clover. Our clover fields give us something like two to three tons to the acre and we want as many clover roots as possible. The clover adds to the soil in many ways.

I believe in applying manure lightly and as evenly as possible and in rotation so that we can get over the field every four or five years. We think it better than to apply it much more heavily and get over the farm once in eight or ten years.

I have omitted very much of importance in these few brief remarks because I know it will be drawn out in the discussion, because there are men in this audience who will ask

questions both for their benefit and for the benefit of the audience.

DISCUSSION.

Mr. McKerrow—I would like to ask Mr. Everett if he has had any experience with manure spreaders or if there is any gentleman here that has? I would like to use them but it would cost so much to buy three or four them. I am inclined to have them. I am one of those that cannot haul out all the manure from the stables. I have sheep yards and sheep sheds, cattle yards for the younger stock, and manures in this climate we cannot haul out in the winter time. A good deal of the manure is left.

Mr. Anderson—I approve the address of the gentleman on the application of manure. I think that this is one of the most important questions that we farmers have to deal with to keep up the fertility of the land. It is impossible to do it in any other way than to return to the land all you take from it and add to that; also to feed all the stock that your farm will permit you to raise feed for. It is as Mr. Everett has said, that the farm is a bank. He is too young a man to quote from an address I made three years ago in Mazomanie. I told them in these words: Your farm is your bank and if you draw from it without making any deposits, it will soon cease to honor your drafts. I agree with the gentleman in regard to everything he has said on the manure question. The absorbents is a difficult question with me. I have to use large quantities of straw for bedding and I could not get any leaf-mold from my farm. I live three miles from my wood lot and it would be rather difficult for me to get the leaf-mold. Do you find any difficulty in spreading evenly on grass lands in winter?

Mr. Everett—In regard to spreading, we sometimes find it difficult to spread, often we find it frozen, perhaps, but we obviate that by the use of the harrow.

Mr. McKerrow—We can hardly appreciate the full im-

portance of the subject we are discussing. A few days ago it was my privilege to have a visit from a gentleman of the Iowa Agricultural College. He had just been on a tour to the agricultural colleges in the eastern part of our country, also calling at the station at Ontario. He said that it was remarkable as to the amount of work being done; that the eastern experiment stations were putting in the commercial fertilizer and the main work being done at the eastern stations was done with commercial fertilizers, showing that that was the great work in the east, and showing which were the best and what they would do for the crop. He believed that people in the west would have to take better care of the fertilizers on the farm, grow more clover, so that we might avoid what is taking place in the East. I simply recite this here to show the importance of this question to a man who has visited the East.

Mr. Faville—You have told us that the greatest waste of the manure is in leaching. Now I want to know, if it would not pay the average farmer, the farmer that cannot draw his manure in the winter as you recommend, if it would not pay him to build some cheap sheds to protect it. You know that drawing it out in the spring with the average farmer is out of the question. We are too much hurried with the spring work and the ground is so soft that it cannot ordinarily be done, so that the manure is left in the yard until after harvest, and then drawn out.

Mr. Everett—It certainly would because there would be some leaching. A rough, cheap shed would be a benefit. And there is another point that is well for us to remember in piling manure. There is a loss by heating. We know that horse manure heats more rapidly than cattle manure. Pile the two together. Wherever the manure heats there is a loss of fertility. Where manure is piled over the yard, some experiments that have been made show that if it is piled carelessly that 50

to 60 per cent. of the value is lost. So that a rough, cheap shed would be of great value.

Mr. Everett—I would apply water to that manure in the shed.

Mr. McKerrow—I would like to ask if this heating would not be obviated to a large extent by mixing the horse and cow manure together?

Mr. Everett—Yes, also by the landplaster that may be added to it.

Mr. Brigham—How much of that leaf-mold do you find it necessary to use, how much would you store up for every ten cows?

Mr. Everett—We store up perhaps 75 bushels, three loads.

Mr. Brigham—That would leave how many cows?

Mr. Everett—We use that for 14 head. In your case you would want not less than 100 bushels. You can get it cheaply.

Mr. Brigham—Would you use 7 to 8 bushels to the head if you had it?

Mr. Everett—Yes sir. We fill the gutter of the stable about one and a third full and sprinkle a little landplaster on the top of this mold. That absorbs all the liquid so we are able to get it very rapidly on the field.

The Secretary—Do you haul directly from the barn over the field?

Mr. Everett—Yes, we follow that same practice hauling directly from the stable. In the winter we make a stone-boat for that purpose. We often, as I have remarked, find it impossible to get in the field and then pile it in the yard. In spring when the ground softens up we have made manure in the yard by littering in the straw; we pile that up and apply that in the fall.

Mr. Favill—Two years ago I heard you speak about using a stone-bolt and I had a man make one for me, but it pulled too hard. How is yours? Mine's no good." (Laughter).

Mr. Everett—I frequently use one horse; never have any

trouble with it. It will hold perhaps all you can get onto it, it will hold four or five wheelbarrows. The bottom is plank, turned up at the end.

Question—How is your chain?

Mr. Everett—It is fastned from the lower side and run through.

Mr. Favill—I have no doubt that description is very interesting if we could only hear it, but we cannot hear it.

Mr. Jones—I would like to ask Mr. Everett, if you could get both leaf-mold and peat cheaply, which would you prefer?

Mr. Everett—Leaf-mold, I think. It contains—I am not clear but I think, perhaps there are some in the room who may be clear—I think leaf-mold contains more fertility. I am of the opinion that peat differs in its fertilizing value; depends on the kind of peat it is.

Mr. Brigham—You speak of one advantage of leaf-mold, now can't the leaf-mold absorb a good deal more moisture than road dust?

Mr. Everett—I find little difference that the two will absorb but prefer the leaf-mold because it has more fertility. The road dust is an impoverished fertilizer.

Mr. Ames—Do I understand that you prefer this leaf-mold or almost anything else to horse manure?

Mr. Everett—I said I had used a good deal of horse manure but leaf-mold is better.

Mr. Ames—The horse manure is convenient to get and it seems to me that you might use horse manure and the litter to advantage.

Mr. Everett—It is advisable to use horse manure, and in our case we like to have it for calf stables, and we put up quantities of this leaf-mold.

Mr. McKerrow—How do the liquid parts and the solids of the manure compare in value?

Mr. Everett—I think the chemists find that about 60 per

cent. of the value is in the liquid portion, a little more than half is in the liquid portion of the manure.

Mr. Everett—I think I said that the carbon hydrates I am feeding my cows cost two or three cents and that the proteine costs something like six to seven; that the proteine was the expensive part of the ration and we must feed it. The ration for any animal consists of the proportions of the two kinds, and we should endeavor to produce as much of this proteine on the farm as possible. If we buy it it is expensive; in the shape of bran it is cheap. Now I think that carbon hydrates are usually figured at about one and a half to two and a half or three; two and one-half for carbon hydrates and three for proteine. I do not feed corn to my dairy cows. The entire corn plant in the shape of ensilage is a carbonaceous food. I get it cheaper than corn meal.

Mr. McKerrow—Is there a difference in the manurial value of the two?

Mr. Everett—Yes, sir. Proteine food makes valuable rich manure, and carbon hydrates are rich in carbon and have not near as much fertility. For instance, butter is fat and has little fertility.

The President—Any other question?

Mr. Cole—Mr. Chairman, I do not wish to criticise what Mr. Everett has said because I have been doing the same thing. But I see in the annual report that Professor King has made several experiments and found that water will penetrate frozen soil to a depth of three or four feet with but little influence upon that soil. Therefore I ask, have I been doing right to apply it on the frozen soil? Now the two things that we wish to husband more than any other are the fertility of soil and fertilizers. These are the two things that the young men here want to pay attention to, and we as farmers, and if it is a fact, as we have no doubt it is, that water penetrates frozen soil to that depth without affecting the soil, when it decomposes the manure on the surface, are we not liable to

lose very largely of that manure and have we not been losing?

Prof. King—There can be no question about the result of water on the soil when it is frozen, observations shows that beyond question. But we have as yet no positive data as to how thoroughly water when it reaches manure in the winter season will carry fertility with it. In the summer season, when the fertilization takes place, there is a tendency of the soil to abstract from the water the fertility, and the valuable part of the fertilizers which water may contain is retained in the upper soil. Whether that is true under different conditions or not is not yet a matter of proof. So that while there are certain advantages in hauling manures on the soil in winter, there are, as the gentleman has suggested, places where there are chances for large losses and it is a direction in which observation needs to be made carefully. I would like to emphasize the thought that Mr. Everett expressed in regard to the application of small quantities of manure rather than applications of large quantities at long intervals. This is a very important point because this is true, that the richer our lands are the greater is the danger of losses of fertility by leaching and by fermentation. We may have our land so rich that the crop cannot utilize that material while it is on the ground, and then comes the interval of the two crops during which a large amount can be washed out of the soil. When you have a large amount of dressing of farm-yard manure which has not gone through this process so that in the latter part of the year that nitrogen goes on forming and comes up in the fall with a large amount of it in the soil. This nitrogen is liable during fall rains and during the winter thaws and during spring to be largely leached away from the ground. So that we may put on too much fertility so that by far the larger part of it is lost and we get no returns from it. So I think the point he makes is a very important one.

The Secretary—Do I understand you to say that you recom-

mend or do not recommend the spreading of manure on frozen ground?

Prof. King—I think we have not sufficient data to make any positive statement in regard to it. I should prefer to take my chances on the ground. I believe we have chances for careful work and that it may be found true that storing it during certain portions of the year in sheltered places in a careful way, that we shall by that means reach larger returns from our manure than by the method of applying directly to the land.

Mr. Arnold—"A penny saved is as good as a penny earned." We may be penny wise and pound foolish.

I want to apply this to the average farmer, perhaps not so much to the student. There is such a prevailing sentiment among the farmers that they must feed simply what they can raise on the farm. I do not know of any process in nature or art whereby you can add to the fertility of the farm simply by cultivation and taking from it without bringing something on the farm. Nature allowed to herself without any action of man perhaps adds to fertility, but we have no definite proof that it will retain in itself what nature has given. I want to bring out the importance of our not being afraid to buy kinds of feed that will fertilize our farm. I think that is the greatest thing that we should consider as farmers, not so much the food value to the farmer as the food value to the farms. Take them both into consideration and these two things come so nearly together that it is impossible to discuss one without discussing the other. For instance, when we feed bran of course we are not paying its commercial value. We buy cheaper than the markets show in the way of manures. Corn don't cost as much per ton. Now if we feed that kind of food to the animals, we want that kind of development that that kind of food will give; then we are adding to the fertility of the farm and at the same time enhancing the value of the stock. I have noticed that in countries where they raise sheep and where

they are making butter, notwithstanding there is but a very small proportion of the manurial value taken from the farm, when they sell those sheep, hogs or butter there is a tendency of constant impoverishment of the soil. What is the reason of it? Take back on the farm all there is and still the farm is growing poor. In my opinion there is a cost from taking off the surface of the soil that which is the natural production and keep it in a condition whereby the plant can utilize the elements of the soil. The frosts in the winter must necessarily deplete the soil also. We may think because we are dairymen that we are going to have rich farms, but we will find out that our farms will not be fertile unless we see to it that they are not too closely cropped. I believe that nature is its own restorer, and with proper cultivation we keep upon the surface of the soil a sufficient amount of mulch, give the sheep plant foods, that we will have done the best thing we can do to fertilize our farms, and I would like to see this emphasized—that our fields are not exposed the year around.

Prof. Henry—Perhaps Mr. Arnold has said enough, but I feel that we can hardly say too much provided we say the right thing.

Our situation is unique and our success in agriculture is due to our situation in regard to the great wheat fields of the northwest. Wisconsin has suffered the least from depletion of soil of any state in the union. My correspondence shows that. We are on the borders of the great wheat fields of Minnesota and the Dakotas. There goes into every bushel of wheat a certain amount of the fertility of the soil. I mean that eastern farmers are paying \$40,000,000 for fertility in bags, and the prices at which that fertility sells measured in the bran of our wheat represents the selling price of the wheat today. We know that the fertility of the Dakotas is going into the great mills of the northwest; a large part of that appears in the bran; the starchy part of the flour contains but little fertility. We could plaster a whole farm a foot deep with

flour and you would have no good results. When the great mills at Minneapolis have to a measure been taking charge of the prices we have to pay Chicago, but we do not have to pay those prices that the farmers in New York pay.

I have heard a farmer say, "you won't catch me buying this feed. I will feed what I can raise on the farm." Now we are running some saw mills on the Wolf river and are interested in Oshkosh. What would you think of a manufacturer of doors, sash and blinds in Oshkosh that would not manufacture anything from logs that were not raised in Oshkosh? The facts are they get their logs from wherever they can, from the Wolf river or anywhere else they can, and manufacture them in Oshkosh and make money. Supposing Eau Claire said, "We are situated on the Chippewa river, but we are not going to manufacture any logs that are not raised in Eau Claire. They would have no city of Eau Claire. The wisdom with our farmers is to manufacture this feed here and then save the fertility as best they can, and while Dakota is growing poorer, some one is going to take advantage of it and Wisconsin is destined, if she uses it right, to take that advantage. And the same way with the oil meal. Flax seed meal can be raised here better than in the east. Let us use that. We can become a great agricultural manufacturing state just as Oshkosh and Eau Claire are lumber manufacturing centers. We are going to manufacture it here if we are wise. I see farmers hauling out big loads of bran but it don't worry me any more than to see a sawyer getting a large quantity of doors, blinds and sash. Don't let us be afraid to be manufacturers, and because we cannot produce everything on our 160 acres is no reason that we ought not to do it.

Mr. Ames—I would like to ask Professor Henry, which is the cheaper, bran at the price now, or oats at 25 cents a bushel?

Prof. Henry—What price do you rate the bran?

Mr. Ames—\$14; I would like to get at that point.

Prof. Henry—On the whole I should prefer bran for dairy cows. If the farmer has to go several miles to haul it, that takes a large part of the day, but if I could trade oats on the farm and buy bran at \$15 I should make a swap for part at least. There is variety that comes in there. I should not trade all my oats.

Mr. Ames—Would you want the bran coarse?

Prof. Henry—I should buy bran coarse.

Mr. Arnold—If you are going to feed corn on your farm in conjunction, would you rather have the corn than the oats?

Prof. Henry—The bran is better. We find the fertility in bran is more than the fertility in the oats.

Mr. McKerrow—At the present price of oil meal, twenty cents, and bran fifteen, which would you prefer to buy?

Prof. Henry—I prefer oil meal.

Now let me say another thing. Cotton seed is extremely cheap just now. It can be had in this state at much less than \$19 a ton. It is exceedingly rich in proteine food and the richest we have of any food for fertilizing element. While corn is high, cotton seed meal is very cheap. I had a letter from a Dakota farmer saying that he could buy it in South Dakota for \$19 a ton; another farmer wrote that he could get it for less.

Mr. McKerrow—Is there any danger from constipating effects?

Prof. Henry—Cotton seed meal is not as beneficial food as most of our common feed. It is fatal to hogs but not to other animals unless over-fed. There don't seem to be any poison in cotton seed meal except for hogs. Don't feed of it more than two or three pounds a day to a dairy cow, for a steer six to 8. Parts of Texas are producing the cheapest portion in the market.

The Secretary—In making your comparison between oats and bran you treated it with reference to the dairy cow, or the milk producing properties. Do you claim a ton of bran has the feeding qualities, all combined, that a ton of oats has?

Prof. Henry—The oats are a perfect ration for a horse. The bran is hardly a perfect ration, there is too much proteine. Oats may be given by themselves.

The Secretary—Bran takes its preference only in its application to milk production?

Prof. Henry—I should feed bran to horses but not in a heavy proportion.

The President—Any other questions?

Mr. Cole—There is one point I want to make. I find a great many farmers are hauling off their oats and selling cheaply. I think just as soon as a farmer begins to reason from this standpoint, How can I sell my grains in connection with live stock so as to get the market price and pay the manurial value of the farm, just so soon he is on the road to success. There never has been a year for the past twenty-four years that I have not got the market price for my grain. We cleared seventy odd dollars on a carload of sheep over and above everything fed to them. The young farmer that commences his feeding in this way is selling a large proportion of the farm through the animals on the farm, and then begins to study that manure, and my opinion is there is lots of room to think and study. We lack a little of our fathers; they used to use ashes. Perhaps it is largely because we are producing more manure than we used to, but perhaps there are better methods and we want science to teach us those better methods and she is going to do it soon.

The President—I notice that some one has put a map up here. I would like to have it explained.

Mr. McKerrow—The people of Beaver Dam asked us to place the Farmers' institute at that place this winter and when we went there to hold the meeting we found that somebody (I understand the charge is made at the door of our friend Newcomb) had prepared this chart with the reading upon it, which I presume is self-explanatory. It says: "Farmers' institutes encouraged the farmers to build 38 butter and cheese factories within ten miles of Beaver Dam, Wisconsin, paying in cash annually over one-half million dollars to the farmers for milk,—adding over \$1,000,000 to the wealth of Dodge county in the past seven years since the first institute was held in this county." (Below

this is the picture of a cow, a hog and a horse cited as "The farmer's best friends").

The President—Any other questions to be asked?

Mr. Thompson—I would like to ask which is the most advantageous, to spread manure on the grass land or upon other land?

Mr. Everett—I think it is advisable to apply to grass lands. I believe that the fertility gets down into the soil fast enough without plowing it down. We ought to manure on the surface if possible. We ought to manure on the meadows because there will be less loss if there is running away from this roughage than stubble field.

Mr. Ames—If I understand you rightly, you would manure your clover before you mowed it. Would you be bothered with manure being raked up in hay?

Mr. Everett—The manure we apply has very little coarse and strawy stuff in it. We apply it rather lightly over the field and harrow it to dust in the spring, so when haying time comes we have no difficulty at all. If it was in the way of hay I would rake it off.

Mr. Thompson—You claim there is no loss in the manure by evaporation?

Mr. Everett—The main loss is by leaching and there is a loss going on all the time by evaporation of ammonia.

Mr. Thorp—What time of the year would you apply that manure?

Mr. Everett—I stated I apply manure all winter and spread it on the clover field every day, and pile it in the yard in the spring when the ground is too soft, and later on spread it on the field. There are perhaps not ten wagon loads in our yard today.

Mr. Thorp—Have you noticed any difference in the value received from applying that manure at different times of the year? If applied in the fall, for instance, after the frost was out, did you notice any difference in the growth of the grass?

Mr. Everett—There would be scarcely any noticeable difference.

Prof. King—There is a point there that needs to be emphasized a little. When you put manure on ground that is bearing

crop, the element of the nitrates, while the crop is on the ground, places that nitrate in such a condition that the crop does not utilize it and leaves it in a condition where it can leach away. If you have manure on clover ground in the spring, if that clover is growing, it takes the nitrates that are developed during that time and prevents it leaching away. Put manure on a grain field when the season is dry so that the crop takes all the moisture that can be utilized for its own production, so that if the development of nitrates is small, then when that grain crop goes away, nitrates develop there, there are no roots to gather them and they leach away, but if the ground has been seeded to clover so that when the crop is taken off there is a balance still left to utilize these nitrates then the clover balance fixes it so that the crop standing on the ground is a means of preventing a loss by leaching. There are decided advantages by this practice of placing manure.

Mr. Thorp—Nearly two years ago while in the southern part of the state I ran across a very practical farmer and he said he had given up putting manure on his pasture in the fall after it had frozen up. I saw 7 or 8 loads heaped up on his grass lands as high as he could throw it. I asked him why he did that and he said that he found by putting it out in the spring after the frost was out he obtained better results than by putting it on in the winter. The next fall I manured about two acres after it froze up. In the spring after the snow was gone I manured two acres more, and during the whole summer I could see the line where I had manured last. It was a better growth of grass.

Mr. Noyes—I would like to ask if there is any other advantage derived from the application of coarse manure?

Mr. Everett—Acts as a mulch.

Prof. Henry—Before the manure question is closed I would like to counsel the farmers to write to the Department of Agriculture, Washington, D. C., for Experiment Station Bulletin Number 23, entitled "Barnyard Manures." It is a practical treatise on the subject we have just been going over. I have written the secretary to send me a copy for the class, and I wish every farmer would write for one.

The President—Our next paper is, "How I Grow Clover, and Why," by Hon. Matt. Anderson.

HOW I GROW CLOVER, AND WHY.

Hon. Matt. Anderson, Pine Bluff.

Mr. President:—The subject assigned to me is, How I Grow Clover, and Why. I do not expect to be able to tell the intelligent farmers that attend this convention anything they do not know about growing clover, as the farmers who attend our state conventions are generally well informed on how to grow clover. This subject has been so thoroughly and ably discussed in the institutes all over this state that I think that my way of growing clover will not be different from that of a majority of the farmers and, therefore, of little benefit to them. I may have been growing clover longer than most farmers in this state and ought to know how to grow it.

In the spring of 1857 I sent from Ohio, 18 bushels of medium red clover seed to be sown on the farm that I now live on. That was the first clover seed sown in that section. I moved on to the farm in 1860. I have never sowed small grain from that time until now without sowing clover of some kind. I make this statement to show that I have been growing clover a long time. When I raised spring wheat and barley I sowed clover at the same time that I sowed the grain, using a drill with a grass seed sower behind the hoes. In sowing red clover I usually sowed four quarts of clover and two quarts of timothy, well mixed, to the acre. I consider this amount enough.

I harrow after the drill, cross-wise of the drill, with a smoothing or light harrow; if spring plowing, I roll it, as I usually sow grain on corn stalk ground. For the last ten years I have not grown any red clover. About twenty years ago I began to sow Alsike clover in a small way. I did not like it at first, but after learning more about it, I found that sowing it with timothy I got the finest and best hay I ever raised. I sowed about four quarts to the acre, half Alsike, half timothy. This I sowed with drill the same as the red clover. Alsike and timothy manures about the same time, medium red clover is ready to be cut when grown with timothy before the

timothy is at its best. Therefore, I prefer to grow timothy and Alsike together.

When I raised red clover I found it difficult to cut, cure and house a large crop without getting some of it spoiled; either before or after it was stacked. I could not use caps for covers as Mr Everett does as I had too much to handle. Yet I believe in caps for hay cocks where there is not too much to cover. I cut and rush my hay into the barn or stack as fast as it is fit, sometimes without even putting it in cocks, but prefer having it lying in cocks over night.

Nearly all the hay I make of late years is timothy mixed with Alsike. I get most of my hay or feed from the Alsike that is hulled for seed. It makes good feed if cut at the right time and hulled and stacked in good shape. I cut last year 90 acres of Alsike for seed. I began to cut it when there was much of it in blossom. It is not like red clover, it does not blossom or ripen all at once. The lower blossoms are ripe when the top ones are white. I cut with two self-rake Champion reapers, cutting as low as it could be cut. We set the rakes so that every other rake raked off. The gavels were lifted with a fork and placed three rows in one, three gavels in one bunch. I had a huller to hull it in the field. The small cocks dried quick and could be pitched on to the wagon speedily. We set a wagon with a hay rack under the carrier and hauled the chaff to the barn yards and stacked it in ricks. I have been feeding it to horses, cattle and sheep, they eat and relish it. The dust from Alsike is not like that of red clover, it has none of the unpleasant, itchy feeling produced by red clover, which comes from the fuzz on the red. I had 470 bushels of seed last year by weight as it came from the huller. I sow about three quarts of seed to the acre. That would be as thick as six quarts of red clover, as the seed is small. Since the chinch bugs stopped the growing of spring wheat and barley, I sow with oats. I prefer to sow with wheat or barley as oats shade and smother the young clover more than other grain. In favorable seasons I get a good stand nearly every year.

Why I grow clover. I grow it for the money that is in it. I grow it to keep up the fertility of the land. I grow it for feed

for live stock. I grow it in my rotation of crops. I grow it because I cannot make a success of farming without it. I was told before I came to this state that my land was worn out. I said to the man who gave me this information, that I knew land that had been under cultivation over 100 years and it now produced more than it did 50 years ago. I said I will sow clover and wear it in; that there was no such thing as land being worn out in the 15 years it had been under cultivation. After growing clover on the oldest fields for two years and after a crop of corn on the clover sod, the first crop of wheat I raised had 30 bushels to the acre, while the man that told me my land was worn out had less than 15 bushels per acre. My rotation in crops when I raised red clover was one year in clover, the next year in corn and the next year in small grain seeded to clover again. Since I have sown Alsike I changed my rotation to two years in Alsike and two years in corn, and one year in oats seeding again with Alsike. I haul the manure on to the clover sod before plowing for corn. The manure and sod being plowed up makes the land in good condition for the second crop of clover.

This rotation may not suit others. If I raised winter wheat or rye I would sow clover when the land was frozen early in the spring, as soon as the snow was off. I sowed on rye last spring and although I pastured the rye, it did well. I am frequently asked if Alsike will enrich the land as well as red clover. I answer that my land has improved since I have grown Alsike as much as it did when I grew red clover, and produces better crops than adjoining farms that grow red clover. The roots of Alsike do not go down as deep perhaps as red clover. But there are more of them, as they grow in a large bunch near the surface. If it is true that the clover roots gather nitrogen in nodules near the surface, Alsike should gather more nitrogen on its numerous roots than red clover does on its few roots. I will read an article taken from a bulletin of the Minnesota Experimental Station which gives good reasons why every farmer should grow clover.

The Experiment Station of the University of Minnesota, has just issued a bulletin on the "Chemical Development and Value

of Red Clover." It is stated that the experiments were prompted on account of the many failures, of farmers in the northwest, who attempted to raise red clover. The failure does not appear to be due to the deficiency of plant food in the soil; but it is due more to the want of proper chemical conditions of the soil. These conditions can be ascertained only after extended experiments with the seeding of clover on different soils and under different conditions. It was found, also, that clover seeded with late wheat gave a yield of a ton per acre more than clover seeded with early oats. In both cases the clover was sown on fall plowed land, which had previously been in corn for two years. The bulletin summarizes as follows: The largest yield of dry clover can be obtained at the end of flowering, while the largest yield of nitrogenous matter is from time of full to late bloom. At the time of full bloom, the nitrogenous materials in red clover have reached their most valuable food forms. The lime and potash are taken up by the plant the most rapidly of any of the mineral matters. Only two per cent. of mineral matter is added to the crop after full bloom. No potash is taken up after full bloom, and when ripe the plant contains less potash than at the time of full bloom, which is due to the retrograde movement of the potash at maturity. From fifty to sixty per cent. of the mineral matter taken from the soil by a clover crop is lime and potash; and in the way of fertilizers, clover responds the best to land plaster, which is a lime fertilizer, and wood ashes, which is mainly a potassium fertilizer. The leaves of clover are very rich in nitrogenous compounds, from sixty to seventy per cent. of the entire amount found in the plant, excepting roots, is in the leaves. About the same proportion of the lime is stored up in the leaves. When the leaves are young and in the first stages of development they are the richest in nitrogen, on account of the nitrogenous compounds of the plant being developed at an earlier period than the non-nitrogenous compounds. The greatest change from lower (amido) forms of the nitrogen to the higher (proteid) food forms occurs from early to full bloom. Clover roots are of much value for increasing the fertility of the soil by adding organic matter and nitrogen, and changing

phosphates, potash and lime into more available and valuable forms of plant food for succeeding crops. At the time clover is five to six inches high, the plant, with its roots, if used for green manure, will contain as much dry matter, phosphates and potash per acre as there is in a ton of good farm manure, and as much nitrogen as there is in two tons of the best farm manure.

The clovers grown on different soils in Minnesota show the most variations in lime and potash, varying according to the nature and the amount in the soil. The clover in all cases has a practically equal food value.

The root nodules of clover contain from four to six per cent. of nitrogen. A crop of clover will add from thirty to fifty pounds, and more of nitrogen to every acre of land, and in addition to this, enough available mineral food will be left in the crowns and roots for two good crops of wheat.

Another reason why I grow Alsike, I grow it for pastures. It makes better pasture than red clover. Cattle, sheep and hogs will pass over the red clover and go to the Alsike when in the same field. I have sowed red and Alsike mixed for pasture; in some spots it would be nearly all Alsike. The cattle and horses eat the Alsike off before eating the red clover. I have but little land in permanent pasture and that is low land in blue grass, and on this every few years I sow Alsike.

John Boyd, a noted dairyman of Illinois, said that after experimenting with many kinds of grasses for pasture, said if he had to give up all kinds but two, he would select Alsike and orchard grass. But as my subject is clover I do not intend to speak of grasses.

I will read an article taken from the Wisconsin Farmer as it is much easier to use the scissors than the pencil:

How Clover Enriches Land.

From time immemorial it has been well understood that clover adds fertility to the soil. It is only in recent years, however, that the method by which this is accomplished, or, as our scientific friends would say, the *modus operandi*, has been understood even by the scientists themselves. Clover can

not add anything to the potash or phosphoric acid of the land, for the reason that it can obtain no supply of it except what is within reach of its roots. It may, however, have a greater capacity than other plants for utilizing that supply, and when once it is utilized for its purpose, leave it in a more available shape for the use of other plants than it was before. The clover obtains its fertility, the fertility which it gives to the land, solely in the form of nitrogen, and this, as we have explained over and over again, it obtains from the atmosphere. Just how this is done the scientists have not been able to tell us. They have, however, succeeded in demonstrating that it is closely associated with the little wart-like protuberances on the roots of the plant, which, for want of a better name, they have called tubercles, from their similarity to peculiar deposits on the lungs of the consumptive man or cow. They have, however, no connection with disease. These tubercles are filled with germs, not death-dealing, but life-giving germs, which, in a way not yet understood, are able to utilize the free nitrogen of the atmosphere, amounting to about four-fifths of the total, for the purpose of meeting the enormous demands of the clover plant for this expensive kind of fertility.

Not to go any further into the theories of scientists, which in this case we believe to be thoroughly well founded, it is our aim at present to point out the practical application of this theory to the western farm. Of all the great elements of fertility, nitrogen is the most easily exhausted. Potash and phosphoric acid do not leech out of the soil to any great extent. Nitrogen does very rapidly, especially in wet climates and wet seasons. The analysis of drain water from Sir Jno. B. Lawes' experimental plots fertilized with nitrogen, proves this beyond question. It follows, of course, that western soils become exhausted first in nitrogen. The farmer, therefore, sows clover to restore it, as at once the easiest and cheapest possible method. This power of obtaining a supply adequate to its wants from the free nitrogen of the atmosphere is shared by all the legumes or plants that have a pea-like blossom, such as peas, beans, the common locust tree, the honey locust and various kinds of weeds, but is not shared with any

of the true grasses, the clover not belonging to the true grasses, strictly speaking, nor by any of the grains in common use on the western farm. This explains why all crops do well after clover; it explains why the blue grass lawn always thrives better when white clover is permitted to grow with it; it shows why grass and grain grow under a locust tree almost up to the trunk, while they refuse to grow in the shade of any other kind of tree; it explains why the timothy crop, after a crop of clover has been taken, is usually exceedingly luxuriant, the timothy feeding on the nitrogen stored up in the land the year before by the clover. It goes still further, and it does much toward explaining what is commonly called in America clover sickness, but which is really the exhaustion of the potash and phosphoric acid in the land by the removal of frequent crops of clover, and which can be restored only by the use of commercial fertilizers or by the slow process of the disintegration of the primeval rock in the soil.

From this point of view it is easy to see the great importance of the clovers in any rotation of crops. They form, so to speak, the starting point from which we begin to rotate and come back to the point we started from, a clover crop. They are, so to speak, the *alpha* and *omega*, the beginning and the end, of every properly arranged rotation of crops.

It is the first crop or cutting of Alsike that produces the seed. In growing red clover for hay it has to be cut at the time I wanted to cultivate corn. This is of great importance to the farmer that grows both corn and clover largely. Alsike when cut for seed or when sown with timothy for hay, has not to be cut until through cultivating corn. With me it is almost impossible to take care of a large crop of hay and have my corn properly cultivated at the same time. Last year some farmers had their corn ruined by not having it cultivated after the late June rains. They were in the midst of haying. I got my corn all cultivated after the rain and had a good crop.

In a report by Mr. Frank E. Emery, from the North Carolina Experiment Station, he gives a table showing the actual amounts of digestible nutrients in 100 pounds of dry matter of each as follows:

	Proteine	Carbo- hydrates.	Fats.	Ratio 1 to:
Alfalfa hay.....	10.55	44.31	1.35	4.52
Alsike clover hay.....	9.31	46.96	2.76	5.78
Red clover hay.....	6.64	42.64	0.80	6.72
Crimson clover hay.....	12.45	43.70	1.25	3.76

This shows Alsike hay to have more than twice as much fats as Alfalfa or Crimson Clover, and over three times as much as red clover hay.

In conclusion, I do not advise farmers to give up growing red clover and grow Alsike, as red clover on poor or high dry lands will do better than Alsike. But on my farm I intend to keep on growing Alsike.

DISCUSSION.

The President—Any questions to be asked? We can devote a few moments to it.

Prof. Henry—What proportion of hay do you get from Alsike compared with red clover on the same land?

Mr. Anderson—That depends a little on the seed; in a dry season red clover will grow better, but in a moist season the Alsike. The largest crop I ever raised was Alsike clover and timothy, on rolling land. The Alsike was about three feet high and the timothy was so high it was almost impossible to cut it with the mower. There is no doubt but Alsike on rich land or low land will grow big enough. The trouble was the seed did not fill, but I cut it for hay and 'it makes one of the finest hays I have ever raised. During the dry season the old clover left on the ground was a mulch and kept the ground moist. Every farmer knows mulch will enrich the land without manure, so that the mulch is of great benefit to the land. That is one of the reasons why clover does so much good. There is a good deal of it left on the ground.

In regard to the enriching of the land, a great many think that the Alsike does not have roots enough to go down. I have a package of papers at home called "Clover Leaf" I sent

word back to have them sent in today by express. You can see the cut of the Alsike. I have a root of Alsike one year old in my pocket.

Mr. Ames—Then your land is not low, quick bottom?

Mr. Anderson—No sir, part of my land is rolling, the whole is prairie. I have a little low land where I grow bluegrass and Alsike together.

Mr. Ames—Your low land is where you get your best Alsike?

Mr. Anderson—I get it all over the farm. I have raised it three foot long in a good year, and sometimes so high I could hardly cut it.

Mr. Thorp—Do you get as good a crop the second year as the first?

Mr. Anderson—A little better. I cut all but 350 acres the second crop. I got 170 bushels of seed; that was this year.

Prof. Henry—How is Alsike for pasture?

Mr. Anderson—Alsike for pasture—I sowed Alsike and red clover in the same field, expecting to cut the Alsike for seed but I turned my cattle in. The cattle would pass the red clover and eat the Alsike. The hogs won't eat red clover if they can get Alsike—Alsike is better for pasture than red clover.

Mr. Newton—Does Alsike clover grow enough to cut a second crop the second season?

Mr. Anderson—Not if you take seed off. I cut from the first of July to the second of August. I cut my Alsike early this year, by the time I was mowing my timothy, and got a good second crop which was full of seed, so that convinced me that by getting the first crop early the second crop would be full of seed. Red clover ought to be cut from the 15th to the 25th of June. If you want to get a good crop of clover seed you had better cut the first crop early.

Mr. Grisim—I have had a little experience, still it has been quite uncertain. About 55 or 56 years ago I sowed a twenty acre field of clover and Timothy mixed. I sowed about four pounds of clover and timothy to the acre. I had to pay fifteen cents a pound for the clover. How much clover hay do you suppose I got out of that twenty acre field next year? Can any one guess? I got five loads of red sorrel. I don't

know where it came from. I didn't sow it. I got fifty bushels of oats per acre from the land the year that I seeded it.

Mr. Anderson—I raised 70 bushels to the acre.

Mr. Grisim—That is nothing at all; I had 85 bushels per acre.

The President—We have got to close this shortly.

Mr. Grisim—My clover pasture was the poorest pasture I ever had. My cattle and sheep would eat anything before they would eat the red clover; I will except the hog, but the cattle and sheep will eat anything before eating the red clover.

Mr. Anderson—You and I agree on that.

Mr. Grisim—If I could make the seasons all right I could raise the clover every year. I have had that experience in this country,—I find clover is quite expensive when we pay \$5 or \$6 a bushel for it.

Mr. Anderson—I paid twenty cents a pound for clover. If you cut clover when it ought to be cut it makes good hay, but if not, it is the poorest hay you ever had. Clover is very uncertain. I have raised as good and as poor as anybody ever raised. I sow it every year for all this bad luck.

Mr. McNeil—I would like to ask, how do you sow Alsike clover on bluegrass pasture?

Mr. Anderson—By hand. In cleaning up my land I sow upon the bottom lands every year that I use for permanent pasture, and when I have not got that I use pure seed and sow it; but almost every year I have some that is not marketable. The first thing that I do in the spring when the snow is gone off, early in the season, I sow it.

Mr. Hodges—There is one question I would like to ask. I would say I am farming somewhat on a small scale myself and I farm for profit, and I would like to ask the gentleman, in raising this clover for seed and for hay, I would like to know which he derives the greatest profit from, cutting for seed or for hay.

Mr. Anderson—That will depend on the ground and the kind of seed you get. This year seed paid four times as much as hay would have paid, but last year red clover filled well but Alsike did not, the first year I have known it to fail to

produce seed, and that is one of the reasons why Alsike has yielded so well. Undoubtedly it paid me best this year.

Prof. Henry—Mr. President and Members of the State Agricultural Society:—Fifteen years ago this week I stood before your body for the first time as a representative of the State University in its agricultural department. Fifteen years ago I met this Society for the first time. I pleaded then with you for the agricultural department of the State University. The next winter I was with you again, and you will recollect at that time we held a meeting in Science Hall, the building which burned down. Several in the room today were at that meeting. I kept on urging your interest and confidence and respect for that department. I urged you to send your sons to the agricultural college. You will recollect a movement was made for the separation of the agricultural department from the University proper but it failed to go through. Ten years ago the regents said, "We will start a farmers' course," and ten years ago we had for the first time a few men come for that course, and now it is getting into very fair proportions. I think you older members here can notice a great change from that time to the present. To give you some idea I will ask our boys to rise. (Agricultural students present arose.) Now, gentlemen, I wish I could have brought all the family here but unfortunately a great many, probably seventy-five, are kept at the dairy building on account of the dairy work there. We have with us at this time in that department 214 young men representing fourteen states and Canada.

Now I hope this is but the beginning of what is going to come in Wisconsin. We want your help, we want your sympathy and confidence just as much as ever. We have boys judging live stock at many of your county fairs. Our boys are helping us at your county and state fairs and in every way the influence of the agricultural college is beginning to be felt as you see it felt in this meeting. Give us your confidence and your help.

The President—At two o'clock this afternoon we will be pleased to see you all here again.

Mr. Hodges—Unfortunately I was appointed Superintendent

of the Dairy Department, and I wish to ask, as I do not think I am capable of making a display at that place as it should be without the help of this agricultural college, and I wish to invite all the students here to co-operate with me and assist me in this undertaking that we may make a grand display there, to show what the dairy interests of Wisconsin are, as I think the dairy interests of Wisconsin as important as any interest that we have in the agricultural line, and I want their co-operation. I want the students and the professor to help me in this matter, and I think if they will lend me their help we will make it a success.

Adjourned.

2 o'clock p. m.

Mr. C. H. Everett, Chairman—The first subject that we will take up this afternoon for consideration is a comparatively new subject and yet one of interest, and I take great pleasure in introducing to this audience Professor Russell of our University, who will talk on "The Relation of Bacteria to Agricultural Pursuits."

THE RELATION OF BACTERIA TO AGRICULTURAL PURSUITS.

Prof. H. L. Russell, Experiment Station.

The inter-relation and inter-dependence of one line of activity to another is much more marked now than in former years.

Farming used to be considered an avocation by itself. There was no need for any schooling except that knowledge gained in the school of experience. If the boy was well versed in the three R's he was well enough equipped to take up his chosen vocation as a tiller of the soil.

Now, the agriculturist has a broader outlook upon the scope of his activities. He recognizes that his business is based

upon certain fundamental operations that occur in nature and that the principles underlying these must first be acquired before he can intelligently till the soil and reap from it the richest reward.

He is taught the principles of physics that are applied in the construction of machines, and how to use power economically in his work. He is shown how he can by harnessing natural forces diminish the drudgery of routine in many ways.

A knowledge of elementary chemistry, too, often helps the agriculturist to adapt his style of farming to the character of his lands. If he is familiar with the chemical components of different food rations he is able to select at best advantage the necessary nutritive elements for successful feeding. The application of the fundamental chemical principles in the selection of fertilizing substances enables him to restore to the soil in the most economical manner those necessary ingredients that are abstracted from it by the growing crop.

Basic and essential as is a knowledge of chemistry to a successful farmer, in a no less degree should he be familiar with the laws that govern the animal and vegetable kingdom—those that pertain to what is known as biological science.

A knowledge of the way in which a plant feeds and breathes and in consequence of which it is able to grow and reproduce, as well as the fundamental principles underlying the physiology of nutrition, growth and reproduction of animal life, are advantageous to every tiller of the soil.

An adequate conception of these studies is essential in many ways, and the farmer boy that has been taught the underlying principles upon which the facts and phenomena that he is forced to deal with are based, is best prepared to husband his resources and utilize his powers to the fullest extent.

My purpose today is to bring before you a certain department of this biological science—that which concerns life and living matter and show you what it is doing for agriculture, broadly considered.

The particular phase which will concern us is the relation of the bacteria to general lines in agriculture.

In briefly recounting some of the different ways that bac-

teria are brought into relation to agricultural topics, of first importance is the function that they fill as scavengers of the universe.

Were it not for the different forms of germ life that are engaged in pulling apart and breaking down the dead animal and plant matter, this earth would soon be choked and buried beneath the accumulating mass of its own debris. The fallen tree trunk and the sere and yellow leaf would remain inert and unchanged, were it not for these tiny scavengers that are continuously at work tearing apart the complex structure and restoring it bit by bit to the soil that once hurtured and supported it. In this way the nutritive elements that are incorporated in the giant oak and the tender blade are given back in their own good time to the mother earth to nourish again future generations of living matter. By this slow but continuous process the deep rich loam of the forest glade has been made fruitful for man's occupancy.

Not only has it prepared the soil so that under man's fostering care the desert may blossom like the rose, but today the forces are at work on every farm preparing and changing the fertilizing elements that the farmer adds to balance the account with nature for what he has abstracted in the growing crop.

Fresh made or green manure is worthless to the plant in its raw state. You may supply it to the growing crop in abundance yet the cereal will hunger for that which it cannot find. Its food may be all about it but its bread is a stone until it is changed and ripened and rendered soluble under the ceaseless influence of these invisible mites of living matter. When once this change has taken place and the insoluble nitrogen has given place to the soluble material, then the tiny rootlet can lay hold of its food and appropriate it, building it anew into tissue and fabric that surpasses in delicacy of structure any product of the Gobelin looms.

The ripening changes that take place in natural fertilizers is only one of the processes in which the bacteria are concerned that affect the fertility of our soils.

Another we have in the appropriation of that invaluable

chemical element N. that is taken from the air and stored up in some mysterious way in the root of the clovers, vetches and the differnet plants that are members of legume or pea family. We have in the atmosphere about us an unlimited store of this valuable fertilizing element that for purposes of sustaining and developing plant life is practically worthless. Here it exists in an uncombined state but useless as a food material for green plants. Think of the enormous gain that would accrue to our resources if this illimitable supply was available for the use of growing crops. Nitrogen is by far the most expensive element that must be added to the soil to recompense it for that which is taken away from it in the annual crop. Its cost is over four times that of potassium, and two and one-half times that of phosphoric acid, yet four-fifths of the air about us is made up of this valuable element.

By growing clover and such plants, every farmer knows that he can greatly enrich the fertility of his soil and yet do so at a minimum of cost. In other words, he is able to gain something without paying an equivalent for it. The amount of nitrogen that is added to an acre of land by the use of clover as a fertilizing crop has been quite accurately determined with a number of plants. The New Jersey Experiment Station found as a result of four years' experiments that the actual manurial value of the fertilizing ingredients annually added to the land from a crop of alfalfa was about \$65.00 per acre; over \$50.00 of this was due to the nitrogen that had been taken out of the air and stored up in the clover roots and soil.

The question will occur as to the relation of bacteria to this process.

We find upon a close examination of the roots of the clover plants minute little protuberances that are always associated with a vigorous condition of the crop. Where these are absent, the stand of clover is scant, but where numerous the thriftiness of the forage plant is much increased. A microscopic examination of this wart or swelling reveals the presence of myriads of tiny organisms belonging to the bacteria that are able to penetrate the succulent tissue of the growing

root and thus gain an entrance into the clover plant. Here these germs establish a sort of a partnership concern. They derive their sustenance from the soluble material that is brought to it by the plant cell and in return they give to the other member of the firm the nitrogen that they are able to take in a gaseous condition from the air. Just how they are able to assimilate and hold this nitrogen in a combined state we do not fully know, but the fact is well proven, even if all of the steps of the process are not completely understood.

Not only is the soil enriched through the fixation of the free nitrogen of the air by means of the micro-organisms dwelling in the clovers, peas, etc., but other kinds of bacteria are able to take this gaseous element and appropriate it directly, thus increasing the amount of this fertilizer in the soil.

Still there are other ways in which the fertility of soils is much increased by the aid of bacterial germs.

We mentioned in the beginning of this talk the relation of organisms of this class to the decomposition and decay of organic matter. In this breaking down process, different gases are given off and soon the material is reduced to the simplest compounds or elements. But in this form much of the fertilizing property of decayed material is unavailable. For instance, among the nitrogenous elements, ammonia is freely evolved. Now, in this stage as ammonia, the nitrogen has no immediate value as a plant food. It must be changed from this form by certain chemical steps into nitrogen compounds like nitrites and nitrates. Nature has been accumulating these nitrogenous salts in the earth for centuries and we are using them in the naturally prepared saltpeter beds from South America, but the process of nitrate building or nitrification, as this process is called, the conversion of ammonia compounds into nitrites and nitrates is going on under our very eyes continually.

It is now known to be a result of living forces and dependent in every way upon certain microscopic bacteria. The details of the process are very curious, for here we have the single instance, outside of the green plants, where organisms devoid of the green coloring matter in the leaves are able to build

up from the simplest material, compounds of a highly complex character. Even in this process there is to be found a peculiar division of labor—one set of organisms changing the ammonia into nitrites and this resulting compound is picked up by another set of organisms and carried on to where the nitrates are formed. When it reaches this state it is more stable and there is less liability of its being broken down again into the simplest forms.

This synopsis will serve to present in bare outlines the relation of germ life to some of the different processes that take place in the soil. This, however, is only one of the many phases in which bacteria come into relation to the agriculturist. We can only allude in a very brief way to many of the other lines that are of interest in this connection.

The manifold diseases that pester the horticulturist and agriculturist⁴ are for the most part due to the attacks of fungus parasites, but plant life is by no means exempt from the ravages of invading bacteria, and the single disease known as the pear or apple blight testifies to the deadly character of these troubles. This particular malady is spread from tree to tree by the aid of insects that visit the blossoms for the nectar that they can secure. In this way the disease organism gains an entrance into the soft succulent tissues of the host plant and when once it has forced its way into the interior it is able to thrive unimpeded. The continuous ravages of the disease organism sooner or later causes the death of the entire tree.

While bacteriologists have been unable to find a positive cure for this trouble yet an exact knowledge of the way in which the disease is propagated and transmitted has enabled fruit growers to limit its destruction to a minimum amount.

Bacteria are able to affect plant tissues in only a few instances, but on the other hand they find in the animal body much more favorable conditions for growth. The juices of the plant are as a rule too acid in their reaction, and the mechanical barriers with which the plant is endowed makes it difficult for bacteria to pierce the corky layers. To the breeder these germs are a serious menace for numerous germ troubles often rage among his flocks and herds with especial virulence.

The estimated loss in this country alone from the contagious diseases of swine that are caused by bacterial organisms has been placed from twenty to twenty-five million dollars, and these diseases are only a few of those that are more or less common in our midst. Almost every domesticated animal is subject to some special malady that is produced by certain forms of germ life. In some instances a disease is confined mainly to one class of animals, like glanders in horses, while in other cases, as consumption, there is scarcely a warm blooded animal that has been domesticated but what is subject to the ravages of this disease.

This one disease alone, in cattle raising, is a serious drawback to successful animal industry, and not only this, but it is a direct menace to public health through the infected products derived from diseased animals.

A thorough study of the causes that are really at the bottom of these different maladies has resulted in the perfection of a system of prevention that is as valuable and efficient a means of checking animal epidemics as is now employed with many of the human scourges.

In considering the relation of bacteria to agriculture we will use the term in a broad sense, including some of the more special departments of this general science.

One of the most important to Wisconsin farmers, from a financial standpoint, is dairying in its many phases. The cow and the product derived from her occupy a front rank in Wisconsin's industries, and we will turn our attention to these more closely.

First, to start with, milk.

What effect have bacteria upon this substance? If we set a sample of milk aside for some days it is only a matter of a few score of hours before this food product is rendered unfit for human use. Ordinarily it will undergo souring and in doing so the physical, as well as the chemical characters of the fluid are profoundly changed. If we examine more carefully this sour milk, it will be found to be teeming with myriads of tiny organisms that belong to the bacteria. If these minute bits of living matter are separated one from another

and studied each by itself, we will soon find that the sour milk contains varieties of germs which, if inoculated into perfectly germ-free milk will cause a rapid change in the same.

We now know that it is not the thunder that sours milk but that this change, which is nothing but a fermentative one, takes place in the milk because certain kinds of bacteria have gained an entrance to the fluid, and the changes produced are inaugurated by means of these tiny forms of life. If these were excluded milk would not sour; it would remain sweet indefinitely. Not only is the souring of milk due to germ growth but nearly all that host of obnoxious and undesirable fermentations that are such a source of anxiety to the dairyman, are likewise produced by the presence of certain specific forms of bacteria that get a foothold in the milk.

The question naturally arises, how do these organisms get into the milk? Can they be checked in their career in any way? Bacteriology gives us an answer to these questions that is based on practical experience. Experience taught us long ago that cleanliness was the first precept of successful dairying and that the cleaner the milk was secured and handled the purer would be the product, and the longer it would keep. Bacteriology teaches us the same lesson but it tells us *why* dirt and carelessness increase the rapidity with which the milk is changed by these fermentations. It shows us the relation between dirty conditions and bacterial life, how one presupposes in a certain sense the other. It is not dirt that causes the rapid change but what the dirt contains. If we exclude the dirt, as is done where a régime of scrupulous cleanliness is inaugurated, then we will exclude the bacteria and with them this multitude of fermentations that always accompany them. Where the milk is intended for direct consumption in this condition bacteria of all kinds should be kept out of it. The less there are in milk the longer the product will keep, so that if milk can be deprived of its bacterial population it can be kept in a marketable condition much longer than where the germ life that gets into it is allowed to produce acid that sours the fluid.

This can also be accomplished by the use of heat. If the

milk is heated to a temperature of about 155° F. and held at this temperature for 20 to 30 minutes and then cooled as low as possible, it will keep from three to six days longer than it would otherwise. This temperature is high enough to kill all bacteria that are in a growing condition, but not high enough to give a cooked taste to the milk. By this process, known as pasteurization, the milk is not only freed from the organisms able to sour or ferment it but all disease germs like consumptive organisms are eliminated. Pasteurized milk is then much better adapted for infants and invalids than that which is untreated.

Although the presence of bacteria to any extent may be said to be detrimental to milk that is to be consumed in that condition, yet they are a very necessary adjunct to certain dairy operations.

In the manufacture of acid cream butter the bacteria play a most important role in ripening the cream preparatory to churning. By this process the yield is somewhat increased, but what is more important is the production of the peculiar flavor and delicate aroma that is so highly prized in butter. These peculiarities that mark a fancy product, and for which a high price can always be obtained, are due to the decomposition changes that certain favorable organisms produce in the cream. These organisms are the same that are present in the milk so the kind of germ with which the milk becomes seeded is a question of first importance.

If carelessness prevails in handling the milk and cleaning the vessels that are used for storage purposes, then the presence of undesirable ferment organisms will have a marked effect on the flavor of the butter.

Recent experiments on this subject seem to show that it is quite possible to introduce cultures of organisms that have been selected on account of their pure flavor producing quality and, after heating the cream to kill out all of the bacteria, introduce into it this pure culture of the proper organisms that will bring about the delicate flavor that is desired.

This novel way of making butter has already been tried with marked success, and in Denmark pasteurized cream ripened by the aid of pure bacterial starters is extensively used.

In this way it is possible to render the butter very uniform in quality because the fermentation is under direct control and is the same whether the butter is made in January or June.

This item in itself is of great importance as it overcomes the chief difficulty that the better class of butter makers have to contend with at present.

In addition to this increased uniformity in the production, butter made according to this process has very much better keeping qualities than that which is ripened according to the old method. This is to be expected, for the production of the off flavors in butter that has been held in stock is mainly due to the mixed series of fermentations that go on in this product where no attempt is made to govern the kind of bacteria that are concerned in the ripening process.

The application of the pure culture method will not tend to increase the delicacy of flavor that is now produced by first class makers, but it will doubtless be of material assistance to those that now make a somewhat inferior product. To the better butter maker the chief advantage gained from the use will be an increase in uniformity and keeping quality of his product.

If bacteria are desirable in butter making, they are an absolute necessity in the manufacture of cheese; for unless germ life is present in green cheese, the casein which is such an important element remains unchanged and therefore indigestible. Under the influence of rennet and bacterial life, the insoluble casein is broken down into soluble form and the nitrogen is put into a digestible and nutritive condition.

This change in the character of the nitrogenous part is an essential one and one on which the market value is largely based.

If the proper organisms are present in the milk and are transferred to the green cheese, the curing changes go on in a characteristic way and the cheese ripens in a suitable manner. If, however, the milk is tainted or has any abnormal number of any undesirable forms then the quality of the cheese is very much lessened.

The bacteria are necessary to the proper curing, but the kind of bacteria present is also of utmost importance. Instead of those forms that take part in the normal curing changes there may be present in the milk many forms that are capable of forming gas from the decomposition of the milk sugar. These undesirable bacteria are the cause of pin hole and floating curds, or huffed and swelled cheese. They represent only one series of the many diseases or defects that are to be found in cheese that are attributable to bacterial action.

In a hasty review like this, it is impossible to give more than a mere sketch of the various lines in which this form of germ life is brought into direct relation to agriculture. In this connection we find them playing a dual role, appearing in the guise of a friend as well as that of a foe. In agriculture, the well disposed forms are far more numerous than in any other relation, for as we have seen, the operations of the dairy and many of the processes in the soil that are carried on by the bacteria are of the greatest value to us. On the other hand, there are a few forms that are malign in their activities. They live at the expense of our possessions and if we are unfortunate enough to be made the recipient of their attention, it is often through our own carelessness and negligence.

It is not fair, however, to blackmail the whole class of bacteria simply because a few of these are obnoxious and harmful. We do not reject the potato plant as a food product because it happens to be a near relative to the deadly night shade that is poisonous, and so the general condemnation that is often hurled against these tiniest forms of living matter is unwarranted, to say the least.

For the last decade or more bacteriology has been considered an adjunct to medicine, but the time is rapidly approaching when the bearing of this subject to agriculture will be considered as important as its relation to the healing art.

This brief sketch will have served its purpose if it has sufficed to point out to you, as farmers, the different ways in which bacteria are brought into relation with your pursuit.

A knowledge of these relations may often be used to considerable advantage, and in developing primarily the field of bac-

teriology in its relation to agriculture, the Experiment Station is taking up a peculiar work—a work that as yet is scarcely touched by other stations in this country, but which, as you readily see, comes close home to farmers in more ways than one.

DISCUSSION.

The Chairman—Questions will now be in order. I trust that those of you who ask questions will rise in your seats that all may be enabled to get the benefit of your questions and that you will also give us your name, and remember that these questions and replies must go into the Annual Report, and let your questions be distinct. I am well aware that it is a subject on which the ordinary farmer may feel it pretty difficult to ask intelligent questions upon.

Mr. McKerrow—Mr. Chairman, Prof. Russell tells us that the changes in the fertile elements of the soil are made by the action or work of the bacteria. Now, is it necessary to have a free circulation of the air through the soil that these bacilli may do their work?

Prof. Russell—The bacteria occupy a rather unique position with reference to air. The great majority need air for their growth. There is a large class of the bacteria to which air acts as a direct poison, so that if the organisms are in free contact with air they are unable to develop. Those organisms are developed in their best condition where the air is scarce or absent. The fermentations in the manure heap can go on without air. The fermentations that take place on the outside of the heap are able to develop in the air.

Mr. McKerrow—Those two classes are what we hear about, aerobe and anaerobic?

Prof. Russell—Yes, sir; anaerobic is an organism which lives without air.

Mr. McKerrow—What starts the fermentation?

Prof. Russell—The presence of these organisms that are in the manure. A large amount of food goes through the intestinal tract and the manure thrown out is rich in germ life. The fermentation which occurs in the manure heap is a continuation of the changes started in the intestines of the animal,

and in the continuation and breaking apart and tearing down of the material that is thrown out in excrement you have the restoration of the articles that corn plant is able to take up and use.

The President—Any other question?

The Secretary—I would ask the professor if the heating of this milk to prevent its souring has any other effect upon the milk.

Prof. Russell—As far as the milk is concerned as milk there is no harmful effect. By heating milk to 155 or 160 degrees and then cooling it off the milk is unchanged as far as its purpose for milk is concerned. Now, with reference to it as butter it is likewise harmless, but when you come to consider it with reference to cheese making and with the heating of milk for cheese purposes it affects it and cheese cannot be made out of it. The organisms, this ripening of the cheese, are killed out in this pasteurizing process and unless you can introduce some organism which will ripen this process, the cheese will not ripen.

Mr. Grisim—I am not educated well enough to ask questions concerning this subject—I do not understand these great phrases. Do I understand that this buttermilk or milk, after it sours, that there are living animals in it?

Prof. Russell—Living plants, yes sir. So if you put a drop of sour milk in a flask or bottle of boiled milk, that milk will become sour through the influence of these germs.

Mr. Grisim—Do you claim that these living animals are hurtful?

Prof. Russell—It just depends upon the stage in which you let it go. Those organisms are harmless as far as disease is concerned, but it makes a change in the milk. If you only want to keep milk for a day in the summer time the ordinary process is sufficient, but if you wish to keep it fifteen or sixteen days you must pasteurize it.

Mr. Grisim—As well physically developed men as I have ever seen were Irishmen. It was said they were brought up on potatoes and buttermilk, I did not know how that was myself. What became of those little germs then?

Prof. Russell—You consider the diet of buttermilk and potatoes account for the superiority of the Irishmen?

Mr. Grisim—I never saw better men physically than they were, and the buttermilk was so sour that it would hum. (Laughter.)

Prof. Russell—Perhaps it was the bacteria in it making the noise.

Mr. McKerrow—This acid that gives the principal flavor to butter can be produced after heating this milk?

Prof. Russell—No sir, it cannot. If you heat milk to that temperature you stop the development of the acid and the cream will remain sweet for a much longer period of time. It becomes necessary to use a starter as is done in the ordinary process of butter making where you use sour milk to start fermentation. That is done by these pure starters. Take a pure germ and in place of doing as you do in sour milk you add one single kind, and the fermentation has to be carried on along one single line, and in place of a mixed production of milk you have the same fermentation in winter as in summer.

The Secretary—You are aware that we have a great deal of tainted milk. Does heating this to 160 degrees tend to purify it?

Prof. Russell—If you take care as it comes from the cow and as soon as you can conveniently heat it to this temperature, you can destroy these taints. The taints come into the milk in most cases through uncleanness due to the surroundings of the barn, these things falling into the milk produce the taints. The gaseous fermentations in cheese produce puffiness because you have imprisoned the gas in the curd as made.

Question—Does the milk from a healthy cow contain any of those organisms?

Prof. Russell—If you could get the milk from a healthy animal as it is made in the udder it would be in that condition for a thousand years. It is only the access of these organisms that causes it to sour. Souring is only one of the many fermentations that are produced by this same class of organisms. Those from a healthy animal gain access during the time of milking.

The Secretary—Will not the quality of the food even in the animal, especially the water, affect the milk?

Prof. Russell—That is not a bacterial question at all. That is a question of feeding. The kind of food you give an animal has an effect upon the milk but not on the bacterial quality of the milk.

Mr. McKerrow—Bacteria that may be in food by the process of digestion are kept out of the milk?

Prof. Russell—Yes sir; no more than the secretions from a human being are filled with bacteria. They are free from bacteria as they are secreted. They become contaminated as they get to the outside, because of course the conditions are such as to allow the germs to enter. Foul and fermenting material in the barn will get into the milk.

Mr. Babbitt—Do you mean to say that if some Yankee ingenuity could invent the process whereby milk could be taken from the udder of the cow into a receptacle which is air-tight, that you could keep that milk for a thousand years?

Prof. Russell—Yes sir, provided you kept it from evaporation. That has been done several times, not by Yankees in these cases either. There is one point in connection with that question. The milk which is in the lower end of the milk duct reaching down to the teat absorbs particles of dirt which have worked their way into the teat, so the first few streams which are taken from the udder are very much richer in germ life than any of the milk which comes out later, and if you were to analyze the first milk and the strippings, in many instances you would find the strippings absolutely free from organisms, while the first few streams would contain a large number of organisms. They have gone up in the milk duct for a very limited distance. It is often wise to throw away the first few streams.

Mr. Buttress—Would not these germs get back into the milk afterwards?

Prof. Russell—I suppose you must keep it covered so that the dust won't get into it. The sources of contamination come from the barn and because milk vessels are not thoroughly

scalded and cleaned. When the udder is dirty the fine particles of dust that fall off the animal get in.

Mr. Briggs—This milk that has been kept, that is drawn from the udder, could be kept a thousand years?

Prof. Russell—Yes sir.

Mr. Briggs—I understood you to say it had been kept so long.

Prof. Russell—No sir, not a thousand years.

Mr. Grisim—Where you have an inflammatory condition of the udder in an animal, they will probably not go up more than an inch or two?

Prof. Russell—No sir.

Mr. Grisim—How can you tell?

Prof. Russell—You can tell by milking; that is the way it is done.

Mr. Grisim—I first milk two or three streams on the ground.

Prof. Russell—That is a wise provision—learned that by experience?

Mr. Grisim—I would give more for that experience than anything I have ever read of. (Laughter.)

Mr. Brigham—We are advised to whitewash our cow stables. Is that for killing those germs?

Prof. Russell—Yes sir; whitewash is one of our strongest disinfectants. Whitewash will be as an effectual method to kill the germs as any we have. In addition to that, it gives light in your stable.

Mr. McKerrow—Would you add carbolic acid to the whitewash?

Prof. Russell—That would depend; in special cases they must be treated in another manner. You must use the strongest disinfectants; elbow-grease and hot water is a good application. (Laughter.) In certain cases carbolic acid, but you cannot use it where the animals are going to lick the surface again. You must use scalding water where the animal can get at it with the tongue.

Mr. Thompson—I would like to ask the professor the reason why creamery-made butter will not keep as well as home-made dairy butter.

Prof. Russell—Usually there is more bacteria because in the

creamery process, when you have your cream gathered by the gathering system, the cream is subjected to a higher temperature. In the process of separating you separate the milk at about 85 or 90 degrees. These are the particular differences. In home dairy, unless you use the hand separator, you separate by the gravity process, and consequently the growth is less rapid.

Mr. Thompson—Has salt any effect on the keeping quality?

Prof. Russell—Salt has a great effect upon the keeping quality, but what effect salt has on the bacterial quality I do not know.

Mr. Babbitt—I would like to ask the professor a question. A stable that has been occupied by a colt or a horse that has had the horse distemper this season, letting a year pass, or at least a summer and to the middle of the winter, and then occupied again by another horse, would that horse have a tendency to get the horse distemper?

Prof. Russell—We do not know of any germ connected with this horse distemper. It probably is contagious. We have not as yet isolated any case, and until the germ which produces it can be isolated, it is only a matter of analogy.

Mr. Babbitt—The reason I asked this question—I know of a gentleman who had a beautiful colt kept by a farmer in our vicinity, and he claimed that in previous years other horses had been affected by horse distemper in the stable where the colt was kept through the winter, and that that was the reason why his colt got the disease and died. I wanted to know whether it was true or not.

Prof. Russell—I could not say with reference to that disease. In reference to tuberculosis, it is folly for a man to put a horse in a stable where there are tubercular germs. These organisms are in the dust in the barn and all that is necessary is to shake them up, and the animals take them in their lungs and fall victim to the disease.

The Chairman—Anything further?

Mr. Thorp—How long will those germs live?

Prof. Russell—Nine to twelve months, and that also depends to an extent how the sunlight strikes them. If the

sunlight strikes the tubercular germs, they will be killed out in a very few days, but where little daylight gets in it requires a little time. Unless disinfectants are applied, it is running one's chances to a new outbreak.

Mr. McKerrow—Does sunlight mean death to those germs?

Prof. Russell—Yes, sir; sunlight is one of the most potent disinfectants known. If you hang out a mattress, it is the sun rather than the air which destroys the germs.

Mr. Dobson—Will frost act the same?

Prof. Russell—No sir.

Mr. Thorp—How about cows drinking impure water?

Prof. Russell—If the vitality of the animal is lowered, or the animal is feeding on impure food, these materials naturally tend to depress and lower the vitality of the animal to an extent that produces a diseased condition, the same in animals as in man.

Mr. Thorp—It would not originate by keeping a herd of cattle in the barn?

Prof. Russell—Not unless the germ itself gains entrance to it.

Mr. Briggs—In a consumptive person, would that have a tendency to give out germs in the barn?

Prof. Russell—If he is in the habit of spitting on the floor, the germs dry, and if they get into the dust they will be breathed by the animals and they will get the consumption just as if they got it from another animal, so that the herding by a consumptive is to be deprecated unless instructed how to handle it.

Mr. Dodge—Is there any way in which we can tell whether and when a barn is affected by the disease?

Prof. Russell—Usually you will not expect to find the tubercular germ in a barn unless the herd has been affected with it. The introduction of tuberculosis into a herd does not come from the barn as much as from the purchasing of animals that are affected with tuberculosis; that is the main way in which it is carried from one animal to another, by purchasing animals diseased, even if in the beginning of the disease.

The Secretary—I wish to request that all questions be stated distinctly.

Mr. Thorp—In my neighborhood a young man went out and bought a thorough-bred animal, bought two of them and brought them home. One of them did not seem to be well and it kept growing worse, and last summer it died. He examined it and found that one of the lungs was nearly gone. Now he has a cow that coughs the same and acts in the same way. That animal has been used all through that neighborhood, the different farmers have had it on their places. Isn't there a strong chance of nearly every one of those animals having tuberculosis?

Prof. Russell—No, I don't think that is probable. There is a danger, but very slight, of a tuberculous bull infecting a cow. The presence of that animal upon your premises would throw out the germs and in this way it might be introduced into your herd, but as to the animals served by the bull, there is but little danger.

Mr. Thorp—Would they take it from him by being present?

Prof. Russell—Certainly, if the animal is present on the premises and throwing out those germs there is a possibility of infection arising in that way.

Mr. Cole—How long will tuberculosis live in a herd of cattle before it will manifest itself?

Prof. Russell—That sometimes will be only a few months and then again years. I have seen some that had it for several years and still were fat and healthy. Some slight strain may throw it into a rapid stage of the disease. The presence of the disease can be learned by the tuberculin test. That is the only reliable way we have of telling whether the animal is diseased, in the early stages.

The Chairman—We will close this discussion.

The next subject on the program is "The Profitable Sheep for the Times." Mr. McKerrow, as you well know, is a good talker along the line of sheep, and he has come to be a successful sheep man because he is a student and has always asked questions where he might receive an answer that would be of benefit. I remember of being at an institute up north with Mr. McKerrow a year or two ago. He had been giving:

a very fine talk on sheep, and as he finished his talk a sturdy old German farmer who had had nothing to say during the meeting and who had paid very close attention to the remarks of Mr. McKerrow, arose and said: "I vud like to ask you von question." Mr. McKerrow granted the privilege, and then the German asked, "Wy is it der is more vite vool as plack vool?" The German had an idea of his own which he thought might be of benefit in the future. "Vud you like if I shall tell you?" He says, "Vel, because der is more vite sheep as plack." He may put a different construction on this subject than I, so I will introduce him.

Mr. Thorp—I would like to ask if Mr. McKerrow thinks it necessary that he have an ear-tag as well as his sheep?

THE PROFITABLE SHEEP FOR THE TIMES.

Geo. McKerrow, Supt. Farmers' Institutes.

Mr. Chairman, Ladies and Gentlemen—I fear my friend Everett has a very short memory. He does not get this story just right. I think the reason he does not get it right is because he was not at that institute. However, my German friend who had been paying close attention to what had been said, did ask me a question that caught me. His question was, "Vat makes de sheep plack?" Not having any theory on that line, I said, "I cannot tell you, my friend. Can you tell me?" His answer was, "It has plack vool."

Now as to the ear-tag that I wear, every thorough-bred should have his record-tag. (Laughter.)

Mr. Thorp—I am going to get one.

Mr. McKerrow—I have a very honest, hard-working German neighbor, who at one town meeting was running for the office of town treasurer, and at that same town meeting we were to take a vote to decide whether we should build a town hall or not. I was very much in favor of building a good town hall and was spending the day electioneering along that line. Early in the morning I met my German friend, and passing

the time of day, said to him, "Charlie, are you going to vote for the town hall today?" He replied, "Vat you do, vote for town hall?" I said, "That is not the question, I ask you." "Vel, you see I run for office today, and I find ven I take a load of potatoes in market and dos vomens wants to puy dem and von says, I wants peach-plow potatoes, have you got peach-plow, and I say no, den I don't sell dem any potatoes, but if I say, yes, den I sell dem two or tree bags. Anoder say, have you got early-rose, and I say yes, then I sell him two or tree bags. So I tiks it is better for me to find vat de oder fellow vant, and den I say de same."

Now, my friends, if I knew just what you wanted today I might talk to those wants, but not knowing that, I must talk according to my own inclination.

You may think it is a pretty hard matter to prove the proposition that my friend Fleming has placed before me, "The Profitable Sheep for the Times." I presume many think there are no profitable sheep at these times, but I am pleased to say that my influence is so great down in the market in Chicago, Buffalo and New York, that I have succeeded in getting the manipulators there to raise the market so that I can prove today that there are profitable sheep.

But there have been profitable sheep in this state even through the bad times, for sheep that we have been expressing the last two years, I believe, have been the highest during the past summer.

I have upon one side of my farm a neighbor who always keeps a large stock, therefore it is always in poor condition. He sold his lambs this summer at an average of about one dollar per head in the month of October. I have another neighbor who has a farm upon the other side of me. He is always rather under-stocked and always has everything in fairly good condition about him. He sold his lambs this summer at the same time at \$2.40 per head. His flock of 65 breeding ewes showed him an average of eight and a half pounds wool per head, which he sold at fourteen cents per pound, and 76 lambs, making a total income from each ewe in the flock of just \$4 per head, while the other neighbor's income from

his ewes would not average \$2. In the one case he was raising sheep at a loss, in the other case he was raising sheep at a profit, for this gentleman who sold the high-priced lambs told me that his sheep had paid him as well this season as anything else he had produced on his farm. He is a good farmer, raises good crops, has good cows, and breeds horses and hogs, yet this was his verdict, that there was as much profit in sheep as any other line of business.

R. B. Ogilvie told me last evening that he had just been out to his late brother's farm at Verona and had shipped four hundred lambs yesterday evening that weighed on an average 108 pounds per head, and would sell today in Chicago at \$5 per hundred. And I think he was right in the statement, because yesterday two lots of lambs of about equal weight with these, and possibly no better quality, as I understand these were good, brought \$5 per hundred. Lambs at \$5 per hundred in the month of February in Wisconsin have paid their way with some profit, if they have been properly fed and handled.

Now the profitable sheep for the times, I will say, without any fear of successful contradiction, must be a mutton sheep. He must be a fairly well-bred sheep. He must be well cared for. He must be well fed and he must be of that class which comes to maturity early, and he must be sold while comparatively young, at less than fourteen months of age. Formerly we might keep our sheep over and get a price that would pay for keeping, but we cannot do that now, and every time we shear a sheep that is not producing a lamb we are keeping it at a loss. But I will speak of this later.

The first proposition I make is, that this sheep must be mutton sheep. I will simply say that within the last six months I have been getting many letters from the men who were once noted breeders of the American Merino, the great wool producers of the world, asking me about mutton flocks to put in the place of their Merinos. This is proof that their Merino flocks are not paying a profit, and they are seeking the mutton sheep to make profit.

If you are going to select a mutton sheep to develop a profit-

able flock on your land, you might ask, "What breed will I select?" But I am not here today to argue in favor of any particular breed. I might, were I talking before a breeders' association, give them my preferences and reasons, but today in this talk I wish to give free latitude to all breeds. Every man should study for himself what breed he would better select. First, he must study himself, his farm, its surroundings and the purposes for which he wants that breed. And again, he may take into consideration some other conditions, climatic conditions, the class of herbage that is produced on his farm, the richness of the foods he wishes to feed. This matter of adaptation of breed to a particular locality has been given but very little thought in this country, but if we go back to the best mutton producing section on the globe, the British Isles, and start in the northern part of Scotland, we will find the black-faced Scotch sheep, resembling the goat to some extent, a hardy animal, able to subsist on the rough herbage of that section. Further south we find a better breed, and further south in England we meet in Leicestershire and Oxfordshire the Suffolk and Southdown and a number of other breeds, each holding mainly to his own particular locality for which he seems to be adapted. As I said, we have studied this question but little, but I think the time will come when we will find particular breeds in particular localities, and we might give them some thought now.

I would not advise the average farmer who has had but little experience to go out and invest his money in a pure bred flock with the hope of making a fortune in sheep breeding along the line of pure-breds, because in most cases he will make a failure, first, from lack of experience, mainly, I might say, from lack of experience. I would say to a man who says he wishes to establish a flock, get the very best mutton sheep at the best price. Or, if you cannot get them at a reasonable price, get the Merino. Better still, buy three crosses and save more time, but buy the best you can for the breeding flock. Then buy the other half of the flock, the sire, and I sometimes think the sire is the best half of the flock. In buying this sire be sure you buy a pure-bred animal and be sure you have the

pedigree of that animal. Don't be satisfied to have a pedigree shadow thrown in. Select the very best of that type, of that breed you can afford to buy. Select an animal, first, that is full of vigor and constitution. He must be large around the heart and full in the chest. The fulness in these dimensions gives room and full play for the vital organs. He should have a strong muscular neck, masculine head, a bright, bold eye, an active, energetic step, the more vigorous the better, even if he drives you out of the yard sometimes so long as he does not hit you. He must have good abdominal capacity to consume large quantities of food, and an animal of good mutton type. By this I mean an animal well developed, wide over top of the shoulder, full thigh, well sprung in the ribs so that he is wide in the back, because along that wide back and in those full thighs there is plenty of room to place high prices of meat, and a carload of lambs of this class will top the market, whereas a carload with narrow backs, with the larger percentage lying along the lower lines of the body, no matter how well fleshed, in competition with the wide back and well rounded limbs will be beaten, and by a good many cents per pound.

When you have selected such sire and the foundation flock, keep right along in that line by selecting another sire of this same class so long as you are satisfied with the results. Of course, if you find you have made a mistake in the breed you may gain something by crossing over, but do not do indiscriminate crossing, or you will have boarding-house hash.

Now, when you have selected your stock you must make up your mind that you must give your flock good care. They do not require a great deal of care but they require care of the right kind and at the right time always. Here in Wisconsin it is better for the average flock to have access to their yard so they can be out, but you should have housing that you can put these sheep in when necessary from storms and especially from sleety storms. This shed should be so arranged so that there is no danger of foul air. There should be plenty of ventilation, but so that it will not cause drafts. Drafts and foul air are dangerous and should always be avoided. In winter

feeding of your flock a great deal of care should be taken. You should have on hand a variety of food. "Variety is the spice of life" and variety gives success in stock feeding. We do get good results by giving variety. It is just as reasonable to ask our sheep to live on any one class of food as it would be reasonable for our wives to ask us in the fall of the year to sit down to a dinner of potatoes with this reasoning: "I think we had better eat these potatoes now" . . . and when winter comes she will invite you to a dinner of meat and will say, "This meat might spoil next summer, we would better eat it all this winter." I say it would be just as reasonable for our wives to make such a proposition to us as to feed our stock on any one kind of food. In summer I believe in variety of food also, variety of grass. If we have some permanent pasture, that would give satisfaction, at particular times of the year especially. I like clover pastures so that the flock can be shifted from one to another. While sheep will live without water, in the summer time I like to have mine have access to water every day and throughout all the seasons of the year. This is very necessary for the raising of profitable lambs. Ewes that are rearing lambs, to raise good lambs and profitable lambs must have water. We hear a great deal about a balance ration and I believe in it. A ration of a combination of carbon hydrates and the proteines will build up the tissues of the young animal and at the same time will fit the animal for market by giving it a sufficiency of fat by keeping up the energy and the heat in cold weather, and in doing this it is well to study the question of ration. If we are going to put some oil-meal in our ration, we can put a good deal of corn in, which is one part of ten, to balance up. Feed the old sheep more corn and less bran. We can feed more corn, more wheat, more heavy foods and less bran and oil-meal. If we are feeding lambs we would better feed a lighter ration so that their muscles may grow, and less of corn and wheat and barley. In the fall of the year or through the latter part of summer we can raise some very cheap sheep on foods that will put flesh on our rams and flocks in general at a very little cost. These foods we find in the form of roots, turnips and rape, of

which considerable is being grown in some parts of the north-west the last year or two. I need not tell you how to raise these. I said that the sheep that you raise now to be profitable should be an early maturer and fast grower, and at the same time a sheep that carries a compact form all the time in his growth.

I should have stated in describing the ideal sire that the body should be placed on moderately short legs, for a compact animal of any kind, all other things being equal, will always be the easiest feeder. Therefore, in selecting a breed for early maturity I would select a fast grower and at the same time as compact as possible. It has been proven time and again by the experiments and by the records of our fat stock shows, both in this country and Europe, that the young and growing animal has made the greatest gain in time, has made the greatest gain in proportion to weight, and therefore the cheapest meat for what it has consumed. The record of the last fat stock show in Chicago shows that. The steers made a daily gain from birth until the time of that show of 1.171 pounds per day. The yearling steers just under two years old made a larger gain of over two pounds per day from birth until the time of the show. The calves, steers just under one year, from 2.90 to 3.50, had made an average gain of nearly 2.75 lbs. per day, showing that the young animal had made much better gain than the older animal, and that as feeders had eaten less food. In the experiments it has been proven that there is a certain amount of the food of the animal that has to go to the support of its body. It takes almost twice as much to support the hundred pound lamb or sheep, and whatever is received back in gain is from the feed over the food of support. So if we are feeding a 50 pound lamb and feed something extra, we get a good gain. I think we should feed off all our animals young. Again, the lamb beats the older and larger sheep in selling in the market. The best lambs today are selling in Chicago at \$5 per hundred, while the best sheep are bringing \$1 to \$3. I told you about some bought in our neighborhood at \$2.40 and sold in Chicago at \$3.20 per head. The same shipper the same day shipped a carload of sheep which in all brought \$2.50 a hundred against

\$4 for lambs of equal quality. There is another good reason,—by selling all in lamb form we will furnish a class of mutton which the people will like and eat much more of than if they have to depend on the old sheep for their lamb-chops. That is a pretty good adage that says, “A flock well summered is half wintered, and a flock well wintered is half summered.” It means that the flock should be kept in good condition all the year around. There is no animal that will succumb to disease any quicker than a poor sheep, and I do not believe there is any animal freer from disease than a good fleshy sheep. We hear a good deal about disease of sheep. We keep salt, sulphur and turpentine mixed before our flocks all summer long as a preventative. In general we have little or no trouble from intestinal worms. Since we have begun this practice our lambs have been free from any signs of these intestinal or internal worms. We hear a good deal about grub in the head. A good many years ago when I was dressing sheep for the market I opened the heads and found the larvae in them. Later they were shipped to Chicago. They did not die and appeared healthy and hearty until they went to the Chicago market. To ward off this gad fly we can touch the noses with tar occasionally, or, possibly better, flatten off a log, bore two inch holes and drop a little salt in and touch the holes all around with tar.

Mr. Grisim—Would it make any difference if they reached the salt or not?

Mr. McKerrow—Yes, sheep cannot have too much salt. I do not think there is very much danger from the grub in the head. I have a neighbor very much like the first man I spoke of, who has always too many sheep and poor. Every spring he will say, “I am losing my sheep from grub in the head.” He said once, “I am going to sell them out, there is something about my farm that generates this disease. I am going to close them out.” A day or two after that he sold them to a Scotch drover, and that drover had a brother who was raised on a sheep farm in the old country. The first sight that met his eye was a dead sheep, and he said to the Scotchman, “I told your brother all about it, but he said that is all right.” The Scotchman walked around, looked at the feed in the racks

and at the live sheep, and with an inquiring glance said: "Would ye like to ken what I think is the matter wi' your sheep? It's no grub in the head—it's lack o' grub in the stomach." This illustrates what I wish to say, that a well fed, plump sheep is not troubled with these diseases.

I think I have talked long enough and it is only fair that we take turns and I will let you talk a while. We are ready for the questions. Do not be afraid to ask them. I have no grudge against this audience even if I did have to rap my friends a little.

DISCUSSION.

Mr. Briggs—Is rape a good crop to grow for other stock as well as sheep?

Mr. McKerrow—Our colts and cattle apparently do well on it. They ran on it this winter and fed on it until we got this last heavy snow, and did quite well. I think it is the best and most profitable crop.

Mr. Baker—Please give your method of growing rape.

Mr. McKerrow—The rape that we sow early for our show sheep, or if we wish to sow a little extra early, we sow in drills, and we have sowed it as early as April, though for a general crop I would not recommend so early. It is just the same as turnips—the rape plant looks like a rutabaga, all gone to top, growing up in good soil and in a good season all the way from two and a half, three and three and a half feet. For our regular crop of rape for fall feeding we calculate to plow the ground after the grass is well started. We plow half of the land first of June, cultivate it about once a week with a harrow to keep it mellow on the surface. This secures the best condition of the soil and kills all the weed seeds as they germinate, and from the first to the middle of July we sow it broadcast. We sowed four to six pounds of rape seed broadcast with the ————— broadcast seed sower. I might say before sowing we rolled the ground to have it level and fine, and after we ran the harrow over it, left it to grow. This last season we were watching for a little shower before we sowed it until the 16th of July. We did have a heavy dew

one night. We sowed it, harrowed it, and I think about half the seeds that sprouted showed two leaves and I gave up the ghost. I had no time to bother with it any further and I paid no more attention to it. About the middle of August we had a fairly good rain and the other half of the seed came up and grew very rapidly until the middle of October. We had a crop of rape that was two and one half feet high on an average. An Englishman, who was working for me and who was raised where they grow a good deal of rape, said he never saw any better. The snow fell on this last crop of rape and we thought it lost. The snow thawed off, but I was somewhat fearful to put the sheep on it. We put the old ewes on but they had a bluegrass pasture, and after a few days we found we could let the sheep run on it and they lived there without any corn until early in January. They did not eat hay until the first week in January. We had two flocks, one part there part of the time and the other part the other part of the time.

Mr. Grisim—This fall feed that you raised for your sheep would be turnips?

Mr. McKerrow—Yes, sir; I raised more acres of rape than turnips.

Mr. Grisim—Do you raise white turnips?

Mr. McKerrow—Yellow Aberdeens.

Mr. Grisim—If you fixed your ground nice for turnips and sowed it and it did not rain for six weeks, what would you do then?

Mr. McKerrow—I would keep it for turnips still. You should have lived in Waukesha. I would like to have had you.

Mr. Grisim—Perhaps I would not if I had been there a while. You were speaking about the rations for sheep. I have perhaps had as much experience as you but never been so successful. I am a good deal older, and I never wintered sheep any easier nor cheaper than on straw and oats, that was all the ration we had and they came out as well as any ration. I had a neighbor that went into the sheep business. He went in to raise Lester mutton sheep and he was going to get rich out of it. He built a nice sheep barn that was so warm the

ticks could grow all winter in the barn. When the lambs came they were great, big things that couldn't stand up, and died. He made a failure of the business.

Mr. McKerrow—He made a mistake.

Mr. Grisim—Yes, I think so too. (Laughter.)

Mr. McKerrow—He probably kept those sheep in that place a good deal of the time.

Mr. Grisim—How about the other man you spoke of, if he sold his sheep again at half the price he would have just as many as the man that took good care of the sheep?

Mr. McKerrow—He lost his lambs.

Mr. Grisim—Then he made a mistake.

Mr. Daubner—I must confess that I am disappointed in this convention. I came here to learn something. Mr. McKerrow came here, as I understand, to instruct us in the most profitable sheep for the time. He says we must not raise Merinos, and then sends us to the guessing school for all the rest of it. (Laughter.)

Mr. McKerrow—I am very thankful that we have one Waukesha county man in the audience, and he cannot learn.

Mr. Briggs—This man said he fed them on straw and oats and that they did as well as any he ever wintered, but did not say how good that was.

Mr. Grisim—I never had a flock of sheep come out better than those. I fed them straw and oats. I used to keep forty ewes. I used to pick out ten of my best ewe lambs every fall to keep for breeding, and picked out ten of my poorest ewes and sold them. In that way I renewed my flock every four years. When I went to the show with my sheep I always got the first prize. When they gave the best prize for the best long wool-back, I didn't shear mine. (Laughter.)

Mr. McKerrow—I was just going to say that the difference between the sheep we show—we have to shear them every day during show time.

Mr. Webster—By sowing rape in July, can't we have two crops, one of clover and then get the rape if we have good soil.

Mr. McKerrow—Yes, you can take off a crop of clover and

raise a crop of rape, although one year with another we ought to sow somewhat early in July.

Mr. Cole—Would you allow the clover to grow or not before sowing the rape?

Mr. McKerrow—Give it time to grow up and then plow the land and cultivate it once or twice to kill all the weeds that might sprout there.

Mr. Cole—If you were sowing twenty acres would you sow it all at one time or at different times?

Mr. McKerrow—At three or four times.

Mr. Cole—What kind of rape?

Mr. McKerrow—The rape for the best results in this country is the Dwarf Essex rape, cultivated in England. The seed is nearly all, if not all, imported from England. Two years ago such a demand sprung up in the states and Canada that England could not supply enough of this and sent out a good deal of the German rape, but the sheep would not take as quickly to it as to the Essex. It is a ranker growth and is liable to go to seed in the fall if sown in July, and the seed is very much like mustard seed. To stop this we clipped it off with scythes and then put all the stock that we had on the rape to eat it down. It didn't bother us at all. I think that this German rape might be a good plant for late sowing even at the last of August.

Mr. Cole—Do you turn your sheep right on?

Mr. McKerrow—We turn our flocks right on. In a piece of good rape no fence is necessary for the sheep will move right along and eat as they go.

Mr. Cole—There is no danger in turning the sheep on it when it is wet?

Mr. McKerrow—Put your sheep on the rape when their stomachs are well filled with other food. Put them on a short time for two or three days and then let them run on the rape and grass. I have never lost a sheep by doing this.

Mr. Chadwick—How much rape would you sow for 100 sheep?

Mr. McKerrow—If your land is good and you have pastures

for your sheep to run on, as you should, three to four acres would be a great sufficiency.

Mr. Grisim—Would you have trouble with stretchers?

Mr. McKerrow—Yes, sir; years ago we occasionally had sheep troubled with it.

Mr. Grisim—You said your poor sheep died. My fat ones died.

Mr. McKerrow—I am not surprised at that. You said you did not feed any roots. When we were feeding timothy hay we were feeding those foods that keep them in a laxative condition.

Mr. Grisim—You have been in the sheep business a good deal?

Mr. McKerrow—Yes, sir.

Mr. Grisim—Do you make more money now with the science than when there wasn't so much science about it?

Mr. McKerrow—I have made more money late years than ever before. I do not know whether I am more scientific. I think when my hair is as gray as yours I will know more still. (Laughter.)

Mr. Grisim—Do you mean to say you know more than I do?

Mr. McKerrow—No, sir.

Mr. Webster—Have you ever had any experience in raising turnips in connection with barley?

Mr. McKerrow—I never have. I have raised turnips, fitting the land just like for rape. When I fit land for rape I sow a part at the same time with turnips. I think the sheep do better to have part turnips. We sow yellow Aberdeens. I have never had any experience sowing rape with barley crop.

Mr. Webster—We have raised a good deal in our section of the country in that way.

Mr. Cole—I have sowed the land the last three years in that way until this last season. I would like to ask you one question. You spoke about the early maturity of sheep. There is a good point; it is one I want to catch on to. Can you take two lambs and decide with any degree of certainty which one will reproduce themselves, get good early maturing stock until you test them?

Mr. McKerrow—Not positively, but I can in a large measure—not so much by what the lambs look like as by what I know about their mothers and their grandmothers and their sires and their grandsires.

Mr. Cole—Could you decide with any degree of certainty until you tested them?

Mr. McKerrow—No, sir. There are some very nice points a man should use in selecting breeding ewes that should be looked to as a dairyman looks to his cow. I would use my best judgment, and if I got two lambs that suited me equally well and I could not tell until I tried them, I should want to try them two years.

Mr. Babbitt—I have been exceedingly pleased with this discussion and particularly with the manner in which Mr. McKerrow has presented what I believe to be a one-sided view of this sheep question. He assumes, as I understand, that it is best not to raise any Merino sheep but to confine ourselves strictly to mutton products. I understand that to be his position. I understand it to be so, that is, he would advise profitable sheep, especially the mutton sheep.

Mr. McKerrow—For today, for the present time.

Mr. Babbitt—I would like to say right here that we are confronting conditions, and it is exceedingly apparent to me whose head has grown gray in the service, when I look over this audience. I remember only a few years ago when every gentleman in the room was a white-haired man. It was a most rare thing to see a young man at the Wisconsin State Agricultural Society's meeting. What a mighty change has come over us! Why, here in Wisconsin, in the capital of this great state, is assembled today on this occasion and on this floor, young men buoyant, ambitious, proud. The parents of this state are proud of the fact that they can present such an appearance as this audience presents here today. Why, I tell you, gentlemen, I almost feel inspired when I see this assemblage, when I feel that here are the men who in a short time are to take the positions which have been occupied by the older members of the Society, and we gladly sit down and give you the palm and throw the mantle over you and wish you Godspeed. I tell you, gentlemen, the time has come when

Wisconsin will rank as high as any state in this grand galaxy for farmers of the truest stamp and the truest patriotism. You, gentlemen, are talking upon a subject which gives life, character and stability to home, plain every-day practical experience, and the result will be that while you do this thing you are laying the foundations of that pure patriotism in your hearts which will make it impossible for any power or any condition of men to wrest from you what you have inherited from the past. I must, however, say, gentlemen, as I stand here—and let me emphasize it just a trifle by saying that when the great question of wool agitated us so very much and I had to take a position square-toed that I did not own a sheep on my farm, taking advantage of the conditions which seemed to prevail, I concluded it was a mighty good time to go into the sheep business, and after my record had been made, square-toed, so that I could not be accused of being selfish, I bought sheep, and this year they have been the most profitable stock that I have anything to do with on the farm, and I have just as good brands of Lady Sales Shorthorn cattle as any man in the United States. But I bought sheep at the low market, at \$1.15 a hundred, \$1.15 a piece, and I have the sale of a good lot of them for \$1.58 a piece, and I have today ninety ewes that are looking as well as anybody's sheep that I know anything about.

Now my idea is this, inasmuch as conditions change, circumstances change, life changes in this state and in the United States, changes rapidly, that it is not best for the farmers in this state to all flock into one particular line. I believe in mutton sheep just now, but I would not be surprised if in the future when manufacturing comes to our own doors and to our own homes, that Merino sheep once more will take its proud position in the development of civilization, and it will be a most glorious thing for a farmer to own a first class Merino of the good old fashioned stock of Wisconsin. (Applause.)

Mr. McKerrow—I must say that I think I had just as much love for the Merino sheep twenty-five years ago, when I was selling his wool at fifty cents to a dollar a pound, as any other man could have, and in my youthful enthusiasm at that time

I could boast about the American Merino as well as any other man. But conditions have changed, and some six or seven years ago I had to part with the last Merino, simply because he was not paying his way. Now my friend's prophecy will come true, that the Merino sheep will again be on deck, but I do not want to wait too long for him to get there. Therefore I will stick to the mutton sheep.

Mr. Everett—I want to say that while he believes in mutton sheep he has them on his farm.

Mr. Wicksam—We do not want to get the boys too much excited over this sheep business. Let us cut down to hard business. I tell you let us go slow on this sheep business, buy when they are cheap and sell when they are high. I have done that way the last thirty years. I have neighbors who say, "You are going to that humbug business." I come and learn your tricks.

Mr. Briggs—There seems to be a good deal of encouragement to the young men. I remember at a farmers' convention here four years ago I ventured to say something on some subject after an old man had been talking. He and I did not agree, and the reply I got was this, "Those young cranks are coming here and think they know it all."

Mr. Chadwick—They have in England 28,000,000 sheep. We have less than 50,000,000 here. England is just a little larger than the state of Wisconsin.

Mr. McKerrow—In regard to the advice given by Mr. Wicksam to buy when they are low, I will say to you, you will have to profit by that advice very quickly, now or not at all, because they are going up.

Mr. Cole—I just want to touch upon one point. I have a neighbor that won't attend a farmers' institute, he won't attend an agricultural meeting. He came to me a short time ago to sell a flock of sheep for twelve shillings. He sold his sheep for eighty-five cents. I sold some I bought for one dollar for \$2.50. This man lives within forty rods of a cheese factory, his cows are not giving milk and he is buying his butter. That is the kind of a man who will not pay any attention to farmers' institutes.

Mr. Grisim—Does he claim all his success is due to the fact that he 'don't attend these institutes? (Laughter.) About a dozen years ago I took up some paper and read that a man could not be anything or know or do anything unless he went to an institute. There was an institute within sixteen miles where I used to live, and I said to my wife, "We will go to that institute." I had to go six miles with my team and ten with the train. So I went to the institute, and there was a man there who told them how to make butter. At that time I was making butter and shipping to Chicago and getting from 23 to 28 cents a pound. He went on and told me a new way of making butter, and I said to my wife going home, "Now we have learned something, and those institute fellows know something. We have been working all our days for nothing, now we are going to get something for our work." I made a tub of butter just as he directed, and he was so good and told me not to keep the butter but to ship it, and I was so particular to do just as he directed in that respect. It was six miles from the station and I didn't get my butter packed until seven o'clock, and the train went out at nine. I hitched up my horse and went to the station with my butter and shipped it that night. Now, Mr. President, what do you think I got for that butter in Chicago? I got ten cents for that butter. (Laughter.)

Mr. McKerrow—What do you get for your butter now?

Mr. Grisim—Now I'm out of the business.

Mr. McKerrow—Did this man tell you to put a card on that tub, saying, "Sell this butter as soon as received"?

Mr. Grisim—It was not necessary for the butter was not fit to sell. (Laughter.)

Mr. McKerrow—I am afraid your man held it until the next day and it spoiled that night.

Mr. Reinhard—I am afraid that butter was not appreciated.

Mr. Grisim—It was not salted right.

Mr. Briggs—I would like to know what sheep has got to do with butter.

Mr. McKerrow—I presume Mr. Grisim made this butter from a flock of sheep.

Mr. Grisim—I don't know but what you have made butter from sheep, but I never did. (Laughter).

Mr. Sanderson—I would like to inquire how long you keep your breeding ewes before disposing of them. Should you sell off your lambs and keep on doing so?

Mr. McKerrow—That is a good question and I stand corrected, although I want you to understand that in the limited time I had on this subject I could not say everything. You should always keep the best of ewes in your stock to replace the draft made at shearing-time. When the lambs are young you can tell which ewes are raising their lambs properly, and any ewe not raising a lamb properly should be marked, for if you don't mark them, later in the season you have lost the identity of this ewe and will be fooled. All old ewes, I should say over five years old, should be drafted unless extra good ewes. Ewes that will raise two good selected lambs can stay as long as they continue to do so. A ewe that can raise an extra good single lamb can stay as long as she raises a good single lamb.

Mr. Fish—If there is any virtue in tarring the sheeps' noses, I think we might give it a little prominence by furnishing an easy way of doing it. Instead of boring holes in a log, take a pine tub 2 x 4, put a strip on the underside to close the hole and smear tar around the hole the same as on the log.

Mr. Buttress—Where do you obtain your rape seed?

Mr. McKerrow—Formerly from Canada, now from Curry Bros., at Milwaukee.

Mr. Sanderson—Do you prefer to raise single lambs or twins?

Mr. McKerrow—I prefer a ewe that will raise good twins.

Mr. Sanderson—Do you feed your sheep any oats or grain in summer while on grass?

Mr. McKerrow—I believe in feeding the lambs in the summer time on grass. If pasture is short or grass very watery it is best to feed some grain. It pays to feed the lambs you are feeding for the market some grain all the time.

Mr. Babbitt—Do you think that rape is any better than the ensilage for the sheep?

Mr. McKerrow—They do not come in competition. Rape will fatten sheep faster than any one feed I have ever used. Ensilage is all right for sheep in the winter season, but I would not try to winter a flock on corn ensilage alone any more than on dry corn fodder alone. I have a neighbor who wintered them on eight pounds of corn ensilage a day, but the lamb flock was very unsatisfactory, badly goitered. In the spring he lost the flock. The next winter he fed ensilage and a little oats and his flock went through and his lamb crop was good and satisfactory.

Mr. Babbitt—If you feed hay with it it will work all right.

Mr. Grisim—I tried the best I could with a calf once. At six months old I got him to weigh 620 pounds and I had him suck two cows.

Mr. Daubner—There was a question asked that I think Mr. McKerrow misunderstood. As I understood it, he would like to know whether Mr. McKerrow would select for breeding ewes lambs that were twins or single.

Mr. Sanderson—Would you prefer one good lamb to two early twins?

Mr. McKerrow—If you were going to produce lambs for the early market. While off their mothers I would prefer to have the flock have the one lamb, but if they have been away from their mothers for a couple of months I would select a flock that would breed twins. A good ewe will breed and raise twins and give them as much bone as the one that raises the single lamb.

Mr. Grisim—I tried that once. I thought I would go into a kind of speculation and raise lambs for the 4th of July market. So I picked out twenty of my best ewes and had the lambs the first of March. I fixed a place in the barn and put every ewe by herself about the time for them to commence to lamb. The twenty ewes brought thirty-four lambs. I fed each sheep by herself, fed her potatoes once a day, oats once a day, ground oats, swill once a day and all the hay they would eat. Those that had the twins could not support the lambs and the sheep were so reduced they could not stand up

and the twins were not worth anything, and the result was I didn't have any 4th of July lambs.

Question—What time in the year would you prefer to have lambs drop to sell in the Chicago market?

Mr. McKerrow—For breeding a very early lamb you want him to drop very early, and the lamb to bring a fancy price in the early spring must be dropped in December. The average flock for the farmer would be the last of March and through April. They are not like cattle in that respect.

Mr. Webster—Would you advise keeping twin ewe lambs with the idea that they will produce twins?

Mr. McKerrow—Yes sir. I have one family that I can trace back four or five generations that almost invariably produces twins. Twins will produce twins oftener than others. I have proved it in my flock in several families, and they raise them well; that depends on the quality of milk, etc.

Prof. Craig—I just want to emphasize two of the points Mr. McKerrow made in regard to feeding sheep, one in regard to early maturing and the other in regard to rape feeding. We took the same kind of lambs and divided them into three lots. One lot we fed grain from birth; another lot we began to feed grain after weaning; the third lot when the ordinary farmer starts in feeding in the fall. We fed them ground feed until they weighed 113 pounds. We kept careful track during that time. It took us seven weeks longer with the same food to bring the last lot to that point. We saved seven weeks' time. The one lot matured seven weeks before the others because they got their food when younger. This brought out another point, that the feeding of grain before and after weaning will also make the cost cheaper in the end and get more wool and make more out of the sheep.

Mr. Arnold—Didn't those sheep you fed seven weeks longer consume more food than the others?

Prof. Craig—It took seven weeks longer. We didn't use the same food. You will find that the cost is about the same. We fed them cheaper food.

Taking the other point, rape growing, I think it is

a very important one and there is just one feature of it I wish to refer to. We have tried it several years at the station, perhaps never as well as this last year. A year ago last fall we got our first results from it. We started to feed our sheep on it in October,—we started sixteen wethers. The rape was not exceptional in any respect. We kept these sixteen sheep on seven-tenths of an acre of rape for twenty-five days and they gained 149 pounds, which was 2.6 a pound per week. The point is this: We bought these wethers at three and a half cents a pound, and charging them with the oats and grain they ate, one-half pound daily, we made about \$15 on an acre of rape. That was our first experience. We have had better results than that. Last year we sowed our rape the 18th of June. It was ready to feed in two months. We turned twenty-one wethers on one-half acre. We kept them on that rape for ten weeks, and in that time they gained over 400 pounds. Valuing them at 3 cents a pound and selling them at 3 1-2, it gave us \$20 an acre for our rape. I do not know but what there is profit in that. We charge oil meal \$1.25 a hundred; oats 30 cents a bushel and wheat 50 cents a bushel.

There is just one other thing I wish to refer to. The sheep industry is just now in a peculiar condition. England at this time has less sheep perhaps than she had for a number of years. English mutton is selling for 14, 15 and 16 cents in the market. As they have less and we send them over there it has helped to take a great many sheep out of this country. I think that at this time the sheep industry is better than it ever has been, but with lamb selling at 4 1-2 and 5 cents a pound, if we can grow that crop of rape it seems to me there is a good field for profit. We find lambs will mature early if sheared early. We find it better to shear them the fore part of October. They don't seem to suffer much from the cold at that time.

Mr. McKerrow—Have you tried shearing them in September?

Prof. Craig—No.

Mr. McKerrow—I have had the best result early in September.

Mr. Webster—If this rape plant goes to seed early, is there any trouble getting it out of the land?

Mr. McKerrow—There is trouble in getting rid of it, that is the German rape, but not the Essex.

Adjourned until 8 o'clock.

Wednesday Evening, Feb. 6, 1895, 8 p. m.

Prof. Henry—Ladies and Gentlemen, Members of the State Agricultural Society:—If my memory serves me rightly, fifteen years ago this day I stood before the State Agricultural Society in this capitol and was introduced to the people of the state of Wisconsin as the new professor of agriculture.

At that time I pleaded with you for our agricultural college, not that it was so large, but that it was to be. I asked your sympathy, your support in the appeal that we might make. At first the growth was so slow that many of the people of the state doubted whether there could be a real agricultural college here. You recollect that there was talk of separating it from the state university. Now, through your kind help and through a number of forces working together my hands have been strengthened, the students have gradually come, until at this time there are in the city of Madison two hundred and fourteen students in attendance at the agricultural college. They come from fourteen states and Canada, nearly all from the farm. One hundred and one are in the dairy course proper, one hundred and three in the short course, several in the long course, and six are graduates of other colleges; five of the six have come here to study that they may return to those colleges as teachers.

I have kindly asked the boys to come in and pass in front that you may have some idea that we have some real live agricultural students at the university. The boys are ready to

appear and we shall now await their coming. (Students attending the agricultural college then passed through the assembly chamber). (Applause).

The President—We are sometimes told that Wisconsin is not a good agricultural state. I think Professor Henry by his demonstration tonight has convinced us to the contrary.

The first subject tonight is upon the question, "How Can Our Country Roads Be Improved?" by Allen P. Weld, River Falls.

HOW CAN OUR COUNTRY ROADS BE IMPROVED?

Allen P. Weld, River Falls.

It is not the object of this paper to describe the methods employed in building highways of the first class, such, for instance as become a necessity in the vicinity of large cities where the immense traffic requires the best of work and materials combined in the highest degree of engineering skill, but rather to consider the needs of the farming community and of those tracts of country where traffic demands something better than the ordinary earth roads.

A good road must be well located. The alignment must be carefully considered, although the question of the route of a road does not seem to have received the attention it should if we may judge from the erratic lines so often found in the country highways.

It is demonstrable that a saving in distance between two points where the traffic amounts to ten tons per day will result in the decrease of cost of freightage of \$150 per annum. This is the interest at five per cent. on \$3,000.

The question is a fair one whether this is not rather too high a tax in some localities to pay for simply saving the symmetry of a single farm.

The nature of the ground over which a highway is to pass is a matter requiring very careful examination. Here often the highest degree of engineering skill is required. Trautwine

won no brighter laurels than those he acquired in designing roads in England, but I doubt if there is a single person in Wisconsin who makes a specialty of highway engineering, and yet such men would soon be developed if the public demanded them, and this profession will in the near future be found a useful and profitable one to many men of good, sound common sense who, combining intelligence with experience, prove their fitness for the work.

We do not need in this line so much the trained theorist as the practical man of experience, just as it has been found in the higher class of railroad engineering that the man whose school has been field work often makes the best locating or constructing engineer.

In locating a highway the engineer will frequently come in contact with individual interests and preferences. For instance the road must wind around a hill. The owner of the land meets his complacent neighbors, the town board, and easily convinces them that the true route is up as high on the hillside as possible where the ground is sandy because he won't charge any thing for the right of way and it won't hurt his fields. Then, too, of course, the sand will always be dry.

Yet this rise in the gradient of the road caused by this yielding to an individual interest, together with the difficulty incurred by loaded teams in passing over the road may diminish the practical value of the highway to those using it as much as a detour of a mile, for it should be remembered, that a single hill may prevent hauling upon a given road a load of more than two tons, when, if it were avoided, three tons could as readily be taken as an average load. If the daily freightage upon that road be ten tons per day we have another resulting loss of \$150 per annum as a concession to private interests.

It is not necessary to dwell upon the fact that heavy grades should be avoided where possible even at the expense of moderate detours or quite expensive construction. Sandy places also should be shunned, unless the road bed is to be surfaced with gravel or broken stone in which case it affords an excellent foundation.

Attention should also be paid to the probable amount of traffic, as where this is large or likely to become so, expensive work in grading and surfacing would be justified where greater economy would result from a detour if the travel be less.

To recapitulate briefly, the engineer should so locate his road as to produce the most economic results ultimately taking into consideration the cost of right-of-way, that of construction, permanence of foundations, facility for drainage and ultimate maintenance and amount of traffic.

It is not always possible to avoid quite heavy grades in country roads. Where it cannot be done, care should be taken to make the road surface at such places in such manner as to ensure a hard, even surface, thus diminishing the difficulty of draft and possibly equalizing the capacity of the road. Then, too, it may be noted that animals differ from locomotives in the nature of application of power, and that a team may lift a quite heavy load up a steep pitch with less actual weariness than would result from making a long detour. A man can often climb a set of stairs more easily than he can make the same rise by a long gradient. It is claimed also that a varying grade is less wearisome to teams than one of uniform incline, as it brings into play a different set of muscles. But this should not be taken as a justification for careless or indifferent methods in laying out roads where proper grades can be obtained, and only emphasizes the necessity for the exercise of good judgment and skill in this department. Yet as a matter of fact expert skill is rarely if ever called in. The main question usually is, "Can the road run on a line?" and if not, "Where can it be placed so as to cost the least for right-of-way and hurt our political friends the least?"

Another important element in the construction and improvement of the country highway is its foundation. No matter how carefully we may construct our bridges, if the abutment yields the superstructure is sure to suffer. A road may be ever so well graded, turnpiked and metaled, if the foundation is insufficient it will sink in places, lose its symmetrical form and soon ruts and mud holes appear all the

greater nuisance possible because of the care taken to form the surface.

To determine what ground is most suitable for foundations depends very much upon the nature of the road when completed.

As far as possible an earth road should be laid upon loamy soils or light clay, or if this be impossible some special treatment be made to alleviate the sand on the one hand or the heavy clay or marsh on the other.

But if we are to use broken rock or gravel we can find few better foundations than a strip of sand, and even a marshy tract may be under-drained and give good results while the soil would be found too friable for a surface for an earth road.

As in constructing a road bed to receive a metaling of stone or gravel we must practically build an earth road we will first take up the matter of the construction of this useful and necessary, but much abused class of highways.

The great enemy of all roads is running water. In its destructive influences it is constant, insidious, persistent and effectual. Controlled it is the engineer's friend but ungoverned a fatal enemy. If not promptly carried off the road surface it will follow every wheel track, now gently purring along the lighter grades, now rushing down the pitches. It will tug at the larger stones until it loosens them from their beds; then perhaps disclosing some hidden rock, rejoices in washing away the soil around it, perhaps dislodging it to afford an obstacle for the traveler's carriage and then softening the road bed; mud holes and deep ruts appear until the entire road bed, perhaps the joy and pride of the engineer a year before, becomes a chaotic mass of heterogeneous ruin wherein the wheels of the wagons sink to bottomless depths, at once a source of sinful profanity on the part of the driver and destruction to his vehicle.

This evil must therefore be carefully guarded against with skillful and unintermitting care. Either upon the surface or below the foundations it must be taken care of. For the latter under drainage may be resorted to with good results if the soil be marshy or heavy clay. For this purpose blind ditches

may be used filled with logs, brush, fascines, broken stone or better still with common tile drains which are comparatively cheap and very effectual.

If the soil be soft and yielding, material of a more solid character may be hauled in. It frequently happens that in the vicinity of quarries there are large amounts of broken rock mixed with earth and soil which may be piled into marsh lands and make excellent causeways. Heavy clay has been mixed with sand in many places with good results, forming a dryer and better surface in wet seasons. On the other hand clay or heavy loam may be put upon sandy roads with excellent effect.

The most convenient and conventional way of disposing of the water is by side ditches, and often these are all that is required.

The depth of the ditches may vary with the nature of the soil, very shallow ditches being best on sandy roads as deep ones tend to dry up the sand, while on heavy clay or marsh land the ditches are sometimes constructed to the depth of 30 inches so as to drain out the subsoils. However a ditch is constructed with relation to the road bed it should have an outlet so as to carry the water away from the road. Water standing in a ditch by the road side is offensive whether regarded from aesthetic, hygienic or engineering points of view. It softens the foundations and will ultimately result in great damage to the work.

In making ditches in the ordinary prairie country I would recommend making the road bed proper about 18 to 24 feet wide, with broad flat ditches say about seven feet in width on each side and the latter should be seeded down to grass. The water flowing over these will be distributed in shallow streams and thus less danger of cutting result and good sod once formed will entirely obviate this danger.

The road bed is turnpiked with the earth from the ditches, but as much as possible grass sods should be thrown out as the vegetable mold resulting from their decay is entirely unsuitable for a road covering.

Once constructed the ditches and road bed should not be

disturbed by plow or scraper except in extreme instances as ruts and mudholes should be filled with material hauled on as much as possible. Certainly no one should be allowed to use the ditches for a potato patch or place to scour rusty plows.

There should be a gentle incline from the center of the road bed to the ditches to give a direction for the water from the wheel tracks to the ditches, and in future maintenance of the road care should be taken to often go over the road and fill all wheel tracks to prevent the formation of ruts.

It should be a maxim constant in the mind of the road maker: Take care of the water.

In making roads the tools most often used are the plow, the common road scraper, road grader and harrow. Rollers, too, are often used. The common road scraper is an unsafe tool in the hands of many laborers and should be used sparingly. If one might judge from the miniature Appenines so often found in our highways after the tax is worked out we might think that the purpose of the labor had been rather to illustrate by an object lesson the process of the formation of mountain ranges than the construction of highways where hills should be cut down and the valleys exalted.

The common scraper brings in the earth in masses of varying solidity, dumps them down without system, leaving soft places between each load which soon develop to the great detriment of the track.

A strong back with a good shovel is an important element in road building, especially if the one who handles the latter has skill in grading. The harrow is one of the best of road tools. Used persistently it first mellows the ground, breaking up the lumps and reducing them to a homogeneous material and then by further use packs the ground and makes a uniform surface which will very soon become compact and hard under traffic. It is an especially good plan to return to the work at intervals, going over it again and again as ruts form to keep them full and the surface solid. In the early spring or after a protracted wet season the harrow can be used on almost any kind of a road to good advantage.

The road grader is an excellent tool in the hands of experts,

but its work is sometimes unsatisfactory for want of skill in its manager. After using a road grader it is well to throw out the clods of sod and go over the work with a harrow to form a smooth surface. Breaking up an old road with a plow and re-turnpiking it may sometimes be justified, but I hardly know when, and if done, the harrow should be used much longer than the plow. Even then it is still more rarely that the ditches should be disturbed, especially if in good form, as the material comprised as it is of vegetable substances washed from the road bed and decaying grass, etc., is utterly unfit for a road surface.

If marshy places are found or heavy clay which becomes soft in rainy weather it may often be an excellent plan to haul in coarse gravel or detritus from the quarry and fill these places up, packing the material into the subsoil and covering with a good surfacing. Let it be remembered however that thin, flat stones should not be used for this purpose as they tip up under loads and aggravate the difficulty they are intended to obviate. Such stones should always be broken into as nearly cubical shape as practicable as they keep their places very much better in this form.

An article which is a constant menace to the road surface is the narrow tired wagon. Such a vehicle is a genuine road destroyer. The knife edged tires cut into the most solid road beds causing ruts which soon become deep channels and in many other ways cause great injury to the road bed, while a wide tire lengthens the life of a road by tending to maintain its uniform regular surface.

Wherever it is necessary to carry water across the road sluices of some kind often become a necessity. I know of none better than hard glazed vitrified tile such as are made by leading potteries for this purpose. They are sold to towns in car load lots at dealer's prices and thus cost but little more than plank sluices and are much more durable. They should be protected at the ends and be covered not less than six to eight inches.

With a road prepared as stated the next thing is to provide a suitable covering. The best practical material for this

where attainable is a good gravel, being at once the cheapest and on the whole where the traffic is moderate the most acceptable to travelers. A good road gravel should be composed of small pebbles nearly uniform in size, having a small admixture of clay or loam which acts as a binding material. Perfectly clean gravel will not pack under ordinary conditions but is liable to roll up under the wheels and cause heavy draft.

In clay soils clean gravel can be used as it sinks into the plastic clay in wet season and packs. Sand may sometimes be used to good advantage in such soils. Where covering with gravel or stone is too expensive sand roads may be covered with earth or clay. The use of straw as a temporary expedient is too well known to need more than a passing notice. It is sometimes a good plan before covering a sandy road with gravel or even broken stone, especially in a dry season, to put on a coating of straw, allow the latter to become trodden down by travel and then apply the surfacing. The strawed surface holds up the gravel and prevents its admixture with the sand before it becomes compact.

But the best country road where the expense can be justified is one metaled with broken stone laid on a good earth foundation prepared as I have described. These roads known as the macadam from the name of their inventor, are found everywhere in Europe and in many parts of our own country. In their construction the highest degree of engineering skill has been called forth and their cost has often equalled that of the railroad. But for ordinary country work such excessive cost is not necessary.

A good fair stone surfacing can be put upon a country road already graded for from eight hundred to two thousand dollars per mile where stone is attainable, with not more than an average haul of half a mile, the wide difference in the cost stated arising from the depth of stone desired, the cost of breaking it and of team and hand work.

It is not necessary to find quarries for this purpose. A moraine of boulders or coarse gravel containing too many large stones to make it profitable for ordinary use on the highway, will afford fine material for this purpose after being

broken. I have taken broken rock from river beds and crushed them with good results.

The principal thing to be obtained is to secure as hard and durable a rock as possible and break it into fragments having no larger diameter in any direction than two inches, in other words, to use the engineers' term, so that each piece can pass through a two inch ring.

Rock broken by hand labor is best for this purpose and in some countries this affords a constant occupation for men who, too old to perform the harder labor, are able to keep the wolf from the door by breaking stone upon the highways.

But the rock crushers can do this work on a large scale more cheaply than the hand laborer, and hence is now in this country more generally used.

In actual practice the crusher is located between the source of supply and that where the material is to be distributed, not necessarily in the quarry, though where convenient this is the better way. With an ordinary agricultural engine for power from sixty to one hundred loads of road material can be broken each day.

The books quite generally recommend breaking the stone with the jaws quite open and screening the rock and dividing them into different sizes, using coarse rock first and then finer.

Where money is plenty and the ultimate thickness is to reach eight to ten inches this may be a good plan, but in building a cheaper class of roads such as come within the means of the farming class, my experience has been to break all the stone not exceeding two inches in thickness, and I prefer even finer material than this.

I have found it better practically to first distribute upon the road a coating of rock, not more than four to six inches of loose rock, preferably four inches. The reason for this is that the stone must be packed in layers to ensure good results, and in the country where few rollers are used the packing must result from the traffic. Hence the stones should not be too large to pack readily in this manner nor so as to deter teamsters from trying the new, and at first, I confess, rather forbidding, road. My own practice is also to send the entire

product of the crusher, sand and all, to the road, as the angular sand formed makes an excellent matrix to hold the larger particles in place, especially after rainfalls.

It is very desirable that the loads distributed upon the road bed should be as uniform as practicable. This is ensured where the common farm wagons are used by insisting upon each teamster being provided with dump boards of a size designated by the foreman. A very convenient size is obtained by using plank side boards 12 inches wide, their edges resting upon the wagon bolster, the bottom boards to be 4 and 6 inches wide. End gates 9 feet apart should always be used, the bottom boards and side plank being made of 12 foot stuff. With these loads a covering of 1,000 loads to the mile can be put on for the first coating, about 4 inches thick and 8 feet wide, making a single track with room to turn out and yet keep one wheel on the metaling, which experience has shown to be a sufficient provision for the ordinary country work, as in such cases the travel of loaded teams is usually in one direction.

The covering having been put on all ruts and depressions must be constantly kept filled, and the first wet day it should be rolled. Water here is our friend. For some reason a stone road will not pack until wet, but the broken stone will roll up before the wheels and grind out infinite amounts of dust without coming to its place, but let a wet spell come on and all is changed. The incorrigible cubes drop into their places almost like magic and in a few days we have a road with hard, even track, almost rivaling the iron rail in smoothness and ease of hauling.

If rollers cannot be had the packing must be done by the traffic, a slower process, but quite as effectual in the end.

Meanwhile the road builder must give the road his constant attention, filling any ruts that may form, put in small stones finely broken where a weakness has developed, remove spauls which prevent proper union of the material, rounding up the road so as to turn off the water, and rake off any loose stones which refuse to combine with the rest, until within a month or so he finds his road in good condition and may rest from his labors or travel over his work, rejoicing justly in its smoothness and freedom from dust and mud.

In about two to four years after the first coating is applied, a second one of like character should be put on, and after this care be taken to keep the surface smooth and in good condition by the use in defective places of finely broken stone intimately mixed with the covering. Some insist on putting on a finishing coat of fine gravel or binding material. In hard rock this is useful but wholly unnecessary in the softer limestones. In fact I think in these cases it is an actual detriment to the road to use it, as the finer particles of lime rock seem to make the best cementing material we can find for the larger pieces.

It may perhaps be well to say that there is usually in a broken stone road no actual cementing of the particles. It is rather a miniature pavement in which the stones hold together by dovetailing. Hence it is desirable to have all of the stones as nearly cubical as possible, and small flat pieces of rock which are often broken off of some kinds of rock in crushing should be broken up or removed from the road bed.

When will it pay to construct such roads?

A careful estimate of the difference between the actual cost of hauling upon the common earth road, taking into consideration all seasons of the year, shows that there is a saving in favor of the stone road of at least 4 cents per ton upon every mile. If the daily traffic be 25 tons it will be seen at once that the daily saving is one dollar per mile. Allowing 200 days' use of the road each year (deducting the balance for time of winter, holidays, etc.) we find an annual saving of \$200. This would be ten per cent. of the cost of the road estimated at \$2,000 per mile, to say nothing of the comfort and convenience of travelers using light vehicles, as well as the wheelmen who deserve much credit for this movement for good roads.

It follows therefore that where there is a daily average traffic of twenty tons that it will pay to build roads of this class, especially as the cost of maintenance is greatly reduced over that of the common earth road.

Even supposing we are still more conservative and place the saving at three-fourths of the above figures and we still have a saving of seven per cent. of cost of construction.

Nor is this all. Good roads are one indication of an advancing civilization. Men do not erect costly mansions as

homes to make money. They do not cultivate velvet lawns or plant trees by the roadside for hay or cordwood, nor do owners of residence property in the cities expect to realize large dividends in cash from asphalt pavements whose cost for a single block would build a mile of macadam road.

But they pay their money freely for these things to gratify a wholesome taste for better things, to make life happier and men better, and so even if we cannot quite see ten per cent. profit in our district in constructing this class of highways, may it not be well to anticipate a little to be abreast of the times and meet the demands of advancing civilization.

The President—I have the honor and it gives me great pleasure to be able at this moment to introduce to you a life-long friend, the president of the Wisconsin Good Roads League, Sheboygan's favored son, T. M. Blackstock.

Mr. Blackstock—Mr. President, Ladies and Gentlemen:—I am not a lawyer and I cannot talk as well upon this subject nor upon any other subject, as the gentleman who has just addressed you so ably and practically. I have a little the advantage of him, I think, in some respects. I have traveled roads a good deal and I have had a good deal of experience in building roads, actual experience. These experiences have been of great benefit to me. The last experience that I had was in traveling a road. It was in the warm month of July, I think; my memory is not quite as good now as then. It was during the republican state convention in Milwaukee. (Laughter.) I started from that beautiful evergreen city of Sheboygan on the road to Madison. I thought the road was straight and smooth and easy to travel, and that I would get here without any trouble. (Laughter.) My friends all told me so. They told me so gratuitously, and I started, and it was clear sailing and a pleasant journey until I got to Milwaukee. (Laughter.) There I met the other fellows who came in on other roads. I found the road was blockaded there. I found

there was a big toll-gate there, the Pfister Hotel, and we had to stop there and pay toll. (Laughter.) I stayed there of course with the rest of them. I didn't see through it all and kept building castles in the air, and I know I built my castle just as high as anybody. One fine morning about eight o'clock a cyclone struck us fellows and all that was left was Upham and Mylrea and the rest of the fellows that are rooming down stairs. (Laughter.) I went home. I declared I never again would come to Milwaukee and I swore I never would go to Madison. But I was foolish enough to go to Milwaukee the other night, and while there at the banquet I was elected president of the Wisconsin Good Roads League.

Now I want you to understand, gentlemen, that I am not in the business of manufacturing bicycles, I want you to understand that I am not in the business of selling bicycles, I am not in the business of riding bicycles. (Laughter.) I would not ride a bicycle for a hundred dollars, and if I had to ride a bicycle at all, if it was the law of the land and I had to do it, I would get on sideways as the ladies ride.

I am here tonight for the purpose simply of explaining, as I understand it, what the situation or the attitude of the members of the Good Roads League is in regard to legislation and things connected with it. I noticed by the newspapers, as well as by talks that I have had with people that I met at home and on the way here and everywhere I go, that there is evidently a wrong impression as to the attitude of the Good Roads League in regard to this matter.

No doubt those who ride bicycles would like good roads. You cannot blame them for that. It is natural and reasonable. But they do not want to put themselves in front. They do not want to do any more in this matter than to encourage the improvement of the public highways, which is for the benefit of every one.

Now, in the board of directors, consisting of five gentlemen, I think there is not one who owns a bicycle or ever rode a bicycle, and they are all too old, they won't begin now. Such men, as Mr. Rogers here in Madison—possibly he has a bicycle, I do not know, but he don't look to me like a man who rides a bicycle—looks too healthy, looks as though he walked. We

have asked General Fairchild to be one of our directors. He ought to have been the president, because he is a man who takes such a deep interest in all such matters. He is always taking such an interest in the good roads at Madison. General Fairchild is our first vice president and one of our directors. Mr. Johnston, of Milwaukee, is very much interested; Mr. Hamilton, of Milwaukee, and that class of men. So you see our board of directors is well made up.

Now, I want to say right here before I forget it, before I go any further, that it is the farthest from my mind of anything possible to encourage or try to get anything done in the way of building good roads in any portion of this state unless it is done by the farmers themselves. They are the men who are directly interested; they are the class who have got to pay the taxes for the improvement of most of the roads, not all perhaps; they are the ones that have got to be consulted before you can do anything, and it seems to me that the first thing we want to do in this matter—and I think I can speak for the board of directors, and I think I can speak, in fact I know, for the Good Roads League Association—that they expect and want the farmers to take hold of this thing themselves and have the management of it and the handling of it in their own hands. It is not the idea, at any rate it is not my idea and I would not have any part nor take any part in any legislation or any man that didn't first recognize that it is the farmers of the state of Wisconsin that must do this work themselves, and I am satisfied that they can do it. I am very free to say, and you all know, that they have not been doing it well. Every one of you gentlemen here tonight who has a farm will plead guilty to that charge. I am a farmer myself. I know how the work is done on the roads. You know how it is done on the roads. It is the system that is at fault entirely.

Let me illustrate this thing to you. The building and maintaining of good roads is very much, almost entirely, like the building and maintaining of character. That may seem strange to you. I say it is very much, almost exactly, like the building of character. If you want to build up a young man, to give him character and a foundation to work on

when he goes out into the world to do for himself, what do you do? You begin right at the beginning with the best material that you can get, and you build up and build up and round him out and finish him at the normal school, the state university, and he goes out into the world with a good foundation to start with, and with a good character, and he is prepared to do the work and bear the burdens and carry along and do his share of the world's work which he ought to do.

You want a good road that does the same thing. You have got to begin the foundation right and you have got to build up with the right kind of material, and there are two main things, as the gentleman who has spoken to you tonight said, that are absolutely necessary. The water must be carried away not only from the surface of the road but from the foundation of the road, and that is more than one-half of the whole trouble. If you leave the water in a ditch or on the surface, your road is spoiled, just as a man's brain is injured if he gets water on it, as many of them do.

Now, gentlemen, I hope that I have made it clear to you what attitude the Wisconsin Good Roads League stand in in regard to this matter, and I hope that any prejudice that you have in your minds against that League, that you will forget it, because it is wrong if you have any such impression. They do not intend to take part in this business.

I want to speak to you now practically for a few minutes in regard to this road business. The county of Sheboygan, where I live, has fifteen towns in it. I go down to the town of Sheboygan where my farm is. I went the other day to the county building and looked over the tax list for the last ten or fifteen years. I found to my astonishment that we have been assessing ourselves in that town \$3,000 a year for the last fifteen years to build roads. I did not look further back. But that town was pretty well settled thirty years ago, and I figured it up in this way, and I do not believe that I am out of the way much. I feel certain that I have not figured it too high, but am sure that it is figured too low. We have spent in that town during the last thirty-five or forty years, since it was settled, between ninety and one hundred thousand

dollars. Now keep this in mind, if you please. I will make this clear to you and we will get down all the facts and figures and you can see it for yourselves. I say that the town of Sheboygan has spent, or the farmers have been taxed during the last thirty-five or forty years, over ninety thousand dollars. We will put it at the round sum of one hundred thousand dollars. I have figured up that there is about fifty miles of road in that town, as near as I can estimate it roughly. How much is that a mile that has been spent upon the road in that town? It is \$2,000 a mile, isn't it? Yes, pretty good. The roads in that town today are no better than they have averaged for the last twenty years, and you will find that I am not mistaken when I say that the roads throughout the state, in the older settled counties particularly, are no better today to travel on than they were twenty years ago. What might have been done with those two thousand dollars per mile? The gentleman has stated to you here that you can buy a crusher and crush stone and make a good road, the cost of which will not exceed eight hundred to a thousand dollars. That is true, that is true, it won't cost that. There is an enormous amount of money that has been spent, thrown away, that is all there is about it, and you know it, thrown away voluntarily. Perhaps the farmers work upon the same principle and look at it in the same light that the people who had the charity ball at Milwaukee did last week. I find no fault, but make an illustration of it. It is said that it cost them \$10,000 to rig out and get ready with all the nice things they had to wear, but out of the whole proceeds there is only \$2,000 left, that is what they have got. They spent \$10,000, but out of it there is only \$2,000 left to go to the poor, and it is said this morning the poor are not going to get that—it is going somewhere else.

The farmers in the town of Sheboygan that I am talking about will say, "Mr. Blackstock, that is all right; I admit \$10,000 would have made just as good roads as these are, but, don't you see, we have got the other \$90,000 ourselves?" That is true, they have been puttering away and working out so many days, which if you count up the price per day, comes to that.

By the way, if there is any one here who wants to ask any questions, I will be glad to answer them to the best of my ability. I don't pretend to be up in the business of road building, but I will answer willingly any question that any person wishes to ask me.

They have got in the town of Sheboygan but \$10,000 worth of road and have worked out \$90,000 worth of taxes. That is all there is about it.

Take the county of Sheboygan. The county of Sheboygan has fifteen towns. The town of Holland spent \$4,000. The county expenses between '45 and '50 were \$10,000 a year in road taxes. Figure it up, figure it up for forty years. It amounts to \$2,000,000, don't it? Yes, if you stop a minute and think. Take \$2,000,000 and go into that county, and what could you do with it? It is the same in the county as in the town—no difference, not a bit, one and the same thing. Our town in Sheboygan is the same as every other town in the county. They have spent their money and have got for their \$100,000 some \$10,000 worth of work to show for it. No one can make any more out of it. No earthly excuse for it. That is not the way you would do your business in any other matter at all, and when you think of it you cannot help but feel guilty. You never can go over the road but what you will feel ashamed of yourselves and the road as well.

Now for myself individually—I am free to say I am not going to speak for the Association in this matter; I don't know as I pretend to speak for the directors on this point, but judging from the talk I had with them at the meeting the other evening in Milwaukee and with them individually afterwards, I am of the opinion that we are agreed upon this one thing, and I consider it a very important and a very necessary thing in this whole scheme. The less legislation we have at the present time the better for all concerned. That is my judgment, after having given it very careful thought. The less legislation that we have at this time the better it is for all concerned, for the farmer, for the Good Roads League, for everybody. Why? Well, I will tell you why. I do not care what law you pass this winter, don't care what law you have got upon the statute books, if there is not public sentiment

behind that law you can never enforce it. It is a dead letter on the statute books, and a law that is a dead letter is one of the very worst things that a state can have. It is simply a sore, it is a bad thing, and the less of those things that you have upon your statute books the better. You have got, I say, to have public sentiment back of any law if you want to enforce it. To illustrate, you have a law forbidding the opening of saloons on Sunday, the selling of beer on Sunday, etc. Can you enforce that law in Madison, Milwaukee, Sheboygan, anywhere in the state of Wisconsin? No, you cannot do it. I have tried it, being mayor of the town. I am not speaking of the people who violate the law, we all do it. Without public sentiment you cannot enforce any law whether it is a good law or a bad law, public sentiment must be back of it.

I am satisfied that public sentiment is not back of any legislation that will require the farmer to pay any more taxes than he is paying now, that will require of him to pay an increased tax, or even if the tax was decreased one-half, I say the farmers of this state are not ready to subscribe to that law nor to that sentiment.

What then shall be done? I will tell you what I think ought to be done. I am taking too much time I guess. I know there are others to come on. I will stop any time you say, Mr. Hubbard. One or two little things I will mention. Is the time about up?

First, let the people of the city of Milwaukee together with the people residing along the line of the road running from Milwaukee to the State Fair, beyond the city, subscribe \$10,000. The people living along the line and owning property there of one hundred feet in width will pay one-third. That will build a beautiful boulevard to the State Fair grounds, without any expense to the farmers of the state or anybody else not directly interested. Get it there. Ask the legislature to loan to the State Agricultural Society \$10,000 to build a road in and around and through your beautiful Fair grounds, which is one of the finest Fair grounds in the United States anywhere. It is a needy improvement. The legislature can hardly refuse to do that. You are going to spend it on your

own property, you are going to increase the value of that property so much. Those of you who were at the Fair last fall remember that it rained one day and every lady who was there and did not have rubbers had to wade through the mud. It need not be so. The state can loan \$10,000 to the Society and they build the road. Now what is the result? Simply this, that the people who go there from all parts of the state next fall will have an object lesson, will see that road, ride over it and travel over it to the Fair grounds. This will be a lesson and an educator. They like such a road better after that. That, ladies and gentlemen, is not the only benefit in this thing.

The moment you get such a road as I speak of, you will find a comfortable conveyance, easy to ride in, and the fare will amount to but five cents, and the farmers who come from different parts of the state to the Fair always like to go into the city. I contend that the saving on the fare alone will not be less than five to eight thousand dollars, besides being much more convenient. That is worth something. That money comes right back to you.

Now, if they do that, then you can get them to see and work along in that way.

One thing more and then I will finish up. My idea of this thing is simply this, to repeat, the less legislation the better. None at all I think is preferable. But ask the board of regents, the special committee of the board of regents who have the Agricultural Department of the University in charge, to give to each one of the sections of the farmers' institutes when they begin to hold their meetings next fall, a practical, common sense, level-headed farmer who knows something about roads, an intelligent man who is interested in roads. Let him go to a certain section of the state, say one-third of the state. He may go as early in the season as he thinks necessary to get over the ground thoroughly, look over the roads geographically, making notes, diagrams, noting whether there is gravel, sand or stone, and when the institute meetings are held and that question comes up he is ready to talk upon that question just as Mr. McKerrow talks about sheep, intelligently, practically, from what he has seen and from what he knows.

If you do that—and you can see how slight the cost will be and it is right along in the line of the same work—I am decidedly of the opinion, and the more I think of it the more I am convinced of it, that it is the Agricultural Society that should have, for the present at least, for some years to come, the management of that thing, have it under their control and under their direction. The time will come when you will have to have a state engineer, a good one, and when you will have to have commissioners, but you don't need them until you get public sentiment educated up to a point where they are not only willing but want to have good roads properly laid out and properly built.

Now, it seems to me that if we do this simple thing, which is easy to be done, we will have struck the nail square on the head, we will have accomplished a great deal more than by any legislation, and that two years from now the farmers will feel differently about it and everybody will feel differently about it and be willing to take a step farther ahead. Let us go slow and carefully. I would like to talk to you a little more about the construction of the roads. I spent seven or eight years on the roads from Fond du Lac to Sheboygan when I was a young man, and I would like to go into the question and talk to you about it and have you talk to me about it, but there is no time. I have trespassed upon your time longer than I expected or ought to have done; but some time, I hope it will be soon, I hope it will be when I am located in one of the rooms downstairs, when I am there as governor (laughter), when I can make you stay whether you want to or not. Please excuse the joking, and now I thank you for your attention and I wish we could all get together and talk this thing over thoroughly and realize what an everlasting benefit and saving of money it would be to build good roads this spring. I say you can build gravel and stone roads all through this state for one dollar a rod.

I thank you for your attention.

The President—I want to say that I can corroborate one thing Mr. Blackstock has said in regard to his superin-

tending the road between Fond du Lac and Sheboygan. I have had to travel over it a hundred times and seldom got over it without breaking some part of my buggy.

The next question will be discussed in a manner that will not only be instructive but entertaining, by Mr. Van Matre.

MILESTONES ALONG THE LIFE OF A GRANGER.

T. J. Van Matre, Fayette, Wis.

Mr. President, Ladies and Gentlemen:—There are two questions paramount in my mind here tonight. The one is, "Why should I be asked to come up here and address this meeting when there are scores of men present the latches of whose shoes I am not worthy to stoop down and unloose?" The other is, "Why in my weakness did I consent to come?" To the former question echo answers "Why?" To the latter I answer, "That I might become better acquainted with the progressive farmers of this state, and by a comparison of methods we might receive a mutual benefit." And as I steamed across the beautiful expanse of country which intervenes between this place and my own home, showing unmistakable evidences of the intelligent application of thought to agriculture and the breeding and care of stock, I was brought to exclaim what a change, what a happy change has taken place within the easy recollection of your speaker. For I had once known much of this section of country as an uninhabited wilderness without wagon roads, much less railroads.

There are two classes of people in this world whom it is very hard to convince against their will—women and men. Convince a man against his will and he will be of the same opinion still. Therefore I shall not attempt to argue you into the belief that farming is the best business on earth; but I may attempt to show you it is not the worst.

Volumes would be required to record the advances made along agricultural, educational and industrial lines, since my eyes first beheld the light of day in the territory of Wisconsin, and as my mind goes back along the path which I have

trod, for more than half a century, there comes up before me evidences of thrift and prosperity made possible by the adoption of right methods in farming. While on the other hand the way is strewn with wrecks caused by the adoption of slipshod and unbusiness-like methods. I take much pleasure in seeing public opinion daily assuming a more intelligent and determined attitude in regard to the adoption of better methods. An ignorant man can never become an ideal farmer. Neither can he become a valuable citizen under a republican form of government like ours. This is the conviction of thinking men of today, and this conviction has led many good men to undertake the education of the masses along the line of better methods, at no small sacrifice of time and means. We sometimes hear our agricultural colleges, experimental stations, farmers' institutes, and their methods severely criticised, but as a rule these criticisms are prompted by prejudice, ignorance and shiftlessness. An indolent farmer never cares to listen to the gospel of better methods, simply because it is easier for him to float with the current than it is for him to turn about and battle against it. A life long experience has taught me that farming to be made profitable must be conducted on the most exacting plan of economy in every department. The work must be done at the proper time and with the least possible wear and tear of muscle. I am not disposed to contradict the fact that half a century ago farmers, ignorant of science, made a good living, and some of them laid by a little money, but then the country was new; a virgin soil, loaded with fertility, produced most excellent crops, which sold at remunerative prices. The habits of the people were more simple at that time; they raised almost all they ate and wore. Their wives and daughters had no ten-dollar hats, twenty-five dollar dresses, and fifty-dollar cloaks. Linen, wool and yarn, manufactured in the home, supplied the inmates with clothes and bedding. I know this was so because I was there and grew up amid these surroundings. Neighbors were neighbors indeed. They looked after and consoled each other in sickness, visited each other in health, and when able, aided each other in financial distress. If one neighbor had \$100 and another needed it, it was passed over and not a word said

about note or security, and when wanted was paid, usually without interest. I have known my father to lend hundreds of dollars in an early day, without the scratch of a pen to attest the fact. And those same men who borrowed then, would not now lend a sum of money without an interest-bearing note with good security. I do not pretend to claim that the people were any more honest and obliging then than now, but they simply had a different way of expressing it. Their equality in worldly matters made them all feel rich. They were happy in spite of their poverty, and not because of it. And I believe the pioneers of a new country, though they work hard and suffer many privations, are the happiest people on earth, because they are honest with hearts full of love and gratitude for the neighbors for miles around. I can but contemplate and compare the present aristocratic and unfriendly feeling of the people with the customs and habits of a generation ago. It was then customary for our fore-mothers, after they had cleared away the breakfast dishes, to leave the further discharge of the day's duties with their older daughters, don a new linsey dress, take their knitting to some neighbors, and spend the entire day in friendly conversation and mutual encouragement. They seemed indeed to enjoy themselves. Their conversation did not hinge upon some "new fangled sleeve pattern," new style of hat, or possibly upon some neighborhood gossip, but rather upon the best mode of making butter, or upon which were the most profitable fowls to keep. The list was not so extended then as now. They did not have the Barred Plymouth Rocks, the White Plymouth Rocks, the Laced Wyandottes, the White Wyandottes, the Golden Wyandottes, the Black Java, the Light Brahma, the Dark Brahma, the Langshan, the Partridge Cochin, the Buff Cochin, the White Leghorn, the Brown Leghorn, the Hamburg, the Black Spanish, the Houdan, and the Indian Game; but they did have the old pumpkin red and the dominique, which would lay as many eggs in 365 days, Sundays excepted, as any of the more modern breeds. They took particular care in preparing their daughters for good and efficient housewives. They were taught to sling the pots and kettles, milk the cows, and make home generally cheerful. They were taught how

to set a table with few dishes, so as to make it pleasing and attractive to a hungry household. Modern belles know but comparatively little about these things. They are taught French and German, music and rhetoric, and just how low to bow when saluting company. And while these things are all very good in their place, they never will appease hunger, or make home really what a home should be. Hundreds and thousands of miserable, neglected and unhappy homes may be found in this country, simply because the domestic education of our daughters has been overlooked. How many young ladies here tonight, contemplating matrimony, and I hope you are all contemplating that event, because there is but one more undesirable class than the "old maid class," and that is the "old bachelor class"—I ask how many young ladies present here tonight are familiar with the mysteries of domestic life? Do you say you will never be obliged to milk the cows and attend to the kitchen drudgery? I say, "You have no assurance of this fact, whatever may be your present financial standing." We cannot tell "what a day may bring forth." The proprietor of an enormous retail business in Chicago told me recently that a large proportion of the women and girls, employed in his establishment, began life in comfortable and prosperous homes, with the expectation of permanent ease, but the death of a father or husband, fluctuations in stocks, or some other business reverses, left their families penniless, and now they stand behind the counter twelve or fifteen hours each day, under the eye of an exacting task-master, and sell goods to keep the gaunt wolf of hunger from the door. If I were able, I would change public sentiment so radically that no young girl should be considered fairly well educated, no matter what her standing in society might be or her acquirements, until she had mastered some business, trade or profession. Self-support would then be possible in time of need, and she would not float upon the current of life, borne hither and thither by its uncertain flood, a part of its useless driftwood. I believe that every great institution of learning in this land should have in connection with it a manual training department, and our children should be taught some trade or profession, so that in the event of the loss of fortune they might not be left wholly

dependent. Many avenues are now open to young men and women wishing to engage in business, that were unthought of in my boyhood days. Young people wishing to engage in business now have advantages exceeding those of any generation before them. They live in an age and in a country where every success is possible; where men and women may make of themselves almost what they choose; where energy, enterprise and business integrity are appreciated, and a market is always open for good wares. In our day and in our country men are called upon to do what men never did before. Everywhere is met a spirit of investigation, inquiry, and experiment. In politics there are new tasks, in commerce shifting currents, in science colossal developments, in education new methods; even in religion new attitudes are being assumed. And if we as farmers do not keep pace with the advancing progress of the age, in the great struggle for the survival of the fittest we may be left. A party policy which was all right in our grandfathers' times will not meet the changed conditions of our times. The small vessels which breasted the unknown wave four hundred years ago, and planted here in the fertile soil of the western continent the seeds from which has sprung the most powerful and opulent republic upon which the sun ever shone, would not meet the demands of modern commerce. The telegraph, the telephone, and the lightning express have taken the place of the post boy and the old mail coach of three score years ago. The old log school house, with its primitive methods and antiquated teacher, has long since given way to modern structures, with modern methods, to meet modern demands. Primitive Christianity that worshiped under the canopy of heaven, and soundly denounced jewelry and fine apparel as devices of the devil, calculated to deceive the very elect, now worships in splendid cathedrals, bedecks itself with diamonds and jewels, clothes itself in silks and satins, and the world says Amen! and Amen!

As a boy I was taught to swing the cradle, the scythe, and the flail, and if my accounts at the close of the year showed a balance of one or two hundred dollars in my favor, I was

Happy indeed. My boys cut their grass with a steel mower, reap their harvests with a twine binder, thresh their grain with a steam thresher, and if at the close of the year their accounts do not disclose a balance of one or two thousand dollars in their favor, they soundly denounce the trusts and combines of our land. This all goes to prove that the world does move, that we are passing from an era of muscle to an era of brain. The fertile mind of genius has been touched by the magic wand of thought. And while this all tends toward a higher consummation, we must remember that there is a certain amount of physical drudgery that must be performed. And the man who mixes the mortar and carries the hod, may be despised by master masons and decorators, whose works are seen and applauded by men, but the architect who gave him his work knew that without his help the temple could not have been reared, and when the great day of reckoning shall come his reward shall be sure, for the laborer is worthy of his hire. I hope no young man will permit himself to become diverted from his intention to become a farmer by the senseless remarks of those who claim to be engaged in the higher walks of life. There is no business which antedates farming, and history, ancient and modern, sacred and profane, unite in proclaiming it the most honorable of occupations, though we should remember that it is not the business that dignifies the man, but the man who must bring dignity to his calling. Many farmer boys are now undecided whether to leave the old homestead and press their way into the crowded city, there to engage in the severe and uncertain struggles of a business life, or to remain upon the old farm, adopting agriculture as their life work. These boys like the farm, and hesitate to adopt farming as their life work only because they fear the returns may not be commensurate with the efforts put forth. But if the great financial troubles that have recently swept over this country have proved one thing more conclusively than another, they have proved the uncertainty of business ventures in the city, and the certainty of competence, comfort, and the best things of life to those who sensibly and systematically follow farming. Each day develops the fact that

education and training pay on the farm as they pay elsewhere in life; and other things being equal, the young man who fortifies himself by a thorough agricultural education will succeed much better than he who neglects this precaution. If we study the history of men who have figured most conspicuously in the affairs of this nation, we shall find that a large proportion of them had their early training upon the farm. It is true today, that the farm is the best school for the training of capable men that exists in this country. The farmer boy is learning real things. The great book of nature lies open before him, while too often the city boy is learning from the printed page only the pale reflection of things. The farmer boy learns early about land and soil, about crops and their rotation, about the seasons and the weather; he becomes familiar with domestic animals; he owns a pig or a calf; he has a favorite horse; he rides wild colts; he feeds and milks the cows; he hunts with a gun and goes fishing; in short, he develops a strong physical constitution which must accompany a bright mind. The farmer never gets out of a job; I think you will bear me out in this assertion. There are no strikes, and he who has a family to support is saved a great deal of worry and anxiety, for his income, though small, is nevertheless sure. There is cause for self-congratulation on the farm these hard times, when so many of our fellow men are out of employment in the factories and in the mines. And if we only do our duty by this God-given land we shall never feel the cold palsied touch of the hand of beggary, or be obliged to listen to the pleadings of the thin white lips of poverty. We may never become millionaires, but the strength of this nation does not rest upon its millionaires, but upon its six million yeomanry with their happy homes. Whatever builds up and strengthens the homes of this nation, builds up and strengthens the nation. And I believe the more evenly the wealth of this country is distributed the better it is for all concerned. Concentrated capital is subjugating everything. It has engaged the press; it has corrupted legislation; it has bought judges; even our great institutions of learning are not free from its contaminations. Its grip is upon the church. Go where you may

you will find the people paralyzed with a sense of their own impotence. We know this from the oft repeated expression heard, "You can never legislate against combined capital." What! a nation who in her infancy laid the proud British lion prone at her feet, not now in the strength of her years able to cope with a few thousand millionaires? What idiocy! What blindness! This spectral phantom of our land, this devil-fish with its innumerable arms which cut like a scalpel and sucks like a cupping glass! This loathsome horror of vampire death lurks on every hand to seize the earnings and destroy the life of unfortunate who come within its grasp. It winds around its victim, covering and enveloping him in its slimy folds. It is a hideous picture of loathsome disease, and clings closely to its prey. It is spider in shape, but chameleon in the rapid changes of its political hue. But yesterday it was democratic, today it is republican, tomorrow it will grapple for the throat of the reform parties. And if we do not bestir ourselves, from the same golden altar upon which every ancient republic has been immolated, will ascend the smoke of sacrificed American liberty, and a despotism, the most damnable ruled by this money oligarchy, will be the sequence. Call me a radical if you please, I am proud of the title. Moses was a radical, Christ was a radical, Luther, Latimer, Hesse, Ridley, Phillips, Lovejoy, old John Brown, Wm. Booth and Dr. Parkhurst, were all radicals, and I challenge you to point me to any reform that has ever taken place in the history of nations, that was not the outgrowth of extreme radicalism. The time for conservatism has already passed. It passed when concentrated capital denied to honest toil a just compensation. It passed when the gold bugs of this nation spread their gaudy wings over our national capitol and said, "Thus far and no farther." Friends, "honesty is the best policy." At a slave sale in one of the southern states a great many years ago a smart, active colored boy was put upon the block for sale. A kind master, not wishing him to become the property of a cruel owner, went to him and said, "Sam, if I buy you will you be honest." With a look that beggared description the poor colored boy made reply, "I will be honest, massa, whether

you buy me or not." We are in need of hundreds and thousands of just such men and boys in America today as this poor colored boy was, men who will be honest with themselves, honest with their fellow men and honest with their God. The stream which guides our children into the haven of eternal rest must have its rise in the fountain of purity.

Heaven is not reached at a single bound,
 But we build the ladder by which to rise
 From the lowly earth to the vaulted skies,
 And we mount to its summit round by round.

Thursday Morning, Feb. 7, 1895, 9:30 A. M.

Mr. Wylie, Chairman—The first subject on the program this morning is, "Why Wisconsin Farmers Should Be Dairymen," by Mr. C. P. Goodrich.

WHY WISCONSIN FARMERS SHOULD BE DAIRYMEN.

C. P. Goodrich, Ft. Atkinson.

Mr. Chairman, Ladies and Gentlemen—Sometimes folks ask me, What is the use of being a dairyman anyway and being tied down? Now the Agricultural Society asks me, Why should a farmer in Wisconsin be a dairyman? Well, I have written down a few reasons which I will try and read. I am an awful poor reader and so I hate to read, but I will try.

Every farmer should constantly keep in view the maintaining of the fertility of the soil, at the same time that he is endeavoring to get as large an income and as remunerative a compensation for the labor bestowed on it as possible. To do this it is necessary to keep some kind of stock to consume the products of the farm. No stock brings a better income than good, well-cared-for dairy stock, and no farm products can be sold off the farm which takes away less fertility than dairy products in proportion to the amount of money they bring. A ton of wheat at 50 cents per bushel will bring less than \$17, and remove from the farm 64 pounds of nitrogen,

phosphoric acid and potash which, if it were purchased in the form of commercial fertilizers, would cost \$7.08. A ton of oats or corn sold off would remove 52 pounds, which would cost to replace \$6.06. And so with all the grains and grasses, every load hauled off to market represents a portion of the farm. A ton of cheese sold off the farm at 10 cents a pound would bring \$200 and remove 129 pounds of these elements of fertility which would cost \$17 to replace. A ton of butter, which at the small price of 20 cents a pound would bring \$400, would remove but 48 cents worth of fertility and could be replaced by two bags—80 lbs.—of bran, costing 60 cents. Besides this, a good profit is made on the cost of the bran by feeding it to the dairy stock in the increased dairy products. The farm of the dairyman who feeds out most of the products of the farm and purchases in addition some protein food which he can buy cheaper than he can raise, finds his farm growing richer each year instead of poorer, provided he carefully saves and applies all the manure. The dairyman's farm is growing more valuable each year, and the selling price growing higher. He will be able to bequeath a rich legacy to those who come after him, in the form of fertility stored up in the soil instead of leaving behind him a barren waste.

That this is true, any one who is observing can see. One can tell the dairy districts even when riding through the country on an express train, by the unmistakable evidences of prosperity in the shape of large and commodious barns, neat and well painted and comfortable houses, well cultivated fields and luxuriant crops. If one wishes to pursue his investigation further let him ask the bankers what class of farmers deposit the most money with them, and he will be told that it is the dairyman every time. Investigate further and find out who has mortgaged farms, and you will find it is not, as a rule, the dairyman—certainly not the dairyman who tends to his business in a sensible manner or has been engaged in it any considerable length of time.

I am often asked if there was not danger of the business being overdone so that competition will reduce the selling price below the cost of profitable production. Now, I have

heard this kind of talk for more than 20 years past, and yet today, although the price of dairy products are a trifle lower than they have been at some particular times in the past, yet with the improved methods and improved stock now in use the business is more profitable than it was 20 years ago.

You might as well talk of the straight and narrow way being so crowded that there would be no chance for a Christian to get into heaven. There are so many who are unwilling to adopt and practice the methods that insure success in either case, that neither the route to heaven or to profitable dairying will be crowded while the present generation is on earth.

Then, again, all parts of the country are not as well adapted to dairying as is Wisconsin. We are in the dairy belt. We need fear no serious competition from the southern states. Their warm climate with the lack of ice, and in many places the lack of good water, is against them. More than that, the tastes and inclination of the people are against it. They cannot make a good quality of cheese. They could, if they would only take the necessary trouble, make passably good butter, but they will never milk cows to any extent. The character of their laborers—those who must necessarily do the great part of the work of milking and caring for cows—does not conduce to success in dairying. It needs intelligence, skill, brains and training to make dairying successful. We have all that in Wisconsin in addition to her natural advantages. But a few days ago I was talking with an intelligent gentleman from Arkansas, who is connected with the Agricultural College there, and he frankly told me that we never need fear competition from the south in the dairy business, and he, himself, had been at work trying to make a success of the business for more than 20 years.

We will never have competition from any part of the west beyond Minnesota and Iowa. Beyond that line in many places the water is bad, and nearly all of it is a poor grass country. I had a friend who went to Dakota. He had been a maker of fine butter here in Wisconsin, which brought the highest price in the Chicago market. He took his fine herd of Jerseys to Dakota and made butter and shipped to the same market. It sold for 7 cents a pound, and he was told that al-

kali water and wild onions did not impart the flavor to butter that suited the Chicago taste. Of course he sold his cows and like the rest of them turned his whole attention to raising wheat and selling off the fertility of his soil.

We, in Wisconsin, have the best of natural conditions for dairying. We have as good a climate for it as can be found anywhere, an abundant supply of the best of water (an absolute necessity) and an abundance of the best of grasses. With our fine corn, clover and grass lands we can produce as much cow-food per acre as can be produced anywhere. With the great wheat and flax growing states near us on the west, with their immense flouring mills and oil mills, we can buy bran and oil meal much cheaper than they can in the east. We can buy them at a rate that makes them cheap feed and also cheap fertilizers. Let the west sell off the fertility of her soil in the shape of wheat and flax if she must, but we will buy a part of them and, not only get our money back with a good profit added, by feeding them to the cow and selling her product, but we will also get our money's worth *again* in the added fertility of our soil.

We can make butter and cheese *cheaper* than they can in the east because feed is cheaper; *easier* than they can in the south, because of the climatic conditions, and *better* than they can in the west because of their drouths and the scarcity of good, pure water and grass.

Now, in view of the natural advantages possessed by our state, I feel like urging Wisconsin farmers to be dairymen; be educated, intelligent and skillful dairymen. Set your mark high, climb toward the top—there is always room up stairs—and you will surely be prosperous and happy.

DISCUSSION.

Mr. Weld—Don't you think it would be a good plan to anticipate these oleomargarine men and make more butter?

Mr. Goodrich—No sir; I had a chance to do that quite a number of years ago but declined. I have not had any experience in it.

Mr. Convey—What did you decline for?

Mr. Goodrich—Because I thought I would prefer to make good, honest goods and get a good price for it.

Mr. Convey—What percentage of profit does the dairy business afford, have you ever estimated it in that way?

Mr. Goodrich—I can tell about the percentage of profit it has afforded me. I know there are some that don't make any profit. Take the whole country together I don't know how I can tell. I don't know as I really care to tell my own business. I am afraid that—

Mr. Faville—He is afraid they will come in for an income tax on him.

Mr. Faville—How do you know about him?

Mr. Goodrich—I will tell you what another man did.

Mr. Goodrich—Because I have seen the books of the creamery where he took his milk and I counted his cows, and, well, that ain't all.

Mr. Grisim—Did you milk them?

Mr. Goodrich—No, but I saw the girl that did milk them.

Mr. Grisim—You better see the old man.

Mr. Goodrich—I will tell you what a good dairyman has done, one that worked at it scientifically by saving the best and breeding the best and taking the best care of the cows. I went to his place last year and he had five two-year-old heifers. His name is Sebastian Heller. He also had eight three-year old heifers and seven mature cows; that made twenty, and those were all the cows he had for a year that paid or gave any milk. For one year, from October 1, 1892, to October 1, 1893, he got 142,399 pounds of milk; 5,679.78 pounds of butter fat; average test was 3.99 per cent.; butter fat made 6,626.41 pounds of butter; average price of butter from creamery 21.5 cents, making \$1,390.30; 331.32 pounds of butter per cow per year bringing \$69.54 per cow. He says it cost \$35 to keep the cows, and here is \$69.54, so he got \$34.54 for his work and profit. He says it cost \$35.00 to keep a cow.

Mr. Ryan—At what price did he sell the butter?

Mr. Goodrich—The price of the butter to him was 21.5, the average price at the creamery was 25.5 cents; he got 21.5.

Mr. Ryan—He got a good price.

Mr. Goodrich—It was a fair price; that was what the butter averaged.

Mr. Brigham—1894?

Mr. Goodrich—1893. Now, I want to say a little—they talk as though the business might be overdone and they say the dairy products are going down. Now I have taken a little pains to look it over and have got it clear in my mind. In 1887 the average price I got for my butter was 25 cents, (I am putting it in round numbers). From that year to 1889 it was 25 cents; in 1890 it was 24 cents, and in 1891 and 1892, 26 and 27 cents; in 1893 it was 27 cents. That is about the highest that it has been at any time since 1882. Last year it was down to 24 cents again, the average price. We are not so very bad off after all.

Mr. Weld—Which is the best, for the farmer to have private or public creameries, that is, make the butter at home or send to the creamery?

Mr. Goodrich—That depends so much on circumstances. A person must have the skill and education to make it at home. If he has to depend on all sorts of hired help he cannot do well at home. I believe there is a place for the creameries. We need creameries and cheese factories, and if possible we need private dairies. We can do better, I can see a good many around here that can do better making their own butter than patronizing a creamery because they can do better than get creamery prices and do not have to haul their cream away.

Mr. Weld—That emphasizes the fact that brains pay a farmer.

Mr. Goodrich—I do not know but what it pays a farmer as well as a lawyer. (Laughter).

Mr. Faville—On this question of production of cheese, I want to say that I have been personally and intimately connected with that business since 58 years ago. I heard this cry of over-production when I was eight and ten years old until now, and the average price of butter products has been growing better from that time until now, varied a little, but on the whole more money is made now than when I first knew it, and there is no danger of over-production. Mr. Goodrich has made that matter very clear; there is always room on the top.

Mr. Arnold—I would like to know if Mr. Armour runs a more profitable dairy than he does.

Mr. Goodrich—He may be making more for the present, but I don't believe he is laying up treasures in heaven. (Laughter).

Mr. Arnold—I would like to see some sort of resolution passed whereby we can tell oleomargarine from butter. I do not know what is being done. I think it is important something be done. Is there anything being done?

The Secretary—I would state that the Wisconsin Dairy-men's association has caused a bill to be presented to the legislature. You can see who the confederates of that bill are by going to the assembly chamber and reading it, in fact every dairyman ought to have a copy of it in his possession, and the special committee to which it has been referred would be pleased to have any or all of you appear before them, because they are interested in it, and I think they are somewhat at sea. They do not know what is the best thing for them to do. I have been interviewed by some of them. My position is this: "Gentlemen, go just as far as you can in this matter, but keep within the constitution." I believe our enemy is alert. I don't believe this legislature could pass a law that would please them better than a prohibitory one, and they would at once go into the courts and test the constitutionality of it, and I have said to that committee that they ought to make the constitutional test before they make the law.

Mr. Anderson—I think I can claim the credit of introducing the first bill ever introduced in the legislature of Wisconsin to make it a penal offense at a fine of not less than \$200 to sell oleomargarine. There was no dairyman to enforce it and the bill fell through.

Mr. Grisim—Mr. Goodrich says there is no danger of over-production, and the reason is because the men ain't all like Mr. G. If every man would make butter like he does, I think he would not get more than 10 cents a pound for his butter. I am too lazy to be a dairyman. I don't want to be tied to a herd of cows, milking from 5 to 6 o'clock every day. And then again, I don't want to lay up money to have my children quarrel about when I am gone. And then he talks about his dairy cows. I like so much better to see a great,

thrifty steer, ham down to the gambrel, instead of a little, snivelled-up, crooked leg, little bit of a Jersey cow that feels so mean she is ashamed to have you look at her. I can go out and look at my steers and grow fat, than looking at these little Jersey cows. And talk about keeping up the fertility. I have a neighbor who says: "What is the use of my buying myself cows to keep my farm up, when it is growing more valuable every year and I am selling everything off of it? My farm is worth more than it was ten years ago." I sold off all my cows because I got poorer and poorer every year when I had them. If I understood how to make butter like Mr. Goodridge I would not tell it,—I would keep it all to myself. (Laughter).

Mr. Warner—I would like to ask if he ever milked a good Jersey cow in his life?

Mr. Grisim—I would not if I had one.

Mr. Taylor—I like to talk loud enough to make these deaf men hear. I am not surprised that this man milked cows and got poorer and poorer every year after describing those great big, broad cows.

Mr. Grisim—Steers! (Laughter).

Mr. Taylor—I have had the extreme satisfaction of from year to year milking these little Jersey cows and I believe I am growing in the grace of dairying.

Mr. Grisim—I doubt the grace.

Mr. Taylor—I believe that my farm is richer today in fertility, (consequently I have a "bank account"), by keeping dairy cows, and a Jersey cow at that. I do feel that it is somewhat out of place for a man to get up before an intelligent collection of dairymen to consider dairy methods and ridicule the best specimen of dairy cow that has ever come to Wisconsin, a Godsend to the dairyman, to the creamery, to the person that consumes milk, that has ever graced the state of Wisconsin, the Jersey and the Guernsey cow. Long may she live and flourish and grow upon our farms, and may her owners be prosperous, happy and contented. If a man will sit down with me for a few minutes, I will show him how he can make money with the Jersey cow.

Mr. Grisim—I do not want to make money that way. They are nasty looking things.

Mr. Morgan—Mr. Goodrich told us about this man that made money on those cows. I would like to know what breed of cows he had and how he got that breed?

Mr. Goodrich—The cows Mr. Heller had were no particular breed. They were mostly Guernseys. One was a half Holstein, but he had built up his herd by testing them and raising the calves from those that produced the best without regard to color or size. He was using a pure-bred sire to build them up. I don't know how many years he had been at it.

Mr. Convey—About 12 years.

Mr. Elton—Do you know about the amount of capital this man has invested, so we could figure out the percentage he made on his investment?

Mr. Goodrich—I do not know how he valued his cows, he had 20. He had to have a barn and some young cattle growing, farm tools, etc. I will tell you how I figure this business. I charge the cow with just what she eats. I charge her what I raise on the farm, just what I sell it for. I am selling it to the cow instead of somebody else. I charge the cow just what I pay for it. As to the fixtures we use in dairying,—there is capital that we want to charge interest on, and the cows invested in it, but not the farm, because we are selling the products of the farm to the cow.

Mr. Warner—Do you charge all your hay to your cows?

Mr. Goodrich—Certainly, at what I can sell it for.

Mr. Warner—Do you think there is as much money made in winter as during the summer in dairying at the present day?

Mr. Goodrich—I think there is more money made by cows coming in the fall. I have got to feed the cow any way, and it makes little difference which end of the year she has her calf. You can get more money at the end of the year, and I am fully convinced that a cow will produce more milk commencing in the fall. There is a certain kind of weather in the summer, certain conditions, when it is just impossible to prevent cows falling off in milk. You cannot help it. July and August, fly-time and heat, will reduce the flow of milk, do the best you can. After that you will never get it back again. If

they commence after fly-time is over, and you feed them good succulent food, (that is almost as good as summer feeding), their dry period is just when they are bound to dry up any way, and you get more milk and better.

Mr. Warner—Did you ever have any trouble to have them come in the fall?

Mr. Goodrich—Not in the least, not if they are handled right, there is no trouble. The way I did was to start with the heifers in the fall and then with the cows that came in in the spring; I let some go over so they came in the fall, some a little earlier and earlier, some in February and March, but I always have wanted to have some come in in the spring as I wanted to keep a continuous supply of butter.

Mr. Warner—I have tried your way too, to have them come in the fall, and my experience taught me to let them come in at all times of the year, and I have had good success ever since. Let them come in in July or any other month. I keep about 40 cows.

Mr. Anderson—Have you got a silo?

Mr. Warner—No sir, I don't want one.

Mr. Anderson—I never knew a man who objected to a silo.

Mr. Thorp—I want to ask if you ever noticed in individual cows, if they came in before or after the flush of food in the fall, when they got their biggest returns?

Mr. Goodrich—My cows don't know much about the flush of food. They have all they want to eat in flush food the year around. You scarcely see any difference when I turn them out in the spring.

Mr. Thorp—I noticed cows coming in in the fall—we have a fall food to turn them on and they give a large flow of milk, but as soon as they get the dry feed or while changing them it is a pretty hard matter to get them over that period from green to the dry feed without having a shrinkage, but after the grass is gone I can keep up the flow of milk all right. Last spring my cows decreased 50 pounds in milk after they got on the grass but it soon came back again, but in the fall it is hard to get them over and keep them on.

Mr. Grisim—I tried once, I thought I would have my cows

come in in March, and I found they came in just when they had a mind to.

Mr. Dodge—Do you prefer to have cows milk steady the year around or to have them go dry?

Mr. Goodrich—I prefer to have them go dry six weeks to two months.

Mr. Warner—Don't you think it would be better if you could hold the cattle and not have them go dry at all? Don't you think after the milk gland has shrunk away once it is hard to get it up again? If you take a heifer and train her up, when she has her first calf she need not go dry two months, or three or five, if you please.

Mr. Goodrich—Have you got done?

Mr. Warner—Yes sir.

Mr. Arnold—At our creamery we had experiments in milk, and we had cream brought in there that would not churn out any butter. They were milked the year around. Now that is something nobody has been able to explain. At the experiment station they would be glad to have some explanations. I would like to know the advantage in torturing a cow twelve months in the year. I would like to know the advantage if you milk a cow two years and then cannot churn as has been demonstrated.

Mr. Goodrich—I said I preferred to have cows go dry six to eight weeks; that is strictly true. The time was when the trouble was that the cows did not give milk long enough. We have endeavored to prolong the period of milking until occasionally we get a cow that it is not safe to dry up. I have some that I did that way with, but I am very sure that if they were dry two months or six weeks they would produce more and be healthier and live longer. As to the value of the milk, we know that a man is liable to get into jail if he takes the last of the milk and sells it. We know that it is not real fit food and we feed it to the pigs. I have some that milk continuously.

Mr. Baker—What is the cost of producing a pound of butter?

Mr. Goodrich—I have figured as closely as I possibly could

and it costs me about 13 cents a pound to make butter by the year.

Mr. Warner—Was her last milking before she came in good?

Mr. Goodrich—It had a better flavor to it. You run a great risk if you put in the milk along the last period of milking.

Mr. Warner—You could not perceive anything with the naked eye?

Mr. Goodrich—I don't know as I could do that but I could perceive it with a naked nose. (Laughter.)

Mr. Convey—There is a necessity that cows come in at different times of the year, is there not?

Mr. Goodrich—Yes sir.

Mr. Arnold—Taking the milk of the new milch cows, can you churn out more butter from a cow's milk for a long time than if you had it by itself?

Mr. Goodrich—If we manage rightly we can get it almost every bit churned out anyway.

Mr. Arnold—If there is none in the last milking you cannot get it out?

The Secretary—Did you say that the milk from the cow late in the season of milking is not as rich in butter fat?

Mr. Goodrich—No, I did not say that. I said it did not have as good a flavor and sometimes a decidedly bad flavor.

Mr. Martin—Is it richest in butter fat at the first or last?

Mr. Goodrich—As a rule it is less when she is giving a large quantity of milk. I was talking about the Babcock test the other day. We were testing some of the milk. I gave them instructions the night before how to take the sample,—milk the cow clean out and turn from one pail to another. We tested up to eleven per cent. When I find milk as rich as that it is suspicious that the sample is not thoroughly taken. We had the names of the different ones. I said, "Is Mr. Smith present? Will you please tell us what kind of a cow this is?" He said, "Half Jersey." I said, "Did you take the sample just as I said? I said, how much milk did she give?" He said, "You have it there."

Mr. Warner—Did you ever test a cow, that she would give more rich fat out of one gland than out of another?

Mr. Goodrich—No sir. I know what Dr. Babcock reported: If you commence to milk with the right fore teat first and then the next, the first gave poorer than the second, and the last one was richer than when he commenced. If you milk in one section it is richer today but it may not be richer tomorrow. You take the milk when the gland is excited and it is better than when delayed.

Mr. Warner—Could you ever give the cause why the cow would not give the same kind today as some other day?

Mr. Goodrich—No sir, no man has ever been able to tell that.

Mr. Jones—Will linseed oil hurt the texture or flavor of butter?

Mr. Goodrich—I never fed very heavily of it.

Mr. Grisim—Does the quality make any difference in the butter fat in the milk?

Mr. Goodrich—That is an old question talked and disputed about a great deal 20 and 30 years ago, but the longer men live and the more they experiment the more they use the Babcock test, and still they weaken on that.

Mr. Grisim—I heard one of the most learned professors say a cow would give just as rich milk on straw as the best feed you can give her.

Mr. Goodrich—I believe she will give richer milk.

Mr. Grisim—Do you think she would give as much?

Mr. Goodrich—I do not know, I never tried a cow that way.

Mr. Grisim—I kept one on straw. He said it was just as rich per pound of milk but he said the cow on straw would not give milk.

Mr. Elton—I would like to ask if there is anything in the fact that cows that are in better condition will give milk richer in butter fat?

Mr. Goodrich—I never discovered that. I never had a cow so poor but what her milk would have just as much butter fat as if she was fat.

Mr. Martin—At a hotel this morning I heard several talking about Prof. Russell's statement. This remark was made, that he said it made no difference in the flavor of milk what a cow was fed on.

Mr. Goodrich—I don't believe he said that. I think it must be a mistake because I do not believe a man of good sense would say anything like that if he knew anything about cows.

Mr. Martin, they will lie about all of us. (Laughter.)

Mr. Morff—What do you feed cows?

Mr. Goodrich—They are fed for a winter's ration about 30 pounds of ensilage, 5 pounds of clover hay and some dry corn fodder, 4 or 5 pounds of that, and what little straw they will eat; 5 pounds of bran, 5 of glutine meal this winter is about a day's ration.

Mr. Weld—Is your ensilage in a sour state?

Mr. Goodrich—Yes sir, sweet is better but is rare. We feed three times a day and mix it up.

Mr. Taylor—What do you feed your cows before milking?

Mr. Goodrich—Hay.

Mr. Grisim—What time do you milk?

Mr. Goodrich—Six or half past.

Mr. Grisim—Don't milk at all, do you?

Mr. Goodrich—Well, that is what I thought you were getting at.

The Secretary—When do you water the cows and how much do you warm the water?

Mr. Goodrich—We warm it up to about 60 or 50 degrees, not warm, take the chill off. We water about nine o'clock in the morning and three or four o'clock in the afternoon. They are let out of the stable for that purpose.

Mr. Grisim—Will they drink twice a day?

Mr. Goodrich—They will.

Mr. Grisim—Mine won't.

Mr. Thompson—What percentage of corn was this ensilage?

Mr. Goodrich—Usually the ensilage is about ten per cent. of corn; that is, 30 pounds of ensilage would have corn enough to make 3 pounds of dry corn. The way I arrived at that, I estimated the amount of corn on the acre.

Mr. Jones—What would your herd of cows average per day, what number of pounds?

Mr. Goodrich—I don't know but I have got to read my account again.

Mr. Jones—Can't you tell nearly? .

Mr. Goodrich—Mighty close to a pound a day.

Mr. Jones—So that is 13 cents per day that your cows cost?

Mr. Goodrich—Yes sir.

Mr. Jones—Over \$30 a year?

Mr. Goodrich—Yes sir.

Mr. Fratt—Did you ever keep cows in the stable in the fall when the flies were bad to prevent shrinking of milk?

Mr. Goodrich—You know it is hot weather in the fall. If you shut them up and darken the stable the air is stifling.

Mr. Rice—I would like to know if it is advisable to keep them day after day without exercise in the winter?

Mr. Goodrich—I can only give you my opinion of it. My opinion is that they better have some exercise each day, enough to stir their legs a little, and it is just about enough to satisfy them by going out of the stable twice a day when they get water. They do not feel much like exercising.

Mr. Jones—What is the estimated cost of raising a heifer up to the time she calves?

Mr. Goodrich—I don't know as I figured close on that. You can estimate as well as I can.

Mr. Jones—I want to get an estimate and see where your dairy cattle come with this old gentleman's beef cattle.

Mr. Goodrich—I don't think it will cost any more for the dairy cow than the beef cow.

Mr. Taylor—I want to refer to a matter of the most vital importance in successful dairying. After we have made a selection from the best dairy breed and have chosen a good sire and have feed and everything properly arranged and have adopted good methods, unless we get a good flow of milk the first thirty or sixty days our efforts will be lost for the milking period. This gentleman contends that after the fall feed is gone in the fall he can keep up a flow of milk and that she will freshen when the grass is good until shrinking when the dry feed comes.

Mr. Thorp—No, I did not say that. I said there was a certain percentage of shrinkage but I could hold them through

the winter at that per cent., but if they come in after the grass I could hold them up to the normal amount.

Mr. Taylor—A fresh and green pasture with a running brook is the best ration that nature gives us. A warm barn, well ventilated, well bedded, well lighted, with corn or clover silage, with warm water in the barn, is the nearest approach to nature's condition that we can expect to arrive at. The very best care must be given the cow for some time after she has her calf, for at least 30 to 60 days. At this time she should always be in the hospital, in the box stall, summer or winter. Remember that she is a mother performing the functions of maternity and is therefore a sick animal. Have plenty of patience with her at this time. Remember that she has a fever and cannot be turned out without taking cold. If you are in the habit of turning out all the rest, leave her in, putting a blanket on her because the thermometer may go down. Treat the cow carefully at this time. Feed her three times a day. Don't let anything disturb her in any way. From 12 to 15 days after freshening you will give her a little bran and oats and other food lightly; from 16 to 25 days take her to eat large quantities of ensilage and clover hay and other feeds and get her full and see to it that she keeps full until she freshens the next time. Until that cow has been in milk two months you need not expect to get her to her highest production. Watch her carefully. I want to get these young men interested in this mother from the time the calf is dropped. If you will follow this direction you will find your profits greatly increased, and you will never let go of that cow after you have followed her up two months, and the first thing the old gentleman knows he will be surprised that the young man wants a nice dairy cow, and finally he will say, "Well, have your own way."

Mr. Thorp—I want to ask Mr. Taylor if he puts his cow in the hospital in summer.

Mr. Taylor—Yes, I do. We accustom her to the box stall before she freshens and get her used to these quarters. We do not want to rush her out of the pasture without being used to it.

Mr. Grisim—Do you blanket them all?

Mr. Taylor—In the winter every one of these new milch cows. We protect them 25 degrees below zero, and they are worthy of it.

Mr. Wicksam—I would like to learn which is the cheapest, raise or buy your heifers.

Mr. Goodrich—I figured on that a good deal. I have bought and I have raised them. I can raise better cows than I can buy.

Mr. Taylor—Do you think a dairy cow doing her best will transmit those qualities to her offspring?

Mr. Goodrich—I do. The longer you continue to improve them and select the best and the best, the more sure you are of getting a first class dairy cow. If you can come right in where somebody has been at work for years and years, you can step into their shoes and commence from where they left off and go on.

Mr. Linse—It is not only in the breed alone in raising a good dairy cow but in the way you bring up the calf.

Mr. Goodrich—I think I could bring up any calf so that it would not be a very good dairy animal. The Professor at the Agricultural College says if you fatten a heifer before she comes in and then ask her to give you butter, she will say, "I am not going to do it, you taught me to make tallow."

The Chairman—The next subject on the program is "Silage and the Silo," by Professor King.

ENSILAGE AND THE SILO.

F. H. KING.

Ensilage is a green, succulent food which comes nearer to natural grass than the best of cured dry fodder can. When properly prepared all animals relish it. It takes the place, in the relation of the cow or the sheep, of the potatoes, cabbage,

onion, turnips and beets which we in our ration, not only so much relish but in reality find indispensable as articles of food. Practical experience has proved over and over again that whenever men have been long and continuously deprived of those foods which contain the natural juices of plants or fruits their power to work is diminished and sooner or later the disease known as scurvy is almost certain to follow.

All herb and fruit eating animals, during the long and inevitable processes of evolution have come to be so constituted in their machinery and processes for digestion and assimilation of food that the natural juices of vegetation are helpful and in the long run absolutely indispensable to them. Now silage may be the cheapest succulent food, everything considered, which has yet been provided for animals which must be carried through long winters. Roots of various kinds may take the place of silage in supplying the natural juices of vegetation, but they are not as concentrated food, they are more expensive, pound for pound, and you cannot crowd animals as hard upon them. Silage too can be stored for a longer period and probably also with less loss than is possible with roots. Then when it comes to intensive dairying, when we aim to crowd the land as well as the cow to its utmost safe limit, the preservation of a part of the feed as silage must be found, I think, an indispensable adjunct to methods of soiling as it is even now in the hands of some of our best dairymen, a means of diminishing the great losses sustained almost every year through a shortage in pastures. The use of silage as a summer feed has been tried so many times under the practical conditions of the farm that there is no longer any question about the possibility of preserving it in good condition as long as may be desirable. Neither is there any doubt regarding cattle eating it with relish, even while on good pastures in midsummer, nor of its being possible to use it as a supplemental food during the summer season.

Regarding the feeding value of corn silage when compared with that of corn fodder, acre for acre, in milk production, there have now been conducted so many careful experiments under reasonably good conditions as to leave no room

for doubt on this important point. The results show that, acre for acre, under the conditions of the trials, the silage has usually given the largest amounts of milk and butter, although the differences have always been small. It must be remembered, however, in this connection, that in all of these trials the cornfodder has been cured and fed under the best possible conditions, that is where the losses have been reduced to the minimum, while the silage, in the majority of cases, has been stored and fed under conditions which made inevitable losses much larger than are now experienced in the best silos now in use under practical farm conditions.

To make the statement definite, the average losses of dry matter in curing and handling corn fodder, in the best possible way, but which does not mean the way farmers generally handle it, has been about 20 per cent. or one-fifth of the whole crop. (So, too, the average losses of silage under the conditions of the experiments referred to have been about 20 per cent. or likewise one-fifth of the whole crop. In this case I feel confident, however, that these losses are nearly, if not quite, double what they need be under ordinary farm management. This is based upon the fact that last year at the Station farm we removed from our silo and fed out as good silage, bright, green and free from mould, within 10 per cent. of what was put into the silo, as shown by weighing the silage in and weighing it out again, and this was true in spite of the fact that the silage was dryer when it was taken out than when it was put in, so that the total loss of dry matter was less than 8 per cent. of the total amount put in the silo in September, the last being removed early in May. Of the 10 per cent. loss in green weight, 2,400 pounds was that which was spoiled on the top, no covering having been used. But this 2,400 pounds, on many farms, would have been wholly avoided by beginning feeding as soon as filling had ceased. So that it seems to me safe for our farmers to assume that a good silo will enable 88 to 90 per cent. of the corn crop to be utilized on a properly managed dairy farm, while under the average conditions which must prevail upon the farm, only from 60 to 75 per cent.

can be counted available when the corn crop is fed as dry corn fodder.

The cost of preserving corn as silage, counting labor in cutting and filling at 15 cents per hour, counting interest on the cost of the silo at 6 per cent., and 2 per cent. on the same amount for insurance and repairs, I find that as an average of five Wisconsin farms it costs 73 cents per ton of silage, or \$8.76 per acre, yielding 12 tons, to cut and store the corn as silage. Now, in order to feed corn fodder so that it is at all comparable in value with silage it must be cut and fed as the silage is, making the same machinery necessary, and to do this by methods now in use certainly costs \$9.52 per acre as against \$8.76 if the labor is counted at 15 cents per hour as I have counted it for the silage. If the corn is husked, shelled and ground, then the cost passes far beyond the silage. But against the corn crop fed as dry fodder must be counted the necessarily greater loss in dry matter incident to handling, and a saving of 5 to 10 per cent. of the value of a corn crop should not be lost sight of in our efforts to increase the returns of the farm.

Turning to the construction of the silo we should understand that in principle it is a large fruit can, in which green products are to be stored. Like the fruit can then it must be so constructed that it shall largely exclude the air and to do this its walls must be tight.

The silage in the silo should have a depth sufficient so that by its weight nearly all air shall be expelled when settling and so there shall be no chance for air to again enter it. To insure this, the depth should not be less than 24 feet, and 30 feet is better than 24.

Another matter of prime importance is to have walls so rigid that they cannot spread under the very heavy pressure which exists while the silage is settling. This is important because where the walls do spread an air-space is left between the silage and the wall into which the air enters, causing the silage to mould and spoil.

Corners should always be avoided in a silo where that is pos-

sible, because silage never can be made to crowd tightly enough into these places to prevent a large amount of spoiling.

The round or cylindrical form of silo, whenever it is not built in a barn is by far the best, strongest, and everything considered, the cheapest and this is true no matter whether the material out of which it is built is wood, stone, brick or iron.

I have seen very excellent square stone silos where the corners inside have been made very rounding by building the corners thick, but this requires a useless amount of material and labor.

It is best always to place the silo as deeply into the ground as practicable and usually the bottom may be sunk fully 3 feet below the level of the feeding floor. Deeper than this increases the labor of taking out the silage. The size of a silo should be proportioned to the amount which is to be fed out daily. The silage surface should be lowered from 1 to 2 inches daily to avoid too much heating and spoiling and this is done when about 5 square feet of surface is allowed for every cow or her equivalent.

A silo 15 feet in diameter and 30 feet deep will hold about 100 tons, and one 20 feet in diameter will hold 186 tons.

Table giving the approximate capacity of cylindrical silos for well matured corn silage, in tons.

Depth, feet.	INSIDE DIAMETER IN FEET.											
	15	16	17	18	19	20	21	22	23	24	25	26
20.....	58.84	66.95	75.58	84.74	94.41	104.6	115.3	126.6	138.3	150.6	163.4	176.8
21.....	62.90	71.56	80.79	90.57	100.9	111.8	123.3	135.3	147.9	161.0	174.7	189.0
22.....	67.35	76.52	86.38	96.84	107.9	119.6	131.8	144.7	158.1	172.2	186.8	202.1
23.....	71.73	81.61	92.14	103.3	115.1	127.5	140.6	154.3	168.7	183.6	199.3	215.5
24.....	76.12	86.61	97.78	109.6	122.1	135.3	149.2	163.7	179.0	194.9	211.5	228.7
25.....	80.62	89.64	103.6	116.1	129.3	143.3	158.0	173.4	189.5	206.4	223.9	242.2
26.....	85.45	97.23	109.8	123.0	137.1	151.9	167.5	183.8	200.9	218.8	237.4	256.7
27.....	90.17	102.6	115.8	129.8	144.7	160.3	176.7	194.0	212.0	230.8	250.5	270.9
28.....	94.99	108.1	122.0	136.8	152.4	168.9	186.2	204.3	223.3	243.2	263.9	285.4
29.....	99.92	113.7	128.3	143.9	160.3	177.6	195.8	214.9	234.9	255.8	277.6	300.2
30.....	105.0	119.4	134.8	151.1	168.4	186.6	205.7	225.8	246.8	268.7	291.6	315.3
31.....	109.8	124.9	141.1	158.2	176.2	195.2	215.3	236.3	258.2	281.8	305.1	330.0
32.....	115.1	135.9	147.8	165.7	184.6	204.6	225.5	247.5	270.5	294.6	319.6	345.7

In this table the horizontal columns express the capacities of silos in tons, having the depth indicated by the figures in the left-hand column; and the vertical columns express the same facts for silos having the inside diameter given at the top of the column. If the capacity of a silo 25 feet deep and 26 feet in diameter is desired, it will be found in the vertical column headed 26 and horizontal column headed 25, to be 242.2 tons.

The weight of corn silage per cubic foot varies with the depth of the silage below the surface. At the top it will weigh about 18 pounds per cubic foot, at 10 feet 33 pounds, at 20 feet 46 pounds and at 30 feet 56 pounds. The mean weight of corn silage in a silo 30 feet deep is 39.6 pounds.

Table showing the computed weight of well matured corn silage at different distances below the surface, and the computed mean weight, for silos of different depths, two days after filling.

Depth of silage.	Weight of silage at different depths.	Mean weight of silage per cubic feet.	Depth of silage.	Weight of silage at different depths.	Mean weight of silage per cubic feet.	Depth of silage.	Weight of silage at different depths.	Mean weight of silage per cubic feet.
Ft.	Lbs.	Lbs.	Ft.	Lbs.	Lbs.	Ft.	Lbs.	Lbs.
1	18.7	18.7	13	57.3	28.3	25	51.7	36.5
2	20.4	19.6	14	38.7	29.1	26	52.7	37.2
3	22.1	20.6	15	40.0	29.8	27	53.6	37.8
4	23.7	21.2	16	41.3	30.5	28	54.6	38.4
5	25.4	22.1	17	42.6	31.2	29	55.5	39.0
6	27.0	22.9	18	43.8	31.9	30	56.4	39.6
7	28.5	23.8	19	45.0	32.6	31	57.2	40.1
8	30.1	24.5	20	46.2	33.3	32	58.0	40.7
9	31.6	25.3	21	47.4	33.9	33	58.8	41.2
10	33.1	26.1	22	48.5	34.6	34	59.6	41.8
11	34.5	26.8	23	49.6	35.3	35	60.3	42.3
12	35.9	27.6	24	50.6	35.9	36	61.0	42.8

In putting corn into the silo the stage of maturity is important. The corn should go in a little greener, but only a little, than it would be cut for shocking. It is not advisable to allow the leaves to become dry and the silage is better, as is corn fodder also, cut a little too green than a little too ripe.

It is not necessary to rush the filling of the silo all into a few days. This work may extend over two or even three weeks if need be, and if care is taken in planting to have a part of the corn a little earlier than the rest, there need be little more rushing than if the corn were to be cut and put in the shock. We do not appreciate sufficiently that too late cutting of corn fodder is just as bad as to allow hay to become too ripe before cutting. Corn may be put in the silo whole or cut, but usually, everything considered, the losses will be less and the labor of handling less if the silage is cut in. In the deep silos short cutting is not essential and the labor of cutting is less when the knives are set for one inch lengths rather than $\frac{3}{4}$ inch or $\frac{1}{2}$ inch.

I think most farmers in our state are planting rather thinner than is desirable to procure the largest amount of feed per acre. By planting Pride of the North dent $3\frac{1}{2}$ feet apart in the row one way and one stalk every 7 to 9 inches in the row a better proportion between ears and stalks will be secured and a larger amount of dry matter per acre, but the stalks will be smaller. Flint corn, I think, may be planted in rows 3 feet apart for this purpose, with stalks from 7 to 9 inches apart in the row.

Thorough tramping of the silage at the time of filling has a tendency to expel the air which lodges between the pieces of cut corn and so to diminish the amount of fermentation which can take place at first.

Whether or not silage should be covered depends on how long it is to be left before being used and whether a cheaper cover than the corn itself is at hand.

If the silage is very thoroughly tramped two days after filling and then wet with 15 pounds of water to the square foot and then tramped again about a week later and a similar quantity of water added, the amount of spoiled silage will not exceed 10 to 15 pounds per square foot of surface.

In putting clover into the silo the matter of depth is even more important than in the case of corn, for it tends to lie looser unless very heavily weighted. Some farmers fill clover into the bottom of the silo and then cut corn in on the top of this,

thus securing a high pressure and very excellent silage. In one case of this sort with which I am acquainted the clover silage was carried over and fed in the summer two years after cutting, and the silage appeared to be just as good as it was the first season.

DISCUSSION.

The Secretary—I would ask Professor King what the dimensions of that silo are and the exact process of filling wherein he received the 20 per cent. loss?

Prof. King—The Station silo?

The Secretary—The one you cited in your paper.

Prof. King—10 per cent.; 20 per cent. is the average loss experienced in silos where careful experiments have been made comparing cornfodder with silage. Our loss at the station was 10 per cent. less than corn forage. The silage was a little drier when we took it out than when we put it in. The silage was carefully weighed when taken out.

The Secretary—What was the stage of maturity of that corn when cut?

Prof. King—A little greener than for shocking.

The Secretary—How long did you cut and what length of time did you use in filling it?

Prof. King—The filling was accomplished inside of a week in this case.

The Secretary—With regular intervals?

Prof. King—One day following another, continuous filling. In regard to this matter of continuous filling, it is not necessary to put it in every day. If you put in two days and want to let the silage settle, there is no danger so far as the silage is concerned by letting it stand two or three days, and you can put in a larger quantity by allowing a long time.

The Secretary—When filled did you cover it, and with what?

Prof. King—No cover used in this case.

Mr. Taylor—Have you tried that corn one year?

Prof. King—We tried it again this year, but have not opened the silo.

The Secretary—Do you advise the tramping of silage after it has been in more than a week?

Prof. King—I should. The principle is this: You fill the silo absolutely full of water and it is air tight so long as it is full of water, the silo is air tight, and the silo full of water is not a place in which life can thrive. Wood thoroughly full of water does not rot, nor when it is dry. Keeping the surface of the silage thoroughly wet keeps it in a condition where the surface will not rot. When you wet the surface there is formed upon the surface by the drying out a rotten layer which masses down and becomes extremely impervious. As long as you keep that wet you have practically a sealed top there.

The Secretary—That was just the point I wished to bring out. Do you not think that sealing was started within a month's time?

Prof. King—Yes, sir. The first wetting is likely to give you enough sealing to evaporate a large amount of water first put on. You need a second wetting to thoroughly complete the process.

Mr. Taylor—How much tramping is necessary? You spoke of tramping and treading out the air.

Prof. King—In the deep silos, especially if round, it is not especially necessary to tramp. I know of some tramping it but once a day, levelling off the silage either in the morning or at night after the work is done. If you have a small silo the need of tramping is greater than in a large one. When you have a shallow silo tramping is imperative.

Question—How long do you continue wetting the surface?

Prof. King—We have never wet more than twice.

Mr. Goodrich—Would you advise putting up ensilage for summer feed for cows?

Prof. King—I would unless you have a large quantity of land and pasture that you cannot use in any other way.

Mr. Goodrich—Don't it make cheaper food than corn, oats, etc.

Prof. King—I should not advocate feeding entirely upon si-

lage. Cut clover and feed it if you have it to feed and use the silage as a supplemental feed.

Mr. Dodge—How about the practicability of feeding ensilage for dairying purposes?

Prof. King—I have made an experiment of feeding dairy cows ensilage. We have found that we retain the flow of milk by feeding ensilage, but for fattening purposes we did not find such an advantage. We tested 8 steers on ensilage and 8 on the dry feed, and the 8 that were fed on the ensilage for the time of two months did not make a very great gain over those on the dry feed. Consequently we came to the conclusion that there was no great gain by feeding ensilage for fattening purposes.

The Secretary—I would ask if those two lots of animals were fed to their full capacity?

Prof. King—We fed them all they would eat of the ensilage and all the good clover hay they could eat. We did not feed any corn outside of the ensilage.

Mr. Linse—He speaks of not making a great gain. Was there a loss?

Prof. King—The ones fed on the ensilage made a gain of about two pounds more per month than those fed on the dry food.

Mr. Linse—Even if it was not a gain over dry food it was a gain because we can put up ensilage cheaper than any other ration we can feed. So there is a gain anyhow, I claim.

Mr. Robertson—I would like to ask the gentleman if he fed both lots of cattle the same amount—if those that he fed ensilage got enough of ensilage and clover hay and those fed the dry fodder got enough of that and the clover hay?

Mr. Favill—I want to ask Professor King in regard to how he leaves the top of the silo, whether he leaves it level, or in what shape?

Prof. King—The surface as level as possible.

Mr. Favill—I asked that for the purpose of saying another thing. You know I am a kid-glove farmer, but for the last three seasons I have helped to fill the silo and we adopted this plan, of tramping thoroughly around the outer edges and

every night leaving the center as much as two feet higher than the outside, and when the silo was full and ready to be covered we had it rounded up in the center two feet higher than the outside. The effect of it was, in settling this cone in the center settled down and crowded the outside out so that there was no waste along the outside as there usually is.

Mr. Goodrich—May I say something about the silo?

Prof. King—Yes sir.

Mr. Goodrich—I have had a little experience with the silo and I have examined a good many other silos. I have seen ensilage drawn off from the silo, leaving a space for the air to get in at the side. The first man that told me about it said, fill it right up. I filled mine that way and it seemed to shrink away from the sides. I went to thinking. I never did anything good to myself or anybody else without doing some thinking about it. What was the cause? I will tell you what made me strike onto it. We had some land out west and we put up some hay with a hay stacker that would let the hay drop down in the center. My men went on the stack and only tramped in the middle. After that stack was settled it was narrower and sharper than when first put up. That is the way it was with my silo. We got a lot of men on the straw stack and they kept it highest on the outside and tried to tramp it down in the middle. I said, "Why won't that apply to the silo?" The next year I got the silo higher on the outside and tramped it, keeping it up all the way around at the end, and filled it up highest in the middle. It would act like a wedge and pressed the sides out. I knew it was a good strong silo.

Mr. Favill—That is just what I have been talking about.

Mr. Goodrich—I know it but I make it more plain than you do.

Hon. Matt. Anderson—I have had some little experience but cannot brag very much with my first experience, but the last years we have succeeded very well. I think I can tell those boys how to make their silos solid around the edge. I generally have a good deal of clover chaff. The men told me, when they picked it out, it was good dry clover chaff, and another thing is, the Professor says you must tramp it or it will

shrink away from the side. I have had my men come in there and tramp it every day for a week. This year was a very dry season and there were a great many dry places on the corn. I said to my men, "This is getting too dry, you must wet it." We had as much as 20 pails of water put on every day to wet it down. The silage came out fine. If you have not enough moisture in the corn stalks wet your silage every half day, and that will help to keep it moist.

Mr. Grisim—I have never built a silo but my son built one. He went to that Agricultural College and came home and thought he must build a silo. He built it in a barn that was 15x24, and made two silos out of it, 15 ft. one way and the other way 11 ft. Gould recommended B F corn, and my son planted 17 acres of it.

Question—What is the B F corn?

Mr. Grisim—Big Fool corn. He filled it with that stuff and got me to go in and tramp it down. It settled from the wall did not press on the wall, but settled in the middle, and when we came to use it it wasn't worth anything. There was water enough in it to water the cattle, and a dry way to water cattle. If a man has not got a good bank account behind him and undertakes to fool and experiment from what those institute workers tell him, he will go on the poor farm in a few years. I did most of the tramping on the outside. That silo was not worth much of anything, as the ensilage was poor, dirty, nasty, sour, watery stuff. But he did put in some afterwards, some small corn, and got some good ensilage. In the town where I live there were four silos built and none of them are any use now. That is where I got fooled on the institute work.

Mr. Linse—Is it not a fact that too much wetting will produce a different kind of ensilage than when it is just right? Years ago when we first put up ensilage, 13 or 14 years ago, we did not know of any other way than to put it in green, in the most succulent state the green plants would be. We had less loss at that time in spoiled ensilage and it kept perfectly green, but it was as sour as vinegar. It did not develop the proper heat, and that is what we must do. You have heard about sweet ensilage, and that is the way to have it

and have it in a proper state when you put this corn in, not too much moisture and not too dry. Study this matter and get the best ensilage. We must study it thoroughly and know how to put the corn in, not too dry and not too moist. I heard the question asked, "How can you develop the right temperature in order to have sweet ensilage?" The answer was, "You cannot very well do it." He did not know any way to manage it. When I put in ensilage I start a little earlier in growing the corn because it takes me a couple of weeks to put up this ensilage.

Mr. Convey—I see in this audience some that have been using silos for a number of years, some of the first silo builders in the state, and I would like to call for a showing of hands of those in the room who have silos. (17 hands raised.)

Question—How many have silos and are dissatisfied with them? (None.)

Mr. Brigham—I have been troubled with ensilage freezing. Has any one tried canvas or any other covering on the ensilage, and how does it work?

The Secretary—I would suggest to those having wooden silos, while in the process of filling, take building paper, lath it all around the silo, and it will help to exclude any air that may otherwise work in and at the same time prove a protection from the frost, if the silo is well built.

Mr. Russell—The way I am troubled with freezing is principally from the outside around the edges of the wall and along the surface.

Mr. Thorp—That freezing on top bothers us all a little more or less, but you can obviate that by mixing it up an hour or two before you want to use it and feed off the frozen ensilage.

Mr. Anderson—I mix mine with shorts or ground feed, throw it down the night before.

Mr. Linse—That is my way of doing. Every dairyman wants warm ensilage. At the time I feed in the evening I throw it down for use in the morning and it gets thoroughly warmed in the barn during the night.

Mr. Douglas—I would like to ask if ensilage does taint milk, and if not, why do condensers pass restrictions against it?

Mr. Goodrich—I want to talk about the ensilage affecting the quality of milk. That is something that worried me a good deal. I examined ensilage and I talked with everybody I could, wishing to know this very thing. After I had almost persuaded myself that I must have a silo, I wrote the commission man in Chicago, asking him if he knew anything about it. He wrote back, "We sometimes get good flavored butter,—we more often get bad flavored butter. One man who had been sending good all at once sent bad." I said I have learned that it is from feeding ensilage. That kept me from feeding ensilage for two years. When I commenced to feed ensilage again he said, "If you feed ensilage, the flavor of your butter is excellent, never so good before at this time of the year." I do not know anything about the milk condensing factories, but it gives me better flavored butter than any dry feed I ever fed. You must feed good ensilage. If you feed turnips and rotten stuff of any kind you will have bad milk. That is all there is about the ensilage business. That is the fear of these men in the condensing factories.

Prof. King—If a cow has been fed ensilage just before being milked there is a tendency of that odor or some odor of the ensilage coming with the milk as it is drawn just as if you feed turnips before milking, or anything else, and if that is fed so that the cow has it in the system at the time you are drawing the milk there will be a tendency to draw off that product in the milk too, but that of course can be wholly avoided by simply feeding after the milking rather than before. We tried it at the Station here thoroughly last spring and we found that by having the milk drawn so that no one knew which milk was in which can, we could tell by the odor which milk was ensilage and which was not ensilage milk. If the feeding was done after the milking then it was impossible to discriminate between the two.

A word in regard to the failures of silos. There is no question that in the early starting of silos a great many were poorly built. The majority of them were very shallow and in a great many cases there were very bad results from those built in that way. It was not the fault of the system as a

system,—it simply resulted from the imperfect understanding how a silo should be built. We have passed that stage of ignorance now. We know what is needed in a silo and can build it and fill it so that there is no question when you are filling it but that you will have good ensilage when you come to feed it.

Mr. Douglas—Is it not an unjust discrimination against ensilage and certain root crops that condensers make?

Mr. McNeil—Is ensilage injurious to horses? In some cases it causes colic.

Prof. King—Judiciously fed it is not.

Mr. Russell—I should like to have the question of tainted milk answered. In the southwestern part of the county we are interested in Swiss cheese makers and they have a strong prejudice against ensilage milk. They say it does not agree with Swiss cheese. Does it affect the milk, and especially if there is any possible show that it might affect it for Swiss cheese making, would that be permanent in the cow? We have one cheese maker that says the more winters a cow is fed on ensilage the worse she will get, and after being fed three or four years it will spoil that cow for Swiss cheese making.

Mr. Goodrich—I would like to know whether it smells worse than Swiss cheese.

The Secretary—I think he has asked a practical question. I have been a manufacturer of the cheese he has spoken of, together with all the other domestic cheeses. I have also operated a silo for the same length of time. My cheese factory and silo stand side by side 20 feet apart. I have fed heavily of ensilage and I have taken that identical milk into my cheese factory. I have it away from the boiling vat, having a partition in my vat, and I want to go on record here in the face of all those critics in saying that the charge is unfounded, it is untrue, and I can prove it by the bills that I have received for my goods and the record I have kept of the same, that the feeding of ensilage had no injurious effect upon the quality of the cheese. I know that I have fed as much of that ensilage as any man; I have fed those cows to their

full capacity, and so I am prepared to say that they criticise you unjustly.

Mr. Convey—I am aware that this idea exists in the southwestern part of the state. As an illustration I will say that in a factory for about 300 cows he excluded the milk of some Jersey cows, claiming it was so rich he could not work it in. In regard to feeding horses ensilage, I have fed them ensilage for several years. You do not want to make too sudden a change. You do not want to depend too much on feeding ensilage. I know of no better food in connection with other food.

Mr. Linse—I can only agree with Mr. Fleming in regard to his cheese making because I have made Swiss cheese myself. For several years I made quite a little and my cheese went on the market as number 1 quality, and I have fed ensilage for the last 13 years.

Mr. Russell—I wish to thank Mr. Fleming and the last speaker for the information on the subject.

The Secretary—Yes, and you refer those fellows to me too.

Mr. Thorp—Would smut hurt the ensilage any?

Prof. King—Smut, when fed in large quantities, is injurious to animals. Whether we have enough to make that appreciable I do not know.

Mr. Linse—I think smut is injurious when the animal eats it in the dry state. One time, four or five years ago, I was making ensilage and there was a lot of smut in the corn and I threw it aside. Unfortunately a couple of animals, two heifers, got in that yard and ate all they wanted. It was not dry, that smut was in the green state. They lived and kicked their heels as high as ever.

Question—Is it advisable to build the silo in the barn or in a separate building?

Mr. Morse—The silo should be put where the ensilage can be fed most conveniently.

The President—At two o'clock this afternoon we will have the pleasure of listening to a paper by Mr. Thomas Convey.

Adjourned until 2 p.m.

Thursday Afternoon, 2 P. M.

The President—We will open the program this afternoon with a paper by Mr. Convey, upon a subject which every Wisconsin farmer is necessarily interested in, "How Can Farmers Raise Hogs for Profit."

HOW CAN FARMERS RAISE HOGS FOR PROFIT.

Thos. Convey, Ridgeway.

Mr. President—In preparing this paper I endeavored to depart somewhat from the usual line of thought that is followed in the preparation of a paper on this subject. Those of you who are in the habit of reading newspapers in regard to agricultural matters and listening to discussions along this line are apt to find about the same story. Therefore I have endeavored to pursue a different line from that which it has

Swine breeding in Wisconsin is second only to dairying, and when carried on in connection with dairying it affords greater profit in both lines. All parts of the state are well adapted to the production of pork. It is a common opinion that pork can only be profitably produced where corn is most successfully grown. But this is a mistake that will be more apparent with each succeeding year. It will always pay to produce pork in the dairy districts, for the by-products of the dairy can be more profitably fed to hogs than other classes of animals. In the dairy districts of Wisconsin a variety of foods are produced, and such variety, when rightly combined, secures better development, hence less liability to disease, a better quality of meat, which in the near future, if not already, will command better prices. Not only these, but such a line of feeding, taking the whole period of a pig's existence into consideration, pork will actually be produced at less cost. I cite the results of a series of feeding experiments at the Maine Station in proof of this, where the rations compared contained about the same number of pounds of digestible material, the narrow ration having a nutritive ratio 1:5.5, and the other 1:9, the narrow

ration giving 50 per cent. better results. Variety is more than the spice of life in hog feeding, and were it not the case that breeders of pure bred swine in the distinctively corn growing states paid so much attention to intelligent hog feeding, thereby enabling the reckless feeder to procure fresh blood and unimpaired vitality, the disastrous results of exclusive corn feeding would be more apparent.

One of the essential conditions in profitable feeding is to select the right type of hog. This is not a question of breeds, because in feeding experiments with breeds the results are contradictory, nor could we expect different results because we find desirable and undesirable types in all the breeds. The long nose, narrow face, light jowl, cylindrical body, and coarse-boned, fleshy-legged, soft-jointed variety may be rapid growers and attain remarkably good weights for age, but they do not handle well, dress well, nor produce pork economically, as they are more ravenous eaters than the smoother type of hog. In the human family, do you ever see a lean, narrow face on a fleshy body? With a swine breeder who understands his business, it is just as easy to select an economical pork-producing type of hog as it is for the ordinary observer to associate a certain form of body with a certain style of face, in the human family. I do not mean by this that perfection of form always accompanies a desirable form of head, but in the absence of the latter you need not expect a desirable animal. A great many people are anxious to get heavy-boned hogs, as they term it. This is a laudable desire, and I hope it will give them more satisfaction than it has given me. I have come to the conclusion that coarse-boned hogs are like coarse-boned horses, pretty sure to develop unsoundness. A coarse, round leg is usually wrapped in a thick skin and supported by sprawling feet. The right type of hog has a broad, level back. Plump back of shoulders, on top and sides, and is level underneath, and with good ham. Good length of body is desirable in connection with the previous conditions, but I believe a short-bodied hog will produce pork just as economically and you are more likely to secure perfection of form in the short hog.

At what age or weight to sell hogs is a conundrum, that

is difficult to answer. As a rule it rarely pays to feed hogs weighing over 200 pounds. But when there is so wide a margin between light and heavy hogs as prevails at present, it may alter the conditions somewhat. Where grain is low and pork is high, the feeding period may be extended, but when hogs are low and grain is high, as is the case at present, more especially in cold weather, it necessitates a considerable advance in price to repay the farmer who has hogs fit for market, and the heavier they are the greater the loss. If we study the results of experiments at our own Station we can see that it has taken 7.18 pounds food to produce one pound of additional gain in hogs weighing 250 to 300 pounds, while it took only 2.36 pounds of food to produce one pound gain in pigs weighing about 50 pounds, or more than three times as much food with the heavier hogs. In feeding experiments in cold weather where corn and hogs were weighed regularly, with mercury at zero, hogs gained 1 1-4 pounds per bushel corn. At 10° below zero they made no gain. Hence we see the necessity of taking advantage of the more favorable temperature and keep stock growing, yet a great many feeders use the larger portion of their grain in cold weather, and allow their pigs a limited amount when the conditions are most favorable. The food that would constitute a full ration in summer and autumn would barely keep a hog from shrinking in cold weather, and in the latter case you get the manurial residue for profit. For who would not prefer a young healthy hog to an older one of the same weight? The latter would gain faster when liberally fed but would not produce pork as economically.

Corn will always be a desirable hog food, but I would not advocate feeding more than one-third of a ration of corn for breeding stock, or young pigs, the other two-thirds to consist of peas, oats, middlings, milk, oil meal, bran and ground wheat or any combination of these. We are feeding corn in the morning, swill twice a day, consisting of ground wheat, peas and oats, mixed with milk from separator, and buttermilk, and one feed of peas and oats unground. We also feed in swill about one-half pound of oil meal for each hog. This is carefully stirred in milk or water and allowed to stand for a few

hours, and other ground feeds added. I consider it the cheapest feed on the market at present prices. Wheat is an excellent hog feed, but should be ground, and if finely ground should be fed in a thin slop or in connection with ground oats or some other food that will prevent its becoming a sticky mass, that the gastric juices can not readily penetrate. The same is true of barley, rye or finely ground corn meal. Any of the whole grains cooked appear to be in a more indigestible form. I have fed cooked oats and barley considerably, but with poor results. At the Wisconsin Station, cooked food has given poorer results than the same quantity of food uncooked. The same is true of the other Stations. The reason given was that cooking aided the digestibility of the carbo-hydrates, but made the protein more indigestible, and made a poorer quality of feed. I have never fed cooked food exclusively, and would not expect to get good results by so doing, but I have fed cooked roots and meal as a part of a ration, in connection with corn, and never had hogs do better. For fall or winter pigs cooking or heating feed is a necessity in cold weather, but it would not be wise to depend on all sloppy or cooked foods at any time, especially in cold weather. Much is said in favor of clover hay and ensilage, but I have had no success in feeding either. A little of either may be good but it seems the less they get of it the better they thrive. Even so bulky a food as wheat bran or ground oats does not appear to be concentrated enough in form, and where hogs are fed on mixed foods, if fed liberally, they do not show an inclination to become a hay mow or a silo. Those bulky foods have little use for fattening hogs, and brood sows should be carried through winter in good flesh. A sow in good condition when farrowing will raise a better quality of pigs, and stand heavy feeding when pigs are well started without losing her appetite. Many breeders advocate getting the pigs to eat as soon as possible. I prefer to have them live on the sow as long as possible. I have noticed that the first pigs to take feed are the first ones to become diseased, and the most unthrifty of the litter. Pigs when about a month old should be carefully started on soaked corn and sweet skim milk. If sow and pigs are well fed it is

neither necessary nor advisable to wean them. Much mischief is done to young pigs by keeping them around old pens where the atmosphere is bad at all times. It is utterly impossible to keep young pigs healthy in such a place. A large number of young pigs are lost each year by neglecting to be on hand at farrowing time. Few or no sows will be careful with pigs, while sick; at farrowing time take care of the pigs by placing them in basket or box comfortably fixed and covered. When the sow is well she will care for them. You can always tell when she needs watching as she will have white milk in forward teats.

Does pork production pay in Wisconsin? Of course it does. Hogs have averaged \$5.00 per hundred the past year, and are likely to average much higher the coming year. Allowing 50 cents per hundred for shipping you still have a good margin. Pork rarely is very high, or very low, for two successive years, and less frequently below the cost of production. To afford the greatest profit, depends as much as possible on summer feeding and on pasturage and keeping up continuous growth. Salt and ashes should be placed where accessible.

DISCUSSION.

The President—Does any one desire to ask Mr. Convey any questions?

Mr. Briggs—What time do you like to have your pigs come to be the most profitable?

Mr. Convey—Usually during the mild weather of the spring, early spring preferable. If they come too early, and cold weather follows, the chances are they will become stunted in a measure, sometimes by thumps, unfavorable conditions, want of care, etc.

Mr. Cole—Don't you think there is often a good deal of mischief done by over-feeding old sows when pigs are young, a week old or younger?

Mr. Convey—Much mischief is done in that way by a person not familiar with the feeding of sows by producing too large a milk flow. In some cases the sow will not give much milk because of bad condition of the udder, but ordinarily it will be too large and in that way the pigs will get too much and they rarely recover.

Mr. Brigham—How do you feed your sows for a week after farrowing?

Mr. Convey—We feed them a very large ration of corn and sloppy foods twice a day; later on three times a day and all the corn they care to eat.

The Secretary—How do you feed your corn in the summer time?

Mr. Convey—Shelled and soaked corn—at other times in the ear.

The Secretary—Where do you feed the corn, on the floor or trough?

Mr. Convey—On the floor; when we feed separately, in the trough.

Mr. Goodrich—Do you feed skim milk in connection with corn?

Mr. Convey—Yes sir; in connection with ground feeds, and these in connection with corn.

Mr. Linse—How do you feed your sows in winter before farrowing?

Mr. Convey—I apprehend you have more trouble from over-feeding than from under-feeding. If you feed them on mixed foods largely they will be in good condition.

Mr. Linse—I am afraid of giving them corn food. I do not feed any corn, but I have found clover hay a good thing for them, and even with that ration they get fleshy and almost too fleshy. For my older sows I take the droppings from the barn floor with a bucketful of clover, and they eat the whole of it and thrive well.

Mr. Convey—That kind of ration would be more suitable for old than young sows.

Mr. Linse—I have not so much trouble with young sows, they can stand heavy ration.

Mr. VanMatre—Do you think it profitable to keep the hogs until 14 or 15 months old?

Mr. Convey—Rarely.

Mr. Anderson—I wintered a large number of hogs once and I got 7.5 cents in the spring, and at that time we kept our hogs; that was a good many years ago. It depends on the price of hogs in the fall. If they are low I want to winter them.

Mr. Goodrich—Can you tell what time they will be the highest?

Mr. Anderson—No sir; either in the spring of the year or early in the fall is better, before the rush goes in. There is a certain time the farmers have them all ready. I have sowed a large quantity of peas for many years. I just turn my hogs into them and tell them to feed on them and they do it, they obey orders. I have raised as high as 30 acres of peas. My men thought I would have to fence the corn, as I have the corn and peas in one field, but I said no, the hogs will never touch the corn as long as they can get the peas.

Mr. Favill—How heavy are those hogs?

Mr. Anderson—Part are old sows.

Mr. Favill—We are talking about stock to make pork.

Mr. Anderson—I have some for that purpose.

Mr. Convey—How many years have you been raising hogs?

Mr. Favill—He has been at it long enough to know a darn sight better than to winter them that way. (Laughter.)

Mr. Convey—How many years have you been producing pork?

Mr. Anderson—I came here in 1860. I commenced buying and shipping hogs immediately. When I came here I did not sell hogs until winter.

Mr. Convey—35 years, and he reports one winter that he had success wintering hogs.

Mr. Goodrich—I want to find out how much it costs to winter a hog.

Mr. Anderson—No one can tell because the price of corn varies so much.

Mr. Goodrich—What will it cost to keep one?

Mr. Anderson—I never figured that.

Mr. Goodrich—I never get good results unless I figure. I want to know how much corn it has taken.

Mr. Anderson—I think there is a good deal of humbuggery in trying to figure up how much they cost.

Mr. Briggs—I have seen Mr. Anderson raise as fine hogs as I have ever seen, and I think I have heard him tell as big a hog story as any one.

Mr. Linse—I think circumstances will change conditions or conditions circumstances, as you may take it. I have had the most success with fall pigs, when it don't come too early fall. In the spring of the year it is an advantage to put them on spring pasture in connection with some food and have a fine hog ready for the June market. I even have good success with fall pigs. I think the spring pig has its place. You must not condemn raising hogs in the fall.

Mr. Anderson—I do not feed very heavily in the summer time, but I have a good pasture for them, and I can make more money feeding hogs that will come late in the fall and winter, care them carefully and feed them early in the fall with peas. I did not really want to winter them, but I did in order to have them run in the summer pasture and ready for the early fall market. They averaged about 300 pounds a piece.

Mr. Grisim—I think Mr. Anderson is pretty near right. I probably have raised hogs longer than any man in this audience. It is 60 years since I commenced it. Perhaps some of you don't believe it. If I had a witness I could prove it. (Laughter). If I was going in the hog business I would have my pigs come the last of July or the first of August. I would have a good clover pasture for my sows. I would keep my sows shut up until the pigs are about four weeks old. I would turn the sows and pigs all in the clover pasture, and I would let the sows wean the pigs themselves. At that time I let the pigs go wherever they please, all over the farm. Then I would have a good shed for the pigs to run into in winter, a dry place. Would let them run in the barnyard, and feed my cattle a little more grain than they would digest; then the pigs would get

fat. I would feed my pigs once a day with warm swill, corn once a day and then what they could pick up in the yard. In the spring I would have a good clover pasture to turn them into and feed them a little corn all summer in the pasture, and sell them at 11 months or a year old right from the pasture. I say a man will make more profit. He need have no hog pen, just a good shed to let them sleep in. I have been in the business sixty years, since I was 18 years old. I am 78 years old now.

Now, I have got to tell a little story on friend Anderson. I got acquainted with him about ten years ago. I happened to be at the State Fair, and there were two men who put me on the committee on hogs with Mr. Anderson. Mr. Anderson would go in front of the hog, and say, "That hog has a splendid pair of ears." Then he would go behind and say, "It has a beautiful tail," and I told him if a hog had a good, broad shoulder and a good, broad back and ham down to the gambrel, I didn't care whether he had any ears or tail or not. Then he said, "You don't know anything about hogs." (Applause.)

Mr. Anderson—He does not tell the whole story. We got along very well judging hogs until we came to a pen with an Essex, and he called an Essex a Berkshire.

Mr. Grisim—Mr. Anderson is mistaken, there was no Essex on the ground.

Question—I would like to ask Mr. Convey which he thinks are the best, young or old sows. Has he made a practice of keeping old or young sows?

Mr. Convey—Usually we have young sows, too, but two years is the preferable age.

Mr. Faville—Do you raise more than two litters a year?

Mr. Convey—Not with success. The early pigs will have to come too early or the late pigs too late. Ordinarily you cannot have good results from raising two litters a year. I do not like to wean pigs. It takes more care to carry them through the weaning period when you do wean them. Much labor can be saved by right methods.

Mr. Fish—Is it practicable to raise two litters a year, or is it necessary to wait for the second litter, a litter in one and two-thirds years?

Mr. Convey—It is not necessary to wait a full year. If you can take pretty good care of them you can have them come at different times a year. If you have them come in mid-winter it will take a great deal of care to keep them until warm weather comes.

Mr. Thompson—At what age would you have the sow farrow the first time?

Mr. Convey—It is preferable when about 13 months old, though you might then have the pigs come at an undesirable time. Ordinarily at a year old.

Mr. Morgan—What kind of hogs do you raise, what breed?

Mr. Convey—Poland China.

Question—What do you think of having pigs farrow in August and September?

Mr. Convey—Where the sow fails to raise a good litter for the first time I give her a second opportunity and have her farrow in the fall, and they come sufficiently early to have them started before cold weather. If you take proper care it is all right, but it is necessary that you do not depend on feeding them cold swill. They should have warm foods and be fed frequently.

Mr. Russell—In your experience has the age of the sire anything to do with the litter?

Mr. Convey—I prefer to use a matured sire.

Mr. Douglas—Is it not better to use a mature dam and young sire? Have you ever tried it? If so, what was the result?

Mr. Convey—I prefer to have mature parents on both sides.

Mr. Cole—To keep up the constitution and vigor of our swine, is it not necessary that we give them plenty of exercise and give them dry bedding and plenty of ventilation?

Mr. Convey—It is necessary that all kinds of stock should have a sufficient amount of exercise but it is quite difficult in weather like this to induce them to take as much exercise as is good for them.

Mr. Emery—What does it cost to produce pork at the present time?

Mr. Convey—3.25 to 3.5 cents. I have followed feeding

mixed foods and unless we have an accident we never have any cripples. I am particular in selecting breeding stock not to select anything that is coarse in joints and poor in feed.

Mr. Briggs—Do you think that hogs that have been shut up close for two months will stand shipping as well as those that have been exercised?

Mr. Convey—They will scarcely stand shipping as well, but from the standpoint of a feeder—

Mr. Briggs—From the standpoint of a feeder and shipper.

Mr. Convey—If stock is of good quality they will stand two months of heavy feeding without breaking down.

Mr. Goodrich—I want to say a little something about the advantage that a dairyman has in raising hogs. I say that he can raise hogs cheaper than any other farmer. I say that he can make better pork that will bring more in the market. It furnishes milk in connection with some carbonaceous foods, which makes a balance ration, and the hog will make more growth for the amount of food taken. Then I say it will make better pork. If you have ever heard of Irish bacon, that sells at the very highest price. Do you know why they get it?

Mr. Convey—Because they desire it.

Mr. Goodrich—I talked with a man in Milwaukee and he likes Irish bacon. He says he is paying 30 cents a pound for it this winter. It comes from Wisconsin dairy-fed pigs that weigh 200 to 225 pounds. There is a man in Ft. Atkinson doing a small business but it is a profitable business. He makes fancy sausage that he sells at wholesale for 16 cents a pound. I saw some of it in Minneapolis on sale last winter and they were retailing it for 25 cents a pound. He is curing nice hams. What kind of hogs does he want? He won't touch a large hog. He takes the pig weighing 200 to 225 pounds. He will give a quarter of a dollar, he will give a half dollar or if necessary he will give a dollar more for this kind than for the very fat ones. It is a great object to produce lean meat, good, sweet, tender, lean meat. Everybody likes it better and it will bring more in the market. I keep cows anyway, and I keep hogs and grow them rapidly and feed them a good balance ration of corn and skim milk until they weigh 200 or 225 pounds. You will make more money that way than any other.

Mr. Grisim—How many hogs do you keep?

Mr. Goodrich—One! (Laughter.)

Mr. Anderson—This is all very nice for a dairyman to talk about and have pigs of that kind. We cannot depend upon that market to sell Irish bacon or anything of the kind. When I first commenced shipping hogs to Milwaukee Fred Layton said, "I want to buy all your hogs because I am putting up English bacon," and he says, "that class of hogs you have suits me exactly." I said, "Will you pay a little more for them?" and he said he would. I made him an offer but he did not take it. Plankinton made me a better offer and got the hogs. I was the first man that brought the Magee hog in this state and it originated from the man's name, Magee. You will find the history of the Magee hog in the State Agricultural Report of 1873.

The first Poland China hog I ever had here in Wisconsin I sold to Mr. Plankinton. It happened to be icy on the street and Mr. Plankinton says, "That hog can't stand up." So I sold it to him for \$7.

Mr. McNeil—I would like to ask Mr. Goodrich how he knows that Mr. Armour knows the difference between his hogs raised in the dairy and those raised on shorts. I say they all come out of the same chute. I think it is all bosh about dairy hogs bringing better meat.

Mr. Goodrich—We sell our hogs in the market where we can get the most for them. If Mr. ——— will give me half a dollar more for my pigs to make sausage he gets them, and if he did not do it I would do it myself.

Mr. McNeil—How much is he giving his neighbor? They don't always do it when they say so.

Mr. Goodrich—The neighbor will tell the truth.

Mr. Martin—I will say a few things about this hog question. I would not advise these young men to keep hogs at a very old age to make money out of them. I would not advise keeping old sows as a rule to breed from. I would say to these young men right here that there is a marked difference in a dairy-fed hog and a corn-fed hog, and the man whom you sell to in the market knows it just as quickly as you know a

thoroughbred horse from a Norman horse. I have bred hogs by the hundred. I have shipped hogs by the many carloads, buying and shipping, and I have had a good deal of experience in this business. I like to have pigs come from April to June, one litter a year. I do not like to winter hogs except enough for scavengers and breeders.

Mr. McNeil—I would like to ask Mr. Goodrich if he would advise us to go into the dairy business just to get the highest price for hogs?

Mr. Goodrich—If you have the skill to make it successful, using the dairy to the best advantage; both go together.

Mr. Grisim—I never tried to find out what it costs to winter a hog. I had a sow that had eight pigs, spring pigs. When they were five or six weeks old I shut them up and charged them with everything they ate, and I sold them in August, I think, or September. I fed those pigs oats ground and boiled potatoes mashed up together, and the pork cost me 8 cents a pound, dressed pork, and I sold it for 8 cents. I had the manure for my trouble. Then I took another lot of ten pigs and shut them up the 10th day of February, weighed them, and fed them on corn meal and corn in the ear. I carried my corn to the mill and paid for the grinding, and I weighed 4 or 5 basketfuls of corn in the ear and kept account of each basketful they ate. I sold those pigs the 5th of May and every bushel of corn I gave them made 11 pounds of live stock.

Mr. Briggs—I think this topic can be summed up like this. In some parts of this state, Iowa and La Fayette counties, where they are making an exclusive business of raising corn and stock, I think they can make more money by keeping their hogs until 12 or 15 months old than pigs from 6 to 8 months old; in other parts of the state by turning them off from 6 to 8 months old. We must take into consideration the differences in locality.

Mr. Convey—I live in the district mentioned by Mr. Briggs, and I think it is a mistake to think that you can produce pork just as profitably and sell at 12 and 15 months old as at 8 and 10 months old. The larger profit is with the smaller hog. I am certain of this.

Mr. Grisim—Can you feed them on clover pasture?

Mr. Convey—No sir; I think it is a mistake to depend on pasturage. Where they have tested that question they have found that hogs make no gain on clover. If you allow hogs to run on grass and feed them skim milk they will fatten, and besides you are forced to put your pork on a late market which is almost invariably a poor market. You lose in this way too. It does not require much corn when in pasture, but corn can never be more profitably fed than during the early part of the summer season.

Mr. Favill—I have fed hogs on clover a great many times and guessed at the results just as most other people do, and only once have I tested it so as to know positively what I was doing. I bought 50 shoats in the spring that averaged a little over 100 pounds. I turned them in the clover field as soon as the clover was up so they could get a bite. I think many people wait until the clover is too large before turning them out. These 50 hogs were turned into an 8 acre clover field. They were fed one pound of shelled corn to each hog per day and fed regularly at night. These hogs were sold the 15th of September and had gained 100 pounds each from the clover. Besides the 100 pounds gained on the clover they had gained enough more than the 100 to pay for the corn they had eaten.

Question—Did the corn help the clover or the clover the corn?

Mr. Favill—There was just enough of that corn to neutralize the acid in the stomach, and the hogs gained 100 pounds. They were sold the 15th of September right out of the clover field.

Mr. Wicksam—I have handled hogs 30 years. I have my pigs come in June. I turn the sows into the clover field. I build a pen and let the pigs run in there and steal their corn. They want to be in mischief somewhere. They run there until harvest; after harvest they run in the fields; then a little while they run in the corn, and my old hogs I leave in the field, but they are growing bone all the while. I let the hogs husk the corn. I raise from 100 to 300 a year and I make a success of it. Hogs need a dry place more than a horse, keep them dry, out of the rain.

Mr. Anderson—Mr. Favill ought to explain how much he made out of the 8 acres of clover. I have been figuring it up. He got 100 pounds weight on each hog at 5 cents, making \$2.50, out of the 8 acres of clover, besides paying for the corn. You cannot say too much in favor of clover as a hog food, but you should have some corn with it. Be sure and have a clover pasture and don't put them in a filthy yard to fatten. Let them run in the clover field.

Mr. Babbitt—I would like to say that in August this year I sold 36 hogs for 6 cents cash, live weight. Consequently I think I have a right to give my views in regard to the time to raise them. I believe in very early pigs. I believe in first class pigs from the time they are born to the time they go out of the yard, and in order to be prepared to take advantage of every speculation you must have your hogs always in first class condition. From the very first minute they are born take the very first opportunity that you have to sell them for the highest price. You do not have to run after customers either. You want to get your hogs ready. It will bother you some of course to keep them from freezing. Give them enough to eat all the time from the time they are born until the time you sell, and you can get the market price. I have sold as late as September and received 5 cents for hogs that weighed 400.

Mr. Cole—There is one point here that I am a little surprised has been made by a breeder and a shipper, that is the recommending of raising from young swine. If I can get 8 pigs from a two or three year old sow, those pigs will richly pay the cost of keeping the sow. If I am going to use those pigs for breeding purposes I am getting more constitution and vigor, and that is what we want to look after. Another thing is early maturity, and by selecting your sows so that you can get another advantage there. So that a man has everything in his favor, and I recommend raising pigs from aged sows, particularly where you are raising breeding stock. I think I got enough from 8 pigs to richly pay for the wintering of the mother.

The President—The next subject for discussion is one which interests us all and one which will be handled in a way that will interest us all, "How Shall We Maintain Our Dairy Interests," by Gov. W. D. Hoard.

HOW SHALL WE MAINTAIN OUR DAIRY INTERESTS?

Gov. W. D. Hoard.

Mr. President, Gentlemen:—I am a very much over-worked man, I think, for I have not been able to reduce my ideas on this question to a compact form since the Secretary wrote me. But a man whose heart and mind are full of the question ought at least be able to give a reason for the hope that is within him.

The question is, How shall we maintain our dairy interests? Well, it is a simple question. There are three propositions in it, and if I can get every man in the state of Wisconsin to adhere to those three propositions, you can maintain the dairy interests with your eyes shut.

First, let every man who owns a cow make up his mind that he is dealing with a proposition that requires brains and thinking rather than muscular labor. Let him say to himself, "This is a mystery, this is a deep problem, this whole business is based upon the functions of maternity, and that has been a problem for all the finest intellects of the world."

It is different with this product than if you worked in the woods. As Governor Upham said to me the other day, when I said to him that we pay out in Ft. Atkinson over \$300,000 every year to the farmers for milk product: "If I should go out and get \$300,000 in my line of business I would be cutting down the product of one hundred years' growth. It would take a hundred years for the world to grow such a harvest. Do you tell me you take this same amount from your dairies?" And then the Governor said, "This proposition amazes me," and I knew why, because he had not given it a thought and had not looked into it to see what it all meant.

The dairy interests of Wisconsin may be figured up in about this way: There are 701,000 cows. The 701,000 cows may be

fairly said to give a gross product of about \$40 or \$50 per cow; they earn in gross about \$40 per cow; that would be \$28,000,000 and over, so that the dairy interests, the cows of Wisconsin, earn annually from \$28,000,000 to \$30,000,000. Now what does this mean to the whole state? It means an investment of about \$150,000,000 or \$160,000,000 in farms, in barns, in cattle, in factories, in all the paraphernalia of the dairy. Every dollar of that is taxable and is at the hands of the state for the promotion of all the interests of the state. So you see it is an important interest. It has grown with marvelous swiftness and is dotting this state like school houses all over this broad expanse from the north to the south. The northern portion of the state is more deeply interested in dairying than the southern portion, for it is the most instinctive grass portion of the state, timothy and clover growing instinctively.

Now, these interests are great and they are wide and they demand statesmanship, demand judgment, demand breadth and not narrowness of administration. How shall we maintain those interests? We are today confronted with two propositions. First is the question of internal competition. To a certain extent competition is making itself felt. Then we are confronted with a worse proposition, that of counterfeiting and adulteration.

Now, we must maintain the character of our product, because food, particularly butter and cheese, is wonderfully affected by character. I can illustrate it to you in my own person. For instance, the Hoard Creameries supply 4,000 customers in New York, Cincinnati and other large cities. Now, why do these people send way up to Wisconsin, to one place, and ask those 4,000 families to be supplied in this way? They can find butter at their hands anywhere and everywhere. What is the meaning of it? I am not putting on airs, gentlemen, when I say that it is reputation. It has been the aim of the Hoard Creameries to so gain the confidence of the public that they shall say, "We can reach out and take that butter with our eyes shut and never be deceived." Reputation means money, it means credit, reputation means everything in the production of food. There is a wonderful accretion of value that comes to a man in the production of fine butter which

he does not find in the production of grains. Here are two men, the one is a fool and the other a wise man and they both raise wheat. The wisdom of those men has never entered into the quality of that wheat. The fool gets as much for his wheat as the wise man, and as a consequence there is no competition between the two. When you step into the domain of making butter that moment you get real individuality, which stamps its character upon the product, and it is skill then, skill. Reputation pays a difference of at least ten cents a pound between that and the ordinary quality.

Our dairy interests can be maintained by establishing in the minds of the people the necessity of dairy education. We have so much indifference among the farmers in this state and everywhere as to the effect of intellectualizing their business and of taking on judgment and understanding and training in this line. Our farmers have an idea very largely—and I know what it means, for I have to deal with eight hundred of them every morning and we have them constantly before us,—and they are typical of the farmers of the state of Wisconsin. These eight hundred men are saying that it don't make any difference whether they produce their milk in the finest possible manner or not. It is the old story my father used to say to me, "Boy, you think you can give it a scuff and a brush and it will be all right. You can never hoe a hill too well and do your work too well, because this means more corn." But I could see that it meant more back-ache. (Laughter.)

We must maintain the dairy interests by getting the farmers to see that it is for their interest that they make a special study of the problems of dairying. First to get a good cow. How many thousands are boarding cows absolutely to their loss? How many thousands do not care anything about it? There are plenty of them. How many thousand farmers in Wisconsin today would not spend one dollar for all the information that could be given them concerning that one fact, where they are spending one hundred dollars a year in loss? It is a queer proposition, but, gentlemen, I have been engaged in talking with those people and I think I know them, and it is a strange thing that so large a number of men among our farmers have no practical interest in the importance of their

cows. They must have a good cow to start with. The difference between a cow that barely pays her keeping and one that gives you \$10 above her keeping is an enormous interest today, if you will figure it up.

Second, we must maintain our dairy interest by united effort on the part of the farmers of Wisconsin to put a stop to this adulteration. It lies in the hands of the farmers to do it. The legislature of Wisconsin, or the congress of the United States, would not hesitate one minute as to what their duty was, if every dairy farmer in Wisconsin and the United States would write one single postal card to his member of the legislature and to his member of congress. What a simple proposition! Nothing but for a farmer to put upon a postal card, "Hon. So and So: I ask of you to do your duty by the dairy interests in legislation," and sign his name. I remember when the oleomargarine legislation was agitated in 1886. I was in Chicago and a man walked up to me and said, "Oleomargarine has come to stay and we have got the money and organization, and what are you going to do about it?" You never saw a more impudent man in your life. I said, "You may have the money. The assumption of money on your part is offensive. No one cares a snap for your money that has any manhood or citizenship in him. No one cares for your organization. Thank God you have not got the votes, and when the old farmer has done his duty he will officially inform you what he will do about it." And he did. I came home and concluded I would see what a little advice would do. I wrote our congressman a postal card. I sent it to every agricultural paper in the United States with the request to publish it, and they did. At once there commenced to pour into Washington a perfect snow-storm of postal cards until Caswell told me, "For God's sake let up on this postal card business. I am all right. you know." At once congress responded, because the farmer had done his duty and showed to those men in power that this was his will. Congress goes there and remains in absolute ignorance, and if the average congressman wants to know what his people want he must spend a deal of money and time to find out. Would you expect a man whom you had hired to go out and do some

work for you when you had not told him what you wanted? You would be surprised if he did do what you wanted him to do. What is the duty of the farmer today? The duty of the farmer is to make himself and his opinions known, and it is a simple way by writing his congressman or his member of the legislature a postal card.

Now, gentlemen, this adulteration, this flood of counterfeiting must be stopped. I just came from before the committee in the legislature and have been telling them some things I think ought to be done. I read them a statement under the sworn affidavit of Armour & Co. in regard to this cost of the counterfeit which is threatening the life and existence of our dairy product. The highest priced oleomargarine that Armour makes, under his sworn testimony, costs \$4.96 a hundred pounds. In a recent suit brought by Armour versus Thorp, the Commissioner of the Agricultural Department, the facts as regards the price were brought out by the testimony adduced in New York. Now, then, what is the effect? These men are selling it just a little below butter and making 300 and 400 per cent. profit, and the farmer won't even write a postal card.

Now, what shall we do? We shall do this: The Supreme Court of the United States has decided that the states have the power to control these matters, and we shall ask the legislature of Wisconsin to pass the bill now before it. One of the bills offered by the Wisconsin Dairymen's Association is to compel these men to place this product upon the market without the yellow color of butter, and to pass a law prohibiting, absolutely, the manufacture of the fraud and counterfeit filled cheese. Now, then, when we do that, gentlemen, what will be the final effect upon the dairy interests of Wisconsin? Massachusetts, with 2,500,000 of people and only 150,000 farmers, think of it! taking the lead in the United States against the adulteration and fraud of farm product; Wisconsin with 120,000 farmers interested in the dairy, who have not interest enough to make themselves felt upon the legislature. Is that maintaining our dairy interests? Things have come to that pass when we must have law. We must put a stop to this

adulteration and we must invoke the law and the law must be made the creature of punishment.

Now, these things come to me as a practical answer to "How shall we maintain our dairy interests?" As I said before, we must maintain them first by intelligent study in the production, not only of the dairy interest itself, but of the material which goes into the product of butter. We need education, we need study, constant thought along these lines, and then we need to invoke the power of the law and impress upon the legislature the force and dignity of every farmer in it. I ask you to go to your homes and talk with your neighbors, to just extend the influence which you may have received here, and ask your neighbors to simply do that little thing, write their member of assembly a postal card, saying, "We demand at your hands that legislation which belongs to the protection of the dairy interests."

Many of you are not aware of the wonderful effect which this dairy interest has had in holding Wisconsin and her finances up during this depression. I happen to live in a county which is remarkable for its dairy interest. 1870 saw Jefferson county completely in the dumps, clear to the very lowest niche. The farmers, anxious to sell out and get out, mortgaged their farms at 60 per cent. of the assessed valuation. Think of it! where a country is when 60 per cent. of the assessed valuation is mortgaged, the farmers owning only 40 per cent. Under a very wasteful agriculture we had reduced the production of wheat to eight bushels per acre. There were only a few thousand cows in the county, no revenue, and men distressed mentally. I remember the many conferences my old friend, Mr. Favill, here and I used to have in 1870, '71 and '72 as to what we would do, and finally we organized the Dairymen's Association and agitated the question. You know you may have the finest theory in the world, unless you agitate it it will not amount to anything. There must be agitation to secure results, and we went on with this project.

Now, what is the result today? Land was then selling at about \$20 per acre. The average sales of real estate in Jefferson county last year, I think, were over \$60. The farmers of

Jefferson county have today in the banks of that county over \$1,000,000. That does not represent all the money or property which has come from it. We have a large number of German farmers who are not very largely given to banking; they believe in the stocking-leg bank. That county is annually turning out a cash product which holds the whole business of the county steadfast against depression.

Here are a few scattered thoughts and it all sums up in just these two propositions: First, our duty at home; the duty to ourselves in the promotion of our dairy. Second, our duty politically, not partisanly, not in partisan politics, but those which belong to law; our duty to suppress fraud, adulteration, counterfeiting, and force these things upon their own basis. Butter has to stand upon its own basis. It does not counterfeit anything else. It stands there, and the very moment that anything whatever is the matter with it to interfere with its quality, that very moment it advertises the fact. But here is a fraud and a counterfeit, which, under the guise of chemistry and skilful manipulation, is brought to deceive the consumer, allowed to be sold at butter prices and to destroy this profitable industry of our state.

I thank you, gentlemen, for your kind attention.

DISCUSSION.

The Secretary—I would ask the Governor if this bill prohibits the manufacture of filled cheese?

Gov. Hoard—It does.

Mr. Goodrich—The Governor stated that in 1870 the mortgage indebtedness amounted to 60 per cent. in Jefferson county. I would like to have him tell what it is today, since we have had 23 or 24 years of dairying.

Gov. Hoard—About 7 per cent.

Mr. Martin—I would like to hear about the making of filled cheese.

Gov. Hoard—Filled cheese is made by running the milk through a separator and taking out the butter fat and then taking neutral oil, the oleomargarine, and, by emulsion, incorporating it into the skim milk, and then setting the milk, applying the rennet, and then the usual process of cheese making, and try to incorporate this fat in the curd in place of butter fat. It makes a very inferior article and one which has nearly destroyed the reputation of Wisconsin cheese. Today, by virtue of this product, we are advertised all over Europe as a nation of swindlers and counterfeiters. Mr. Simonds, of Neenah, a fine cheese maker, went to Liverpool and undertook to sell Wisconsin cheese, and was told to his face, "We want nothing whatever to do with you in Wisconsin. You are a people of swindlers and fraud." A nice state of things we have got into, haven't we, when in 1885 Wisconsin was quoted in the Liverpool market as at the head. Today every pound of cheese made in Wisconsin sells two cents less a pound than in the state of New York because of the suspicion that attaches to Wisconsin cheese by virtue of this counterfeit. I do not know of any way out of it except to prohibit it, and then we can say, "Gentlemen, filled cheese is no longer made in Wisconsin; it is under the ban, the prohibitory ban of the law," and no longer shall a few men get rich at the expense of the prosperity of the whole people.

Mr. Briggs—Would it be a better plan to have a national law instead of a state law in regard to this?

Gov. Hoard—Yes, but have both. I never refused to marry the woman I liked because I might get one whom I liked better. I would not refuse to do myself the good I could. Why do these farmers sell that skim milk for filled cheese?

Mr. Briggs—Because they do not know any better. I know it because I have been there myself.

Gov. Hoard—I cannot dispute state's evidence. I agree with him and it is right. It is because these farmers do not know the value of skim milk. We found it necessary to instruct our patrons, we thought it best to instruct them as to the value of skim milk, because we believed it was better for us that they should make good profit not only on the butter but on

the by-product rather than to make poor profit. So we instituted a series of experiments in the creamery and invited all the patrons to come and watch the progress of it, and we wanted them to understand the philosophy of pig-feeding. You would say a farmer who has fed pigs all his life would know all about it, but there is a chance to learn. We put 30 pigs, 100 pounds each, into a pen. We bought them of Mr. Wilcox for \$4.50 a hundred. We said, "We will show you just what skim milk is worth fed foolishly, fed without intelligence, for you shall not say, 'You have a way of doing we cannot understand.'" So we fed those pigs for 56 days with nothing but skim milk from the separator and sold them back to Mr. Wilcox at \$4.50. The weights of the milk were kept and the milk netted us 22.5 cents a hundred. Now, had we fed it intelligently, as we afterwards did—to demonstrate it again: We bought shorts and corn meal, paid for the shorts and corn meal, and the skim milk netted us more than 27 to 35 cents a hundred, depending on the individuality of the pig. We gave the minimum value at 27 cents a hundred. There is a wonderful difference in the individuality of the pig.

Now, would any farmer that knew his business let a filled-cheese man take his skim milk at 10 or 15 cents a hundred when by the use of intelligence on his part he can make it worth from 20 to 25 cents a hundred at present prices of pork? No! Therefore I say, in maintaining the dairy interests there is a great need of information and study of the economies of this business.

The Secretary—Are there not some honest doubts as to the constitutionality of the prohibitory filled-cheese law?

Gov. Hoard—No sir; the United States Supreme court has settled that. Pennsylvania has a prohibitory law prohibiting all imitation or counterfeit food product, and the case of Pennsylvania vs. Power has gone to the United States Supreme Court and there been adjudged constitutional. In this recent case called Pennsylvania vs. Power, the Supreme Court Associates thought the state the sole judge of the necessity of such a law and that it has the power to prohibit any imitation or any counterfeit in food.

The Secretary—Would it be considered imitation or counterfeit if it were branded as filled cheese, left upon its merits?

Gov. Hoard—You cannot put the brand in the consumer. Branding it is a delusion and snare.

The Secretary—It would probably not be considered a false product if it were branded what it is?

Gov. Hoard—Whether it would be considered so or not, the Supreme Court says the state has the sole authority to prohibit anything which it deems detrimental to the interests of the state.

Mr. Convey—Would the manufacture and sale of filled cheese hurt the butter market as well as the cheese market?

Gov. Hoard—Here are two hands,—in one hand is the milk which goes to butter making; in the other the milk which goes to cheese making. Keep them separate in their places, and there is no more milk than we want. Dump the cheese hand into the butter hand and down goes the butter to destruction. We are not producing any more butter or cheese than we need if we produce good. If you make filled cheese and enlarge butter production, you destroy the cheese reputation. Therefore, the making of filled cheese is injurious to the dairy interests in that way, because it makes an unhealthy and unusual enlargement of the production of butter and there is no recompense to the people in the manner of making cheese.

Mr. Goodrich—I want to add a little testimony. Even a little boy can help substantiate a case where there are older ones as witnesses. Good cheese is a healthful and nutritious article of food. The more cheese that is made and consumed, the better it is for the consumer as well as the producer. The consumer gets his money's worth and the producer gets his pay. Filled cheese reduces the consumption of cheese. I want to tell a little experience. We like cheese at our house if it is good, especially my wife. One morning when I went to town she said, "Bring some cheese." I brought it home. It was good and went pretty quickly. Next time I brought some home she said, "It is not very good but it goes after a fashion." The next time I said to the groceryman, "Have you got some good cheese?" "Well," he said, "I have some of Mr. Simonds' cheese." When I came home I smelt of it and knew it was

filled cheese. I paid 2.5 cents more a pound to get good but it was filled cheese, and my wife never said cheese to me for six weeks. So now, if you provide your family with cheese I will give you a good recipe, get filled cheese, and they will not ask for any more. The groceryman said that was Mr. Simonds' cheese. It was a libel on Mr. Simonds. The groceryman was deceived. That is just the way it is in England. In England they say, "We cannot trust you."

Mr. Babbitt—I would like a little information in regard to this law specifying that yellow coloring shall not be used in the manufacture of oleomargarine. Is it prohibitory as against the manufacture of oleomargarine? Is it also prohibitory in regard to the manufacture of butter? The yellow coloring is used by the individual in coloring his butter. Can you make that distinction, or how can the distinction be made as between a man who manufactures butter on his farm or in his creamery in Wisconsin, and prohibit the manufacture of oleomargarine? I ask this question in all honesty, just simply to get at these facts.

Gov. Hoard—If I understand Mr. Babbitt correctly, it is, if you prohibit coloring oleomargarine yellow, should you not by the same reasoning prohibit coloring butter? I would say no. In the coloring of butter you do not undertake to make butter look like something else than butter. You are simply attempting to get it a little more along the line of butter itself. So that in coloring butter you do not attempt to deceive any man in any respect whatever as to the character of the compound. Butter does not sell on its color but on its flavor. Its color is a matter of taste. You will always notice that color is the lowest factor in the scale. It is not colored to represent something that it is not, therefore the parallel ceases. But oleomargarine, not being butter, is colored to make it look and represent itself to be butter, and the analogy does not belong in this case as many might think.

Mr. Babbitt—Is the natural color of oleomargarine white?

Gov. Hoard—Yes sir.

Mr. Babbitt—The natural color of butter in the winter is the same.

Gov. Hoard—Not always. Let me ask you, would you say that white or yellow was the natural color of butter?

Mr. Babbitt—In winter the natural color is white. We have all kinds of cows. Now you must allow me to say that if the butter was made from a Shorthorn cow it would be yellow.

Gov. Hoard—I think he has given us sufficient ground to conclude that the natural color of butter is yellow.

Mr. Linse—The natural color of butter need not be white. I have produced butter without coloring at all in the midst of winter that was yellow, not as yellow as in summer, but yellow.

Question—I would like to know how it is that some can get yellow butter in the winter time and others perfectly white. Is it the difference in the food that the cows eat?

The President—Mr. Babbitt says it is because they are not Shorthorns. (Laughter.)

Mr. Linse—It is the food and proper care of the cream. One kind of cream may produce quite white butter while another may produce yellow butter. It depends upon how it is handled.

Mr. Cole—Don't you find a great difference in the individuality of the cows?

Mr. Linse—Of course; I know I cannot make very much yellow butter from common cows, but can from Jersey cows.

Mr. Palmer—Mr. Babbitt spoke about the Shorthorn cows making yellow butter. I think they make the most yellow butter after they are dead. (Laughter.)

Question—I would like to ask him if there ever was any oleomargarine that was not colored. Oleomargarine, I think, is naturally white, in the summer or winter.

Mr. Babbitt—I do not like to have it understood that I am in favor of competition on the butter question. I believe a man ought to get 50 cents a pound for Wisconsin butter. I ask this question in all honesty, How far can we go and go safely?

Gov. Hoard—The state of Massachusetts passed a law prohibiting the manufacture and sale of any substitute for butter in the yellow color of butter, and it went through all the

courts of Massachusetts and the United States Supreme Court and was decided to be constitutional. I think that settles that question.

The President—Do you not consider oleomargarine just as healthy as butter?

Gov. Hoard—No sir; it is anything but healthy.

The President—In the woods they all eat it and prefer it to butter.

Mr. Grisim—What is it made of?

Gov. Hoard—I do not think they prefer it; I know to the contrary from many of them.

Mr. Anderson—My hired man told me he did not prefer it.

Gov. Hoard—The Armour schedule gave the cost of it at \$4.96 a hundred. According to the formula used by Armour & Co. in New York and Philadelphia there is no butter used in oleomargarine. The formula is as follows: leaf lard 34 per cent., oleo oil 27 per cent., cotton seed oil 12 per cent., Ashton salt 9 per cent., and milk 18 per cent.

Question—What is butterine made of?

Gov. Hoard—Butterine is simply where you use more of the leaf lard. There is very little distinction between oleomargarine and butterine. In oleomargarine they use beef suet.

Mr. Arnold—They claim there is no butter in butterine.

Gov. Hoard—Oh, yes, but they have got past that.

Mr. Grisim—I supposed it was made of pure lard.

Question—Is it digestible?

Gov. Hoard—No, it is not. There is not a reputable hospital in Europe—and I think not in America today, an intelligent hospital, where they dare use it in place of butter. I know it is forbidden in Europe and all over France and they dare not use it in the hospitals. Why? Ordinary butter, cow butter, melts in the human stomach at 92 to 94 degrees, that is below the heat of the body. Oleomargarine melts at 105 to 108 degrees; that is above the temperature of the body. Common butter melts at 92 to 94 degrees and passes into the pancreatic emulsion of the stomach and is easily digested and assimilated and taken up by the force of digestion. This substitute butter which is taken into the stomach has to remain there. It cannot be melted and remains in the stomach until

it is finally expelled by severe gastric action. When the physicians in the hospitals found their patients sinking they found it was due to taking into their bodies this substitute butter which would not melt, and that it decreased the nervous force and power, and the patients began to sink. No man ought to eat this butter, particularly if he is of sedentary habits. If he has hard labor, he may be able by virtue of strong vigor to expel it, but it never nourishes the body. There is no guarantee as to the amount of paraffine that will be used in its manufacture and there is no known substance which will dissolve paraffine. This is testimony. These are facts. These men at Chicago, with no check upon them whatever, are putting up a stuff and by the aid of chemistry deceiving you of its taste and telling you it is just as good. The cow cannot counterfeit her product, she cannot make unwholesome product. You have to make it for her, and when she makes a wholesome product she makes it as designed by nature.

Mr. Babbitt—It might become unwholesome by the introduction of bacteria, in 24 or 48 hours. After going into the hands of the consumer it would be unwholesome. (Laughter.)

Gov. Hoard—That is true, but the cow is not to blame.

Mr. Babbitt—In regard to your position on this article, it seems to me that it is pretty convincing that it ought not to be used under any circumstances. Possibly there are other arguments that may be strong.

Mr. Briggs—In regard to this butterine going into the woods, we had this brought to our attention at the institutes in the northern part of the state. One man said he bought it exclusively for the lumbermen. They eat it because they cannot get anything else and not because they like it.

Mr. Brigham—Some consumers prefer the oleomargarine. What injustice does the proposed bill work to those consumers?

Gov. Hoard—No injustice whatever.

Mr. Everett—The bill that is before the legislature is a bill that has been drafted with a good deal of hard, earnest thought, because the farmers and the dairymen and the people of Wisconsin desire justice, not special legislation, simply

justice. They ask that filled cheese be prohibited because it is a fraud, because no one wants to eat it and no one would eat it if they knew it, because it enters the retail market as cream cheese and the consumer pays for such, and, being a poor article, the consumption is cut down. In answer to Mr. Babbitt—we ask that oleomargarine shall not enter the market in the color of butter because it is not butter. Is that not justice? We do not ask that it be prohibited, because the poor man may want to buy it. It lets him know just what he is paying his money for and he knows it is not butter.

Mr. Fisher—Why not legislate against the sale and manufacture of butterine, instead of simply against coloring butterine the yellow color of butter?

Gov. Hoard—If butterine was sold without being colored it would sell at a low price and therefore not materially affect the price of butter.

Mr. Fisher—I do not believe it. If the legislature prohibits the coloring of butterine, it would probably prohibit the coloring of butter, and butter in the winter is white, and therefore butterine would still compete with butter as before, and some people would use it because it would be cheaper.

Gov. Hoard—Does not butterine depend on butter for its sale?

Mr. Fisher—Certainly, but how would it help the butter in the winter when butter is white?

Gov. Hoard—The butter would be yellow and the butterine would be white

Mr. Fisher—Not in the winter, unless it was colored, and in some parts of the country, as for example in western Nebraska and Kansas, butter sells better if it is not colored at all, and in such places butterine would still compete with butter.

Gov. Hoard—I can show you yellow butter made in the winter.

Mr. Fisher—How do you get it? Is it in the feed, or does it depend on the breed of the cows, or the making of the butter?

Answer—It depends upon how the cows are fed and on the breed.

Mr. Babbitt—I can answer that question. If the cows are Durham the butter will be yellow.

Gov. Hoard—Butterine is not wholesome. It will melt in the stomach at not less than 105 to 108 degrees, while good butter melts at 92 to 94 degrees, and as the temperature of the body is 98 degrees, the butterine is very hard to digest.

Mr. Fisher—Why not then prohibit its sale in our state? Some one says that the poor man cannot afford the good butter. If it is not wholesome he cannot afford the poor butter, and it also hurts the dairyman. So why not prohibit the sale of it altogether. If it is not possible to prohibit the manufacture of butterine, it certainly is possible to prohibit the sale of it, in one way or another. As I understand it, it is certainly a fraud if it is sold at all.

Mr. Goodrich—It is not a fraud if we know what it is.

Mr. Fisher—Why not prohibit it? That is what the farmers want.

Mr. Martin—We have been told we were unable to enforce the laws. It is a fact that its being branded as oleomargarine and butterine does not prevent its consumption. The marks are scratched off.

Mr. Goodrich—Did you ever buy any?

Mr. Martin—Yes, lots of it.

Mr. Grisim—If there are any other articles hurtful to the human family besides oleomargarine and butterine, would it not be a good plan to send a postal card to prohibit their manufacture, such as tobacco, whisky, etc.?

Gov. Hoard—I suppose a man might indulge in his fancy here all night. I would like to see health catching and disease prohibited, but it goes the other way. I cannot prohibit all the evils, but there are a few things I would like to help.

Mr. Briggs—What is this oleo oil?

Gov. Hoard—You tell. It is called oleo oil, but who knows what it is composed of. If you turn to the June number of Leslie's you will see an interesting article on this subject, and the writer avers that the dead horse goes into the making of oleo oil.

Mr. Douglas—Half a mile from here is a place where dead horses are rendered up and made into oleomargarine.

The President—At half past nine tomorrow morning we will be pleased to meet you all. We will have a very entertaining and instructive program.

Adjourned.

Friday Morning, Feb. 8, 1895, 9:30 A. M.

The President—The first subject on the program this morning is "Horses," upon which we expected to hear from Mr. True, the ex-secretary of the Society, but on account of some unavoidable accident he does not appear to be here. It is possible he will be here later. Consequently at this time we will have to take up the next subject, "Care of Brood Mares," by Mr. A. J. Philips.

CARE OF BROOD MARES.

A. J. Philips, West Salem, Wis.

Mr. President and Gentlemen—I do not usually write a paper for any meeting, but two or three newspapers have applied for my paper, and in order to get it in print and relieve the reporter I concluded to write it, but I did not write it until this morning. I always like to hear Mr. True talk "Horse" because he knows just what he is talking about. It has been his life business. I anticipated following him and made my paper brief. I am well aware that there are men in this audience who have had more experience and know better, perhaps, how to care for brood mares than I do, but at the time there is no one here who has been more intensely interested in the care of brood mares than I have. For that reason, when Mr. Fleming asked me to write a paper, I selected that subject. I think it is one that has been neglected.

Thirty years ago in Rock county I heard a young man say to his father: "You do not manage right; when wheat is high you save every kernel when you thresh, and when it is cheap you waste too much. Now, you had better take more

pains to save it when the price is low, as you need it the more." This advice holds good today in the care and treatment of our brood mares. We must strive to raise better colts at a lower cost to make any profit at the present low prices, and in my opinion in no place can the average farmer make a more marked improvement than in treating his brood mares better. Better care and handling means better colts and consequently better prices. The kind of treatment and best of care of the dairy cow has been proclaimed in church and school house, in court houses and city halls, by such champions as Hoard, Hiram Smith, Beach, Goodrich and Taylor, and she justly deserves it. But scarcely one word is said or one voice raised in behalf of better treatment of the brood mare, the mother of the equine race. So I feel it a duty, as one who always used her well, to say at the close of this convention a few words in her behalf, hoping that some thoughtless man or careless boy may profit thereby. First, select a sire for her colt, as my friend True advises, the very best you can find. The best is none too good. Second, make a profound and earnest study of the best feed for her to have as soon as you are satisfied she is to be a mother; so she can gradually, during the six or eight months previous to the birth of her colt, be imparting to it the elements of bone and muscle to make it strong and healthy. Do not pay extra to, nor ask the owner of the stallion to warrant the colt to stand and suck. You can do that better and cheaper than he, for you have control of the mare and her feed. Right here let me say I never do this, and, though I only raise colts in a small way, I find on looking over the past that I have only lost one colt out of forty-two I have raised and weaned where I had control of the mare six months previous to foaling. I know of one man in my part of the state that lost nine young colts in one season. A neighbor said to me a few years ago: I expect to raise a good colt next season as I have used a full-blooded Cleveland bay horse. I said, what are you feeding her? Oh, he said, I am giving her a good chance. I do not work her. She gets a scoop shovel of corn in the morning and the same at night; runs day time at the straw stack and is stabled at night, and has plenty of good timothy hay. Why,

I said, you are giving her nothing to make bone and muscle and your colt will be weak when it comes. Oh, said he, that is one of the new fangled notions that you have learned at farmers' institutes and State agricultural meetings. No, I said, my first lessons in the care and feed of brood mares was when a boy, with a Lancaster county, Penn., farmer. He had good horses and colts and I know just how he fed them, and so far it has proved a success for me. Now, for the results: My three mares foaled in April afterward and every colt was up and took their breakfast before they were half an hour old, and about May 1st my neighbor had to lift his coming roadster up to suck and continued it for three weeks. Then he put splints on all his legs for several weeks longer until his bone increased in strength so he could get up alone. I've watched that colt since. He never grew much until fall, and has only made a nudge of a driving horse, worth now about \$35. Now, this is the kind of evidence that Friend Hoard likes for his paper. Actual facts and results. How many are there who have for years tried to raise colts for farm and other use and for the market and at the same time have asked the mare to do the same work and on the same feed that the gelding or non-breeding mare that works beside her does, when she needs especial feed for the condition she is in. This kind of care of the mare and of the colt for the first two years of its life has done asmuch to fill our country with stunted unsaleable horses as any other cause. Remember right here I am not advocating idleness for the brood mare. She and the colt need exercise. The health of both demand it, but I am pleading for better care in feeding. Avoid corn, only an occasional ear to please her. For a change feed her oats, clover hay and a good supper every night of cut hay or straw with bran and shorts over it, not forgetting about the proportion of salt that you like in your own food. Remember she cannot scold as you do when your good wife in her hurry forgets to salt your potatoes or pan cakes. Do not make this a sloppy mess, just moisten enough to make the bran adhere to the hay or straw, then follow this through the season, the colts soon learn to eat it, and, like the lambs, give them a chance with a little oats

in a box of their own, it will afford them some amusement when their dams are out at work. Then when weaning time comes instead of losing twenty or thirty pounds they will make a continued gain through that ordeal, though it may be small. As Uncle Goodrich says of his cow, try and please the mare. Do not ask her to help draw wood to town or ice to the farm and then make her trot back. Consult her wishes. Only let her jog along when she wants too, and when she desires to walk let her do it, and I assure you that will be most of the time. I have seen boys on their way from town when they were drawing wood, urging their teams, trying to pass each other, and have known that two mares in those teams both lost their colts in the spring. Chicago and Boston horsemen and dealers will tell you that the horses that last longest on the pavements are those raised in districts where proper food is given to the brood mare and growing colt; and I have heard men who bought horses for old-fashioned stage routes say that from these districts they always obtained their best horses, especially where they were pastured on hilly lands. I can in no better way emphasize what I practice and advise others to do, than to repeat the noble and humane words of W. D. Hoard in his appeal for better care of the cow. Treat the brood mare kindly because she is a mother. She will pay you for it in the same proportion that the cow does. Teach the boys to do this. It will increase their love for and interest in dumb animals, and increase their love for the farm and for stock raising. Nothing pleases the boy more when going to town with the mare and colt than to meet some old farmer who says: Hold on, Bub, and let me look at your colt. By thunder, he is a good one. How much does he weigh, etc.? Now, ten to one, the mare and colt both will receive an extra caress and an extra hand full of feed on their return home. It makes me shudder to see a mare heavy in foal stand for hours near a saloon door after bringing a load to town. Then, to make up for lost time, to see her owner whip her into a trot and keep her at it for a mile at a time on the way home.

Gentlemen, I have seen this more than once and this accounts for many ill-formed, blemished and stunted colts that are

raised, whose only real mission on earth is to bring down prices of really good horses. Now, my experience tells me that if farmers will practice what I have recommended in this short paper they will raise better horses and will seldom have a blemished animal. The horses will have better stomachs and better digestive organs, and a case of belly ache or colic will be as rare as a case of hydrophobia. I know my plan entails some extra work but what can we do on the farm that work does not enter largely into. The only question that arises is, Does it pay to care for the brood mare? Well, I answer yes. I have made this paper short for the reason that short papers are remembered better than long ones. I have sat up many nights and left a good bed many mornings to care for my brood mares, and this morning I left a warm nest about four a. m. to write this paper. Gentlemen, I thank you.

DISCUSSION.

The President—Any questions to be asked?

Mr. Reng—I would like to ask if he would not prefer to keep salt before them each day.

Mr. Philips—Yes, I do. It is a good plan to have rock salt. We keep it out in the yard in lots all the time. I think an animal does better to have salt.

Mr. Grisim—Do you think it is a good idea to put it where the horse is obliged to take it?

Mr. Philips—Oh, I do in small quantities. I think a man ought to know how to fix feed better than the horse.

Mr. Merrill—Do you think the stock get enough salt from the rock salt?

Mr. Philips—No, I do not think they do. You know if horses start out of the yard for the pasture together they cannot get at the salt box all at once. A horse likes company and if the first ones get their salt and start for the pasture, the others will hurry and will not take as much salt as they ought to have.

Mr. Brigham—How would it be to put the salt in the manger feed box?

Mr. Philips—I would not put it in the feed box. I would rather have it where I could get at it if I wanted it.

Mr. Favill—Is it a settled fact that the horse is better off to have very much salt, particularly the driving horse, all it will eat? Would they n. t get more than they needed if you put it in the feed and compelled them to eat it every time they eat? Do you know how much is good for them?

Mr. Philips—No, I do not.

Mr. Favill—Why do you stuff it in them?

Mr. Philips—I think my judgment is better than the horse's.

Mr. Favill—I have seen horses that had better sense than the driver.

Mr. Briggs—I think the horse knows better what he wants than we do.

Mr. Merrill—I have tried feeding salt. They do better where the salt is placed in the food every morning than where they get it once or twice a week.

Mr. Philips—Mr. Favill asked if it was a settled fact that they would not get more than they needed. It is a settled fact for me that the horse won't eat more than is good for him. I am giving you my plan.

Mr. Favill—The question was, Would you not be likely to force more on them than if they are left to their own judgment. Where they can lap it when they please they won't take more than is good for them, but if forced it is another question.

Mr. Philips—A man must use judgment in feeding all kinds of animals. We have a great many cooks throughout the country that put more seasoning into the victuals than is healthy for the stomach. Our good mothers and aunts when they want to make a good Thanksgiving mince pie get more seasoning in it than ought to go into a man's stomach. A man will have to use judgment. If a horse is hungry you can put in more than is good for him. We want these young men to study these things.

Mr. Drake—I keep a chunk of rock salt in the manger all the time and my horse feels so good over it that it is all I want

to do to drive him through the streets. If I should put fine salt in his feed I would force him to eat more than he wants. I think they need salt all the time. I presume cattle would not get what they wanted from rock salt. I think it is all right to put fine salt in their food occasionally, but if they have rock salt before them continually, I will risk the animal.

Mr. Merrill—By feeding ground salt to cattle they can be forced to take a great deal more than is good for them, and the same with a horse. In a milch cow it sometimes causes a falling off and sometimes an increase of milk. By observing how much they will eat you can find out and regulate the amount of salt. I find that it is a good plan for milch cows and I think it would be just as good for horses. I give them a regular allowance every day.

The Secretary—What advantage do you claim in offering it instead of leaving it to the instinct of the cow?

Mr. Merrill—It is a little easier and better for the feeder to place the salt before the cow all the time, but she will sometimes eat more than is good for her—one day not eat enough and the next day more than is good for her. I think it is better to give her some every day.

The Secretary—I do not question that the gentleman is doing that, and from what I know of him I think he is practical and has got the question of salt down to a fine point, but I would not have this convention go away with the idea that it is good to have their cattle fed in that way. I would like to advise the young men in regard to the salting of cattle to leave the salt within their reach and give them free access and let them regulate the amount to be consumed.

Mr. Merrill—That is a right statement to make. To over-feed does more harm than to under-feed and unless you are sure it is better to give them less. In case of a dairy cow the daily amount of milk will show it.

H. H. Smith—In our portion of the state a great many colts are lost either before or after foaling. I would ask the gentleman if he can attribute any great proportion of that loss to a lack of exercise in the sire.

Mr. Philips—Not so much as lack of care and judgment in

treating the brood mare. Mr. Briggs can answer that question better than I can because he has had more experience in that line.

I want to state a fact with reference to a horse that I have raised. I fed his mare just as I have advocated, and do now. I raised the colt, fed him just as advocated. I sold him when he was 5 years old in La Crosse to work for a hardware firm. He has an excellent record. He has had the same driver 11 years. After working for that firm on the paved streets for 6 years he was sold to a wholesale drug store that had heavy loads to draw and lighter loads, down to a barrel of kerosene oil. I saw him week before last; I generally see him once or twice a year. The horse knows me as well as when I sold him. I looked at his foot and the frog seems to be just as perfect as when 4 years old. His legs are all right. He told me he has never given the horse a spoonful of medicine and that he has never been sick. I have an idea that that is pretty nearly the right way to raise a horse.

Mr. Grisim—I don't know that it is best or necessary for me to say anything on this horse subject. I am not so much of a horse man as I am of Durham cattle. But when a man advocates and says that a certain kind of business is profitable, I want him to prove that it is profitable by going into that business himself if he believes what he says. I know a man in Sauk county, been acquainted with him 20 years. I have read his speeches and heard him speak on that subject, and I have never seen or heard of him raising one good horse. I did hear he had a 2-year-old colt once, a good one, and he sold it when it was 2 years old for fear it would become spavined. I had an acquaintance that wanted a horse last spring and I asked him what kind of a horse he wanted. He said he wanted a horse that stood fifteen and a half or sixteen hands high, with a good sharp back and a good broad rump, not too sloping nor too straight, and a good heavy tail; a good broad stifle, with a good leg and not too straight nor too crooked, and a good round body, high on the withers; his neck large where it was set onto his body and a little arching on the top; short underneath; rather small where the head was set on the neck;

good broad breast, and a rather small, upright, tapering ear; pretty wide between the eyes, with a good intelligent eye; no hole above the eye where you could put an egg in; head taper down to the nose, wide between the chops (indicating) with a good large nostril. I says, "I guess I know a man that has that kind of a horse and I am going pretty near his place in a few days, and I will go and see him. So I went down there. Now, Mr. President, what do you think I found there? I found one long-back, long-legged shanghai of a two-year-old colt, back long enough to suit the Irishman. There were nine in the family and he wanted the back long enough for the whole nine to ride on him at one time. Then I found a little chunk of a three-year-old colt, good enough what there was of it—weighed somewhere from 700 to 800, and an old mare. And those were all the horses I saw on his farm.

Mr. Briggs—I would like to know what good this Jersey cow and horse talk does the citizens of Wisconsin.

Mr. Philips—Do you include my paper?

Mr. Briggs—No.

Mr. Anderson—I want to say that I have had a little experience with horses. I have bought and shipped horses to Philadelphia and New York and shipped them to the west. I think I have some little knowledge about horses. John L. Mitchell, our present United States senator, read a paper on horses once before our farmers' convention. I did not know who he was at the time. The next time I saw him was in Chicago. I was walking along on the street and met Mitchell. He looked up and said, "Hello, Anderson, you are the man who pitched into my paper." He said, "I want you to be one of the judges on horses for me at the State Fair next year." I did not care to because I never found a horse that pleased me in every way, but he insisted and I went. I breed a good many horses and I would advise all young men not to breed fast horses. I never knew a man in all my experience that made money breeding and training fast horses. I never knew a farmer that lost money breeding first class draft horses. Get the best horse you can and keep the best mare. Don't sell them off. I think a man that has a good mare ought to raise horses. In regard

to the salting, my practice is to throw a little salt into the manger when there is no feed in it. If he does not want it he don't take it. Horses and cattle, hogs and sheep need salt. It is the opinion of our best doctors all over the country. In cold weather I don't feed them so much salt as in warm weather.

Mr. Favill—I want to say that I heartily endorse Mr. Philips paper as a whole. I only raised the question as to the salt because I think there are better ways of giving the salt. As a whole his paper in regard to the brood mare is just right. I just rise to make this explanation that I endorse his paper. It is true that mares sometimes will come out all right in spite of abuse and raise a good colt, but it is not a credit to the man who abuses the mare.

The President—I want to say to this audience that we received a telegram from Mr. True stating that if nothing happened he would be here, but evidently something has happened to prevent his coming—probably snow drifts. But we are fortunate enough to have here a man who has had experience second to no man in Wisconsin, and while perhaps he is not the best, he is the equal of any man who can talk on the subject of horses. I will introduce to you Mr. Briggs.

Mr. Philips—Before Mr. Briggs commences I want to say that I am not an extensive breeder but the man I referred to is an extensive breeder. You would get the idea that because he kept so many horses he was better authority than I am. I do not think that men who have a large number of horses and have other things to attend to on the farm are any more likely to be better breeders than those who have but few.

Mr. Grisim—I would like to put myself right on the salt question. I am willing to admit that a large majority think they need salt. Is there anybody that knows that it is actually necessary? Have they had the experience to know but what that animal would be just as well off without as with? I was raised to think so. I salted, my father salted, my grandfather salted, everybody salted.

Mr. Merrill—I would like to answer that question. He wants to know if they will do just as well without as with

salt. I say no, emphatically. A milch cow will not thrive as well without as with salt. There is apt to be an increase of milk by giving a little and a decrease by giving too much. Why do the deer travel for miles to get to a salt lick? It is nature, and we have salt in our food. There is a certain kind of salt in all food that we eat, and if we are deficient in that we need a little artificial salt in addition.

Mr. Favill—There used to be some handsome deer in this country and I am very sure they did not travel to the Kentucky salt lakes for salt.

Mr. Merrill—That is true.

Mr. Favill—I know men who get along very well without a drop of whisky and others will go a good ways to get it. Salt is an acquired taste.

CHEESE MAKING IN WISCONSIN AS IT IS AND AS IT OUGHT TO BE.

John High, Berlin.

I am very glad to stand before the Wisconsin State Agricultural Society in behalf of the cheese industry of Wisconsin, and yet when I realize the fact that most of you who are here are connected with dairying more or less, especially those gray headed men who have been engaged in the good work for more than a quarter of a century, and who have done so much toward promoting it, I feel diffident about discussing a subject in which their experience must necessarily have been so much greater than mine. I am glad to see that they are with us. They show us by their presence that they co-operate with us in the stand that we have taken, and this co-operation is an encouragement to the younger dairymen interested in the advancement of all dairy work.

My subject, "Cheese Making in Wisconsin as It Is, and as It Ought to Be," is one in which I am deeply interested, in-as-

much as I have had several years' experience both as a factory operator and as instructor. I believe in the dairy, and I believe that the men who engage in dairying should make it a study just as they would any other profession. A man cannot buy his education. He must be studious and observing, he must make it a point to be constantly improving.

At the present time too many of our dairymen are practicing a false economy. Rather than spend a dollar in improvement which, in the end, would triple their money, they drag along in the same old rut which they have been in for years, simply from lack of foresight.

Wisconsin cheese very rapidly gained a market in Europe at the highest price and was standing second to none, but I am sorry to say that at the present time it is not so favorably received across the water, simply because we have allowed filled cheese to be made within our state. We must consider the filled cheese industry an enemy which we have to confront. It has broken down our reputation and destroyed our market for good, honest goods. We are in no way able to do away with it unless we unite and stand as one body against it.

The great trouble with the operators of full cream cheese factories is, that they do not pull together. At present every one is struggling along by himself and wondering how he can manage to get a patron from his neighbor's factory, regardless of what feeling may arise between them. His sole aim is to get all the milk he can for his own factory and in doing this he does not discriminate closely enough for fear the patron may leave and go to another factory. At the present time the Babcock test is doing much for the advancement of the cheese industry. While about 20 per cent. of the cheese factories are paying for milk by the test (which in my estimation is the only true method of paying the farmer) I am sorry to say, that the remaining 80 per cent. of the factorymen are still giving 1 pound for 10, or pooling, which is a most absurd and unjust method of paying the farmer for his milk. You are inviting him to cheat you and not only that, but you are also encouraging negligence in the care of milk. That is one great fault with our patrons, they do not give care enough to their milk

and do not give enough attention to the feeding of their cows. But where the Babcock test is used for determining the exact value of the milk, the patron necessarily becomes directly concerned in the quality of the milk which he himself delivers, because he is not getting paid for the *quantity*, but for *quality*. The main reason for so much poor cheese in the country is due wholly to the poor quality of milk delivered by the patron, and to incompetent makers.

The tendency is, for a man wholly ignorant of the making of cheese, to go into a factory and work as helper for two or three months and then the next season take entire charge of a factory. Such a system cannot help being injurious, for no man can, in so brief a period of time, prepare himself for anything but a good assistant. We should employ none but good, competent makers, men who have practical as well as theoretical knowledge regarding the manipulation of milk. What we should do, is to co-operate and go shoulder to shoulder, every man making up his mind to improve the quality of his goods. The factorymen should insist on using the Babcock test for determining the value of milk. It is *the way* and the *only way* of compelling the patron to take better care of his cows and his milk. I believe that before we can ever attain a reputation such as Canada has, we will have to form stock companies and make the patron directly interested as well as the cheese maker, decreasing the number of factories in the state, but making those which we do have, on a more complete scientific principle.

World's Fair.

In regard to filled cheese, I am ashamed that we allow any such a thing as a filled cheese concern to exist in our midst. It is a disgrace which reflects on the honest dairymen of the state as well as on those engaged in it. It must be done away with before we can expect to re-establish our reputation in the foreign market.

I know that we can make as fine cheese as can be made in the world, but we can only prove this by doing away with inferior goods.

HORSES.

H. A. Briggs, Elkhorn, Wis.

Mr. President and Gentlemen—I came up here more as a student than as a teacher. I was out at the Experiment Farm this morning and got up here late. I know but very little of what you have said. I do not know what topics have been touched, and this "Horse" subject is a broad one, but I shall try to confine myself to the kind of a horse that the market demands and that is bringing the highest price of any horse that a farmer can raise.

Why should we raise a horse for the market? There are a great many who advocate the general purpose horse, a horse just this way. If a man wants a horse just that way, I say, raise it that way, but if he raises it according to his idea he cannot sell it to somebody else. If you raise a horse for the market, grow what the market demands. You would not think a man had any idea of business if he insisted on making white butter when the market demanded yellow. It is just as absurd to raise something in the horse line that the market does not want.

Now, then, what kind of a horse does the market demand today? It has changed some in the last few years. A few years ago we thought if we had a horse that weighed 1,400 pounds we had a good draft horse. Today he is only a chunk. Let us look at the quotations of the horse market in Chicago, where as many horses change hands as at any point in the world, and where they are buying horses from all the markets in the civilized world. I am informed by a farmer who keeps posted that sound horses from 5 to 8 years old are quoted from \$30 up. This small horse weighs 1,000 pounds. Next is the street-car horse, which is going out of use, and in a few years there will be no demand for him at all. A few years ago there was a great demand for them and we could sell at a profit. These horses are quoted from \$50 to \$70. Next is the coach horse. These horses are something better. The English are

taking them by the thousands. They are using them for the tram-ways and busses that are made to carry 40 to 50 passengers. They are selling on the market today from about \$70 to \$124 for the very choicest.

But there are other classes of horses we can raise to better advantage, namely, the good, nice, intelligent draft horse and the good, nice, large driving horse or coach horse. The draft horse should be in as compact form as possible, of good, smooth build, weighing not less than 1,500 pounds, and if they weigh 1,800, all the better, providing it has same quality, good, clean, flat bone, good feet and a good clean-cut head and neck, with a good intelligent eye, and a good, quick, active walk. Mr. Grisim described a very good head. There is no danger of over-stocking the market with this horse. This class of horses is selling even now, at these times, so that a farmer can raise them at a good profit. There is a demand for them in our cities, lumbering districts and horse regions, and we are situated here to raise and market them as we are close to the markets in Milwaukee and Chicago. Then there is another class of horses that the farmers of Wisconsin can raise and put on the market, if he has a taste for handling and fitting them for the market, namely, the good sized, clean-cut, stylish and easy-moving driving or coach horse. They should stand not less than 15 hands, 3 in., and up to 16 hands, 2 in., and weigh not less than 1,150 pounds and up to 1,350 pounds for drivers, heavy coach horses. This last class of horses requires more care and better handling and more educating to fit them for the city market, and consequently are more expensive for the farmers to raise. But they bring the top of the horse market.

Now, in order to raise these two classes of horses, we must select the best type of a draft mare and the same of the coach type of mares for raising good heavy drafts and coachers. These we can get among our grade draft mares. To raise draft horses, breed them to the best type of a draft horse that can be had, of the respective breed that your grade mares represent, and breed them of a uniform type. For coachers select the larger and most stylish strains of Hamiltonian or trotting

strains of blood, and be sure to get all of the style and quality and size as stated. We can get very good results by breeding this kind of a coach mare to the imported coach horses, but I have yet to see good results, as a rule, from crossing the common scrub mares of the country to the imported coach horse.

How are we going to produce these horses? I do not think all farmers are adapted to raising coach horses, because it takes a certain amount of skill and qualification to fit them for the market. A draft horse can be put to work at 3 years and at 4 years and 5 years has paid his way on the farm and is ready for the market. But not so with the coach horse. He wants to be well broken in every sense of the word, so that when you take him out of the stall he will stand while harnessing him, and when you get into the buggy he will stand while you are getting in. These capitalists will admire him and his education and all the qualities about him. If you go on the street he will move off easy and you can drive him up to a steam thresher and street cars. When you get such a horse you do not need to look for buyers. The country is scoured for them all the time. They are paying fabulous prices for them. They will sell on the Chicago market for \$600 and \$700. Now, I say we can raise the coach horse in this country just as well as in the old country. We have as good material in this country to raise coachers as anywhere in the world if we will only use it, and that is in our American-bred Hamiltonian, provided we select those of a coach type and have size enough.

I have said nothing encouraging in regard to the small driving horse and the trotting horse. I do not think, as this gentleman said, that any farmer or farmer's boy wants to raise a trotter for the simple reason that they are bred for speed and that alone, and if you do not get that your horse is utterly worthless. They are selling them at bottom prices, \$30 and \$60. There is "J. I. C."—everybody probably knows his reputation. He was bred in this line, had as good a lineage as any trotting horse. If he had the qualifications of a coach horse he would have sold at any time for a good price for a driving or coach horse. But there was a man buying horses in Racine one day, and the groom who was exercising J. I. C.

halted this man and said, "How much will you give me for him?" The buyer looked him over. He was not very attractive to him, and he said, "It is not my kind of a horse, but if he can move out in pretty good shape I will give you \$75 for him." He had refused \$50,000 (?) for him. A man would not give anything on his looks. We want a horse that will sell from his appearance and actions as a farmer can grow him.

HORSES.

John M. True, Baraboo, Wis.

Horses are not now the most popular of farm animals. A wag has said, "Formerly a man's poverty was indicated by the number of dogs he kept, it is now shown by the number of his horses."

This depression in prices has strongly demonstrated the characteristic of the American farmer to desert in haste any enterprise when it for the time fails to be remunerative, and with equal eagerness to put his money into that line of work that just then chances to be booming.

For years all kinds of horses were raised with a greater or less margin of profit. Even those bred without system and indifferently raised and handled brought their owner more money than was realized from most other kinds of farm stock, while choicely bred and well handled animals sold for high prices. It took years of mismanagement and carelessness to overcome this condition of affairs. Market requirements were disregarded, proper mating ignored, and true breeding derided.

Every man claimed and fully exercised the right to produce just such an animal as his individual ideas of economy and propriety dictated. No enterprise could long withstand the influence of such demoralizing lack of business methods, and the break in the horse market came. Today thousands of horses in the hands of Wisconsin farmers would not bring five

dollars apiece if exposed for sale at public auction in the communities where owned. The owners of these inferior animals are very sick. They see no future for the horse market, and for this let us be thankful.

If better horses and consequent better prices are to come to us it will be because these men who are unfitted from want of appreciation and lack of intelligence for horse breeding keep "hand off."

The general-purpose idiot and the speed crank have had their day and way, and are reaping the rewards of their efforts in the production of seventy-five per cent. of the present unsalable product. The general demoralization of the market has enabled buyers to throw a shadow of suspicion over really good stock, and the prices have suffered accordingly;—but this is being gradually overcome and recent sales of fine coachers, good roadsters, and smooth, heavy draft horses, show that there is no oversupply of material in either of these classes.

Shall we still raise horses? It takes five years to produce a horse suitable for the market. The foals of the coming spring will not be of saleable age before 1900. At that time all the horses at present old enough for sale, as well as other stock, will be outside of consideration.

For the past two years not one colt has been dropped upon Wisconsin farms where five had previously been born annually. The coming season will even fall below this ratio. It needs no prophetic vision to enable one to predict that the well bred foal of 1895, properly raised, will be prized by its owner in 1900. Hence we argue that the horseman should lose no time in getting in line for good work as a breeder.

Undoubtedly the two classes of horses we are best prepared to produce are the good sized, stylish, level-headed American-bred roadster, and the smooth, blocky stylish draft horse. The coacher will be found to be a more uncertain product, especially if we seek to produce him by a cross of our imported coach stallions upon our Wisconsin brood stock.

I very much question whether a better sire of American coachers can be found than a proper selection of our American roadsters. Clearly speed must be subordinated to style, size

and good behavior in the carriage horse, and extreme weight to smoothness and quality in the draft horse.

I wish to lay special stress upon the necessity of good disposition and good manners in the carriage horse. Without these traits, insuring comfort and safety to the occupants of the carriage, the term is a misnomer.

The coming horse will be better bred, better fed and better handled than the average unpopular equine of today. The horses of today are precisely what we have made them; so will the better horses of the future be the result of more intelligence, greater liberality and better methods.

DISCUSSION.

The Secretary—I am sorry we have not some fast horsemen here. I think they would make you trot a pretty fast clip.

Mr. Anderson—I think he has given these young men a good lesson. I do not think we have lost anything by not having Mr. True here. He has in every instance expressed my opinion on this question. Everything he has said has been my experience. The difficulty in this section of Wisconsin is to get brood mares to raise coach horses, and the Cleveland Bay horses have not proven what we had reason to expect of them. I am sorry that we have not some of those coach horses in this country. Seven or eight years ago I had a paper at a meeting of this Society, entitled "The Draft Horse." People think almost any horse is a draft horse. It is a mistake. Old Mr. Clark got up and told about his little Dollie mare, a little Morgan, and pitched into me because I did not mention the best draft horse in the United States, a Morgan horse. The idea of him pitching into me because I did not mention a Morgan horse when my subject was a draft horse. A 1,700-pound horse will sell in Chicago today, if sound, at a reasonable price, bring \$175 or \$200, where a horse weighing 1,300 will

sell at \$75 or \$80. I like a nice coach horse as he has described, but they are few. I have seen them in the New York market, trained; appeared to be as intelligent as any animal could be. The intelligence has a good deal to do with the price of the horse, because the man who pays the high price is not always a fool. Those men have the money and want something that is safe and something they are proud of, and that is the kind of a horse I would recommend any American to raise if he can find the right kind of a dam and sire.

Mr. Favill—You can find in Mr. Briggs' stables today just the kind of draft horse that he has been picturing to you.

Mr. Brigham—I would like to ask Mr. Briggs what stable he would recommend for brood mares, how constantly and what weather out doors, and how warm the stables?

Mr. Briggs—Before I handled so extensively as I do now, I had no more horses than I wanted to use. They did all the work there was to do. Our brood mares have exercise every day; they run in the yard. We have not a very warm stable. We keep it dry, but it will freeze in there. I want it ventilated enough and cool enough so there will be no steam in there. If you have a very warm stable and turn your horses out in the morning they will shiver. Have the stable so it keeps the storm off, and no drafts, but moderately cool and well ventilated. Have the horses exercise every day until about the first of January. In regard to food, we feed what we have on the farm. We find it is cheaper than what we can buy. I feed a good deal of oats and common ground middlings in connection with corn fodder, timothy and clover hay. Our mares are getting a ration this winter once a day of oats and a little corn.

Mr. Brigham—You always turn them out no matter how bad the weather is?

Mr. Briggs—If it is a very bad rainy day we do not like to have them out. The rain hurts them more than the cold. If they get wet and it turns suddenly cold it chills them.

Mr. Brigham—Is a dry stable too cold where they get a little frosty around the tail?

Mr. Briggs—No sir.

Mr. Wicksam—Which would be the best for a dairy farmer, raise or buy his horses?

Mr. Briggs—Every farmer that is carrying on a farm can just as well keep a few mares and raise a few colts, from the time they are three and four years old, and always have one or two horses to sell every year. As for running a farm, I would soon advise him to buy all his cows or hogs or steers as I would advise him to buy horses, for even at the present a couple of years while he has others coming on. You can do this with your mixed farming and dairy business.

Mr. Wicksam—I have heard them talk about raising these Normans at our institutes. They have been talking to me because I was opposed to raising so many horses. I raised them for several years and made but little money. They told me they wanted 1,400-pound horses. I went to raising 1,400-pound horses. I liked horses. When I got them in the market (I had 7 or 8 of them) then they wanted 1,600-pound horses. I went to raising 1,600, and they changed again, and then they wanted them a little larger again. I tell you I can buy my horses cheaper than I can raise them. Take colts and try to raise them, and two out of four will have some accident, and it is a most risky thing in this country to raise horses.

Mr. Briggs—If they are losing money now it is the best time to keep on. By watching the successful men of the country you will see the very best time is to go in when everybody is going out. That is so with the sheep business, and I think there is no better time to raise good draft or coach horses than just now. About a year ago now I saw by the statistics that there were 125,000 less horses in the United States in February, 1894, than in February, 1893. The other day I heard that there are 147,000 less horses in the United States today than a year ago. You add these together and how many thousand horses less have you than in 1893? To be sure, a certain class of horses are not being used quite as much but with the decrease in the number of horses and the decrease in the number of mares bred every year for the last two or three years, how long before a good horse is going to be clear at the top of the heap?

Mr. Anderson—It costs me very little more to raise a colt three years than to raise a steer three years old, and the colt will sell for double the amount of money.

Mr. Briggs—I think there is a mistake with the average farmer. He can raise a colt from six months to three years old cheaper than a steer. There is a good deal of coarse clover hay that the cow will throw out. In regard to feeding colts, the most important time in growing a colt is from the time it is dropped until it is a year old. Do not let them get stunted then or it will always be stunted if you do. I have never received any injury from feeding a colt all it wanted, if they have plenty of exercise. If you feed them all they can eat without exercise you will ruin them in a short time. Feed them on a variety of foods, and no danger of hurting them.

In regard to growing horses in Wisconsin, in this latitude,—perhaps some of the older men know it, but it is a fact that a horse grown in southern Wisconsin and northern Illinois sells better on the market than the horse that is grown in the corn section of the country because he has been fed on a more variety of foods, has better quality of bone and muscle and fat. Where they are grown on corn alone the bone is big enough but it is a coarse, weak substance. The body is fat meat but when you put them to a test they are not there. I have often spoken to buyers about it.

Mr. Noyes—Supposing that the farmer is raising coach horses and fail to come to their proper standard, but have sufficient style and action to command a good price on the market, how would they be for farm horses?

Mr. Briggs—They make a good general purpose horse but not a fine coach horse. The Russians and Germans are looking for this type of horse and are paying good prices for them. They do not want any blemishes on them.

Mr. Fisher—I heartily agree with Mr. Briggs' talk. There are only two kinds of horses which it pays to raise now, namely, the heavy draft horse and the coach and carriage horse. We can sell those horses faster than any other horses. We sold one team, fairly broken, for which we got \$400. That paid us better than it would as a rule to develop those horses and train them. We do not advocate training horses at all.

I spent two months this fall in South Dakota, Nebraska and western Kansas, and the west is so flooded with general purpose horses that they can be bought for about the service fee of a good colt. Nobody wants them. There seem to be almost as many horses as cattle and they won't bring cattle prices. What we can sell best is the driving horse. As a rule that will weigh 1,100 to 1,200 pounds. We keep about 50 horses and about 25 of them are brood mares, most of which are standard and registered. They weigh from 1,050 to 1,200 pounds. The sire we are using most is Phallamont, a horse of excellent breeding and a very successful sire of speed, having nearly twenty in the 2:30 list. This cross produces large, speedy driving and carriage horses, and while we do not favor the ordinary breeder training his colts, we sell many for speed purposes. There have never been enough of this class to supply the demand. These horses are large enough to do general purpose work, and any that may not develop into just the style desired, or meet with an accident, make general purpose horses.

We handle our colts from the time they are old enough to halter, that they may be gentle and easy to break, hitching them up, as soon as old enough, with other horses and giving them short drives. All of our light teaming and driving is done with the older colts and brood mares, and much farm work is performed with them. We think the brood mare does enough work every year to pay for her keeping. This work not only keeps her strong and healthy, but we believe, as was stated in the "Breeders' Gazette," it also imparts strength and endurance to the offspring.

The Secretary—Where do you reside?

Mr. Fisher—Janesville.

Mr. Rice—I would like to ask if farm work is a disadvantage to a horse raised for a coach horse?

Mr. Briggs—No sir. On the ordinary farm there is no work that a horse that is heavy enough for a coach horse cannot do.

Mr. Rice—The ordinary training they would get and the farm work would be sufficient to prepare them for market?

Mr. Briggs—Not to bring the best price.

Mr. Rice—How much extra?

Mr. Briggs—They have got to be broken to the road and educated for traveling, so they will have their good clothes on when brought out. Just as much difference as a boy on the farm and when dressed for town.

Mr. Rice—Could an ordinary farmer who had an eye for business, understood the handling of horses, give the horses that training?

Mr. Briggs—Yes, but as a general thing the average farmer is not qualified. His attention is taken up by the other things on the farm so that he has not the time.

Mr. Grisim—I like the descriptions of the horses you have given. Suppose a man should breed any of the kinds you have described, how long would it take him to get one of the kind you have described fit for the market?

Mr. Briggs—If he would commence—it would take him four or five years.

Mr. Grisim—If I was not a judge and went out to buy my first brood mare I would be likely to be cheated. Then I would have to commence again and at the least calculation it would take five years to get a horse fit for the market.

Mr. Briggs—It is like any other kind of business. If he is not a judge he is not going to make a success of any branch of business.

Mr. Grisim—Suppose I had good luck in buying a good brood mare—it would take five years. Well, who would know what kind of a horse the market would want then?

Mr. Briggs—Judge by the past.

Mr. Merrill—I would like to ask Mr. Briggs if he does not think that one thing that ails the market today is that the horses have not been developed for speed purposes?

Mr. Briggs—There are too many inferior horses. Farmers have been raising the small horse and the ranches have been raising them. Of course there are isolated places where they are raising the draft horse, but they are exceptions. What we want to raise is something that will not come in competition.

Mr. Noyes—Can you give us an estimate of the number of mares bred in 1890?

Mr. Briggs—I should judge there was one in 1894 where there were 5 or 6 four years ago, about 20 per cent.

Mr. Noyes—In regard to the coach horse, are the colts about as gentle to train as the draft horse?

Mr. Briggs—No sir.

Mr. Noyes—Do they come nearest the draft horse?

Mr. Briggs—Yes sir.

Mr. Noyes—I understood you to say that all farmers ought to raise horses.

Mr. Briggs—If I had a farm of 80 acres I would raise one or two horses a year.

Mr. Noyes—Must not a man have horse sense to raise a horse?

Mr. Briggs—Well, if he has not got sense he should not have a farm.

The President—Perhaps we would better close.

The Secretary—I want to make one statement. I would not feel that I was doing justice to myself to permit the adjournment of this meeting without, in a public way, expressing my thanks to the different gentlemen upon the program which I compiled, for their prompt response and the able and instructive talks which they have given us, together with their constant attendance at these meetings, joining in all our discussions, bringing out the good, practical, substantial points of the different papers. Next to them I must thank my old **genial friend, Mr. Grisim**, who has appeared here on almost every subject in a nice, pleasing way, but never failing to make a good logical point before he got through. He had humor enough in his talk to open our minds for reception, but he always clinched it in a good, practical way, and I thank him.

You, my young friends, you army of young men to whom I feel closely related, being myself a young man, probably the youngest who has ever held the position of secretary of this Society,—I feel doubly thankful to have had you with us. You have aided us most materially in furnishing a good meeting, and I believe I have never attended an agricultural meeting in the state of Wisconsin where the information imparted was so thoroughly and widely distributed throughout the state of

Wisconsin as I believe this will be, because we have representatives here from every section of the state. You have been attentive, you have been critical when the time demanded it; you have had your books out taking down items that have occurred during these meetings, the only way, in my opinion, for a man to attend a meeting of this sort and reap practical and lasting benefits. I want to make one request of you. Before you leave your Agricultural school this winter I want you to come to our Agricultural rooms in the capitol and leave with me your names and addresses. I want to supply you all with the agricultural reports that are given to me for free distribution, together with all literature pertaining to the Agricultural Society and our premium list when it is compiled. And I will make one further statement. When I am ready to advertise for our next fair (and I propose to advertise most generously), if I have your addresses I will send some of our advertising matter to you, and those of you who will see that it is properly posted in good places, making a little talk among your neighbors, I will supply with a complimentary season ticket during the fair. I thank you.

Mr. Grisim—Will you allow me to make just a few remarks to my friend, Mr. Fleming? I must say that I am not capable of using language that will express my thanks to Mr. Fleming. I have never felt more grateful in my life than for the compliment he has paid me. I did not expect it and do not think I am deserving of it.

Mr. McNeil—Will those living out of the state get those reports?

The Secretary—Yes sir.

The President—I had intended to say something to this audience at the close of this meeting and had prepared a little paper to that effect. I was looking for it this morning but found it was gone. I did not think of it until I heard Mr. Fleming speak. I think he stole it. But, gentlemen, we trust that these meetings have been of profit to you, and if they have, the effort that we have made has been amply repaid. We thank you.

Meeting adjourned 11:30 a. m. sine die.

STATE FAIRS OF 1895.

How Prize-Money was Apportioned by the eleven State Fairs belonging to the Eastern and Western Fair Managers' Association.

[Compiled by Arthur Babbitt, Assistant Secretary Wisconsin State Agricultural Society.]

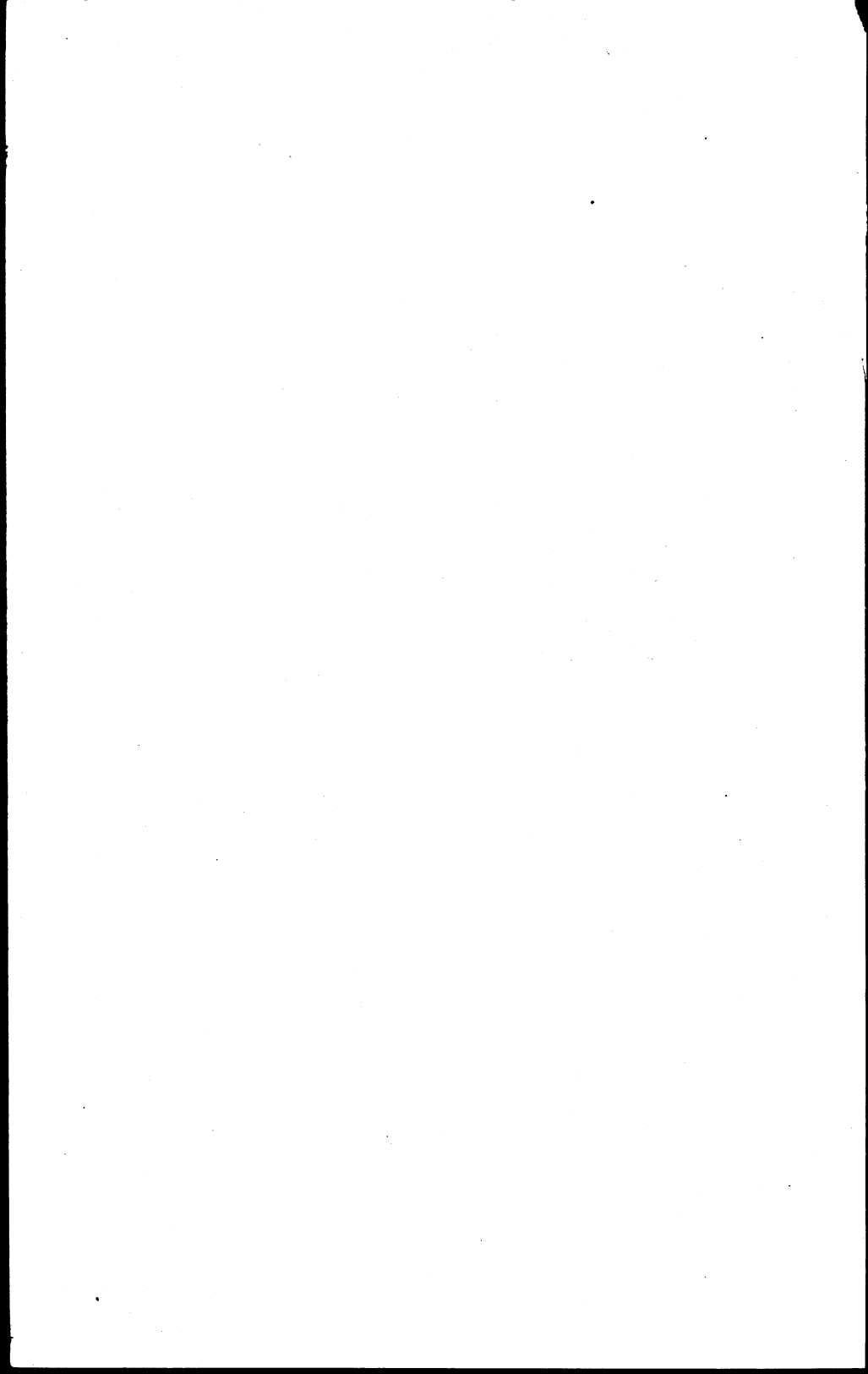
STATE.	Total amount hung up in premiums.	Horses.	Cattle.	Sheep.	Swine.	Poultry.
Illinois.....	\$27,306 00					
Distributed as follows.....		\$7,515 00	\$7,305 00	\$1,740 00	\$2,160 00	\$1,150 00
Per cent. of total.....		27.52	26.75	6.37	7.91	4.21
New York.....	\$18,091 00					
Distributed as follows.....		\$2,843 00	\$4,757 00	\$1,760 00	\$2,040 00	\$1,736 00
Per cent. of total.....		15.71	26.29	9.73	11.28	9.60
St. Louis.....	\$18,140 00					
Distributed as follows.....		\$6,315 00	\$3,650 00	\$1,860 00	\$1,300 00	\$1,104 00
Per cent. of total.....		34.81	20.12	10.25	7.11	6.31
Wisconsin.....	\$13,936 00					
Distributed as follows.....		\$3,007 00	\$4,595 00	\$1,200 00	\$1,105 00	\$797 00
Per cent. of total.....		21.58	32.97	8.61	7.93	5.73
Ohio.....	\$11,818 00					
Distributed as follows.....		\$2,722 00	\$2,900 00	\$862 00	\$848 00	\$725 00
Per cent. of total.....		23.03	24.53	7.29	7.18	6.13
Minnesota.....	\$13,953 75					
Distributed as follows.....		\$4,138 00	\$3,858 00	\$791 00	\$1,535 00	\$863 00
Per cent. of total.....		29.66	27.65	5.67	11.00	6.18
Indiana.....	\$11,645 50					
Distributed as follows.....		\$1,608 00	\$3,260 00	\$1,290 00	\$1,467 00	\$695 00
Per cent. of total.....		13.81	27.99	11.08	12.60	5.97
Iowa.....	\$16,064 00					
Distributed as follows.....		\$2,717 00	\$2,250 00	\$760 00	\$1,100 00	\$798 00
Per cent. of total.....		16.91	14.00	4.73	6.85	4.97
Nebraska.....	\$16,321 50					
Distributed as follows.....		\$2,771 00	\$3,100 00	\$929 00	\$2,274 00	\$1,290 00
Per cent. of total.....		16.97	18.99	5.69	13.93	7.90
Michigan.....	\$11,284 65					
Distributed as follows.....		\$2,500 00	\$2,864 00	\$1,523 00	\$790 00	\$535 50
Per cent. of total.....		22.15	25.38	13.50	7.00	3.75
Kansas.....	\$6,125 00					
Distributed as follows.....		\$2,315 00	\$1,025 00	\$358 00	\$534 00	\$449 00
Per cent. of total.....		37.80	16.73	5.84	8.72	7.33
Average per cent. to department.....		23.54	23.76	8.07	9.23	6.19

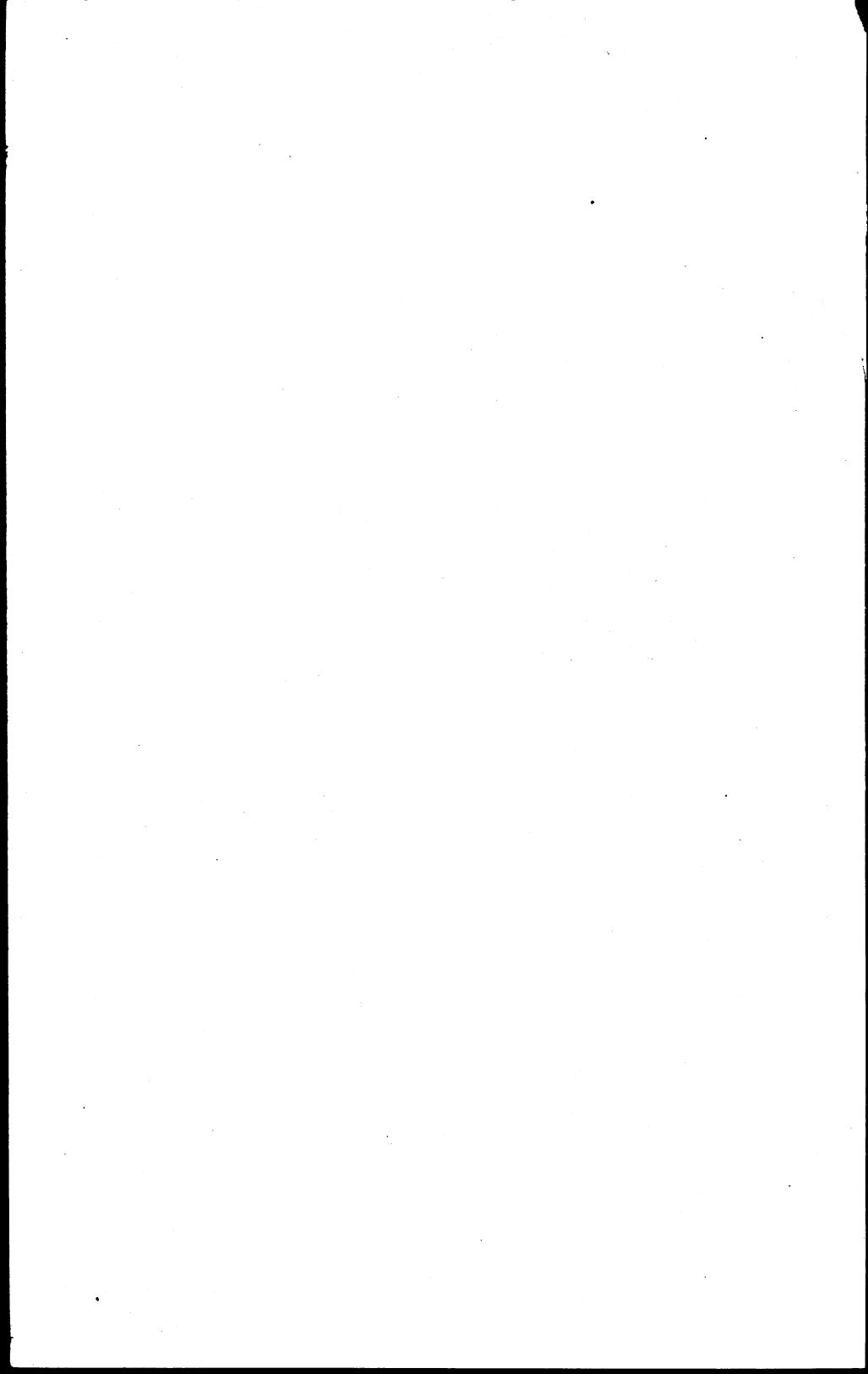
STATE FAIRS OF 1895.

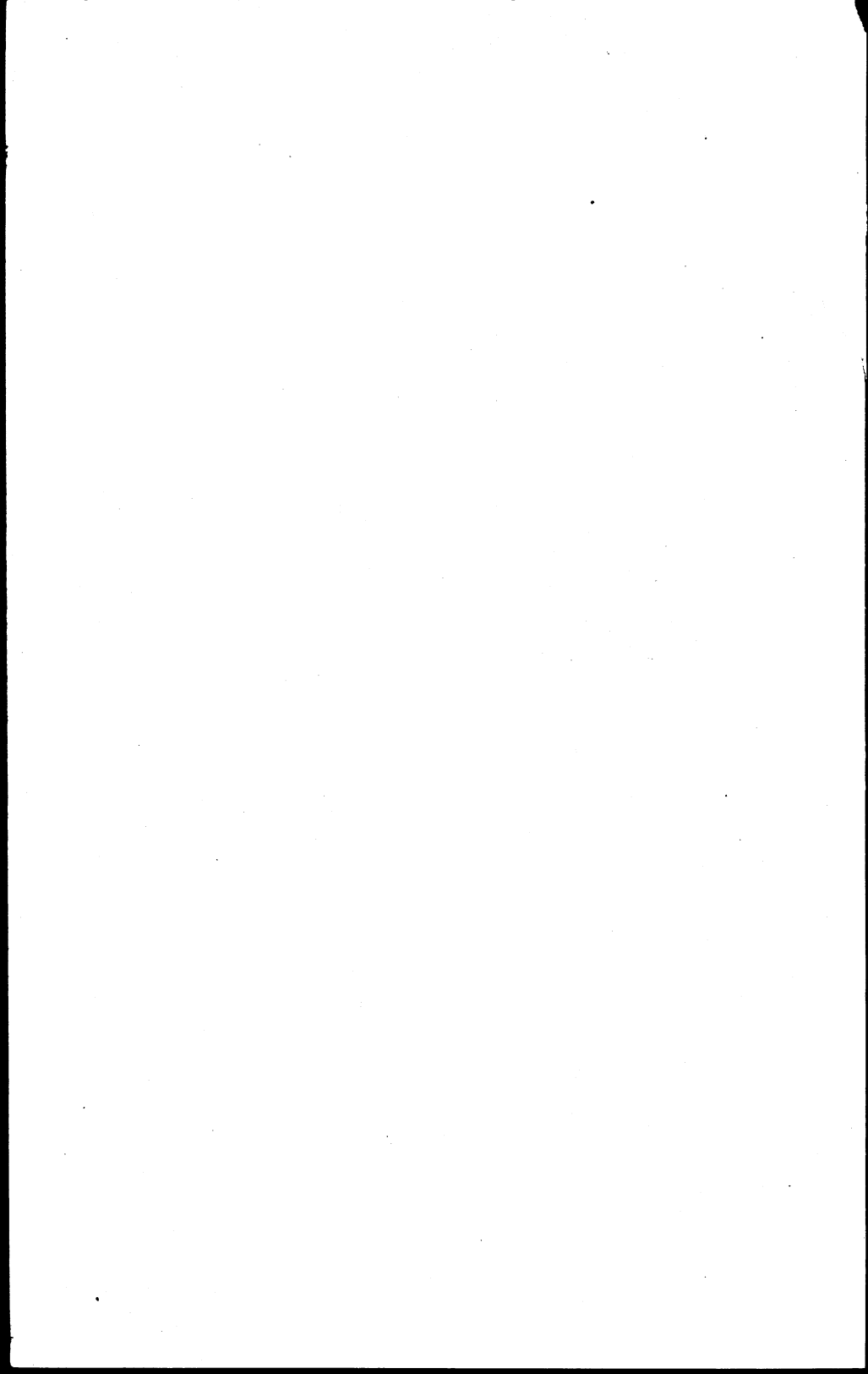
How Prize-Money was Apportioned by the eleven State Fairs belonging to the Eastern and Western Fair Managers' Association—Con.

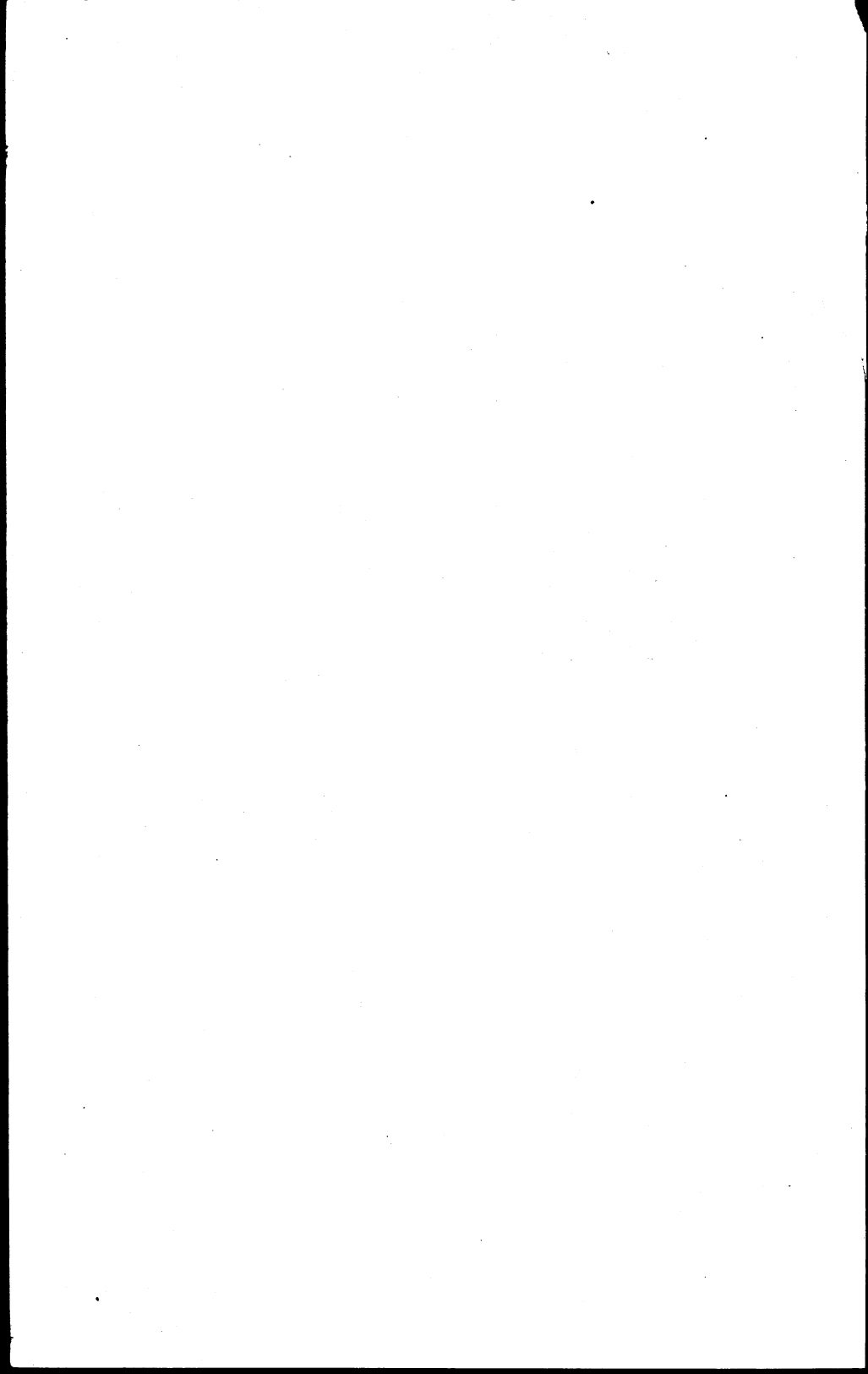
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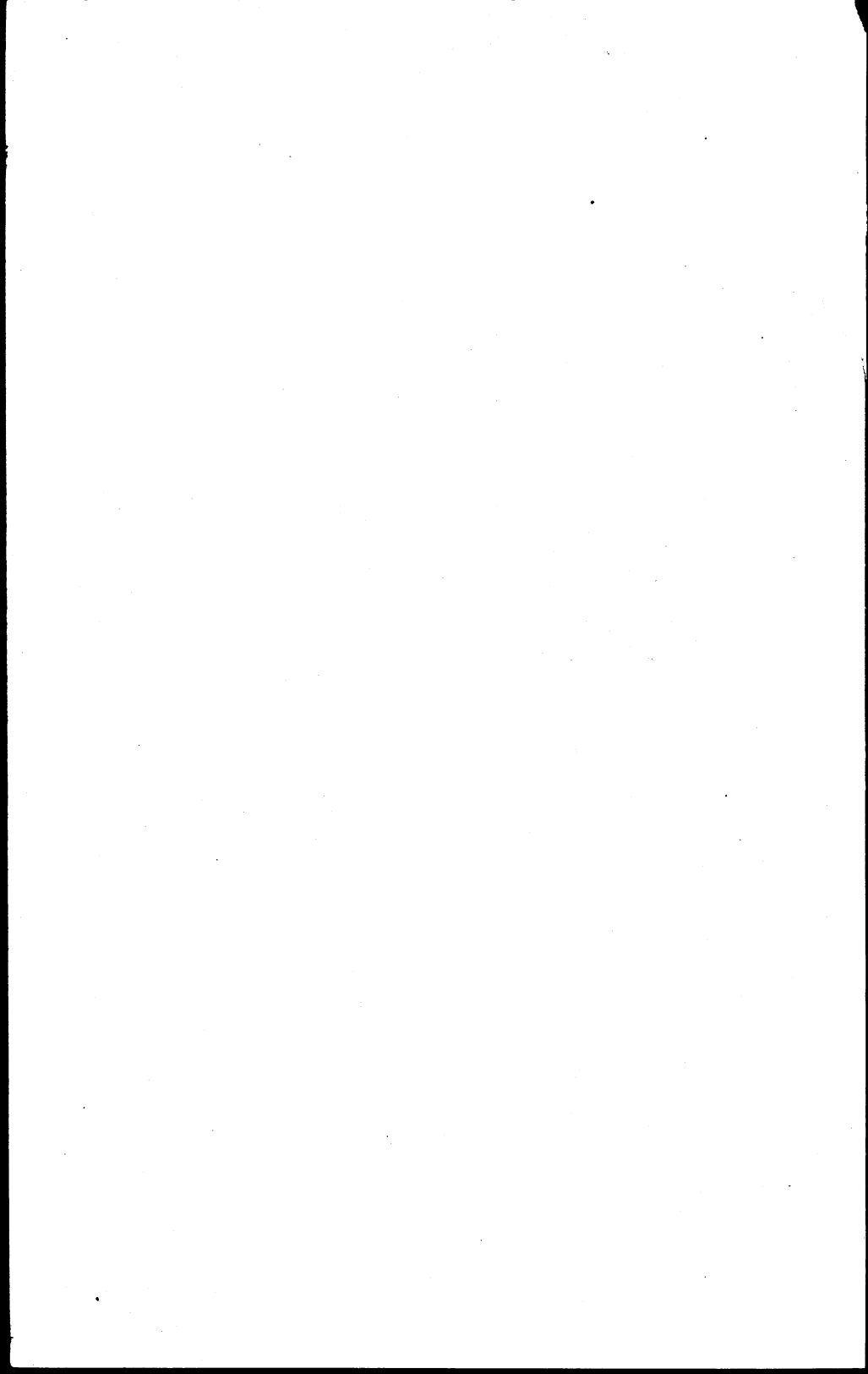
Dairy.	Agri- culture.	Fruit.	Flowers.	Apiary.	Pantry.	Woman's work and paint- ings.	Manu- facturi'g and Ma- chinery.	Educa- tional.
\$514 00 1.88	\$2,471 00 9.05	\$662 00 2.42	\$738 00 2.70	\$255 00 .93	\$426 00 1.56	\$1,511 00 5.53	.....	\$359 00 3.17
\$900 00 4.97	\$531 00 2.94	\$1,661 00 9.18	\$941 00 5.20	\$175 00 .97	\$224 00 1.24	\$523 00 2.89	.....	.....
\$175 00 .96	\$865 00 4.77	\$532 00 2.93	\$406 00 2.24	\$151 00 .83	\$464 00 2.46	\$1,120 00 6.17	\$198 00 1.04	.....
\$573 00 4.11	\$491 00 3.52	\$449 00 3.22	\$264 00 1.89	\$96 00 .69	\$172 00 1.23	\$1,187 00 8.52	.....	.....
\$56 00 .47	\$753 00 6.37	\$1,023 00 8.66	\$562 00 4.76	\$92 00 .78	\$210 00 1.78	\$1,033 00 8.74	\$32 00 .28	.....
\$463 00 3.32	\$494 50 3.54	\$558 75 4.00	\$276 00 1.98	\$250 00 1.79	\$206 00 1.48	\$472 50 3.39	\$48 00 .34	.....
\$225 00 1.93	\$485 00 4.16	\$331 50 2.85	\$685 00 5.88	\$136 00 1.17	\$163 50 1.40	\$1,299 00 11.16	.....	.....
\$720 00 4.48	\$1,083 00 6.74	\$480 00 2.99	\$413 00 2.57	\$135 00 .84	\$615 00 3.83	\$4,028 00 25.05	\$965 00 6.04	.....
\$138 00 .85	\$2,833 50 17.36	\$580 00 3.55	\$409 00 2.51	\$132 50 .81	\$155 00 .96	\$1,561 50 9.57	\$29 00 .18	\$119 00 .73
\$63 00 .56	\$379 50 3.37	\$481 40 4.27	\$353 50 3.14	\$152 00 1.35	\$140 00 1.25	\$873 75 7.75	\$329 00 6.53	.....
\$64 00 1.04	\$114 00 1.86	\$267 00 4.36	\$91 00 1.49	\$23 00 .38	\$225 00 3.67	\$610 00 9.96	\$50 00 .82
2.23	5.79	4.40	3.41	.96	1.90	8.98	1.38	.16











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