Transactions of the Wisconsin State Agricultural Society together with short-hand report of annual convention. Vol. XXXIV 1896

Wisconsin State Agricultural Society
Madison, Wisconsin: Democrat Printing Company, State Printers, 1896

https://digital.library.wisc.edu/1711.dl/7QVFZW54MPAZM83

TRANSACTIONS OF THE

WISCONSIN

State Agricultural Society

TOGETHER WITH SHORT-HAND REPORT OF
ANNUAL CONVENTION.

VOLUME XXXIV.

COMPILED BY

T. J. FLEMING, Secretary.

MADISON, WISCONSIN:
DEMOCRAT PRINTING COMPANY, STATE PRINTER,
1896.

LETTER OF TRANSMITTAL.

To his Excellency, EDWARD SCOFIELD,
Governor of the State of Wisconsin:

Have the honor of herewith transmitting to you my annual report of the Wisconsin State Agricultural Society for 1896, ending December 2d. While it is unpleasant to record a deficit in the treasury at the close of the year, it is consoling to recall and consider the conditions which brought it about. The surest index of merit for an agricultural fair is its cleanliness and amount of paid premiums. It is conceded by the highest authority that no more moral or meritorious fair was held in the United States in 1896. As shown by our published premium list we paid seven thousand dollars ($7,000.00) more in premiums than during any other year of the society, excepting 1895.

During the year large sums of money have been spent in the improvement of Art, Dairy and Poultry buildings, and in the construction of several new ones, all of which were necessary for the comfort and convenience of exhibitors. When we couple with this large outlay of money the stringency of the times, the intense excitement into which the people were thrown last fall and the unpropitious weather during fair, none of which we could control, we find ample satisfaction. With the return of prosperity and business activity we believe the Wisconsin State Fair will become the peer of any.

Very respectfully,

J. J. Fleming

Secretary.

TABLE OF CONTENTS.

WISCONSIN STATE AGRICULTURAL SOCIETY.

WISCONSIN CHEESEMAKERS' ASSOCIATION.

EXECUTIVE BOARD

OF THE

WISCONSIN STATE AGRICULTURAL SOCIETY.

S. D. HUBBARD.....MONDOVI.....*President*
T. J. FLEMING.....NORTH GREENFIELD.....*Secretary*
M. R. DOYON.....MADISON.....*Treasurer*
A. C. PARKINSON.....MADISON.....*Ex-President*

Vice Presidents.

1896.	1897.
N. D. FRATT.....Racine	CLINTON BABBITT.....Beloit
H. C. ADAMS.....Madison	R. C. VERNON.....Madison
GEO. MCKERROW.....Sussex	G. G. COX.....Mineral Point
W. A. BROWN.....Marinette	JOHN F. BURNHAM.....Milwaukee
G. G. COX.....Mineral Point	E. M. ANDERSON.....Hartford
G. G. PABST.....Milwaukee	C. E. ANGELL.....Oshkosh
C. E. ANGELL.....Oshkosh	A. J. PHILIPS.....West Salem
C. G. WILCOX.....De Pere	C. G. WILCOX.....De Pere
A. J. PHILIPS.....West Salem	ISAAC STEPHENSON.....Marinette
GEO. MARTIN.....Hudson	GEO. MARTIN.....Hudson

Additional Members.

1896.	1897.
W. A. JONES.....Oconomowoc	E. B. HEIMSTREET.....Janesville
C. L. HILL.....Rosendale	GEO. WYLIE.....Leeds
C. M. CLARK.....Whitewater	P. J. SOMERS.....Milwaukee
E. B. HEIMSTREET.....Janesville	W. A. JONES.....Oconomowoc
JOHN F. BURNHAM.....Milwaukee	W. A. JONES.....Mineral Point
A. L. VANNAMAN.....Milwaukee	A. L. VANNAMAN.....Milwaukee
E. M. ANDERSON.....Hartford	G. T. HODGES.....Monroe
GEO. WYLIE.....Leeds	ALEX. GALBRAITH.....Janesville
G. T. HODGES.....Monroe	C. M. CLARK.....Whitewater
W. A. JONES.....Mineral Point	M. F. BARTEAU.....Appleton

LIST OF MEMBERS.

Abrech, C.....Milwaukee
Ackermann, Philip.....Milwaukee
Adams, F. F.....Milwaukee
Adams, M. H.....Milwaukee
Adams, H. C.....Madison
Adler, E. D.....Milwaukee
Aitken, Elvin.....Waukesha
Allen, C. F.....Whitewater
Allen, J. W.....Janesville
Anderson, E. M.....Hartford
Anderson, Matt.....Pine Bluff
Andrus, L. E.....Milwaukee
Angell, C. E.....Oshkosh
Angell, Wm. H.....Sun Prairie
Anstedt, C.....Milwaukee
Arnold, A. A.....Galesville
Armour, P. D.....Chicago
Armstrong, L. G.....Boscobel
Asmuth, Anton.....Milwaukee
Aspinwall, D. M.....Farmington
Atkins, A. H.....Milwaukee
Atwood, R. J.....Madison
Atwood, Wm. F.....Portland, Ore.
Auer, Louis.....Milwaukee
Auerbach, S. B.....Milwaukee
Austin, Wm. H.....Milwaukee

Babbitt, Clinton.....Beloit
Babbitt, Arthur.....Beloit
Babcock, J. W.....Necedah
Bacon, E. P.....Milwaukee
Baer, John W..... .....Appleton
Bailey, A. P.....Sun Prairie
Bannen, Jas.....Milwaukee
Barlass, David.....Emerald Grove
Barnard, H. C.....Milwaukee
Barrows, E. S.....Denver, Col.
Barth, Peter.....Milwaukee
Bartlett, O. Z.....Milwaukee
Bartlett, L.....Milwaukee
Bass, Jas. W.....Milwaukee
Baumbach, C. von.....Milwaukee
Baumgaertner, H. J.....Milwaukee
Beaumont, E.....Hartland
Bechtel, Daniel.....Madison
Beck, C. A.....Milwaukee
Becker, Danforth.....Milwaukee
Becker, Edward.....Milwaukee
Becker, Washington.....Milwaukee
Becher, J. A.....Milwaukee
Beckwith, S.....Dartford
Beer, Richard.....Milwaukee
Bell, F. L.....North Greenfield
Bemis, Jervis.....Footville
Benjamin, H. M... .....Milwaukee
Bergenthal, Wm.....Milwaukee
Berninger, H. S.....Milwaukee
Best, Jr., Chas.....Milwaukee
Bigelow, F. G.....Milwaukee
Bigelow, Wm.....Milwaukee
Billings, Earl.....Madison
Bingham, J. W.....Milwaukee
Birkel, F. G.....Milwaukee
Bird, Ira W.....Madison
Bishop, J. C.....Fond du Lac
Blackstock, T. M.....Sheboygan
Black, John.....Milwaukee
Blatz, A. C.....Milwaukee
Boehme, Louis.....Milwaukee
Bonnell, James.....Milwaukee
Boomer, Elbert.....Beaver Dam
Boorse, W.....Granville
Boorse, Henry.....Granville
Boorse, J. H.....Granville
Borup, T. H.....Milwaukee
Bostwick, J. M.....Janesville
Bostwick, R. M.....Janesville
Boyd, J. G.....Milwaukee
Boyd, Francis.....Milwaukee
Boyd, R. B.....Milwaukee
Boyle, W. J.....Milwaukee
Boyle, Wm.....Milwaukee
Boynton, A. L.....Milwaukee
Bradley, Edward.....Milwaukee
Bradley, W. H.....Milwaukee
Brazee, A. C.....Milwaukee
Brand, F. C. G.....Milwaukee
Brabazon, J. R.....Delavan
Brickner, G. H.....Sheboygan Falls
Brigham, D. M.....Milwaukee

Brockway, E. P.....Milwaukee
Brown, Frank G.....Madison
Brown, Thos. H.....Milwaukee
Brown, Fremont E.....Milwaukee
Brown, Rudolph M.....Wauwatosa
Brown, J. Austin.....Chicago
Brown, W. A.....Marinette
Brown, Wm. W.....Merton
Bryden, J. A.....Milwaukee
Bryant, D. D.....Madison
Bryant, Geo. E.....Madison
Bryant, Jr., Geo. E.....Madison
Bryant, Frank H.....Madison
Bryne, John A.....Madison
Bryan, John.....Portage
Buening, Jobst H.....Milwaukee
Button, C. P.....Milwaukee
Bull, Stephen.....Racine
Bullard, S. D....Bridgewater, S. D.
Bunde, Louis W.....Milwaukee
Bunker, Geo.....Madison
Burke, J. F.....Milwaukee
Burk, B. J.....Waldo
Burroughs, Geo.....Milwaukee
Burnham, John F.....Milwaukee
Burnham, Clinton.....Milwaukee
Burnham, Miles, Bloom'g Pr., Minn.
Bush, C. S.....New Orleans, La.

Cairncross, Geo. A.....Pewaukee
Callahan, John.....Milwaukee
Campbell, Henry.....Evansville
Campbell, Vie H.....Evansville
Campbell, J. G. J.....Milwaukee
Camp, H. H.....Milwaukee
Cantwell, M. J.....Madison
Carey, Ed. A.....Fond du Lac
Carlton, W. D.....Sun Prairie
Carter, A. M.....Janesville
Carr, Nathan B.....Madison
Carr, Joseph S.....Milton
Carpenter, J. H.....Madison
Carpenter, J. E.....Windsor
Carpenter, S. D.....Carthage, Mo.
Carpenter, M.....Milwaukee
Case, Jackson I.....Racine
Casper, Wm.....Milwaukee
Casson, Henry.....Madison
Chase, Geo. H.....Milwaukee
Chase, Clifford.....Milwaukee
Chase, Clarence.....Milwaukee
Chase, Lucien D.....Milwaukee
Chapin, Chas. A.....Milwaukee
Chandler, J. C.....Madison
Chamberlain, J. N.....Beloit
Cheney, Joseph.....North Greenfield
Chipman, A.....Stoughton
Chipman, C. R.....Waunakee
Children, E.....Council Bluffs, Ia.
Clark, J. M.....Milwaukee
Clapp, G. W.....Oregon
Clapp, W. A.....Wauwatosa
Clark, J. J.....Waukesha
Clark, John H.....Madison
Clark, C. M.....Whitewater
Clough, C. E.....North Greenfield
Cochrane, John.....Waupun
Cogswell, A. W....Galesburg, Mich.
Colton, J. B.....Madison
Colman, Ed.....Fond du Lac
Colvin, W. W.....Milwaukee
Cooper, E. J.....Des Moines, Ia.
Coon, H. C.....Albion
Cook, W. H.....West Point
Coogan, M.....Milwaukee
Corrigan, J. E.....Milwaukee
Corrigan, John.....Milwaukee
Cottrill, W. H.....Appleton
Cottrill, C. M.....Milwaukee
Cox, Orson.....Indian Ford
Cox, G. G.....Mineral Point
Crawford, J. N.....Mukwonago
Cramer, John F.....Milwaukee
Craig, John A.....Madison
Crawl, John.....Center
Crilly, John J.....Milwaukee
Crossett, B. F.....Janesville
Croft, S. P.....Milwaukee
Crocker, J. T.....Chicago
Cudahy, P.....Milwaukee
Culver, Caleb E.....Shopiere
Cummings, Wm.....Randolph, Ia.
Cupple, Chas. M....North Greenfield
Cuppel, Chas.....Milwaukee
Curtis, Dexter.....Madison
Currie, James.....Milwaukee
Curtis, D. W.....Ft. Atkinson
Curtis, F. C.....Rocky Run

Dahlman, Anthony J....Milwaukee
Daly, John D.....Milwaukee
Dana, C. L.....North Greenfield
Daniells, W. W.....Madison
Daubner, G. H.....Brookfield
Davis, W.....Center
Day, F. T.....Milwaukee

De Hart, J. L....Livingston, Mont.
De Voe, A. B.....Creston, Ia.
Des Forges, Geo.....Milwaukee
Dean, E. B.....Madison
Dever, Thos. P.....Milwaukee
Dexter, Chas. J.....Milwaukee
Dexter, W. W.....Chicago
Dickerman, J. A.....Madison
Dittmar, George.....Granville
Dittmar, Henry.....West Granville
Dittmar, J. F.....Wauwatosa
Dodge, H. S.....Milwaukee
Dolan, L. B.....Milwaukee
Doolittle, W. J.....Chicago
Dore, Timothy.....Milwaukee
Dore, John S.....Fresno, Cal.
Douville, E. L.....North Greenfield
Douville, F. C.....North Greenfield
Dow, O. P.....Palmyra
Downey, W. K.....Milwaukee
Doyn, E. T.....Milwaukee
Doyon, M. R.....Madison
Drake, John R.....Milwaukee
Deunkel, Chas.....Wauwatosa
Duffy, John.....Milwaukee
Dunbar, Tom.....Milwaukee
Dunlap, Sylvester.....Token Creek
Dunlap, John M.....Wauwatosa
Durr, Emil.....Milwaukee
Durand, W. T.....Milwaukee

Eastman, John S.....Madison
Echlin, Joseph C.....Janesville
Edgerton, E. W.....Milwaukee
Ehlers, C. F.....Milwaukee
Ellis, J. A.....Madison
Ellsworth, W. J.....Madison
Ellsworth, Lem.....Milwaukee
Ellsworth, Isaac.....Milwaukee
Elliot, E.....Santa Barbara, Cal
Elmore, A. E.....Green Bay
Elmore, R. P.....Milwaukee
Eldred, John E.....Milwaukee
Everett, C. H.....Beloit

Fairbairn, R. P.....North Greenfield
Falk, Frank R.....Milwaukee
Farnsworth, J. H.....Fond du Lac
Farlow, Simeon.....Minnesota Jct.
Fenn, G. W.....Janesville
Ferguson, D.....Milwaukee
Ford, J. C.....Kansas City, Mo.
Fiebrantz, Wm. J.....Milwaukee
Field, W. W.....Odebolt, Ia.
Fifield, Edwin.....Janesville
Fifield, J. G.....Janesville
Fink, H.....Milwaukee
Finger, Jacob J.....Milwaukee
Finney, F. N.....Milwaukee
Firmin, F. H.....Findlay, Ohio
Fisher, N. D.....Florence
Fisher, C. T.....Wauwatosa
Fisher, Elijah.....Center
Fisher, S. W.....Center
Fisher, C. C.....Center
Fisher, Seth.....Center
Fitzgerald, H. J.....Chicago
Fitch, D.....Madison
Fitch, Wm. F.....Madison
Fitzgerald, R. P.....Milwaukee
Flannigan, L. W.....Marinette
Fleming, T. J.....North Greenfield
Fletcher, John.....Springfield
Flint, Wyman K.....Milwaukee
Flowers, J. M.....Oconomowoc
Foley, Jr., M. C.....Wauwatosa
Folds, Geo. H.....Sioux Falls, S. D.
Foley, Jr., John.....Milwaukee
Foote, E. A.....Footville
Foote, A. E.....Milwaukee
Ford, J. C.....Madison
Foster, C. P.....Milwaukee
Fowler, Jas. S.....Milwaukee
Fox. William.....Baraboo
Fox, A. O.....Oregon
Frank, Geo. R.....Muscoda
Fratt, N. D.....Racine
Frattinger, Peter.....Milwaukee
Freeman, C. F.....Milwaukee
Friedman Ignatious.....Milwaukee
Fricke, W. A.....Milwaukee
Fuldner, Herman.....Milwaukee
Fuller, E. M.....Madison
Fuller, M. E.....Madison

Gallagher, A. J.....Milwaukee
Galbraith, Alexander.....Janesville
Gammons, Warren.....Middleton
Ganes, John W.....Lowell
Garrett, G. W.....Milwaukee
Gartner, Andrew.....Milwaukee
Greenleaf, E. B.....Milwaukee
Geilfuss, A. B.....Milwaukee
George, John S.....Milwaukee

Gettelman, Adam.....Milwaukee
Gibbs, Chas. R.....Whitewater
Gilbert, Thomas.....Oregon
Gilman, Henry.....Sun Prairie
Gill, Thos.....Milwaukee
Gilligan, John.....Milwaukee
Goes, Geo. W.....Milwaukee
Goodrich, A. S.....Milwaukee
Goodrich, T. W.....Milwaukee
Goodrich, John R.....Milwaukee
Goodrich, Ezra.....Milton Junction
Goodnow, H. D.....Madison
Graves, J. W.....Hudson
Graves, S. W.....Rutland
Graves, R. T.....Ripon
Graf, John.....Milwaukee
Grau, A. M.....Milwaukee
Gray, Thos. S.....Minneapolis
Grant, W. J.....Milwaukee
Gregg, L. H.....North Greenfield
Green, David C.....Milwaukee
Green, N. S.....Milford
Green, Richard.....Middleton
Greenman, C. H.....Chatfield, Minn
Greulich, A. F.....Milwaukee
Grinnell, J. F.....Farmers Grove
Grover, F. B.....Rolling Prairie
Groom, John.....Milwaukee
Gross, F. C.....Milwaukee
Grogan, P. J.....Milwaukee
Grubb, W. S.....Chicago
Gurnee, J. D.....Madison
Gumz, Emil T.....Milwaukee

Hackett, Ed.....Milwaukee
Hackendahl, D.....Milwaukee
Hacker, T. L....St. Ant. Park, Minn
Hadden, Wm.....Janesville
Haight, Nicholas.....Madison
Haid, P. B.....Milwaukee
Haisler, M. J.....Milwaukee
Hallock, Youngs.....Middleton
Hall, Augustus....North Greenfield
Hall, H. P.....Boston, Mass
Hammond, E. S.....Marinette
Hammond, L. M.....Chicago
Hamilton, A. K.....Milwaukee
Hansen, Guido.....Milwaukee
Hansen, John E.....Milwaukee
Hansen, Oscar C.....Milwaukee
Hansen, Theo. L.....Milwaukee
Hanley, G. W.....Marinette
Hanley, S. V.....Milwaukee
Hanks, A. S....Station B. Milwaukee
Harris, Jas.....Janesville
Hartung, Paul.....Wauwatosa
Harding, Geo.....Waukesha
Hartmann, F. W.....Milwaukee
Harper, Samuel A.....Madison
Harkness, D. S.....Milwaukee
Hase, Henry.....Milwaukee
Hastings, S. D.....Green Bay
Hast, A. W.....Milwaukee
Hatch, Eugene.....Oakfield
Hauser, Bernard.....Milwaukee
Hausmann, Jos.....Madison
Hauxhurst, Sidney.....Milwaukee
Hawes, Jasper, T., Willow Lake, S. D
Hayes, A. J.....Milwaukee
Hazen, Chester.....Ripon
Hazelton, Geo. C., Washington, D. C.
Heimstreet, E. B.....Janesville
Helms, Christian.....Milwaukee
Helmer, A. M.....Milwaukee
Hempstead, H. N.....Kasson, Minn
Henderson, S. I.....N. Greenfield
Henderson, F. W.....N. Greenfield
Hendee, C. A.....Milwaukee
Henry, W. A.....Madison
Hesse, Fred.....Milwaukee
Heyl, Jacob.....Milwaukee
Heyn, Herman.....Milwaukee
Hicks, J. H.....Oshkosh
Higgins, C. A.....Milwaukee
Higbee, A. T.....Dodgeville
Hildebrand, And.....Oconomowoc
Hill, Chas. L.....Rosendale
Hill, J. H.....Madison
Hildebrand, Fred.....Milwaukee
Hintze, C. F. A.....Milwaukee
Hinsey, John A.....Milwaukee
Hinrichsen, H. L.....Milwaukee
Hinkley, Frank D.....Milwaukee
Hinkel, Ed.....Milwaukee
Hirsch, H.....Milwaukee
Hitt, H. D.....Oakfield
Hoard, W. D.....Ft. Atkinson
Hodges, L. F.....Milwaukee
Hodges, G. T.....Monroe
Hoff, J. J.....Milwaukee
Hoff, S. H.....Milwaukee
Hoffman, Chas. G.....Milwaukee
Hogan, Gilbert.....Elyra, O
Holland, D. A.....Milwaukee
Holstein, W. A.....Oconomowoc
Home, W. M.....Milwaukee

Hopkins, Jas.....Madison
Hopkins, B. B.....Milwaukee
Hopkins, H. C.....Oconomowoc
Hopkins, E. C.....Lockport, N. Y
Hogan, Matt.....Chicago
Hoven, Math.....Madison
Howie, D. W.....Milwaukee
Hoxie, B. S.....Evansville
Hoyt, E. D.....Wauwatosa
Hubbard, S. D.....Mondovi
Hudson, John W.....Madison
Huntley, Daniel.....Appleton
Hurlbut, E.....Oconomowoc
Hurson, G.....Milwaukee
Hustings, E. L.....Milwaukee
Hutson, J. S.....Stoughton
Hutchins, C. A.....Madison
Hume, Wm.....Oshkosh
Hyde, Edwin.....Milwaukee
Hyde, W. F.....Milwaukee

Ilsley, Chas. F.....Milwaukee
Inbush, J. H.....Milwaukee
Iverson, J. C.....Milwaukee

Jacobs, Jr., Wm.....Madison
Jackman, Hiram.....Chicago
Jeffrey, Geo.....Wauwatosa
Jenkins, J. G.....Milwaukee
Jenkins, J. C.....Janesville
Jerdee, L. P.....Madison
Jerdee, M. P.....Madison
Jones, W. A.....Mineral Point
Jones, W. A.....Oconomowoc
Jones, E. D.....Fond du Lac
Jones, John N.....Madison
Jones, C. H.....Sun Prairie
Johnson, Jos.....Hartland
Johnson, John A.....Madison
Johnson, Fred J.....Milwaukee
Johnson, H. M.....New Orleans, La
Johnston, John.....Milwaukee
Johnston, Robt. A.....Milwaukee
Johnston, W. A.....Minneapolis
Johnstone, Mrs. J. H. S.....Chicago
Josslyn, E. S.....Oshkosh
Kane, A. L.....Milwaukee
Keenan, Mathew.....Milwaukee
Kelly, Thos. L.....Milwaukee
Kelley, M. D.....North Greenfield
Kellogg, Geo. J.....Janesville
Kennedy, P. D.....Milwaukee
Keogh, Frank.....Milwaukee
Keogh, Edward.....Milwaukee
Kerin, John.....Wauwatosa
Keyes, E. W.....Madison
Kickhaefer, Aug.....Milwaukee
Kiewert, Emil.....Milwaukee
Killilea, H. J.....Milwaukee
Kimball, M. G.....Madison
Kinney, V.....Wauwatosa
Kindling, Louis.....Milwaukee
Kingsley, Geo. P.....Madison
Kipp, F. J.....Milwaukee
Kipp, B. A.....Milwaukee
Kiser, W. C.....Tetonka, S. D
Kissinger, J. P.....Milwaukee
Kiser, J. C.....Oregon
Klann, Wm.....Milwaukee
Klein, Geo.....Ft. Atkinson
Klein, P. J.....Milwaukee
Knapp, G. A.....Fond du Lac
Knapp, Wm. A.....Fond du Lac
Kneeland, James.....Milwaukee
Knight, Ed.....Myrtle, S. Dak
Knowles, Geo. P.....W. Superior
Koch, John C.....Milwaukee
Koch, H. C.....Milwaukee
Koehne, Dr., Chas.....Milwaukee
Kopmeier, John H.....Milwaukee
Kopmeier, G. J.....Milwaukee
Kraus, Fred.....Milwaukee
Krull, Rob't.....Milwaukee

Ladd, M. L.....Mendota, Ill
LeFeber, James.....Wauwatosa
Leffey, Mike.....Milwaukee
Lamb, F. J.....Madison
Lando, Julius.....Milwaukee
Landsee, C.....Milwaukee
Landauer, Max.....Milwaukee
Lapham, Henry.....Summit
Larkin, Clarence.....Oconomowoc
Larkin, B. F.....Madison
Larkin, Daniel.....Madison
Lawrie, James.....Milwaukee
Lawton, J. G.....De Pere
Larkin, Courtland P.....Milwaukee
Lazier, Ed.....Rochelle, Ill.
Learned, J. M.....Janesville
Lee, John.....Milwaukee
LeFeber, John.....N. Greenfield
Leitch, Jr., W. T.....Madison
Leidesdorf, B.....Milwaukee

Lennox, B. G.....Chicago
Lewis, Calvin E.....Milwaukee
Lindsay, E. J.....Milwaukee
Litt, Jacob.....Milwaukee
Little, Thos. H.....Janesville
Loyd, Lewis.....Cambria
Lucy, O. K.....Columbus
Ludlow, A.....Monroe
Ludington, Fred.....Wauwatosa
Luedke, H. A.....Milwaukee
Luening, A. F.....Milwaukee
Lull, Chas. R.....N. Greenfield
Lunezmann, C.....Milwaukee
Lynn, A. W.....Milwaukee

McAuliffe, J. J.....Milwaukee
McCarthy, F. D..Glen Harbor, Mich
McCoy, John.....Milwaukee
McCord, Samuel.....Milwaukee
McConnell, Wm. N.....Dartford
McConnell, L. J.....Madison
McDermott, Wm.....Fond du Lac
McDougall, A D.....Milwaukee
McDonald, John.....Fond du Lac
McDonald, A.....Alloa
McFetridge, E. C.....Beaver Dam
McGeoch, A. N.....Milwaukee
McGiveran, John T.....Green Bay
McGordon, Chas...Menomonee, Mich
McGrath, J. E.....Marinette
McHenry, M. E.....Freeport, Ill
McKenzie, D. J.....Alma
McKerrow, Geo. H.....Sussex
McKinney, H. D.....Janesville
McLaughlin, Martin.....Milwaukee
McLaughlin, J. H.....Milwaukee
McLaren, W. P.....Milwaukee
McNeil, David.....Stoughton
McNamara, M. J.....Cudahey
McPherson, J. P.....Springdale
Madden, Geo. L.....Milwaukee
Mahoney, Geo.....Milwaukee
Mann, J. H.....Troy Center
Mann, Fred M.....Milwaukee
Mann, Henry.....Milwaukee
Manegold, Jr., Chas.....Milwaukee
Manegold, A. F.....Milwaukee
Mannwaring, Wm.....Black Earth
Marshall, Samuel.....Milwaukee
Martin, Geo.....Hudson
Martin, A. C.....Ashton
Martin, J. W.....Richland City
Matchette, F. J.....Milwaukee
Matthews, A. R.....Milwaukee
Matthews, E. P.....Milwaukee
Mauer, T. C.....Milwaukee
Maxon, O. T.....S. Evanston, Ill
Maxon, Glenway.....Milwaukee
Mayer, Geo. P.....Milwaukee
Mayhew, Geo. W.....Milwaukee
Mayhew, Frank H.....Milwaukee
Meehan, P.....Milwaukee
Meehan, James.....Milwaukee
Mehl, John.....Milwaukee
Meissner, C. A.....Milwaukee
Meinecke, John.....Milwaukee
Meinecke, Jr., A.....Milwaukee
Mendell, H. M.....Milwaukee
Merrill, Alf.....Madison
Mergler, Wm.....N. Greenfield
Mertz, Edgar F.....Milwaukee
Meyer, Aug. R.....N. Greenfield
Meyer, W. H.....Milwaukee
Meyer, Dr. Wm.....Milwaukee
Meyers, Joe A.....Milwaukee
Myers, A. B.....Milwaukee
Middlemass, Archie.....Milwaukee
Millett, Chas. O.....Beloit
Millard, A. F.....Milwaukee
Miller, Chas. B.....Madison
Miller, Roswell.....Chicago
Miller, John.....Milwaukee
Miller, B. K.....Milwaukee
Miller, Jr., B. K.....Milwaukee
Miner, Cyrus.....Janesville
Miner, Geo. B.....Milwaukee
Mitchell, J. L.....Milwaukee
Mitchell, Stanley G.....Milwaukee
Mock, B.....Milwaukee
Mohr, Oscar.....Milwaukee
Mooney, R. D.....Brown Deer
Moore, B. F.....Fond du Lac
Morehouse, L. H.....Milwaukee
Morden, Edward.....Madison
Morgan, Wm. J.....Milwaukee
Morgan, Thomas.....Milwaukee
Morgan, James.....Milwaukee
Mueller, Louis J.....Milwaukee
Mueller, Oscar.....Milwaukee
Mullen, James.....Chicago
Murphy, John P.....Milwaukee
Murphy, J. W.....Milwaukee
Myers, A. B.....Milwaukee

Nash, C. D.....Milwaukee
Neacy, M.....Milwaukee

Needham, J. P.....Wauwatosa
Nelson, C. B.....Madison
Neuser, Henry.....Milwaukee
Newton, J. S.....Middleton
Newton, T. L.....Beaver Dam
Newcomb, S. B.....Cold Spring
Newcomb, C. W.....Milwaukee
Nichels, L. T.....Berlin
Nieman, L. W.....Milwaukee
Norton, J. B.....Madison
Norris, C. W.....Milwaukee
Nowell, W. A.....Milwaukee
Nunnemacher, Rob't.....Milwaukee

Oberman, Geo. J.....Milwaukee
Ogilvie, R. B.....Madison
Olcott, J. B.....Oshkosh
Olcott, John D.....Milwaukee
Oliver, Joseph B.....Milwaukee
Olney, C. W.....La Cygne, Kas.
Osborne, W. H.....Milwaukee
Otjen, C. S.....Milwaukee
Ott, Geo. V.....Lawty, Fla

Pabst, Fred.....Milwaukee
Pabst, Jr., Fred.....Milwaukee
Pabst, G. G.....Milwaukee
Paine, Cassius M.....Milwaukee
Paine, O. W.....N. Greenfield
Palmer, J. S.....Baraboo
Palmer, O. M.....Oregon
Palmer, Henry.....Verona
Palmer, E. W.....Verona
Palmer, H. L.....Milwaukee
Park, W. J.....Madison
Parkinson, A. C.....Madison
Parmley, Ira.....Center
Patten, L. F.....Janesville
Patton, Jas. E.....Milwaukee
Paul, Edward J.....Milwaukee
Paulson, Aug. A.....New Holstein
Payne, Wm. A.....Janesville
Payne, H. C.....Milwaukee
Peck, Geo. W.....Milwaukee
Peffer, Kate F.....Pewaukee
Pember, R. T.....Johnstown
Perry, B. F.....Madison
Pereles, Thos. J.....Milwaukee
Pereles, Jas. M.....Milwaukee
Petley, James.....Milwaukee
Petit, L. J.....Milwaukee
Pfister, Chas.....Milwaukee
Philips, A. J.....West Salem
Phillips, Thomas.....Milwaukee
Phillips, W. H.....Waupun
Pierce, C. L.....Milwaukee
Pierce, F. R.....Root Creek
Pierce, A. E.....Des Moines, Iowa
Pilgrim, D. T.....Wauwatosa
Pilgrim, Jr., D. T.....Wauwatosa
Pilgrim, J. H.....Wauwatosa
Pinney, S. U.....Madison
Pleiss, Aug.....Milwaukee
Plumb, J. C.....Milton
Plumb, T. D.....Madison
Plummer, B. G.....Wausau
Polzinsky, Jas.....Milwaukee
Poppert, Geo.....Milwaukee
Porth, Geo. W.....Milwaukee
Porter, Wm. H.....Marshall
Pratt, Oris.....Spring Prairie
Preusser, C.....Milwaukee
Prichard, M. E., Miss.....Janesville

Quinn, Jeremiah.....Milwaukee

Rademacher, Wm.....Milwaukee
Rand, H. H.....N. Greenfield
Raymond, S. O.....Geneva Lake
Ray, Chas.....Milwaukee
Razall, H. G.....Milwaukee
Resague, A. C.....Janesville
Reynolds, John.....Ranney
Reid, T. B.....Appleton
Richardson, D.....Middleton
Richardson, H.....Janesville
Richardson, R. J.....Janesville
Richmond, A.....Whitewater
Rich, A. W.....Milwaukee
Richards, Griffith.....Racine
Richter, Frederich.....Milwaukee
Rice, E. M.....Whitewater
Rilling, Geo. F.....N. Greenfield
Ring, M. C.....Neillsville
Roberts, C. B.....Milwaukee
Roberts, R. W.....Milwaukee
Roberts, D. M.....Milwaukee
Robinson, Chas. C.....Milwaukee
Robinson, Geo. I.....Milwaukee
Rogers, H. G.....Milwaukee
Rogers, J. S.....Burlington
Rogers, D. G.....Milwaukee
Rogers, E. E.....Milwaukee
Rogers, C. C.....Milwaukee
Rohlfing, Wm.....Milwaukee
Rose, D. S.....Milwaukee

Rosenkranz, O. L.....Milwaukee
Rosenheimer, John.....Hartford
Rowe, W. E.....Mazomanie
Rowe, Richard W.....Madison
Rucker, A. M.....Milwaukee
Rust, Julius.....N. Greenfield
Rust, Herman F.....N. Greenfield
Rust, Henry.....N. Greenfield
Rust, John L.....N. Greenfield
Ryan, T. E.....Waukesha
Ryder, James K.....Waterloo

St. John, J. W.....Janesville
Salisbury, R. W.....Paoli
Salisbury, D. F.....Oregon
Salisbury, Abraham.....Milwaukee
Sanger, Casper M.....Milwaukee
Sanborn, Jas. S.....Milwaukee
Sanderson, H. B.....Milwaukee
Saveland, John.....Milwaukee
Sawyer, H. W.....Hartford
Sawyer, James.....Milwaukee
Schoeffel, Geo. J....New York, N. Y
Schweitzer, Theo.....Milwaukee
Schweickart, Geo.....Wauwatosa
Schmidt, P. J.....Milwaukee
Schoonmaker, Harry....Wauwatosa
Schuengel, Edward M....Milwaukee
Schultz, H. F. W.....N. Greenfield
Seamans, S. H.....Milwaukee
Seaver, J. E.....Darien
Seefeld, H. F.....Milwaukee
Seville, Jas.....Lodi
Sexton, Wm. F.....Milwaukee
Shaw, Chas. H.....Wauwatosa
Shackman, L. A.....Milwaukee
Shannon, P.....Milwaukee
Sherman, Amaziah.....Janesville
Shea, Edward.....Milwaukee
Sheldon, A. H.....Janesville
Sheldon, S. L.....Madison
Shipman, S. V.....Chicago
Sholes, Chas.....Milwaukee
Sieben, John.....Milwaukee
Simpson, E. B.....Milwaukee
Simonds, Wm. L.....Milwaukee
Simons, C. J.....Monroe
Simonson, Andrew.....Racine
Skiles, G. W.....Milwaukee
Skinner, Geo. J.....Sioux Falls, S. D
Skinner, E. W.....Sioux City, Ia
Sloan, I. C.....Janesville
Smith, A. E.....Milwaukee
Smith, Angus.....Milwaukee
Smith, Winfield.....Boston
Smith, E. C.....Markesan
Smith. J. M.....Janesville
Smith, S. B.....Verona
Smith, A. A. L.....Milwaukee
Snell, H.....Madison
Snyder, E. A.....Menominee Falls
Snyder, Fred.....Milwaukee
Somers, Thos. F.....Milwaukee
Somers, Peter J.....Milwaukee
Spaulding, D. J...Black River Falls
Sprecher, John.....Madison
Specht, J. A.....Milwaukee
Spencer, John C.....Milwaukee
Spencer, James C.....Milwaukee
Spencer, R. C.....Milwaukee
Spiegel, A.....Milwaukee
Sprinkmann, Fred.....Milwaukee
Squire, Thomas B.....Waterloo
Stark, Edward J.....Milwaukee
Stark, Chas. G.....Milwaukee
Starke, Conrad.....Milwaukee
Stapleton, J. A.....Milwaukee
Stafford, H. H.....Milwaukee
Stickney, J. S.....Wauwatosa
Steensland, H.....Madison
Stelloh, Henry.....Root Creek
Stelloh, Geo.....Root Creek
Steele, Chester.....Milwaukee
Stephenson, F. M.....Marinette
Stephenson, I.....Marinette
Stephenson, I.....Menomonie
Sterzinger, Joseph.....N. Greenfield
Stevens, B. J.....Madison
Steinmueller, F.....Milwaukee
Stickney, Chas.....Wauwatosa
Stilson, Adelbert.....Oshkosh
Stilson, Edgar.....Oshkosh
Stone, G.....Beloit
Stone, Jesse.....Watertown
Stone, T. H.....Milwaukee
Storm, Wm.....Madison
Stowe, LaFayette....Spirit Lake, Ia
Stoltz, H. L.....Milwaukee
Stockman, John....Milton Junction
Stelper, Chas.....Milwaukee
Sutton, J. J.....Columbus
Sutherland, C.....Madison
Surles, W. H.....Milwaukee
Swan, O. J.....Wauwatosa
Swan, N. J.....Wauwatosa
Swan, E. A.....Wauwatosa

Swain, W. W.....Madison
Sweet, B.....Milwaukee
Tainter, L. S.....Menomonie
Tanner, A. L.....N. Greenfield
Taylor, E. T.....Mukwonago
Taylor, Wm. R.....Cottage Grove
Taylor, H. A.....Madison
Taylor, John G.....Chebanse, Ill
Tenney, H. A.....Madison
Tenney, Samuel A.....Hartland
Tenney, D. K.....Chicago
Terwilliger, Jas.....Madison
Terwilliger, Sid.....Madison
Thayer, M. A.....Sparta
Theurer, Fred. J.....Milwaukee
Thompson, H. M.....Mosinee
Thorsen, John.....Milwaukee
Thomas, W. H.....Pewaukee
Thomas, E. P.....Milwaukee
Tibbits, Geo. M.....Milwaukee
Todd, J. G.....Santa Cruz, Cal.
Tolford, J. W.....Neillsville
Tower, O. R.....N. Greenfield
Townley, John.....Moundville
Tratt, F. W.....Whitewater
Treat, Geo. E.....Milwaukee
Treat, R. B.....Chicago
Trowbridge, W. E.....Milwaukee
Trowbridge, Henry.....Milwaukee
True, J. M.....Baraboo
Tucker, Joseph F.....Chicago
Turner, W. J.....Milwaukee
Tuttle, A. G.....Baraboo
Tweedy, Jr., J. H.....Milwaukee
Twining, M. S.....Monroe

Uehling, Otto C.....Milwaukee
Uihlein, Alfred.....Milwaukee
Uihlein, Henry.....Milwaukee
Uihlein, Aug.....Milwaukee
Usher, Ellis.....La Crosse

Van Brunt, W. A.....Horicon
Van Cott, Albert B.....Madison
Van Etta, Jacob.....Madison
Van Norman, G. B.....Milwaukee
Van Orden, J.....Baraboo
Van Ryn, H. J.....Milwaukee
Van Slyke, N. B.....Madison
Vance, Frank L.....Milwaukee
Vance, David.....Milwaukee
Vannaman, A. L.....Milwaukee
Vaughn, A. W.....Lodi
Vernon, Ralph C.....Madison
Vilas, Wm. F.....Madison
Vilas, Chas. H.....Chicago
Vogel, Aug. H.....Milwaukee

Wackerhagen, E.....Racine
Wagner, Julius G.....Milwaukee
Walsh, Michael.....Milwaukee
Wall, E. C.....Milwaukee
Waller, Frank E.....Milwaukee
Walken, F. W.....Milwaukee
Walker, W. A.....Milwaukee
Warren, J. H.....Albany
Warren, J. D.....Wauwatosa
Webster, S. R.....Danville
Wehr, Henry J.....Milwaukee
Weiner, Jacob.....Milwaukee
Weigel, August.....Milwaukee
Welch, Wm.....Milwaukee
Wellauer, Jacob.....Milwaukee
Weston, John.....Burnett
West, Henry.....Verona
West, Walter A.....Elkhorn
West, Julian.....Paynesville
Wettenkamp, Fred.....Wauwatosa
Whaling, J. M.....Waukesha
Wheelock, W. G.....Janesville
Wheelwright, Jesse.....Middleton
Wheeler, L. A.....Milwaukee
Wheeler, Geo. F.....Waupun
Wheeler, J. M.....Wauwatosa
Wheeler, Guy.....Janesville
Whitcombe, H. F.....Milwaukee
Wicks, Thomas.....Chicago
Wightman, H.....Denver, Col
Wilcox, C. G.....De Pere
Wilcox, C. T.....Janesville
Wilkins, A. W.....Superior
Wilkin, T. S.....Milwaukee
Wilson, William.....Wausau
Williams, Chas. H.....Baraboo
Williams, D.....Darien
Williams, S. B.....Madison
Williams, Daniel.....Summit
Wiley, O. S.....Chicago
Wollager, F.....Milwaukee
Wolf, W. H.....Milwaukee
Wolcott, H.....Milwaukee
Wootton, Robert.....Madison
Wood, J. W.....Baraboo

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

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 subjects; 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 OF 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 exhibtion 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 tne rooms on the north side of the west wing of the capitol, to-wit: The rooms just made vacant by the removalofthe 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 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 Soceity.

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 envelops 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 intoxicating 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 381, 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 con-

tingency and shall before acceptance, be approved as to form and execution by said commissioners. And said 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 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 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 of 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 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 insecured 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. McFetridge 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 provisisons 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 the 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 commissioner 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.

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 Miwaukee 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.

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 sceretary, 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 Scienes, 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 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.

AMENDMENTS.

The following amendment was passed at the annual meeting, 1896:

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."

BY-LAWS.

SECTION I.

OF OFFICERS.

The officers of the Society shall, *ex officio*, fill the corresponding offices of 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 ag-

ricultural 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 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 of 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.

MADISON, WIS., DEC. 2, 1896.

To Hon. Executive Board Wisconsin State Agricultural Society:

Your treasurer begs leave to make the following report for the current year ending Dec. 2d, 1896.

The total amount of money in my hands during the year turned over by the secretary was $34,040.67, received from the folowing sources:

Balance on hand from 1895	$4,238 95
Sale of admission tickets	16,879 80
Rent from Jockey club ($500 on 1895 acct.)	2,500 00
Entries and stall rent	1,946 50
Concessions	1,631 00
Life memberships	360 00
State appropriation (special tax)	3,000 00
Ten per cent. on paid premiums	2,554 10
Miscellaneous sources	1,930 32
	$34,040 67

M. R. DOYON,
Treas.

SECRETARY'S WARRANT ACCOUNT, 1896.

No.	To whom and for what paid.	Amount.
735	Mrs. A. Kingsley, premiums, 1895, dep't L	$ 2 00
736	Anna C. Brady, premiums, 1895, dep't L	2 00
737	Arthur Babbitt, salary, Nov., 1895	83 33
738	T. J. Fleming, salary, Nov. 1895	150 00
739	W. U. Tel. Co., telegrams	13 35
740	Geo. Martin, attending Dec., 1895, board meeting	19 00
741	James O'Brien, settlement of personal injury claim	200 00
742	Agnes L. Morrissy, work on preparation of catalogue	45 00
743	Douville Bros., sundries, per bill rendered	14 08
744	Cream City Bill Posting Co., bill posting	356 73
745	Postal Tel. Cable Co., telegrams	1 01
746	National Exchange Bank, grand stand tickets, J. M. W. Jones	61 25
747	J. H. Yewdale & Sons Co., printing ribbons and tickets, 1895	284 65
748	Boynton and Taylor Lumber Co., lumber, per bill rendered	86 74
749	S. D. Hubbard, expenses at Chicago meeting	40 00
750	Robert Philips, work on grounds, Dec	30 00
751	T. J. Fleming, expenses at Chicago meeting	30 00
752	John S. Cant, delegate, Marquette Co., 1895	15 00
753	Void	
754	Void	
755	Void	
756	E. J. West, bill posting, fair of 1895	2 50
757	Arthur Babbitt, salary, Dec., 1895	83 33
758	T. J. Fleming, salary, Dec., 1895	150 00
759	John Mulligan, labor, removal of grain exhibit	1 00
760	J. B. McPherson, labor, removal of grain exhibit	1 00
761	F. Wallace, labor, removal of grain exhibit	1 00
762	Adam Klehm & Son, hardware for buildings	6 06
763	John Pritzlaff & Co., cross cut saw	2 40
764	Chicago Horseman, advertising, speed dep't, 1895	54 16
765	Robert Philip, work on grounds	30 00
766	Mrs. A. Kingsley, bal. due on premiums, 1895	3 00
767	Mark H. West, premiums in dep't F, 1895	17 00
768	Geo. Acker, premiums in dep't F, 1895	4 00
769	Mike Carney, premiums in dep't F, 1895	1 00
770	J. M. Bemis, premiums in dep't F, 1895	2 00
771	T. J. Fleming, salary, Jan., 1896	150 00
772	Arthur Babbitt, salary, Jan., 1896	83 33
773	Nase, Kraus & Koken, cloth banners, advertising, 1895	25 00
774	Geo. Wylie, attending Feb. board meeting	7 15
775	C. M. Clark, attending Feb. board meeting	6 50
776	E. M. Anderson, attending Feb. board meeting	10 35
777	G. G. Cox, attending Feb. board meeting	9 00
778	A. L. Vannaman, attending Feb. board meeting	9 00
779	Geo. Martin, attending Feb. board meeting	13 48
780	G. T. Hodges, attending Feb. board meeting	12 40
781	N. D. Fratt, attending Dec. and Feb. board meetings	25 87
782	S. D. Hubbard, attending Dec. and Feb. board meetings	22 50
783	E. B. Heimstreet, attending Feb. board meeting	4 40
784	Thos. Convey, attending Feb. meeting	3 00
785	Robert Philip, work on grounds	30 00
786	T. J. Fleming, salary, Feb., 1896	150 00
787	Arthur Babbitt, salary, Feb., 1896	83 33
788	T. P. Fitzsimmons, transportation, per bill rendered	20 00
789	Steve Mayer, delegate, Washington Co., 1895	12 00
790	Kate L. Sabin, speaker at Feb. convention	6 00
791	Otto Doerner, speaker at Feb. convention	6 13

No.	To whom and for what paid.	Amount.
792	M. F. Barteau, delegate, Outagamie Co., 1895	14 00
793	George McKerrow, speaker at Feb. convention	5 00
794	Chas. Duenkel, taxes on fair grounds, 1895	42 39
795	Arthur N. McGeogh, team and sprinkler, fair of 1895	7 25
796	The Citizen Co., advertising, 1895	7 50
797	H. J. Noyes, cheese lost at fair, 1895	16 90
798	Robert Plisch, delegate, Marathon Co., 1895	20 00
799	C. Hennecke Co., loan of table, 1895, dep't L	3 00
800	S. D. Hubbard, visiting grounds	12 00
801	A. J. Philips, attending Feb. board meeting	6 88
802	O. W. Paine, overpaid stall rent	5 00
803	Adams Stamp and Stencil Co., stars and punches	28 00
804	Arthur Babbitt, salary, March, 1896	83 33
805	T. J. Fleming, salary, March, 1896	150 00
806	Robert Philip, work on grounds	30 00
807	Blain W. Taylor, post route map	2 50
808	W. U. Tel. Co., telegrams	3 00
809	J. E. Keane, payment of draft, advertising, Horseman	18 76
810	Arthur Babbitt, salary, April, 1896	83 33
811	T. J. Fleming, salary, April, 1896	150 00
812	Henry Reiner, hay for packing grain exhibit	9 90
813	J. F. Burnham, attending Feb board meeting	6 50
814	C. G. Wilcox, attending Feb. board meeting	17 40
815	Columbia Publishing Co., advertising	5 00
816	Mrs. James Templeton, judge, 1895, dep't H	12 00
817	T. J. Fleming, salary, May, 1896	150 00
818	Arthur Babbitt, salary, May, 1896	83 33
819	Robert Phillip, labor and team work in April and May	100 00
820	M. H. Adams, Treas., grading Cottril Ave	200 00
821	Geo. Martin, visiting grounds, grain exhibit	28 19
822	T. J. Fleming, salary, June, 1896	150 00
823	Arthur Babbitt, salary, June, 1896	83 33
824	C. W. Jarvis, hauling grain exhibit to depot	7 25
825	Quinn & Co., life members' tickets	30 00
826	Milwaukee Publishing Co., advertising, 1895	20 00
827	Ida Herfurth, reporting convention and bal. due, 1895	140 00
828	E. J. Keane, telegrams	3 35
829	T. J. Fleming, salary, July, 1895	150 00
830	A. Babbitt, salary, July, 1896	83 33
831	P. H. Murphy, new tank and repairs on water works	180 13
832	Robt. Philip, work, June and July	60 00
833	Post Pub. Co., advertising matter	350 00
834	Void	
835	M. Laffey, advertising	50 00
836	S. D. Hubbard, visit to grounds	30 00
837	E. J. Keane, freight and telegrams	9 14
838	W. H. Birthwrong, cleaning up grounds	12 75
839	W. U. Tel. Co., telegrams	72
840	M. J. Mooney, cleaning up grounds	18 00
841	Martin Birg, 24 days labor on grounds	36 00
842	Ruben Brown, five days labor on grounds	7 50
843	Albert Abbott, cleaning up grounds	37 50
844	Chas. Hoffman, expenses in advertising fair	50 00
845	Doegler & Kirsten, sprinkler	145 00
846	Gus Nebo, repairing flags	10 00
847	Henry Baldwick, lumber	50 00
848	D. McGrath, labor on grounds	10 50
849	J. E. Fuller, labor on grounds	11 25
850	John Fleming, labor on grounds	9 00
851	Martin Burr, labor on grounds	10 50

No.	To whom and for what paid.	Amount.
852	M. J. Mooney, labor on grounds	8 85
853	M. Schultz, labor on grounds	9 75
854	D. Gaffney, labor on grounds	6 00
855	J. W. Proctor, labor on grounds	9 75
856	Tom Eagan, labor on grounds	8 70
857	J. Mayer, labor on grounds	8 78
858	Al Abbott, labor on grounds	8 85
859	G. Nebo, labor on grounds	5 25
860	A. Ferdinand, labor on grounds	8 25
861	R. Fitzgerald, labor on grounds	7 50
862	P. J. McDonald, labor on grounds	6 75
863	M. Casey, labor on grounds	9 45
864	P. Nickol, labor on grounds	8 25
865	Fred Barneko, labor on grounds	8 25
866	Reuben Brown, labor on grounds	9 00
867	S. C. Young, labor on grounds	7 35
868	John Schlehim, labor on grounds	8 75
869	John Shanley, labor on grounds	7 35
870	J. Fogarty, labor on grounds	6 45
871	F. C. Billings, labor on grounds	3 00
872	Chas. McMullen, bill posting, Boscobel	75
873	Arthur Babbitt, salary, August, 1896	83 33
874	F. W. Walker, carpenter work on grounds	7 00
875	R. C. Bush, work in office	10 00
876	Wisconsin Agriculturist Co., advertising	175 00
877	C. Hoffman, advertising	50 00
878	J. O'Keefe, work laying water pipes	5 00
879	A. W. Boerth, rebate on commutation supply ticket	3 30
880	A. Huffman, rebate on commutation supply ticket	3 10
881	John L. Hamme, rebate on commutation supply ticket	1 00
882	J. Graf, rebate on commutation supply ticket	3 50
883	A. Rosenthal, rebate on commutation supply ticket	3 80
884	C. F. Nobles, rebate on commutation supply ticket	3 70
885	F. P. Adler, rebate on commutation supply tickcet	3 10
886	J. S. Eastman, billing Milwaukee	48 00
887	Arthur Babbitt, salary, September, 1896	83 33
888	H. A. Chase, work in office	25 00
889	Frank Davis, labor on grounds	5 75
890	Wm. Davis, labor on buildings	48 75
891	W. W. Chadwick, supt. dairy dep't	60 00
892	W. M. Forseman, freight, C. & N. W. R. R	5 94
893	Kittie Ryan, 39 days work in office	87 75
894	Frances Somers, 36 days, stenographer	90 00
895	Louis Graven, rebate on commutation supply ticket	3 20
896	Boynton & Taylor Lumber Co., lumber	625 30
897	J. E. Fuller, labor on grounds	24 75
898	L. A. Jansen, sup't in poultry dep't	45 00
899	H. Skinner, painting buildings	52 00
900	John Skinner, painting buildings	24 00
901	Spratts Patent Limited, food for dogs, dep't M	60 00
902	W. Kirby, work, dep't M	9 00
903	H. B. Hamilton, work, dep't M	8 00
904	H. Stemin, work, dep't M	12 00
905	Wm. Stalkenberg, work, dep't M	12 00
906	R. Crab, six days work in dep't M	12 00
907	J. J. O'Brien, six days work in dep't M	12 00
908	R. Graf, six days work in dep't M	12 00
909	J. D. Olcott, supt. dep't M	60 00
910	J. D. Olcott, constructing benches, dep't M	22 00
911	P. I. De Gelleke, six days work in dep't M	12 00

No.	To whom and for what paid.	Amount.
912	Christ. Bach, music during fair	162 00
913	Am. Express Co., draft, E. G. Roberts, prems. dep't E	112 50
914	Bunde & Upmeyer, bicycle prizes	130 50
915	Geo. Stelloh, wire and labor	57 05
916	M. Schmidt, engine at fair	30 00
917	Cream City Cycle Co., premium cycle meet	4 00
918	D. W. Howie, coal	14 13
919	E. H. Schwaiger, sundries, as per bill	4 89
920	Cream City Cycle Co., bicycle prize	8 00
921	Quinn Stationery Co., mdse., per bill	2 70
922	Metal Sign and Eng. Co., cuts and drawings	27 95
923	Chauncy Simonds Co., bicycle prize, suit	12 00
924	Globe Ticket Co., grand stand tickets and reels	23 00
925	W. U. Tel. Co., telegrams	5 35
926	Edwin Sheftels, work at fair	3 50
927	M. R. Doyon, salary and expenses	115 00
928	A. LeFeber, coal	11 71
929	A. LeFeber, feed, forage dep't	148 50
930	S. V. Hanley, plumbing	38 22
931	Wm. Millard, rent of Lincoln Hall	15 00
932	Breeders Gazette, advertising	30 00
933	J. Rowland Jones, Jr., expenses in transfer of bicycles	50 00
934	E. M. Anderson, supt. machinery dep't	75 00
935	Fred Rheingans, work on grounds	3 75
936	G. F. Rilling, carpenter work on grounds	10 00
937	J. W. Proctor, work on grounds	8 00
938	A. Hanley, work on grounds	5 00
939	A. Priester, work on grounds	10 50
940	H. T. Kent, work on grounds	10 50
941	John Meyer, work on grounds	6 60
942	J. Terensky, work on grounds	9 97
943	G. C. Young, work on grounds	9 75
944	C. Kent, work on grounds	4 95
945	P. Nickel, work on grounds	7 95
946	J. M. Culey, work on grounds	4 35
947	Louis Daubner, work on grounds	6 75
948	J. Connel, work on grounds	7 20
949	J. Mews, work on grounds	3 60
950	J. Vots, work on grounds	3 33
951	T. A. Spoleder, work on grounds	4 90
952	S. H. Hunt, work on grounds	3 15
953	C. Eckstein, work on grounds	4 90
954	B. Bergman, work on grounds	5 78
955	Chas. Hormel, distributing speed programs	2 00
956	B. Grintger, work on grounds	32 73
957	John Schlenhem, work on grounds	24 27
958	Frank Davis, work on grounds	16 50
959	Art. Hanley, work on grounds	17 50
960	M. E. Woodworth, 3rd money in 2-13 pace	50 00
961	Walter Palmer, 2nd money in 2-13 pace	100 00
962	J. L. Cameron, 2nd money in 2-27 trot	100 00
963	C. A. Niles, 1st money in 2-22 pace	200 00
964	Parker Bros., 1st money in 2-27 class trot	150 00
965	Wm. Kirkpatrick, 4th money in 2-16 trot	25 00
966	Chas Eaton, 2nd money in 2-22 trot	100 00
967	E. C. Brown, 1st money in 2-22 trot	225 00
968	Oakland Stock Farm, 2nd money in free for all pace	100 00
969	L. G. Brown, 3rd money in 2-22 trot	50 00
970	Darnall Farm, 2nd money in 2-22 pace	100 00
971	Parker Bros., 2nd money in free for all pace	150 00

No.	To whom and for what paid.	Amount.
972	H. Jassen, 1st money in 2-35 pace	225 00
973	J. O. Garrity, 1st money 2-45, 3rd 2-27, 1st 2-17, and 4th in 2-22	450 00
974	A. Brand, 3rd money in free for all pace	50 00
975	D. B. Kenehan, 3rd money in 2-22 pace	50 00
976	Darnall Farm, entry in 2-29 class off	25 00
977	J. L. Cameron, 1st money in 3-yr-old pace	225 00
978	Geo Brown, 2nd money in 3-yr., 4th in free for all	125 00
979	Jas. McKone, 4th money 2-27 trot and 2-22 pace	50 00
980	A. W. McElroy, starting judge	75 00
981	Chas. Vose, attraction, Happy Jack	200 00
982	T. J. Dunbar, 4th money 3-yr. pace, 2nd 2-35, 1st 2-16 trot	450 00
983	Marshall's Dep't., police during fair	332 10
984	John Lobbs, 3rd money in 2-17 pace	50 00
985	Sid. Terwilliger, gate keeper at grand stand	8 00
986	Walter Cummings, money advanced on Sulphide winnings	15 00
987	E. B. Roys, 2nd money in 2-16 trot	75 00
988	L. Warren, rebate on overpaid entry, speed dep't	5 00
989	Walter Cummings, bal. of 1st money in 2-13 pace	135 00
990	Coy & Manchester, 3rd money in 2-35 pace	50 00
991	C. A. Cchurjer, 3rd money in 2-16 trot	20 00
992	W. M. Workman, ass't speed dep't	27 54
993	Max Schinug, flagman and gate, speed dep't	6 00
994	C. G. Wilcox, supt, speed dep't	91 54
995	A. V. Bishop, judge, dep't G	11 00
996	L. Laiten, ass't., dep't I	27 50
997	E. B. Heimstreet, expenses of art dep't	171 [illegible]
998	Sam Taylor, grand stand	21 00
999	C. C. Deits, work during fair	12 00
1000	Geo. Martin, sup't., dep't F	56 70
1001	C. H. Sunderland, ass't., dep't F	30 87
1002	C. M. Clark, sup't., dep't C	45 50
1003	M. R. Doyon, ticket sellers	287 25
1004	T. J. Duffy, hitching teams	10 00
1005	D. J. Dufffy, hitching teams	10 00
1006	Philip P. Lee, handling catalogues	8 00
1007	M. Mahoney, watchman	7 50
1008	T. Truss, attendant, toilet room	12 00
1009	Anna Dorse, attendant, toilet room	12 00
1010	R. J. Boylan, prizes in bicycle races	173 75
1011	J. Curry, prizes in bicycle races	65 00
1012	A. F. Bingenheimer, prizes in bicycle races	25 00
1013	W. C. Sanger, prizes in bicycle races	150 00
1014	A. J. Weilep, prizes in bicycle races	15 00
1015	H. A. Zerbel, prizes in bicycle races	50 00
1016	D. O. Gaffney, work on grounds	16 00
1017	G. Nebo, caring for flags and labor	7 50
1018	Mary E. Chadwick, work as clerk in office	63 00
1019	Walter C. Sanger, special purse	100 00
1020	J. W. Proctor, work on grounds	11 50
1021	M. Casey, work on buildings	14 25
1022	A. McMath, work on buildings	12 75
1023	L. L. Collins, carpenter work on grounds	36 50
1024	F. G. Collins, carpenter work on grounds	37 63
1025	John Barneko, labor on grounds, man and team	24 50
1026	John Barneko, work with engine	30 00
1027	S. D. Hubbard, 59,770 lbs hay @ $8.00	239 00
1028	G. Schweickhart, Jr., rebate on commutation supply ticket	5 90
1029	J. D. Bowes, meals for police and rebate on com. sup. ticket	17 55
1030	C. Pierner, carpenter work on grounds	28 00
1031	H. Prust, work on barns	25 50

No.	To whom and for what paid.	Amount.
1032	G. T. Hodges, sup't., dep't B	61 50
1033	W. W. Hodges, ass't sup't, dep't B	31 25
1034	R. B. Watrous, press work	60 00
1035	G. G. Cox, sup't, dep't A	71 70
1036	G. Rilling, carpenter work on grounds	43 72
1037	S. H. Kneass, hanging posters in Milwaukee	15 00
1038	M. Burr, labor on grounds	19 50
1039	M. Schultz, labor on grounds	23 85
1040	R. C. Bush, office work and privilege dep't	65 00
1041	P. Nickel, work on grounds	5 25
1042	F. Crandall, work in office	9 00
1043	F. Barneko, work on grounds	3 75
1044	J. O'Keefe, engineer and laying water pipes	37 00
1045	T. Lyon, engineer and laying water pipes	37 00
1046	L. H. Gregg, meat for dep't M and rebate on com. sup. ticket	8 73
1047	R. Quade, attendant, dep't M	12 00
1048	E. C. House, attendant, dep't M	12 00
1049	A. Cook, rebate on merry go round	25 00
1050	J. E. Keane, freight and telegrams	25 61
1051	A. Hanley, special watchman	10 00
1052	John Mayer, special watchman	10 00
1053	T. Driscoll, attending water pipes	10 00
1054	J. W. Hodgins, work during fair	2 00
1055	R. Fitzgerald, watching on grounds	8 00
1056	J. F. Murphy, work on grounds	6 00
1057	C. Goodman, work in office	15 00
1058	Elizabeth Ensey, work in office	33 00
1059	Louise Duke, work in office	45 00
1060	Bell Kayser, work in office	36 00
1061	Robert Philip, work, Aug. and Sept	60 00
1062	W. D. Lavender, work in office	26 00
1063	Chas. Hoffman, advertising	26 00
1064	Void	
1065	Hughes Bros. and Rundell, premiums	54 00
1066	W. A. Jones, premiums	103 00
1067	C. A. Thomas, premiums	70 00
1068	F. Wilcox, judge, dep't F	11 00
1069	J. A. Countryman, judge, dep't D	34 69
1070	Rose Fernekes, judge, dep't L	15 00
1071	Palmer and Noblet, premiums	148 00
1072	John A. Craig, judge, dep't C	35 00
1073	A. Galbraith, judge, dep't A	35 00
1074	G. Howard Davison, premiums	83 00
1075	G. W. Trone, premiums	124 00
1076	A. Choquette, premiums	4 00
1077	C. C. Hendee, premiums	46 00
1078	Oakwood Kennels, premiums	18 00
1079	F. W. Walker, ticket taker	8 00
1080	A. Kaad, carting cots from city	2 00
1081	C. F. Kletzech Co., rent for cots	2 50
1082	F. L. Whitten, premiums	8 00
1083	K. B. Obermann, premiums	5 00
1084	A. Rammell, ticket taker	8 00
1085	G. Zachriasen, ticket taker	8 00
1086	Rust Bros., premiums	217 00
1087	John F. Burnham, Supt. of gates	30 00
1088	M. Pruist, gateman	10 00
1089	A. McMath, gateman	10 00
1090	C. Inglis, gateman	11 00
1091	J. Fleming, gateman	8 00

No.	To w om and for what paid.	Amount.
1092	T. Dwight, gateman	10 00
1093	A. Wilson, gateman	2 00
1094	C. Butler, gateman	10 00
1095	F. Olwell, gateman	10 00
1096	Wm. Siner, gateman	10 00
1097	R. R. Barlow, gateman	10 00
1098	J. Zeeh, gateman	8 00
1099	Geo. Gifford, Jr., ass't sup't, Dept. K	60 50
1100	O. Klein, gateman	10 00
1101	L. Preuner, gateman	10 00
1102	J. Fleming, gateman	2 00
1103	C. Johnson, gateman	10 00
1104	A. J. Philips, sup't., dep't. H	85 00
1105	W. J. Phillips, watchman, Dept. H	18 00
1106	Robt. Currie, ass't sup't, Dept. H	21 00
1107	Wm. Putnam, bill posting at Marshfield	90
1108	Void	
1109	T. McCabe, bill posting at Mineral Point	1 20
1110	M. L. Smith, bill posting at Darlington	1 62
1111	Sauk Co. Bill Posting Co., bill posting at Baraboo	2 58
1112	Ray Brett, bill posting at Ft. Atkinson	1 92
1113	John Sykes, bill posting at Milton Junction	60
1114	J. J. Disch, bill posting at Kenosha	4 40
1115	C. E. Davis, bill posting at Lake Mills	1 98
1116	Jacob Dietrich, bill posting at Cedarburg	1 08
1117	C. Osterer, bill posting at Cedarburg	75
1118	Wm. Davis, bill posting at Winneconne	1 47
1119	B. Button, bill posting at Elkhorn	2 13
1120	Alfred S. Boyles, bill posting at Sun Prairie	60
1121	G. C. Kirst, bill posting at Two Rivers	2 94
1122	E. A. Hartman, bill posting at Manitowoc	6 60
1123	J. D. Lawe, bill posting at Kaukauna	1 80
1124	P. B. Haber, bill posting at Fond du Lac	7 20
1125	Void	
1126	W. C. Tiede, bill posting in Racine	11 76
1127	E. J. Kempf, bill posting in Sheboygan Co	19 35
1128	E. L. Ross, bill posting at Delavan	1 05
1129	Chas. Fiala, bill posting at Kewaunee	2 58
1130	G. B. Phelps, bill posting at Whitewater	2 94
1131	H. R. Fosbinder, bill posting at Mauston	1 32
1132	A. Erickson and Co., bill posting at La Crosse	4 50
1133	C. A. Norton, bill posting at Merrill	1 20
1134	Cad. F. Mevis, bill posting at Waukesha	4 92
1135	E. E. Stoltzman, bill posting at Rhinelander	1 20
1136	J. S. Campbell, bill posting at Clinton	1 47
1137	J. L. Manville, bill posting at Edgerton	1 83
1138	Stang Bros., bill posting at Burlington	2 13
1139	Ed. Bullis, bill posting at Kilbourn City	60
1140	A. W. Rumsey, bill posting at Centralia	75
1141	T. Cordingley, bill posting at Platteville	2 94
1142	J. E. Williams, bill posting at Oshkosh	11 70
1143	D. J. Hotchkiss, bill posting at Fox Lake	60
1144	Ben. Hilgendorf, bill posting at Mazomanie	90
1145	C. A. Griffith, bill posting at Berlin	2 94
1146	G. Burdick, bill posting at Lake Geneva	1 05
1147	A. J. Clark, bill posting at Chippewa Falls	3 00
1148	G. Wulfing, bill posting at Richland Center	90
1149	M. A. Reinarz, bill posting at Sauk City	1 32
1150	G. Winkel, bill posting at Clintonville	75
1151	A. R. Hume, bill posting at Clinton	60
1152	M. Puerner, bill posting at Jefferson	1 62

No.	To whom and for what paid.	Amount.
1153	Owen O. Jones, bill posting at Dodgeville	90
1154	Not in	
1155	Wm. Harris, bill posting at Ripon	2 97
1156	J. W. Laube, bill posting at Brodhead	1 47
1157	F. L. Warren, bill posting at Albany	60
1158	Chas. McMillen, bill posting at Boscobel	75
1159	S. H. H. Barnhart, bill posting at Appleton	8 94
1160	P. N. Reid, bill posting at Lancaster	1 47
1161	A. H. Carnegie, bill posting at Portage and vicinity	4 80
1162	F. W. Payne, bill posting at Monroe	3 66
1163	Wm. Lanning, bill posting at Stoughton	1 62
1164	J. W. Reamer, bill posting at Waterloo	60
1165	Chas. Long, bill posting at La Valle	60
1166	Palmer and Olson, bill posting at Oconomowoc	2 58
1167	H. W. Hamilton, bill posting at Evansville	2 19
1168	E. Doestader, bill posting at Janesville	6 30
1169	R. H. Wilson, bill posting at Beloit	3 00
1170	E. T. Frank, bill posting at Princeton	90
1171	F. G. Preston, bill posting at Black River Falls	90
1172	I. S. Lodders, bill posting at Lodi	60
1173	T. A. McCollom, bill posting at Juneau	60
1174	Alfred Dunbar, bill posting at Sparta	2 16
1175	L. J. Williams, bill posting at Viroqua	75
1176	Not in	
1177	J. A. Risker, bill posting at Shullsburg	75
1178	D. Brainard, bill posting in Prairie du Chien	1 20
1179	Chas. H. Thompson, bill posting at Union Grove	1 32
1180	H. D. Tenney, work in office	12 00
1181	M. Laffey, advertising and office work	75 00
1182	S. M. Tibbits, painting	29 25
1183	R. B. Ogilvie, judge in Dept. B	25 00
1184	South Mil. Journal, advertising	10 00
1185	John Curley, 3 days work during fair	4 50
1186	Elliott and Hickox, attys., payment of Cold Spring tax	3,000 00
1187	Not in	
1188	F. P. Black, bill posting at Evansville	1 44
1189	Emily Sharpe, premiums	3 00
1190	Mrs. J. L. Wilcox, premiums	2 00
1191	Mattie Foote, premiums	2 00
1192	C. Schley, premiums	4 00
1193	C. W. Jarvis, draying	6 50
1194	John McGeen, premiums	90 00
1195	Wm. Foresman, freight, C. & N. W. R. R.	5 53
1196	John Mans, premiums	75 00
1197	P. Devroy, bill posting at De Pere	1 08
1198	Geo. W. Evans, bill posting at Watertown	5 52
1199	J. E. Fuller, taking up water pipes	10 50
1200	Arthur Babbitt, salary, Oct., 1896	83 33
1201	R. Philip, work on grounds, Oct	30 00
1202	T. J. Fleming, 36 days team work on grounds	81 00
1203	T. J. Fleming, salary, Aug., 1896	150 00
1204	Lewis Helwig & Co., embossing premium ribbons	64 30
1205	John McShane, work during fair	8 00
1206	E. Godager, work during fair	6 00
1207	Chas. Liebenthal, blacksmithing	20 37
1208	T. McCall, delegate, Monroe Co	17 18
1209	Goodwin and Judy, premiums	200 00
1211	W. C. Waite, premiums	9 00
1210	J. Jackson, premiums	16 00
1212	M. W. Reed, premiums	39 00
1213	F. R. Westrope and Son, premiums	64 00

No.	To whom and for what paid.	Amount.
1214	R. S. Kingman, premiums	156 00
1215	T. Clark, premiums	207 00
1216	G. C. Hill and Son, premiums	171 00
1217	G. S. Redhead, premiums	84 00
1218	W. B. Barney & Co., premiums	120 00
1219	T. H. Scribner, premiums	142 00
1220	Wm. Vaughn, premiums	50 00
1221	F. Tschudy, premiums	46 00
1222	C. G. Robinson, premiums	54 00
1223	G. Ineichen, premiums	57 00
1224	C. T. Hill, premiums	26 00
1225	J. Gordon, premiums	22 00
1226	Wm. Roberts and Son, premiums	56 00
1227	E. J. Ryan, delegate, Pepin Co	30 00
1228	A. Barber, premiums	141 00
1229	W. A. Campbell, assist. in Dept. D	4 00
1230	H. A. Briggs, premiums	220 00
1231	E. W. Monnier, premiums	19 00
1232	J. M. Taylor, judge, Dept. M	75 00
1233	J. M. True, delegate, Sauk Co	11 08
1234	J. J. Ewing & Son, premiums	150 00
1235	Void	
1236	W. H. Terpening, delegate, Pierce Co	24 10
1237	A. R. Virgin, judge, Dept. F	15 00
1238	H. A. Briggs, premiums	15 00
1239	J. W. Martin, premiums	202 00
1240	Ed. Finn, premiums	60 00
1241	T. H. Inmann, premiums	208 00
1242	M. B. Millard, 2d money in 2:45 trot	100 00
1243	M. Hayes, 4th money in 2:35 pace	25 00
1244	A. T. Gamber, premiums	55 00
1245	R. J. and W. J. Munce, premiums	126 00
1246	O. E. Lincoln & Sons, premiums	77 00
1247	C. C. Minor, judge, Dept. L	17 00
1248	Fred. Pabst, Jr., premiums	80 00
1249	R. B. Ogilvie, premiums	220 00
1250	O. Walter and Bro., premiums	45 00
1251	A. A. Bates, premiums	28 00
1252	McLay Bros., premiums	15 00
1253	R. E. Haeger, judge, Dept. E	30 50
1254	Heylland Farm, premiums	360 00
1255	G. Richards, judge, Dept. A	5 00
1256	Geo. Cheatle, premiums	15 00
1257	G. Vaughn, premiums	68 00
1258	J. N. Chamberlain, premiums	11 00
1259	W. D. Richardson, premiums	75 00
1260	George McKerrow, premiums	312 00
1261	H. Jessen, premiums	10 00
1262	S. Breese & Son, premiums	35 00
1263	J. J. Finger, premiums	12 00
1264	Fred. Soper, premiums	118 00
1265	Metcalf Bros., premiums	170 00
1266	Hornig Bros., premiums	25 00
1267	F. Pierce, premiums	10 00
1268	E. B. Thomas and Son, premiums	90 00
1269	Hadden, Scott and Mouat, premiums	115 00
1270	C. F. Eickstedt, premiums	22 00
1271	N. M. Jewell, premiums	33 00
1272	D. Bradfute and Son, premiums	106 00
1273	E. Reynolds and Son, premiums	88 00

No.	To whom and for what paid.	Amount.
1274	F. E. Bone, premiums	38 00
1275	J. M. Brewster, delegate, Walworth Co	10 50
1276	James Scott, delegate Rock Co	11 10
1277	Not in	
1278	Bascom and McMurray, premiums	113 00
1279	G. Harding & Son, premiums	164 00
1280	R. Miller, premiums	90 00
1281	D. Schreiter, delegate La Fayette Co	16 70
1282	H. S. Weil, delegate Iowa Co	17 66
1283	Bascom and McMurray, premiums	65 00
1284	Heylland Farm, premiums	75 00
1285	R. P. Ogilvie, premiums	15 00
1286	H. S. Day, premiums	66 00
1287	G. E. Kelley, premiums	53 00
1288	Alta Kennels, premiums	85 00
1289	F. R. Smock, delegate Green Co	9 15
1290	T. A. Howard, premiums	75 00
1291	H. Vose, premiums	8 00
1292	J. Deane, delegate Outagamie Co	18 52
1293	F. H. Meekin, premiums	123 00
1294	J. Milton, premiums	88 00
1295	C. Rountree, premiums	53 00
1296	Bridges and Guilliams, premiums	57 00
1297	R. Miller, judge in Dept. A	5 00
1298	J. J. Williams, premiums	6 00
1299	C. Rountree, premiums	5 00
1300	E. B. True, asst. Dept. A	31 60
1301	J. B. Hawkins, delegate Iowa Co	13 80
1302	W. W. Alexander, delegate Vernon Co	18 00
1303	G. Klein, premiums	377 00
1304	Void	
1305	T. A. Howard, premiums	20 00
1306	K. Bjurman, premiums	87 00
1307	H. R. Cowan, premiums	15 00
1308	W. W. Kirby, premiums	5 00
1309	J. H. Beirne, premiums	40 00
1310	B. F. Lewis, premiums	235 00
1311	G. F. Davis & Co., premiums	71 00
1312	J. Holth, premiums	20 00
1313	O. W. Paine, premiums	57 00
1314	W. A. Hoyt, premiums	8 00
1315	John Carey, delegate B. Prairie Agr. Soc	18 79
1316	G. Bain, delegate Portage Co	14 00
1317	J. M. Bemis, delegate Langlade Co	23 80
1318	B. F. Lewis, premiums	28 00
1319	J. Callahan, premiums	75 00
1320	H. F. Brown, premiums	178 00
1321	F. Kuhlig, premiums	30 00
1322	J. Reinhardt, premiums	5 00
1323	W. D. Harper, Jr., premiums	25 00
1324	Wm. Loeffler, premiums	3 00
1325	C. Meyer, delegate Kewaunee Co	18 86
1326	J. Bishop, delegate Douglas Co	35 74
1327	J. S. Hall, judge, Dept. F	24 68
1328	H. P. West, premiums	153 00
1329	Alta Kennels, premiums	10 00
1330	M. H. West, premiums	12 00
1331	F. W. Tratt, premiums	90 00
1332	F. W. Tratt, premiums	33 00
1333	C. Lawrence, judge in Dept. D	15 00

No.	To whom and for what paid.	Amount.
1334	G. Wylie, supt. Dept. D	45 00
1335	H. Curtis, sign painting and time board	9 00
1336	J. S. Harris, judging Dept. F	10 00
1337	J. Meisenheimer, premiums	50 00
1338	F. T. Hilgard, premiums	38 00
1339	H. Dose, premiums	5 00
1340	D. Hausherr, premiums	25 00
1341	J. H. Frey, ticket taker	8 00
1342	Void	
1343	A. Thorn, premiums	5 00
1344	C. P. Dougherty, gateman	8 00
1345	F. C. Marks, gateman	8 00
1346	Robt. Joos, judge, Dept. E	35 00
1347	D. Alt, gateman	8 00
1348	M. Harris, premiums	15 00
1349	R. J. McGeehan, delegate Brown Co	10 54
1350	Void	
1351	A. Cook, premiums	10 00
1352	F. Kuhlig, premiums	10 00
1353	H. Hoyt, premiums	13 25
1354	F. W. Ruff, delegate Price Co	26 20
1355	F. Prasbrig, helper Dept. E	12 00
1356	J. C. Brown, carpenter, Dept. E	20 50
1357	F. Duenker, watchman, Dept. E	10 00
1358	M. Carey, gateman	10 00
1359	O. F. Meade, helper, Dept. B	10 00
1360	J. McDonald, gateman	10 00
1361	S. H. Knease, gateman	8 00
1362	M. Michels, premiums	40 00
1363	Pewaukee Creamery Co., premiums	20 00
1364	Sunny Peak Farm, premiums	30 00
1365	Not in	
1366	H. J. Noyes, premiums	30 00
1367	P. Ammon, premiums	30 00
1368	O. Luchsinger & Co., premiums	75 00
1369	H. Bilgrien, premiums	35 00
1370	A. Lindback, premiums	35 00
1371	Louis Vanderveen, premiums	15 00
1372	T. J. Warner, premiums	10 00
1373	J. A. Brunner, premiums	35 00
1374	Classen & Classen, premiums	10 00
1375	F. C. Curtis, premiums	25 00
1376	Mrs. Wm. Peffer, premiums	20 00
1377	D. J. Evans, premiums	10 00
1378	C. L. Fitch, premiums	5 00
1379	H. A. Taylor, premiums	20 00
1380	B. A. Oestreich, premiums	15 00
1381	A. E. Dempsey, premiums	15 00
1382	Burwood Farm, premiums	10 00
1383	Mrs. C. Thorp, premiums	5 00
1384	C. Linse, premiums	3 00
1385	G. Hodges, premiums	35 00
1386	W. Nisbet, premiums	15 00
1387	H. E. Austin, premiums	8 00
1388	W. Nisbet, premiums	35 00
1389	O. Freund, premiums	20 00
1390	H. E. Beyer, premiums	15 00
1391	Wm. Zwicky, premiums	25 00
1392	W. J. Kohl, premiums	20 00
1393	F. D. Widder, premiums	5 00

No.	To whom and for what paid.	Amount.
1394	B. A. Oestreich, premiums	10 00
1395	J. Wohld, premiums	25 00
1396	F. Sette, premiums	10 00
1397	K. M. Amman, premiums	5 00
1398	E. H. Farrington, asst. Dept. G	25 85
1399	Mrs. B. Hayman, premiums	10 00
1400	John Farber, premiums	5 00
1401	A. T. Cunningham, premiums	5 00
1402	Black Hawk Kennels, premiums	3 00
1403	B. Gregory, premiums	8 00
1404	N. Heidenreich, premiums	5 00
1405	J. Graham, premiums	5 00
1406	Worth Kennels, premiums	10 00
1407	H. G. Myer, premiums	5 00
1408	L. Steffin, premiums	10 00
1409	C. Spelleberg, premiums	13 00
1410	J. Wallace Wakem, premiums	3 00
1411	H. F. Lachman, premiums	3 00
1412	B. S. Horne, premiums	3 00
1413	M. E. Sorge, premiums	10 00
1414	L. Gross, premiums	10 00
1415	T. Palmer, premiums	10 00
1416	R. W. Holmes, premiums	5 00
1417	Mary H. Boynton, premiums	10 00
1418	J. H. Green, premiums	5 00
1419	B. F. Bellach, premiums	8 00
1420	G. J. Kellogg, premiums	30 00
1421	G. Jeffrey, premiums	48 00
1422	R. Ramsey, premiums	30 50
1423	L. L. Olds, premiums	40 00
1424	Mrs. C. H. Root, premiums	44 00
1425	C. Hirschinger, premiums	44 50
1426	Wm. Toole, premiums	7 00
1427	F. H. Chapple, premiums	42 00
1428	J. W. Porter, premiums	33 00
1429	T. Fountaine, premiums	122 00
1430	J. M. Dunlap, premiums	59 00
1431	Wm. Fox, premiums	11 50
1431	Wm. Fox, premiums	71 50
1432	A. G. Tuttle, premiums	27 50
1433	E. Nye, premiums	19 50
1434	H. Tarrant, premiums	29 00
1435	P. Jeske, premiums	36 00
1436	E. Jeske, premiums	12 50
1437	J. Korn, premiums	6 50
1438	Asa D. Barnes, premiums	10 00
1439	Not in	
1440	G. A. Perry, premiums	12 00
1441	J. Zette, premiums	13 00
1442	Mr. von Cotzhausen, premiums	7 50
1443	G. W. Ringrose, premiums	1 00
1444	Currie Bros. premiums	66 00
1445	E. B. Thomas & Son, premiums	5 50
1446	Mrs. W. E. Killops, premiums	16 00
1447	John Grape, premiums	21 00
1448	Dr. Leonard, rebate on com. sup. ticket	4 10
1449	Wm. Prietz, rebate on com. sup. ticket	3 20
1450	J. H. Pitcher, rebate on com. sup. ticket	6 00
1451	J. C. Brown, premiums	12 00
1452	C. Eckstein, premiums	1 00

No.	To whom and for what paid.	Amount.
1453	F. C. Zacher, premiums	5 00
1454	Robison & Koch, premiums	3 00
1455	C. W. Robison, premiums	1 00
1456	R. Neumann, premiums	5 00
1457	L. A. Jansen, premiums	39 00
1458	H. J. Baumgaertner, premiums	2 00
1459	H. F. Jansen, premiums	8 00
1460	Ed. Fueger, premiums	2 50
1461	Wm. A. Bartlett, premiums	119 50
1462	J. R. Brabazon, premiums	161 00
1463	G. C. Prescott, premiums	1 00
1464	J. J. Bean, premiums	6 00
1465	Geo. T. Reid, premiums	13 50
1466	Mrs. J. F. Wegge, premiums	13 00
1467	Milward Bros., premiums	6 00
1468	A. E. Ross, premiums	5 00
1469	Geo. Cook, premiums	1 00
1470	W. A. Daggett, premiums	6 00
1471	Yorgey, & Rich, premiums	10 50
1472	S. D. Seymour, premiums	1 50
1473	W. J. Harper, premiums	1 00
1474	Frank Mathison, premiums	13 00
1475	C. F. Chamberlain, premiums	14 00
1476	Wm. Korb, premiums	26 00
1477	A. Prasbrig, premiums	18 00
1478	D. M. G. Harper, premiums	9 00
1479	Dobberphul & Luebke, premiums	4 00
1480	J. H. Whitman, premiums	7 00
1481	C. Williamson, premiums	27 00
1482	Not in	
1483	C. A. Brown, premiums	4 00
1484	R. Bahlke, premiums	3 00
1485	E. Ochsner, premiums	17 00
1486	J. H. Pilgrim, premiums	109 00
1487	Mrs. J. H. Pilgrim, premiums	1 00
1488	Robert Pilgrim, premiums	15 00
1489	D. T. Pilgrim, premiums	3 00
1490	Frank Whitehead, premium	12 00
1491	W. F. Pilgrim, premiums	37 00
1492	Mrs. V. Kinney, premiums	2 00
1493	V. Kinney, premiums	3 00
1494	Mrs. W. A. Clapp, premiums	9 00
1495	Frank Mayer, premiums	7 00
1496	F. W. Ruff, premiums	62 00
1497	Pete Pommer, premiums	52 00
1498	Warren H. Barber, premiums	5 00
1499	Mrs. John Haus, premiums	8 00
1500	W. W. Thompson & Sons, premiums	38 00
1501	A. L. Greengo, premiums	24 00
1502	H. P. West, premiums	92 00
1503	C. G. Robinson, premiums	8 00
1504	Mrs. Burton G. Ingersoll, premiums	51 00
1505	Edward T. Clarkson, premiums	3 00
1506	E. A. Perry, premiums	6 00
1507	Fraser Bros, premiums	10 00
1508	M. C. Foley, premiums	16 00
1509	John R. Ingersoll, premiums	11 00
1510	Lee West, premiums	8 00
1511	Not in	
1512	Mrs. A. P. Stafford, premiums	13 00

No.	To whom and for what paid.	Amount.
1513	Not in	
1514	Emily Schwartz, Premiums	1 00
1515	Not in	
1516	Esther H. Noble, premiums	8 00
1517	Mrs. Elon Munger, premiums	13 00
1518	J. Michelstetter, premiums	1 00
1519	Emma C. Shafer, premiums	4 00
1520	Not in	
1521	Frank E. Swan, premiums	2 00
1522	Mrs. C. T. Jeffery, premiums	2 00
1523	Mrs. J. F. Holman, premiums	4 00
1524	Mrs. D. T. Pilgrim, premiums	1 00
1525	Mrs. A. Le Feber, premiums	1 00
1526	Frank Whitehead, premiums	1 00
1527	Emma Ritter, premiums	9 00
1528	Mrs. Geo. Jeffrey, premiums	7 00
1529	Miss Helen Rhodes, premiums	3 00
1530	Nevada Hawley, premiums	3 00
1531	P. Hammersmith, premiums	17 00
1532	Martha Platitz, premiums	29 00
1533	Hattie . Thompson, premiums	7 00
1534	Mrs. A. E. Rich, premiums	42 00
1535	Mrs. Mary Hyde, premiums	18 00
1536	Clara Wehr, premiums	8 00
1537	Mrs. Harriet M. Carr, premiums	4 00
1538	Arthur Beacher, premiums	5 00
1539	Mrs. John Nicholson, premiums	14 00
1540	Taplin & Kroes, premiums	30 00
1541	C. A. Carlson, premiums	2 00
1542	Minnie Grenel, premiums	1 00
1543	Ida Hinkel, premiums	7 00
1544	Mrs. J. M. Chenoweth, premiums	36 00
1545	Fred. S. Thompson, premiums	10 50
1546	Mrs. E. J. Wagner, premiums	6 00
1547	Mrs. E. Westphal, premiums	5 00
1548	Mrs. J. D. Dawson, premiums	12 00
1549	Edward M. Tyrrell, premiums	7 00
1550	Not in.	
1551	Mrs. J. A. Cunningham, premiums	4 00
1552	Mrs. Martha Showalter, premiums	5 00
1553	Mrs. J. L. Wilcox, premiums	2 00
1554	Mrs. Geo. Jeffrey, premiums	7 00
1555	Vivian Mowry, premiums	7 00
1556	Lee West, premiums	5 00
1557	Mrs. J. D. Gilbert, premiums	5 00
1558	John P. Felsecker, premiums	3 00
1559	H. P. West, premiums	3 00
1560	E. B. Thomas & Son, premiums	3 00
1561	Miss Nellie Manchester, premiums	14 00
1562	Mrs. J. G. Kestol, premiums	21 00
1563	Mrs. L. Reinhard, premiums	24 00
1564	Mrs. G. E. Talbert, premiums	8 00
1565	Mrs. J. Dick, premiums	12 00
1566	Anna C. Brady, premiums	11 00
1567	Miss Julia Weinberg, premiums	13 00
1568	Miss Jenny Kayser, premiums	18 00
1569	Mrs. J. A. Chadwick, premiums	6 00
1570	Minnie Schuerbrock, premiums	6 00
1571	Mrs. M. A. Dann, premiums	1 00

No.	To whom and for what paid.	Amount.
1572	Mrs. F. W. Tratt, premiums	9 00
1573	Mrs. H. G. Tuttle, premiums	7 00
1574	Mrs. Joseph H. Ball, premiums	3 00
1575	Minnie Grenel, premiums	2 00
1576	Clara Scharfe, premiums	5 00
1577	Carrie Barrwald, premiums	11 00
1578	Mrs. James Manchester, premiums	6 00
1579	Mrs. J. H. Hanson, premiums	6 00
1580	A. M. Madden, premiums	1 00
1581	Miss Emily Shape, premiums	23 00
1582	Not in.	
1583	Mrs. C. Schley, premiums	3 00
1584	Mrs. Wm. Sweeney, premiums	3 00
1585	Miss J. Hahm, premiums	9 00
1586	Miss Johanna Rhode, premiums	1 00
1587	Miss Cora Kestol, premiums	2 00
1588	C. D. Boettecher, premiums	1 00
1589	Mrs. T. P. Leonard, premiums	5 00
1590	Mrs. O. Pratt, premiums	75 00
1591	Mrs. L. M. Buell, premiums	69 00
1592	Hattie Foote, premiums	14 00
1593	Henry Hess, premiums	3 00
1594	Carl Reimann, premiums	95 00
1595	T. B. Modrakowski, premiums	10 00
1596	Miss Lucy Whitney, premiums	16 00
1597	Anna E. Pierce, premiums	10 00
1598	Lenora H. Cawker, premiums	5 00
1599	Lizzie A. Harris, premiums	6 00
1600	Mrs. B. O. Nobles, premiums	3 00
1601	Mrs. A. B. Chamberlain, premiums	8 00
1602	Elsie Rumelin, premiums	3 00
1603	Frank T. Johnson, premiums	11 00
1604	Geo. M. Neidecken, premiums	21 00
1605	H. W. Buemming, premiums	8 00
1606	Anna Reiter, premiums	3 00
1607	Mrs. P. P. Camp, premiums	2 00
1608	Miss Hattie Hess, premiums	24 00
1609	Not in.	
1610	Geo. Klein, premiums	25 00
1611	Mrs. Henry Fisher, premiums	2 00
1612	E. G. Roberts, premiums	120 00
1613	Mrs. E. W. Johnston, premiums	2 00
1614	Yorgey & Rich, premiums	1 50
1615	Mrs. Burton G. Ingersoll, premiums	3 00
1616	James Conlin, draying	1 00
1617	Mrs. James Templeton, judge, Dept. L	10 80
1618	John Haus, premiums	43 00
1619	F. E. Swan, premiums	15 00
1620	Mrs. T. P. Leonard, premiums	2 00
1621	J. E. Van Duser, rebate on entry fee	2 00
1622	Julius Berg, rebate on entry fee	2 00
1623	Emily Schwartz, premiums	6 00
1624	Mrs. J. A. Chadwick, premiums	3 00
1625	M. Thierbach & Co., press badges	3 00
1626	F. A. Huebner, delegate Manitowoc Co	10 40
1627	C., M. & St. P. R. R., freight	94
1628	Jos. Shepherd & Co., advertising banners	30 00
1629	J. E. Fuller, plumbing and repairing	37 13
1630	First Nat. Bank, overdraft	13 00

No.	To whom and for what paid.	Amount.
1631	Myer Rotier Printing Co., printing	70 15
1032	W. U. Tel. Co., telegrams	61
1633	Hoffman & Billings, sundries	28 61
		$34,026 68
	Outstanding warrants for 1895	169 50
	Total	$34,196 18
	Disbursements $34,196 18	
	Receipts 34,040 67	
	Overdraft	$155 51
	Outstanding indebtedness in addition to overdraft (approximated)	$7,844 49

PROCEEDINGS.

EXECUTIVE BOARD MEETINGS.

Madison, Wis., Feb. 3, 1896.
Agricultural Rooms, 8 p. m.

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

Minutes of last meeting held in 1895 read by the secretary and approved by the society.

On motion a committee of five were appointed to recommend a sum to be given in premiums and the percentage of such sum that should go to each of the respective departments.

President appointed as such committee G. G. Cox, C. G. Wilcox, Geo. McKerrow, Geo. Mylie and W. H. Jones.

Adjournment.

Agricultural Rooms, Feb. 4, 9:30 a. m.

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

On motion of Geo. Martin the board proceeded to the election of superintendents of departments for fair of 1896.

Result of election as follows:

Marshal—Ralph C. Vernon.
Speed—G. C. Wilcox.
Horses—G. G. Cox.
Cattle—G. T. Hodges.
Sheep—C. M. Clark.
Swine—Geo. Wylie.
Poultry—C. E. Angel.
Agriculture—Geo. Martin.
Dairy—W. W. Chadwick.
Horticulture—A. J. Philips.
Machinery—E. M. Anderson.

Manufactures—W. A. Jones.

Gates—Jno. F. Burnham.

Forage—A. L. Vannaman.

Transportation—G. G. Pabst.

On motion of E. B. Heimstreet the following resolution was adopted: That the office of superintendent of privileges be created, such officer to have full charge of all privileges to plat and rent the grounds, collect the monies, turning the same over to the treasurer, taking his receipt for the same.

On motion the date of the fair was fixed as Sept. 21--26.

At this point Gen. Fairchild addressed the meeting in reference to the semi-centennial.

On motion Gen. Fairchild's suggestions were referred to a committee of five who were instructed to report to the afternoon session. The president appointed as such committee N. D. Fratt, C. G. Wilcox, A. J. Philips, G. T. Hodges, Geo. Martin.

On motion of C. G. Wilcox the recommendations of the National association of live stock exhibitors were adopted in so far as they were practical.

Adjournment.

Agricultural Rooms, Feb. 4, 2 p. m.

Meeting called to order by S. D. Hubbard.

On motion S. D. Hubbard was elected superintendent of privileges.

On motion it was determined that privileges be sold on a cash basis only on the payment of the full amount of the privilege.

On motion it was decided to have a kennel show in connection with the state fair.

Committee appointed on the 3rd to recommend total amount of premiums and percentage of distribution to departments recommended that not to exceed $16,000 be given in premiums and that departments should respectively receive percentages not to exceed the following: Horses, 21 per cent.;

cattle, 25 per cent.; sheep, 9 per cent.; swine, 12 per cent.; poultry, 6 per cent.; dairy, 5 per cent.; agriculture, 5 per cent.; fruit, 4 per cent.; flowers, 2 per cent.; apiary, 1 per cent.; pastry, 1 1-2 per cent., woman's work, 8 1-2 per cent.

A special premium of $500 was voted in addition to be given for county displays.

The committee to whom were referred Gen. Fairchild's suggestions made the following report, which was adopted:

To the Executive Board of the Wisconsin State Agricultural Society.

Gentlemen—Your committee appointed to consider the matter of holding a semi-centennial celebration beg leave to report that they heartily endorse the project and that this association will cheerfully co-operate and assist in every way possible the getting up of an appropriate exhibition of the resources of Wisconsin and we heartily tender through our president and secretary the use of the state fair park for the same, and we respectfully request that the state agricultural society be given a proper representation in the management and conducting of the exhibition if held upon their grounds, and a copy of this resolution be forwarded to Gen. Fairchild.

Adjournment.

MEETING OF EXECUTIVE BOARD.

Pfister Hotel Club Room.
Milwaukee, Sept. 2, 8 p. m.

Meeting called to order by President Hubbard.

No business transacted.

Adjourned.

MEETING OF AGRICULTURAL SOCIETY.

Lincoln Hall, Milwaukee, Sept. 24, '96, 8 p. m.

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

Minutes of all meetings held during the year read and approved.

Election of officers resulted as follows:

President—S. D. Hubbard, Mondovi.
Secretary—T. J. Fleming, North Greenfield.
Treasurer—M. R. Doyon, Madison.

Vice Presidents.

1st District—C. Babbitt, Beloit.
2d District—R. C. Vernon, Madison.
3d District—G. G. Cox, Mineral Point.
4th District—John F. Burnham, Milwaukee.
5th District—E. M. Anderson, Hartford.
6th District—C. E. Angel, Oshkosh.
7th District—A. J. Philips, West Salem.
8th District—C. G. Wilcox, De Pere.
9th District—Isaac Stephenson, Marinette.
10th District—Geo. Martin, Hudson.

Additional Members.

E. B. Heimstreet, Janesville.
Geo. Wylie, Leeds.
P. J. Somers, Milwaukee.
W. A. Jones, Oconomowoc.
W. A. Jones, Mineral Point.
A. L. Vannaman, Milwaukee.
G. T. Hodges, Monroe.
Alex. Galbraith, Janesville.
C. M. Clark, Whitewater.
M. F. Barteau, Appleton.

The following resolution introduced by James Petley and adopted: Resolved, that it is the sense of this meeting that this legislature at its coming session should pass at the earliest practical moment a bill authorizing the board of supervisors of Milwaukee county to issue bonds for the erection of the viaduct on Grand avenue extended so as to have the structure completed in time for the semi-centennial celebration in 1898, and that we pledge our hearty support to the enterprise.

Adjourned.

T. J. FLEMING,
Secretary.

EXECUTIVE BOARD.

Agricultural Rooms, Madison, Wis.

December 1, 1896.

Meeting called to order by Pres. S. D. Hubbard. Minutes of previous meeting read and adopted.

The secretary's report was read and referred to the auditing committee. Auditing committee was appointed by the president as follows: N. D. Fratt, A. J. Philips, E. B. Heimstreet.

The text of the secretary's report is as follows:

To the Executive Board of Wisconsin State Agricultural Society.

Your secretary begs leave to make the following report for current year ending December 2d, 1896:

The total amount of money in my hands during year was $34,040.67, received from following sources:

Balance on hand from '95,	$4,238.95
Tickets,	16,879.80
Rent from Jocky club, $500, '95,	2,500.00
Entries and stall rent,	1,946.50
Concessions,	1,631.00
Life membership,	360.00
Special appropriation for back tax,	3,000.00
Percentage on paid premiums,	2,554.10
Miscellaneous sources,	1,930.32
Total,	$34,040.67

Same was duly turned over to Treasurer Doyon, for which I hold his receipts.

T. J. FLEMING,
Secretary.

The auditing committee made the following report:

Your committee, to whom was referred the books, vouchers and papers of secretary and treasurer, would report that they have examined the same, compared the vouchers, stubs, with the treasurer's books, and find them to correspond; that

they have examined the treasurer's books and find them to correspond with the vouchers, and the report is correct.

N. D. FRATT,
E. B. HEIMSTREET,
A. J. PHILIPS,
Committee.

Reports of secretary and of auditing committee adopted.

On motion it was decided to pay the Hutchinson premium money as awarded.

On motion of E. B. Heimstreet the secretary was instructed to procure the affidavits of P. Hartung, H. Dittmar and Jacob Korn, all of whom claim to be life members.

On motion the president was instructed to appoint a committee on legislation, of which he himself was to be a member.

Adjournment.

T. J. FLEMING,
Secretary.

MEETING OF AGRICULTURAL SOCIETY.

Agricultural Rooms, Madison, Wis.,
Dec. 2d, 1896, 9 a. m.

Meeting was called to order by President Hubbard.

On motion the amendment proposed at the December meeting of the society in 1895 was adopted.

Amendment is as follows:

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."

On motion a committee was appointed to look over our present constitution and by-laws and propose amendments thereto at the February meeting.

The president appointed as such committee Arthur Babbitt, E. B. Heimstreet, T. J. Fleming.

REPORTS OF SUPERINTENDENTS.

CATTLE DEPARTMENT.

To the Executive Board of Wisconsin State Agricultural Society.

Gentlemen—I herewith submit my report as superintendent of department "B", Cattle, for state fair of 1896:

There was never a better display of cattle at the state fair than there was this year, there being over twice as many entries in this department as there was last year. And the competition was so strong that in many cases it was very difficult for the judges to arrive at a decision. Among the special attractions was a fine exhibit of Swiss cattle, which attracted a great deal of attention. I wish to say that every thing passed off very smoothly and satisfactorily in every respect, and the exhibitors all seemed to be very well satisfied, and the superintendent was treated with the greatest of respect and civility.

I would suggest a change in the manner of awarding premiums in the case of exhibitors' herds. Am in favor of having another judge, one who has had no hand in awarding individual premiums, award herd premiums, thereby giving to exhibitors the benefit of new judgment and thereby giving better satisfaction. I make this suggestion after consultation with a number of the exhibitors. I am also in favor of employing some means of attracting attention to this exhibit while they a e being judged. It seems too bad to have so few spectators present when we have so fine a display of cattle as we had this year.

I would suggest that one day or a part of a day be set aside for this purpose, and have the band in attendance and have no other attractions going on while premiums on live stock are being awarded. I would suggest that a special classification

be made for Wisconsin cattle, thereby encouraging Wisconsin breeders to compete, and not allow exhibitors from outside of the state. My idea is not to exclude outsiders, but to give Wisconsin breeders an opportunity of competing against each other in some certain class.

All of which is respectfully submitted,

G. T. HODGES,
Superintendent Cattle Department.

SHEEP DEPARTMENT.

To the Executive Board of Wisconsin State Agricultural Society.

The exhibit in this department was very good, although, in my judgment, not quite equal to the display of some former years. The barns were nearly all occupied with about 300 sheep, consisting of representatives of Merinos of the American or wool producing type; also the larger Delanes and Ramboletts. The latter appear to be a desirable sort as they combine size and feeding qualities with the finest of fleece. Of the Downs we had Oxfords, Shropshire, Hampshire and South Downs; also Suffolk, Cotswold, Leicesters, Lincoln, Dorset Horns, Cheviot and Tunis. Eleven of the above breeds claim the carcass as of most importance.

As a whole the exhibit was a success. So far as came to my notice, satisfaction was general. I would recommend the same general policy in the management of the department, with some changes in classification.

Respectfully submitted,
C. M. CLARK,
Superintendent Sheep Department.

HORSE DEPARTMENT.

To the Executive Board of Wisconsin State Agricultural Society.

Gentlemen—The continued depressed condition of the horse interest was still manifested at the fair of 1896, though probably not quite as noticeable as the fair of 1895. I am pleased to report that most of the classes were fairly well filled and, I think, of excellent quality. Among the several exhibitors of the fair of 1896, I am pleased to mention the names of H. H. Briggs of Elkhorn, Wis.; Heylland Stock Farm, Milwaukee; Wm. Hadden, Janesville, Wis.; Geo. Klein, Ft. Atkinson, Wis.; R. B. Ogilvie, Madison, Wis.; McLay Rath, Janesville, Wis.; Fred Soper of Ripon, Wis.; Fred Pabst, Jr., Milwaukee, and quite a number of other exhibitors.

Judging in all classes was done very satisfactorily by Mr. Alex Galbraith of Janesville, Wis., assisted by Mr. Richards of Racine, Wis., and Mr. Miller of Canada. I think, as did my predecessor, that it is quite necessary to have a 1-4 mile track in front of horse barns for the purpose of showing driving horses, carriage horses, etc., as this year we had to show the driving classes on the road way in front of horse barns and it was very dangerous,—so many people were coming and going all the time.

The arrangement of the premium list seems to have given good satisfaction to exhibitors. Still I think it would increase the exhibits to have a separate class for English shires. I also recommend that class (4), Cleveland Bay, be attached to class (6), French, German and Russian coach. This would not increase the classes or the amount of premiums.

I desire to extend thanks to all of the exhibitors and horsemen of department "A" for the very generous treatment I received at their hands during the fair of 1896.

Respectfully submitted,

G. G. COX,

Superintendent Horse Department.

SPEED DEPARTMENT.

To the Executive Board of Wisconsin State Agricultural Society.

Gentlemen—The speed department again had to contend with adverse circumstances. Bankrupt societies and rainy weather sent a large number of trainers and stables home before our meeting, thereby making it uphill work to secure a sufficient number of horses to fill all the classes. The enormous list of 1895 suspensions throughout the west also added to the difficulty of securing entries. However, the racing was first class. Ten races were finished in three days. Forty-four heats, thirty-seven of which were in 2:20 or better.

Owing to the heavy rain Thursday night, Friday's races were declared "off" and this caused the first dissatisfaction I have heard of in the two years I have been in charge.

While I am personally against racing in the mud, believing it is not approved of by the public or true horsemen, I did not without first consulting some of the more experienced horsemen on the ground as well as the officers of the society, and the fact that the track was almost too heavy for the bicycle races at 4 o'clock on Saturday, confirms me in the belief that the decision was right.

The net cost to the society of the ten races was about sixteen hundred dollars, seven hundred less than last year. The number of suspensions is still large, and I regret to say the society has received but a very small percentage back from the American Association. A tabulated statement of receipts, disbursements and suspensions has been filed with the secretary. The expense of advertising was large, owing to the first classes failing to fill, causing double work as well as expense.

Yet we have come out so much better than most of the meetings of '96, that I feel encouraged to believe that when the mushroom associations have been gotten out of the way, and the conditions are right, our society will reap the benefit, for the horsemen are beginning to see the advantage of entering when they pay what they advertise promptly. Owing to the state of my own health, and sickness in my family during the

months of July, August and September, I could not give this department the attention I ought to have done, therefore was obliged to trespass on the time and generosity of the officers of the association, the press and the horsemen during the meeting, for which I wish to extend my sincere thanks.

Respectfully submitted,

C. G. Wilcox,
Supt. of Speed.

SWINE DEPARTMENT.

Gentlemen—The exhibit of swine at the Wisconsin state fair for the year 1896 was the largest ever made in Wisconsin, and was also the largest show of swine made at any fair in the United States during the year. The judging was done by J. A. Countryman of Lindenwood, Ill., who passed on the Poland Chinas, Berkshires and Jersey reds, and Chas. Laurence of Danville, Wis., who passed on the white breeds. The work of these gentlemen gave very nearly universal satisfaction. In fact it was conceded by exhibitors generally that the work done by our judges was of a higher order than any other fair in their respective circuits.

Respectfully submitted,

GEO. WYLIE,
Superintendent Swine Department.

POULTRY DEPARTMENT.

To the Executive Board of Wisconsin State Agricultural Society.

Gentlemen—The exhibit of poultry at the last fair proved to be one of the best in years and probably attracted more attention than any other class of exhibits on the grounds.

There were twenty-six exhibitors and nearly a thousand birds. The extensive addition made to the poultry house recommended a year ago, was more than filled, some of the exhibitors being crowded out and obliged to exhibit their fowls

in tents. New stationary coops have been built by the society and placed in the poultry house and it is with regret that I have to report that they are not approved by exhibitors and in their present form, hardly come up to expectations.

The idea of building them was of course calculated principally to make a more neat and tasty appearance to the long isles through the building by making the coops of uniform size and color; this was realized and many complimentary remarks were heard in reference to this effect, but a decided objection was made to them by the exhibitors on account of the inconvenience in changing and removing fowls, and in feeding.

The passage ways behind the coops are very narrow, in some places they are barely wide enough to admit an ordinary sized person. When the work of judging begins every bird has to be removed and placed in a separate coop on the outside of the building, and after the judge has passed on them they have to be taken back and replaced in the coops, thus requiring a large number of helpers to bring the birds to the judge.

I would suggest the coops be made separate so as to allow them to be moved and the door placed in front for convenience in feeding and removal of birds.

I would recommend that a separate building be arranged for the display of pigeons and other pet stock exhibits, allowing the whole of the present building for poultry. Much unfavorable comment was heard from exhibitors on account of the entry fee required in this department, the expense to the larger breeders being from $25.00 to $40.00.

The professional exhibitors are still clamoring for an enlargement of the list. The expediency of changing these rules however is a question for the board to consider. All of which is respectfully submitted.

C. E. ANGELL, Superintendent,
By H. A. CLUM, Ass't.

DAIRY DEPARTMENT.

To the Executive Board of Wisconsin State Agricultural Society.

Gentlemen—There was another large increase in the number of entries in the dairy department over last year and that of 1894, as shown by the following table:

1894.—	No. entries cheese	19
	No. entries butter	30
	Total	49
1895.—	No. entries cheese	30
	No. entries butter	73
	Total	103
1896.—	No. entries cheese	72
	No. entries butter	97
	Total	169

H. C. Taylor of Orfordville, Rock county, Wisconsin, whose Jersey cow, "Brown Bessie," took first premium at the World's fair at Chicago, and which he sold for $4,000, whose print butter scored 100, was awarded first prize in that class.

The first prize dairy butter of F. C.Curtis, Rocky Run, Wis., also scored 100, as did also the creamery butter of John A. Brunner of Tarrant, Pepin Co., Wis., and the cheddar cheese (Flats) of Wm. Nisbet of Hub City, Richland Co., Wis., and the Domestic Swiss cheese of O. Luchsinger & Co., Monroe, Wis.

Former students of the Wisconsin dairy school made entries from their factories of separator creamery butter and gathered cream factory butter. Also of factory cheese both cheddar shape and flats.

Four prizes were offered in each of these classes, making a total of sixteen premiums for these products of butter and cheese factories.

Eleven of these sixteen prizes were taken by the dairy school students, as well as the first prize of brick cheese that scored 100, which speaks well for our experimental station under the supervision of Prof W. A. Henry. Our exhibit completely

eclipsed the exhibit at the Minnesota state fair, and also that of any preceding fair of our own state.

A large glass refrigerator, forty-eight feet in length, contained the fine display of our dairy product.

We manufactured in the state of Wisconsin, during the year 1895, 74,653,730 lbs. butter, value $12,310,373; 52,480,815 cheese, value $3,984,103, making a total of 127,134,545 lbs., and a total value of the dairy product for 1895 of $16,294,476.

Prof. Ferrington of the experimental station proved a valu able and efficient assistant to me in my department.

A. V. Bishop of Milwaukee is a splendid judge of dairy products, and gave universal satisfaction as judge in the dairy department.

Every exhibitor's goods was judged and a score card was mailed to each one.

I would recommend that the premiums in this department be increased rather than diminished.

Respectfully submitted,
W. W. CHADWICK,
Superintendent Dairy Department.

AGRICULTURAL DEPARTMENT.

Agricultural, Culinary and Apiary Department.

Gentlemen—I again take pleasure in being able to report a great improvement in the agricultural and culinary exhibits both in quantity and quality, being the largest and best that I ever saw at any state fair. The improvements in agricultural hall added very much to the appearance of the exhibit, without which we could not have had room to put the large display. The $500 set aside for county competition, although not placed as it originally was intended, succeeded in bringing forward the largest and grandest showing of Wisconsin's products.

Should the board think best to continue this appropriation, I would recommend that it be divided, giving a part of it to

county exhibits, one display only from a county to be made by officers of agricultural societies, the other individual exhibits by the exhibitors own growing, certified to in writing at the time of entry. I would further recommend boys' and girls' department be left out, as with two years' experience, I find that it does not bring out products of their own production, but does bring out a divided exhibit of the parents, and helps them to carry away more society money.

In the apiary department, I am opposed to other states being allowed to bring in car loads of stuff, thereby over-reaching state exhibits and carrying off money that should be given to Wisconsin's producers. I can but think that Wisconsin's honey exhibit was much superior in quality, which did not receive due consideration at the hands of the judge.

Very respectfully yours,

GEO. MARTIN,

Superintendent.

MANUFACTURERS' DEPARTMENT.

Milwaukee, Dec. 16th, 1896.

Mr. T. J. Fleming, Sec'y Wisconsin State Agl. Society, Madison, Wis.

My Dear Sir—Pursuant to your request I take much pleasure advising your society the names of the exhibitors in the manufacturers' building on the state fair grounds in September last. They were as follows, viz.:

Globe, Wire & Iron Works, Milwaukee, Wis.
B. Sterns & Sons, "Atlas Flour," Milwaukee, Wis.
J. V. Beyers, Furniture, Milwaukee, Wis.
Doerflinger Artificial Limb Co., Milwaukee, Wis.
Badger Cycle Co., Madison, Wis.
Capwell Horse Nail Co., Chicago, Ill.
Blinkens Leifer Mfg. Co., Typewriters, Milwaukee, Wis.
Maple City Soap Works, Monmouth, Ill.
Whitnall & Rademacher Co., Coal, etc., Milwaukee, Wis.
Specialty Mfg. Co., Milwaukee, Wis.
Skidmore Shoe & Clo. Co., Milwaukee, Wis.

Carter White Lead Co., West Pullman, Ill.

Schlitz Brewing Co., Bottled Goods and Malt Extract, Milwaukee, Wis.

C. F. Netzow Mfg. Co., Pianos and Organs, Milwaukee, Wis.

Jos. Flanner, Sheet Music, Milwaukee, Wis.

T. A. Chapman Co., Dry Goods, Milwaukee, Wis.

Clement Williams & Co., Furniture, Milwaukee, Wis.

Mathews Company, Sporting Goods, Milwaukee, Wis.

Gordon Mfg. Co., Bloomington, Ill.

Crocker Stock Medicine Co., Milwaukee, Wis.

Leo Hofmeister Cereal Food, Milwaukee, Wis.

Julius Laudo, Optician, Milwaukee, Wis.

Hand made wood work, a beautiful exhibit of miniature barrels, casks, cups, etc., *hand made*, Kenosha, Wis.

The Art of Dressmaking in School Form, Milwaukee, Wis.

Hankins Sash and Door Mfg. Co., Waukesha, Wis.

It is with exceedingly grateful feelings that I can advise you further that I experienced the most cordial welcome and encouragement from the manufacturers and merchants of Milwaukee when interviewing them as regards their placing exhibits in the manufacturers' building. They responded in numbers greater than we had space to supply them, and had the building been three times its size I believe every foot of space alotted for exhibits could have been filled, if your superintendent of this department had sixty days' time to get together the proper exhibits.

Many of the exhibits were meritorious and attractive. The building was well cared for, a janitor being in constant attendance. Very little complaint from dust was heard.

Much praise was expressed by visitors as they viewed this building's exhibits, many saying they were far in advance of exhibits the building had shown at previous fairs. Some of the exhibits required a space 48x12 feet, others 32x12 feet, and others 16x12, 8x12, 4x12, 6x6, and 4x4, with two 20x15 feet.

If your society would paint the interior of the manufacturers' building or decorate it in a manner suitable to a fine show room, I am sanguine exhibits of fine fabrics would be made. Several dealers in these fine fabrics, on the order of

silks, laces and furs, would like to show this class of goods at the fair, if the building or a portion of it could be arranged for the reception of such goods in fine show cases, after the class of show cases at the Milwaukee exposition.

Very respectfully yours,
GEO. P. GIFFORD, JR.,
Agricultural Superintendent.

FINE ARTS DEPARTMENT.

In July Secretary Fleming pushed the work of remodeling art hall and had everything ready for the articles the first day of the fair, and the art hall is now equipped with cases equal to and better than the majority of buildings at other state fairs. The result of this is shown in the increased interest taken in this department as follows:

Year.	No. Exhibitors.	No. Exhibits.	Expenses.
1894.....	75	778	$228.25
1895.....	115	1,397	170.70
1896.....	120	1,790	186.57

Showing an increase each year with no more expense of any account. The building needs painting on the inside, the cases etc. never having been painted. The sky-lights need some repairs. With this done, it will be in excellent condition for the next fair, and no appropriation for extras will be asked for in this department. Your superintendent would suggest that it would save a great deal of time and trouble if during the week of the fair, the clerk of this department could be kept in the art building. There are more entries here than any department and it could be handled far better if the clerk was with the superintendents, as most of the exhibitors bring their goods with them. The goods in this department were of a

finer class than have ever before been exhibited, and the glass cases have prevented valuables from becoming soiled as well as prevented loss.

E. B. HEIMSTREET,
Assistant Superintendent.

HORTICULTURAL DEPARTMENT.

From the fact that I knew there was an immense crop of apples in Wisconsin, and from the applications I had received for space and plates prior to the fair, I was not surprised at the very large exhibit that was made. Through the kindness and forethought of Secretary Fleming I was allowed to spend the week previous to the opening of the fair at the horticultural building re-arranging, and building more shelves to accommodate the exhibitors. By this means the capacity of our side of the building was greatly increased. Twelve hundred new plates were brought and all were painted, I am glad to say all were filled, and never since I have been connected with the state society have we made such a large display of fruit of such good quality. The old time professionals were on hand with some new ones added, and the non-professionals were increased somewhat. At first some complained of cramped quarters, for horticulturalists enjoy spreading themselves when the opportunity offers, but when they saw their neighbors were crowded too they accepted the situation and all were pleasant and good natured. The fruit side will need no expense on it next year unless an addition is built on the north end. It is large enough for ordinary years, but in years of abundance like the season of 1896 it is too small. The show of flowers was not as large as some former years, but the quality was very fine. All the exhibitors seemed satisfied with their treatment and I heard no complaints. One exhibitor of honey very indiscreetly broke into the building and began packing his goods without permission. His payment of pre-

mium was delayed for awhile, but now it has been amicably settled and judging from his appearance when it was being explained to him, I do not think he will ever do so again. I found it necessary in order to have my awards made in time to employ three judges—one on flowers and two on fruits. The full amount paid for premiums in this department I have not in my possession, but it will no doubt appear in the secretary's report. In conclusion will say I am under obligations to the exhibitors for their kind and courteous treatment and to the officers of the state society for their efforts to furnish the necessary means to make the horticultural exhibit the success it was.

A. J. PHILIPS,
Superintendent.

REPORT OF MARSHAL.

To the Executive Board of the State Agricultural Society.

Gentlemen—Ralph C. Vernon, marshal of the Wisconsin state fair for 1896, begs leave to make the following report:

I had employed in my department, fourteen policemen for day work, four night watchmen, including the watch in the secretary's and the treasurer's offices, and two assistants and one mounted policeman. Four saddle horses were also used in the department.

Part of the force was discharged on Thursday night of the fair as the weather indicated there would be but little work during the balance of the week, and as will appear from the statement below, considerable expense was saved by such action.

The society is indebted to William Raueschenberger, mayor of Milwaukee, for kindly furnishing from twelve to sixteen uniformed policemen, who were under charge of A. O. Neidner (roundsman) who was ever ready to place his men where they would be of the most service to the department and the society. This favor was granted by the mayor without any ex-

pense to the society, except dinner was furnished each day for Mr. Neidner and his men.

Following is a statement of the moneys received and expended in the marshal's department:

S. Wilke, 3 days	$6.00	
J.Shanley, 3 days	6.00	
R. W. Reed, 3 days	6.00	
S. Pierce, 3 days	6.00	
S. Cook, 3 days	6.00	
V. Roesh, 3 days	6.00	
John Dagen, 3 days	6.00	
Jos. Marx, Sr., 3 days, $1.50 per day	4.50	
A. Roth, 3½ days	7.00	
E. Hubberd, 5 days and mileage	37.50	
D. Armour, 5 days	25.00	
J. E. Tucker, 4 days	8.00	
J. O'Brien, 5 days and mileage	22.30	
J. E. Faber, 4 nights	8.00	
F. Billings, 5 days	10.00	
J. Marks, 5 nights, $1.50 per night	7.50	
H. T. Moore, 5 nights	10.00	
L. Bryant, 5 days	10.00	
Z. O. Borden, 5 days and 3 nights	16.00	
P. Comstock, 5 days	10.00	
A. Brasee, 5 days	10.00	
D. Armor's horse, 5 days	10.00	
J. F. Bears' horse, 4 days	8.00	
Mr. Marton's horse, 5 day	10.00	
T. J. Fleming's horse, 5 days	10.00	
R. C. Vernon, 10 days and expenses	56 30	
Return to Secretary, over draw	10.00	
Received by check		$332.10
	$332.10	$332.10

Respectfully submitted,

RALPH C. VERNON,

Marshal.

FORAGE.

To the Executive Board of Wisconsin State Agricultural Society.

Gentlemen—Your superintendent of forage begs to report as to his department during the state fair exhibition, and will state that the cost of this department is too much for the revenue which we receive and could be made to sustain itself.

The expenses for running this department has been $52.56 for man and team, for hay $295.72, for straw $194.65, for oats, corn meal, bran and wheat, $153.28, freight on hay $88.88, total $765.03, being a deficiency of $215.63. Received cash for the sales of the same, $559.40.

I would suggest that all straw for the State Fair Association should be charged for, except for first bedding, as it is given away and little judgment is used, and the expense becomes enormous on account of the extravagance of the exhibitors.

Respectfully submitted,

A. L. VANNAMAN,

Superintendent.

Adopted.

AGRICULTURAL MACHINERY—DEPARTMENT J.

To the Executive Board of Wisconsin State Agricultural Society.

Gentlemen—I have the honor to submit the following report in relation to exhibitors and exhibits in my department for the year 1896. Before doing this it would be well to say that before a man enters upon such a duty it is advisable to look over the field of labor and lay his plans upon which he is to base his work in the future. To do this it was necessary for me to visit State fair park.

Last June in company with our secretary and his assistant, looked over the grounds and made a survey, making the

avenues 66 feet wide, running north and south, and the show grounds 100 feet deep, and moved the line shaft from the south entrance more into the back grounds, which change met the hearty approval of the exhibitors and visiting public.

In reply to a soliciting letter which I sent out to manufacturers inviting them to attend our fair and make an exhibit of the product of their factory, the reply in some cases was hard times, no money, light sales, can not afford to do so. And the manufacturers of threshing machines and engines, also binder manufacturers, made an agreement not to show at any of the state fairs this season. Regardless of all these drawbacks we had a very credible display. The 120 feet of line shaft was filled on both sides to its utmost capacity,—much so that it required two steam engines for power.

The miscellaneous exhibits, together with those of agricultural warehouses, make up a long and attractive list. I will give them in as brief a form as possible to do credit to exhibitors. The following is a list:

Gale Mfg. Co., Albian, Mich.—Big Injun and Western Star Sulkey plows, gang and side hill plows, steel chilled walking plows, two horse cultivator, lever harrow, disk harrow, corn planter and a full line of garden tools.

Deere & Co., Moline, Ill.—New Deere, Kid, Pool and Texas Ranger sulkey plows, Pony gang plows, eight sizes walking plow, corn planter, potato digger, niney tooth zigzag harrow and cultivator.

David Bradley Mfg. Co., Bradley, Ill.—A full line of steel and wood beam stubble plows, X Rays Sulkey and Gang plows, potato digger, corn planter, disk harrow and gas pipe lever harrow, all steel hay rakes.

J. Tompson & Sons Mfg. Co., Beloit, Wis.—The Ole Olson sulkey plow, stubble plows, disk harrow, hay rakes, seeders, cultivators.

Moline Plow Co., Moline, Ill.—Flying Dutchman and Good Enough Sulkey plows, gang plow, check row corn planter, disk harrow, lever harrow, cultivators and potato digger.

Syracuse Chilled Plow Co., Syracuse, N. Y.—Pavement plow designed for plowing up pavement in city streets,

sulkey plows, steel and wood beam walking plow, harrows and a complete line of wood and all steel wheel barrows, road scrapers, hand carts and warehouse trucks.

Janesville Machine Co., Janesville, Wis.—Prairie City seeder, hoe drill Prower mower, disk harrow and sulkey cultivator.

Smalley Mfg. Co., Manitowoc, Wis.—Monarch tread power feed mill, four horse farm boiler engine, snapper and ensilage cutter, complete shredding machine, sawing machine, root cutter, sweep power feed grinder.

Stoddard Mfg. Co., Dayton, O.—Tiger rake, corn planter, New Triumph seeder, lawn swing, metal truck wheels, Ajax spading harrow.

S. Freeman & Sons Mfg. Co., Racine, Wis.—Eight and twelve feet galvanized iron wind mill with power attachment, feed cutters, corn shellers, Centennial farming mill. feed grinder.

Appleton Mfg. Co., Batavia, Ill.—Feed mills, cutters, corn shellers, tread power sawing machine, corn husker with carrier, wind mills.

J. I. Case Plow Works, Racine, Wis.—A complete line of walking, sulkey and gang plows, lever harrows, walking and riding cultivators.

American Harrow Co., Detroit, Mich.—Seeders, disk harrows, ordinary cultivator, corn planter, bean harvester.

Van Brunt & Wilkins Mfg. Co., Horicon, Wis.—Broadcast seeder and two drills.

Sterling Mfg. Co., Sterling, Ill.—No. 1, 2 and 3 fodder shredder, grinding mill with four horse sweep power.

New Birdsall Co., Auburn, N. Y.—Eight roll corn husker.

Rosenthal Bros. & Behn Co., Milwaukee, Wis.—Cyclone corn husker in two sizes.

Harrah & Moffatt, Newton, Ia.—Clipper corn harvester.

Runkel, Weiler & Barth Mfg. Co., Milwaukee, Wis.—Weiler's lifting jacks.

Sanson & Wegner, Milwaukee, Wis.—Feed cutter, feed grinder, gas and gasoline engines, crank pump for power, hydraulic water elevator, steam boilers.

Silberzahn Mfg. Co., West Bend, Wis.—Pits horse powers, circular saws, jacks and feed cutters.

Peter J. Fischer, Milwaukee, Wis.—Feed cutters, horse powers, circular saws.

Binkle & Bover, Sand Beach, Mich.—Pea harvester attachment for mower.

Western Wheeled Scraper Co., Aurora, Ill.—Steel road grader.

Star Mfg. Co., New Lexington, O.—Star feed grinder.

Andrew Koppernd & Co., Milwaukee, Wis.—Well drilling machines and fixtures.

Chicago Scale Co., Chicago, Ill.—Wagon scales and portable platform scales.

Potato Implement Co., Traverse City, Mich.—Peerless hand potato planter, transplanter, sprinkler, knapsack sprayer, plaster lifter, powder gun.

J. B. Jones & Sons, Milwaukee, Wis.—Giant fence wire tightener, tire tightener for tire on wood wheels, without removing tire.

A. J. Dorsch & Sons, Milwaukee, Wis.—Dealers in general line of farm implements, also top carriages, phaetons, surries, road wagons.

Bicknell Bros., Fort Atkinson, Wis.—Elevator for handling grain, corn, coal, apples, potatoes, etc.

Frick Company, Wayensboro, Pa.—Landis Eclipse thresher, with wind stacker, also Eclipse traction engine. This new and complete outfit is practically a new machine for 1896, the company claiming many new and radical departures in its construction. They, not signing the agreement, were showing through the northwest.

D. M. Sechler Carriage Co., Moline, Ill.—Top buggies, phaetons, surries, caberolet, spring wagons, park, road and Concord wagons, B. B. road and speed cart.

Racine Wagon & Carriage Co., Racine Wis.—This was the largest exhibit of the kind on the grounds, composed of twenty-nine jobs of all kinds of vehicles very artistically arranged for display.

Henney Buggy Co., Freeport, Ill.—Loop front phaetons, double carriages, open driving wagons.

Sturtevant-Larrabee Co., Binghamton, N. Y.—Portlands, open, light Stanhope wagons.

H. Kellogg, Hudson, Mich.—Fine hand made double and single harness.

Michigan Buggy Co., Kalamazoo, Mich.—Buggies, surrey, road wagons, trap sleighs, swell body and Portland cutters.

Hirsch Bros., Milwaukee, Wis.—General line of vehicles, also farm implements, potato cutter and planter, hillers, diggers, wind mills, fanning mills, wind mill churn attachment.

J. F. Dittmar, Milwaukee, Wis.—Laundry, milk and open delivery wagons.

Gabriel Streich Mfg. Co., Oshkosh, Wis.—General purpose wagons, platform spring, stake truck, furniture wagons, lumber and dump carts.

Wisconsin Carriage Co., Janesville, Wis.—Stiver runabout, open road, canopy top and Concord business wagons, extension and canopy top surries, top buggies.

John Esch & Sons.—Tubular axle wagon and street sprinkler.

Parry Mfg. Co., Indianapolis, Ind.—Carriages, buggies, phaetons, road wagons.

Benzemaker Bros., Milwaukee, Wis.—General line of vehicles, consisting of Concords, road wagons, buggies, surreys, delivery wagons and 12 jobs of different styles of cutters.

W. H. Boettcher, Milwaukee, Wis.—Sectional wagon body.

In looking over these creations of inventive genius and mechanical skill, and witnessing their perfection of movement and work, one could but feel how difficult of award would be the palm of superiority. In closing this report I desire to tender my heartiest thanks to exhibitors and their agents for many courtesies received from them, and for their kindly co-operation in my efforts for their accommodation.

All of which is respectfully submitted,

E. M. ANDERSON,
Superintendent.

OFFICERS OF AGRICULTURAL SOCIETIES IN WISCONSIN FOR 1897.

The location of the fair is in every case (except where otherwise noted) the same as secretary's address. The address of the president and treasurer is in every case (except where otherwise noted) the same as the secretary's address.

COUNTIES.	Name of Society.	President.	Secretary.	Postoffice address of Secretary.	Treasurer.
Adams	Adams County Agricultural Society	S. W. Pierce	Frank McConick	Friendship	G. W. Waterman.
Ashland	Ashland County Agricultural Society	John J. McGeehan	R. F. Spencer	Ashland	John A. Watson.
Barron	Barron County Agricultural Society	W. W Flinn	Jos. E. Cartright	Chetek	W. A. Kent.
	Cumberland Agricultural and Driving Park Association	S. H. Waterman	H. S. Comstock	Cumberland	H. L. Williams.
Bayfield	*Bayfield County Agricultural Society	K. G. Staples	Byron Ripley	Iron River	A. A. Hobbe.
Brown	*Brown County Fair and Park Association	H. Hagemeister	D. W Flatley	Green Bay	H. B. Baker.
Buffalo	Buffalo County Agricultural Society	M. Hurlbut, Urne	H. Brown	†Modena	Mondovi.
Burnett	Burnett County Agricultural Society	Peter Anderson	And. A. Anderson	Grantsburg	Calute Olson.
Calumet	Calumet County Agricultural Society	Tjork Oesan	L. D. Dorschel	Chilton	Winfield S. Lloyd.
Chippewa	Chippewa County Agricultural Society	Alex. McLaren	Jesse R. Sharp	Chippewa Falls	C. A. Hayes.
	Northwestern Wisconsin Agricultural and Industrial Society	James H. Agen	Jesse R. Sharp	Chippewa Falls	F. W. Jenkins.
Clark	Clark County Agricultural Society	Joseph Gibson	S. E. Hutchings	Neillsville	G. L. Redmond.
Columbia	Columbia County Agricultural Society	George Bain	Kennedy Scott	‡Rio	J. M. Bushnell.
	Lodi Union Agricultural Society	Robert Steele	A. H. Hindes	Lodi	A. R. Reynolds.
Crawford	Crawford County Agricultural Society	J. W. McCullick	Fergus Mills	Seneca	Charles Mitchell.
Dane	Dane County Agricultural Society	S L. Sheldon	Carl Suhr	Madison	Daniel Bechtel.
Dodge	Dodge County Fair Association	D. Dickinson	C. W. Harvey	Beaver Dam	H. B. Drake.
Douglas	Douglas County Agricultural Society	James H. Agen	Fred. M. Williams	West Superior	Harry Rogers.
Dunn	Dunn County Agricultural Society	Henry Miller	George Galloway	Menomonie	J. B. Chickering.
Eau Claire	Eau Claire County Agricultural Society	S. D. Smith	A. G. Cox	Augusta	Obadiah Works.
Fond du Lac	*Kite Park Fair Association		H. D. Markle	Fond du Lac	
Forest	Forest County Agricultural Society	Alfred Smith	Samuel Shaw	Crandon	W. W. Waite.
Grant	Grant County Agricultural Society	Delas Abrams	T. A. Burr	Lancaster	W. J. McCoy.
	Boscobel Agricultural and Driving Park Association	L. B. Ruka	F. C. Muffley	Boscobel	F. B. Sarles.
	Fennimore Fair and Driving Park Association.	William Rogers	John Rogers	Fennimore	J. W. Varrell.
	Blake's Prairie Agricultural Society	John Carey, Jr	W. H. Glasier	Bloomington	H. C. Enke.
Green	Green County Agricultura Society	R. A. Etter	Frank Smock	Monroe	Andrew Lewis.
Iowa	Iowa County Agricultural Society	John B. Hoskins	George W. Mundy	Dodgeville	W. E. Williams.
	Southwestern Wisconsin Fair	George G. Cox	W. H. Bennett	Mineral Point	P. Allen, Jr.
Jackson	Jackson County Agricultural Society	H. A. Bright	Frank F. Oderbolz	Black River Falls	Martin Tollock.
	Merrilan Agricultural and Driving Park Association	A. S. Trow	A. D. Merrill	Merrillan	L. B. Stillwell.
Jefferson	Jefferson County Agricultural Society	R. J. Washburne	J. L. Kearney	Jefferson	F. P. Kispert.

Juneau	Juneau County Agricultural Society	A. C. Plummer	I. C. Baldwin	Mauston	F. A. Adler.
Kewaunee	Kewaunee County Agricultural Society	Charles Meyer	Adolph Ebel	Kewaunee	H. R. Erichsen.
La Crosse	La Crosse County Agricultural Society	J. J. Johnson	F. H. A. Nye	West Salem	C. H. Hawkins.
	*La Crosse Industrial Fair Association		C. S. Van Auken	La Crosse	
Lafayette	Lafayette County Agricultural Society	James Hoskin	George F. West	Darlington	David Schreiter.
Langlade	Langlade County Agricultural Society	J. M. Bemis	John McGreer	Antigo	C. S. Seycom.
Manitowoc	Industrial Association of Manitowoc County	F. A. Huebner	C. H. Sedgwick	Manitowoc	Oscar A. Alter.
Marathon	Marathon County Agricultural Society	John Kiefer	K. Wright	Wausau	C. F. Paff.
Marquette	*Marquette County Agricultural Society	John S. Cant	Harry Cochrane	Westfield	Frank Gibson.
Milwaukee	Wisconsin State Agricultural Society	S. D. Hubbard	T. J. Fleming	North Greenfield	M. R. Doyon.
Monroe	Eastern Monroe County Agricultural Society	Thomas McCaul	M. L. Hineman	Tomah	J. E. Mooney.
Oneida	Oneida County Agricultural Society	John C. Curran	F. E. Parker	Rhinelander	B. R. Lewis.
Outagamie	Outagamie County Agricultural Society	John Dey	Herman Diestler	Hortonville	Nathan McComb.
	Fox River Fair and Driving Association	George F. Peabody	M. F. Barteau	Appleton	John J. Sherman.
	Seymour Fair and Driving Association	James Dean	H. J. Van Varen	Seymour	Wm. Michelstetter.
Ozaukee	Ozaukee County Agricultural Society	W. H. Rintelman	D. E. McGinley	Cedarburg	L. E. Schroeder.
Pepin	Pepin County Agricultural Society	W. H. Huntington	J. J. Morgan	Durand	W. L. Bachelder.
Pierce	Pierce County Agricultural Society	J. W. Hancock	E. S. Doolittle	Ellsworth	H. R. Huber.
Polk	Polk County Fair Society	J. W. Mullen	Fred. Hudson	St. Croix Falls	Harry D. Baker.
Portage	Portage County Agricultural Society	Jesse Lea, Jr.	J. N. Webster	Amherst	Andrew Moberg.
	*Central Wisconsin Agricultural, Mechanical and Scientific Association		George E. Oster	Stevens Point	
Price	Price County Agricultural Society	W. H. Martin	Fred. W. Ruff	Phillips	Allen Jackson.
Richland	Richland County Agricultural Society	H. M. Bock	J. G. Bunell	Richland Center	F. M. Hart.
Rock	*Rock County Agricultural Society		D. W. Watt	Janesville	
St. Croix	St. Croix County Agricultural Society	George W. Martin	Frank McGuire	Hudson	M. Goldberg.
Sauk	*Sauk County Agricultural Society		J. S. Hall	Baraboo	
	Little Baraboo Valley Agricultural Society	E. Blakeslee	Charles Pearson, Jr.	Ironton	Harry Thornton.
Shawano	Shawano County Agricultural Society	Harry R. McComb	Louis C. Bold	Shawano	Chas. R. Klebesdel.
Sheboygan	*Sheboygan County Agricultural Society		Otto Gaffron	Plymouth	
Trempealeau	Arcadia Agricultural and Driving Association	Nic. Lehrbach	F. C. Richmond	Arcadia	Emil Maurer.
	Trempealeau County Agricultural Society	S. E. Houghton	F. G. Davis	Galesville	J. A. Kellman.
	Trempealeau County Agricultural, Industrial and Driving Park Association	N. L. Frederickson	H. H. Scott	Whitehall	E. N. Trowbridge.
Vernon	Vernon County Agricultural Society	D. O. Mahoney	F. W. Alexander	Viroqua	John W. Mills.
Walworth	Walworth County Agricultural Society	J. M. Brewster	Geo. Harrington	Elkhorn	L. G. Latham.
Washington	Washington County Agricultural Society	S. C. Long	Joseph Ott	West Bend	George W. Jones.
Waukesha	Waukesha County Agricultural Society	Eph. Beaumont	Frank W. Harland	Waukesha	Warren H. Smith.
Waupaca	Waupaca County Agricultural Society	A. V. Balch	A. L. Hutchinson	Weyauwega	John Borngener.
	New London Agricultural and Industrial Association	August Roloff	George W. Werner	New London	E. H. Ramm.
Waushara	Waushara County Agricultural Society	Gilbert Tennant	W. H. Berray	Wautoma	J. W. Jeffers.
Winnebago	*Oshkosh Fair Association		C. E. Angell	Oshkosh	

*List of officers not yet filed.

†Fair held at Mondovi.

‡Fair held at Portage.

ANNUAL CONVENTION,

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

February 5, 9:30 A. M.

President S. D. Hubbard in the chair.

The President—The first thing on the program will be some remarks upon saving and applying manures, by the superintendent of Farmers' Institutes, George McKerrow.

SAVING AND APPLYING MANURES.

Geo. McKerrow.

Mr. President, gentlemen:—What I say this morning will be largely drawn from my field of experience, and in some things it may appear to you that I am offering advice; but you understand full well that you have the privilege of discussing it after I get through. A Scotchman who was raised in the pure air of the Scottish isles and fed upon that muscle producing food, oatmeal, and blessed with an inherited good constitution, lived past middle life without ever consulting a physician. But time and a habit which some Scotchmen have of partaking a little too freely of spirituous beverages, told on his magnificent constitution, and he found it, as he thought, necessary to consult a physician. He called on one of the best practitioners in Edinburgh for advice. The medical man wrote out a prescription, giving him directions to have it filled at the drug store, and then closed his advice with this admonition: "Now, Sandy, there is one thing I insist on, that you give up drinking spirits." This brought a cloud to

Sandy's brow and he very quickly arose to go without taking the prescription or offering a fee, when the doctor reminded him that it was his custom to charge for advice. "Aye, aye," says Sandy, "but I don't propose to tak yer advice." Now, you have the privilege of taking it or not.

I would like to enlarge the subject a little by first speaking for a moment about the value of manure to the Wisconsin farmer, as I see it. I had the value of manure impressed upon my mind while in Ohio some four weeks ago, where I listened to a very good talk on fertilizers by a professor of the Ohio Experiment Station. The professor had charts showing the records of the use of commercial fertilizers upon their three experimental farms in Ohio. These charts showed in every case that commercial fertilizers had increased the yields of corn and wheat and other products, but they also showed that the increased product in wheat, over an average of six or eight years, had cost about an average of $1.50 a bushel for the wheat; that the increased product in corn had cost about $1.12 per bushel on the average. The wheat during this time had been selling for something like seventy cents, and the corn something like forty cents a bushel. He showed the farmers of that audience who had been using commercial fertilizers that they had been losing money. He also showed what the results had been from the application of eight tons of manure per acre, and while he had not these results figured out in the cost per bushel, as he had the others, yet it was quite evident that the manure that had been applied, had brought profitable crops, provided the manure had been produced by animals that pay their way in meat, butter or cheese production. In the first place, there is a great difference in manures. Manures like commercial fertilizers are valuable, as they contain those elements most needed in plant growth, nitrogen, phosphoric acid and potash, and we must remember that as we feed our stock, so we get returns. If we feed a nitrogenous ration or a balanced ration, which is supposed to bring the best results in development, then we get good results in the manure produced. But if we feed a highly carbonaceous ration, it does not keep our stock in the best of health, and the manure is proportionably poorer also. Now,

in the saving of manures comes one especial consideration for every farmer. In the young and growing animals it has been found by experiment that they take out ten to fifteen per cent. of the nutritive value of that ration. The dairy cow possibly takes out twenty-five per cent. The balance, from seventy-five to ninety per cent. of the food that we feed our animals, we find in the manure. Now, every good feeder is very careful about the results of his feeding so far as the growth of the animals is concerned, as far as the added weight of milk, butter and cheese produced is concerned; but I fear that some of us are not so very careful about the seventy-five to ninety per cent. of that food in the manure, and in talking on manures this morning, I hope to be able to impress upon the minds, especially of the young farmers, this fact, that the manure heap represents by far the greater proportion of the average foods as you feed them, and therefore should be especially looked after.

Let me call your attention, first, to the way in which losses occur. Manures we find in two forms: solid and liquid, and it is generally conceded that for practical purposes it will do to say that half the value is in the liquid form and half in the solid. The liquid form can very easily be lost, as you all know; it can very easily run away. Now, to save the liquid the first consideration is to either have receptacles that will hold it or absorbents that will gather it up and hold it until you can get it upon the soil. Such absorbents on the farm in the form of straw can be used by putting them into the gutters. The manure from a horse stable will take up a good deal in the gutter behind the cows. Land-plaster helps some by absorbing ammonia that otherwise would escape, and also is a deodorizer, and these things should be plentifully used so that the liquids will be held. Now, there is another method for saving liquids, and that is the cistern. We have a few farmers in the state of Wisconsin that have advanced so far as to have cisterns. Some have sheds above those cisterns in which the coarse manures are piled, and these liquids are drawn from those cisterns, dumped over the manure heap to keep it moist and from heating, and then whatever liquids drain out, go back into the cistern. But as we do not all have cisterns nor the

sheds, we should look for the next best method. Another loss comes through over-heating. As the heating is taking place, these elements, especially the nitrogen, are being released and go off into the air. As you go into the yard on a frosty morning you will see steam escaping, from the horse manure heap especially, and this causes loss. Therefore, if you are going to pile manures at all, mix the horse manures with the manures that have more liquid in them, such as manures from the cow stable or the hog pen, and to be safe on this score, it is best in many cases not to pile at all. Now, coming to our own methods, not having the cisterns and sheds, only as we have sheep sheds, those of course covering the manure in them, we find it best to take out manure at all times of the year. There are exceptions to every rule, and there are to this. When snow is three feet deep and we cannot get at it, we do not take it out We calculate to clean out our sheep sheds two or three times in the winter, both to get the manure upon the land when we can get it there cheaply, and for the health of the flock. Now, I can see advantages in getting manure upon the land just as soon as possible. As I said before, manure may be easily lost by leaching, and also its value lost by heating; but if you get it upon the soil there is no loss by the leaching process. The liquid value is washed into the soil and immediately assists in the growing of the crops. Then, as we use our manures, separating them upon the surface of grass land, we get a double benefit. One is that the liquid manure washes quickly into the soil and produces an extra growth of grass roots, causing the clover to grow deeper and therefore adds more fertility to the soil. It also acts as a mulch, saving the moisture, and this matter of water in wet times goes down into the ground, forming pores through which water comes up again in a dry time and goes off into the dry air. The dry, warm air, rising from the surface of the earth, continually has a drawing or something of a pumping action, which naturally evaporates,—but if we cover up those pores, we save that moisture so that the roots of the grasses reaching through the soil, drink it in and it is not lost to us. Therefore, I think I get a great deal of gain by taking out these manures in their rough state and spreading them

on the grass land, through the action of the mulch. Now, in turning these grass lands six months or a year afterwards, there is still a part of the manure that is turned down in the soil and on that account we plow somewhat shallow because that humus that is turned under we wish to rot quite rapidly so that we quickly get the plant producing elements, and by this rotation process it will release other elements in the soil and make them fit for plant food, and humus to rot must come in contact with air, and must also have plenty of moisture to rot rapidly, and by turning it under shallow it acts as a mulch where it is turned down. If turned down shallow the moisture can come near the top, whereas if we turn it down deep it would hold the moisture and keep it away from the short roots, and if there is any time a plant needs moisture it is when it is young. We are told the seed of every plant is supposed to have enough nutriment in it to throw the shoot above the ground, after which its short roots should get food from the soil. We use manure for a top dressing because we like it to rot on the surface. We found years ago from actual experience in hauling out manure for a corn crop and spreading it on the ground that in a dry season we did not get as good a crop of corn from the ground where the manure was plowed under deep as where it was plowed under shallow, and the reason is, I think, that it was down so far that the roots of the corn plant did not get the moisture and the corn plant got stunted in its early growth, it being a dry season, and even though it might have been moist later in the season, it never caught up to that where the manure was plowed under shallow.

There are a great many other things I would like to say, but I feel that the best part of this meeting is that part called the discussion.

DISCUSSION.

Mr. Anderson—Mr. McKerrow, in regard to plowing under manures for corn, you say "as we used to do,—" do you mean that the plowing under of manure at the persent time for corn crop is not a good thing?

Mr. McKerrow—I stated that we used all the manures in

dressing grass lands and those grass lands are used later for corn. After they have been top-dressed on an average one year, then that manure is rotted down and does not require the moisture to keep up the rotting in a rough condition. We do not plow under manures put on the same spring.

Mr. Anderson—You would not approve plowing under manures for the present time? Our experience has been, it is a failure in the seeding for grasses and we have been obliged to retain our old meadows for grasses. What are we going to do for the corn crop? What are we going to plant on?

Mr. McKerrow—So far as I am concerned I have been able to get clover enough to have clover stubble for corn every year. With the exception of one of these years my clover has grown when sown upon winter grain. I am growing it because I feel pretty sure of getting a catch of clover on that grain. But I think I have a good deal better plan, which I tried a few years ago, and that is of sowing clover alone, so that we have had clover stubble to plow down for corn. This last spring I sowed eighteen acres of clover alone. I was very well satisfied with the results, except an a piece where the land was full of weeds.

Mr. Anderson—When did you sow this clover, in the spring of the year?

Mr. McKerrow—Yes, sir, when we sow it alone we sow it just as soon as the harrows can be used on the soil; or we sow on such snows as we have today. When we sow it with winter grain we sow it on the frozen ground in March, the first moisture that we get causes growth, and it gets a pretty good root before dry weather comes on. In the spring just as soon as the surface is dry enough for harrows to work, we sow it where we wish to harrow. In this way the clover gets a quick growth and has made me a very good crop.

Mr. Anderson—What time of the year would you cut it?

Mr. McKerrow—Not quite as soon as other crops of clover. In case I did not have grass land I would do the next best thing,—I would put out the manure where I was going to plant corn. Then when the time came for plowing I would plow it under a little deeper than when put on grass land. I would not plow it as shallow as I would if the manure had

been well compacted to the soil, but I would plow it under rather shallow, and then I would work that ground thoroughly with the harrows the whole depth that I had plowed, breaking all clods, and plant my corn.

Prof. Henry—I would like to ask if this seeding of clover is likely to come up again?

Mr. McKerrow—No, sir.

Prof. Henry—Our first experience at the university with seeding grass runs back as far as twelve years. At that time we sowed some three or four acres of mixed grasses on part of which was a nurse crop and part without. We found the portion which had no nurse crop gave us over a ton of hay the first year. We have been seeding almost every year since without a nurse crop and get the same results. Last year I recommended the experiment of sowing clover entirely by itself, to our students, in the spring time upon well prepared land. I have reports from two students, one in Waupaca county, who sowed seventeen acres of clover by itself, and as it was very dry in that particular part of the state, he reported to me that on his farm was the only clover in that part of the country as far as he knew. He said that an uncle had only half an acre on his whole farm. He had followed this young man's recommendation and left half an acre of the grain field unsown to grain and sowed clover seed upon that, and he had half an acre of clover while on the rest of the field on which grain had been sown there was no catch of clover. About eight miles from Madison another student sowed eight acres of clover by itself. He said his neighbors criticised him severely, but he has the only clover in that neighborhood; he has eight acres of good clover, or at least it went in the winter in good shape. This spring I am going to try to get at least a hundred farmers to experiment with clover sown by itself, and if they will do this we will be able to give some statistics later on. If you will sow clover by itself with timothy and other grasses that you like, but no grain crop proper for a nurse crop, you will be sure of a catch of grass, unless there is an absolute drouth. Of course clover cannot grow without water, but if you have what we commonly call a dry season, you will get from a fair

to a fine catch of clover. If the season is a good one for moisture, you will get from half a ton to a ton of hay per acre the first year, so there is not the loss that farmers are apt to think there is in sowing clover by itself. If you will think back you will find that you have been treating clover in a peculiar manner. You have been trying to have clover and grow along with it some other crop If I should come to you with a new variety of clover seed to plant, you would be willing to follow my advice if I said, "Plant this seed by itself." Clover is an old friend, our best friend, and we have abused it. We have expected it to grow and get its life somewhere and somehow among the growing oat or barley plants, where even the weeds won't grow. Mr. McKerrow has explained the reason. There is not moisture enough for both oats and clover. The oat crop is the stronger of the two and chokes out the clover. The idea that clover must have a nurse crop is falacious. The idea that clover must have something to protect it from the sun is entirely wrong. You might as well try to protect your oats and other crops by putting an umbrella over them.

Mr. Favill—I want to know if you give it out as your advice to us farmers who expect to get a living from clover, to sow it without any nurse crop?

Prof. Henry—I think it is the safest. If it is a good year you will get a ton of hay to the acre, and you cannot afford to lose your clover in the rotation.

Mr. Favill—When would you cut the clover?

Prof. Henry—It will be about three or four weeks later than the usual clover crop is cut.

Mr. Favill—At what stage of maturity would you cut it?

Prof Henry—I should cut it at about the same stage we cut clover otherwise as to blossom. If you want a hay that is magnificent for sheep feeding or for choice stock, the stalks of clover will be fine, and you will have an elegant hay crop. But do not let it get too ripe, too far advanced,—otherwise you will run the risk of its winter killing the following winter.

Mr. Grisim—I think we are getting away from the subject of manure. Mr. McKerrow, I would like to ask what your

soil is as to quality. Is it sandy, loam or clay, or what is your soil?

Mr. McKerrow—I have a very heavy clay on one of my farms, a clay on which grew mostly white oak timber. On another grew burr oak, and then I have some black land, a creek bottom that is pretty black.

Mr. Grisim—Do you claim your experience would apply to the average farmer of Wisconsin?

Mr. McKerrow—It will apply on general principles, but every man should have brains enough to modify my experience to fit his own case.

Mr. Grisim—About this manure business,—I believe it will take a longer time to rot coarse manure in a shed.

Mr. Kerrow—If I had been in a talking mood I should have talked more upon that. You cannot rot coarse, dry manure in a shed, and there is danger of losing a good deal by heating, and we clean our sheep sheds out two or three times in winter so that it will not heat so much.

Mr. Jones—I think it will be a good idea to have a barnyard, and when you draw the manure out put it in sort of a compost heap with the coarse straw and all kinds of rubbish at the bottom so that liquids cannot run away, and spread it out and throw lime and salt over it to help it rot.

Mr. McKerrow—Lime will injure the manure.

Mr Grisim—About your clover business, I think you have to cut your clover so late it would interfere with the cutting of the grain.

Mr. McKerrow—Yes, sir. We have some grain, although, we are not grain farmers, and we generally find time to take care of a clover crop. We do not have to have five or six men binding in the fields as we used to. My boy can leave the harvest in such shape that one man can easily shock it.

Mr. Grisim—Your experience is different from mine. I have had two who could not do it.

Mr. McKerrow—There is one thing here I wish to say in regard to this sowing of clover seed alone. Sow it on clean land free from weeds. If there are a good many weeds, watch it, and as those weeds get a good start run the mower over them and keep them clipped down. In that way you are able to get a good crop of clover in the average season.

Mr. Anderson—Don't you think that a farmer on an average may better take his chances in one or two years out of five of losing his seed than sowing the crop alone? We have had two years now in succession in the old way of seeding rather than sowing clover alone. The time of losing our clover is after harvest. We find we have a splendid stand of clover, but by the time we have our barley harvested before we can top-dress in order to save that clover, our clover is dead, the sun has burnt it off. Our harvest this year was such that I harvested three acres of barley very early. I had some manure that I drew out and top dressed between the shocks and there the clover was good and I had a fine stand of clover, but at the outer edge where it was not covered the clover was dead; so that I think it is more beneficial to run the chances of seeding in a grain crop with a stand of clover considering the value of our lands. We have considerable money at stake and should take the chances of a clover crop rather than to use the land only for clover.

Mr. McKerrow—It is a good question because I can see that I have been misunderstood. Formerly and at the present time we are growing sixty to one hundred acres of grain a season. That is probably one-third to one fourth of the acreage that we are cultivating. We always seed all this grain land to clover, but these dry seasons have taught us that it is better to take ten or fifteen acres for clover without grain to make sure that I will have some clover, and then sow the other sixty or seventy with grain. We may lose to a certain extent, but on the other side, when we lose the clover seeding we lose the seed; so I balance one up against the other and say I can afford to sow one-fifth or one-sixth to clover and lose that much of a grain crop, in my case. I do not know as every farmer can do that. You cannot take what we say in a farmers' institute and apply it to conditions that are different and make it fit. You must cut and fit and cut and fit until it fits your case. A farmer told me in Dodge county that he never used to have much use for farmers' institutes, but that he learned something in the farmers' institute last winter that was worth one hundred dollars

to him, and that was, throwing a ridge of dirt over the corn row after the planter had gone over it, and that ridge was cut down by harrowing and a cleaner row left. He said, "By learning this I am sure I saved one hundred dollars on my crop this summer, and last spring one of my neighbors planted at the same time that I did and the frost killed his crop, but as mine was still covered it was saved from the frost. I was not satisfied with driving twice over each row, but went to work and studied out some scheme by which I could throw that ridge up at the same time I put my corn in." He was not satisfied with the idea he got there but improved on it, and this man is one of the best farmers in Dodge county, Mr. Thomas Steele.

Mr. Favill—What you have been saying about sowing clover seed with grain applies to spring grain mostly, does it not?

Mr. McKerrow—Yes, sir. That clover seed sown with winter grain is almost sure to make a crop. It applies to spring grain only.

Mr. Jones—What effect does sowing salt have on clover in dry seasons?

Mr. McKerrow—I have sown salt for over twenty years. It helps my grain crop and I think it does help the clover, but it does not save the clover these dry seasons. I think it helps.

Mr. Jones—We are in the same county with Mr. McKerrow and I find that a good many farmers in that vicinity who have sandy soil do not cover the clover seed deep enough and I find the seed lying on the dry sand. If you would drag it in good you would have a good catch of clover. On another part where we sowed it was clay soil—there was a little snow on the ground and as quickly as it got muddy it came up. On sandy ground I should drag it in deep. Mose farmers do not get it in deep enough.

level ground on account of the washing, so that it will not wash away.

Mr. McKerrow—Mr. Jones' idea is correct, but I do not stop even for the hilly ground. We top-dress grass lands and there is more or less roughage there, and I think a good

proportion of the fertility is caught by the roughage even on the way down. Even where it is sloping and the wash has carried off some of the color of the manure, it don't seem to get very far because the grass below does not show much effect from it. Your suggestion is a good one and we try to follow that course. There is more or less roughage which I think saves the fertility that otherwise might flow away.

Mr. Grisim—I cannot fall in exactly with Mr. McKerrow's plan of manuring. I do not believe it is the best place to put the manure on grass lands. Now I do not pretend but what it might be as good for the land, but you do not get as good nor so much grass for pasture nor for hay for the reason that if that manure is a little coarse there will be places in your field where there is not a spear of grass. The manure should be plowed in. I have had a little experience in this business, about sixty years, and I have experimented, and I would give but very little for burnt manure. I do not like it. I have settled down to the plan to pile the manure in a large heap, spread it out and rot it each way, and keep it in such shape that it would be just warm enough not to burn. I have been all over the road, clear from the tallow candle to the electric light.

Mr. McKerrow—About spreading the manure on grass lands, if it is spread finely and evenly, it is not necessary to go over it afterwards. We do not get men on an average that will do it without a good deal of looking after, and then we have to run the slanting-tooth harrow over it at the time when the bottom is moist, so that it will hold the lower part, and when the frost is in the manure that tears it up, and then we go over it with a fork afterwards. It pays to do this.

Mr. Anderson—I would like to ask Mr. McKerrow if he ever tried the sulky rake? I hitched a horse to a sulky rake and it scattered the manure very nicely, and when the rake was full of coarse stuff we dumped it. Off from eight acres of top dressing I got probably five hundred pounds of straw, and this was an old meadow, and I cut two tons of clover and timothy to the acre. One of my neighbors had to plow their grass land under, but it was as good as mine the fall before.

Mr. McKerrow—We use the slanting-tooth harrow while

there is still frost on the ground, and if we do not get spring rains we put the sulky rake on, and have followed that plan for years; otherwise we do not use the rake.

Mr. Anderson—Do you believe in using top-dressing for other crops?

Mr. McKerrow—I always find a few loads in scraping up the yards and use it for top-dressing, sometimes for barley and sometimes for oats, always have some rotted manure that we spread on this ground, and in every case it has been satisfactory, more so than plowing under.

Mr. Convey—Quite a number of people seem to think that storing the liquids in a cistern is the acme of perfection. Will it lose by fermentation and is it a perfect manure if applied by itself?

Mr. McKerrow—No, sir; I do not believe it is a perfect manure if used alone. I think they have to dilute it or spread it thinly on the crop, and it is argued by some that it does lose by fermentation if kept there some length of time. Possibly Professor Henry can give us some idea along that line.

Prof. Henry—I do not think it will lose by fermentation if put out reasonably soon.

Mr. McKerrow—For my part, I think I would just as soon have the liquid and solids mixed if they can be got on the ground without too much loss.

Mr. Brigham—What is the advantage in having one of these cisterns, provided you have tight gutters to hold the liquids so that there is no chance for manure escaping in the stable, and then load it directly on the wagon and put in the field?

Mr. Convey—The Department of Agriculture has issued a bulletin in regard to manure in which they say the fermentation is quite rapid where the liquid is stored alone. I think the majority will not recommend using liquid manure in that way. I think the best plan is to dump the liquid and solids on the land, or to make a compost heap and put both liquid and solids together.

I wish to ask Mr. McKerrow if those commercial fertilizers in the experiment station in Ohio were applied directly to the wheat crop?

Mr. McKerrow—Yes, sir; they were applied directly to the crop.

Mr. McKerrow—In regard to the salt question, we have found the best results by sowing before the grain comes through the ground because we sow quite heavily now.

Mr. Williams—My experience is to sow the salt when the grain is up, and then the grain keeps the moisture.

Mr. Convey—There is one other feature that I would like to have the opinion of Mr. McKerrow on, and that is the advisability of using ashes and lime on manure.

Mr. McKerrow—I would prefer to have them separate. I should say, no. I am not a chemist but am told that lime releases some of the elements in the manure heap and that ashes have somewhat the same effect, and it would be better to put them on separately.

The President—We have to close this discussion. The next subject will be corn culture and harvesting crop, by Mr. Convey.

CORN CULTURE AND HARVESTING CROP.

Thos. Convey.

(Paper.)

Corn with me has done best on clover sod. It makes a cleaner field, easier cultivated, less inclined to wash, having greater capacity to take up the moisture; it is also more retentive of moisture, and will withstand drouth a great deal better, especially if ground is well saturated after being prepared for crop. It also contains more available fertility than if preceded by any other crop. The cultivation that is given the corn develops the fertility about as rapidly as the growing crop can make use of it. The absence of weeds in a clover sod permits of rowing corn but one way. On clean land this is a decided advantage, as there is less root pruning, and a better crop can be produced with less labor, for various reasons.

About two-thirds of the usual amount of cultivation is all

that is necessary. On rolling land advantage may be derived by running rows, that they may be as nearly level as possible. This lessens labor not only in cutivation, but also in harvesting. Moreover as the land is ridged to some extent, in cultivation, a thunder shower, or heavy rain, does not flow from the field so readily, and water is taken up by the soil that the crop will need at some time during the season. I prefer a spring plowed clover sod, and prefer to harrow and plant, about as fast as plowed. This can easily be done where corn is only rowed one way. If preparing any other kind of land fall plowing is more desirable, but fall plowing should not be left without cultivation until planting time. Harrow, or cultivate, as soon as ground is fit, it will prevent ground becoming lumpy, kill weeds, and retain moisture. I prefer an early dent corn for nearly all purposes. It makes a surer crop for all conditions and seasons. The smaller varieties can be thickly planted, and appear to yield a larger amount of food and of better quality, than the large varieties. Our land is well prepared by disk and harrows before planting. We plant as shallow as possible and have it covered; harrow ground about as soon as possible; keep harrow going most of the time until corn is about ready to come up. Then quit for a time, until it is well up, then start harrow again, and work at it until corn is at least six inches high. We then cultivate with two horse riding disk cultivator with levelers attached, giving shallow cultivation about two inches deep, and follow this with a Breed's weeder, taking two rows at a time. We cultivate twice in this way and finish the third time with the sulky, always giving shallow cultivation. This however to give satisfaction, must be done with an implement that is designed for that purpose. The whole surface of the ground between the rows should be stirred and the surface should be level after the machine passes over. This can not be done with four or six shovel cultivator, with shovels four to five inches wide tapering to a point; if allowed to enter the ground only two inches, at least half of the surface would not be disturbed, until cultivated the other way; in the meantime the land would dry out and become weedy.

When land is cultivated deep, and left ridged in a dry

season, neither roots nor moisture will be formed within three or four inches of the surface, the roots not being permitted to grow near the surface where the soil should be the richest, and where a moderate rain fall would reach them. After trying both ways, for a number of years, I feel satisfied that by cultivating only one way I can keep corn clean, and have it mature two weeks earlier, especially when deep cultivation is not permitted.

Farmers as a rule give too little attention to maturity in corn. The moisture in grain may run from 4 to 25 per cent., the corn having the least moisture having the greatest feeding value. In the central and northwestern part of the state, corn is not grown so largely as it should, want of success being due to faulty methods in cultivation, and the use of varieties that will not mature early. Corn can be profitably grown in nearly all parts of the state, either for grain or fodder, better for both where it is possible. I prefer to top the clover sod with manure during the winter and spring, before plowing up for corn. With fall plowing it is better to cultivate immediately after planting, then harrow before corn comes up.

DISCUSSION.

Mr. Brigham—What variety of corn do you use?

Mr. Convey—Pride of North. I have aso tried a small variety of sweet corn but it does not yield as much.

Mr. Biggelow—I would like to ask how you store corn?

Mr. Convey—We put it in the barn and in sheds, store it under cover when we have sufficient amount of room. I have stored corn in large quantities and store it so now. When we put corn in the barn we pack it in tiers so that it will not heat because we are fearful of its spoiling from over-heating. The air will pass out to the ends of the stalks and up through the tiers of corn. It can be stored that way unless it is very moist.

Mr. Favill—I want to correct you on one thing, and that is, is it not profitable to use the binder in making silage? My nephew told me that by using the binder for filling his silo

he saved fifty dollars this year, because it can be cut and handled so much cheaper in every way.

Mr. McKerrow—I would like to ask for Mr. Briggs' experience in using the corn binder, we would like to know a little about it.

Mr. Briggs—I would not think any more of harvesting a crop of corn the old way than a crop of grain the old way. In regard to the binder in filling a silo, I cut my corn with the binder, and I can take the corn where it is cut with the binder to the house about as quickly as it is shocked up. As I filled my silo this year, we have to draw it from eighty rods to half a mile, and with two teams got the corn to the machine as fast as we could cut with the feed-cutter.

Mr. Convey—You can cut faster with those cutters on wheels than with the binder because you can cut two rows at a time. If you run it through a feed cutter you must cut the bands and remove them.

Question—How much can you cut in a day?

Mr. Convey—We cut about six to eight acres. We do not cut long hours.

Question—How much an hour?

Mr. Convey—I have not figured on it, but I know there is an immense advantage in handling it in that way. Our machine is on wheels.

Mr. Grisim—You can tell how much you did cut, can't you?

Mr. Convey—Five or six acres a day, and not long days.

Mr. Skinner—I bought a Deering binder and was able to cut seven to eight acres a day and put about fifteen bundles in the shock. We threshed it with the grain thresher, about eighteen acres a day, and the fodder kept well. I think the corn binder is the coming machine.

Mr. Briggs—Mr. Convey, did you ever use a corn binder?

Mr. Convey—No, sir.

Mr. Briggs—My advice would be to get one and try it and see if it is not a superior way. I have tried both ways, the way that you recommend and the way that I am working, and I would not work your way for any consideration.

Mr. Convey—In my case I am satisfied I do not need it. A

good portion of the corn goes into the silo and we unload our corn with the horse.

Mr. Briggs—Was your corn dry when you threshed it?

Mr. Skinner—We threshed our corn when we were not able to handle it, it would break up because it was so dry.

The Secretary—I would ask Mr. Skinner if he has had any experience in threshing corn in a wet fall? Don't you attribute the preservation of the fodder to the dry season?

Mr. Skinner—No, sir; it may heat some, but like the silo, it don't spoil,—get warmed up and dry out. Mr. Racy, living four miles this side of Beloit, said the barn outside was all covered with moisture from the fodder inside and did no harm.

Mr. McKerrow—I threshed for three years some years ago. The first year was a dry fall and I thought threshing corn was just the thing. The fodder kept well in the barn and the corn kept fairly well. We spread it out and it kept well. The next season in some places in our corn field there were blanks made by the cut worm, and we planted in a little later filling in these blanks. It was a dry fall, but this corn had not fully matured. We threshed that in the dry time and had a bad time of it. The corn on the barn floors kept one man pretty busy stirring it, and the fodder both in the barn and in the stack was mouldy and was not satisfactory. The next year, not having any blanks in the corn field, I threshed again, but it was rather a damp fall, though the corn appeared to be fairly dry, and that year it was a failure, and I quit thershing corn on that account.

Mr. Grisim—Do you help the growth of your corn by harrowing and driving the horses over it?

Mr. Convey—It is not necessary that you drive the horses on the corn any more than the cultivator, and we find it does not do the corn any mischief and keeps the land clean.

Mr. Grisim—There is only one way that I can raise good corn, and that is, to have the ground well fitted, a good season and good cultivation.

Mr. Anderson—Mr. Convey spoke about cultivating his corn, will the harrow leave it in that state? He also spoke of a weeder,—we would like an explanation of that.

Mr. Convey—The harrow does not leave the ground perfectly level. Ridging the land does not interfere with the successful growth of the corn. The Breed's weeder is the implement that gives the best satisfaction if the land is in proper condition. You must keep your land mellow if you use the Breed's weeder.

Mr. Anderson—Where he uses the harrow sufficiently, if the soil is in condition, is there much use for the weeder, providing the weather is favorable so that he destroys the weeds in the dragging? The benefit that I understand the harrow has, is that it loosens the ground in the row and destroys the weeds before the corn comes up. Do you plant your corn with the horse planter?

Mr. Convey—The old Keystone planter. I plant it that way with good results. Plant three feet apart each way. Then it is in the very best condition to prevent weeds starting, and I never let them get a start.

Mr. Anderson—What kind of a harrow do you use?

Mr. Convey—I prefer the straight-tooth harrow every time. I think the slanting-tooth harrow is a mistake. The straight-tooth harrow gives me the best satisfaction.

Mr. Anderson—Did you ever see the cultivator used that was recommended by an institute conductor—the Tower Bros.' surface cultivator? There were about half a dozen farmers in our section who bought those cultivators, and I think they are beyond doubt the best cultivators that were ever introduced into a corn field, in our experience. It leaves the ground in such a fine condition that it will push the dirt up to the corn and leaves the ground in very nice shape, and also hills it slightly.

Mr. Convey—I have used the Acme harrow and found some difficulty in cultivating with it when the knives are out of condition. I was afraid the Tower Bros.' surface cultivator could not always take hold of the land, and took this cultivator on trial. It has the same style of levelers as the Tower Bros.' You can run it just as shallow as you like. It has greater capacity for work than the Tower Bros.' cultivator. The Tower is one of the best implements.

Mr. Anderson—Is not the disk likely to throw the dirt, if your team walks sufficiently fast?

Mr. Convey—We use shields. You can adjust the running of the disk just as you like, or cultivate from the corn and pull the earth back. It is a machine calculated to do good work when rightly handled.

Mr. Jones—Can you keep grass off with the corn cultivator?

Mr. Convey—Yes, sir. I have not got any.

Mr. McKerrow—Get rid of the quick grass before you plant the corn. Keep working at it, never let it get a green leaf on it, and you can kill it. It needs steady, incessant work.

Mr. Anderson—Constant plowing, or hand work?

Mr. McKerrow—The spring-tooth harrow that I have drags the roots out, gathering them up and keeping them on the surface while dry.

Mr. Williams—This last summer we hoed it and dried it in the barn.

Mr. Jones—The main thing we have cultivated corn for this last year was on account of its being too dry, and not on account of the weeds. We kept going through the corn field after every shower to conserve the moisture.

Mr. Convey—Did you cultivate immediately after the shower or wait until the ground was sufficiently dry?

Mr. Jones—When the corn field was in fit condition. Not right after the shower,—when the ground is in right condition, and you always want to keep the weeds out on account of the corn.

Mr. Grisim—Supposing it rains a week?

Mr Jones—We keep the weeds out when we plant the corn.

The President—Would not the weeds grow up in a week of rainy weather?

Mr. Jones—No, sir; I do not think so.

The President—But you cannot go on your land in wet weather?

Mr. Jones—As quickly as the ground is plowed we drag it and keep dragging it and keep cultivating it and kill the weeds before we plant the corn. If there does happen to be a wet time, there will be a time when it is dry enough.

Mr. Anderson—Do you plow in the fall?

Mr. Jones—No, sir; I do not believe in fall plowing. It depends on the season. In a dry time I think the ground ought to be plowed before the corn is planted.

Mr. Grisim—Can you plow 150 acres of ground in the spring and get it ready for corn?

Mr. Jones—No, sir, not alone.

Mr. Grisim—I would not have it plowed in the spring.

The President—Don't you think land plowed in the spring would stand a drouth better than if plowed in the fall?

Mr. Jones—Yes, sir. If you have a dry season I would rather have it plowed in the spring.

Mr. Briggs—What is the nature of your soil?

Mr. Jones—Sandy soil.

Mr. Grisim—The benefit of fall plowing is that you get an early season. I do not want to put it in the mud, but I got a better crop from fall plowing than from spring plowing.

The President—Don't you get a great deal less start when sowed early than when sowed later?

Mr. Grisim—Yes, I think I do, but I found I got a better crop of potatoes or anything else when put in a little early.

Mr. Tusler—I would like to ask if he gets a better crop by planting his corn early or planting it a little later, and not have it frozen?

Mr. Grisim—I never made calculations on frost. My rule has been that whenever the ground was ready and the season would admit, I would put in my crop, no matter where the moon was. I settled upon that as an established rule.

The President—You don't believe in palnting in the moon?

Mr. Grisim—No, sir, I could not get up there. (Laughter.)

Mr. McKerrow—I believe in the full of the moon, that is the proper time to plant corn because you can plant later at night.

Mr. Convey—Quite a number here seem to think it unavoidable to have a large number of weeds. It is not necessary to have those weeds, and if a corn field cannot go untouched for a week without having weeds grow six inches high, it is due to bad farming. Outside of that, and with other styles

of land I would prefer fall plowing every time. I plow about four inches deep.

Mr. McKerrow—I want to agree with friend Grisim in one thing, and that is that fall plowing is the right thing to do. But I have to differ with him in regard to fall plowing for corn when it is a clover sod. There are with us on clay lands some other things to be taken into consideration besides getting it in early, especially if there is some timothy. There is the cut worm to think about, and the frost to think about, and this matter of top-dressing through the fall and winter; and after experimenting a good deal I have come to the conclusion that it is best to leave that clover sod until just before I want to plant it, allowing the clover to grow up two or three inches before the 20th or 25th of May, and then putting in the plows,—then turn that over four or five inches deep, keep the harrow and roller in the field,—then roll it down. As soon as it is dry enough, work it, but in case it is a dry time, have every piece of ground rolled and harrowed before dinner and before night and not let it dry out, and then plant it just as quickly as possible, and follow right up in that way each day, and I get better satisfaction than by fall plowing this sod and planting it in the spring. In the dry time save the moisture by stirring the ground.

Question—Harrow first or roll first?

Mr. McKerrow—That depends on the condition of the soil. If there are other grasses, then we quite often run the disk harrow over lightly.

Mr. Anderson—I want to ask Mr. McKerrow if that is not true in his experience in clover as well as stubble, to top-dress and work on the same principles as for clover sod, and if the results are not better than in fall plowing? Let the manure lay and plow just the same and use the ground just in the same condition as the clover sod, and see if it does not give better results than from fall plowing?

Mr. McKerrow—When we are planting stubble we fall plowed with stubble to a pretty good depth, seven or eight inches, and after that we began to top-dress in the winter and then re-plowed again in the spring between three or four inches deep and worked it for corn. Otherwise prefer to plow for stubble, as you suggest.

Mr. Williams—If you take a pulverizer and cut it up, it don't dry, but if you plow it, it will. My experience is that the pulverizer is the best. It don't dry up; it is better than spring plowing.

Mr. McKerrow—We do not find much trouble there.

Mr. Jones—I would like to ask Mr. Convey how he saves and stores his corn seed?

Mr. Convey—We have raised a variety of corn for several years that is called the Pride of the North. We have had excellent seed since we started to raise that variety because it is mature before we pick it, and ripe early in the season. We fire-dry it for a time and then shell and store it, and have good results in that way,—just as good seed corn as I ever saw. With the later varieties it would be better not to shell until a short time previous to planting. There is quite a difference in the late and early mature seed corn. There is no difficulty in saving the best of seed.

Mr. Spaulding—I would like to ask Mr. Convey if there is any particular time of the day preferable to harrow the corn?

Mr. Convey—Our corn is thickly planted, in fact for the last two years it has been too thick at harvest time. I do not find that harrowing pulls out any noticeable amount, and for that reason I was not particular about the time. I would prefer to harrow it when the corn has toughened up somewhat with the sunshine. We have lost by planting it too thickly.

Mr. McKerrow—I would like to ask if it improves the corn crop to buy from other sections?

Mr. Convey—I think not. Corn can be kept for an indefinite period on a farm where it is properly cared for. Corn should never be bought from a southern latitude. I have obtained the Pride of the North seed corn where it was raised in northern Illinois and had poor results, and also from Massachusetts, and it did not do as well. Corn can be kept on the same farm for an indefinite time, and I do not think it will run out. I would not say to seed corn off land heavily manured, but off sod land or new land.

Mr. Grisim—What plan have you in selecting your seed corn?

Mr. Convey—I select as nearly perfect formed ears as I can, and take no ears with smut on.

Mr. Grisim—When do you collect it?

Mr. Convey—In August or September.

Mr. Grisim—When do you seed? Do you husk it?

Mr. Convey—Sometimes we shock first. We start to husk and save seed early in September. I can pick it out from one acre.

Mr. Jones—Is it not safer to keep your seed corn on the ear until ready to plant?

Mr. Convey—It might be safer but I do not think it necessary. We shell it for the convenience of storing it and have had no bad results. It is perfectly dry before we shell it

Mr. Grisim—Tell me about how many bushels you raise to the acre as a general thing.

Mr. Convey—One hundred bushels in the ordinary year.

Mr. Grisim—How many acres would you take to raise 100 bushels from?

Mr. Convey—Not many.

Mr. Grisim—Do you shell the whole ear, or off the butts?

Mr. Convey—We run it through the corn sheller. I select ears with good kernels even to the tip of the ear, and where I have looked up the results have found that we get just as good results from the tips as from the butts. But there is this difficulty, that you get a lot of small kernels that will make it quite irregular in planting, unless you take precaution to plant on the thin side. There should be some regularity in the number of kernels on the hill.

Mr. Williams—I always shell both the butt and tip ends.

Mr. Convey—The butts give the largest return as far as I know.

The President—The kind of corn you raise, the Pride of the North, how many days does it take to mature a corn crop?

Mr. Convey—I have heard of ninety day corn but have never seen it. I think it takes one hundred to one hundred and twenty days to mature a corn crop.

Question—What is the amount of seed to the acre?

Mr. Convey—I have not kept record of it. We plant about

three feet apart in the row and about equal distances the other way. We do not care about having all our corn perfectly eared. We like to gather a large crop of forage and for that reason we do not strive to have all perfect ears, but a large amount of fodder, as we value stover almost as much as we do the corn crop itself. I think a bushel will not plant much more than six or seven acres.

Mr. Ames—I would like to ask if any gentleman in the room thinks corn would deteriorate by shelling any particular portion of it and planting it by itself and by wasting the tip end?

Mr. Convey—I do not know as to the result of tests made along that line. The result from the Experiment Station is that the best is from the butt and the worst from the tip end.

Prof. Henry—The question of tips and butts and little kernels of corn has been experimented and it is in favor of planting from the whole cob, not selecting.

The President—Prof. Henry would like to say a few words to you.

Prof. Henry—I wish to give a cordial invitation to all the farmers and others attending this convention to visit the university and the agricultural department of the university. There will be some one there to show you about the farm and through the buildings. We have at the university some thirteen buildings. We cannot show you live stock in all departments, but we are growing as rapidly as our means will permit us. Our legislature has provided that we shall have a complete farm department, but the income from taxes is not yet received and we cannot build our dairy farm for some little time, although the money is provided by the legislature. Before you leave for home do not fail to take in some of these objects which are of interest to you, and if you do not get the reports of the Experiment Station, leave your name with our clerk, and you will get our report. Visit the agricultural college. It belongs to you.

The President—We will now have to close the morning program. We think we have an interesting program for the afternoon and will be pleased to meet you all at two o'clock.

Adjourned until 2 p. m.

Wednesday afternoon, 2 o'clock.

The President—The first subject for discussion this afternoon was "Benefits of the Short Course in Agriculture." We have changed it to broaden the question a little, making it Agricultural Education. Mr. R. A. Moore, of the Agricultural College, will talk to you on the subject.

AGRICULTURAL EDUCATION.

R. A. Moore, Experiment Station, Madison, Wis.

Mr. President, Gentlemen and Fellow Workers in the Agricultural Cause: I am pleased to stand before you today as an ardent advocate of agricultural education. I have for years felt the dire necessity of the same and fully realize that the day is not far distant when the world will recognize from far and near that in order to succeed, the farm must be run in accordance with scientific and systematic principles, based upon diligent research, and careful thought and investigation, as well as the professions and other occupations.

Education is the pearl of price, and by its firm establishment into our country's soil, brought forth the product that startled the old world to its very foundation and caused our land to be acknowledged as Free America. Most noble name! How we revere it! But do not let us forget that our broad emblem of victory was consecrated and dedicated to liberty by the valiant patriotism of our agriculturists.

American genius has everywhere made itself manifest. In arts and professions we stand peers to the old world, and for inventive genius, energy, ambition, undaunted courage and executive ability the Americans are recognized far and wide. But I am sorry to say, worthy listeners, that the professional and inventive faculty have been largely built up to their present standard at the expense of our agricultural industries.

For years the very cream has been taken from our rural communities in order to build up the professions, until it is almost an established fact that nearly all young men of promise leave the farm at an early age lured by the dazzling imaginary glory and inducements held out to them by the cities.

The youth of our country have been lured on by the few bright examples of prosperity which are heralded far and near, while the thousands who were merely eking out an existence and the hundreds of thousands who have been drawn into the very vortex of sin and corruption and descended to the lowest depths of degradation, were rarely if ever heard from.

This constant drain has continued until in some sections of our country a residue is left upon the farm who are not worthy of the name of farmers. And yet some complain and wonder why the farmers are not more successful and lay the blame to almost everything except the right source, when in reality it is general change of conditions, of production and consumption, combined with close competition, loss of the fertility of the soil and a general lack of knowledge of the fundamental principles of agriculture.

The soil has been robbed of its fertility and no more can we gather those great harvests which a few years ago were the common characteristics of our country, and unless this fertility is properly restored and the occupation of farming placed upon a systematic basis combined with a general knowledge of the occupation we follow, our soil will continue to be unproductive and our vocation unremunerative and distasteful.

Now, how are we to remedy this evil and retain our sons and daughters to comfort our declining years and build up our agricultural interests until the farm becomes the most peaceful and attractive spot on the face of God's footstool? This problem is solved in the educational opportunities offered our offspring. Since the introduction of libraries and the graded course system in the common schools throughout nearly the entire state, the advancement has been marvelous. Through the introduction of the township libraries by one great master-stroke the fetters of slavery to the old text book were stricken from nearly a half million of children in our rural districts, and an opportunity is now given all to acquire the foundation of an education at least. Here the Short Agricultural Courses of the University of Wisconsin hold out those grand inducements to all worthy sons of the

soil to come and receive that special training which will properly fit them for that important calling they are to pursue, and at the same time establish a love and veneration for the work which will cause them to go back to their labors with renewed energy and vigor and with a thorough knowledge of the fundamental principles upon which successful farming is based, contented and willing to continue in the work and help build up the agricultural industries of the great state of Wisconsin.

We should profit by the example set us by Denmark, only about one-fourth the size of Wisconsin,—yet, through her earnest efforts in behalf of agricultural education has made farming the most prosperous and desirable occupation within its borders, and today England, who can boast of her grand navy built largely at the expense of her agricultural interests, is paying litte Denmark the sum of $2,000,000 per month for butter alone, besides great sums for bacon and other farm productions. Now, why can't we with our carefully trained youth establish a like reputation for our butter, cheese, mutton and other products, second to none in the market. Our state has its natural advantages for nearly all farm products, and by the young men grasping the grand opportunity offered them at the Agricutural College will be enabled to compete with the world. For "knowledge is power" and that power will raise the standard of the state of Wisconsin so that her products will find a market far and near, and our soil, from our knowledge of the advisability of purchasing fertilizers in the form of feeds from our neighboring states, will soon become the most fertile and productive spot in America. As I look upon our little army of about two hundred who are now taking this special training in the agricultural and dairy courses, I feel we can scarcely measure the marked influence and benefit those young men are going to lend to the future of our state, and it is sincerely hoped that instead of two hundred we can soon enroll twice that number to take this grand work upon which the future prosperity of the state depends.

DISCUSSION.

Mr. Convey—Mr. President, I would like to ask, knowing Mr. Moore has been connected with the common schools in his own county, about the advisability of introducing a limited course of agriculture in the common schools.

Mr. Moore—I have been laboring along that line to a certain extent in my county, and last year we put in one work on agriculture in particular. It was the first principles of agriculture published by the American Book Company. A great deal of interest was taken in that book. We have been laboring along the agricultural line for several years in the way of collecting different cereals and storing them away in each school; also different classes of wood, and very instructive object lessons are taught from the different kinds of wood, soils and grasses. It should be our special object to train the pupil's powers of observation very carefully. I further think that we should put more stress upon this particular line of work because I feel that the day is not far distant when our common schools are going to be connected more closely with the agricultural courses of the university; therefore we should put forth more special effort along that line.

Mr. Arnold—This being the case, it would necessitate the teachers being examined in those lines and necessitate the legislature passing an act making that a part of the course, would it not, in order to make it uniform throughout the state?

Mr. Moore—We may need some special legislation along that line in the future. So far we have not had any. Through our library books, (those works on nature, history and agriculture) my teachers have been able to thoroughly prepare themselves for the work that has been so far introduced in the schools and have been able to handle that work to very good advantage.

Mr. Arnold—I believe that we should have a text book of this character and that we should also have one other thing introduced in our common schools,—that music should be taught in our common schools. I think if it is considered by the people of Wisconsin that they will come to that conclu-

sion. We are becoming, as a people, too material. The almighty dollar is held up as the ultimatum to which we should all aspire. Something of the aesthetic should be cultivated as well as that of making money. The German nation has gained very much in this respect, and I think we may learn a lesson from them, and I think there would be greater advancement in the other courses of study by making music compulsory. If the subject would meet with approval, cooperation on the part of our public men and women of influence throughout the state, I think that a bill of this kind might not take the usual course of all worthy bills, that is, of being defeated. If it is considered, and we should unite upon it, I think the bill would be carried through the first session. The man who would get up the first book of this character would be a lucky fellow. It would require a class of music where there would be no chance for division of sentiment upon religious questions, and patriotic songs especially should predominate.

The President—Making that education compulsory?

Mr. Arnold—No, sir, perhaps not compulsory, but yet as one of the text books, and I do not know that we have any uniform text books throughout the state. But a law can be framed so as to make that a part of the course and a part of the examination, and no teacher should teach in school unless he or she knows something about music and agriculture.

Mr. Moore—I hardly endorse what you say about the value of music in the common schools. In nearly all the common schools in my county we have considerable of that work. At present, I think, the district board has a right to introduce the study of music, if they see fit; yet, without asking the advice even of the board, I have suggested to the teachers that they have music. We use the Glee and Chorus book largely, and very few teachers would think of opening school without having two or three good pieces of music.

Mr. Gettle—I feel somewhat like an interloper in this convention, although I lived upon a farm a good many years. Several questions have been brought out here that tempted me to say something to you on the subject. It seems to me

that the introduction of a course of agriculture into the common schools is an almost insurmountable object. We must remember that while Mr. Moore has been successful in Kewaunee county, that two-thirds of the teachers there are young men, but all elsewhere throughout this state the men have been crowded out or gone out voluntarily because of the lowness of the wages, so that we have eight or nine thousand women with sixteen hundred to two thousand men in those schools. The larger number of teachers are trained in the high schools in the cities,—girls who do not do anything but attend school and know nothing about soils or fertility or cows or any of those things we expect a youth to know about, and think of turning loose those girls out upon the country boys and girls to teach them agriculture! Now, then, I think it would be preposterous for us to think or discuss this matter of sending out these people to train our boys and girls. I think though that there is a way by which this training can be brought about, a way which the people of the country districts have not thought it proper to avail themselves of in the past. I know there is on the statute books a provision permitting any township in the state of Wisconsin to establish a high school in that township. Sustain a township high school for all the boys and girls, permit the engaging of the very best teachers, and let it grow and develop as much as possible. I think there are only three townships in the whole state of Wisconsin which have been interested enough to provide a high school for the boys and girls. If these young men and women go out and agitate the subject of township high schools and establish in those high schools a department for the study of agriculture, I think the question would be very nearly solved. The question lies in the hands of those people in the country districts. As to the library matter, I am very glad that I represent that part of the work in the state superintendent's office, and I was very glad for the good words by Mr Moore. Until recent years, until the time of the farmers' institutes, these general discussions throughout the state, there has been no desire for general education, and it is only now that the result and the fruit of the meetings held all over the United States is being crystalized in the form of ag-

ricultural literature, and as soon as it is crystalized it will be made valuable to the country boys and girls.

Mr. Grisim—I was thinking of asking Mr. Arnold if it would not be a good thing to introduce patch-work in the schools. When I went to school, seventy-two or three years ago, teachers taught patch-work. I expected to hear a number get up and tell of the great benefits they had received from it, and I am a little bit disappointed. With your permission, Mr. President, I will give my history of the benefits that I have received from this agricultural college. In the first place, I came to this country in 1873 from Canada. I brought two boys with me, one eleven and one thirteen years,—good honest working boys. I gave each a hoe, when seven or eight years old, and an ax, a scythe and a rake, and they handled them to good advantage. I came out here and bought a farm, a quarter section, and my boys worked on it and were good steady fellows. Well, here a few years ago my oldest son took it into his head to graduate and he came to the Agricultural College. It cost him $150. He came home in the spring and brought some little kind of a thing like that (indicating)—one or two little books, and said, "I aint going to follow your plan of farming at all". So he plowed in his potatoes and plowed out his potatoes, and had to buy them next year. Well, I bought another quarter section adjoining that quarter,—my constant care was to increase my store and keep the boys at home. The oldest was twenty and the other eighteen, and I says, "You can have all you can raise on this half section,—I will stay here and you can have all you can riase,"—they were good steady fellows. Well, finally one of them got married and I divided this half section, and he went on one quarter and I and the other son stayed on the other quarter. Pretty soon he got married too, and then I sold out to them for about half what the property was worth. They thought they were not making anything and they sold the farm. And that is all the Agricultural College has done for me. There is one thing that I do think,—there is no farmer who can do all his own work. The idea of a farmer keeping a kit of tools to repair all his machinery! Let the farmer do the farming and hire the other work done.

Mr. Boothby—I think the gentleman who has just been speaking to us has misrepresented the work of the short course. I do not think there is a boy in the dairy department but who will say this course is doing him more good than he could get at home under the circumstances in which he was placed at home, and that he is more than getting the interest from any money invested in this short course. Let them investigate the work. If you could estimate, if it were possible, the knowledge that a boy has when he first comes here, of agricultural work, and compare it with the average boy that goes away from here, I think you would find a great increase and you would find this increased knowledge to be something that will last him all through life. It gives him a better understanding and he has more capacity for work than he could otherwise possibly have. (Applause).

The President—Boys, you are all right. (Applause). I want to say for your benefit that my friend over here, if he was running a farm, instead of taking the butter fat from the milk with a separator he would take the old fashioned skimmer to get it out.

Mr. Grisim—I know the old lady would like the old fashioned way the best. (Laughter).

Mr. Moore—I think the case of our friend is a rather exceptional one. That is the same way they are talking in old England and therefore little Denmark gets possesison of the trade.

Mr. Grisim—I do not know but what I will accomplish my object yet,—I think I will succeed in drawing them out.

The President—You are on the right track. They are likely to come out all right. (Laughter).

Mr. Jones—I was a short course student three or four years ago. I found it a great benefit. It makes a student of you. A farmer must be a student to be a successful farmer nowadays. We know what plants grow on and just what is needed in the soil, and how many farmers do really understand this question thoroughly? When the soil is run out, if you make a study of agriculture, you know just what is needed. You know the proper ration to use for growing animals, etc.

Mr. John Brossimer—I think it is a very good thing to have this Agricultural College, but at the same time I can tell you

that I could count quite a number of these high-studied men who think they can learn farming just out of the book. I have seen many who have bought farms for six, eight, ten or twelve thousand dollars, but it was not long before they ran down. A farmer has to work. But the most of those learned farmers, that we call Latin farmers in Germany, are not successful. A farmer must commence early in the morning and he must notice every little thing.

Mr. Boothby—I think our friend who has just spoken has a misunderstanding of the students that are now attending the state agricultural department. They are not, as he classes them—I cannot recall the name, but it seems to me what he would say is, high monkey-monk. They are the farmers' sons of the state of Wisconsin, who are progressive men. You will not find any one attending this short course who is not in a state of progression, and without a state of progression the agriculture in the state and the whole United States would go to pieces.

Mr. White—The greater number of the boys that are attending the short course of agriculture are boys raised on the farm, but at the same time they do not know when and how to apply crops and handle the crops most advantageously, and we mostly all come to this short course to learn these particulars, and there are but few boys among farmers that do know and understand the principles of farming until they have attended some such course as this or gained the knowledge from study.

Mr. McElroy—I just want to say in answer to my aged friend (Mr. Brossimer) that I am old enough to remember the time when the question was discussed whether spading or plowing was the most successful method of agriculture. I do not think you would listen to me one minute here if I advocated spading now.

The President—We woud send you across the lake. (Laughter).

Mr. McElroy—Now we do almost all our work by machinery on the farm, and I do not agree with Mr. Grisim that a blacksmith shop and a carpenter shop and a machine shop on a farm is nonsense. About sixteen years ago I wanted to make a bargain with a blacksmith to do all my work, but instead I

bought some tools and it has not cost me in sixteen years what I offered him for one year. I say there is progress, and these young men going to that agricultural school at a time when they feel the need of knowledge, when they can utilize the knowledge, it must be a great advantage to them and to the country.

Mr. Elmer Anderson—It seems to me that there is a wrong impression being left upon this audience in regard to the agricultural course of the university. I speak as a student of the short course, and I believe that we are surely getting the advantages in a concise form of the experience of scientific men who have investigated the matter carefully and advantageously for many years back. I believe that there is science in these things, in feeding, and in manuring and all these things. Men of intelligence have through their carefulness and precaution examined the practical methods and the impractical methods. If we are gaining anything we are gaining a true knowledge of the practical methods of agriculture.

The President—We will have to close this subject. Our friend over here is all right. The idea and the position he takes is correct, if you only understand it as he intends. He wishes to convey the idea that if through this education you expect to get a living on a farm, without work, it will be a failure, but he does not mean to say to you boys that because you have this education that you are going to make poorer farmers than you would without it, but that you must work although you have the education. You must study and think. So I think the old gentleman is all right and I agree with him. (Applause).

The next question for discussion is a very interesting one, and will be discussed ably by a man who has had practical experience for many years, a man whom it has been my good fortune to know, and I can assure you that no man in the state is better prepared to talk along that line than my lifelong friend and neighbor, Mr. Arnold.

HOW CAN FARMERS RAISE HOGS FOR PROFIT.

A. A. Arnold.

Mr. Chairman, Ladies and Gentlemen—I always like to associate with people that know more than I do, with intelligent people,—I generally learn something, and I have sort of a fellow feeling for a hog because he knows more than any other brute we have on the farm. I also like a hog because he is more like the rest of us. If you examine him physiologically you will notice that he is very much like we are, and whatever would agree with our stomach would agree with the hog's stomach. I prefer a black hog because if he is black I can tell him from a white two-legged hog. I always like to talk about hogs for another reason, I always had sympathy for the under dog. There is no animal that has been abused so much as the hog and so little appreciated, and it seems to me the hog needs a friend and advocate. I like hogs because I have found them profitable, and I believe there is no animal on the farm that, take it one time to another, you can be as sure of good profits from as from raising hogs. There are a great many reasons why the average farmer should have hogs on his farm. There is a great deal of by-product on the farm that would be wasted without the hog, especially in the dairy industry. I do not know that I will be able to say anything very new, but there are good methods and bad methods, and the bad predominate. I will offer a few suggestions, and I think we can more profitably discuss this question after I have got through talking.

In the first place I would choose a black hog because he is not so likely to have skin disease and for the further reason that he is more fashionable. There is a good deal in fashion, and while we may not think it, fashion controls the markets a good deal, and I would have my hogs all uniform as to color. A carload of hogs of one color will bring a little more in the market,—just so in cattle. If you have them uniform they will look better and sell for more. The eye is what decides the price very often. It may make a difference of from three to ten cents per pound. So that you cannot mix white and

black hogs together. It makes no difference how good their grading may be, and inasmuch as there are good breeds of hogs of both colors, it certainly is poor policy to mix the white with black hogs. Now, in order to be a successful hog raiser you must have a good sire and dam to start with. These you may buy, but after you have bought them you want to know how to properly care for them. There is no animal on the farm as cleanly as the hog—he is the only animal that will keep his bed clean and go to bed and tuck himself up in cold weather. He is more like mankind than any other animal because he can be coaxed but he cannot be driven, and when a man learns how to manage hogs well he has learned half of what may be necessary to manage mankind. A man who cannot manage a good drove of hogs cannot manage other men and will never be a leader. You want a hog broad between the eyes. You will find that all animals when the eyes are close together, lack intelligence, and the hog is no exception. You want a broad face with a bright clever looking eye, a short nose and a good plump side, a round heart showing that he is good at eating corn, and then you want a straight back, broad all the way along, well hammed down and tail setting well up on the back, and if it has a ring in the tail all the better, as it is indicative of good health. Never fear your hogs will be sick if they go around with a curl in the tail. You should not mate them until they have matured. During the time that the mother is carrying her young she should be fed upon a nitrogenous diet. Oats is the best food that I know of. It is the best balanced ration that we raise. With oats and water I have had good success. I spread the oats on the floor and let them take their time to pick it up. Keep her on in this way and have her growing, and if she is young she wants to be fed more than if old. A hog of any kind if she is in good condition in the fall and has a good nest, will live on her own fat, and there is very little waste. The young sow, inasmuch as she is growing, needs more food than the old sow. The old sow will eat the most and needs the least. Then when she farrows see to it that she has but little or nothing but very little warm slop and very little food for a week, increasing the amount until her pigs are two weeks old. If she

is a good mother and a good milker, you are apt to get the pigs to scouring, and no medicine will put them back in as good condition as before. I feed my hogs some corn in cold weather because I think it is very necessary in cold weather. After that let the pigs have some run-way and feed them some milk and soaked corn, and in that way you will give them a good start, and never wean them until eight weeks old. In the winter I never have less than two hundred and fifty to three hundred hogs. I have seventy-five hogs running in my barn yard. That is the best place for hogs; a good big barn-yard where they can exercise, and you have no idea how much rubbish they will take care of, and it promotes their health and growth.

In moist weather I feed them clover and put it on the ground so that it will moisten itself, and they eat a large amount of that clover. I have a shed boarded down on all sides; a few holes in each stall, and put in fresh bedding three times a week, otherwise it will become foul or be full of perspiration and damp and the pigs will not be healthy. Every pig has his bed fellow. Have them sleep on the ground, or if on plank have it so that the air cannot get under. The hog makes his nest on the ground and goes out and gets his feed and then goes back into his bed. They want a bed to lie in. They have sense enough to appreciate a good bed, and the sleeping quarters should be away from the feeding floor so that they must walk three or four rods to feed. I built a fine hog pen but do not keep them there in the winter, except to put a few hogs in, that I have to keep separate. The main drove of hogs runs in the barn yard in the winter time. If you keep your hogs warm and take care of them, there is no reason why a man should not make money keeping fall shoats as well as spring shoats. The well fed animal is fattened very quickly, and just as soon as they can be got on full feed it should be given them, but during the time they are growing we should be careful and give them proteine food, and when we are fattening them give them carbonaceous food.

Now, I think in general, these are some of the leading points I wish to impress upon you, if there is anything in them. Inasmuch as my subject is "How to Make Money Rais-

ing Hogs," I have some figures here that I will submit. There are three methods of making money out of hogs. Remember that you cannot make it at any one of these methods unless you take care and handle them in the best manner. Most of the hog raising in this day is done at a disadvantage. These principles are not regarded and hogs are not well housed or well fed. The swill is taken from the house and thrown in a barrel and allowed to sour and fed to the hogs when nearly poison. A man better not have a hog at all than to feed him in that way.

As I said there are three ways of making money in raising hogs: First, have pure bred hogs for breeding purposes. Second, spring pigs from young sows. Third, spring and fall litters from old sows. A hog is a hog of any breed, but all are not good hogs of either breed. A hog that has been bred from stock in no way related, carries in his body some of the blood of from 100 to 1000 other hogs. If heridity has an influence, which we all concede, then we can see from this how rapid may be the fall from a well bred to a scrub. Animals seldom show characteristics further back than the grand parents. Mental and instinctive qualities are more generally controlled by those of the mother, while physiological development is more generally controlled by the sire, bood lines being equal. These are considerations that should be regarded by every breeder, and to some extent by every feeder. Money can be made by the breeder of pure bred hogs if he will follow these suggestions and feed and handle rightly. To this end he must never breed from immature dams, and sires of such age as to make up and secure the best of vigor. The pigs must not be fed on a concentrated diet. A well balanced ration is necessary to make a good pig. Warmth, light and exercise are all necessary to make a good pig and cannot be dispensed with. Pigs that are bred, fed and handled rightly will sell with judicious advertising, and give their nice returns, but with the present competition and consequent low prices there is no more in it than in feeding for the market, which is less bother and responsibility. I sell the best for breeders and fatten the balance. I do not state how much can be made by

the breeder of pure bred hogs, but he can make money if he has a reputation for honesty and for having good hogs.

Spring pigs:—a young sow will farrow and raise six good pigs.

I am endeavoring to put a conservative estimate all the way through. The sow when eighteen months old should weigh about 400 pounds and bring on the present market $16.00. Estimating the cost of her keep at ten pounds of gain for every bushel of corn, and corn at twenty cents per bushel, she has cost forty bushels of corn, or $8.00. Add to this ten bushels for extra feed while raising her pigs and we have a total cost of $10.00, thus making $6.00 on the sow. The six pigs when seven months old should weigh 262 pounds, or a gain of one and a quarter pounds per day since birth. I think this is a conservative estimate. At four cents per pound they would bring $10.48 each, and the six $62.88. Cost of feed at same price $21.40, or a profit of $31.48. We will take the $6.00 profit on the sow to replace her and we have the same stock on hand for another year and have a profit of $31.48, or one sow and all the feed paid for. At the same rate ten young sows would give an income of $628.80, or a net profit of $314.80. And this is about the number of sows the average farmer can keep to advantage. Take the last method suggested, raising two litters a year from old sows. A good sow will give as much nourishment to her pigs per day as a cow will give per day. If you see a litter of pigs from a good sow at the commencement of a week and again at the end of the week, you will discover that the sow has given as much to her young as the cow, and therefore the sow must be a good dairy sow. The hog is naturally an herbaceous animal, and the way we are feeding the animal is really destroying its vitality. There is a good deal of sense in the southerners idea that the hog can outrun the nigger. That is the animal that has the most vitality in its native state, and by this high feeding we are injuring this vitality. We will consider that we have a good sow that is a good milker, gentle and well bred, weighing about 350 pounds in stock condition. Breed her to farrow in March. She should have eight pigs at least. Wean the pigs in May and breed her to farrow in September, thus

getting two litters per year, raising sixteen pigs each year from one sow. The cost of keeping the sow, estimating corn at twenty cents per bushel, ten pounds of pork for every bushel of corn, and supposing she would weigh 500 pounds at the end of the year, she would cost $10.00. Allow twenty bushels extra for feed while she is raising pigs, $4.00. The eight spring pigs when five months old should weigh 200, or a gain of one and a third pounds per day, making 1,600 pounds, which at four cents would be $64.00, and would cost $32.00, giving a net profit of $32.00.

The September pigs when seven months old should weigh, if they gain one and a quarter pounds per day, 262 pounds each, making the eight weigh 2,096 pounds at least, and will bring $83.89; cost of same, figured as before, $41.80,—net profit, $42.04.

The cost of keeping the sow is $14.00; interest, etc., $1.00; cost of keeping spring pigs, $32.00; cost of fall pigs, $41.80; total cost, $88.80. Total receipts: Spring pigs, $64.00; fall pigs, $83.94; total amount received, $147.84. Total cost, $88.80, leaving a net profit of $59.04. Total receipts from ten sows, $1,478.40; net receipts, $590.40.

Sell the old sow for $20, if you choose, and raise one of her spring pigs, and you have another gain of $5 or $10.

The first method is fitted to the pains-taking man, with a liking for some particular breed; one who can keep books and keep track of breeding and pedigree. The second, or spring pigs from young sows, is the best for the pork-maker, that has no milk and in winter has not good warm stables for the pigs. The third is only profitable to the man that has ample accommodations for his breeding sows in cold weather. If a farmer can purchase growing shoats when they weigh about 100 pounds, there is generally more money feeding them up to 250 to 300 pounds than to raise them. Old hogs do better on raw corn and water than young, and with grass often can be made profitable. Hogs should always go with a dairy, and seldom pay well by themselves. A good sow with the dairy will pay as well as a cow, and she with her pigs will take no more time or care. The best hog to be fitted young for the market, in my opinion, is the Berkshire hog; the best mother

is the Berkshire hog. The best hog to take on flesh at a little more mature age, while they are not as good mothers generally, they have one quality that the Berkshires do not have, they will take on more flesh than the Berkshire, and that is the Poland China hog, and while many of you may not agree with me, I am frank to say that with the present fashions I have no use for any other breeds than these two, and if you will be careful and select good mothers, sows that have not had these instinctive qualities and the natural qualities of the hog all bred out of them, you may succeed with either of these breeds. The best hog for fattening is the Poland China.

DISCUSSION.

Mr. Williams—Do you feed salt to your hogs?

Mr. Arnold—I have salt and ashes, and I use charcoal when I can get it, and haul cinders from the depot.

Mr. Williams—In regard to feeding salt and ashes once a week, let them have all the water they want, and they never catch any disease. The most successful farmer in this county was a man near Sun Prairie. He sold as high as $3,000 worth of hogs a year, and it is my opinion that all farmers should feed salt and ashes to hogs.

Mr. Arnold—I think it is of great importance to a hog raiser to be somewhat secure from hog cholera. Have them placed upon new ground every year, and this is something I have followed to some extent. It is an easy matter for a farmer to to take a load of feed on some sort of cart and feed his hogs separately. Have a little shed that you can turn with the open side to the north in the summer time so that it is cool, and with the open side to the south in the winter, and have it just large enough for a sow and her pigs, and this can be done in summer and winter, and you can have new grounds to put your hogs on. There is a great waste from the ordinary hog yard. By having the shed in the fields the manure runs off with the rains when we cannot put it right out on the fields, and is some distance from the house, and the hogs are better off than near the house.

Mr. Anderson—What are your reasons for not allowing your hogs to sleep in the good hog house that you have built.

Mr. Arnold—It was not made as good as it should have been. The air can get under the floor. I kept them in there one winter and found it is not a good place to keep a hog. There is no chance for the steam to get away. I remember when I first got my shorthorn cattle, I kept them warm but they were lying on the floor. I said to a neighbor, "Your cattle look as well as mine do". He said his cattle had a good warm bed to lie in and that they were warm all over, and I found that to be true with the hogs. They are better off with a little circulation of air than in a tight pen.

Mr. Anderson—My hog house has tar paper on the studding and a ventilator which I can close at night. You say there is circulation under the floor. You have no protection, but mine is built for wintering and sheltering fall shoats. If it is a real cold night that ventilator is closed. I think the fall shoats grow faster in a warm shed than when exposed to the cold.

Mr. Arnold—You cannot make a floor warm in the winter time even if there is no circulation under the floor. There is no place like the ground for the hogs to sleep on.

Mr. Favill—Do they go out entirely exposed? Do they like it to go out to eat?

Mr. Arnold—I want hogs to do that, otherwise they will not take any exercise. I have seen the best fattened steer in the world lie down in a snow bank and enjoy himself.

Mr. Favill—But the hogs should be fed in a sheltered place.

Mr. Anderson—If you are farming on the scale of the general farmer you like to have your hogs around the manure pile while feeding.

Mr. Arnold—Yes, sir. There is a great waste of grain by hauling the manure directly from the stable.

Mr. Anderson—I think that is where the farmer is making a mistake. It should not be drawn directly from the stable because then there is a great loss by not giving the hog the privilege of taking what was left.

Mr. Arnold—I think it is a mistake for farmers to confine their hogs. If they are on full feed they do not need coning. There is no need ringing a hog's nose, and when a

hog is on full feed he should be fed upon tne floor, and let him take all the exercise he wants.

Mr. Convey—Mr. Arnold makes a pretty strong showing of figures. I would like to ask if he has as good results in figures. I would like to ask if he has as good results in handling herds?

Mr. Arnold—I have.

Question—Do you keep a dairy?

Mr. Arnold—Yes, sir. If a man has twenty cows he certle and they are not expected to give much milk, you know. A man can make as much clean profit in a year from a sow by judicious dealing as from a cow.

Question—Would you not consider it profitable to keep a good sow for every cow?

Mr. Arnold—Yes sir. If a man has twenty cows he certainly ought to have twenty sows.

Mr. Convey—The statement has been made that you can produce the second hundred pounds at half what it takes to produce the first hundred pounds.

Mr. Arnold—It costs something to get the pigs started. A man that sells his pigs when they are eight weeks old for $2.00 a piece is giving himself away, if he has anything to keep his hogs on. He makes the money on the feed. If corn should be forty cents a bushel and pork $2.00 a hundred, it would be on the other side. In the same proportion, if butter is worth twenty cents a pound and oats fifty cents a bushel, then it would be on the other side. Farmers must take those chances, but I am putting this estimate when corn is worth twenty cents a bushel and hogs $4.00 a hundred.

Mr. Favill—You are not making any provision for a man who has his pigs come in June or July and keeps them over the next winter.

Mr. Arnold—No, I do not think that is a profitable way to do. There is money in that very often, perhaps sometimes the best thing a man can do, but I do not think it is a good thing for a man to do.

Mr. Grisim—Have you made as much profit on every pig and sow as you have quoted?

Mr. Arnold—No, sir.

Mr. Grisim—I never could make hogs sleep on the ground. They always dig under it. I like your description of a hog; it is very good all the way through except the tail; I do not care anything about the hog's tail. It is not worth anything to me. When I was a boy they used to cut the tail off. Now about gaining, I have tried pigs and the best I ever could do was to make them gain fifty pounds in thirty days.

Mr. Arnold—Last summer I kept an average of 250 hogs and we made an average gain all summer of one and a quarter pounds right through the heat of summer, and there were 200 hogs in the drove all the time,—mostly young hogs. Of course you must feed them some grass. There is a difference between feeding a dairy cow in a cool stable and feeding a fat hog in cold weather.

Mr. Jones—I give the pigs warm swill once a day and what corn they will eat up clean, and they would take all the undigested grain from the cattle.

Mr. Arnold—You feed your hogs a ration of roots twice a week, and that helps them, and if you give them fresh meat, that helps them.

Mr. Grisim—I cannot get fresh meat myself, to say nothing of the hogs. (Laughter.)

Mr. Ames—Mr. Arnold, please give us your ration from six to twelve weeks old.

Mr. Arnold—When the pigs are about three weeks old they begin to eat a little sweet milk and soaked corn. You see corn is too carbonaceous a diet. Milk is full proteine, and that makes a balanced ration, and when the pig is getting milk from its mother and a little sweet milk, the corn is just what he wants. But if you do not have milk, take shorts, oil-meal, and soak it up every morning for dinner, as that is as long a time as it should stand in warm water. If it is a little sour, on the turning point, it is all right, but when it is turning to vinegar it has lost its nutrition.

Question—How much corn do you feed pigs at that age?

Mr. Arnold—I do not know as I can tell—about what they will eat up nicely. If you feed too much corn you will get the pigs too fat.

Mr. Williams—How would it be to feed them oats?

Mr. Arnold—They will not eat oats, but when they get older it is just what the hogs want. Shorts are good for young pigs.

Question—In feeding middlings would you feed it immediately on mixing up with water or let it stand until it got warm and soaked a little?

Mr. Arnold—A hog will eat it much better if it is soaked a little.

Mr. Convey—I have been offered oil-meal at $15.00 a ton. Don't you think it as good as middlings at $10.00 a ton?

Mr. Arnold—I always feed a little, but as a ration I would slack up and think I could cheapen my food by feeding oats.

Mr. Brigham—You spoke about feeding roots. What kind of roots?

Mr. Arnold—My hogs do not like flat turnips very well, but rutabagas are all right. I woud rather have potatoes.

Mr. Brigham—Feed potatoes raw?

Mr. Arnold—Yes, sir. I do not think potatoes have the corrective elements after they have been cooked. I feed them to horses and cattle because they have the corrective influence and they will not have worms.

Mr. Convey—I would disagree with Mr. Arnold in regard to feeding them raw instead of cooked potatoes. Potatoes contain a large amount of starch, and they are more palatable if cooked, which is something we should not lose sight of.

Mr. Arnold—Raw potatoes are fed as a corrective diet. I agree with you they are more nutritive after they are cooked than before.

Mr. Douglas—I would like to ask Mr. Arnold what potatoes are worth a bushel as compared with corn at forty cents a bushel?

Mr. Arnold—About ninety per cent of a potato is water.

Mr. McKerrow—I believe if the experiments were averaged up, corn is worth forty cents and potatoes ten cents, it would be, not to make a whole ration of potatoes, but to make a part ration, as much as the animals will stand, of potatoes.

Mr. Arnold—Fed separately, according to these estimates, the corn would bear a relation to the potatoes of one-seventh.

Mr. Brossimer—In order to have gentle sows, you do not want to feed them with a pitch fork, but be kind to them as

well as to a horse or cow, and you can have them just as quiet and nice as a trained horse.

Mr. President—We will have to close this discussion. We expected that at this time the discussion of good roads would take place, but unfortunate circumstances prevent either of the speakers being present at this time. If you will make your appearance in the assembly chamber tonight, you will have the privilege of listening to the governor, who, I believe, is a practical farmer. We will have a program that will interest you all.

Adjourned till 8 p. m.

Assembly Chamber. Wednesday Evening, 8 p. m.

ANNUAL ADDRESS.

President S. D. Hubbard, Mondovi.

Members of the Convention, Ladies and Gentlemen:—The annual reunion of the State Agricultural Society finds us at the close of the most eventful year in the history of our commonwealth. While a severe and protracted drouth prevailed in portions, and the whole state has suffered more or less, yet never in the state's history has the farmer been so magnificently rewarded with an abundant harvest as during the year just closed. While the returns from this abundant and wonderful harvest have been somewhat disappointing, still we have abundant reasons to rejoice at the abundance of the yield, with the fond satisfaction that if we are not able to pay many of our debts, we have an abundance with which we can pay our taxes and sustain life.

It is with pleasure and pride that I am able to inform you that the society has had the most prosperous year of its existence. With improved facilities for accommodating exhibitors, and with the most admirable weather during the week of the fair,—with a secretary who apparently anticipated every want; and with superintendents in all departments, intelligent, painstaking and obliging, we can only have words of commendation and thankfulness for our unparalleled success.

At our last annual meeting we found the Milwaukee driv-

ing park association, who held a lease of the fair grounds, had forfeited the same, and the executive board found themselves without a tenant and with no revenue from the grounds. They authorized and instructed the president and secretary to make such disposition of the same as in their judgment would conduce to the interest and be the most advantageous to the society. Under these instructions the president and secretary were confronted with two propositions: First, to find some one to take charge of the grounds; second, to rent the grounds to some one who not only would look after and protect them, but would pay rent for the same. It was absolutely necessary that the premises should be looked after and protected by an interested party. The first proposition could only be carried out at an annual expense to the society of from five to six hundred dollars. The financial situation of the society would not allow us to entertain this idea for a moment, if by any possibility it could be avoided.

The second course seemed the only practical solution of the problem if we could only find some party or parties that would bind themselves to protect and care for the society's property, and had the financial ability to make their contract good. We found the State Park jocky club who proposed to accept the transfer of the original lease, calling for twenty-five hundred dollars per annum, held by the defunct Milwaukee Driving Park association, but also to make good the deficit of the same upon condition that we would extend the time of said lease so that they could occupy the grounds the same length of time originally given to the driving park. They refused to accept the grounds upon any other terms. This being the only party to whom we could lease the grounds and receive any revenue necessity compelled us to accept the offer. Consequently we extended the time, transferred the lease and closed the contract. Mutterings of discontent and disapprobation at the course taken were heard from every side. People who knew nothing about the circumstance were loud in their denunciations and profuse with their opinions and advice. The secretary and myself were accused of exceeding our authority, breaking faith with the society, and by some of being disloyal to the

state, whereas we had only changed the heading of an old edition, carried out the instructions of the executive board, and successfully accomplished what the society through its offiers and under the instructions of its executive boards had attempted to accomplish ever since the location of the society upon their own grounds. Subsequent events have confirmed the wisdom of our course. Permanent improvements aggregating about thirty thousand dollars have been made. The electric car line has been extended into the grounds capable of unloading a train load of passengers every two minutes. The extension of the electric line in the near future to Waukesha, Racine and Kenosha, and the St. Paul system with a track upon the grounds, removes all doubt of easy access and rapid transit to and from the grounds. Many innovations and some radical changes have been made, which in our opinion will practically make the society itself sustaining. With a continuance of the business like principles upon which it has been run during the last year, and with such assstance as we can reasonably expect from the state, there can be no doubt but in the near future the Wisconsin state agricultural society will have a home equalled by few and surpassed by none. Nature never furnished grounds or facilities better adapted to the purpose of holding a fair than those we possess. True, means must be furnished and ways devised for such additional improvements as are required in the way of buildings and embellshing the grounds to make it the ideal agricultural park of the northwest.

Wisconsin with pardonable pride can point to her agricultural college with its able corps of teachers from which so many young men go forth with theoretical and practical knowledge that is required to become successful farmers,—to her farm institutes, that perhaps ought to be more specifically defined as "the school of the farmer on wheels or runners," from and through which the experience and knowledge of successful farmers reaches, or may reach the home of every citizen of our state.

Then, with a state park perfect in all parts in which to exhibit the products of this system of progressive farming, we can with becoming modesty point to that emblematic

word "Forward" so indelibly engraved upon our banner, and with the natural enthusiasm possessed by every intelligent citizen feel that we are justified in using the same. The age has caught the spirit of our institutions. The gentle zephyrs from the west have wafted them east; they have been carried across the Alleghanies and breathed new life into the middle and New England states. Emissaries from those states are seeking instruction at our university and dairy school, calling from our citizens, instructors and workers for institute work in their own states modeled after and following the course of our own, while at the same time they carefully inspect our state fair park with a view of improving their own. Wisconsin has good reason to feel proud of the position she occupies among her sister states. The farmers have still greater reason to rejoice from the fact that they are leaders in this progressive work, that makes life's burdens less, broadens the intellect and ennobles mankind.

The laboring man today is better fed, better clothed and better housed than the nobility were three hundred years ago. Yet with all this advancement there is much that still belongs to labor and agriculture that has not been obtained. The whole system of taxation rests upon the real estate, and while a large share of the taxes are paid by the farmer, we have no laws protecting our goods and the world's market from coming in contact with a spurious or counterfeit article put up and branded precisely as our genuine productions are. Pure full cream, Wisconsin cheese, finds a market alongside of some other state's filled cheese but branded as "Wisconsin's best." While this is a free country and every one can eat just what he prefers, we earnestly protest against his consuming any food without knowing just what it is. The fault is with ourselves. We have the remedy and if we only make a judicious use of it the desired end will be accomplished speedily and quickly. With no unmistakable emphasis shoud we demand from the law makers of our country protection, so for that not only shall the genuine honest production of the farm but all other commodities be sold upon their merits, and branded correctly and truly as to their contents. If we are only true to ourselves the time is not far distant when each one will try

to excel all others, and the consumer will have the satisfaction of knowing that what he purchases and uses for himself and those around him are the genuine article, as his taste may desire and his pocketbook afford; with sufficiently stringent and honestly enforced laws to protect and ennoble labor, and secure to each citizen the benefit to be derived from his own honest efforts without fear of being driven out of the world's market by a spurious or fictitious article.

President, Ladies and Gentlemen—I have the pleasure at this moment of introducing to you our distinguished fellow citizen, His Excellency, W. H. Upham, Governor of Wisconsin.

Mr. Chairman, Ladies and Gentlemen and Fellow Citizens—I am pleased to appear before you this evening, but I am also pained that I am compelled to appear here in the condition I am in. I noticed your president read from a printed program, and upon my word as a gentleman and a soldier, until just as I was about to leave my office for home to eat my supper, he had not informed me that I was to appear here and talk to you people.

This commonwealth is a large state and many in number are the people of this state. With a secretary at the command of the agricultural society and another at the command of the governor, this information was either purposely or otherwise withheld from the governor, and therefore I have nothing writen for the occasion. With so many people—two million people in this commonwealth to watch—and I am now convinced that most of the people are watching me—I should have thought my secretary would have protected me or that the secretary of this society would have written me a notice to appear here.

I returned here this evening from Baraboo merely to assure you that the country is perfectly safe. Hoard and I saved it last night. But I want to say to you as a society that your responsibilities are great and they are a great deal greater than they used to be. There are many social and financial problems which are in the thoughts and brains of many citizens today, and what will be the outcome of them the future only can tell.

In the history of civilization the farmer is the primary instrument. When the farmer has settled upon the plains which the Lord has made and created, as a natural consequence of his settlement, towns, villages and cities come also in their order, and the agriculturist of today has more upon his hands than to look into Thompson'salmanac and see when the proper time is to sow, to reap, and kill the pork and put it in the barrel in the cellar. The farmer is the first solution of the problem of the "survival of the fittest," and it may be that this country and this community may be going through that process which will determine in the future whether we are a country and people that will survive for generations to come. These low markets are not entirely induced by the times. The suffering and distress and the depressed market under which the farmer suffers struck the manufacturer two years ago, and this is only a sequence or conclusion which occured in the panic of 1893. You have got to get more brains, more intelligence and more industry and thrift into your profession, because when you go to the markets, you go to the markets of the world and there you have to compete with the wheat of India, with the corn from South America and with the wheat from Russia, and you meet on an equal basis and you have got to reduce the cost of production equal to theirs, or else the stuff remains a drug upon your hands. I am pleased to see this young element here, and were it within the power of the law or the power of the state, I would school five times the number of the young men here present and about to adopt the profession of farming and send you into that rank. There are two ways in which this problem will equalize itself. It is a law in mechanics that action and re-action is ever equal, contrary and simultaneous. While you comfort yourselves with the idea that you are the producers, you have also got to look around and find your consumers. That is where your re-action comes in. While the manufacturer in the city is a producer, in his turn he has got to look to the country for his consumption. There are two ways this problem can be solved to your satisfaction, and one is to make an increased population in your country or amongst your agriculturists, and the re-action is to give you a greater population

in your cities. Or, if you do not solve it in that way, with the instruction afforded at the university, you can put yourself on a plane with the serf of Russia, or the Turban inhabitant of the East Indias, or the South American.

Now, I would have much desired to have come here prepared to talk more to you upon the subject of agriculture because I know the process, though I have not done much farming for many years. I understand that the farmer plows and he harrows and he sows and reaps, and the man who comes to talk to you should have properly plowed and sowed his subject, and then perhaps you might reap some benefit. (Applause.)

President—As a people we boast of our intelligence. The superior intelligence that we possess as a free people and the great bulwark and defense of American liberty against the aggression of the world is the free common school. At this time and at this moment we will hear from Miss Sabin upon the relations that we hold to the common schools.

OUR RELATION TO THE COMMON SCHOOLS.

Kate L. Sabin.

In every walk in life the necessity is more and more apparparent, that he who would win must be able to think and act intelligently; for there is no line of work that does not daily present complicated problems to the inquiring mind. The man following the plow may not realize why it is that the character of farming in Wisconsin has changed entirely during the short period of the state's history, but he has had to accept the change and to adapt himself to the new condition in order that he may not be overpowered in the greater competition. As in farming, so also in manufacturing, commerce, invention and teaching: "Time makes ancient good uncouth; we must upward still and onward who would keep abreast of Truth."

We owe a debt of gratitude to the founders of our public school system, for their wisdom in putting it on a generous

and democratic basis. They were men who trusted in the sound sense of the people, knowing that when the people realize the responsibility of a trust imposed upon them, they meet that responsibility nobly. Year after year we have been adding to the strength and magnificence of our system. Our state university, ranking among the first in the west, is a noble monument to the people of the state. It stands unrivalled in beauty of surroundings. Probably nowhere can be found a state university with more splendid buildings, better equipment, a more efficient faculty, or a more loyal and sincere student body.

The university draws its life from the 193 high schools scattered over our state. The number of high schools in Wisconsin compares favorably with the number in any state east or west. In a recent report of the superintendent of public instruction of the state of Pennsylvania, he said: "If Pennsylvania were to follow the example of Wisconsin in making a liberal appropriation in favor of all high schools maintaining a given standard, the greatest want in our system of public instruction would in no long time be supplied by the multiplication of high schools in rural districts, and by the increased efficiency of the secondary instrution in cities and boroughs."

The institutions of higher education have had able advocates to plead their cause, and to lay before the legislature the necessity of their demands, so that their equipment might keep pace with their growth. With them, new opportunities for development have been fostered, and changing conditions recognized. The framers of the constitution were in no sense forgetful of the necessity for elementary training. Right here we find that we have been negligent of the paramount interests of the state—or indifferent to them. Our rural schools have not kept pace with the demands upon them. Although we are beyond the day when six dollars per month is good compensation for a teacher, yet we must enlarge the salaries still more, if we would make our schools centers of life and inspiration.

Fifty-eight per cent. of the children of the state receive the rudiments of their education in the country schools. The

majority go no further. As a large proportion of children must leave school at an early age and make their way in the world with minds only partially trained, our greatest duty is to them. It is true that: "Public affairs and private interests are largely controlled by men whose only education was acquired in the district school."

In many rural neighborhoods the school is the source of all the helpful impulses that reach the entire community. If the teacher is well educated, refined, enthusiastic, she is a power for good. Her sphere of usefulness is two fold. In the community she arouses activity and stimulates the intellectual life. In the school-room her influence is difficult to measure, because so subtle are the forces that mould character. And yet this thing which is so difficult to estimate, so elusive and intangible, is the very foundation of our commonwealth. It is in the district school that character is formed, patrotism fostered, and right ideas of citizenship inculcated.

Tact, earnestness, sympathy, insight into character, are not half so requisite in the teacher of a special subject as they are in the country teacher. Work until you find a teacher with the real heart interest and keep her at any price for the quality of the work to be done is such as to demand the most efficient teaching, and herein are our schools most lacking. Our state, realizing that schools can be more cheaply maintained than can jails and prisons, supports six normal schools for free training in the profession of teaching, but graduates from these schools, and from the university, flock to the cities and villages where the pay is better.

It is easy to realize that the intelligent farm hand is the cheapest. He is worth the most who is able to handle a team, to run the complicated binder or corn harvester, or to tinker the harrow or mower. Is it not strange that knowing this, the farmer will commit his most precious possession to a bungler in the school room? The size and material resources of many districts render it impossible for better wages to be paid. But this need not long be an excuse, for it lies with you to correct the evil. Your town board organized the districts in your township and, at the time the work was done, the results were satisfactory. Since then conditions have so

changed that for purposes of inequality and irregularity, the districts might serve as shining examples of the gerrymander. The power s now no less with your board to reorganize the districts. Can you not afford to lay aside personal prejudice and temporary inconvenience for the certain good that will speedily follow such a change? Let no petty dissentions, family feuds, nor race distinctions weigh for a moment in this most important matter. In his report of 1891-2 Ex-Supt. Wells said: "Apart from local feelings that are wont to resist encroachment upon established institutions or customs, it is safe to say that it would be easy to redistrict a very large number of towns in such a way as greatly to enhance the worth of the schools, while reducing the number of districts."

After thus equalizing your burdens of taxation, appeal to the state for more assistance, and the legislature will not refuse you.

Pay liberally, for "in the long run the amount of pay determines the character of the service rendered."

But not the teacher, the legislators, nor the school boards can do everything. You, the parents and patrons of the school are a power behind the throne that helps or hinders its efficiency. Let your children realize that you and the teacher are a unit in everything that pertains to the good of the school. You know the value of a piece of machinery in which each part naturally and regularly does its work. Lose a screw, a lever, a pin, and an essential element is gone. Although you may find the missing part and readjust it, your work is interrupted, your time is lost, your patience exhausted. In the same way each child is an essential part of the school, and is dependent on all the rest for the life and vigor of his work. One who is tardy or absent, injures not himself alone, but all enrolled in the school. If he is frequently tardy, he becomes careless, indolent through loss of interest and indifferent to the rights of others. With you, no less than with the teacher, lies the burden of these most important and practical lessons—punctuality and regularity. Do not make the school a nursery, a mere matter of convenience to which you may send your four-year-old, but from which you may keep

your boy or girl who is able to help on the farm or in the house. Teachers say: "I am troubled with irregularity in attendance, as some parents take very little interest in the education of their children." This is a difficult statement to believe. Is it so? Are parents indifferent to the moral, spiritual, and intellectual rights of their children?

Do you visit your school? Are you filled with pride at the appearance of the house and grounds? Some of you well may be, for you live in a district that will not tolerate smoky walls, holes in the plastering, broken panels in the door, battered window shades, poor blackboards, lack of proper ventilation, and uncomfortable seats. You are fortunate in realizing the vital connection between the physical and mental well-being of your children. Many of you may be surprised to learn that in some parts of Wisconsin the old-fashioned backless benches are still in use. When the general writing exercise takes place, the children kneel before the benches on which they have been sitting, and so find a support for the copy book. Fortunately, such cases are rare, and people are realizing more and more the silent, but no less powerful, influence of the surroundings on the character of the child. Dr. Butler, professor of psychology in Columbia University, says: "No amount of thundering eloquence on character as the sole end of education can make amends for our failure to study the facts dealing with the physical and physiological elements in education, and for our delay in applying them. We need to be strongly reminded that wickedness is closely akin to weakness, and then to consider the moral consequence of our physiological ignorance."

This year the state educational department has done an inestimable service to the rural schools by so unceasingly striving to enforce the mandatory features of the public school library law. Through this law, as you know, good books are every year brought to the children of the common schools. With every privilege is an equal responsibility, and the teacher of today has in her hands the means by which a literary taste may be cultivated. Contact with good books is ennobling, for as has been said, we live in thought with the character of fiction and history, more than we do with the people with whom

we constantly associate. Because the imagination is so strong, and the world of the imagination so real to children, their whole lives are directed by it. When taught to read they are furnished with a powerful weapon, and unless instructed in its proper use, it becomes a menace to the moral and intellectual life—yes, even to the physical. With these library books, not one of which does not induce high thoughts, the child may unconsciously cultivate a taste for good reading, that will save him from a desire for the penny dreadful or the yellow-backed novel. If the inner life is full of the sunshine and culture that comes from association with "kings and queens", as Ruskin puts it, the world will generally wear the smile and not the frown. One of our prominent educators says: "Many of those who leave school at thirteen must subsist and perhaps rear families on a dollar a day. If they can enjoy a good book, they are in these days of public libraries, almost on a par spiritually with the more fortunate of their fellow men. Moreover, the right use of books serves to awaken the whole mental life and to stimulate the powers of the intellect into normal activity at every stage of development."

In many respects, educationally, Wisconsin is in advance of her neighbors. Her recent law in regard to the educational qualifications of county school superintendents cannot but be beneficial. The law creating an institute fund to be used by the superintendent in promoting the knowledge of the common school branches, and in giving instruction in the theory and art of teaching, makes it possible to aid teachers more systematically and thoroughly than ever before. Teachers' meetings and local institutes of short duration are essential in keeping alive an active educational spirit. The wisdom in making the township system of school government optional, is clearly seen on studying the unlike conditions existing in different parts of the state. The democratic basis of the district system is one of its most valuable features, for we have within our hands the power to correct its faults.

An intelligent discontent with existing affairs that will lead to discussion of matters pertaining to the common schools, will in time clear away the chaff, disclosing the sound kernel around which may grow the life-giving elements. Let us re-

member that we are responsible for the condition of our schools. Through our neglect they may remain poor and become miserable—insufficient; but through our earnest effort they may be raised to a high degree of excellence. Do not cling to the old because it is all you had. As in the struggle for existence you discarded the sickle for the reaper, and that in turn for the binder, or abandoned the old hand method of dropping corn for the corn planter, and that for the check rower, so you must furnish your children with the best equipment for their work in life. Your duty to them demands that their opportunities be larger and broader than were your own.

It is well, it is necessary to be liberal in the support of higher education, but unless the fundamental branches are secure and tangible possessions, it is not possible to be thoroughly educated. (Applause.)

Mr. S. C. Carr, Milton Junction—I desire to offer the following resolution:

"Resolved, that we petition congress for the free delivery of mails in rural districts."

I do not suppose there is any need of taking up this question. I take it that most of the people here are farmers and are interested in it. People living in cities can get free delivery of mail and the government pays for it. And who is the government? You are a part of it. You pay part of this expense. All we ask is that we have this free delivery of mail extended to the rural districts.

I would like to read a few extracts from an article entitled, "Shall Mails Go Free to Farmers' Homes?" (Arguments in favor of free delivery, by Mortimer Whitehead):

"Our fathers fought the battles of the Revolution to establish the principle and the right given us in the constitution that 'all citizens shall be equal before the law'. A very large proportion of our citizens in villages and on farms are now very unequal before our postal laws. They pay the larger portion of the taxes, and whatever is paid for by the government should be as freely given to the country as to the city.

"When we pay our postage to have our mail carried, why

should Uncle Sam carry the city man's letter right to his house or place of business, and then leave ours at a postoffice perhaps several miles away from the person to whom we wrote? He only partly carries out the contract of carrying the mail for us, but fulfills it completely with our city cousins. Why should the machinery of government be used so largely for the benefit of the favored few?

"Give city 'advantages' to the country. Bring the farm house in touch with the civilization of the day in which we live. Keep the farm up with the times, and not days and weeks behind the times. Put the daily papers, the daily markets, the daily weather report in the farmer's home. Nearness to postoffice, like nearness to churches, schools and blacksmith, helps to fix the value of a farm. Bring the postoffice to the door by the carrier and you will add a thousand dollars to the value of tens of thousands of farms. By promptly knowing the changes in market, the speculator cannot hasten out in the country and buy up large quantities of products before the farmer has 'been for his mail', or gets his weekly paper. It will do a great work in education, and 'knowledge is power'. Farm life will surely be more attractive, and will pay better, and then the boys will stay.

"Can we take this important step? What will it cost? are very proper questions. We all admit the good and effective work of our postal system. This one thing done by the government, or the whole people, is done exceedingly well. But it is not perfect. Free delivery in the rural districts will be a great stride towards making it so.

"It does pay. Our last congress appropriated $10,000 to make a preliminary test. Forty-six country postoffices in thirty states, and covering as many of the varied conditions of our great country as possible, were selected for the trial. Of these, all but seven at the end of several months showed an increase over former receipts and usual gain of enough to pay the entire cost of the new service and leave a profit besides. Seven did not quite reach the cost. The increase of gross receipts in thirty-nine offices amounted to $6,213.49. Deducting what rightly belonged to natural increase, and the net balance to the credit of the free delivery service amounted to $850.00.

This success is a wonderful showing when it is considered that in the establishment of the free delivery system the patrons of the office stopped paying box rent, and the loss on box rents was therefore taken from the gross receipts. The forty-six free delivery offices aggregated 285 months of free delivery service, at a total cost for carriers of $4,420.69, and a net profit as before said of $850.00. An entire year of these offices, aggregating 52 months, would at the above rate have resulted in a net earning of $3,812.54, and this profit is on an appropriation of only $10,000. With an appropriation of $200,000 for a year on these figures, for a basis of estimate, the net earnings, or profit to the government, would reach $76,250.80. How many farmers are now paying $2 or more a year for a postoffice box miles away from their farms? Based on the above figures of actual practice, for only 20 to 40 cents a year for each inhabitant, the mail can be brought to each door."

From another article Mr. Carr read as follows:

"As to the free collection and free deliverey of postal matter, the people in the rural districts are as much entitled to it as town people are.

"We often proclaim our belief that 'all citizens shall be equal before the law'. Every person taxed should derive the same benefit as others. Farmers pay the great proportion of taxes and should have at least equal advantages with others. The city home has the mail come right to its door, and convenient boxes close by in which to deposit letters and papers going away. Our interstate commerce law was passed to prevent discriminations between persons and places. Why carry one citizen's letter right to his house and leave that of another several miles away? The business man has all the benefits of this special service. Is not the farmer a business man? Why should the machinery of government be used so largely for the benefit of the favored few? Since the farmer must necessarily waste more time to get his mail than the denizen of the city, he has the greater need for free postal delivery, besides his equal right. Free delivery is now confined only to cities of 10,000 and more inhabitants.

"Other countries have long been delivering the mail directly at the doors of their farmers. In England and in other Euro-

pean countries the mails are delivered in the rural districts as well as in the cities. The postman and postboy are familiar characters in stories of English life.

'Back and forth like a shuttle I go,
Bearing a message of joy or woe.'

"Mounted postmen were sent through the farming parts of England more than a hundred years ago, and their pace was so exactly calculated that farmers' boys knew just when to expect them at a turn in the pike, and the practice is still carried on. The intercepting messengers are mounted wherever they have considerable distance to go or heavy bags to carry. Boxes, strong and safe, are placed on the highways for mail deposits. The carriers hand the farmer his letters right at his door. Shall we lag far behind others in this? If the United States cannot devise better methods for the farmers than those in use in England, we ought at least to imitate them. Or, we can go to countries less commercial and less thrifty to find better exemplars than the present system of rural parts.

"In India there is a post-runner who, with his sack on his back, plods his way with a spiked stick through jungles, while his clamorous bells frighten off reptiles and wild beasts and warm farmers of his coming. There is not a person in the vast Indian empire whose mail is not delivered at his door. What India can do I have faith to believe America can do. Where camels are necessary they stride the desert with their swinging sacks, their driver brilliant in uniform and loud in his warning bell.

"In Japan the physical character of the country and the placid temper of the people make the swift runner satisfactory to the people throughout rural parts. Even in China there is better rural service than we have. A runner hurries from station to station, a bell or bugle announcing his approach. Messengers are ready to receive and deliver the mail all around among the farms."

This is all I will read. I do not think it is necessary for me to say anything in regard to this. I believe we are far behind the times. We farmers living in the rural districts have taken back seats long enough. Let us come to the front where we belong. I am glad to see so many young men here, and when

they come and ask for their rights we believe the people will grant them.

President—Are you ready for the question? Those in favor of the resolution say aye, opposed, no. The ayes have it and the resolution is carried.

This closes our exercises for this evening. Tomorrow morning at nine o'clock we will have a very interesting program in the agricultural rooms below and we will be pleased to have you all there.

Thursday Morning, Feb. 6, 9:30 o'clock.

The President—The first number on the program this morning is the Necessity of Immediate Legislation for the Protection of Our Cheese Industry, by a man whom we are all pleased and happy to hear, Professor Henry. (Applause.)

Agricultural Students (in chorus)—U-rah-rah Wis-con-sin.

Prof. Henry—All right, boys. When I think back to the time, fifteen years ago, that I stood here and pleaded with the members of this Association to help me get students and as a result of that appeal I did not have one student in the university; now I see two hundred young men coming to us and know that there are many more talking of it, and seeing a goodly portion of the farmers here that were formerly students, I realize that Wisconsin is coming forward agriculturally and I believe that if we can keep up the energy and the push, that this Agricultural College is going to prove its worth to our people each year. It is all right, boys, to shout U-rah-rah Wis-con-sin. It is a great state!

THE NECESSITY OF IMMEDIATE LEGISLATION FOR THE PROTECTION OF OUR CHEESE INDUSTRY.

By W. A. Henry, Dean College of Agriculture, University of Wisconsin.

In 1880 the United States exported cheese to the value of $12,160,000

In 1894 the United States exported cheese to the value of $12,170,000

A decrease of exports in fourteen years of 40 per cent.

In 1880 Canada exported cheese to the value of.. $3,900,000

In 1894 Canada exported cheese to the value of.. $15,500,000

An increase in fourteen years of nearly 400 per cent.

Let me examine briefly into the cause of these anomalous conditions. In the report on "The World's Markets for American Products", Bulletin 1, Supplement 1895, issued by the department of agriculture, Washington, we find the following: Consul Neal, reporting United States trade conditions for the Liverpool market, writes: "Lately there has been coming into Great Britain, more notably from Wisconsin, what is called 'filled' cheese, among the constituents of which are beef fat, lard and like substances. This importation has been so marked and so deleterious to the trade in United States cheese generally that the association of provision dealers in Glasgow and Liverpool have this winter memorialized the legislature of Wisconsin to enact laws or to provide some means to prevent these filled cheese being passed off upon dealers and consumers for other than they really are. The dishonesty of these manufacturers will, if not speedily prevented, ruin the market for United States cheese in this country."

R. J. MacBride, a citizen of Wisconsin, now consul at Leith, writes: "On this subject (conditions of the cheese market) I again wish to quote from the testimony of Mr. Osborne before the select committee of the House of Commons. He said, in substance, that the public was often imposed upon by the cheese sent here from America, as there is no means of ascertaining the composition of these American cheese except by analysis. His remedy for both butter and cheese is that for-

eign governments should be made responsible for the quality of the article shipped. If the foreign governments decline to accept the responsibility, then he would recommend that the articles from such countries should be prohibited from being imported into Great Britain. He would propose that the packages in which the articles were brought to this country should have a government stamp put upon them, and also that there should be a certificate of genuineness. He believed that most of the filled cheese come from the western states of the United States, and that they were made principally of lard. They looked very like full milk cheese, but they corrupted very quickly. He attributed the excellent trade in butter, at present enjoyed by Denmark, simply to the fact that the Danish government are particular not to allow adulteration."

Reports equally discouraging from other consuls could be given but surely this suffices. From an advance copy of the report of the secretary of agriculture, Washington, for the year 1895, I quote:

"Throughout the year the United States cheese has commanded the minimum figure upon the English market, and as, by the operation of an invariable law, the lower grades always suffer the most of a material fall in prices, our cheese has suffered disproportionately to other makes by the depressed condition of the English cheese market, and has reached in 1895 the lowest price yet quoted for American cheese in that country, namely $2.17 per 100 pounds."

Our agent and correspondent reports in explanation that "United States cheese is, as a whole, the poorest quality that reaches the English market, and the British public are not only aware of the fact but are prejudiced against it because so much in the past has been adulterated." While accusations that "filled" cheese is being dumped on the British market from the United States go unrefuted, the very first statement impugning the Canadian product, in the same manner, was met with cabled denials from the Canadian government; denials from the Canadian agent-general in London and Canadian exporters. The incident, it seems, has actually turned out to be an excellent advertisement for Canadian cheese, and it is now perfectly well understood by the British public

that Canada is maintaining, with strenuous care, the quality of her exports.

In fact, every country shipping cheese to Great Britain has this year enlarged its trade with that country, except the United States, which has lost over 21 per cent. of its last year's business.

If we could honestly state that the United States was consuming home made cheese in much larger quantities than ever before, there might be some consolation to set over against all of this black listing from other countries, but most unfortunately such is not the case.

From consumers everywhere, we hear grumblings and complaints "that our cheese is not what it used to be, and one cannot now find a good piece of cheese when he calls for it, etc., etc."

Filled cheese, skim cheese, poorly made cheese, and dirty cheese have apparently combined into a trust to ruin the cheese market and obliterate even themselvs in the end.

The claims of the filled cheese manufacturers that there is a legitimate market for these cheese is a statement which will not bear the light of careful study. An apple raiser might as well justify the planting of miserable varieties of apples because there are some people who cannot afford to buy the highest grades. A beef raiser might as well endeavor to raise steers which are all shanks and chucks because there are people who at the meat market call for those parts of the steer. Do we not all know that there are enough poor apples, and enough low grade cuts of meat on hand, after all our best efforts to produce the best, to supply all of the demands of the market. After we have done our best under intelligent, rational practices, to make fine cheese there will be a sufficient number of culls to supply the demand of all who cannot pay good prices for cheese and must have a cheaper article.

Though the manufacture of filled cheese in this state was absolutely prohibited by our last legislature, and though there is no filled cheese being manufactured in our state at this time, so far as Commissioner Adams is aware, our dairy interests are still suffering immensely because of the fraudu-

lent use made of it by the dealers in filled cheese. Filled cheese in enormous quantities is manufactured in northern Illinois at creameries where the skim milk is compounded with lard and cotton seed oil for this purpose. This cheese, when skillfully made, at first resembles new, full milk cheese so closely as to deceive all except experts. After it is a few months old, it is a tasteless, unsatisfactory compound, not at all similar to full cream cheese, so that persons who buy it for consumption are always dissatisfied with it. Naturally this filled cheese centers in Chicago, from which point it is delivered to all parts of the cheese eating world. While the product is known to the trade as filled cheese and is bought and sold as such, the dealers who cut up the cheese rarely know what they are buying, and sometimes the wholesaler at distant points is likewise misled, as cases which have come to our knowledge plainly show. The consumer of filled cheese is defrauded ninety-nine times out of a hundred, either knowingly by the man who cuts up the cheese and sells it to him, though this party is generally ignorant of just what he is selling.

To show how the name of Wisconsin is misused by these people to our great loss, I could illustrate by several cases, but these two are sufficient: Mr. C. A. White of Fond du Lac, Wisconsin, a dealer in Wisconsin full cream cheese, received a letter last spring from a Kansas City house, reading like this:

"Dear Sir:—We note your quotations of nine cents per pound for Wisconsin cheese. We have just had offered us by a Chicago firm, cheese guaranteed to be first class and bearing the brand of the Wisconsin state cheese inspector, at seven and a half cents per pound. Now are you not asking a great deal more for Wisconsin cheese than it is worth in the market?"

Everybody in this audience knows that there is no such officer as the "Wisconsin State Cheese Inspector," and this Chicago firm was practicing a most miserable deception in using such a stencil, and while doing so was helping to ruin the name of our state for good cheese.

Major Henry E. Alvord, at the head of the dairy division of the department of agriculture, Washington, told me only

a couple of weeks since that at Columbia, S. C., he called on a jobber who had received one thousand boxes of cheese from Chicago in one shipment. This dealer, who had an old, established trade, had sent these cheese out to his customers as in years past. Shortly after shipping them, they had begun to come back to him in large numbers, every return shipment being reported by a letter which told this jobber that the cheese he was sending out was entirely unsatisfactory and that the customers would not use it, and so the cheese were shipped back. The man thought that most of the thousand boxes would come back on his hands and what to do with them was beyond his knowledge. Major Alvord asked to see the cheese, and there on the boxes was the brand "Beaver State Cheese." The dealer said he had always been buying cheese with that brand on. The government agent asked him if his cheese in former years had not been branded "Badger State" or "Wisconsin Full Cream Cheese," and he said certainly and that he thought these were until his attention was called to the word "Beaver" which had been substituted for the word "Badger." Major Alvord reports this jobber so angry at being swindled that he affirmed to this government official that he would never buy another box of cheese from Chicago as long as he lived.

Without elaborating further, let me say that it is my opinion that the manufacture of cheddar cheese in Wisconsin will decrease during the next five years to such an extent that it will become almost a lost art unless there is some national legislation which will save to us the good name of Wisconsin for cheddar cheese, and some protection which will carry our state under its own true name from the factory of the maker to the counter of the dealer supplying customers with cheese.

Representative Cook of this state has recently introduced a bill in congress which places filled cheese in the same category as oleomargarine, providing that all factories where it is manufactured shall be licensed and that each pound of filled cheese manufactured shall pay a tax to the government, and that all compound cheese shall carry a distinctive label, the same as must all oleomargarine packages. I hope that every person attending this convention will write to his member of

congress, urging that the Cook bill, or some similar measure, be pressed to passage at this session of congress. We have stopped the manufacture of fraudulent cheese in our own state, but we stand helpless before a torrent of fraud goods in other states, which still threatens to ruin the cheese industry, so important to our agricultural prosperity. There is no time for delay, and every farmer in the state whether directly interested in the manufacture of cheese or not, is interested in the passage of this law. Let filled cheese make up in some small measure by paying a goodly tax for all the harm it has done in the past, and will do in the future so long as it is manufactured.

I desire further to call the attention of members of the agricultural society to house bill 4349, introduced by Mr. Sauerhering, of this congressional district. The provisions of this bill briefly are that each state may secure from the treasury department of the United States a state trade mark. This state trade mark may be issued to citizens of the state for marking their goods under certain restrictions laid down by the state. This trade mark being issued by the treasury department of the United States carries with it the government authority and no one will tamper with it without fear of coming under the ban of the laws of tha United States. Every state in the Union has some articles or products which department of the United States carries with it the government authority and no one will tamper with it without fear of coming under the ban of the laws of the United States. are recognized in this country and even in other countries as possessing peculiar excellence. The purpose of this trade mark is to protect such goods and allow them, by carrying this trade mark to advertise their worth and excellence to whatever part of this country they may go. If we had such a law at this time and our Wisconsin cheese were going to other states under this trade mark, the miserable fraud operators on South Water street could not steal away our good name, or if they did the officers of the treasury department would be promptly after them.

Here are two measures in that in proposing to license and tax filled cheese, by Congressman Cook, and the other meas-

ure by Mr. Sauerhering proposing to issue state trade marks, that stand very closely to our dairy interests at this time. With the protection offered by these two acts, if they become laws, our dairy industry will start forward once more untrammeled by the fearful load it has had to carry in the past five years. With honest, wholesome, well-made cheese upon the market, bearing the name "Wisconsin Full Cream," our goods will once more find their way into the market and be sought for by dealers in high class goods as they were years ago. When this condition returns to us, millions of dollars will come to our state that is now lost to us through fraud and deception.

JUDICIOUS HORSE RAISING AND ITS PROSPECTS.

Alex. Galbraith, Janesville.

Mr. Chairman, Gentlemen—There is one advantage and only one in following as good speakers as Prof. Henry and Secretary Fleming, and that is that the interest and enthusiasm which have been instilled into you may not have vanished altogether before I am through with my paper.

I am indebted to Secretary Fleming for choosing so attractive a title for my subject as the use of the word judicious is a most happy and judicious thought. It removes much of the hard, icy, unsympathetic feeling which unfortunately attaches at the present day to the subject of ordinary horse breeding. You talk to a man about horses or horse breeding and he manifests no interest whatever, but ask him if he does not believe that by judicious horse breeding a profit can still be made, there is not one man in ten but will agree with you. And why? Simply because good judgment in horse breeding is just as essential to success as in any kind of breeding or farming or in fact doing business of any kind. When Sir Joshua Reynolds, the great artist, was asked one day what he mixed his paints with in order to produce such wonderfully effective colors he replied, "With brains." Now farmers must use their brains freely in every department of their work. They must profit by the experience of the past, they

must exercise their best judgment and common sense in breeding for a definite purpose, in aiming at a certain high standard of excellence and in providing themselves with the very best and most likely material for the production of that standard of excellence. Nor does this by any means complete their duties. These are but the foundation of the structure—the care, the feeding and the handling of the young stock are equally important and demand the farmer's most thoughtful and constant attention.

Now to show what I mean by judicious horse raising we have but to glance at the horse market of Chicago and see the deplorable effects of injudicious horse raising. We see that market crowded with horses of no special character bred for no special purpose and suited for no particular use. That market is and has for several years been filled to overflowing with undersized and inferior draft horses, alleged carriage horses, that is to say carriage horses only in the eyes of the unfortunate owner, who is either ignorant or has not the faculty of seeing things as they are. Trotting horses, also alleged, bred for special purposes alone and whose sole recommendation is that some of their ancestors trotted or paced a both in the human family and the domestic animal kingdom and as a breeder I shall never attempt to belittle its influence. mile quite fast. Pedigree is undoubtedly an excellent thing but pedigree alone without at least an average proportion of individual merit is a poor support to lean on. I have heard of a farmer who declared that his trotting horses with fancy pedigrees and his field of potatoes were equal in this respect, that the only good thing connected with either of them was under the ground.

These thousands of little, shapeless trotters have positively no place to fill in the social or industrial economy of nature; they cannot under any circumstances be called useful and they are certainly far from being ornamental. They are in fact cumberers of the earth with not even the advantage of weight to make them valuable for canning purposes. The other kinds I have referred to as being altogether too plentiful have at least the merit of being useful and they are bought daily for express wagons, for the southern trade where mules are being

supplanted by horses, for export as bus, street car and cab horses, but scarcely any of them at prices that can be called remunerative. So much for these misfits and so-called "general purpose" horses, always plentiful, always cheap and in large measure the production of inexperienced or injudicious breeders.

Now let us consider for a little what kind of horses really are wanted, what kinds can still be sold in these depressed times at something over and above cost price. And here I would remark that the best authorities although differing on some questions all agree that there are but two kinds of horses possessing quality, style and above everything, action. and that the misfits resulting from the endeavor to produce those kinds will be amply sufficient to supply the in-between class or the so-called general-purpose horse.
horses which the farmer can always raise at a good profit,

The two kinds in demand present and prospective are good heavy draft horses and large handsome roadsters or carriage horses possessing quality, style and above everything action. For both of those kinds there is always, has been and always will be an active demand, and the all but universal suspension of breeding the last few years is going to send prices higher than ever before. Never in the past two decades has the demand for really good heavy harness horses been so brisk as it is at this moment. The agents of foreign firms are bidding sharply for all desirable offerings at the great marts, and their commissioners are scouring the likely districts for horses suited to the needs of their trade. There is barely need to describe the horse most sought, he is well enough known, and speed is a very secondary consideration indeed. There is no gainsaying the fact that if he has the required size, substance, shapeliness and action he will sell all the better if he has speed, but the increase in value is not great enough to warrant any effort being made to produce speed at the expense of any of his other qualifications. The lean, angular, ewe-necked gelding weighing nine hundred pounds or a little more and able to show a 2:30 clip will not bring much, if anything, over one-half that which can be obtained for the roundly modeled, arch necked actor who weighs 1200 pounds and can only com-

pass a mile in five minutes. Big, stately brougham pairs well matched, or single horses of the same stamp, command the vendor's own price, and the demand was never more active. Several reasons can be advanced for this very satisfactory rise in values and quickening of inquiry, but it is not necessary to enter into them here and at this time. The extreme shortage of the supply is the chief of these, and those who have the right sort of mares will make a very grave mistake if they fail to mate them this spring with a suitable stallion. A great revival in horse breeding is surely in sight, but the conditions under which it will be carried on will differ vastly from those which prevailed during the inflated period a few years ago. If any gentleman in this room is disposed to question this statement I will ask him where the supply of horses is coming from to replace those now in harness?

We are using up horses more rapidly now than any time in the past. We are killing them by the thousand and exporting by tens of thousands. New markets have been opened up the last three years in almost every country of Europe.

The British market alone absorbed 35,000 of our horses last year at a cost of four and a half million dollars, and a still larger number will be sent there this year, in fact these foreign buyers declare their willingness to buy all the horses this country can produce provided they are only good enough. There are also numerous buyers from France, Germany, Austria, Belgium and other European countries at the Chicago stock yards all the time, and the commission men there tell us that this export trade has added about $25 on an average to the value of every horse sold in that city, and the number sold during 1895 was about 100,000 horses.

This increased price caused by those foreign purchasers represents a sum of not less than two and a half million dollars—a substantial benefit to the sellers of horses here.

Now while those foreign buyers are taking all kinds of horses they are most anxious for carriage horses and would also buy freely of our draft horses if only they were large enough and good enough, but such are exceedingly scarce.

The class of carriage horse enquired for being practically

the kind in demand in our own large cities I will attempt to describe. First as to color—chestnuts, bays and browns are the most popular and white legs are not objectionable but in many cases preferred. The horses should stand not less than 15-3 and form that up to 16-2 in height and weigh from 1100 to 1300 pounds. When a horse of 15 hands up to 15-3 has extremely high action and otherwise perfectly formed he is quite as valuable as the larger horse but without that action his value is proportionately less. The carriage horse must have a clean cut, intelligent head with bright full eyes and active but not very large ears. His neck should be lengthy, clean cut at the throat latch and well arched on to the shoulders which should be oblique, strong and well muscled. His chest ought to be reasonably full and deep, his back firm and not extremely long, altho' a greater length is allowable in a large coacher than perhaps any other type of horse. His ribs must be well sprung and well let down toward the flank—a tucked-up flank is not desirable either in a draft or carriage horse. His coupling should be short, hind quarter long and level—the tail set pretty high and well carried no matter whether docked or flowing. The thighs should be strong and well muscled, the bone flat and cordy, the hocks broad and clean with no suspicion of curb or spavin or any unsoundness —in fact all his legs must be perfect, his pasterns of fair length and set at the proper angle so as to prevent concussion and his feet must be of moderate size, wide at the heels and absolutely sound. A horse with good action neither points his toes nor paddles but goes straight forward using his shoulders freely, bending his knees and flesing his hocks, or as the Englishmen call it "going all around."

The higher action a carriage horse has the greater is his value and as this characteristic is most difficult to re-produce and exceedingly rare in this country, breeders should use every possible means to obtain it by using sires that not only step high themselves but whose ancestors for generations have also had that faculty.

I may say a word about the necessity of having horses of this class thoroughly broken and handled so that they may have good manners and be in perfect condition when offered

for sale. The class of men who buy carriage horses are very particular to have everything as nearly perfect as possible and they expect to pay extra to get it. This is a point which farmers would do well to give more attention to as they can thereby often secure the handsome profit which otherwise goes to the professional fitter or dealer.

Now as to draft horses, which after all are the farmers' mainstay and as staple as wheat. If the average price today is lower than it has been it is not proportionately lower than other farm products. We are passing through a period of diminished values always inseparable from hard times. Those few farmers who have all along been particular to raise the kind of draft horses which the market demands—horses combining size, substance and quality, have never yet had to accept very low prices, and whenever you find a really first class teazm weighing 3400 pounds or upwards you will find that the owner can practically name his own price for them and get it.

I saw a team of grade Clydesdale geldings in Toronto last team weighing 3,400 pounds or upwards you will find that farmer, refused $600 and I was aterwards told that he had declined $700 for them later on. There is no reason whatever why any of you farmers should not raise just as good and as valuable horses as that Canadian farmer. You have the best of material around you and you have the soil, the climate and the feed, in fact everything that is necessary provided you have the will power. Many of our farmers are quite versatile, but inclined to be fickle and changeable; they are full of hope but sadly lacking in faith. They are too easily discouraged when dull times overtake them and too apt to switch off to some untried branch of farming or something entirely outside their legitimate business, expecting a panacea for all ills. Those who stay by the raising of good horses are on safe ground, and when the general improvement in trade comes horses will certainly share in the revival and we shall again see in them lines of beauty in every feature and a majesty and grandeur in their presence which of late years have been dormant or invisible. It is astonishing how interesting everything becomes that has money attached to

it. Even the millionaire heiress is no exception to the old adage,

"Handsome is that handsome does."

All the evidence and all the arguments for the successful future of horse breeding are in the highest degree favorable, and neither the scare of bicycles, motocycles nor electricity will have any effect in deterring the farmer of intelligence and courage from the production of high class horses—horses that before the close of this century, four years hence, will be selling at higher prices than ever before realized. If farmers will only stop to think they will see that even at the present rate of consumption it can only be a few years before horses will become much scarcer and dearer, whereas with the resumption of good trade which is expected before a great while that increase in price will soon be doubled. And where is the supply to come from? The total breeding throughout the United States the last few years will not begin to supply the demand and our present export trade is more likely to change into an import one. We rush from one extreme to another, but those who are wise and discreet will

"On reason build resolve—
That column of true majesty in man."

(Applause.)

DISCUSSION.

Mr. Anderson—I would like to ask Mr. Galbraith what class of horses would be advisable for the ordinary farmer to raise?

Mr. Galbriath—Assuming that the farmer wishes to raise horses to sell there are just the two kinds I think would be most profitable. If he has been raising draft horses and has a grade draft horse, raise them. Whatever kind he raises he should see to it that he gets the best blood, as nothing short of that will pay.

Mr. Convey—Mr. President, Mr. Galbraith attaches a great deal of importance to high action. What grade would be best?

Mr. Galbraith—The highest stepping horse is the hackney horse, and if I were to name one horse that would get that high action it would be that one. We have also some good German coach horses, and also some good American bred

horses. Occasionally you get trotting bred horses that step high, and they have the ability to perpetuate that high action.

Mr. Williams—Is not a black horse preferred for a coach horse?

Mr. Galbraith—No, sir; the black would take the last choice. Some people like a cross catch.

Mr. Williams—Coach horses of black color take the eye more than any other,—that is my experience.

Mr. Galbraith—In the large cities a black team will always sell at a lower price. One thing that would help with the black team would be four white legs. The fashion in carriage horses has not changed very much. The trouble is we do not get much of that trade in the west. In New York you will find that the best teams have white legs, two-thirds of them have at any rate, and most expensive teams at that. It makes them more attractive.

Mr. Jones—What proportion of the prizes at the New York horse show were taken by the trotter in the high stepping classes?

Mr. Galbraith—The prizes for high stepping horses were competed for almost entirely by trotting bred horses. A few grade hackneys,—only one pure bred hackney, and that won the first prize. One of the most prominent teams there was a chestnut team, 15 hand team, one of which was a trotting horse, and the other out of a hackney sire and Texas mare. Its history seems rather peculiar. Last spring that horse was bought from an Indiana farmer for $25. A friend of mine bought it for $175. He fitted him up and made a little carriage horse of him and sold him in Philadelphia for $600. He hitched him with a trotting horse and they were sold for $3,900 before the close of the show.

Question—What kind of horses are the foreign governments buying for the army?

Mr. Galbraith—They buy all kinds, but mostly thoroughbred horses. They are not pure bred horses. Our country is flooded with non descripts; they are inferior.

Prof. Henry—What prices are they willing to pay for thoroughbreds?

Mr. Galbraith—The French buyers are the most miscella-

neous buyers we have, but they also buy some good ones. They used to have a limit of about $150 for that kind of horse.

Prof. Henry—Do you believe that the Wisconsin farmer who has from two to six horses could attempt to breed coach horses from the mares they have?

Mr. Galbraith—If they have good quality of mares to start with, yes; if not, no use attempting it.

Mr. McKerrow—What kind of stock should we have to breed this horse from?

Mr. Galbraith—Trotting bred mares. It is not necessary that they should be standard-bred mares. If they are truly thoroughbred they are all the better for it.

Member—Are not the description and the facts that you give diametrically opposite? Those that brought the highest price, it was not from a course of breeding,—it was more the jockey and the feeder and the money put into the horse after the breeding that brought the price, was it not?

Mr. Galbraith—That is very true to some extent, but those classes were not for pure bred horses. They were horses of any breeding. I do not say all horses bred so would be good ones. Those might have been exceptions.

Mr. McKerrow—From what you know of the average horses in Wisconsin, would you think it advisable for even a large minority of Wisconsin farmers to breed coach horses from the mares they have on the average Wisconsin farm?

Mr. Galbraith—No, sir; I do not think that I would advise it. I would not expect that they would produce very many coach horses, but they might get a horse that would be very useful. I believe in the necessity of good mares. You "do not get figs from thistles".

Mr. McKerrow—We understand then, that if the farmer has a good average mare, with some roadster blood, he might breed her to a coach horse with the hope of getting either a coacher or a general purpose horse that so many talk about?

Mr. Galbraith—Yes, sir. The only mare that I would breed to a draft horse would be a draft mare,—if you have full blood bred draft horses, not otherwise.

Mr. Convey—Is it not a fact that, owing to a depression in

the horse market, our horses are inferior to what they were two or three years ago?

Mr. Galbraith—That is very true. The over-production caused principally between the years 1886 and 1891 has flooded the market. From that time we have been suffering from that over-production, and in order to raise money in the hard times farmers raised what they could sell. I think the supply of good brood mares is extremely limited.

Prof. Henry—What weight of brood mares would you recommend the farmers to adhere to for drafting?

Mr. Galbraith—The mare ought to weigh from 1400 pounds upwards, and if 1600, all the better. Today the market value is very different between the 1500 and 1700 pound horse.

Prof. Henry—Then we understand you to advise the farmer not to breed horses of any kind unless he has dams with a reasonable amount of quality?

Mr. Galbraith—We will see horses of all kinds appreciate in value for the next few years. If the medium ones go up the better ones will go further up.

Mr. Arnold—Do you think that climate has much influence as to breeding horses—can we breed all kinds as well in this climate as in any other climate?

Mr. Galbraith—I think we can as far as the climate is concerned. A country where they have a longer summer season is perhaps more favorable, but if we use our intelligence in the mater of feeding I think we can overcome it.

Mr. Arnold—I think we are making a great mistake in not having a special line. There is no locality where an exporter can find a special class of horses. If there was some concert of action among the farmers in Wisconsin to breed some one class, I think we would have a greater reputation.

Mr. Vernon—It seems to me that this paper was more particularly directed to men who are breeding horses and not particularly to farmers who have a pair of mares. The breeder that this paper has reference to would naturally have the kind of stallions that those mares should be bred to, and I do not think that a farmer would expect to get the top price. He is not in the business and does not pay the attention that the man who has the stallions referred to.

Mr. Galbraith—What applies to a large breeder applies to a small breeder.

Mr. Williams—Are not rolling lands better than high ands for breeding horses?

Mr. Galbraith—Yes, sir.

Mr. Convey—Do you recommend forcing the draft colt particularly to get all the growth possible in the animal just as rapidly as possible?

Mr. Galbraith—On general principles I believe in giving the colt good treatment from the start, from the time he is weaned, and in my experience there are more that suffer from lack of food than too much. Of course there is a medium in all things, but if you exercise ordinary judgment in bringing up the colt, give him lots of exercise, I do not think you will get the growth too fast.

Senator Anderson—I want to take exceptions to what my friend Vernon said. I think Mr. Galbraith has given good advice to the farmers.

I bred six mares last spring and I think by the time those colts are old enough to go into market there will be a demand for horses.

Mr. Galbraith—I think it is a good time to hold them. The time is coming when the prices will advance.

Mr. McKerrow—The question of climate was raised, and don't you think that Wisconsin is as favorably located as any state, considering the conditions of climate that will produce the best fat and the best bone and muscle for the horse?

Mr. Galbraith—I do not think there is a state in the union better suited for that purpose. Illinois is by no means as well suited.

Member—Will Wisconsin farmers ever be perfectly successful in horse raising until we have intelligent legislation to help us? There are foreign countries that have their reputation and splendid horses through legislation.

Mr. McKerrow—I do not think so. I refer to France,—both there and in Germany, but in Great Britain they have no legislation.

Question—You advise education rather than legislation?

Mr. McKerrow—Yes, sir.

Mr. Galbraith—I think education is necessary.

Member—What kind of education?

Mr. Galbraith—We must have better judges of horses. Not have ignorant men buy horses and merely because they pay high prices think they are good ones.

Member—What kind of education?

Prof. Henry—Such education as they are getting here and elsewhere. (Applause).

Mr. Dodge—If you have two animals, one a perfect animal and the other deficient in some respects, which would you select?

Mr. Galbraith—I do not like to breed from a sire that has no ancestor, although he may be good himself. I should want to know about his ancestor.

Mr. Dodge—Do you prefer line breeding?

Mr. Galbraith—On general principles, yes, sir.

Mr. Laird—I would like to ask what breed of draft horses is considered the best?

Mr. Galbraith—That is a question of course that I did not expect to have put to me. Like others, I have my preference. I am the secretary of the Clydesdale association, and it would be rank heresy for me to say any other is any good.

Prof. Henry—I want to endorse the position of the gentleman in regard to the heavy or high feeding of young animals. His position on that is sound. Some four years ago I spent many days on the Leland Stanford farm. I found that Mr. Stanford's trotting horses were heavily fed upon strong feed. They were being forced, as a Wisconsin farmer would say. I found accompanying the heavy feeding was vigorous exercise. We all know that a man can eat heavily of hearty substantial food provided he works hard with his muscles. A man who saws wood eats a heavy food, and does not suffer from it, but a man sitting at his desk in his office will kill himself in a few years of high living. The same is true with the colt or horse, and Mr. Stanford recognized that fully and impressed this upon his men and his colts were trained regularly from six months on, and at two years old those trotting bred horses were quite generally as large as horses about three years old. The men did not seem to be afraid of heavy

feed provided they followed with vigorous exercise and plenty of out door life. The animals were exercised every day and after that exercise were put into paddocks or in pasture where they were still out of doors, and the quality of their bones warranted Mr. Stanford in saying "You can feed heavily if you will give them the proper amount of exercise".

Member—I would like to ask the nature of the exercise the colts had to take.

Prof. Henry—They had a covered oval shed where they could be exercised. They were driven about in a ring until they had had a sufficient amount of training. They were always afraid of getting them sour on their work and never drove them until they were sorry they were in there. That went on every day and the animals went into the harness at eighteen months.

Mr. Galbraith—What Prof. Henry has said is borne out by my experience. There is just one point, and that is the question of giving them strong feed. There is a medium in that because if you feed strong feeds to young things you may hurt them, and I think the strong feeds should be mixed with rough feed. That will prevent the danger arising from feeding strong feed.

Mr. McKerrow—What is the nature of the food fed, carbonaceous or proteine?

Prof. Henry—I thank Mr. Galbraith for bringing up that point. The horses received oats and barley for their grain feeds, and a part of the grain feed was steamed,—oats forming the bulk of the feed and barley steamed, and for roughage they were fed hay, and were fed carrots which were pulled up in the summer time, and thrown in the feed boxes. Each got from three to five pounds of carrots.

Mr. Arnold—It is hardly practicable for an ordinary farmer to give his trotting horses or roadsters the proper training and give them full feed. If he is breeding heavy draft horses, don't you think it is as well to let them run in the barnyard until they get their growth as to tie them up in the stable? They will get all the exercise they need. Tie them long enough to give their feed.

Prof. Henry—Yes, sir, and the draft mares ought to be handled about the same way.

The President—If there are no further questions to be asked Mr. Galbraith on this subject we will close. We hope to meet you all at two o'clock.

Adjourned.

Thursday afternoon, 2 o'clock.

The President—The first subject on the program this afternoon is silage and the silo, which will be opened by the students of our university. The first will be an opening address; second, the construction of the silo; third, the filling of it; fourth, the use of the contents. After that, and not before, find out from these boys, if it is possible, if they know what they are saying; in other words, if they really realize and can appreciate that they are standing upon their own feet. The first will be by Mr. Jones.

Students (in chorus), U-rah-rah Wis-con-sin.

Mr. President and Gentlemen:—During the early part of the season of 1874 an extreme drought prevailed over a large section of the agricultural district of France, which naturally resulted in very short forage crops. Previous to this time some successful experiments had been made in preserving the tops and pulp from sugar beets and green maize, and the value of any process by which green forage could be economically preserved for any considerable time was clearly recognized by the leading agriculturists. The Société des Agriculture de France, being profoundly impressed with the necessity of having some expedient by which the deficiency caused by drought could be supplied founded a prize fund, the proceeds of which was to be distributed in 1876 and succeeding years, for the best and most economical processes of preserving green forage through the year.

The report of the department of agriculture for 1875 contained an extended description of what it termed the French method of curing silage. In 1875 the first silo in the United States was built by Manly Miles of Michigan, Mr. F. Morris of Maryland following in 1876.

In 1882 the report of the department of agriculture con-

tained reports from ninety-one persons in the United States having silos, of which three were from Wisconsin. From this time the increase in the number of silos has been very rapid especially in dairy districts, and the growing popularity of the silo is justified by the results. When the Wisconsin farmers' institute was first organized in 1885, silage and the silo at once became one of the principal subjects for discussion, and wherever an institute has been held the silo has been thoroughly discussed. Almost every leading farm publication has been sounding the praises of the silo for the last ten years. Thus we see that silaging has been openly advocated for the past twenty years not only in the United States but in Europe as well, as an economic system of preserving winter forage and as the best expedient for supplying the deficiencies caused by drought. No good reason can therefore be given why every Wisconsin farmer should not have an intelligent understanding of the practice and theory of silaging. And yet when the great drought of 1895 dried up our pastures and almost entirely ruined our hay crop, how few, comparatively speaking, of our Wisconsin farmers there were who were prepared to tide over the summer drought and preserve a supply of succulent food for their stock during the winter months, as can economically and profitably be done by the intelligent use of the silo. Thousands of our dairy cows have been sacrificed at canned beef prices. Thousands more are standing, these cold winter days, around their owners' buildings, with arched backs staring coats and empty stomachs, suffering from want of sufficient nourishment, while the dry and worthless stalks from a thousand cornfields are laying buried beneath the snow drifts or frozen in the ice and mud.

Thousands of carelessly put up shocks of corn fodder are standing out exposed to the rains and snows and wintry blasts losing from 20 to 45 per cent. of their feeding value, while not over 10 per cent. need have been wasted if properly put in the silo. I believe that it will be readily conceded that maize or Indian corn is the cheapest forage crop the farmer can raise. Hence, the question naturally arises, What is the best and most economical method of preserving the crop?

From results obtained at some of our leading experiment stations it cannot be said that a pound of dry matter in corn silage posesses any greater feeding value than does a pound of dry matter in corn fodder. And several experiments show nearly if not quite as much loss both of dry matter and proteine with corn silage as with the field cured corn. For example, in 1892 the Vermont station reported a loss or 18 per cent. of dry matter both in the silage and in the field cured fodder. While the Wisconsin station reports, as the results of four years' trials, a loss of 15.6 per cent. dry matter and 16.8 per cent. proteine in the silage and a loss of 24.3 dry matter and 23.8 per cent. of proteine with the field cured system, and the general conclusion seems to be that with very favorable weather and extra good care the crop can be preserved with as little loss both of dry matter and feeding value by field curing as usually occur by the siloing process. But when we consider the methods used and care exercised by the avarage farmer in shocking, curing and feeding his corn crop, I think that we may safely say that there is a loss of from 20 to 45 per cent. both in dry matter and feeding value. Prof. King in 1894 conducted experiments on a small scale with silaged corn and reported a loss of but 2 to 3 per cent. dry matter, and on the strength of these results, with others, he believes that the losses need not exceed 5 per cent.

In order that the losses may be reduced to the minimum the silo should be deep from 26 to 35 feet and have as smooth and as small an inside surface as possible. It should be built with reference to the amount of silage to be consumed daily, as from one to two inches should be taken from the entire exposed surface every day, and feeding should begin as soon as the filling is completed.

In regard to the comparative cost, it is claimed that the advantage is decidedly in favor of the silage.

But personally I do not believe the difference is as great as is usually claimed. The cost is certainly the same up to the time of harvesting, and I believe that the extra help necessary when filling the silo and the extra labor required to handle the additional weight of matter to very nearly equal

the extra labor required in field curing. In feeding the corn fodder to dairy cows I would not husk and grind the ears, but run the whole plant through the cutter or shredder. Husking and grinding the ears and then feeding to the cows with corn stover or stover ensilage has been declared by some experiment stations to be worse than useless, as not only was the labor and cost of grinding lost, but the feeding value was not as great as when fed as corn fodder as I have just mentioned. This statement perhaps needs emphasizing as the farmer who follows this method is generally regarded as being reckless and an extravagant feeder. If the fodder is to be stored in the barn or shed it will require from 8 to 10 times as much space as silage; this is of course a point in favor of silage but we must admit that the building required for silage is much the most expensive and if care is taken in shocking and stacking the fodder the loss need not be very large, probably 20 per cent. Other advantages claimed for silage are a greater digestibility, larger amount of food consumed by animals and proportional larger returns. The animal economy is kept in a more natural, healthy and vigorous condition, and the adaptability of silage for all kinds of stock.

Summing up, I do not believe that any intelligent farmer who has given this question the careful, thorough consideration it deserves, will deny that silage is the cheapest and most economical forage crop for the dairy farmer, and that the silo is a necessary adjunct to the successful modern dairy farm.

A. P. Jones, Mineral Point.

The President—We will now find out how to construct the silo from Mr. Troyer.

CONSTRUCTING THE SILO.

Mr. President, Gentlemen:—I have been asked to tell you all about building a silo,—the how, the whens and the wheres —and I am to do it all in five minutes. That looks like a rather big task for one small man to accomplish, but we were taught in McGuffey's first reader that a boy does not know what he can do till he tries, so I am here to try.

Now I hold as one of the cardinal principles of farm operations that every farmer should be just as lazy as he can be. Our professors keep telling us that this is an electrical age, that each and every one of us should be a galvanic battery on two legs—and it makes very good preaching too. But we agricultural students, while we are perfectly willing to have sufficient electricity about us to spark and be sparked, yet I imagine our professors find us rather tough clay in which to sow their ideas.

We, as a nation, are accused of being a hurrying nation—in a hurry to get into the world, in a hurry to taste its bitter and its sweet, and some of us, even, get into a hurry to wrap our blankets about us and lie down with life's setting sun. Most of us, however, are willing to be lazy when it comes to leaving the world, but I believe in being lazy *all* the time. That is, lazy in this way: I do not believe in shoveling a load of corn one inch further than necessary—rather drive the wagon as close to the crib as it will stand. I do not believe in pitching a hay cock a foot further than need be—bring the rack to the hay cock rather than the hay cock to the rack. I believe in seeing a man make his brains save his arms and his legs.

This then answers the question of *where* to build the silo, build it just as close to the cow's mouth as you can get it. Silage is heavy stuff and a man will be a kinder neighbor and a jollier Christian if his silo is handy to feed from.

Now as to the when of building a silo. I would say build it last year. If you didn't build it then you are twelve months behind the times and are entirely too lazy to suit even my advanced ideas. If you haven't already built a silo begin tomorrow to plan for one.

The last point of how to build a silo is perhaps a little beyond my depth. The only silo I ever built was one that I constructed with a spade. Just a hole in the ground in the dry soil of eastern Colorado. Some men, you know, get rich just by owning a hole in the ground. Well, I didn't become rich from that hole, in fact my experience was such that I should not advise any Wisconsin farmer to build that kind of a silo. Other men however have secured good results from just such a method. Only last November I saw one of these pits, on the farm of Mr. Pratt, a Holstein breeder near Elgin, Illinois. The pit was about 14 by 24 and had been filled with whole corn stalks. These were removed as desired by cutting off two feet slices from one end, just as a grocer cuts off slices of cheese. The silage appeared to be in fair condition. I was reliably informed, too, that on one of the large dairy farms near Dundee, Ill., the cows get nothing except grain and silage and that the silage is stored in huge pits. If you wish to try this method, no one will laugh at you I presume only do not blame me if the silage is not good.

If you wish to be sure of having a good thing build your silo on top of the ground, and make it round. I presume no Wisconsin farmer needs to be told that a round silo is the most economical in cost and the most economical in preserving the silage. Thanks to the careful and thorough investigations of Professor King this is straw that need never be threshed again. Make your silo round where possible.

Another important point is to make it deep. While listening to a talk on silage given by B. R. Stauffer, a prominent dairy farmer of Bellevue, Nebraska, I was struck by his statement that in his seven years' experience with silage no two of them had been alike. One year his silage would be nice and green or brown and sweet, another year it would be black or sour or mouldy, and yet as far as he could see he had each season cut the corn at the same degree of maturity and handled it in just the same way. He could not understand why the product should vary so much. I have wondered since if his silo was not a shallow one or if the walls were not weak so as to allow a slight bulging near the bot-

tom. Either of these defects might admit air, and admission of air means fermentation and decay. Silos must be air tight.

One more important point, and one in which so many silo builders fail, is to provide adequate ventilation over the silage and betweent the walls. Good ventilation dries the walls and retards their rotting.

If these three points are carefully looked to it will make but little difference as to the material used in constructing the silo.. You may use wood, stone, metal or India rubber—the only preference being that wood is the cheapest and will more likely keep the silage from freezing.

In bulding a silo, then, locate it convenient for feeding, make it deep and strong, make it air tight, and provide ventilation. If you do this the silo will keep, the silage will keep, and you will keep—thanking your lucky star that you are civilized enough to build and appreciate a silo.

A. M. Froyer.

The President—We will now find out about filling the silo from Mr. C. O. Ruste.

FILLING OF SILO.

C. O. Ruste.

Mr President, Gentlemen:—In view of the fact that the world is always moving, it is rather embarrassing to get up here and tell one's ways and reasons of doing things when we know that it is going to come out in print and appear as literature and in a very short time be a thing of the past. I shall, however, let that be as it may, in a very few moments describe the way in which we fill and have filled our silo at home for the last three or four years.

The first requisite, of course, is what to fill with, which in a very large majority of cases is Indian corn, and as I understand that question was fully discussed here yesterday, we will assume that our corn crop is ready and I will not further touch upon it except as to variety. My experience is only

with the ordinary field corn, the yellow dent. I have used that in order to get better quality of corn, as I am far away from the station and do not like to buy very much grain. I presume that if more silage was going to be had from a small acreage that the larger varieties would be better. As to location, I may say that our silo is built somewhat on the principle already stated,—on one side of the barn, it being on the side of a hill, ten feet of the silo comes below the ground, twenty feet above. We fill from the outside, arranging our machinery as follows: the cutter, twelve inch cutter, on a platform about two feet high so that it will be on a level with the racks on the wagon to avoid the men stepping up and down while unloading. We run with a two-horse tread power outside, the horses on the power being protected from the rays of the sun by canvass covering temporarily set over. We find that with a two-horse tread power and the knives in the cutter kept reasonably sharp, will do the work as fast as the men can handle it onto the cutter. Our racks are constructed in the manner described in one of the recent reports from the experiment station—18 foot stringers hung underneath the axles on the wagon. Formerly we used the high wagon only but last year we found it could be strung under the truck wagon. The king bolt in front holds up the rack in front and allows it to turn, the two bolts behind supporting the rack, so that it works all right. When to fill the silo is when the time would be to cut your corn in the old fashioned way, that is, when the ears are past the glazing period and commencing to dent; in other words, when we observe by the stalk when the lower leaves commence to dry and the outer husk commences to turn. The corn is then so far matured that it will not gain any more feeding properties and has moisture enough to preserve it in the silo.

As to cutting, we are probably in the rear in this. We cut by hand. The only machine we tried was the old self-raking reaper, which has been advocated and we tried it on small and straight corn, but without success, and we discarded it. We cut and throw four rows of corn into a row and pick it up by hand, load it on the wagon and bring it to the feed cutter, a carrier of course being attached to the cutter and

emptying through a filling window some two or three feet into the silo. I have found that after it is cut into the silo, unlesss a man is kept there all the time, it is necessary to level out each load for this reason, that the carrier having a rapid motion, throws the heavy corn to one side and the light parts to the other. I would say that I have seen, recommended and tried spouts of various devices, but I think with a silo of less than twenty feet diameter the spout is not practicable.

As I said, the heavy stuff will get to one side and the lighter to the other side. That must be trampled around the walls so as to create an even pressure all over. The idea is to get as even a pressure all around as possible, and it is preferable, I think, to tramp down around the walls, and evenly.

As to the rapidity of filling, I think we can fill as quickly as we can and as slowly as we have to, but experience has shown me that our silage cannot be left for more than three days, I think, without adding more. For instance, when our silo is full, we should not leave it more than three days before filling more, as it will settle, and if we want as much as possible in the silo we can fill at intervals, but not more than three days between. After having our silo full I prefer to tramp it down as well as possible, especially around the walls, and let it settle probably for a day or so, and then, unless we want to feed directly, it is advisable to cover it with something of a cheaper material than our corn.

Now, I am sorry that I have weeds on my farm, but I find it is all right to fill weeds on top of the silage, three or four inches, and tramp this down, and preferably moistening them, as the heat from below will cause a crust on top which will cause it to spoil, and if we have something cheaper than corn we can afford to put it on.

This, I believe, is all there is to be said about filling, and if these little precautions are observed, I have no fear whatever but what our silage will come out all right.

The President—We have built and filled the silo, and now we will see what we will do with the stuff. We will learn that from Mr. Dodge.

SILAGE.

J. E. Dodge.

Mr. Chairman, Gentlemen:—As the president has already told you, we have our silo ready for use, and if the builder and the filler have done their work properly, we have a first class article of food, and I feel safe in saying, when backed by the experiments carried on at various experiment stations in our country and the results obtained by practical farmers, that for winter food as part of a ration, silage has no equal, especially when we take into consideration the cost, convenience of handling, and its effect upon animal production.

WHY IS SILAGE A GOOD FEED?

It furnishes us with a succulent food at a time of year when vegetation is dead and so replaces pasturage to a large degree; it is cheap, costing about $1.25 per ton; it is wholesome, nutritious, easily digested and keeps the digestive system in a healthy condition.

FARM STOCK.

Silage has been considered almost wholly as a food for dairy cows for the reason, I think, that more has been said through the press and in meetings of this kind regarding the cheapness of silage as a milk and butter producing food, but it can be fed to beef cattle, horses and sheep as part of the ration with profit, as experiments have proven, and I would advise any person who has a silo to give it a trial, but be very careful to feed in small quantities, especially when changing from dry feed to silage. In this talk I will confine myself more closely to feeding dairy cows, as I have had more experience in feeding them. We should give a cow, in full flow of milk, all the good wholesome milk and butter producing food she will eat, digest, and pay a profit on. This will of necessity be a variety, for you all know that a cow craves variety and her system demands it.

Scientific men tell us that a cow weighing 1,000 pounds, when in full flow of milk, should have about twenty-two

pounds proteine, from twelve to fourteen pounds carbohydrates, from five-tenths to eight-tenths of a pound of fat, or a nutritive ratio of one to five or six, and this has been corroborated by practical dairymen.

How shall we give her this amount? Not all in rough feed nor all in grain, but a proper proportion of each, or I would suggest feeding from twenty to forty pounds of silage, five to ten pounds of hay or corn stover, ten to fifteen pounds of grain, varying according to size and appetite of each cow.

I might add that to feed a cow or any animal intelligently and judiciously, we must study their appetites, likes and dislikes, ability to digest and assimilate food, and the combination of foods best suited to their needs.

I see in the audience a former graduate of the Agricultural College who follows the plan of soiling and I would like to hear from him, Mr. Crossfield.

Mr. Crossfield—I cannot say very much more than has been said on this silage question. I have not fed silage the entire year, but fed it the forepart of the summer and had very good results with it. I think if we can have silage to feed the year round, that other soiling crops would not be needed. But to my way of farming, I keep my cows shut up pretty closely during the summer, give them a little run and cut green feed for them,—have no pasture. The first thing in the spring, I feed rye, winter wheat, oats, clover, millet, and then corn. By planting some corn early I get an early crop which will be ready to feed as soon as needed, and it should be more mature than most folks feed corn. There is too much danger in feeding it too green, before the kernels dent. I have fed it and know how it works, and it is too expensive feed. It takes too much to get any good,—you can feed any amount and get but little good from it. So let it get well matured, and by putting it into the silo you can feed green food all winter, and if you can have enough of it so much the better. One thing in building the silo that was not touched upon, and that is, the floor. There have been many different kinds of floors put in silos. When we first built ours we had nothing but clay and thought it was all right. It was all right the first year, but in a few years the rats got into it and then we did not have a silo. So we put in a cement floor and got something that lasted. I do

not know as I can say anything more that would be of interest to you.

Prof. Henry—I would like to ask how many acres of land there are on your farm?

Mr. Crossfield—Eighty acres in all; only sixty acres plowed.

Prof. Henry—What are the other acres?

Mr. Crossfield—Fifteen acres of woodland, covered with thick woods, and marsh, and five acres for buildings.

Prof. Henry—How many cows do you keep that give milk?

Mr. Crossfield—Twenty-five milch and ten yearlings.

Prof. Henry—How much stock?

Mr. Crossfield—Forty head.

Prof Henry—How much grain do you buy?

Mr. Crossfield—Generally about $300 worth of ground grain, bran, or whatever we can get cheapest.

Member—Do you raise all of your rough fodder?

Mr. Crossfield—Yes, sir.

Prof. Henry—How much run do your cows have?

Mr. Crossfield—The run of this woodland, ten or fifteen acres.

Prof. Henry—What is the first crop you get in the spring?

Mr. Crossfield—Rye.

Prof. Henry—How long can you cut rye and feed it satisfactorily?

Mr. Crossfield—A short time, about ten days.

Prof. Henry—How near maturity should it be when you start to cut?

Mr. Crossfield—As soon as it heads out, before it blossoms.

Prof. Henry—Do you get strong milk or butter from feeding green rye?

Mr. Crossfield—No, sir; I do not think we do.

Mr. Goodrich—Do you feed that entirely, or do you have dry feed to go with it?

Mr. Crossfield—We have some dry feed to go with it.

Mr. Goodrich—About what percentage?

Mr. Crossfield—What they will eat.

Mr. Goodrich—Does the milk or butter never have any taint?

Mr. Crossfield—No, sir. We send out butter right to Chicago and have never heard any complaints.

Mr. Goodrich—I wish to say that we have practiced the same plan. We have fed green rye, but at the same time they had clover hay. They like both and will eat probably fully as much of the hay as of the green rye while they have all they want of each. They want this variety and will take it and enough rye to give it the flavor that fresh grass has. Some like it and some object, but if fed nothing but rye it will make too much of this grassy flavor.

Mr. Anderson—I would like to ask the gentleman why he does not feed early of his rye, before it obtains such a growth? Does he not think he would get a profit by mowing the rye when large enough to feed of it, and continue in that way? The rye then starts again and gives him a second crop the same as with clover?

Mr. Goodrich—I do not know but what that would be all right to start sooner if you can. I pasture my rye well in the spring and turn the cows on the blue grass pasture until the rye is large enough to cut.

Mr. Skinner—I have made a practice to sow tobacco ground, eight or ten acres, and had good results and think it is a splendid practice in the spring, and we turn the cows on for a week at a time until time to plow for planting tobacco.

Prof. Henry—I wish Mr. Dodge would come forward for a moment. Mr. Dodge is the herdsman on a farm owned by Mr. Taylor of Orfordville, who had a first prize cow at the world's Columbian exposition, and Mr. Dodge's ambition is to be a first class feeder of dairy cattle. What rations would you give your dairy cow in the full flow of milk?

Mr. Dodge—It would depend upon her appetite and whether she was a dairy cow. I should feed her forty pounds of silage and what dry feed she would eat, clover hay preferred, and from ten to fifteen pounds of grain, and I have fed over twenty pounds of grain a day to an extra good cow.

Prof. Henry—What kinds of grain?

Mr. Dodge—Corn, bran, oil-meal, oats, depending upon the cost.

Mr. Pratt—Do you figure to feed an exactly balanced ration?

Mr. Dodge—I prefer to feed a balanced ration, probably not exactly balanced, one to five or six or somewhere near that, depending upon the cow.

Mr. Goodrich—Do you find all cows want the same ration?

Mr. Dodge—No, sir, I do not.

Mr. Anderson—When the price of bran is $9.50, oats twenty cents a bushel and corn half a cent a pound, what proportion of that feed would you call an economical food for the Jersey cow, a rough estimate?

Mr. Dodge—About equal parts of each, but prefer to feed a little oil meal with it.

Question—How much oil meal would you feed?

Mr. Dodge—I feed as high as five pounds a day and as low as one pound.

Mr. Anderson—What is the medium?

Mr. Dodge—Two or three pounds.

Mr. Goodrich—Do you not think they should have a certain proportion of dry matter between the concentrated food and coarse fodder, that is, cows that would eat twenty pounds of grain feed without injury—how much coarse food should they have without injury?

Mr. Dodge—About forty pounds.

Mr. Goodrich—How many cows have you that will do that?

Mr. Dodge—About half of our cows will do that; perhaps not that amount—that is an exceptionally large amount.

Mr. Goodrich—Are you counting the silage as dry fodder?

Mr. Dodge—No, sir.

Prof. Henry—How frequently do you feed your cows?

Mr. Dodge—I feed in the morning first thing a little dry feed, which they are allowed to eat while we milk, and then we have breakfast, and feed their grain after breakfast, and then give them silage. Then they get nothing until afternoon, at which time they get silage, then the grain feed, and a little dry fodder after milking in the evening.

Mr. Anderson—That dry feed is coarse fodder?

Mr. Dodge—It is either hay or corn stover.

Mr. Anderson—When do you water and how often?

Mr. Dodge—We water them twice a day, morning and evening.

Mr. Anderson—And then give them their balanced ration of bran, oats and corn after they have drank the water?

Mr. Dodge—Yes, sir.

Mr. Linse—Don't you find that some of your best cows fed this balanced ration or fed bran and oil meal, get poor and you find it advisable to give more carbonaceous food?

Mr. Dodge—Yes, sir. This balanced ration is not a balanced ration—it is not good for one, while it may be good for another.

Mr. True—What determines the amount of grain they will eat?

Mr. Dodge—Her appetite, the quantity of milk and butter produced, and the way the food is digested. If I find that she is beginning to fatten I immediately cut off the fattening food.

Prof. Henry—How much butter have you made from the milk of a cow in one week, give an instance or two?

Mr. Dodge—I think I have saved all the tests I have made. Brown Elsie, No. 96,595, gave in seven days 219 1-2 pounds of milk, which made 15 pounds and 8 ounces of butter. She ate daily 12 pounds of corn and oats, 3 pounds bran, and ran in pasture with rest of herd.

Prof. Henry—How much does your milk test?

Mr. Dodge—We have to report our tests to the American Guernsey Cattle Club. We have the Babcock test and use it daily.

Mr. Anderson—What did your milk test?

Mr. Dodge—I cannot tell now. I have not got it down here.

Prof. Henry—But you test it?

Mr. Dodge—Yes, sir; we test them all.

Prof. Henry—Give us another illustration.

Mr. Dodge—"Connisseur", No. 65,641, gave in 14 days 603 pounds, 8 ounces milk, which made 41 pounds of butter. She ate daily 5 pounds oil meal, 4 pounds oats, 3 pounds bran and 8 pounds corn meal, and ran in pasture with the rest of the herd. "Reif", No. 58,398, gave in seven days 282 pounds, 12 ounces milk, which made 19 pounds, 3 ounces butter. She ate daily 4 1-2 pounds oil meal, 8 pounds corn meal, 3 pounds each

of oats and bran, and ran in pasture with the rest of the herd. "Spark", No. 62,689, gave in seven days 231 1-2 pounds of milk, which made 20 pounds, 3 ounces butter. She ate daily 3 pounds oil meal, 6 pounds bran, 7 1-2 pounds corn, 7 1-2 pounds oats, 40 pounds of silage and what clover hay she would eat.

Mr. Anderson—Was she not putting on fat with that quantity of grain? That is a large quantity of grain.

Mr. Dodge—No, sir.

Question—What kind of pasture?

Mr. Dodge—Mixed grasses.

Prof. Henry—I would like to ask Mr. Ruste how many cows he is milking at home?

Mr. Ruste—An average of twenty-five.

Prof. Henry—Do you ever weigh the silage you feed them?

Mr. Ruste—Occasionally.

Prof. Henry—Do you weigh the milk of your cows?

Mr. Dodge—Twice a month.

Prof. Henry—You have been taking your milk to a cheese factory?

Mr. Ruste—Yes, sir.

Mr. Convey—Is milk from silage fed cows accepted at the factories where they manufacture so-called fancy cheese?

Mr. Ruste—I do not know as I had better enter into that discussion as it is getting into private grounds.

Mr. Anderson—Can you in feeding silage at any time detect any different flavor one time than another in the butter?

Mr. Ruste—No, sir.

Mr. McKerrow—Do you detect a different flavor from dry food?

Mr. Ruste—By feeding the silage and taking all the necessary precautions that a good farmer ought to take, that is, removing the milk from the stable so that it will not absorb any odor and not allow any filth or dirt to be dropped into it, I have not been able to detect any bad flavor. I think Mr. Brigham stated at our institute at Mt. Horeb that he could detect the difference in flavor in milk and cream, but not in the butter. As a matter of fact the Swiss cheese makers object and have a prejudice against silage. They refused to accept milk while we fed it. Some think it has an influ-

ence for the whole following summer season. These are not my views,—it is on the other side of the fence.

Mr. Goodrich—This is quite an important question. The fear of this kept me for twelve years from building a silo. I commenced in this business when the first silo was built in Wisconsin and I was fearful of its effect upon the flavor of the butter, as we were getting a fancy price for it. I tried the silo and two weeks after I had sent the butter away I received a letter from the commission man in which he stated, "Mr. Goodrich, the flavor of your butter is excellent; never so good before at this time of the year". There was one happy man in Ft. Atkinson then.

Mr. Linse—I am making a specialty of the cheese in question. I know it may have some effect on the quality of the cheese, but we know that sometimes, especially in the fall, when the cows get on fresh clover, we have the same results which will not cause a bad flavor in making this fancy cheese.

Question—You mean the pin holes?

Mr. Linse—Yes, sir.

Question—What time do you feed it, before milking or after?

Mr. Ruste—It has been our custom to feed in the evening before milking. Understand, we have used the silage as a food of maintenance more than for a product, as all our cows come in in the spring. Last spring while bringing milk to the factory we changed around so as to milk first and feed afterwards.

Question—Do you feed it in the morning?

Mr. Ruste—Yes, sir.

Mr. Goodrich—About filling the silo, which is your part of the subject. You have undoubtedly known of a great deal of damage being done to the outside in filling,—the silage seemed to settle away from the sides and let in the air. Do you know what causes that?

Mr. Ruste—I have known instances of its spoiling at the top. In settling together, a space is formed at the wall and the air is let in.

Mr. Goodrich—That is all right and I thought you were go-

ing to finish it just right, but you either missed it or forgot it. It does sometimes settle away so that it will spoil for a good ways. Mine did the first time. I did it as a silo man told me, kept the middle the highest, and by doing so found it settled away from the wall. Keep it highest on the outside and tramp it down in the middle. There is one thing I consider very important. I want to ask the gentleman who told about building the silo about lining the silo with some kind of metal. I believe they have been trying that and we would like to know how successful they have been in this.

The President—Professor King, can you answer that question?

Prof. King—So far as I know metal linings for silos have not been very extensively tried. We did make a preliminary trial in one of our silos at the station without satisfactory results. Tin was used first, and then galvanized iron painted. The result was that the silage acted so upon the paint as to soften it and take it off quickly, and my conviction was then that materials of that sort and protected in that way would not be satisfactory. I did also try coating ordinary sheet iron with coal tar and then emersing those sheets of iron in acids. I found that there were little pin holes left through which the acid entered and where corrosion began. Last fall, at my suggestion, a silo was built and lined with galvanized iron, the galvanized iron being coated expect that the asphalt paint will protect in this case, the surface being a better surface than the ordinary iron. From uses that I have put galvanized iron to at home, finding it to withstand corrosive liquids for two weeks without giving way, I hoped that the galvanized iron with this coating would give a moderately cheap and tight lining, but I have not yet received any reports from this. My only fear is that the heat of the silage may melt the asphalt paint and cause it to expose the galvanized iron. It softens at considerably below boiling heat. I have not myself tested the exact temperature at which it will melt. Unquestionably the zinc itself would be acted upon by the acid of the silage unless protected, but I have a good deal of confidence in the protection offered

by the asphalt paint, but while I say this I wish every one who hears this statement to be guarded, because I do not know that it is a success, but think it will be. I have received no report as to what the results are.

The President—We will have to close this discussion. The next subject is Cheese Making in Wisconsin, by Professor Decker.

CHEESE MAKING IN WISCONSIN.

J. W. Decker, Experiment Station, Madison, Wis.

Mr. Chairman, Gentlemen: I am very much pleased to bring this subject before this society, but I would much rather at home. The class of people that are here are the progressive ones and do not need it so much as the unprogressive class.

I hesitate a little to talk on the cheese business of Wisconsin because the market is under a depression, but I believe it will improve. There has been a great hustling to get out of the cheese and into the creamery business, but the cheese business is going to see better days. However, there are some things that need to be remedied. We have new things to meet that we have not had in the past. I see that Prof. Henry has been talking to you about the depression caused by the filled cheese. He has probably told you that the exports to England from Canada have increased nearly four hundred per cent. and that in fourteen years our own exports decreased about forty per cent., and then last year there was a further decrease of about twenty-one per cent. However, in the past year the Canadian export trade has been quiet too. In a letter from Canada about the first of the year, the statement was made that the fall make of all the large factories was still in the curing rooms; that the prices were so low that they did not care to sell.

In the last few years New Zealand and Australia have commenced sending cheese into the English market, and that has cut off part of our trade. A great many of the New Zealand cheese are sent to England. They do not have soft wood of

which to make boxes, and so the cheese are crated when sent to England. The New Zealand government has paid a bounty for cheese exported, but the bounty has been taken off so that the New Zealand makers do not find the business quite so profitable. But the market will open up, and unless we change our methods, the exports from Canada will increase and we will not get our share of it.

The filled cheese of course is one thing that has been injuring our market. Perhaps, in speaking of the cheese business in Wisconsin, I will have to say something about filled cheese in a little different way than Professor Henry has. Most of you have heard about filled cheese and that it injures our markets, but few have seen the product to get acquainted with it. Let me tell you how it is made. The butter fat is skimmed out and neutral oil put in its place. Of course the butter fat is in emulsion. In order to get the hog fat into emulsion it is put into the milk by a steam jet, or jetometer, into which some of the milk is drawn up from the cheese vat and another smaller pipe runs from this neutral oil into this inlet of the jetometer and this draws the fat into the stream that is thrown back into the milk vat, and so all the fat is taken up and forced into emulsion in the milk, and then the vat is set in just the same way as they set it for full cream cheese. Great progress has been made in the manufacture of filled cheese during the last few years. The improvement has been along the line of texture; in fact, they get as fine a looking cheese as you find among the full creams, a texture that is fine, and a close cheese, but the flavor is lacking. It seems that there is something that goes with butter fat which gives a cheesy flavor that cannot be put into filled cheese. I have gone through warehouses in Chicago to find out something about this, and always when I started to taste the cheese found that it was much better to look at; it has an insipid taste.

There has been a tendency toward uncolored cheese. The people seem to be demanding uncolored cheese, and I believe one reason is that filled cheese cannot be made uncolored.

The uncolored filled cheese is blue like skim-milk, and the uncolored full cream cheese has an amber color.

I ran across a cheese in Chicago not long ago stamped and sold as full cream cheese, and when it was analyzed proved to be filled cheese. This is ruining our trade and we need immediate national legislation to protect us from the fraud.

But there are evils in the manufacure of *full cream* cheese. I am talking about the sins of the people, and if you do not like it you can go home and tell your people about the mistakes they are making about the evils that need to be corrected in the manufacture of full cream cheese. Let us look at the district in which cheese is made in Wisconsin. The cheese counties of Wisconsin lie along the eastern shore of Lake Michigan. Starting up in Door county, there are probably thirty factories. There is not a finer country in the world in which to make cheese than northeastern Wisconsin, including the counties of Manitowoc, Ozaukee, Washington, Kewaunee, Dodge, Green Lake, Waushara, Fond du Lac, Outagamie and Waupaca. That is the old district where the business spread out from Sheboygan and Fond du Lac counties. In the southwestern portion of the state Richland county, Grant county, especially the eastern and norhern part, Iowa and Sauk counties make Cheddar cheese, and LaFayette, Green and Rock counties are the great counties for Brick, Swiss and Limburger. Then there is the new district opening up in northern Wisconsin; that will be a grand cheese country when it is developed. There are a few factories which have started in Marathon, Clark and Taylor counties. In the old counties the factories are small and poorly equipped. Take, for instance, Sheboygan and Manitowoc counties small factories have been put up on every cross-road. Perhaps the owner of the factory would not come down on the price of making and somebody put up a factory to run in opposition. They are small shanties not fit to be called cheese factories. Very few have boilers to run the factories by steam. There are heater vats in which there is a tube that runs under the water vat and the water being heated in that way, transmits its heat to the milk. As they cannot heat above the cheese temperature,

you can see that they cannot get hot water for cleaning up. The curing rooms are very poor, being practically big dry-goods boxes in which to cure the cheese. In the southwestern part of the state they have somewhat better factories, and they are equipped with steam. A heater vat is almost unknown there. They are getting along better and make a better grade of cheese, although I do not think that the country itself is quite as favorable for the manufacture of cheese as this northern country. During the last two years nearly all the premiums have gone to the southwestern part of the state. The gold, silver and bronze medals given at Rockford at the National Dairyman's Association went into this territory; the medals given by the Wisconsin Cheesemakers' Association two years ago went there; the first prize at the Wisconsin state fair went there; the silver cup offered by the Wisconsin Dairyman's Association went there a year ago and again this year. So you see they *are* getting the start of the cheesemakers in the old cheese district.

Cheese should be cured at a temperature of about 60 to 65 degrees, but in these dry-goods boxes in which it is held for two weeks the temperature will run up to 90 or 95, and cheese that might have been good may be spoiled by the excessively high temperature. The cheese is therefore shoved onto the market just as soon as it looks good; in fact, they put it on the market when ten days to two weeks old, and people get some of this sole-leather and come to the conclusion that cheese is not very digestible and they do not buy any more cheese.

Sometimes we do not care to receive the truth. At the meeting of the National Dairy Union there was a filled cheesemaker who said filled cheese is more wholesome because of the cleaner way in which it is made than the full cream American cheese and that they did not cure the full cream cheese as they ought to. It is a fact that our factories are dirty, and we want to remedy the matter. I believe that one reason why filled cheese has such a foothold is that they can easily imitate the uncured cheese put on the market, but it does not have a high flavor, a cheesy flavor. Perhaps I might describe

what a cheesy flavor is. It may be called a fine flavor when a person would give twenty-five cents a pound to get another pound of it. But this fine flavor worth twenty-five cents a pound is not developed in two or three weeks. The cheese ought to cure from three to six months, or possibly a year. I was struck by an expression of one of our students, a gentleman who came from Switzerland, where he was used to cured cheese. We were trying some cheese, and he said, "That is not cheese at all," but when he got hold of some a year old, he said, "That is more like it." In Europe they eat more cheese than we do, in England especially. In this country they buy small amounts; it is tough and dry like basswood chips and then they do not like it and throw it away. I do not believe exactly in forcing onto the people things which they do not want, but I believe they do not know what good cheese is, for the plain reason that they do not get it. If they got good cheese they would soon like it, and there they eat one pound now they would then eat five or six pounds. In the future we will have to cater more to our home trade. I believe I told you that a part of the English trade is going to be taken by New Zealand and Australia. We have a great population in this country that would be willing to eat good cheese if it could be had. I believe we must drive out the fraud and see to it that we produce better goods, that the people like and will eat more of.

cheese is because patrons are more to blame than the cheese-

Mr. Dodge—Do you find that the reason we do not have good

The Secretary—Questions are now in order.

Mr. Dodge—Do you find that the reason we do not have good cheese is because patrons are more to blame than the cheese-makers?

Mr. Decker—That is another point I meant to have touched on. The patrons are sometimes to blame and sometimes it is the cheesemaker. For instance, in the northern part of the state I find factories where they cannot afford to hire good cheesemakers. I ran across a case of this kind last summer and they had corky cheese that would not break down; it was like a piece of cork, hard and crumbly. He was not using enough rennet to make the cheese break down into soluble

peptones, and it remained hard. He talked it over with some other cheesemakers and they thought he was using too much rennet, which made it too hard. They ought to have known that it was just the contrary. The patrons are to blame because they will not hire good cheesemakers.

The Secretary—Do you not mean they think they cannot?

Mr. Decker—Yes, sir; and does it not seem ridiculous that where perhaps four or five or six thousand dollars worth of milk goes into a factory they think they cannot afford to put in a good cheesemaker, for with a poor maker they probably will take one or two cents a pound less for their cheese. And these men who cannot afford to equip a factory right will put five or six times as much money in a creamery.

Mr. Anderson—Did you ever have the experience of having one of our educated cheesemakers who has learned the profession, go into cheese factories and take the milk as it comes from the patrons and make a success? Did you ever find a failure in such a case?

Mr. Decker—Yes, sir. We find students who will go into cheese factories and will not follow the methods they are taught. We are trying to teach a uniform method all over the state, so that when Chicago buyers buy Wisconsin cheese they will not have to pick it up in little piece lots. In Canada they buy a month's cheese at a time. There they can get one or two carloads of cheese made uniformly, and when the people like the cheese and go back to the buyers they can get more like it. We want such a uniform method all over the state. It is much like the Canadian system. When our students go out they sometimes refuse to follow instructions, and every year there is a lot of high acid cheese, and people do not like it, and it comes largely from running in too much whey. I believe sometimes our cheese are too dry and the people are asking for more moist cheese, but there is also a great tendency to run in more whey than the cheese will hold and as a result the cheese sours.

Mr. Anderson—Do you not think that after more experience they will fall into the right way and make better cheese?

Mr. Decker—They have had four or five years and do not

seem to be improving so very fast. Some never make good cheesemakers.

Mr. Anderson—Were there not some cases where they made failures at first but afterwards were good cheesemakers?

Mr. Decker—Yes, sir. At Marshfield there was a little factory that had lain idle for one season. They had had cheesemakers who said the milk was not good. Finally they gave up for a year, but the proprietor asked if they could not get a student to come there, and they got from one to two cents a pound more than the general market. Sometimes it is in the maker.

Mr. Anderson—You spoke about cheese being put on the market too soon. Would it have been a good article for the market if it had been kept in the curing room long enough?

Mr. Decker—Yes, sir. The fault probably lies in the patrons. Part of the factories are co-operative factories. On the other hand, perhaps the proprietor has all his money invested in the factory and they think he is making too much money.

The Secretary—Is it not also true and probably the principal cause that they put the cheese upon the market too green and immature, that we all know there is a certain shrinkage, and on the declining market their greed to get the biggest possible price forces them to put that article on the market too soon?

Mr. Decker—Yes, sir. The Canadians' policy has been to first get quality and then work for the quantity. In our state they try to get the quantity and then the quality. The Babcock test is thrown out in this state where it was invented; the men who have the poor milk throw the test out.

The Secretary—I would say, Mr. Decker, while this is very interesting, I think possibly if you would for a few moments take up the duty of the patron to the factory, that in an audience of this kind it would be very beneficial to take up the care and preparation of the milk before they send it to the factory.

Mr. Decker—In regard to the care of milk, flavor is the most important thing in either cheese or butter, for if a man

gets cheese or butter that he does not like, he does not want any more. Cheese and butter have three grades of flavor: the fine flavor in cheese at twenty-five cents a pound; the flavor that is neither good nor bad, a sort of neutral flavor; and then the poor flavor. Flavor can be put in the cheese in two ways: First, by the feed. If a cow gets onions or turnips, it is likely to go into the flavor of the milk, and possibly into the cheese or butter. Such feeds should be fed after milking instead of before. Possibly in nine cases out of ten the flavor is produced by germs that grow in the milk. They have a great deal of trouble with gas organisms which cause pinholes in the cheese. These changes or fermentations, as they are called, are caused by bacteria breaking up the constituents of the milk. The most common fermentation is the souring of the milk, and the bacteria break up the milk sugar into lactic acid. In our American cheese this souring goes clear through the whole process. In the Brick and Swiss cheese the milk has to be just as sweet as possible, the fermentation must not be started at all, and in warm weather they have to make it up twice a day; that is in the Brick and Swiss factories. The bad flavors are caused by bad bacteria. They will come from uncleanly habits, which are sometimes with the factoryman and sometimes with the patrons. How do the bacteria get into the milk? In the simplest manner—by falling in at the time of milking. It has been demonstrated that by carefully drawing the milk from the cow into sterilized vessels, the milk can be held indefinitely without any change. The bacteria get in at the time of milking or after milking. We find that there are bacteria on the cow's coat that fall off. I believe the bad milk may come from a cow wading through a sink-hole and the bacteria sticking to the coat. Perhaps there are uncleanly conditions about the barn and the bacteria in the dust and dirt fall into the milk pail. If the milk is cooled off immediately, it may go into the factory in a comparatively good condition. These bacteria will not begin to grow until warmed up in the factory. The patron must keep things clean. He ought to have on clean overalls, wash his hands

and brush off the cow with a damp cloth so that the hair will stick to it and not fall into the milk. As soon as the milk is gotten into the can it should be thoroughly aerated by dipping it or by running it through an aerator. Then the milk should be cooled down to about fifty degrees, where it will keep sweet. Any sour germs that may be there will be held dormant, and then the milk should be hauled to the factory cool. The morning's, as well as the night's, milk should be thoroughly aerated and cooled. The utensils should be washed first in lukewarm and then in scalding water, and then put in a good airy place where the sunlight strikes it, because sunlight will kill the germs.

Questions—Is there any danger of churning out milk fat in pouring it in that way?

Mr. Decker—I think it helps to prevent that. Dr. Babcock has demonstrated that in cow's milk there is a certain amount of fibrine, and when exposed to the air a clot will form, and in pouring that way the fibrine clot will catch the fat globules and hold them in the milk.

Mr. Convey—The milk test is not being used in more than half of the factories in the state. What effect is that likely to have on the dairy regions?

Mr. Decker—It will result in a lot of skim-milk cows, or will result in skim-milk some other way.

Mr. Convey—We find in some cases less than three per cent. fat and the cheesemakers in some cases are trying to work in all the water they can.

Mr. True—We found last year at one of the institutes that a manufacturer of Swiss cheese did not desire milk from Jersey cows, and they are exchanging their Jerseys for Holsteins.

Mr. Decker—The Jersey cow will give richer milk and the fat will go into the cheese.

Mr. Linse—I am manufacturing Swiss cheese entirely out of Jersey milk, and my cheese in the La Crosse market brings a cent more than any made around there.

The Secretary—Do you attribute that wholly to the fact that your cows are Jersies, or that you make cheese on better principles than your neighbors?

Mr. Linse—Because my cows give richer milk. My cows give milk testing on an average five per cent. fat. It is the richness.

The Secretary—I will accept that it is the richness instead of the Jersey cow.

Mr. Decker—Too many of our factories are dirty.

Mr. Favill—Mr. Decker has told us that it is the effort of the dairy school of the university and of the Dairyman's Association to create uniformity of product throughout the state. I am glad to know that, but one statement that he has made has been a little disheartening to me, and that is that they are securing to some extent uniformity. I do not know how it is throughout the state generally, but in regard to the cheese offered in the Madison market for home consumption there is uniformity, and I am sorry to say that it is uniformly very poor. (Laughter.)

Mr. Jones—I have noticed a number of factories that never have their whey tank cleaned. I think it is a very wrong thing and am pretty certain that good cheese cannot be made in that way.

Mr. Decker—In a factory in Fond du Lac county the whey tank was right near where they took in the milk and the patrons would begin pumping that sour whey into the milk cans. The cheese was all spoiled till they got rid of the old dirty whey tank. The Canadian factories keep the whey at the factories and it is fed sweet. I believe one place where we have been losing a good deal in cheese making is we have been losing the value of the whey by feeding it sour. If it had been fed sweet it would have been worth eight to ten cents per hundred, and eight to ten cents per hundred for the whey would mean quite a difference in the fatness of the pocket-books.

Mr. Convey—Should the whey vat be of metal or wood?

Mr. Decker—I believe a tank lined with galvanized iron would be the best and should be cleaned out every day, and have an opening at the bottom where surplus whey, if any, can be run off. In Sheboygan county they put the whey tank down as far as possible where they cannot clean it out.

Mr. Arnold—I believe that it is universally considered that

the cheese in Wisconsin is not as good as ten or fifteen years ago, notwithstanding all the efforts of the Dairyman's Association, and if this is the case,—and we were assured here yesterday that no filled cheese is made in Wisconsin—are the Wisconsin people buying all the cheese from Illinois?

Mr. Decker—I believe it is because they hurry it onto the market so. It is curd and not cheese. I believe Mr. Simons at Neenah is doing the people a great benefit; he is putting in curing rooms in which a proper curing temperature can be held.

The Secretary—We must close this discussion because we have an important paper to follow and the gentleman is qualified to handle it,—Prof. Craig.

JUDGING LIGHT HORSES.

John A. Craig, Professor of Animal Husbandry, University of Wisconsin.

It is a pleasure to me to have the opportunity of making known what we are trying to do at our College of Agriculture in instructing students in judging live stock. That our system may be presented to you in the clearest way, I have had this skeleton and other features of our equipment brought here and I propose to discuss one feature of our work—the judging of light horses—just as we take it up in the class room. I wish to say, however, that the class room studies are the smallest part of the instruction that is given. Throughout the term the students are continually scoring and judging the various types and classes of stock and I would ask you to remember that the class room discussions are but explanatory of the practical work that is done in examining horses of all degrees of unsoundness and merit.

The Points of Light Horses.

To obtain a basis upon which to furnish reasons for a great many of the points which will afterwards be submitted, it will be necessary for us to consider the horse as a piece of

mechanism, in which the bones are the levers and the muscles the source of power and the nerve system the stimulator of this source. To understand the ways the bones work in the body it will be best to consider them as levers with which the muscles work. There are three classes of levers and they are all represented in the skeleton of the horse. The first class may be said to be represented by a pair of scissors. The power is applied in the place for the fingers, the fulcrum is in the center and the application of the power at the point. This is the most advantageous form of leverage that is known limbs. The lever of the second class may be said to be repre- and it is represented in the skeleton of the horse by all the muscles and bones that are in use in the extension of the sented by a wheelbarrow. The power is applied to the handles, the weight is in the center and the application is at the wheel. This leverage in the body of a horse enables him to sleep while standing or to stand without any exertion whatever. It is the leverage which prevents the joints from closing on each other and in the shoulder blades, the muscles which run down the shoulder to the humerus prevents the joint between these two bones from closing and it is a lever of the second order. The lever of the third class is represented by a pair of sheep shears. The power is applied to the center, the fulcrum is at one end and the application of the power at the other. This leverage is clearly shown in the action of the horse's jaw in eating his food. The masseter muscles of the jaw apply their power to the center of the jaw bone, the fulcrum is where the under jaw joins the head, while the application of the power is at the teeth. In considering leverage further there are other features attached to it which should be mentioned here. Considering the muscles of a horse there is one feature which is of considerable value. The muscles consist of bundles of fibres and it is easy to understand that when these fibres are long and few in number there is more elasticity in them than when they are short and greater in number. A long slim muscle with long leverage of the bones in certain parts are more favorable to quick action or speed, while the heavier muscle, consisting of more fibres

and shorter ones, are favorable to draft or power. So that in the light horse the length of muscle and its leverage is more to be looked for than in the draft horse.

The Form.—In considering the form of a horse the first matter to determine is, how far the form is due to the skeleton and how much, if it should be credited to the muscular development. If you will compare this skeleton with a well developed horse it is easy to see that the form in some parts is altogether determined by the bony frame work, while in others it is altogether a matter of muscle. Beginning at the head it will be noticed that its form is due wholly to the bony frame work of the skeleton. The outlines of the neck are made altogether by the muscle. The shoulder and the chest are both outlined in form by the skeleton, while on the leg the upper part, as well as the lower, is shaped by the development of muscle in the frame and the position of the tendons in the latter. The form of the body is governed nearly altogether by the rotundity of the ribs and the width of the lungs; in the hind-quarter, the upper part is moulded wholly by the muscular development, and the same may be said of the thighs and the quarters, while the tendons in the lower part of the leg may be said to make its shape. The form in light horses is divided into four classes, the trotter or roadster, the carriage or coach horse, the cob and the saddle horse.

In considering a horse as a piece of mechanism something more than bone and muscle must be included. The stimulation for action comes from the nerve power or force. This nerve power is represented centrally by the brain and from there it is carried to all parts of the body through the main channel of vertebra, and from various points along this it branches out to stimulate each individual muscle. The stimulation for action must come through the nerve centers and these have a great deal to do with the quickness and the strength with which the horse may act. This statement serves to show that the horse of strong nerve system has a quicker and more complete control over his muscles.

The Trotter or Roadster.—The chief characteristics of the roadster are speed and stamina. The ability to trot fast is a

leading characteristic of the roadster and the ability to maintain a rapid gait is very desirable, in a horse of this kind. To be critical, there is a difference between a trotter and a roadster. A trotter is generally considered to be a horse that can go fast at a trotting gait, which does not necessarily mean that that horse has the ability to maintain that gait for any distance over a mile. In the case of the roadster, however, rapidity of gait is not of more importance than the ability to maintain it. The roadster is a horse that is an agreeable driver on the road and one that can do his work day after day without suffering from fatigue. The trotter or roadster approaches toward a definite type. As a rule the typical roadster is about 15.3 hands high, and weighing about 1,000 pounds. In type he is narrow in front, deep chested, wide in the loin and very muscular in the quarters. He has a hard finish which seems to indicate durability. Every feature about the horse appears clean cut. The lineaments of the face and the outlines of the neck, and especially the distinctness of the chord as they stand away from the leg, are characteristic features. The roadster lacks the fullness and symmetry which should be a characteristic of the carriage or coach horse. He is seemingly constituted on principles which guarantee the ability to stand hard work on the road. If you will take a type of the best campaigners that have records of 2.10 or better, you will see a similarity that shows the type towards which the trotter and the roadster is approaching. In addition to the quality of bone and muscle and chord which the roadster seems to have, there are other peculiarities which seem quite distinct. The head is as a rule proportionate to the rest of the body, wide between the eyes and sharp in the pole. The neck is slim and of fair length, carried in a straight posture. The shoulder slopes markedly and the top of it extends far back into the body. The arm is short and thrown far forwards. The forearm is long, the canon short and the pasterns of good length and slope. The horse is upstanding and seemingly too far from the ground in proportion to its height. The back is short, rising very high at the hips; then from the loin to the point of the hips the length

is very noticeable, and from the latter again to the point of the hocks the length is altogether exceptional. A noticeable feature of the roadster in general is its angular appearance. This is due to the fact that all the processes of the skeleton are very prominent. If you will notice the typical roadster, you will find that all the prominences of the skeleton are very pronounced. For instance, the bone which forms the point of the elbow stands out very noticeably; then the small bone which is at the back of the knee is also very sharp and prominent. Below this the navicular bone is very large. At these points the muscles and tendons of the leg are attached and it seems that their prominence favors the play of the tendons when the leg is in action. Again the prominences of the haunch may be very clearly seen. At these two points important muscles are connected and it would seem that their strength is added to by the prominence of these processes. The prominence just above the thigh is also very large and from it important muscles run to the point of the hock. It can be easily seen that the prominences of these parts, as they all give attachment to important muscles, have a direct bearing on the speed or action of the horse.

Coach or Carriage Horse.

The distingunshing features of the coach or carriage type of a horse are style, symmetry and action. The height should not be less than 16 hands to permit of a good appearance. In distinction with the road horse the carriage horse is very smooth and symmetrical. The smoothness should be due to plumpness of muscle over all parts. In addition a coach horse should possess much more style than that of the roadster. To understand what it is that attributes to style in a coach horse it will be advisable to begin considering the skeleton and the relation of the bones to each other. When a horse can be said to possess style, there seems to be a happy blending of all proportions of form. If an attempt is made to analyze the proportions of a horse that has style it will be found that the line running from the pole to the nose has a similar direction to the line formed by the scapula

or the shoulder blade. The line running along the center of the pastern also has a similar direction and the same may be said of the line formed by the thigh and that by the hind pastern. Then if a line made by the forearm or the humerus is taken as a basis it will be found that it approaches very closely in direction to that made by the ischium of the pelvis, or slope of the croup, and this again is like that of the lower thigh. Each part seems to bear a fixed relation to every other part, giving a horse that symmetry which contributes so much to style when he is standing or in action. The action of the carriage horse is quite different from that of the roadster. The roadster to secure speed must have a far-reaching, quick and easy action which carries him over the ground rapidly, seemingly without much exertion. The coach on the other hand steps higher and in the forelegs bends the knee easily and gracefully. The hind action has not the reach of the roadster. To understand the action of the coacher it may be said that his method of using the hind legs in action is very similar to a horse that has been hitched too close to the rig and the bar keeps hitting him on his legs. If you have observed a horse in such a position you will have noticed that when the hind leg reaches a certain point in motion it is gathered up quickly and thrown sharply forward under the body. It seems as if he was trying to keep his hind legs continuously under him. Neat heads, graceful and long necks, round, plump bodies, clean cut limbs and graceful, stylish action are the leading qualifications of the coacher.

The Cob—The cob horse differs from the coacher chiefly in the fact that he is a heavier horse and more muscular. There is the same symmetry and smoothness that is characteristic of the coacher. The action should be high and rounding similar to that of the carriage horse. The chief distinction between the two lies in the fact that the cob horse is of less height and of greater muscular development.

The Saddle Horse—The chief qualifications of the saddle horse are the different gaits which are desired in a horse under the saddle. The standard performances as adopted by the executive committee of the American saddle horse asso-

ciation are the following gaits: (1) Walk. (2) Trot. (3) Rack. (4) Canter. (5) Running walk, fox trot, or slow pace, and possession of these gaits are the peculiar traits of the saddler.

In addition to the study of types we make an effort to closely study the features of merit among light horses in general such as action, quality and the many features that have to be considered in a structural examination of all horses.

Quality—This term applied to horses refers to their bone, skin and all features of their organization. The evidences of quality are clean cut features, glove like skin, silky hair and firm bone. The horse possessed of quality in general appearance has clear cut lines in his face and over all parts where it is possible to distinguish between the muscles, tendons and bones. This freedom from coarseness in the joints and the tendons or in the features shows a soundness of joint and tendon which is necessary in a horse that is required to stand much endurance. Coarse hair is an evidence of coarse skin and a sure indication of soft, spongy bone that quickly becomes diseased when put under a hard strain or usage.

The soft smooth skin is of value merely for it tells us of the internal organization of the animal. It may have never occurred to you but it is no less a fact that the animal has but one skin covering its body externally as well as internally. The same skin which covers the ribs and all internal parts is the same that lines the stomach and intestines. If the skin covering the external parts is soft and pliable it indicates that the secretions are healthy and it would seem just to reason from this that the lining of the stomach will be in the same state and if it is, it is in the best position to digest the food which goes into it. Quality in a horse's limbs and feet are especially desirable. In looking for this feature in the leg it is a common practice to run the hand over the cannon bone. In doing this the skin is felt against the bone and if there is proper quality there the skin seems to melt from the hand, letting the latter come in contact with the hard and smooth cannon bone. Then the fingers of the hand in a leg of good quality seem to touch each other, as they

pass down between the chord and the bone of the leg. There is a feeling here which is one characteristic of horses of good quality and it is one that no description can do justice to. It is a fact that in finely bred horses, such as a thoroughbred, and the trotter that are put to great endurance, the texture of the bones of theses parts is decidedly closer and firmer than that of horses bred for slower and easier draft work, and a comparison of these two classes of horses will usually show just what is meant by the term quality.

Action—In judging a horse his action should be closely studied for it is decidedly the most important point connected with his value. To have a better understanding of what action is, we will suppose that a horse is standing and he starts to move. The body weight is first shifted to the opposite limb, then the limb is free and commences to flex. The angle in the shoulder formed by the shoulder blade and the humerus diminishes. Then the knee is lifted and the angle formed by the upper part of the leg and the cannon bone is also lessened. After this the fetlock and pastern joint are flexed and the whole leg is in a state of contraction. Continuing this observation further, the limb now begins to extend. The angles begin to open and the extension starts at the point opposite to where the flexion began, that is the leg begins to unfold at the pastern joint instead of at the shoulder through the action of the extensor pedis. At the same time the knee becomes extended and the leg is almost straight when the foot comes to the ground on the heel. Then something like a pendulum motion takes place in the front leg, the body more or less rotates at the shoulder and at the hip joint. In the hind leg the thigh flexes toward the body; then the femur flexes toward the hip joint and at the hock the two bones above and below approach each other. From this position there is an oblique downward and forward extension until the leg is wholly extended, and then the foot reaches the ground at the heel. At this point the body is turned on to the limb again, and the limb again passes more or less into a state of flexion. From this it will be seen that action in a horse is a series of small motions which have to be

closely analyzed to determine which is at fault and what is correct.

Observation of Action—In observing the action of a horse it should be noted from three points of view. By standing in front of him, watching him come towards you, you can arrive at a correct conclusion as to the straightness of his front legs and whether he steps true on them or not. Then as he passes you watch how the front limbs and the hind limbs work together. There should be an evenness of stride in all the limbs, and this should give the action from a side view a balanced appearance. The way the front legs and the hind legs are flexed can also be best observed from a side view. As the horse goes away from you observe the action of the hind limbs. They should be moved in line with the front without any spreading from a direct line with the front legs or twisting in or out. The best of the symmetry of a horse or the way that he is balanced lies in the trueness and the regularity of his action. It is altogether the exception to find a horse that is unsymmetrical in his parts to have a balanced stride, so that an even regular action generally fortells a symmetry of proportions.

Qualities of Action—The action should be rapid, straight and regular. In considering the rapidity of the action there are two kinds that seem to be very deceptive in this particular. If one of the forelegs is lifted inordinately high without much extension the horse appears to be going fast but the limbs are really being extended very little. This has been termed "paddling." There is another form which is the reverse of this in which the horse extends the legs exceptionally high, but he seems to dwell too long after they are extended. The recovery apparently is not quick enough. This defect is observable both in the front limbs and also in the hind. It may be best described in the hind legs by saying that it is very similar to that of a duck in the motion of swimming. When the leg is thrown back it seems to be held there without any reason except to delay the recovery. The proportions of the limbs have a great deal to do with the rapidity of the action.

The straightness of the action is an important consideration both in view of speed and appearance. In many road horses the action of the hind legs is too wide and spreading, and hence not straight in a line with the fore. It may be that the action is too close and as a consequence more interfering takes place. If a horse spreads much in his action behind he cannot unite himself as though his action was straight, for in the latter his power is applied more directly under his body where it is fully utilized. Sometimes a rotary movement is noticed in the action of the fore legs. This is generally caused by trouble in the shoulder and is always present in instances of shoulder lameness. The regularity of the action indicates a soundness of the joints. If a horse possessing regular action is trotted over hard ground and the sound of his feet readily heard the exact meaning of "regularity" will be made apparent. The hoof beats are regular and where this is the case it is the best evidence that the horse is properly constructed and sound in his limbs. Troubles of the feet, corns, sprains and many other injuries of the limbs disturb the clock-like action of the sound horse, though it is easy to observe that the action is irregular. It is at times hard to locate the action of it. In locating lameness when an animal is in action, it is easy for the ex-novice to be deceived. If the foreleg is affected, the head and the fore part of the body is lifted when the affected limb comes to the ground, but the horse drops firmer when the sound leg reaches the ground. A bad defect in the regularity of action and the feet is what is known as "hitching." In this the stride of the hind limbs is not similar. The step of one is shorter than the other, giving the horse the appearance of galloping behind and trotting in front. It very often originates from speeding a horse in a heavy rig.

Structural Examination.

In examining horses it should be thought of first importance to look for any unsoundness of wind or limb. By putting a horse through his paces any unsoundness of the joints

or ligaments such as bone diseases and sprains will usually make their presence known. It is of equal importance, however, to know the conformation that gives rise to these diseases. In fact, for use or breeding purposes, it is just as necessary to avoid the horse of defective form as it is to shun the unsound animal. A badly constructed hock without a spavin may actually depreciate the value of a horse much more than a spavin on a well formed hock. The first has not a spavin simply because it has never been put under a strain, while the spavin in the latter case must have been due to a test of more than common severity.

The Head—The shape of the head and the countenance of a horse adds greatly to its appearance. The line from the ears to the point of the nose, as seen from the side, should be almost straight. In scanning the features of a great number of trotters, it will be noticeable that nearly all stallions have slight Roman noses, while most of the mares have slightly dished faces. As a rule it will be found that horses with very large Roman noses are strong minded or self willed. Small nostrils are generally associated with this form of nose, and as a consequence we find in such instances the respiratory or breathing organs lack development. The features of the face should be distinct without the least appearance of coarseness or meatiness. A lean face is suggestive of good quality in a horse. The muzzle should be fine to make the head appear at its best. Between the eyes there should be breadth enough to give a pleasing frankness to the countenance. It is a point of practical value as it is an index of the brain development, which is of much importance in a light horse, as considerable intelligence is required of them. While it is granted that the intelligence of a horse depends mostly upon the training he has received yet, there is a marked difference in the degree to which horses will derive benefit from training, and that difference can only be accounted for by variations in brain power.

Nostrils—The nostrils of a horse should be large, thin, dilatable and of a pink color. There should be no discharge

from them but they should have the appearance of being moist.

The Eye—Someone has very appropriately called the eye the window of the mind. A bright eye indicates vigor of constitution, that is, stamina, staying power or bottom, as it is sometimes called. It is also associated with a happy disposition, and it is that, which accounts for the fact that some horses, like some men, do an enormous amount of work with little worry and strain upon themselves. A large, full clear eye is indicative of a kind, generous disposition.

Ears—The ears should be carried in an erect position. They should be active and somewhat pointed. Lop ears denote lassitude, or in plainer words, laziness. When it is noticed that a horse does not shift or move either of his ears to any extent to catch sounds, it is safe to presume that deafness is present. On the other hand, if they are continually moving, it is advisable to look well to the eyesight, as the chances are that the extra labor imposed on the ears has its origin in a defect in one or both of the eyes.

Jaw Bones—Between the jaw bones there should be sufficient width for the wind pipe and also to allow the head to play freely on the neck. When the space between the ears is very narrow it will often be noticed that the horse carries his head stiffly and in an awkward position, but when there is sufficient width there the head is carried freely and gracefully on the neck. The throttle and throat latch should be light, without any thickness between the jaw bones and the neck.

The Neck—A nicely moulded and distinctly chiselled neck carrying the head gracefully is one of the most important features of the ideal light horse. Running towards the shoulder, the neck should swell gradually, so as to join the body smoothly. The wind pipe should be large and appear distinctly from the rest of the neck. While the "ewe neck" is possessed by many excellent road horses it is an unsightly defect as it detracts from the appearance and should be noted as such.

The Chest—In the light horse that is called upon for fast work, the chest should be deep rather than broad. It should

give room or capacity more by depth than by breadth. The reason for that is that the deep chest permits of freer play of the shoulder blades of the body. It is easy to see that swift, smooth action of the forelegs is hardly possible in the broad-chested horse mainly because it throws them too far apart and out of line with those of the hind quarter. A deep chest is an evidence of staying power. Look at the conformation of such campaigners as Mary Marshall, Nancy Hanks and others for convincing proof of this.

The Shoulder—The formation of the shoulder is one of the parts of all light horses that requires critical scanning. To give elasticity to the movement of saddle horses and to permit of quick and clean action in the roadster, the shoulder blade should be long and oblique. An upright shoulder gives a short stilted action which detracts much from the enjoyment of the rider, while it also proves a more or less fertile cause of such bone diseases as splints and ring-bones.

The high action which is desired in the coach or cob horse and the far reaching and clean action so desirable in the roadster depend as much on the obliquity of the shoulder as on any other feature. In addition, a sloping and long shoulder strengthens the back and extends the length of the underline. Muscular development of the shoulder should also be carefully noted.

Forearm—The humerus which forms the forearm should be short and appear comparatively straight. When so it gives a horse a fine upstanding appearance adding much to his style.

Foreleg—The appearance of the foreleg from the side should show it to be flat and cordy. The flatness, the well attached tendons and the clean cut apearance denote the absence of any coarseness about the legs. In this part the leg should be long from the elbow to the knee, for the reason that free and clean action follows such a conformation. In these parts it will be noticed that most of the muscle that extends and flexes the leg is located between the knee and the elbow. If this part is long the muscle must necessarily be long and that produces quick and easy action. The muscle

of the arm flexes and extends the rest of the leg, and for these motions to take place with the least expenditure of power, the course over which it must travel should be as short as possible, that is, the cannon running from the knee to the fet-lock should be much shorter than the distance from the knee to the elbow.

Mr. Helm has made a careful study of the effect that the proportions of those parts to each other has upon the horse's action. He has measured a great many horses and finds that their action in the forelegs seems to be governed by the proportionate length of the arm and the cannon. He found that Administrator had a very superior action in front and that his cannon was 11 3-4 inches long, and the forearm 21 inches. About the same proportions were found to exist in the forelegs of George Wilkes, and there was no lack of knee action in his movement. The actual proportions were 10 1-2 to 20. In Governor Sprague the cannon was 11 inches and the arm 21, and here the front action was not quite so rounding as that of George Wilkes. In the case of St. Laurence the proportions were 11 1-4 to 21, and the action was noted to be far-reaching and gently curving. It can be easily understood that the strain upon the knees would be greater in those horses that were long in the cannons in comparison with the length of the forearm, and it will be usually found that such a conformation predisposes a horse to weak knees. On the other hand when the arm is inordinately long, the tendency is for the front legs to bend back at the knee and give rise to what is commonly termed calf-knees.

Elbow—The space between the leg and the body should permit of easy insertion of the hand. If the elbow is closer than this or tied in, as it is termed, the toes are, as a rule, thrown out, or if the opposite is the case the toes are likely to be thrown in which makes the progress of the horse awkward and dangerous.

Forearm—Perhaps the most important matter to notice in examining the foreleg is the size of the forearm, or the bunch of muscle observable at the juncture of the leg and the body.

As fat accumulates but very little there it is a safe criterion of the muscular development of the animal.

Knee—The knee should be broad in front, much broader than the rest of the leg, either above or below and the pisiform bone should be sharp and prominent, for to this one of the most important muscles of the foreleg is attached. Breadth is desirable in such joints because of the fact that the concussion is more evenly distributed and better spent by the many bones forming the joint. To be calf-kneed, knockneed or knee sprung are the most defective conformations of the knees in light horses.

Cannon—There should be very little shrinkage below the knee as the joints require as much support as possible. This defect of being tied in below the knee is one of the most common weaknesses to be seen in the forelegs of light horses. A light horse of common size should measure at least 8 inches there. The cannon should be short, full and clean. It is sometimes noticeable that the cannon is thicker than usual which is generally caused by hard work when young.

Pasterns—The pasterns should stand at an angle of 45 degrees with the ground and the cannon and the pastern should form an angle of about 135 degrees. When more upright than this they will cause bone troubles, such as side-bones and ring-bones, as the concussion is very severe in such instances. Moreover, it detracts greatly from the utility of the light horse, especially those intended for the saddle, as the step is short and stilted and this is very disagreeable to the rider. On the other hand, sometimes the pasterns of light horses, and of thoroughbred horses especially, are often too slanting, which weakens them and ultimately ends in straining or breakdown.

Foot—The foot should receive careful attention as it has an inportant part to play in the work of the horse, and it is subject to many defects and various kinds of unsoundness. It should be of firm texture, good size, moderately upright and thoroughly sound. It should have a healthy appearance which is found in an oily coat of natural wax. The frogs should bear the marks of natural usage as a buffer, being

spongy and touching the ground at each step. The roof or heel of the hoof should be distinctly concave. Flatness, brittleness and contraction are the three most common defects in horses' feet. It will be noticed many times that the bar of the foot has been cut away so that the hoof splits from the heel towards the coronet. This is due to the practice of the blacksmith of cutting with his knife bars that bind the foot together behind. When this is done the foot begins to spread and the crack ultimately extends as far as it is possible for it to do so. In having the foot treated or prepared for the shoe, it should be remembered that there are certain parts which should be left almost untouched. The under part of the foot, the heel and the frog naturally peel off and keep in normal condition.

The outer covering of the foot or the horn should be cut back so that the foot stands level. This is the only part of the foot which will not grow too long. Of course it needs to be trimmed back. The external covering of the horn should not be touched with the file. The horn consists of a series of fibres very similar to hairs, in fact there is no distinction between the fibres forming the horn and the hairs of other parts of the body. These fibres lie parallel and are held together by material similar to glue. Like hair, there is a long channel running through these and if the natural wax of the hoof is removed and much filing is done these tubes communicate with the air, the foot becomes drier than it should be naturally and contraction begins.

Ribs—The ribs should be well sprung form the spine and they should be close to each other. It will generally be found that those horses that have well sprung ribs always make a better appearance than those that are flat ribbed, and, in addition, they will be found to be easier keepers. It should be noted that the round ribbed horse always has the appearance of being inordinately long in the legs. This deception is due to the roundness of his body. It can be easily seen that from a side view the flat ribbed horse presents a body of deeper appearance and seemingly has shorter legs than the horse that is rounder ribbed.

Back—In its proportions the body should be short above and long underneath. This not only adds to its strength, but it gives the legs free play and insures a balanced stride. The horse of this conformation under the saddle will unite himself quicker and better while the same horse on the line will have a long sweeping, yet balanced stride. It is the opinion of many that the roach back is an evidence of strength. It is the most undesirable feature in a horse intended for the saddle, and it is to say the least an eyesore in road or in carriage horses.

Loin—It is a defect of many horses to be light and narrow at the juncture of the body and the hind quarter. If the loin is long, that is, the distance is great between the last rib and the hip bone the horse is weak in the coupling and when the action is viewed from the side it will be noticed that the reach forward of the hind feet seems to stop short before arriving at the place where the front feet have left the ground. This probably is due more to the lack of muscle over the loin than to any other feature.

Hind Quarters—These parts should be critically examined, for it is in this region that the propelling power resides. The forelegs are mostly for the purpose of support and to act as buffers. This is evident from the manner in which they are connected with the body. The shoulder blade lies flat against the ribs, and is only attached to the body by elastic, but strong muscles. There is no joint there connecting the body with the foreleg. When a horse comes down on his forefeet, the muscles catch the concussion and spend it, but in the hind legs at the juncture of the body and the legs there is the most desirable joint in the animal's skeleton. It is deep below and is a joint so constructed as to allow considerable freedom and yet insure great strength. These facts of themselves indicate that the power should come from behind. This supposition may be further strengthened by comparing the shape of the foreleg with the hind leg and noting the difference in the appearance of the construction. It is self-evident that to propel anything, there must be contraction and then expansion of the muscles. For instance, if I

take a shot in my hand and try to throw it by holding my arm perfectly straight, nothing will be accomplished, but if I draw it towards me or contract my arm then push it from me or extend my arm, I may throw it some distance. It will be seen that the chief difference in the construction of the foreleg and the hind leg is that the hind leg is capable of great contraction and extension, as it has no less than three angles in its structure. On the other hand, the foreleg cannot contract to any extent. When a horse contracts his hind leg to its fullest extent and he exerts his muscles pushing against the existing medium which is the ground, it is easy to see that he is giving great propelling power. The legs of the grasshopper illustrate to an extreme degree the same idea. The importance of this principle lies in the fact that to balance a horse's stride his weight must be thrown upon the parts that are expected to do the work. Horses drawing heavy loads, or those in use in a hilly country soon become knee sprung, because of the fact that they are forced to use their forelegs for what they were never intended to do, and that is to pull. In truth, a horse doing his work in harmony with his structure does not pull, but he pushes, for it needs no demonstration to see that when the haunches do the work the power is aplied behind the point of its application, which is the shoulder or collar. To have a horse "square away," as we call it, the step-out well in front, and further to prevent over reaching it is necessary to keep him thrown well back on his haunches by top checking and special shoeing. The haunch or croup should be long and for appearance's sake should be comparatively straight. When the croup is long it allows of a greater play of the main muscles that are located in this region. It will be noticed in nearly all fast trotters that the croup seems to be exceptionally long. Length of muscle here as elsewhere contributes to speed.

Length of muscle in hind quarters is very desirable. Length here denotes length of the croup muscles and they are the chief extensors of the femur. The greater their length the more they can shorten during contraction and

consequently the greater will be the extension of the hind limb.

The thigh should be plump with muscle and the quarters should be very strong. The muscle should not only be heavy in the quarters but it should also extend as far down to the hocks as possible. The thigh should be long making the hips low, as this contributes to a long stride.

Hock—The hock should be clean, broad in front, and the point should be prominent as the leverage of some of the powerful muscles attached here depend to a great extent upon this. There should be no "gummies" about the hocks or fetlocks. The support below should be strong and in every feature the outline of the hock should be distinct. In running the hand over the hock the depressions that are characteristic of the sound hock should be easily felt and the bone should feel firm without the least indication of unsoundness in any part.

In this discussion I have outlined our method of presenting the subject of judging light horses to our classes. The description of unsoundness and their detection are taken up in practical demonstrations with the animals as illustrated texts. All classes of stock are examined in a like manner, the special aim being to make the students critical judges of what is good and what is bad among the many traits of our domesticated animals.

DISCUSSION.

Mr. Anderson—I would like to have you show the audience the effects of having the stifle out.

Prof. Craig—That is the stifle (indicating). It gives motion to that joint. If that is taken out there is nothing to hold that joint together, and a horse has no power then.

Mr. Anderson—Will the stifle go out of itself and go back in place after it is once out?

Prof. Craig—I do not think so.

Mr. Convey—I have seen young horses where the stifle would appear to grow out and the limb stretch backward, disabling them until it came forward again. I have seen a

number of cases of that kind. I had one and had to pull the leg forward with a rope and pulley, and by slacking the tendons I could get it back.

Prof. Henry—The stifle is similar to the knee-cap in the leg of man.

Mr. Arnold—Held in place by muscles. Do you think you can judge of the bone structure of a horse by looking at it when alive?

Prof. Craig—Yes, sir; that is just what we wish to get at by studying this skeleton.

Mr. Arnold—At our fairs we have animals on exhibition, cattle, swine and all kinds of domestic animals, that are so covered with fat as to deceive the eye of the best judge. When an animal is in that condition it seems to me the best judge may be deceived.

Prof. Craig—I hardly think so in regard to that. I think a good judge can tell the difference between fat and muscle. As a rule we go by the development of the arm—the development usually indicates the same in a man. This part (indicating) never accumulates much fat.

Mr. Arnold—It would require some experience to be a good judge?

Prof. Craig—Yes, sir.

Mr. Everett—What is the cause of a curb?

Prof. Craig—It is caused by a strain more than anything else. In a curb hock the hock is tied in and the horse has not much strength there.

Mr. Arnold—How about the splint?

Prof. Craig—I think it is more due to the slope of the pastern. Take a horse that has a nice slope on his pasterns, and you do not find those diseases, as a rule. I do not think you will find a colt in a herd with any of those diseases. He does not inherit the disease. Take a horse where the pasterns are straight, and the bones come on top of each other, but where it has a slope of forty-five degrees the bones have more slope. You notice in that leg (skeleton) that there are a series of bones and those bones are hitting right on each other. Up here a splint is just the same as a ring bone, and all those bone

diseases result in the same way. In the matter of a curb, that bone coming down has been straightened and it thickens and gives the appearance of what we call a chord. That has been due to the weakness of the hock. In the case of the spavin, you can see the arrangement of the bones. If the hock is weak, nature says, "Here, that is too much strain," and closes that part up and gives the horse a spavin. Some joints are tied together with that bony growth.

Mr. Convey—Would you not consider a smooth joint a desirable one?

Prof. Craig—The hock should be wide and the joints not meet in any respect. You see the muscles are all attached to this prominence. Where you get it close up to the knee you will find that it interferes with the motion of the joint and it interferes with the chord, and we like to extend the chord back strong from the joint.

Mr. Convey—In a complicated splint is the joint involved, one that is high up?

Prof. Craig—You will get them right up close to the inside of the knee, and that is the worst place you can get them.

Mr. True—How is it that splints will frequently disappear on young horses?

Prof. Craig—I do not know just why it is, but it may be that the bones ..... and re-absorb it back into the system again.

Mr. Arnold—Why is it that a horse that is high on the withers is better than one that is not?

Prof. Craig—He may be a better horse because it gives him a little more style, but as soon as he starts to go at a 2:40 his action is almost perfect because it is thrown up in front. I do not think that is any advantage to a horse for road work. A coach horse ought to be just as high there, if not higher than behind.

Mr. Arnold—For draft horses could the shoulder come up perpendicular and speed horses have a slanting back?
perpendicular and speed horses have a slanting back?

Prof. Craig—I do not think so. When a horse is pulling he is shoving in the collar,—he makes his shoulders fit the col-

lar, at least tries to do that, and I do not think it cuts any figure to have the shoulder straight for the draft horse.

Mr. Arnold—But it is certainly objectionable in a driving horse?

Prof. Craig—Yes, sir.

Mr. Jeffries—Is it a good plan for a blacksmith to heat the shoe into the hoof?

Prof. Craig—There is this about it,—by burning they can make the shoe fit better, but if they cannot trim the foot, they file it, and I think it is an advantage. The hoof is just hair, and if you should soak it in water for a while it would go apart. The hoof is covered on the outside with wax, and if you burn it, it will dry out some and the foot dries out. It certainly gives the foot a better basis to burn it, but I think you can do that by cutting and saving the disadvantages of burning.

Mr. Linse—You do not consider it injurious to cut it?

Prof. Craig—I think you get a better fit by burning.

The Secretary—Probably the most entertaining session of our convention will be held this evening at 8:30 in the Assembly Chamber.

Thursday Evening, 8:30 p. m.

The President—The first number on the program this evening will be a talk by Mr. C. H. Everett on the Dairyman's Association.

DAIRYMAN'S ASSOCIATION.

C. H. Everett.

Mr. Chairman, Ladies and Gentlemen—Upon arriving in Madison this evening I learned for the first time that I was expected to say something at this meeting tonight. I was not altogether pleased with the idea. I have been so busy ever since that I have not thought of anything to say. I am glad to see this subject at the head of the list. I suppose it was put there, Mr. President, because the Wisconsin Dairyman's

Association is first of all in this state. I expect there are some present who will dispute that. The Wisconsin Dairyman's Association was organized twenty-four years ago by a few men who had faith in the future of Wisconsin as a great dairy state; they had faith in the men of Wisconsin; they had faith in the cow if she was given a fair chance; they had faith in organized effort, and they had faith in each other, and that faith abides with them tonight wherever they may be. They worked together all these years for the single purpose of building up the dairy industry of Wisconsin, for the uplifting of the greatest industry in this state, and they have worked harmoniously,—each has found the other to be true to the cause, honest, faithful, persevering. What the Wisconsin Dairyman's Association has been all of these years it is today. With but one exception we are an organization of bright men, of brainy men, of patriotic men, of truthful men, and of handsome men—this latter includes us all. (Applause.) We believe in the general welfare of mankind, and of womankind, too, for that matter. We are organized for the welfare of the general public, for the welfare of our homes, that we may have more comforts in the home, that we may better educate our children. We believe, in fact, in everything that is good and are against everything that is bad. We are a unit as against oleomargarine and filled cheese, because they are counterfeits that rob honest labor of its reward and that sneak into the homes of our people under the guise of purity. We are also a unit for national dairy legislation. We are knocking at the doors of congress tonight, not in a boisterous or whining manner, but as honest men who seek justice for the people. We are in the habit of holding once a year perhaps the largest state dairy convention held in these United States. We expect in the near future to hold two meetings a year. It is our idea at present to hold a summer meeting in June in northern Wisconsin. We have received aid from the state, for which we are very thankful, and this enables us to do good work, to send out over the state competent men as instructors in cheese making and publish a report and scatter it broadcast among our farmers, and I want to say that if there are any two books pub-

lished in Wisconsin today that are sought by our farmers throughout the state, they are the Wisconsin Farmers' Institute Bulletin and the Wisconsin Dairyman's Association Report. There is always a scramble to get those two books. We employ the best talent we can secure in our conventions, both from abroad and at home, and we aim to spend the money at our command wisely, to make the best possible use of it.

When this Association was organized twenty-four years ago there were very few cheese factories in the state. We had in Wisconsin in 1876 something like 300,000 cows valued at about $6,000,000. In 1895 we had 842,000 cows valued at $17,442,144. We have in the state 1,325 cheese factories and 724 creameries, with a valuation of $2,500,000. There was manufactured in our state last year 52,000,000 pounds of cheese and 74,000,000 pounds of butter. This, with the milk and cream used in our families and cities, and shipped out of the state, together with the value of the by-products from our dairies, constitute a revenue of more than $30,000,000 to Wisconsin. That is a pretty good showing. It is indeed progress, and the Wisconsin Dairyman's Association has been a very important factor in this progress. We do not claim to have been the sole cause of this grand result, because there are other institutions in the state—kindred associations: the Experiment Station, and the Dairy School, which have been a great help towards raising agriculture and dairying in Wisconsin. If I were asked for advice from the State Agricultural Society, I would say that it should remove this convention from the city of Madison; that it should do as we do without dairy convention, go out over the state. Perhaps that would not be best, but it would be my advice if it were asked. Our state fair is located at one side of the state; it cannot go to the people. It is a grand institution and perhaps in the best possible place in the state, but our agricultural convention, one of the greatest meetings we hold in the state, should go to the farmers. I frequently hear it said, "We cannot attend the Agricultural Society's winter meeting and we cannot attend the fair because it is too far away", and if they cannot come to our fair, we ought to go to them with

our convention. This is a nice place to hold the convention and we like to visit the Experiment Station and we like to have the short course students attend this convention,—it is good for them, but for the general public it is an institution for the people. The Dairyman's Association and the Horticultural Society are institutions for the people and should be as largely as possible for the people.

I think I have talked long enough and have not said anything, and I thank you kindly for your attention. (Applause.)

The President—There are others that you will hear from tonight who will take exception to the remarks just offered by the gentleman—I mean particularly in regard to their being first and best. In regard to their having all the brains and all the handsome men belonging to their Association, I am of the opinion that other associations will be represented here that will take issue with our friend upon this question also, and for that purpose I will introduce the secretary of the Horticultural Society, Mr. Philips. (Applause.)

HORTICULTURAL SOCIETY.

Mr. A. J. Philips.

Mr. President, Ladies and Gentlemen—I think Mr. Everett has assumed quite a good deal. The handsome part of our Society is in the other room (referring to Horticultural meeting in Senate Chamber). Perhaps the handsomest part of the Dairyman's Association is here, but I doubt it. Mr. Hoard is not here, I believe. (Laughter.) Did Everett talk longer than ten minutes? I once heard Francis Willard say that she would have a meeting the next evening and that a lady would open the discussion with a twenty minute speech and that other ladies would follow with speeches of ten minutes, and they would have to stop at the tap of the bell if in the middle of a sentence, "and you will be surprised to know how much a lady can say in ten minutes".

Secretary Fleming made the remark the other day, and I feel quite complimented, that the Horticultural Society came

in second to only one society in the state, and that was the Agricultural Society, and I thought that in some respects we did not have to take a second place with the Agricultural Society.

Now, in the time that I have to talk I will only tell you a few things with reference to our society. We have to praise ourselves a little. An old gentleman who was praising himself, said: "Self praise is a poor recommendation, but it is so satisfactory because you can always have it when you want it." That is the most praise I get, self praise, at home or abroad, and I may praise our society a little. We think, when we take into consideration, ladies and gentlemen, the fact that an agent sent here from Washington to investigate certain charges made against our state—and we think we have a good state—that we were misusing the children of our state more than any other state in the union, who came here and investigated, and his report over his signature was, that it was a fact that they were working the children in factories and other places and buildings that were so poorly ventilated, and keeping them out of school; that there was a large number of our children running up into the thousands that were deprived of education, and more than that, he said the parents were to blame. He said our factory inspector was a roaring farce. He said the parents knew when he was coming and kept the children out, and when he was gone put them in again. He said, "Those corporations are coining the lives of the children into dividends to enrich themselves". Now, when we take those things into consideration and feel that we are trying to interest the children of Wisconsin and make them useful and valuable citizens, that our Horticultural Society is doing that with them, we are doing a good work, and one great thing we need is more members. And when it comes to comparing our society with the Minnesota Society, we feel in one respect a little ashamed. They have 600 members and we have only 150 members. The citizens of Minneapolis have given them 200 members. Some years ago some of our liberal minded men offered premiums to school children. The first year we had three or four applications, and this year we have

about 4,000 of those children in different parts of the state who have applied for plants to plant them themselves and also to cultivate them. It seems to me if there is any society, you may take the Dairyman's Association or Agricultural Society, if there is any society that can show that they are interesting 4,000 children of tender age in something that is useful and trying to build up what these people working children in factories are tearing down, I will give up the question. I will give you an example. A little girl from Taylor county wrote: "I am eleven years old. I do not think we can grow apples, because it is too cold, but we can grow evergreens, and I would like two evergreen trees." On another side of the sheet was written, "If you send my sister two trees, I want two trees." And on another side, "I am seven years old. I am the littlest of all, but I can take care of two trees." They sent the letter to Mr. Boyn and he sent the trees and told them how to plant them. I told my wife if I ever went into that neighborhood I would try to see those children. I was up there looking up a site and walked a mile in the country to find them. When they learned that I belonged to the State Horticultural Society they showed me those six trees, and they had planted and cared for them as well as any one could, had mulched them and laid stone around to keep it from getting away. There is an object lesson. That is teaching those children to beautify their homes, and I have no doubt those very children will take part in Horticultural meetings when we are gone.

Our Horticultural Society is a pretty good society to belong to. It is elevating and promotes a man. Here is our friend, Mr. McKerrow. He joined our society and this is only his second year, but before he was a member two months he was brought out and appointed superintendent of the farmers' institutes, a responsible position, and I do not know that he would have been there if he had not joined our society, and the amusing part to me is that quite a number of the institute men have joined the society since. (Laughter.) We had some that were members of our society years ago. We have had members here that quit us, and I think it was the mistake

of their lives. I want to tell you that I looked up at the clock when I commenced, but I do not know just what time it was.

I will tell you a story, Mr. Hubbard. The first speech I ever made in public, they say, was when I was two and a half years old. My father, who was a minister, was absent a couple of weeks, and he wrote to mother to meet him at the church. She came in late, so I could not speak to father before the services began. I always expected either apples or candy when he came home. He preached an hour and at the conclusion, to let the people know when he was through, he always said "Amen" in an audible voice. I saw where he had hung his coat and noticed that the pockets bulged out and knew what was in them, and they attracted me more than the speech. Mother said she shook me occasionally, but finally I did succeed in sliding off and said: "Father, say Amen." That is the first public speech I believe I ever made. When you say Amen I won't think you are endorsing all I say, but I will think you want me to quit. (Laughter.)

Our society is trying to make horticulture interesting to the children. Think of it for a moment, when our friends come to pay their last tribute of respect to us, what do they do? They bring in not the animals we cared for during life, but the flowers we cultivated, as the last tribute of respect they can pay And what is there more elevating than to teach our children to cultivate those flowers. At the unveiling of General Rusk's monument there was a wagon load of flowers for one of the best governors our state ever had. Take, for instance, the capital of Washington, it has eight hundred acres laid out in flower gardens to attract the people and beautify the grounds. A little boy was once asked in school what a lawn was, and he said, "It is something to keep off of," and Mr. Coxey learned that in Washington. (Laughter.)

Just a few more words and then I am done. I have told you that in Minnesota they have a large number of members and they always like to tell it to us Wisconsin people. This year I tried to think of something that I could brag over them. I said, "You beat us in membership, but when we hold our meetings in Wisconsin we have ten young men come into our

meetings where you have one." Prof. Green said, "We have to keep our boys in school. You have no such school as we have. Your school is more of a convention." I said I thanked God for the convention then, and I did not think there was anything they could interest the Minnesota boys in better than to adjourn the school and let them attend the agricultural and horticultural conventions, as in our state.

I will tell you another thing we are doing. I told the boys at the debating school the other night that there is no society in Wisconsin today that is doing as much for the young men as our society. It is organizing local societies all over the state. In these local societies, which are attended by girls and boys, they discuss all questions. These societies teach the boys and the people there to have an institute of their own. These young men can run as good an institute as Mr. McKerrow. (Laughter.) We put a young man in for secretary and put them on the program and bring them out, and they follow right up in the line of work they are doing here in Madison. I have always felt impressed with the necessity of this work, and two years ago I went out and held several meetings in our county in the interest of the Horticultural Society and a short course school. The result was that we got nine young men from our county to come to Madison last winter. There are ten here this winter; that makes nineteen in two winters. There are more from Columbia and La Crosse counties than from Dane county because we have made an effort in that direction in our county to interest the young men, and these young men in the short course are going to carry something home that will benefit the neighborhood in which they live.

I would like to stay here and hear the rest of the talking. There is only one society that I am more interested in than the Agricultural Society, and that is the Horticultural Society. We have a meeting that I wish to attend. Mr. Hubbard told me last winter he was anxious to hear some of our talk, and I think he will join our society, too. I think we could arrange it to have one meeting, we invite the agriculturists to our meeting and they invite our people to their meeting, and we

would have a good audience in both places. Perhaps next winter we can arrange it so.

Ladies and gentlemen, I thank you all for your attention. (Applause.)

The President—After listening to the Dairyman's representative I supposed they were the largest society in the world, but when I come to listen to the representative of the Horticultural Society I find I was mistaken, and if it was not for one thing I would have swallowed everything he said. He said he was the son of a minister, and you know what the sons of ministers always amount to.

There is one other institution that is sort of an institution address last evening, saw fit to say to the people here that the on wheels. They are here today and somewhere else tomorrow. They think they are the "Great I am", and some of the farmers think so, too. They are represented here tonight by Mr. McKerrow, superintendent of the Farmers' Institutes.

FARMERS' INSTITUTES.

Mr. McKerrow.

Mr. President, Ladies and Gentlemen—I am thankful for one thing here tonight, that I do not need to brag about the good looks of the 48,000 men, women, boys and girls who attended the farmers' institutes of 1894-'95, because my predecessors, representatives of the two societies that have been before you, have done this bragging, and we cover all these societies and own them all and therefore have all the good looks. (Laughter.) I do not need to brag for another reason. The worthy president of our Agricultural Society, in his annual farmers' institute of the state of Wisconsin was one of the grandest organizations of the state, for which I now thank him.

The legislature in 1885 saw fit to appropriate $5,000 for the purpose of holding farmers' institutes or agricultural schools in different parts of the state of Wisconsin, and from that day to this those two-day schools on wheels, and sometimes on

sleds, have been traveling all over the state of Wisconsin. This was the first appropriation of any large amount made for this purpose by any state in this union or any province of Canada that I know of. Under the management of the late lamented W. H. Morrison, whose executive ability enabled him to build out of nothing a system which we are proud of today in the state of Wisconsin, these institutes gave such satisfaction to our people that the legislature of 1887 so amended the law that now we have $12,000 to use in institute work, and these institutes have proven so successful in Wisconsin that other states have followed suit, until today about a dozen states in this union and two of the provinces of Canada are holding institutes similar to ours. The state of New York is now using $15,000 a year for this purpose; Minnesota $13,500; Ohio $10,425; Massachusetts about $10,000; Pennsylvania $9,500, and the others minor quantities of money.

We do claim for the state of Wisconsin that our farmers' institutes are second to none. We claim further that the Farmers' Institute Bulletin which has been mentioned here before this evening, which began as a private enterprise under the direction of Superintendent Morrison, with an issue of some fifteen or twenty thousand copies the first year, and which has now grown to fifty thousand copies, is second to no agricultural report or institute bulletin issued in this country—the largest in number and inferior to none in its quality.

I will read you the law under which our institutes are being operated. I have received letters from other states asking for copies of this law, and I have sometimes received comments like this: "Your law, while short, apparently covers the whole ground."

The law reads as follows:

"Section 1. The board of regents of the state university is hereby authorized to hold institutes for the instruction of citizens of this state in the various branches of agriculture. Such institutes shall be held at such times and at such places as said board may direct. The said board shall make such rules and regulations as it may deem proper for organizing and conducting such institutes, and may employ an agent or agents

to perform such work in connection therewith as they deem best. The course of instruction at such institutes shall be so arranged as to present to those in attendance the results of the most recent investigations in theoretical and practical agriculture.

"Section 2. For the purposes mentioned in the preceding section, the said board may use such sum as it may deem proper, not exceeding the sum of twelve thousand dollars in any one year, from the general fund, and such amount is hereby annually appropriated for that purpose.

"Section 3. This act shall take effect and be in force from and after its publication."

As I stated before, $5,000 was the first appropriation, covering two years, and during those two years an average of forty-four institutes per year were held in the state. During the next seven years, from 1887 to 1893 inclusive, an average of seventy institutes per year were held and about forty thousand copies of the bulletin issued. During the winter months of 1894-'95 ninety-two institutes were held of two days each, the closing or round-up institute of three days, and during June of that season ten one-day meetings held in the northern counties, so that those farmers who are lumbermen half the year and farmers the other half, could attend the institutes. These one hundred and three meetings were held during 1894-'95. In the present year, that is the institute season of 1895-'96, we have planned to hold 105 winter meetings, ten meetings in the summer and eleven cooking schools will be held for the benefit of the farmers' wives and daughters, making a total of 126 meetings. We have published fifty thousand copies of the Institute Bulletin, so that in compliance with the law passed by the legislature of 1895 we can place in each school district library in the state of Wisconsin a bound copy. I have turned over eight thousand copies to Superintendent Emery and they are now in the school libraries of this state. I am proud that this is the only book that the legislature singled out by law to be placed in the district school libraries.

Last season an aggregate by careful count and estimate of

48,000 people attended the farmers' institutes in the state of Wisconsin, and as the president has said, many farmers in Wisconsin are very loud in their praise of our "schools on wheels". While I am sorry to say that we do meet occasionally, but not very often, farmers who pronounce the farmers' institute a humbug, we are doing all that we can to make these two-day schools practical and applicable to the conditions and surroundings of the farmers in the different sections of Wisconsin where we hold these meetings. We are discussing with them the subjects of the most importance to their calling—stock raising in its different forms, breeding and feeding, horticulture, grain growing, grass growing, rotation of crops, tillage of the soil and making of highways, and educational questions, and it seems to me that we are covering the ground of general agriculture as thoroughly as we can with the means at hand and the time we have to do this work in.

Now, last but possibly not least, we believe that the institute work is developing a spirit of confidence and a spirit of self-respect in the farmers of Wisconsin that is telling in all matters relating to life in this state. We believe that we are developing men among the farmers who are better able to take their places beside the men of any of the other professions in life. I remember when these gentlemen who have talked to you as representatives of the two societies, were first called out at farmers' institutes, trembling so that they could hardly read the words on the papers before them, and now they are able to give you easy extemporaneous talks. We have developed the noted dairyman, C. P. Goodrich of Ft. Atkinson, who has not only talked to the farmers of Wisconsin, but also to the farmers in other states, and we have scores of others who would be able and perfectly willing to entertain you had they the privilege and the good looks of their friends and neighbors. (Laughter.) The farmers' institute, Mr. President, does not claim to be an entertaining institution, but it does claim to over-shadow all other agricultural institutions in the state and expects to work with and take care of you all. (Applause.)

The President—That simply leaves the president of the association at this moment to say of the farmers' institutes as Webster said of Massachusetts, "It speaks for itself."

For about fifty years as a state we have wandered up hill and down hill, through by-ways and cross-roads and among all those roads today we find none in better condition than fifty years ago. An organization in this state known as the "Good Roads League" is endeavoring by teaching the people in the right way to so arrange matters so that we will have better roads. The secretary of that association is present and will address you.

THE MOVEMENT FOR BETTER ROADS.

By Otto Dorner, Sec'y Wisconsin League for Good Roads. Before Agricultural Society, Madison, Feb. 6, 1896.

Mecklenberg county in North Carolina has constructed some macadamized roads in the last few years which are a striking illustration of the immense importance of good roads to farmers. Where formerly two bales of cotton had made a good load on the old dirt roads for two mules in fairly good weather, the same two mules which were accustomed to haul these two bales of cotton are now hitched to a load five times as large, and are able to draw it over the new improved roads in any kind of weather. A similar illustration comes from the turnpikes built in New Jersey within the last few years. The president of the New Jersey state board of agriculture has declared that the average load on the old New Jersey roads, before the turnpikes were built, consisted of twenty-five baskets of potatoes. After the turnpikes had been built, the average load increased to fifty-eight or sixty baskets, and when the stone roads were built, of which New Jersey is justly so proud, it arose to eighty-five or one hundred baskets, or practically four times what had been hauled on the old dirt roads. Mr. Burrough, who explains this, says that he knew of one illustration arising out of the hauling of manure from Philadelphia to the farms about Merchantville about ten miles distant. He says the farmers were in the

habit of going down to Philadelphia with two horses on their wagons and bringing out a load of manure. So long as they traveled on the stone road, the two horses pulled the load with comfort, but when they reached the end of the stone highway, they were obliged to double up their teams in order to bring the two horse load the balance of the distance to the farm. It took them longer, and was more fatigueing to the four horses to come the remaining mile or two to the farm, than it was for the two horses to bring the load the entire ten miles from Philadelphia to Merchantville, and it was frequently necessary to throw off part of the load to get home with the four horses. The loads in question, some of which were weighed on the scales, were found to amount to 6,869, 7,300, and even 7,920 pounds, clear of the wagon, which weighed alone 2,300 pounds, making a combined weight of about four and a half tons.

Honorable A. C. Tupper, dairy commissioner for the state of Iowa, delivered an address at a meeting of farmers at Des Moines a few years ago, in which he spoke of the loss suffered by farmers in the sale of their butter, owing to poor roads. He reported that the shipments of butter for the current year in Iowa had been less than those of the previous year by 10,-211,548 pounds. This amount of butter, he said, at twenty cents a pound, represented a value of $2,043,329. He explained that this entire loss was to be traced to the fact that the rains in the early spring and summer months had been heavier than usual and that the reduction in butter shipments was to be traced solely and alone to the consequent bottomless condition of the country roads. Farmers had been discouraged from making butter for the want of prospect of marketing it. It should be remembered that these two million dollars represent the loss of a single state in a single year on a single item of farm produce, and are traced directly to poor highways.

The United States department of agriculture through its bureau of road inquiry, has recently made a careful computation of the cost of annually marketing crops in the United States. Figuring the time consumed by men and horses at a

fair price, it has been found that the average cost of hauling a ton of farm produce to market is $3.02 this computation being based upon extensive inquiries made in all parts of the country as to the number of miles constituting the average haul and as to the average weight of loads. This average of $3.02 may seem high, but we should remember that where there are twenty farmers within one mile of the market, there are perhaps eighty or one hundred in the next surrounding belt, at an average distance of two miles from the market. There may be as many as three hundred farmers who have four miles to travel to this same market town, and thus it will be seen that the average is higher than many of us would be led to think. The amount of crops was taken from the United States census of 1890, and it was estimated that the total amount hauled over our country roads during the year, was 313,000,000 tons and more. The cost of hauling this to market at the average cost per ton stated, was $946,500,000. The same figures were the result of another investigation into this subject which was made a few years ago by the secretary of the national farmers' congress. Both the department of agriculture and the secretary of the national farmers' congress estimate that two-thirds of this immense cost of bringing our crops to market or $600,000,000 might be saved every year if our roads were what they might be. This estimate is not a careless one; it is based upon numerous experiments made by numerous disinterested parties, and may be taken as absolutely correct, as nearly as such a computation can be made so. But I will not continue to bore you with figures. Figures like these are not interesting except as they serve to emphasize facts with which we are all familiar. We all know the difficulties that make traveling between the farm and the town dependent upon the weather. We have all known the farmer anxious to bring his grain to town in the spring when prices were high when he had the time to take them to town, had his horses in his barn idle and costing just as much per day for food, while he was obliged to stay patiently at home waiting for his roads to dry up. We all know how this is followed by a rush of crops to town as soon

as the roads begin to dry up, and how disappointing it is to find that this sudden flood of marketed grain brings prices considerably down again. Good roads mean access to town in all kinds of weather. They mean not only better roads, but faster trips. They mean that where it required four horses to draw a given load on the old road, only two horses are necessary on the new one; that wagon, buggy and harness will last twice as long because of less hard usage on gravel hills and stony roads, and no waste of effort in getting the loaded wagon out in the event of its becoming stuck in the road. They mean a saving of all this tremendous "mud-tax" which now bears down so heavily on every farmer in the country. They mean that the distance to our neighbors is decreased by half, because it takes only half as long as before to reach them with the buggy. They mean that their children will not be obliged to stay home from school on account of the mud, and that a fair shower will not keep us at home on election day when we should be at the polls to vote. They mean greater conveniences of every kind, and the many benefits necessarily following better means of communication with the world in general.

The great difficulty is how to secure better highways. It is simply a question of means and methods; everyone admits that action of some kind, definite and practical, is necessary. We most heartily appreciate that the farmer today bears his just share of taxes and that it is hardly to be expected that he should consent to paying higher taxes for the building of good roads. But if we seriously consider the present means of road building, the methods adopted and their working in practice, it seems that there is much room for improvement right here.

Ex-Gov. Hoard, in the Good Roads edition of the Wisconsin agriculturist on May 15th last, says: "The roads in most of the dairy districts are for a considerable portion of the year, a wretched apology for a decent highway. The annual "tear-up" of the new path master disturbs what his predecessor has done. There is no intelligent steady method pursued. There is no practical study of how to build a road

by any one in the road district. What is everybody's business is nobody's business." And Gov. Hoard is correct. The Milwaukee Sentinel reported last summer that the county clerk of Milwaukee county had compiled a statement of the road taxes paid in this county during the last five years outside of the city of Milwaukee. It was found that the seven towns in the county had levied in the last five years, the enormous sum of $275,000 in highway taxes, most of which had been "worked out" according to the best information obtainable. I think it is safe to say here that the little improvement made in the country roads in Milwaukee county during these five years, could have been made by any contractor for a sum far below half of this amount with a magnificent margin of profit. If the prevailing state of affairs in Milwaukee county may safely be taken as an example, and I do not know why they may not be so taken, then there is no doubt that an enormous amount of highway taxes is wasted in Wisconsin every year.

Our old system of working out road taxes comes from the old days of the feudal system; from England; from the middle ages; from the time when thought was chained in a dungeon, and when all the arguing was done by means of the thumb screw and the rack. It came to this country with our English ancestors, and has been kept in force until now at last a change is gradually sweeping over the United States. Old Mother England herself has long abandoned it as a last remaining relic of the old barbaric, fedual system, and has adopted a system of highway taxes, which has created a magnificent network of roads pervading every corner of her tight little island. Her example was followed by France, Germany, Italy, Austria, the Netherlands and other European countries, while the only nations on God's earth which are still suffering from poor roads, are despotic Russia and other unenlightened states in the eastern hemisphere, and our own great and glorious republic. It is said that a nation's civilization can be judged by the condition of her roads. Pray heaven that we may not long be placed on the same level in this respect, with Russia, Turkey and the Asiatic nations.

Machinery has long been used on the farm for plowing, sowing, cultivating, mowing, harvesting and threshing, and there is no reason why the same progress in methods that has been made in this direction in the past twenty-five and fifty years cannot be made in our methods of road building. If anyone tells you today that the purchase of efficient road machinery requires the payment of higher road taxes, tell him that the experience of past years shows that he is gloriously mistaken. Tell him that the same tax levied today, if paid in cash, is sufficient to buy road graders, road rollers, rock crushers and other road machinery and to change the entire system of roads in Wisconsin in a few years. The taxes usually levied, if they were put in cash, and judiciously invested, would buy a complete outfit of road machinery for a town, and leave enough to spare for the hiring of help to make a greater improvement in the condition of roads, even the first year, than have been made in any previous year by the old method; the second year of road machinery with a smaller amount of taxes paid in cash and expended to hire honest help and with the judicious use of the machinery, would work wonders.

The United States department of agriculture has collected letters from the town clerks of quite a number of towns which have adopted such a plan, and they are practically unanimous in saying that the roads in their towns are much better; that a great deal more work was accomplished; that the new method was much cheaper; that the tax was much lower than under the old system, and that few people remained who would vote to return to the old system. These letters are published in a circular which any one can obtain by writing to the office of road inquiry, Washington, D. C., for circular No. 16, which they will be glad to send him. There are many cases of just this kind in Wisconsin, such as the town of Middleton, Dane county, the towns of Clinton and Turtle, Rock county, the town of Baraboo, Sauk county, the town of Jefferson, Green county, and many other towns which might be named. In the town of Middleton, Dane county, a road tax was levied in 1894 which was only one-third as much

as that of 1893. It was invested in machinery; the machinery was carefully used, and the result was that more work was done with a smaller tax than had been done the year before with a tax three times as large.

Many states in the Union are entirely abolishing the old system of working out road taxes, and require them to be paid in cash. Among these states are New Hampshire, New Jersey, New York, Vermont, Oregon, North Dakota, Massachusetts and Michigan. Can Wisconsin afford to continue to neglect such an important internal improvement as her highways, in view of the wonderful progress made elsewhere?

The resolutions adopted at the organization of the Wisconsin league for good roads not only urged the adoption of better methods in road building, in the interest of farmers, and the construction of better highways, over which to haul their products, but say emphatically that the cities ought to be made to stand a portion of the expense of road building. They favor the construction of state roads, and the division of their cost between the state, the county, the cities and the towns.

State road building where it has been introduced, has taken several forms. Massachusetts adopted a system of state road building three or four years ago, levying a state tax for the purpose, and creating a state highway commission to look after the building of state roads. This state tax of course falls most largely on the cities, which are thus made to bear a liberal share of the cost. $300,000 were appropriated for the second half of 1894; good authority states that $1,000,000 were appropriated for the year 1895, and I have seen it stated that a bill has been introduced in the Massachusetts legislature appropriating $2,000,000 for 1896. Quite a number of state roads have been constructed during the last few years, and petitions for the purpose are filed with the commission in such great numbers that many of them must lie over from year to year.

The system in New Jersey is arranged upon quite a different principle. It is called the state aid system, and the state pays only one-third of the cost of roads built under this law. A petition from the adjoining property owners is necessary

to bring about the improvement of a given road, and this adjoining property is thereupon assessed with 10 per cent. of the cost of the improvement, the remainder being paid by a county road tax. The result in New Jersey has been the same as in Massachusetts. Splendid roads have been built, such as those referred to in the opening of this paper, and it is impossible to build all the roads for which the necessary petitions have been filed.

A bill creating a similar state aid system was offered in the New York legislature, and passed the assembly just before the close of the session by a vote of 84 to 21. It was not reached in the senate and did not become a law, but the same bill has gone before the legislature this year. Another bill, similar in its provisions, was recently brought before the state legislature of Pennsylvania.

An interesting pamphlet about the New Jersey state aid system and its working in practice is published by the United States bureau of road inquiry, known as bulletin No. 9, which will be sent anyone who takes the trouble to write for it to Washington. This bulletin includes letters from a large number of farmers as to their opinion of the law and their experience with it.

A bill for a state aid system of highway improvement was introduced at the last session of our Wisconsin legislature, construcetd upon the lines of the New Jersey law and the bill which had passed the New York assembly. The friends of good roads in Wisconsin thought to support this bill, and the chance for its passage was perhaps favorable, until their attention was called to the fact that a law of this kind, if enacted, would be unconstitutional. It is perhaps a fact not generally known, that the constitution of Wisconsin provides in article VIII. section X., that "the state shall never contract any debt for works of internal improvement, or be a party in carrying on such works." This provision was evidently intended to prevent excessive appropriations being made for railway purposes. It is clearly a bar, however, to the introduction of a state system of road building in Wisconsin. An attempt should certainly be made by the friends

of good roads to remove this obstacle. There is a great and strongly growing sentiment in our state for the building of better roads, and for any real substantial improvement to be made, a system such as that adopted in New York, New Jersey or Massachusetts should surely be adopted here. To make this possible, we ought to unite our efforts to bring about the necessary amendment of the constitution. The value of such a system is mainly in the fact that the expense of country road building can be divided equitably between the cities and the country through a state tax, and that a state highway commission could be created, consisting of competent and experienced men, who could supervise the road building in the state.

These then, are the two goals, towards which the good roads movement in Wisconsin is tending; the payment of old road taxes in cash, with the purchase of road building outfits of the latest improved road machinery in each town; the judicious expenditure of all road building funds, in such a way that the improvements made are worth the money paid for them; the adoption of better methods which will lead to the best possible results with the means at hand, preventing a waste of effort; and secondly, an amendment of the state constitution, and the introduction of a state system or a state aid system of road building, the details of which can be determined upon later, after the obstacle to their introduction has been removed.

The President—We will now have the pleasure of listening to Ex-Mayor Rogers, member of the legislative committee on good roads.

Mr. Rogers—Mr. President, Ladies and Gentlemen: The hour is late and you have just heard a full discussion of the subject. But there a few things I would like to say. About one year ago the good roads league appointed a committee to prepare a bill to offer to the legislature that is coming here inside of twelve months. That bill is now prepared and in

my possession. It has been pronounced one of the most perfect bills ever drafted on the subject. It not only incorporates all the good features of the laws of other states, but also those features peculiarly adapted to Wisconsin. We want every one of you farmers to instruct your members, whom you are going to select to come to these halls, to support this bill, and thus secure a form under which this great enterprise may be started and crystallized into something that is practicable. I am sure you will all be pleased with the proposed measure as you know more about it. I will not take your time to explain it tonight. Suffice to say that it is along the line that the farmer ought not to pay all the expense of making good country roads. This bill keeps the subject in the hands of the farmers. They have two commissioners out of three to be appointed out of each county. The matter is then submitted to the county board of supervisors. In every county except Milwaukee, the county board is in the hands of the farmers and they can control it to the extent of making the cities and villages in their respective counties pay more than one-third for making the roads. I not only improved the streets of the city of Madison while I was its chief executive, but its tax-payers permitted me, without any express authority of law, to pay out of the city treasury money to aid the country districts in building macadam roads leading to the city.

This proposed law can be readily understood, and I ask that your members of the next legislature be properly instructed upon this subject before coming here. This is a subject that everybody is interested in, and I am surprised that the farmers have closed their eyes so long, to that which is for their best interest. We city residents are glad to assist you farmers. Give us an opportunity and we will pay at least one-third in making these splendid country roads. We ask you to give us the privilege of aiding in making better roads for you in the interest of the whole people. (Applause.)

The President--The next will be the Wisconsin experiment station, represented by Prof. Henry.

Prof. Henry—Mr. Chairman: The hour is late and the agricultural college has had its meeting almost all day and I ask to be excused.

The President—The next will be the agricultural society, represented by Mr. Hoxie.

AGRICULTURAL SOCIETY.

Mr. Hoxie.

Mr. President, Ladies and Gentlemen—I read, two years ago, from a man who wished to pose as a health reformer, something like this: To regulate our diet we must, instead of eating the pies and good things last, eat them first, and then fill up with potatoes and coarse food. And that is about what we are doing here tonight in this discussion. Last evening the president and secretary requested me to respond to this sentiment, The Agricultural Society, and all day today I have been trying to report for a newspaper, and you can imagine how much time I have had to prepare for this subject. I do not know as it would need my voice or any other to say anything to you about the Wisconsin state agricultural society. I see before me tonight some old heads like my own and some younger ones. I found, in thinking, that it has been about twenty-one years that I have attended the state horticultural and agricultural societies' meetings in Madison without one break or interruption. These older ones know something about the state agricultural society in its earlier days, about its fairs—that we had only a few hundred dollars appropriated for premiums, and the pride we took in attending the fairs with our wives and children; that we were modeling after the states where we formerly lived, and then later we inaugurated the meetings here at Madison for timely topics, and I have seen during the past fifteen years this assembly chamber packed full. We did not have many speakers when we first started out. One man stood in the place I stand tonight and read a grand paper, and I remember this, among other things. In speaking of timothy, he said,

"Farmers can get from twenty to thirty bushels of timothy seed, and then the hay is good for fodder." I think that man's name was Nicodemus, and I think he was a relative of the man who came to see Jesus by night. (Laughter). If I remember rightly, a man we called Field was secretary of the state agricultural society at that time, and he was a pretty good field to work in. The state agricultural society from that day on has been progressing all the time, and we have heard from Mr. McKerrow very much about the institutes and I am quite sure that the inspiration for the drafting of that law and its passage by the Wisconsin state legislature was born by the farmers in this capitol building. Here we had the school fostered by the state agricultural society, and the work was planned by the two societies I have mentioned. Out of them has grown what we call "The Farmers' Schools on Wheels," and we have heard from Mr. McKerrow much that has been done for the farmers of Wisconsin, so much that we can say more that we stand today the first and foremost state in this work in the union. This is not boasting but simply showing the progress in this work which the farmers in Wisconsin have undertaken and which they intend to keep up.

It is not necessary for me to go on to enumerate and speak about the different places where the fairs have been held and the difficulties they have had in managing those fairs until a fw years ago, when we secured the site which we now own and boast of as one of the best in the United States. That seems to be the most fitting place that nature has marked out for us to make the display of these products which are so valuable to us. It seems to me that it will not be a great stretch of the imagination or a great thing to prophesy for the state of Wisconsin, after what we have passed through, to say that I expect to see the time when we shall have very much nicer buildings than now and the grounds dotted with tents and cottages in the fall of the year where the farmers can go and take their wives and daughters, and a nice plantation of all the trees which we can grow as object lessons, and to see on those grounds a fine building where we can have

cooking schools for the ladies, and in connection with that we will have a gymnasium for the boys and girls, and a place for the little folks. Is this Eutopian to think all this? If any part is not useful, then we will not have it there. But if it is, we shall yet attain to it in this state of Wisconsin. Perhaps there may be a little danger along this line. You know the old empires of Greece and Rome that were so magnificent and mighty, did not see the evils that threatened them.

Now, let the management of this Society, if this thing ever does come about, and I hope it will, see that there is nothing ever admitted on these grounds that they would not like to take into their own homes, nothing that can be considered damaging to us as a nation and people. It is not necessary to tell about these dangers because I hope in the selection of the men to manage the fairs they will see that this is attended to and that in this great state of Wisconsin, which we are all proud to talk and boast about, there shall be nothing which will endanger or damage our improvement and progress in the future.

The President—Tomorrow at 9:30 we will be pleased to meet you all in the rooms below.

Friday Morning, 9:30 o'clock.

The President—We must reverse the order of exercises somewhat for the reason that Mr. Rust is not present. So we will start out with the question of sheep. Unfortunately the man we have billed for that subject is at home sick, but sometimes in an emergency we do better on the spur of the moment than we do with long premeditation, and we think we are fortunate at this time to be able to present to you a man who understands the subject of sheep in all its different phases, Mr. McKerrow.

PROFIT IN SHEEP.

Superintendent Geo. McKerrow.

I am sorry that the management has seen fit to ask me to talk to you on sheep because I think my sheep ideas are pretty well worn out in these agricultural reports and I may not be able to give you anything new, but simply a re-hash of the old. If I only knew what you would like to have me talk about this morning I would be better off.

The President—Have any of you any ideas?

Mr. Williams—Do sheep pay at the present prices of wool?

Mr. McKerrow—There we have a question for a starter. I am like a politician. I would like to know which way you lean. A neighbor gave me a good pointer on this question. I was specially interested in the building of a good town hall and we were meeting with a great deal of opposition. I went to the polling place quite early in the morning, as I wanted to do a little lobbying for the town hall, and I met my German friend, who was just making his advent as a politician. He was a candidate for town treasurer. When I met him I said, "Good morning, 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 asked you." "Vel," he said, "you see I run for office today, and I find ven I take a load of potatoes in market and dos vomens vants to puy some and von says, 'I vants peach-blow potatoes, have you got peach-blow?' and I say 'No,' den I don't sell dem any potatoes, but if I says, 'Yes,' den I sell dem two or tree bag. Anoder say, 'Have you early-rose?' and I say, 'Yes,' den I sell him two or tree bag. So I tinks it is better for me to find vat de oder fellow vant, and den I say, 'Yes.'"

Therefore, I think it would be well for me if I knew just what you wanted. This gentleman raises the question of wool, and that has been the trouble with us in this country for the past six, eight or ten years. The time was when growing sheep for wool was very profitable. I can very well remember when we were selling wool from fifty cents to a

dollar a pound, when I hauled off a load on a hay-rack and brought back $1,350.00 in my pocket. Those were good times for sheep, especially for wool. You cannot blame us if that wool idea got pretty fast in our heads, for anything that will fill our pockets will also fill our heads (laughter), and I have met this question during the last three or four years almost every time I talked about sheep. In the first place I will say, yes, but not to raise them for wool,—raise them for mutton, making mutton the primary consideration and wool only the secondary. While I was in attendance at the live stock show held the last week in November in New York, at Madison Square Garden, I saw a gentlemen from Ohio sell a carload of good fat sheep at a very paying price. He received $8.00 per hundred live weight for yearling and two year old wethers, and $8.50 for the lambs in that carload. I say these were good fat sheep but not good enough to win the prize in that show, but good enough to bring the price I have named, and paid this man a profit, as he stated to me. These yearling and two-year-old wethers brought him over $20 per head on the average, averaging about 250 pounds each. The lambs he sold brought from ten to fifteen dollars per head, weighing from 120 to 180 pounds. When I put my hands on those sheep I found their flesh of good quality, and I asked him how long he had been breeding and feeding sheep, and he said four years. I said, "It seems to me you have learned the business pretty well in four years." I asked him what line he followed before he began breeding and feeding sheep, and he said, cattle feeding, but that it became unprofitable and he changed to sheep with a small flock of good mutton sheep and that he had produced these as the result. I said, "Why didn't you sell those two-year wethers when they were lambs, why didn't you sell those yearling wethers in the lamb form? Would you not make as good profit even if you could not get as high a price?" He said, "I understand that meat can be produced cheapest on the growing animal, but I was laboring under an adverse condition in this respect. I did not have a carload of lambs to send to the market when these were two-year-old lambs. Again, I did not have quite a carload to send to

market when the lambs that are one-year-old wethers were ready for market, and I said, 'I'll wait another year.' The local buyers would not pay me what I thought I ought to get for these good animals, and therefore I have kept them, although in one sense losing, but now, counting the price I have received, I have made over and above what I would have received if I had sold them in the lamb form." Although he was not a sheep man, he was a feeder and had trained himself to the correct principles of feeding and it did not take him long to become a good sheep breeder, and taking his experience for the text, I will talk to you along the line of profitable sheep husbandry. I asked him if those sheep had paid him, and he said, "Yes, better than anything else I have raised upon my farm." This gentleman followed the course that I would advise every man that is starting in sheep husbandry to pursue. Buy the best sheep you can afford to buy. Do not understand me to advise you to buy the best pure bred sheep unless you have had some experience in sheep husbandry, because you might not get satisfaction. I think the average farmer will not get the satisfaction he ought to get if he invests in pure bred sheep to found his flock. Only the man who has had experience can do this to get the most out of them. This man bought the best grade mutton sheep he could find. Then he chose his breed. In conversation with me he said, "I made up my mind that I wanted a large breed, something that grew lambs rapidly and something that had a good mutton form, and I chose the Oxford-Down." There are some considerations that you must firmly fix in your mind in selecting the sire to put at the head of your flock that you must not lose sight of. It is a common adage among breeders that the sire is half the flock. This is true when you have pure animals on both sides, but when you start to grade up to the higher standard, then the sire is more than half your flock, because the improvement that you are to get must come from that sire, and if all the improvement is to come from the sire, the sire is pretty nearly all the flock. Therefore be very careful in the choice of your sire to head your flocks or herds. If you have selected the breed that you think

is best adapted to the purpose for which you want them, be it the early lamb production or the later lamb production, a flock of sheep to feed upon rich soils where the herbage is plentiful, or upon thin gravel soils where herbage is scarce, select your breed, and above all things be sure you get a good animal of the breed, one that is full of constitution and vigor, that is full of mutton quality and is covered with good fleece of wool that will bring the best price in the market and protect him the best from the weather. Now, as to the constitutional vigor of this sire I will just give you young men a few points that we consider very essential in judging of this sire. First, see that he is large around the heart and wide through the chest. I would say deep, but do not say that the brisket ought to hang down. Today we do not ask for that hanging brisket. We want him wide through the chest and full, but no surplus of brisket, for it is very cheap meat. This animal should have a bright pink skin. The color of the skin indicates very largely the vigorous condition the animal is in at the time. He should have a strong masculine neck, widening back from the head to the shoulders with a good masculine head, wide between the eyes and ears, showing that he has a good quantity of brains, with a bright clear eye, and above all with a vigorous active step. The more vigor this animal has the better, even if he drives you out of the yard sometimes. Then again, he should be well developed in all those parts of the carcass, that indicate high priced mutton and good feeding qualities; wide in the back and shoulders and wide all along the back; wide in the loin and rump and full in the thighs, for there he has the place to put a large percentage of the high priced meat, and the butcher looks at him through a butcher's eyes. If he sees a very large percentage of the meat in that carcass where the cuts will bring him from ten to twenty cents a pound in the eastern market, it makes a great difference. Besides, this broad back and full thigh animal will give you more pounds of gain for feed consumed than will the narrow back. Now, when you have selected such a sire as I have described, then be sure that you give your flock another cross and that is the corn crib cross,

the feeding cross. You understand that these well-bred animals with their well sprung ribs have been developed, and they have been brought up to the high standard of excellence which they represent by careful breeding and selection and good feeding. You keep the stomach of the young animal full and you spring those ribs and make that wide back. The empty stomach will never spring their ribs but will make them go back, and you can make the meanest kind of a scrub out of the choicest animal by starving it a few months. Then have that carcass well covered with a good fleece, a fleece that will protect it from the inclemency of the weather. If it were not for the need of an overcoat I would like to have them turn all their feed into mutton, when wool is ten or fifteen cents a pound. I do not care whether this overcoat is of the coarser or finer type. The breeds of mutton sheep vary in the class of wool they produce as well as in the quality of mutton. On general principles I believe the quality of mutton is largely shown by the fleece, as I found in dressing sheep years ago. The fine wool Merino, even if highly fed, would show a carcass that was nearly all lean meat. The fat would be bunched around the kidneys and but very little mingled with the lean meat. Take the Delaine Merino, growing a little coarser wool, and we found the fat more evenly mingled with the lean meat. With the Southdowns we found that the fat was mixed with the lean meat, and even if the animal was quite fat it was mixed all through the carcass. But when we came to dress the long, and especially the harsh fleeced long wool, we found the fat in bunches, and when we cut through the meat we found a very large proportion of fat. Therefore I say, the flesh under the skin can be largely determined by the fleece that covers it. Of course the expert not only judges by this fleece, but also by the touch. You can find these soft fat spots on the animal as you pass your hand along because it has a softer touch. Now, as I said, be sure to give these animals the corn-crib cross or the good feed cross, and as the Ohio man admitted to me, it is the young animal that pays the highest price in gain for food consumed. Therefore you should strive to force these lambs from the time they are born

until you put them on the market, no matter whether you sell them at six weeks, three months, six, nine or ten months old, or even at a year old. The reasons, as I presume you understand, for putting the surplus of the flock on the market in lamb form, are more than one. We might say there are three good reasons for doing it. If we send them all to market in lamb form a good deal more mutton would be consumed. Now, if we ask for lamb chop we are never certain that we will not get a lamb chop from a seven or eight year old mutton. In this way the consumption is reduced. Then again, the principal reason, of course for advising selling the surplus of the flock in the lamb form is that the weight is made much cheaper. Experiments show that the pig at 200 pound weight needs nearly twice as much food to keep him just at the 200 pounds weight without any gain as does the pig that weighs 100, or in other words, if this food which simply keeps the 200 pound pig alive and not gaining any weight, were given to the 100 pound pig, it would pay a nice profit until it got near 200. You can see that it would pay you very well to feed fifty or one hundred pigs at 100 weight and make a nice profit,—whereas if you continued to feed 200 pound pigs on the same feed you would soon go to the poorhouse. And this is true of the lamb, and that is one good reason why we should turn everything off in the lamb form.

It has been well proven that the young animal has a more active digestion and that he actually gets out of the food a higher percentage of the nutritive value of the food than the older animal. Nature has fitted the young animal to get more out of the food than the older animal after he nearly gets through with his growth. Still another reason for putting them on the market in the lamb form is because they always bring a better price, from half a cent to a cent a pound more than older sheep of equal quality. I told this gentleman who sold his wethers at eight cents a pound and lambs at eight and a half cents, that it struck me that there was not difference enough and that the lambs should have been worth nine or ten cents, and I mentioned this fact to the butcher who bought this carload of sheep, and he said, "You are right.

These lambs ought to bring more but at this time I want some of these heavy wethers to advertise, to draw attention. Besides," he said, "lots of my friends in the butcher business want two or three of those wethers. The lambs being small in carcass, we will cut them up for our best customers. I think I paid too much for the big wethers, but not too much for the lambs." He said he could use a carload a week but he could not get enough. If he could get a carload a week just like those he could afford to pay that price right along. He said they got very few good sheep from the states. He said, "It is sold as English lamb and mutton chops, and once in a while they bring a few over from England, so that we can tell that story." And it is true that the Canadians who follow a better system of breeding and feeding on the average than we do, have this market largely to themselves. They send them across the line to the Buffalo market and get good prices for them, and then they are shipped to New York and Philadelphia and bring good prices simply because we are not raising enough of those good sheep here in the states.

If we are going to make sheep husbandry our business we must so breed and feed that we can produce this mutton here. Many Canadian farmers grow twenty or thirty acres of turnips to feed their lambs and say there is good money in it. Now, if we breed and feed the same way we can breed and feed just as good sheep in Wisconsin, and we could continue to do it if we would breed and feed right. We should have good pastures properly handled, that is, kept in such condition that the grass does not get too long. We should have two or three pastures so that we could shift our sheep every two weeks or so from one to another, and not let them eat the grass down to the roots. Give them fresh grass but not so fresh that it is nearly all water. If we have a very dry time and poor pasture, then supplement it with grain, and as proven at our Experiment Station here and as good farmers will admit, it does pay to feed the lambs even a liberal grain ration from the time they will eat until they go on the market. They make the cheapest mutton by having some of this concentrated food while with the mother. The lamb will

pay you well for the grain he consumes and make cheaper mutton than without the grain. Grow a variety of foods suited to sheep feed through the summer and have them ready for fall and winter. Begin your feeding early in the fall. Variety is a good thing. We like variety. I am a firm believer in succulent foods in the winter time. I do not think you can get the best growths without succulent foods. Silage to a certain extent gives this succulent food but not enough for good sheep feeding. My step-father brought that idea from the old country, and I remember when our neighbors used to laugh at him and say, "Your roots are nearly all water." I have seen him feed steers on roots and hay in the winter and have them gain remarkably well without any grain. I never saw our neighbors get the same results by feeding even as good hay and some grain with plenty of water. We must grow roots here in Wisconsin. Silage will do, but it does not furnish succulence enough to produce the best results in the flock, and you can grow roots quite cheaply. Such a turnip as the yellow Aberdeen or the Greystone and the rutabaga will grow on land rich enough and properly tilled even in the driest seasons, the yellow Aberdeen especially, as it is not troubled with green lice, having a coarser leaf, with which we have had very good results. Later in the season you can have a piece of land tilled for the white turnips. Plow the land and till it once a week until sown, and if you get them too thick, run the harrow through them and pull some out, and you can raise a very cheap feed in that way. White turnips, carefully handled and stored away in a dry place and kept from the first frost of winter will until January make a good food. Every flock ought to be in good condition when it goes into winter quarters, and some extra foods raised cheaply will make you a large amount of mutton at a low price, and if you wish to carry the sheep through the winter you can add largely to the profit. The rape growth comes in as a second crop. We often plow a piece of early clover sod, work it for three or four or five weeks to kill the weeds, and then sow the rape broadcast, and we have had excellent crops that way. Our Experiment Station has proven

by actual figures that a single acre has produced over $20 worth of mutton in the rape crop. I think I can say that we have had just as good results on our farm. We have had $20 worth of mutton produced from an acre of rape, and as a second crop has been almost a clear gain because cultivating the land has put it in better condition for the future crop. Some of the best crops of oats I have ever raised have been grown on this ground, because the sheep that fed off this rape left manure on the ground, and the packing of this soil helps the oats—they stand up better.

Mr. Williams—Don't you have to manure this land to get a good crop of rape?

Mr. McKerrow—No, sir, not any more than for a corn crop. You want to grow rape on fairly good land. But the results of growing the rape crop proved that the crop had taken nothing from the land that was not restored by the sheep. The rape plant is very much like the rutabaga, all gone to tops. If you have a good crop of rape the sheep will eat off on the sides of the field and not get into it. I noticed that my sheep will eat a while on the rape and then go on the turnips. I have never had any trouble from bloating by allowing my flocks to eat rape. The trouble from bloat in eating rape is caused by letting them eat it before it is well matured, and as mine have the change of eating turnips, grass or rape, I have had no trouble in that way. I have had parties tell me that they lost sheep from bloating, but they turned their flocks on when the rape was only a foot and a half high, thinking it was good pasture, but it was too watery and rank and they were troubled with bloating. The rape leaves must be somewhat firm and ought to be two feet high in a good growing season before you turn them on. There are a good many things I would like to talk about but time does not permit.

Mr. Williams—I have had some experience in feeding rutabagas. I had 4,000 sheep and we fed rutabagas, but they were not successful and we lost over 200 sheep.

Mr. McKerrow—I think the trouble was not in the rutabagas, but you probably fed too many of them. They must

get plenty of other good feed with them. They must not feed on succulent food alone. I do not think too many roots are good when it is very cold. Only a moderate quantity should be fed in winter.

Mr. Williams—I have an interest in two flocks of sheep. We have four crops of wool in the wool house and no sale for it and it is not very successful breeding for wool.

Mr. Everett—I just want to say a word of encouragement to our friend in regard to his wool. I agree with Mr. McKerrow what he said about mutton. I do not agree with the president in what he said about him in introducing him. I happen to know that Mr. KcKerrow does not know as much about wool as about mutton. I said I want to give a word of encouragement to our friend in regard to his wool and that Mr. McKerrow has given us a good mutton talk. At an institute two or three years ago in northern Wisconsin Mr. McKerrow had been giving one of his most excellent talks on mutton sheep. In front of me sat an old German who had been very attentive throughout the meeting, and when Mr. McKerrow had finished, he arose and asked the privilege of asking a question. Mr. McKerrow assured him that he would be very glad to answer any question he might ask. He says, "Can you tell me wy it is der is more vite vool as plack vool?" Mr. McKerrow began to think and looked at me to kind of help him out and finally acknowledged that he really did not know. The old German said, "Vud you like I shall tell you? Vel," he said, "it is because der is more vite sheep as plack."

Mr. McKerrow—Mr. Everett knows so little about sheep and wool that he always persists in telling this story wrong end to. The old gentleman's question was, "Vat makes de sheep plack?" I said, "I don't know," and he said, "It is de plack vool dat makes the sheep plack."

Question—Did you learn the age of those lambs shipped to New York by the Ohio man?

Mr. McKerrow—They were March lambs and were sold the last week in November at $8.50 and weighed from 120 to 180 pounds.—

The President—You stated the flesh was of good quality. How could you tell?

Mr. McKerrow—By there being no patchiness on the back. When I run my hand along the backbone I found it was not only level but the flesh was a little above the bone, and it all handled alike, somewhat firm and springy. Again, when I felt of them below the ribs, back of the shoulders you could not spring it up and down as though it was filled with oil. I have noticed that the long wool breeds are very much inclined to produce soft fat even when well fed. Feeding cuts quite a figure. If you fatten sheep entirely on carbonaceous food you get more of that soft fat than if fed on oats, clover, etc. We have found in feeding sheep for show, when we did not have succulent food, that the sheep fed on the dry food would have soft spots. By feeding roots we keep the digestion better and they lay on a better class of meat.

The President—Can you tell us what breed of sheep that was?

Mr. McKerrow—Well, I do not think they were the best breed in the world for every purpose. The lambs, as I said, were the produce of an Oxford-Down sire with long wool ewes, and I expected to find a number of them with soft backs, but did not. I found he had fed his sheep in the fields and the exercise had hardened the flesh. This flesh had not been put on too rapidly by feeding corn.

Prof. Henry—I wish to ask Mr. McKerrow something regarding the condition of sheep raising at the north, which is puzzling me a little. This fall we bought for use at the university a carload of sheep from a northern county, lambs for feeding purposes. When they reached the university farm an examination showed that they carried many ticks and many lice. They were suffering and the feeder said at once, "I cannot do anything with them until they are free from those ticks and lice." The question arose with me, are vermin only found in the north or might those same pests be found in southern parts?

Mr. McKerrow—Yes, we find any amount of those pests in southern Wisconsin and no one can be successful in growing

sheep anywhere unless he looks carefully after these pests. Our plan is to dip the lambs. We use some patent dip. Tobacco makes a very good dip, but we do not always get the strength just right to kill the ticks and small lice without injuring the young lambs. If a lamb is quite young his skin is thin, and some breeders that have used the tobacco dip tell me they have injured their lambs. I use the patent dips because the very best chemists are employed to make them. I never have had any trouble and I have used three or four patent dips. When we dip the lambs we drive the flock into one corner of the shed or yard, and crowd them up until we have them in a solid mass and take the dip and spray it all over them. Before we had a spray pump I strained this dip through a muslin cloth and got above the flock and by walking on the racks sprinkled them all with a common sprinkler. There is no wool on them seven or ten days after shearing. They rub together and the dip works all around them. These small lice are all on the back and neck and we have had no trouble with scratching of wool in the winter time or from lice since we began to dip the sheep.

Prof. Henry—We have a dipping arrangement at the university farm which any visitor can see. Those lambs (and there were 100 of them), were put through this dip in December. They came out all right and dried off in a few days and are at perfect rest and do not seem to be fretting about anything. But I do not think all the grain we could feed would have allowed them to put on one pound of flesh. Those farmers would have said sheep raising does not pay.

The President—Dip them more than once?

Prof. Henry—No, sir, only once. Head and all went out of sight under the liquid.

The President—What is that small parasite on the sheep?

Prof. Henry—It is taking hundreds of thousands out of this state every year. There are several taxes the farmer has paid that he does not see and we are trying to find them.

Mr. McKerrow—When you see a flock of sheep rubbing and uneasy and you examine them and do not find ticks on them, you may make up your mind that it is the little fellow

that is doing it, and especially when they are trying to rub on their backs. If you will open the wool and take a small magnifying glass you will discover them. You can see the work he is doing without the glass.

Prof. Henry—Do you recommend the practice of dipping regardless of what you find?

Mr. McKerrow—Yes, every year. You can dip them at a cost of one to three cents a head, and it will save you from one to three dollars a piece if fed until ten months old. Spray the sheep when they have no wool on, and it should be done all at one time so that there is no chance for the small louse and tick to go back and forth. Tobacco makes a good dip if you can get it just right. There seem to be two classes of these small pests, one white and the other a yellowish white fellow with a red head. If you have ever seen any you will recognize them.

Mr. Jones—Is it not a fact that we are situated where our lambs are too expensive to undertake wool raising alone? Would it not be better to allow our ranch men to raise wool we go more into mutton producing? We are too near Chicago and Milwaukee.

Mr. McKerrow—Certainly, we can not transport the live muttons without much loss to each sheep and without a heavy freight expense, whereas wool representing more money in less weight can be transported from the west much cheaper, and therefore if we are going to compete with the western man we better compete in mutton instead of wool. If we can be assured as good prices for mutton as beef and pork, we are on the safe side. Mutton has been produced at a little less cost than either beef or pork. Without recognizing wool at all, mutton has been produced cheaper than beef or pork, and we can get what me may out of wool extra.

The President—What is your average yield of wool from your mutton sheep per year?

Mr. McKerrow—I will have to name the different breeds.

Mr. Linse—Give us the weight of the sheep and wool.

Mr. McKerrow—When I was breeding Cotswolds the flock at maturity would average about 180 pounds live weight and

shore between eleven and twelve pounds on the average, varying from nine pounds up to eighteen. I think that is the heaviest I ever had of unwashed wool. The Oxford-Downs weigh about the same in carcass, and about eleven pounds average weight of unwashed wool. The Shropshires averaged about 160 or 170 pounds at maturity, shore nine or ten pounds on the average. The Southdowns have averaged between six and seven pounds of wool and in weight from 150 to 160 pounds. That is just in field condition.

Mr. Linse—Can't you keep large flocks of these mutton sheep?

Mr. McKerrow—Yes, sir, you can. The less sheep you keep together the cheaper and easier you can keep them. The greater the number the more attention they need. You can keep these larger breeds in larger flocks, but being larger sheep they need more feed. It is simply a matter of feed and care.

Mr. True—What are the benefits arising from sheep kept on the farm, besides those mentioned?

Mr. McKerrow—There is another profit arising besides the wool and the mutton. Sheep will consume more varieties of weeds than any other class of live stock. I believe it has been tested and proven that they will consume seventy-five per cent. of the weeds grown on farms. They help as a weed eradicator. They also browse down brush. I have cleared brush lands with sheep. You can feed other foods and have a good deal of brush killed out. We have two or three flocks. We put a flock on one field for two or three days, taking them from the best of feed, and every sheep will eat brush and will browse considerably for about twelve hours, and then return them to better pasture.

Mr. Arnold—Did you ever experience any bad effects by feeding timothy hay in the late winter and early spring?

Mr. McKerrow—Not if we had plenty of roots to feed. Timothy hay fed alone is highly carbonaceous, being far from a balanced ration, and it has a dry effect, not only a heat producing but also drying effect and brings very bad effects upon the flock. You should not make your flock live on timothy alone.

Mr. Arnold—I think sheep should be covered with a good coat of wool to protect them from this cold weather.

The President—Why not blanket them?

Mr. McKerrow—That is not profitable. Today there are less sheep in the United States than there ever have been. This is also true in regard to cattle, so that there is no reason why prices should be low on account of over-production, and inasmuch as there is a growing demand for mutton, there is every reason to believe that we may expect good prices for mutton all along.

Prof. Henry—I asked Mr. Hubbard to kindly give me a minute, not because I want to talk longer, but because of something I wish to appear in these eight thousand copies of the report to go to the many people that cannot be here. I wish to call attention to the great sheep country of Wisconsin. There is a great sheep country up here (and I speak to these young men), a country that can be had from one dollar up per acre. That land is as rich as many parts of southern Wisconsin, and those of you who are thinking of getting possession of land let me urge you to carefully consider that country at this particular time. The enormous crowds that flooded the west in hopes of finding a land ready for the plow left this country and passed by it. Fires have swept through it, and you can buy these burnt lands for a small price and find them splendid sheep lands and good for many other purposes. Do not think it is sandy. There is clay soil that is too heavy for and if we can only get that country inhabited by the right sort of farmers we are going to send millions upon millions of dollars worth of fine mutton from that country. It all grows grass except the poorest of it. Timothy grows longer there than in this country. It will stand there for twelve years without weeds coming in. Get good, pure clean timothy seed. I speak of that as one point. You can save enough money by working two summers to buy a good farm. If you do not like to keep cows, keep sheep. Now, think over this matter seriously.

The President—This will be followed by a discussion of the Management of a Dairy Farm, by Mr. Linse.

MANAGEMENT OF DAIRY FARM.

Chas. Linse.

Mr. Chairman, Gentlemen—About fifteen minutes ago I was called upon to say something about the management of the dairy farm. I am only a substitute. I am not modest enough to tell you that I do not know anything about the dairy farm,—I ought to know something about it. Still, I am not foolish enough to think I know it all. It is a pretty hard thing, however, to tell you in a few minutes how to manage a dairy farm, but I will in a few words tell you something about how I manage my dairy farm. The same rules hold good to be a successful dairyman as a successful farmer otherwise. The main thing is promptness in all your proceedings. By this promptness I mean to make it your first business to be a dairyman.

Now, my first aim was, when I started in the dairy business, to get better cows. My choice would have been to start out and buy them, but as a good cow, if such is for sale at all, demands a good price, and my means were very limited, I adopted another plan. I bought a thoroughbred sire, a Jersey. I then, of course, raised calves only from my best cows. This selection of my best cows, however, was not so easy, as I did not always know which were my best cows, and quite often made a mistake in this. Now, you may say that I was not much of a dairyman not to know my best cows, but let me tell you, there are many farmers today who do not know their best cows. If it was only the show in the bucket by which this is determined, the question would be easily settled, but it is the return from the churn that brings the dollars, and you know what it means for a farmer to test a herd of cows with the churn. Today, of course, there is no excuse whatever for a dairyman not to know exactly the quality of every cow in his barn, and any one not having this grand little machine, the Babcock milk tester, lacks intelligence and is not up with the times. Well, I did as well as I knew how in those days, and undoubtedly made many mistakes, but

managed at last to have a pretty good herd of dairy cows. But I knew that a dairy cow, if ever so good, was poor property if not fed properly. I soon learned that plenty of feed alone would not do it. It had to be the right kind of feed. I stuffed my cows with a lot of starchy food, and the result was that in the spring most of them were all right for the butcher, but no more fit for the dairy. In those days it was not so easy as at present to find the best ration for a milch cow, for every dairyman had to experiment for himself. Today our Experiment Station is doing this for us.

You have, I presume, all heard about this balanced ration. Well, when I first commenced in the dairy business I never heard about such a thing, and I almost believe there are a good many farmers who have not heard about it yet, or do not care to hear about it. Our learned men tell us that all feed stuff contains more or less of either of the three principal feeding elements, namely, proteine, carbohydrate and fat. They tell us that it requires a certain amount of each of these elements in a cow's food to make up a proper milk producing ration. Knowing these facts, it is not so difficult for a farmer at the present time to find the right kind of food for his cows, to give him the best results. But I do not say that a man should go blind-folded according to a certain prescription in every case. A dairyman must keep his eyes open all the time. He must study the nature of the different cows. The rule, "What is good for the goose is good for the gander" don't hold good in this case. What is good for one cow is not always good for another.

Proteine is the principal milk producing element in food, but to some of my best dairy cows I found that I can with profit feed a larger percentage of the carbohydrates or starchy elements than the so called standard rule calls for. And not only that, but I must feed to some of them more of the fat producing food in order to keep up their constitution.

But to get the best returns for our feed, we must give the cows in connection with good feed, good care. Good warm stables, well aired and lighted are indispensable, also plenty of good water at least twice a day. We must also have regu-

lar times for feeding, regular times for watering, regular times for milking, regularity and promptness in all our dairy proceedings. We must never let our dairy business be secondary to other business. For instance, we must not think that it makes but little difference to feed our cows an hour later on Sunday morning, or milk them in the busy summer time at nine o'clock in the evening instead of at five o'clock, or one time at four and another time at six in the morning. We must do our dairy work in a business-like manner, and without fail success will be ours.

I have only outlined to you in these few words my principles of the proper management of a dairy farm, but will be pleased to answer any further questions on the subject.

Mr. Dodge—Will you please give us the ration you feed your dairy cows?

Mr. Linse—I feed, mornings and nights, a ration of one part silage and one part corn stover cut on the feed cutter and all mixed up. I do not know the exact amounts in weight. A good cow from 800 to 1000 pounds will eat, twice a day, a good bushel basketful of this food. About eleven o'clock they get some hay, timothy and mixed hay, but they eat very little of that. In conection with the coarse food I feed coarse middlings, bran and oil-meal. I feed according to the size of the cow and the quantity of milk she gives daily, all the way from ten to eighteen pounds. I guess that is the outside, from five to nine pounds of feed mornings and nights. I give them coarse food in the manger and then follow up with the grain food.

Mr. Williams—How much grain food?

Mr. Linse—From five to eight pounds.

Mr. Ames—How do you mix that feed?

Mr. Linse—The bran and middlings are of equal proportions, together with about two pounds of oil meal for each cow per day. I saw a young man here shaking his head when I stated I fed my grain food with coarse food.

Mr. Dodge—Because when I feed grain alone I can tell better if the cow is getting just what she ought to get in grain food.

Mr. Martin—How can you tell?

Mr. Dodge—By the way she cleans it up. I can tell by the amount of milk she gives and by the way she digests the food.

Mr. Martin—There is only one way I can tell, and that is by watching the excretions.

Mr. Linse—I have no difficulty in learning that from feeding the grain with the coarse food. I can tell from the remains in the mangers. It does not bother me one bit to mix the grain food with the coarse food. It is a great study to watch the excretions of the animal, and I can tell in a moment whether an animal digests the food well.

Mr. Williams—I prefer to feed the corn separately.

Mr. Convey—The objection raised by Mr. Dodge, I think is a good one. Mr. Dodge's idea is in case of feeding a cow that is a large producer, so that is a valid objection, I think.

Mr. Linse—I do not see what should prevent my feeding one cow more of the grain food than another, even when I feed it in connection with the coarse food, but we must always remember that a proper ration must contain a certain amount of organic matter, and that we cannot feed a cow grain food at her own pleasure.

Question—Do you water before you feed, or after?

Mr. Linse—I water them about ten o'clock in the forenoon and then I turn them out a little if the weather is nice while the stables are being cleaned, and water them again in the evening. Now I have put in a water device where the cattle have water at all times. Water them right in the stable.

Question—Do you advise watering them before or after feeding?

Mr. Linse—After feeding.

Prof. Henry—I wish to say one word in regard to feeding separately and with the coarse fodder. The experiments by Prof. King and others show that the different food constituents, if given separately to the animal, are very soon commingled in the paunch of the cow. He fed steers and other animals at the slaughter house just before they were killed, starting in some instances fifteen minutes before the animal was slaughtered, and then at longer periods, and he found

even in as short a time as fifteen minutes that the oats were moved in the paunch far beyond what he expected. The pauch is constantly kneading and keeping the food in motion which thoroughly mingles all the elements therein. I give this so that we will have something to help us in that matter. Mr. Linse's practice may be best in spite of that.

Mr. Linse—I believe there is a great difference in the way the animal takes the food, how she will masticate her food and how it goes down her paunch. I have practiced for thirty years and have fed in many ways, but I found the best results from mixing the food.

Member—I feel like Mr. Linse. I know that it all gets mixed up after it gets down. I think the cow will eat more if it is mixed together than if it is fed separately.

Mr. Dodge—Since you have put in your watering device, how long do you let your cows out?

Mr. Linse—I give them exercise every day if the weather is fair. I take particular care that the barns are well aired and ventilated, but I like to give the cows a little exercise. Sometimes when the weather is severe I keep them in for three or four days, but as a rule I turn them out every day for about two hours.

Member—About how warm would you keep them?

Mr. Linse—From 50 to 60 degrees.

Member—Do you feed dry or wet?

Mr. Linse—Dry. Put the silage in with the coarse food which dampens it somewhat. Put all the grain food together in the mixing box.

Mr. Anderson—I would like to ask Prof. Henry's idea whether it pays to grind oats and bran, or feed it coarse for the milch cow?

Prof. Henry—I think if she is hard worked you should grind it. When a cow gets very little I should not think of grinding it. The question of grinding is not absolutely the same for all cases. A horse not hard worked will live on straw and unground grain, but put him on a heavy express wagon, work him hard and you must feed him ground grain.

Mr. McKerrow—I would like to ask whether oats cut would be a good part of dairy cow's feed?

Mr. Linse—You mean oats in the bundle? I have never fed oats in the bundle. I could not say positively. I have never fed it.

Mr. Faville—If the oats are fed quite green and put through a feed cutter, they are excellent mixed with other food.

Mr. Linse—I would not like to feed a great deal, only a small part of a ration of this bundle oats.

Mr. Convey—I have fed largely unthreshed oats. If cut before puite ripe they can feed a limited quantity and obtain good results.

The President—We will have to close this discussion. I want to say to this audience that we had on our program a place to be filled by a man who could not be present. Our program is so changed that although that man is present it now would perhaps be inappropriate at this time to call him to speak upon the subject that he was expected to respond to. Therefore it would seem to me that it would be proper to bring him before you and let him take whatever gait he chooses, a trotting or pacing or even a running gait, if he chooses. I have the honor of presenting to you Ex-Governor Hoard.

Agricultural students (in chorus)—U-rah-rah Wis-con-sin.

Ex-Governor Hoard—Mr. President, Boys—You are a pretty noisy lot. I have been making war speeches all the year, and really when you first started out I thought I had struck a rebel lot. (Laughter.)

The subject that is ever present with us, is the condition and needs of our beloved commonwealth, progress, crystalization of its thought, whether it be in finances, or whether it be in government, or whether it be in agriculture, or manufactories, anywhere along the industrial progress of its people, and can never fail to be one that ought to arouse at least the kindly thought of every patriot, and every man in the commonwealth ought at least to strive to give a reason for the hope that is within him. I have been for a good many

years, as you know, somewhat identified with it. I have had many long and earnest thoughts concerning the progress of my state in lines consistent with dairy effort, watching it from the very beginning, starting in 1870, when I was almost, you might say, like some of the young men here, and feeling that abiding interest, I have today just as much enthusiasm and just as much pluck as when I first began, and a great deal more.

Our state is of wonderful capacity. It has a wonderful brain, and broad, and our meetings are indicative of the enthusiasm and spirit of our people. We have a mixed populatinon. Unfortunately the language of our country cannot reach and does not convey as a medium of communication so qvickly as it ought, the thought which is constantly pushed to the front. But we are making much progress in that direction and we are doing grandly, my good friends, as a state. This winter I had the pleasure of a couple of weeks' work in Maine and Massachusetts, meeting also with the American Guernsey Cattle Club at the Avenue hotel, New York. Wherever I go, whether it be in Canada or whether it be in Massachusetts or down south, the thought ever uppermost is that I come from a state of purpose, pith and push and progress, and it is a very gratifying thing to me when men tell me "In Wisconsin you organize for some purpose. You are not loose and not scattered and not all in a state of nebulosity, but organize for some purpose, and you have your farmers' institutes and dairy conventions, agricultural schools, and all go together for some purpose." My experience as a soldier was that the brainest men on earth were absolutly powerless unless they were in a state of concentration and discipline, and I remember that an old German at the time when we boys were at Racine—and we were nothing but a half organized mob and there was no pith nor push to our effort—and the old German who had been serving in the wars of '48 in Germany, stood it as long as he could, when he burst upon us suddenly and said, "Nix, nix, that Yankee is a humbug. Better vons you seen in dat Prussian army. Ven the colonel look on that rejiment and say 'present arms,' so quick like de

tunder come every gun. What kind of business makes dis American soldier when he comes out on a parade wid his gun under his legs, and wen de colonel look on him in de rejiment and say 'present arms,' des smart man, vat he do, he look on de colonel a little vile and den he say, 'You go to de devil, vate til I take a chew of tobacco first'." What did that mean? It meant this, that there was no discipline and there was no concentration and there was no power as a consequence. And so today organization in our state means everything. We have a wonderfully great state to conquer. We have a great empire north of us. We are on the eve of a little study of it, and when I think of it, I think of Newton's remark when he came to die. He had been all his life wandering on the edge of the great ocean of truth while the whole great sea lay unexplored before him. We have a marvelous state when once we can get all of its powers united in an intelligent work, we have a state, my boys, that will shine among the chiefest in the galaxy of our nation. I congratulate you for living in such a state and you want to remember that some of us older fellows have been doing some momentary service for you, but you need not be grateful to us. We only ask that you shall distinguish yourselves as the men who have gone before you tried to do for you. (Applause.)

The President—We close our meetings with this. I want to say that a year ago, at the close of the convention, the president of this society had carefully prepared a written address that was mislaid, and just at the last moment the secretary of the society came to me and begged the privilege of making a few remarks, and never did you see a man more astonished than when that secretary got up and repeated verbatim the very article I had written. For fear he might do the same thing again, I will call the secretary to speak for himself. (Applause.)

The Secretary—Mr. President and Gentlemen: While it is probably true that I rather got the cinch on our worthy president a year ago, he has doubly turned the tables upon me

this time, because I heard him make a very nice speech which made me feel good and I thought I would out-do myself upon this occasion and left the jollification of the crowd last evening, went to my own room, sat down and consumed a whole hour in what I thought was a good speech. Unfortunately for me, I left my room door open and when I awakened this morning I found the president had stolen my speech. However, I thank Mr. President for the privilege of saying a few words before closing this convention.

I would feel, if that opportunity were denied me, that I would go home dissatisfied with the convention, which I think in most respects has been a success. But I simply have to say that I thank those gentlemen who have appeared upon our program without compensation and given us the benefit of their ideas. The farmers' institute conductors have been here all the while, Prof. Henry with his assistant professors have indeed rendered us valuable service, but it is to you, boys, because I am one of you that I wish to make one closing remark. You have been regular in your attendance at this convention, you have been painstaking and observing in all discussions, participating in many of them with interest and pride yourselves, and I know the benefit even to those older men. I look upon you as the gallant band of Wisconsin's gallant men, because I know that the men of today have sprung from the farms just as you are springing now. I think you are laying a good foundation to build up strong, robust men and men of giant intellect. More than that, I believe that because of your presence here, representing hundreds of homes and all the different localities of Wisconsin, when you go back you constitute in yourselves a medium for the disseminating of the talks and practical ideas advanced here, a medium second only to the annual report of this convention, the preparation of which costs much labor and many thousand dollars to the state, and I feel, and let me say to you, that this convention which you have attended, represents only a small part of the field to be covered by the Wisconsin state agricultural society. We have a greater convention and a larger convention held annually upon our

state fair grounds and as I look upon you and as I appreciate the interest I see beaming in your countenances, I believe in order to make the next state fair of Wisconsin the greatest success we have ever had and second to none in the United States, we have only to get you as our advance agents and advertising agents, and in order to do that let me just say to you do not leave Madison for your homes until you have left with me or my assistant secretary your names and addresses. I will send you a cloth bound copy of this report and of the preceding report and before the next fair will send you some advertising matter which I hope you will take interest in posting up in the most conspicuous places around your respective localities, and though I have but a little meager compensation to offer, I will send you a complimentary ticket for the next fair, and those of you who have a best girl I will send two. I thank you. (Applause.)

Agricultural Students—U-rah-rah Wis-con-sin.

The President—I take only one exception to the remarks offered to you boys by the secretary. He called himself one of you. Until he can show that the top and back of your heads are without hair he has no right to say that.

We thank you for your attendance and will now declare the meeting closed.

Adjourned at 12 o'clock sine die.

DISCUSSION.

Mr. Anderson—In behalf of the convention I would like to have the opinion of Prof. Henry whether there is any of that filled cheese manufactured in the state of Wisconsin at the present time, and furthermore, where do the Chicago men get their filled cheese, providing it is not manufactured in our state?

Prof. Henry—Dairy and Food Commissioner Adams has watched the state very closely, and there is no filled cheese made in Wisconsin to his best knowledge. Filled cheese is nearly all made in northern Illinois at the present time, which is an enormously developed dairy district. Many creameries

of that section run the milk through the separator and put a fat or oil into the skim-milk and make a compound which closely resembles full cream cheese, and that is sold in Chicago in enormous quantities to the great detriment of all honest cheese. Wisconsin we consider free from the fraud, but we are suffering just as badly as though we made it in our own state. I beg to introduce the following resolution:

"Whereas, there is now being manufactured in this country esormous quantities of spurious cheese, compounded of lard, cotton seed oil and other foreign spurious fats, together with skim-milk, and, whereas, such spurious goods are frequently being branded and sold as Wisconsin full cream cheese,

"Resolved, that we, as citizens of Wisconsin, recognizing the need of immediate protection to our dairy interests, most earnestly urge upon our representatives in congress assembled, to use every honorable means within their power to secure the passage of the Cook bill for the licensing of filled cheese factories and a pound tax upon all filled cheese manufactured in this country; also that we favor the passage of the Sauerhering bill providing for a state trade-mark, as provided in H. R. 4349.

"Resolved, further, that the secretary of the state agricultural society be directed to forward a copy of these resolutions under the seal of this society to each Wisconsin representative in congress at the earliest opportunity."

I submit these resolutions.

Mr. Anderson—I move the adoption of the resolutions.

Motion seconded.

The President—The question is upon the adoption of the resolutions offered by Prof. Henry. Are you ready for the question? If so, those who are in favor of it say, aye, opposed, no. The ayes have it and the resolution is adopted.

Prof. Henry—I would like to call the attention of this Wisconsin audience to the possible magnitude of our cheese industry. A cheese exporter who visits England sometimes as often as two or three times a year, said, a short time since, that there were just two cheese states in the union, New York and Wisconsin. The southern part of the state cannot make

as fine cheese as somewhat further north. The best cheese are made in the mountainous and cool regions of the world. The dairy cow that makes the finest cheese must feed upon grasses that are not grown under a hot sun; she must drink cool water, and her blood must not be heated by a scorching sun. The quality of cheese improves as you go north in our state, and Chicago cheese dealers tell me the further north they go the better cheese they can get, because the quality of the milk is superior. Now, the dairy industry is crowding itself, to a certain extent. If we in Wisconsin were making half our milk into cheese, there would only be the other half of the milk to go into butter and the price of butter would be increased thereby. Thus you see that whether you are butter or cheese producers, you are all interested in seeing the cheese industry in this state prosper, and I hope each of you will write a postal card to your member of congress and show your representatives that you are interested in these bills. You do not know the effect of a postal card upon a member in the house of congress. They will know that is your opinion, and you will help this industry, which should be a great one. Canada is getting $15,000,000 annually from other countries for her export cheese. Wisconsin is getting but a million or two for her cheese sold to foreigners. We could just as well be getting eight or ten millions for Wisconsin cheese as not and still have our butter trade. We ought to have 5,000 cheese factories in this state and have every one prosperous, and we can if we, the people, only will it to be so.

Mr. Arnold—How do you suggest the quick recovery of this foreign market?

Prof. Henry—Partly through advertising and partly through making still better goods. Our cheese factories are usually small, poorly equipped, and many are run by men who are not competent and make poor cheese. The dairy school is correcting that as fast as it can. Then we ought to advertise. We are doing it here now to a certain extent. Advertise that Wisconsin cheese is honestly made, and they will then send here and give our Chicago friends the go-by, as they deserve.

Question—Is there no way except by this law?

Prof. Henry—The United States must take hold of this fraud cheese business. In Chicago I have seen cheese dealers take up a box of cheese, scrape the label right off so that no one may know where it came from, and then take a stencil and label it anything under the sun. They can put on any brand they please. They are first careful no one should see where it came from.

Mr. Martin—Would it not be the easiest and most effective way to have petitions circulated by the farmers' institutes, signed by the farmers present? We are careless about writing, and such a petition might go from each institute held in the future.

Prof. Henry—That would be a good thing.

Mr. Moore—I would like to ask if it would not be a good idea, in order to raise the standard of our cheese here in the state of Wisconsin, to have the cheesemakers pass an examination? There are a large number that are not fitted to run a cheese factory and they must necessarily put a poor quality of cheese upon the market.

Prof. Henry—Mr. Moore touches upon a question that we are all interested in, but how can we do it? If we could license our cheesemakers as we do our school teachers, we could help matters.

Mr. Convey—Is it not just as much the fault of the patrons as the cheesemakers?

Prof. Henry—Yes, to a very considerable extent. The farmers, in the first place, are cutting the corners by putting up cheap factories and hiring cheap cheesemakers. Again, they often quarrel among themselves, and instead of keeping large factories, split up and build more factories. In Canada there are cheese factories that take in 40,000 pounds of milk a day. Such a factory can afford to pay one first class man and give him two or three cheaper helpers, but a factory that takes in 3,000 pounds cannot afford to pay the wages of even one first class man. No cheese factory in Wisconsin ought to run that does not take in 5,000 pounds of milk daily, and it would be better if it took in 30,000 or 40,000 pounds. I wish to call your attention to the little country of Denmark, which

is just a quarter as large in area as Wisconsin. Some twenty-five years ago the Danish government saw that in this fearful struggle for supremacy the government must help the people and that dairying was a good industry to push. She established dairy schools and keeps up a dairy Experiment Station which costs as much as our Experiment Station on the hill, which is devoted to many purposes. Denmark keeps two men on the island of Great Britain who go from city to city and write a letter each week telling just what they find in regard to the Danish butter product in England, and keep their people posted as to what is wanted in color, quality and other requisites in fine butter. The farmers there co-operate. They have fine creameries, keep them perfectly clean, and the men that work these creameries wear spotless suits. The floors are scrubbed, the walls clean, the machinery immaculate, the butter packed in finest packages and shipped by the most rapid transit. And what is the result? Today Great Britain is paying Denmark $2,000,000 every month; $24,000,000 a year of English money goes over to Denmark for butter. Wonderful as that is, this little government has not stopped there. You have all heard of Irish bacon, which is shipped and sold even in Chicago. Irish bacon commands the highest price in the English market, or has in the past. Denmark, in producing so much butter, has enormous quantities of skim-milk. Denmark has been informing the people and telling them how to put up bacon equal to the Irish product, and now the Danes are gloating over the fact that they are getting the fine bacon market of the world. If a little government, by fostering industries, can succeed like that, what can we do with a state four times as large, if we can get the proper protection for our honest goods. It is not what we spend in taxes that is hurting us in this business. It is not what a state university as a whole costs. You pay more to support the tramps in your counties than you pay for the professors at the university. It is not what you spend for the university but what you cut out of the selling price of the goods that is taking the business away from our farmers, and if we can only hold together,—if these two hundred boys can

only be held in this state. We do not want to ship brains. Let us keep them within our state and push our educational work ahead, and then we can be a leader among our sister states as Denmark is in Europe. (Applause.)

Mr. Favill—I do not desire to make any lengthy remarks upon this subject. I heartily endorse all that Prof. Henry has said on this subject, and endorse it largely from experience. But I do not think that it is intelligence that we need as much as honesty. That is what ails us today, lack of honesty, integrity in our business. We had it in 1876 so that our Wisconsin cheese was good enough to demand a good and special quotation in the New York market. I know because I was in the business before that and after, and at that time was buying, shipping and manufacturing cheese, and Wisconsin cheese stood so high in 1876 that the quotations from New York were, first New York quotations, then western and following that was Wisconsin. But we have lost our reputation for good cheese through dishonesty, and so long as we keep that up we will suffer, and when we are honest we will do better.

Mr. Goodrich—In regard to the matter of having incompetent makers of butter and cheese, there is considerable interest exhibited throughout the country. Only a short time ago we discussed this subject at an institute, and the feeling is growing that no man should be employed unless he has a good certificate of character and ability. The feeling was expressed only yesterday in strong terms, that they believed every maker of cheese and butter should have a diploma from the dairy school of Wisconsin as a guarantee of his ability. The men took this position, and it is correct A proprietor of a factory has no right to put in an incompetent person to work up your goods, any more than to put an incompetent teacher in a school. In many cases they require a man to have a diploma from the dairy school. A short time ago a young man wrote me asking if I could help him secure a place in a factory. I could not recommend him, but gave him the address of several factories. They asked him if he was a graduate of the Wisconsin Dairy School and said if he was not they did not want him.

The Secretary—I cannot refrain from rising to say a few words on this subject. If I have not now, at least once upon a time, I had considerable interest. I cannot agree with my friends here in saying that the standing of our cheesemakers in Wisconsin is not better than it ever was. I know it is, and why should it not be? The Dairyman's Association of Wisconsin six years inaugurated a plan and carried it to a successful issue, to send out among the cheesemakers of Wisconsin the best men whom they could secure to go out among the manufacturers and teach them a uniform and what was considered the best plan of cheesemaking. I should be sorry to admit, not because once upon a time I was one of those fellows, but I believe it would be a direct slap against disseminating that kind of education. I have personally attended, visited and worked in over 480 factories in this state. But I willingly agree with Prof. Henry that the status of our cheese industry is pitiable, to say the least. I believe he only partially saw the reason when he said that it was the fault of the cheesemakers in Wisconsin. I will say and I honestly and conscientiously believe, that it is largely attributable to the recklessness and carelessness of the patrons of the different factories. Cheese has been constantly going down in price, I believe, on account of the large amount produced. They are losing interest. Unless an article of their produce is up to a certain and profitable price, just as quickly as it begins to go down they begin to lose interest, and it has gone from bad to worse until today, in many of the factories they are taking milk that ought to go to the hog instead of in the cheese. That is where you must begin. You must drive that into the heads of the farmers, because, I believe, as a class they are less likely to accept good wholesome advice, especially where they are taxed to put it into execution. There is another thing that has not been touched upon. We are sending from the different factories of the state today cheese almost in a curd condition. Our curing rooms are not what they ought to be. That cheese is put upon the market. Sometimes it reaches Liverpool when it still ought to be in the curing room. Until you cure it as it ought to be cured, so that it can come

in contact with the various temperatures, it will quickly become rancid and many of the other things that make it most objectionable. I hope that every time this question comes up to these young students here they will impress upon the minds of the patrons the absolute necessity of more cleanliness and better treatment of their milk. I believe we have more skill than ever among the cheesemakers of Wisconsin, and with good curing rooms and good milk they can make just as good cheese as is made in the United States. (Applause.)

Mr. Goodrich—I would like to ask if it is not the business of the cheesemaker to know what sort of milk is delivered to him, or must he take it as it comes? Is he not instructed in the dairy school about judging and that it is his duty to reject all poor milk? The cheesemaker must know how to judge the quality of milk and how to make it up. And another thing, I have known one of the best cheesemakers that I ever knew, to visit every patron every two weeks and see how they had things around the stable, etc.

Prof. Henry—That is right.

WHERE MONEY IS LOST TO FARMERS.

Continual inquiry is made regarding basket willows and considering the favorable market price they bring, it is remarkable that so few farmers undertake the cultivation of the same.

Although this useful plant prospers well in this country, large quantities of willows are imported every year from Europe. Not every farmer may be in position to cultivate willows on a large scale but most every farmer has a spare piece of land where he can plant some without expending much labor. Although the principle of varied cultivation and extras, such as Honey Bees, etc., has proved many failures, yet the planting of properly selected side cultivations always insures success, as not every planting will fail in the same year. Willow raising is certainly the most profitable and practical side cultivation, as it is very simple in comparison to the atten-

tion required by many other plants on which the profits are certainly much smaller.

Low land is best suited, but high land will also do. Land with too much water or standing pools will not answer. The cultivation is similar to corn. It is best to plow in fall and again in spring and keep all weeds out. Early in April the plants or cuttings are stuck into holes, made with an iron point, 12 inches apart and in rows of 3 feet apart, so that grass can be kept down with cultivator and hoe.

These cuttings are made from 2 to 3 year old willows and are about 1 foot long. They are inserted, leaving only 2 or 3 eyes or 1 or 2 inches above the ground. In the first year only a few switches will grow which will increase in number. Every year in March the willows are cut close to the stem. They are tied up in bundles 10 inches in diameter and placed in 2 or 3 inches of water, remaining there until the latter part of April or until small leaves and sprouts have appeared. This shows that the sap has risen which makes the peel easily removable. Now the willows are peeled by pulling them through a springy wooden fork, shaped like a clothes-pin, but larger with blunt edges inside which, without injuring the willow, presses the bark and loosens the same in strands which are easily removed.

Willows are dried in the open air and put up in bundles of 50 pounds for the market. About 15,000 cuttings are necessary to plant an acre. The willow reaches its greatest production in the third year and with proper care and good fertilizing it will continue to yield good results for many years. Dry, peeled willows are worth 5 cents a pound, delivered in Milwaukee.

The following illustration may serve to show the profit obtained from the production of 1 acre of willows:

One acre only moderately well-cared for with fertilizer will yield at least 4 tons of green willows. This is the smallest amount as many acres yield 7 tons.

Of these 4 tons, 2-3 may be deducted for bark and moisture, leaving about

2,666 lbs. dry willows at 5c. a lb.,		$133.30
Wages would amount to for cutting of 4 tons at $5.00,.....	$20.00	
Peeling of 2,666 lbs. at 1 3-4c. for large and 2c. for small willows,	50.00	70.00
This leaves a profit per acre of.....		$63.30

which is very favorable compared with that of wheat, rye, barley and oats and it would be advisable for every farmer to undertake at least the cultivation of one half or one acre.

In former years the American farmer was able to obtain a higher price for his willows, owing to the fact that the manufacturer then received considerably higher prices for his goods.

On account of the constantly growing competition among manufacturers, they were obliged to look around for cheaper material. Willows were imported from Europe in large quantities which discouraged some farmers and induced them to give up the cultivation of willows altogether.

The above illustration plainly shows that the willows can be delivered for 5c. a pound. This price is equal to imported willows, including freight and duty of the latter and gives the American farmer a chance to compete with European producers.

Plants or cuttings of best quality and further information can be obtained of Messrs. A. Meinecke & Son, Milwaukee, Wis.