Second annual report of the Wisconsin Agricultural Experiment Association : Madison, Wis., Feb. 3, 4, 1904. Address of president, secretary's report with papers and addresses given by members of the a...

Wisconsin Agricultural Experimental Association
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SECOND ANNUAL REPORT

OF THE

WISCONSIN

Agricultural Experiment Association

Madison, Wis., Feb. 3, 4, 1904.

Address of President, Secretary's Report with Papers and Addresses Given by Members of the Association and Others Interested in Progressive Agriculture.

Compiled by

R. A. MOORE, Secretary.

DEMOCRAT PRINTING CO., STATE PRINTERS.

1904.

LETTER OF TRANSMITTAL.

OFFICE OF THE SECRETARY,
WISCONSIN AGRICULTURAL EXPERIMENT ASSOCIATION.

Madison, Wis., 1904.

To His Excellency, ROBERT M. LA FOLLETTE,
Governor of the State of Wisconsin:

SIR—I have the honor to submit for publication, as provided by law, the Second Annual Report of the Wisconsin Agricultural Experiment Association, showing the receipts and disbursements the past year, also outlines for experiments, and addresses and discussions given at the annual meeting at Madison, February 3–4, 1904.

Respectfully submitted,

R. A. MOORE,
Secretary.

TABLE OF CONTENTS.

OFFICERS, 1904.

President—A. L. STONE.....Madison
Vice President—LEWIS M. HATCH .....Oakfield
Secretary—R. A. MOORE.....Madison
Treasurer—P. A. DUKLETH.....R. D. 40, Mukwonago

COMMITTEES.

Program: Officers of the association.

Executive:
L. P. Martiny.....North Freedom
H. A. Donaldson.....Eau Claire
R. H. Poston.....Oconomowoc
H. J. Renk.....Sun Prairie
E. E. Jones.....Rockland
S. S. Mutch.....Jewett

Co-Operative Experiments:
Farm Crops.....R. A. Moore
Chemistry.....F. W. Woll
Dairying .....E. H. Farrington
Agricultural Physics.....A. R. Whitson
Animal Husbandry.....G. C. Humphrey

CONSTITUTION AND BY-LAWS.

CONSTITUTION.

ARTICLE I.—NAME.

This organization shall be known as the Wisconsin Agricultural Experiment Association.

ARTICLE II.—OBJECT.

The object of this association shall be to promote the agricultural interests of the state.

1st. By carrying on experiments and investigations that shall be beneficial to all parties interested in progressive farming;

2d. To form a more perfect union between the former and present students of the Wisconsin College of Agriculture, so as to enable them to act in unison for the betterment of rural pursuits in carrying on systematic experiments along the various lines of agriculture;

3d. By growing and disseminating among its constituency new varieties of farm seeds and plants;

4th. By sending literature bearing upon agricultural investigations to its membership, and

5th. By holding an annual meeting in order to report and discuss topics and experiments beneficial to the members of the association and those interested in progressive farming.

ARTICLE III.—MEMBERSHIP.

SECTION I. All former, present and future students and instructors of the Wisconsin College of Agriculture shall be entitled to become members of this association.

SEC. II. Honorary membership may be conferred upon any one interested in progressive agriculture by a majority vote at any annual or special meeting of the association.

ARTICLE IV.—DUES.

A fee of fifty cents shall be collected from each member annually.

ARTICLE V.—OFFICERS.

The officers of this association shall consist of a president, vice-president, secretary and treasurer, whose term of office shall be one year or until their successors are elected.

ARTICLE VI.—DUTIES OF OFFICERS.

SECTION I. It shall be the duty of the president to preside at all meetings of the society and enforce the observance of such rules and regulations as will be for the best interest of the organization; to appoint all regular committees as he may deem expedient for the welfare of the association.

SEC. II. In the absence of the president, the vice-president shall preside and perform all duties of the president.

SEC. III. It shall be the duty of the secretary to keep all records of the association; to report the results of all co-operative experiments carried on by its membership and the experiment station; plan the experimental work as far as possible for the members of the association, and labor for the welfare of the society in general.

SEC. IV. The treasurer shall collect fees, keep secure all funds of the association and pay out money upon the written order of the secretary signed by the president. He shall furnish bonds in the sum of two thousand dollars with two sureties, for the faithful performance of his duties.

ARTICLE VII.—AMENDMENTS.

This constitution may be amended at any annual meeting by a two-thirds vote of the members of the association present.

BY-LAWS.

ARTICLE I. The officers of this association shall be elected by ballot at the annual meeting.

ART. II. The president and secretary shall be ex-officio members of the executive committee.

ART. III. This association shall be governed by Robert's Rules of Order.

ART. IV. All members joining at the organization of this association shall be known as charter members.

ART. V. The time and place of the annual meeting shall be determined by the executive and program committees.

Constitution adopted and organization effected Feb. 22, 1901.

MEMBERSHIP, 1904.

Ackeret, J. J.....Medford.
Adams, H. C.....Sechlerville.
Aderhold, Herman F.....Urbana, Ill.
Ahrens, George A.....Mukwonago
Aldrich, H. E....Burlington, R. R. 21.
Alexander, Dr. A. S.....Madison.
Almon, Perry T.....Weyauwega.
Andreassen, A. L.....Bloomer.
Andrew, J. S.....Mt. Tabor.
Andrew, William R.....Livingston.
Athearn, S. J.....Oshkosh.
Atwood, M. L.....Rockford, Ill., R. 6.
Austin, W. B.....Janesville.
Baker, L. D.....Iron River, Mich.
Baker, F. E.....Whitehall, Ill.
Baker, E. D.....Whitehall, Ill.
Bale, Robert O.....Augusta, N. J.
Ball, Leroy C.....Monroe.
Bark, Ferdinand.....Wauwautosa.
Barkhausen, Ernest .....Thiensville.
Barlass, Robert .....Janesville.
Barron, R. E.....Platteville, R. R. 5.
Barton, Otto M.....Mount Vernon.
Batho, Lester.....Plum City.
Bathrick, H. R.....Hewitt.
Behrens, Bernard F. C.....Grafton.
Belda, William F.....De Forest.
Bell, George S.....Madison.
Benedict, A. M.....Mazomanie.
Bennett, Arthur F.....Pewaukee.
Bennett, Charles S.....Walworth.
Benson, Edward E..Mt. Horeb,R.R.69.
Bruhn, A.....Spring Green.
Beule, Elmore A.....Fox Lake.
Bewick, W. W.....Madison.
Beyer, Ira .....Mishicot.
Bickford, George H.....Livingston.
Biddick, H. E.....Livingston.
Biggar, T. S..Walkerville, Ont., Can.
Biglow, L. F.....Brooklyn
Biles, Alfred.....Porcupine.
Bilkey, Joseph.....Madison.
Bixby, Phil. T.....Appleton.
Blackman, Eugene.....West Bend.
Blanik, George F.....Algoma.
Boies, Phil R.....Marengo, Ill.
Bonnell, A. L.....Northfield, Minn.
Bonzelet, John P.....Eden.
Boss, S. J.....Oshkosh, R. R. 7.
Boss, U. C.....Oshkosh, R. R. 7.
Bourret, Floyd.....Livingston.
Bowden, Charles B.....Mauston.
Brekke, Alfred L.....Alban.
Brehm, Alvin.....Sheboygan, R. R. 4.
Brewer, Burt F.....Berlin.
Bristol, Abel C.....Oakfield.
Brunner, Martin.....Kellnersville.
Buehler, J. G.....Ithaca.
Bunker, H. W.....Clinton.
Bunting, O. H.....La Crosse.
Bussewitz, W. E.....Juneau.
Buzzell, Roy C.....Randolph.
Byrne, John J.....Appleton, R. R. 5.
Cairns, Everett A.....Mount Hope.
Carpenter, Howard.....Baraboo.
Carmody, P. J.....Mount Ida.
Cartwright, W. B.....Tangier, Ind.
Catt, Harry W.....Clintonville.
Cherovsky, Julian L..Kewaunee, R. 1.
Chetlain, L. A.....Galena, Ill.
Christenson, C. Alfred.....Walsh.
Christianson, O. A...Pleasant Prairie.
Christianson, Oscar .....Cambridge.
Church, G. S.....Allenville.
Clark, C. F.....Madison.
Clark, J. D.....Whitewater, R. R.
Clark, W. E.....Weyauwega.
Clausen, Reinhold .....Manitowoc.
Clausing, Adolph.....Bartel Sta.
Clow, A. D.....Mount Horeb.
Clendening, H. V...Bradwardine, Man.
Coburn, O. A.....Whitewater, R. D.

Cockerill, Hugh L.....Berlin.
Cole, James O.....Knapp.
Cole, W. B.....Pleasant Prairie.
Colenso, James E.....Madison.
Conant, Walter A.....Stockton, Cal.
Connell, Wesley F.....Colgate.
Conway, D. F.....Elroy.
Conway, John P.....Elroy.
Cornelius, Herman R....Belle Plaine.
Cowgill, D. L.....Doylestown.
Cramer, John J.....Marshfield.
Cranefield, F. .....Madison.
Cross, A. J. .....Allenville.
Dahl, R. M.....York.
Dale, Clarence H.....Soldier's Grove.
Dallenbach, Chris. .....Clintonville.
Dann, Frank E.....Clark, So. Dakota.
Davis, James .....Viroqua.
Davis, John F.....Barneveld.
Davis, LeRoy M.....Franksville.
Dawson, W. J. .....LaCrosse.
Dennison, Nicholas..Milwaukee, R. 10
Dettinger, W. F.....Mason City, Ia.
Dettwiler, A. J. .....Monroe.
Dickey, Meldrum...Green Bay, R. 7.
Dietrich, John.....Black River Falls.
Dille, Forrest G.....Oakfield.
Dineen, C. F.....Cedarburg.
Dixon, Darley .....Cuba.
Dodge, J. E.....Lowell, Mass.
Donaldson, E. A..Eau Claire, R. R. 3.
Donaldson, H. A.....Eau Claire.
Dreger, Emil L.....Madison, R. R. 7.
Drissen, P. J. .....Athens.
Dudleston, Claude .....LaValle.
Duecker, Herman J.....Kiel.
Dukleth, Peter A..Mukwonago, R. 40.
Eastman, Seth A....Sheboygan Falls.
Ebert, Francis E.....Tomah.
Eddy, Allen R.....Lancaster.
Edwards, William C.....Cambria.
Ehrhardt, Daniel .....Knowles.
Eisenmen, Fred .....Mishicot.
Elfers, David G.....Richmond, Ill.
Ellickson, Alfred C.....Madison.
Elliott, Lewis R.....River Falls.
Emery, George Q.....Stoughton.
Emery, Lyman J.....Oconomowoc.
Evans, Thomas H.....Wales.
Evert, Edward .....Pewaukee.
Farnam, Ernest.....Shiocton, R. 18.
Farrington, E. H., Prof., ...Madison.
Fawcett, L. S..1345 Mont. St., Chicago
Feathers, O. C.....Manawa, R. R. 1.
Feile, Rudolph A.....Kiel.
Fellenz, John .....Kewaskum.
Forsythe, John .....Oconomowoc.
Fox, Henry T.....Durand.
Frauenheim, Oscar....Random Lake.
Fredlund, Jules....Mt. Vernon, Wash.
Freeman, George A.....Sparta.
Fruit, Clyde E.....Arthur.
Fruit, Earl J.....Arthur.
Fruit, J. P. .....Arthur.
Funk, Walter L.....Honey Creek.
Gallagher, Michael M.....Elroy.
Garbers, August...La Crosse, R. R. 2.
Geller, H. W...Agr. Col. P. O., Mich.
Gerhardt, Walter .....Neillsville.
Ghastin, William J.....Twin Bluff.
Gillett, Rufus E.....Verona.
Gleason, Gilbert M.....Madison.
Glindinning, Harry L.....Shullsburg.
Goodell, Alfred, Jr. .....Madison.
Gordon, Roy .....Mineral Point.
Gould, John .....Hartford.
Grebe, Fred P.....Fox Lake.
Grengo, A. L.....Sussex.
Griswold, J. N. .....Stitzer.
Griswold, Theo. E.....Livingston.
Grist, H. C. .....Hayward.
Grove, John W. L.....Browntown.
Gruhle, William H....Barton, R. R. 1.
Guildford, W. S. .....Racine.
Gullickson, Charles E. .....Cushing.
Guptill, Lawrence R.....Auburn.
Gustafson, Theodore .....Lund.
Hamilton, Thomas S.....Westfield.
Hanchett, W. H. .....Sparta.
Hansen, H. T. .....Sawyer.
Hansen, Norman E.....Auburn.
Hanson, A. T.....City Point.
Hanson, H. T.....Camp Douglas.
Hanson, John H.....Luana, Iowa.
Hardt, Walter R.....Janesville.
Harland, Robert E....Cottage Grove.
Hartman, Andrew .....Alma.
Hartsough, A. L. .....So. Wayne.
Haseltine, E. W. .....Mazomanie.
Haskin, I. O.....Prairie du Sac.

Hass, H. A. .....Madison.
Hatch, James R.....Waupaca.
Hatch, Lewis M.....Oakfield.
Hegge, Evan A.....Pigeon Falls
Heid, William J.....Ft. Atkinson
Heike, Rudolph .....Tarrant.
Hendricks, Lewis E...Campbellsport.
Herbst, J. L. .....Sparta.
Hermanson, Herbert T.....Rio.
Hesselberg, Arthur .....Bangor.
Hetts, Gary .....Ft. Atkinson.
Haass, Otto .....Merton.
Hackett, Chas. .....Baraboo.
Hadden, G. A. .....Janesville.
Haevers, Martin .....Tonet.
Hager, Max H.....Prairie du Sac.
Hagestad, A. C. .....Ettrick.
Halbert, J. H. .....Augusta.
Halgrim, Henry .....Dodgeville.
Hetts, John .....Ft. Atkinson.
Hetzel, Peter A. .....Rubicon.
Heuer, E. F. .....Wautoma.
Hicken, A. B.....Waukesha, R. R. 7.
Higday, J. S. .....Evansville.
Hillier, H. B. .....Waunakee.
Hitchcock, H. R.....Pecatonica, Ill.
Holcomb, W. R..St. Bonifacius, Minn.
Holman, Ross E .....Waupaca.
Holzworth, R. B. .....Farmington.
Hometh, Charles .....Mount Sterling.
Houkom, Stephen .....Blair.
Howard, Arthur E. .....Whitewater.
Howard, Herbert M.....Fox Lake.
Howitt, Charles H. .....Randolph.
Howland, Howard H. .....Waupun.
Hoyem, Sigmund .....Eau Claire.
Hubbard, Sherman .....Evansville.
Hudson, Dwight .....Reedsburg.
Huebbe, Edgar .....Beloit.
Hulsether, Albert..Stoughton, R.R.45.
Humphrey, Geo. C., Prof., ...Madison.
Hundt, Peter A. .....Bangor.
Hutchinson, James W. .....Lodi.
Illian, W. L.....Adell, R. R. 19.
Imholt, B. A. .....Houlton.
Jackson, H. O. .....Cambridge.
Jacobson, Anton,..Buckingham, Iowa.
Jacobson, H. O..Cambridge, R. R. 38.
Jahn, Chas. .....Cream.
Jahnke, J. F. .....Pepin.
Jameson, W. G.....Appleton, R. R. 2.
Jaquish, James E.....Ithaca.
Jarr, Herman D.....Manitowoc.
Jeffrey, Harvey B...Menomonee Falls.
Jensen, Fred .....Waupaca, R. R. 3.
Jensen, J. F. .....Waupaca.
Johnson, Alfred .....Iola.
Johnson, Bert .....Viroqua.
Johnson, Billie .....Strongs Prairie.
Johnson, C. J. .....Blair.
Johnson, Frank R.....Appleton.
Johnson, H. W. .....Wiota.
Johnson, Kasper .....Blair.
Johnson, S.....Kilbourn, R. R. 2.
Jones, Albert.....Dousman, R. F. D.
Jones, C. E.....Dousman, R. F. D.
Jones, E. E. .....Rockland.
Joos, Frank...Fountain City, R. R. 1.
Jordalen, Clarence .....Stoughton.
Jorgensen, Edward .....Neenah.
Keenan, William M.....McFarland.
Keipper, Edward...Menomonee Falls.
Kendall, Myron....Waupaca, R. R. 3.
Kendall, V. S.....Waupaca, R. R. 3.
Kent, H. W. .....Rusk.
Kent, Joseph S. .....Rusk.
Keogh, Leuke F. .....Forestville.
Kerthals, August C.....Summit Lake.
Keys, James M.....Richland Center.
Kieffer, Michael .....Fredonia.
Kielsmeier, Ralph C. .....Hika.
Kilby, Otto W. .....Wheeler.
Kiley, Eugene F. .....Curran.
Kitchen, Joseph H. .....Eldorado.
Klovdahl, John .....Wittenberg.
Kluck, Roy E. .....Lena, Ill.
Kluck, F. E. .....Lena, Ill.
Knudtsen, Oscar .....Beloit.
Kohlwey, Otto F. .....Grafton.
Kolar, Frank J. .....Muscoda.
Koll, Charles A.....Eau Claire.
Kramer, H. F. .....Bloomer.
Krause, William A. .....Aztalan.
Kressin, Arthur E. .....Cedarburg.
Kubat, William .....Neilsville.
Kundert, Edward .....Monroe.
Lamb, James R. .....Janesville.
Larson, Arthur D...Waupaca, R. R. 4.

Larson, J. M.....Wautoma, R. R. 1.
Larson, W. B. .....Ogdensburg.
Lassell, Wallace .....Orfordville.
Lawrence, Floyd W. .....LaCrosse.
Leach, John M., Jr.....Stockbridge.
Lehman, William V. .....Neosho.
Lewellin, George C. .....Waterloo.
Liebe, John Jr.....Grand Rapids.
Linker, William J. .....Hartford.
Little, George D. .....Janesville.
Lloyd, Evan B. .....Cambria.
Logan, Ralph G. .....Madison, R. 6.
Longanecker, Elmer..Cerro Gordo, Ill.
Loomis, Charles W. .....Wauwatosa.
Lord, J. W.....Neenah, R. R. 8.
Lord, Karl W.....Chicago, Ill.
6146 Madison Ave.
Lothe, Herbert .....Stoughton.
Lovejoy, Hiram D.....West Salem.
Lyman, C. A.....Sun Prairie.
Lytle, John L.....Luana, Iowa.
Maas, William C .....Oostburg.
Mackie, E. E. .....Picketts.
Maddock, D. E.....Maddock, N. Dak.
Mader, Harvey F.....Evansville.
Main, A. G. .....Hortonville.
Main, Herbert S.....Ft. Atkinson.
Malde, O. G. .....Cranmoor.
Marck, Fred R. .....Athens.
Markey, William E. .....Madison.
Marsden, Riley .....Fennimore.
Martin, Otto .....Ripon.
Martiny, L. P.....No. Freedom.
Marty, Matthias .....Albany, R. R. 1.
May, E. D.....Berlin, R. R. 4.
Melville, David H.....Colgate.
Menn, Bennie .....Norwalk.
Meyer, A. J...Berthold, Col., R. R. 18.
Meyer, E. J. .....Tomah.
Miles, Ira D. .....Taylor.
Miller, Harvey H...Evansville, R.R.1.
Miller, I. L. .....Livingston.
Mills, Stephen .....Viroqua.
Minnich, Hugh.....Kasbeer, Ill.
Mitchell, James T.....Cottage Grove.
Moen, George O. .....Cambridge.
Moody, R. F.....Oshkosh, R. R. 5.
Moore, R. A., Prof. .....Madison.
Morris, George C. .....Ridgeway.
Mortimer, G. W. .....La Valle.
Moses, C. P.....Eau Claire.
Moyle, W. J.....Union Grove.
Muehleisen, Gottlieb .....Alma.
Muenster, Herman .....New Holstein.
Mulcahy, John W. .....Belmont.
Murphy, D. E.....Kewaunee, R. R. 1.
Mutch, Stuart S. .....Jewett.
McCarty, Edward H. ....Brownsville.
McCauley, Rex C. .....Osseo.
McConnell, Robert .....Tomah.
McClure, Mark.....Manhattan, Ill.
McGilvra, George B. .....Baraboo.
McLaren, W. P. .....Delavan.
McLees, Adam .....Viroqua.
McMillan, H. Neil .....Nero.
McNown, J. H. .....Mauston.
Nelson, A. M..... ...Spring Valley.
Nelson, Erwin .....Kaukauna.
Nelson, James .....Waupaca.
Nelson, Ole A. .....Cumberland.
Ness, Christopher E. .....Urne.
Nevens, C. H. .....Winnebago.
Newhouse, Charles L. .....Clinton.
Nicolaus, D. C.....Troy Center.
Nichols, Charles L.....Hebron, Ill.
Nichols, Vernon .....Walworth.
Nicolaus, C. A.....Troy Center.
Nelson, O. A. .....Madison.
Nye, Ernest J. .....Appleton.
Ogle, James L.....Urbana, Ill.
Olcson James P.....Ripon, R. R. 2.
Oleson, Otto W. .....Walsh.
Olsen, Edward.....Strumm, R. R. 1.
Olson, Herman A..Cambridge, R. R. 1
Oison, N. E....403 John Av., Superior.
Oliver, Albert .....Madison.
Osborne, William F. .....Cobb.
Osterday, E. G.....Woodford, R. R. 1.
Ovitt, Norman .....Blackcreek.
O'Keefe, M. . .Stevens Point, R. R. 1.
Pachernig, Anthony..Waccabuc, N. Y.
Paden, H. B.....Kasbeer, Ill.
Partridge, Harry C.....Cross Plains.
Patterson, William.....Glen Haven.
Pattison, Thomas J. .....Durand.
Paulson, John N. .....Manitowoc.
Peck, Leon F. .....Elroy.
Perkins, J. S. .....Hickory.

Peterson, Chas. A. .....Cambridge.
Peterson, Chas. A. .....Orange.
Phillips, Jesse .....Elizabeth, Ill.
Poellman, M. J. .....Granville.
Pope, Nat, Jr.....Waupaca, R. R. 3.
Portz, Albert .....Oshkosh, R. R. 5.
Post, Harry L. .....Sextonville.
Poston, R. H. .....Oconomowoc.
Powell, L. J. .....Hilbert, R. R. 1.
Preston, R. C....Lower Brule, S. Dak.
Purdy, W. N. .....Bangor.
Raichle, William .....Frenchville.
Rankin, Evert J...Templeton, R.R.20.
Rankin, W. D..Menomonee Falls,R.18.
Raven, John W. .....Bloomer.
Ray, Henry K. .....Kewaunee, Ill.
Redelings, Henry .....Marinette.
Reck, Joseph .....Neenah.
Rehbein, A. E....Manitowoc, R. R. 3.
Remington, A. .....Elk Mound.
Renk, Henry J.....Sun Prairie.
Renk, William F.....Sun Prairie.
Richards, W. B. .....Madison.
Richter, B. F.....Faribault, Minn.
Rietbrock, Fred .....Milwaukee.
Risum, Louis E. .....Brodhead.
Roberts, F. W. .....Woodworth.
Robertson, R. B. .....Tomah.
Roeckel, Joseph P. .....Stark.
Rogers, Fred.....Vulcan, Mich.
Rood, Minnick .....So. Wayne.
Rood, Ole C.....So. Wayne.
Rosenow, Arthur .....Oconomowoc.
Rosenow, Henry E. ....Oconomowoc.
Rosenow, Henry G. .....Montana.
Rosenow, Louis J. .....Montana.
Rowe, Leonard M.....Waupaca.
Rundell, Brian L. .....Livingston.
Rundell, Homer F.....Livingston.
Rundell, Homer L. .....Livingston.
Rustad, John.....Black River Falls.
Ruste, C. O.....Blue Mounds.
Ryall, Bryant R. .....Augusta.
Salter, Ray .....West Bend.
Savage, Albert .....Quincy, Fla.
Saxe, Arthur W.....Whitewater.
Schaefer, E. A.....Appleton, R. R. 1.
Schaefer, R. J.....Appleton, R. R. 1.
Schafer, C. H. D..Waukesha, R. R. 7.
Schafner, C. H. .....Duplainville.
Schellenger, R. .....Warren.
Scheid, F. L. .....Campbellsport.
Schnabel, Alfred .....Neillsville.
Schreiber, Robert C.....Fall River.
Schroeder, H. C. .....Madison.
Schroeder, F. C.....Washington, D. C.
Schumacher, H. C..Kewaunee, R.R.1.
Schwartz, J. A.....Troy Center.
Semb, T. A. .....Ranney.
Sette, O. E. .....Juneau.
Shape, O. J...Milwaukee, 239–25th St.
Sheldon, Benjamin F. .....Brandon.
Shultis, A. D. .....Waukesha.
Sizer, G. S.....Fond du Lac, R. R. 1.
Skalitzky, Frederick J...Sun Prairie.
Skowlund, James .....Marinette.
Slaby, Edward .....Kewaunee.
Slosser, G. B.....Black River Falls.
Slosser, J. A.....Black River Falls.
Smith, Clinton E. .....Orfordville.
Smith, Roy L.....Wawa, Pa.
Snuggerud, Helmer H. .....Holman.
Snyder, H. A. .....Brooklyn.
Snyder, R. B. .....Clinton.
Spaulding, C. F. .....Oconomowoc.
Spooner, Carleton .....Orange.
Stantorf, Walter H. .....Boscobel.
Starker, Charles.....Sun Prairie.
Stauffacher, A. J. .....Monroe.
Steele, Samuel H. .....Lodi.
Steffen, Charles .....Corliss.
Steidtmann, Edwin....Prairie du Sac.
Steiner, W. H. .....Brownsville.
Steinhoff, Walter J. .....Platteville.
Stevens, M. B. .....Jefferson.
Stewart, John .....Verona.
Steinstra, Samuel K.....Galena, Ill.
Stivaries, George A. .....Stitzer.
Stommel, Eugene .....Mayville.
Stone, Alden L. .....Madison.
Stone, H. A. .....Oregon.
Stonhouse, T. D..Neepawa, Glendale, Manitoba.
Strader, E. W. .....Augusta.
Strand, Oscar M.....Rice Lake.
Strande, Theodore A. .....Taylor.
Strange, M. D.....Grand Ledge, Mich.
Stroup, F. G.....Fond du Lac.

Suhr, Adolph A. .....Cochrane.
Swan, Leon.....Waupaca, Box 303.
Swenson, O. S. .....Nelsonville.
Taft, Vernon R. .....Whitewater.
Tallmadge, J. J..Milwaukee,69-33d St
Tanner, R. C..Harvard, Ill., R. F. D.
Teisberg, Samuel .....Stoughton.
Tellestrom, Elias .....Green Bay.
Theil, Alfred .....Viroqua.
Thieleke, Edwin A.....School Hill.
Thom, Edward G.....Milburn, Ill.
Thomas, Henry .....Wausaukee.
Thompson, George O...Mount Horeb.
Thompson, Melim, ...Mount Horeb.
Thompson, Theodore .....Curtiss.
Tillotson, H. A. .....Bristol.
Toepel, William H....Haven, R. R. 6.
Toole, William A. .....Baraboo.
Torrey, William E. .....Hebron.
Treat, P. S.....Edgewood, Col.
Treleven, Guy T. .....Omro.
Troeller, Jacob M. .....Rubicon.
Truesdale, Thomas S. ....Gillingham.
Tubbs, George P. .....Seymour.
Uehling, L. E. .....Afton.
Vandercook, R. I.Linden, Mich.,R.R.2.
Vater, Arthur .....Withee.
Voegeli, William .....Monroe.
Vogel, A. H. .....Shiocton.
Wagner, J. M..Union Center, R. R. 1.
Wahler, Adolph ....Woodford R. R. 1.
Waite, Earl L. .....Oshkosh.
Wallin, Joseph E. .....Atlas.
Walter, Andrew .....Oshkosh, R. D.
Warner, J. F.....Tempe, Arizona.
Watkins, H. A. .....Edmund.
Waterstreet, William...Spring Green.
Welton, Clarence.....Monroe, R. R. 3.
Wernick, William H. .....DeForest.
West, John B. .....Whitewater.
West, Robert B. .....Caledonia.
Weston, John .....Burnett Junction.
White, T. J. .....Vesper.
Whitson, A. R., Prof.....Madison.
Whittemore, Francis M.....Brandon.
Wiegand, O. R.....Cleveland, R. R. 1.
Wilkowski, Robert T. .....Mishicott.
Williams, A. R....Waukesha, R. R. 8.
Williams, David.....Mora, Minn.
Williams, D. T....Waukesha, R. R. 8.
Williams, Jesse E. .....Lancaster.
Williams, Melvin G. .....Potosi.
Williams, Ray .....Lancaster.
Williamson, A. B. .....Millville.
Winter, F. H. .....Tomah.
Wise, H. J. .....Platteville.
Wismer, Herman .....Larsen.
Woll, F. W Prof.....Madison.
Wolkow, Benjamin .....Rubicon.
Woodcock, Edward R. .....Collins.
Wrabetz, Frank .....Oconomowoc.
Wright, Marvin T. .....Waupun.
Wright, T. J. .....Mauston.
Wyatt, E. E. .....Tomah.
Young, Frederick T.....Gretna, Ill.
Zabel, Julius J. .....Deerfield.
Zahrt, F. H. .....Hortonville.
Zenz, Andrew .....Hurricane.
Zimmerman, Fred D. .....Edmund.

HONORARY MEMBERS.

Ames, W. L. .....Oregon.
Cary, C. P., Prof.....Madison.
Emery, J. Q., Prof.....Madison.
Harvey, L. D., Prof.....Menomonie.
Hays, W. M., Prof.....
St. Anthony Park, Minn.
Hitt, W. D., Hon.....Oakfield.
Hoard, W. D., Hon.....Ft. Atkinson.
Karel, L. A. Hon. .....Kewaunee.
Phillips, A. J.....West Salem.
Renk, Katherine .....Sun Prairie.
Toole, William .....Baraboo.
Whitmore, Mary .....Janesville.

PROGRAM OF THE THIRD ANNUAL MEETING

OF THE

WISCONSIN AGRICULTURAL EXPERIMENT ASSOCIATION.

The officers and members of the Association extend a cordial invitation to all interested in progressive farming to attend its meetings and take part in the general discussions.

PROGRAM.

Wednesday, February 3, 9 A. M.—Assembly Chamber, Capitol.

Annual Address ..... J. P. BONZELET

Report of Secretary ..... R. A. MOORE

Co-operative experiments with rape.

Rape as a Forage Plant for Sheep ..... H. J. RENK

Rape as a Forage Plant for Pigs ..... C. E. JONES

Discussion ..... H. F. KRAMER, W. E. EDWARDS, H. F. RUNDELL.

Co-operation of Farmers ..... W. H. HANCHETT

Co-operation of Students with Experiment Association ... G. A. FREEMAN

General Discussion.

Co-operative experiments treating seed grain to prevent smut .....

R. C. SCHREIBER, H. E. ROSENOW, H. O. JACOBSON, N. A. OLSON, E. L. DREGER, G. Q. EMERY.

General Discussion.

Wednesday, 2 o'clock P. M.— Assembly Chamber.

Veterinary and Live Stock Topics ..... DR. A. S. ALEXANDER

Growing Clover for Seed ..... J. H. MCNOWN

General Discussion.

Cutting Across Corners, or Ways and Means in Farm Economics, W. L. AMES

Seed Barley ..... J. D. CLARK

Opportunities for Short Course Students as Farm Managers.....R. H. POSTON
Summer Pasture for Growing Hogs.....L. P. MARTINY
A. L. BONNELL, H. C. PARTRIDGE.
General Discussion.
The Press as an Important Factor in Progressive Agriculture.....A. J. BILL

Wednesday, 7:30 P. M.—Assembly Chamber.

Joint Session of the Agricultural Experiment Association, the State Board of Agriculture and the Horticultural Society.

Music.....Short Course Orchestra
The Farmer's Daughter.....MISS ELLA MENN
Quartette No. 2.
Recitation.....MISS MARY WHITMORE
Vocal Solo.....W. J. MOYLE
Illustrated Lecture.....Professor K. C. DAVIS
Vocal Solo.....C. A. DUTTON
Trial Orchards.....A. J. PHILIPS

Thursday, Feb. 4, 8:30 A. M.—Assembly Chamber.

Business Meeting.
Election of Officers, Reports of Committees, etc.
Plan of Work for the Coming Year.
Division of Farm Crops.....R. A. MOORE
Division of Animal Husbandry.....G. C. HUMPHREY
Division of Agr. Physics.....A. R. WHITSON
Division of Chemistry.....F. W. WOLL
Division of Dairying.....E. H. FARRINGTON
Co-operative Experiments, Papers, Discussions, etc.
Benefits Derived from Local Experiment Work.....W. J. MOYLE
Swedish Oats.....E. A. DONALDSON
E. F. HEUER, JULIAN CHEROVSKY, J. P. BONZELET, G. A. FREEMAN, RUFUS GILLETTE.
General Discussion.
Growing Tobacco in Wisconsin.....T. S. BIGGAR
Growing Soy Beans in Wisconsin.....P. A. DUKLETH
J. ROY GORDON, W. ANDREWS.
General Discussion.

Thursday, 2 P. M.—Assembly Chamber.

Opportunities Afforded Short Course Students in the Agency Schools.....R. C. PRESTON

Relation of our Short Course Students to the County Fairs....
A. C. HAGESTAD

Alfalfa as a Forage Plant.....HON. W. D. HOARD

Growing Alfalfa in Wisconsin.....E. E. JONES

H. E. ROSENOW, C. R. SCHREIBER, DAVID WILLIAMS.

General Discussion.

Importance of Selecting Good Seed Grain for the Season's Crop,
G. C. J. SPOERRI

SECOND ANNUAL REPORT

OF THE

Wisconsin Agricultural Experiment Association

PRESIDENT'S ANNUAL ADDRESS.

J. P. BONZELET, EDEN.

Members of the Wisconsin Agricultural Experiment Association:—Owing to the absence of our worthy president the duty of presiding at this meeting has fallen to your vice-president who feels the burden of this arduous task. I sincerely hope you will bear with me in my attempt to render judgment in a just and impartial manner. Rest assured that the welfare of your association is the uppermost thought in mind, and I sincerely hope that the coming meeting will be the best in its history.

It is really surprising the wonderful strides made by our infant organization of a few years ago. From an association of a few members we have grown until now, we have nearly reached the 600 mark. The character of our work is attracting attention far and near and I feel that every state in the Union should have an organization founded upon similar lines to carry progressive agriculture to the very door of the farmer. This experimental work appeals to young and old in a way, that will prevent the life work of the farmer of the future from running in the old ruts of the past. We have reached that period in agricultural advancement when it calls for the united efforts of all interested in that

noble occupation to stand valiantly together and work for the common cause.

I feel our association has accomplished considerable in the past and I know we can do much for the betterment of ourselves and agriculture in general in the future.

I thank you.

REPORT OF THE SECRETARY OF THE WISCONSIN EXPERIMENT ASSOCIATION.

R. A. MOORE, MADISON.

Worthy Members of the Experiment Association:—Another year has rolled by since our last meeting and during this space of time much has been done in the way of pushing the work we have in hand and placing the importance of our line of effort before the public.

We have received just recognition from the state by the enactment of the following:

Bill, No. 189, A.

CHAPTER 157, LAWS, 1903.

An Act to provide for an annual appropriation to the Wisconsin Agricultural Experiment Association.

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 Agricultural Experiment Association out of any money in the treasury not otherwise appropriated, the sum of one thousand dollars annually.

Section 2. The money so appropriated shall be used in securing and testing new and improved varieties of seeds and plants, securing and testing fertilizers, studying the best methods of cultivating and

feeding crops and in general advancing the agricultural interests of the state.

Section 3. The secretary of the said Agricultural Experiment Association shall before June 30th of each year make a detailed statement, properly sworn to before a notary public, to the secretary of state, showing all the receipts and expenditures under the provisions of this act. Said association shall have prnted at the expense of the state, each year, by the state printer, 5,000 copies of an annual report of not over 200 pages, 1,000 to be bound in cloth.

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

Approved May 2, 1903. Published May 5, 1903.

We trust by the judicious use of the funds provided to emphasize progressive agriculture so that future legislatures and farmers in general will justify the action of the legislature of 1903.

Although our work is yet in its infancy and our association scarcely three years of age, yet the practical work we have in hand has appealed to the progressive farmers of the state.

Hundreds of inquiries have come to the office for our reports and outlines of experiments. These have been given out generously and many farmers of the state have followed, during the past year, methods outlined by our experiment association for growing grain and forage plants. One of the commendable features of the association work is the fact that we have reached the actual farmer in a plain and practical way in all counties of the state.

These essentially practical tests with grain and forage plants carried on in so many different localities of the state under the observation of neighboring farmers, have appealed to the farmer in a way that literature never could. We cannot, at the present time, measure the great good we are doing but hope to continually improve on the work in hand until the agriculture of Wisconsin will be materially modified through the selection of good seed, the introduction of important crops and the careful cultivation of the soil. While in the way of experimentation we have taken up work in various lines of agriculture, it seems from the reports received that attention on the part of the membership has nearly all been centered on the farm crops department. We are not surprised at this when we consider that the live stock in-

dustry and dairying have considerably out-stripped and reached a much higher degree of perfection than the growing of farm crops. Much attention has been given in the way of breeding choice breeds of cattle, horses, sheep and swine, but as yet very few have made much attempt to emphasize the growing of choice varieties of grain and forage plants.

The production of grain and forage plants and the improvement of live stock should go hand in hand and the former should be put on an equality at the soonest possible moment as the production of choice grain and forage plants will largely determine the excellence of our live stock industry.

OAT SMUT PREVENTION.

Reports on the oat smut prevention were received from 215 members and invariably we note the effectiveness of the formaldehyde treatment. Many of the members have treated barley using the same treatment recommended for oats with the exception of making the solution stronger; using one pint of formaldehyde to 20 gallons of water instead of one pint to 36 as recommended for oats.

ALFALFA.

From the reports on the alfalfa test we are able to summarize as follows:

Alfalfa will do well on high well drained porous soils. Where land is inclined to be weedy it seems preferable to sow with a nurse crop using about ½ the usual amount of oats or barley for the grain crop. Barley seems to make an excellent nurse crop for alfalfa as it rarely lodges when sown thin and ripens early so that it can be harvested in time to give the alfalfa sufficient time to grow at least one good crop the same season. The amount of moisture held near the surface in heavy clay soils is detrimental to the growth of alfalfa and land of that character should be used for different purposes. As far as we have been able to determine alfalfa develops bacteria-bearing nodules on its roots naturally in Wisconsin. For a feed all speak of it favorably. Three cuttings are usually obtained giving from 4 to 5 tons of cured hay per acre. It seems from the results obtained and the wide spread interest being taken in the growing of alfalfa that the association is warranted in pushing this line of work. Judgment should be used in securing good seed, in the preparation of the seed bed, and sowing on high well drained porous soils. Alfalfa should be cut at the first appearance of

blossoms as the next crop shoots up rapidly when cut at that stage and the quality of hay seems much finer and better. A fine surface coating of well-rotted manure spread on the ground immediately after seeding or the following fall will aid materially in getting a good stand. Do not pasture closely the first year or two after seeding. Always sow in the spring using at least 20 lbs. of seed per acre.

SWEDISH SELECT OATS.

One hundred members reported on growing Swedish Select oats (Wis. No. 4) in accordance with data given below.

Number of persons reporting	100
Number of acres sown	56,450
Number of bushels grown	23,705
Number of bushels for sale	11,940
Average No. bu. per A. of Swedish Select	44
Average No. bu. per A. other varieties	37.5

It seems from remarks and suggestions made in the many reports that the Swedish Select oats are especially adapted for the heavy clay and the worn out soils. The great root development makes them great drought resisters.

Some complaint has reached the office to the effect that on loose, rich prairie soils during wet seasons the growth of straw was so rank and the heads filled so heavily that a storm would readily carry them to the ground. It seems essential that a short strawed, heavy yielding variety be bred especially for the loose rich soils.

The following persons in Wisconsin have grown the Swedish Select oats during the past two years and can speak of their merits and may be able to supply actual farmers with a limited quantity of the seed:

Name of Grower.	Address.	County.
J. W. Stevenson	Rice Lake	Barron.
J. E. Donnely	Dobie	Barron.
John Knecht	Fountain City	Buffalo.
H. F. Kramer	Chippewa Falls	Chippewa, R. R. No. 5.
D. L. Cowgill	Doylestown	Columbia.
Chas. Rutter	Ferryville	Crawford.
Earl Gillespie	Kilbourn	Crawford.
Herman Olson	Cambridge	Dane.
R. A. Gillett	Fitchburg	Dane.
J. C. Latham	Syene	Dane.
Geo. Snyder	Middleton	Dane, R. R.
Renk Bros	Sun Prairie	Dane, R. R.
W. E. Bussewitz	Juneau	Dodge.
Edward Keogh	Algoma	Door.
H. W. Kent	Rusk	Dunn.
Theo. Isaacson	Menomonie	Dunn.
J. V. Langworthy	Augusta	Eau Claire.
Charles L. Hill	Rosendale	Fond du Lac.
E. E. McCormick	Lancaster	Grant.
D. Dixon	Cuba	Grant.
A. E. Barron	Cuba City	Grant.
E. D. May	Berlin	Green Lake.
H. O. Halgrim	Dodgeville	Iowa.
T. A. Strande	Taylor	Jackson.
H. A. Tillotson	Bristol	Kenosha.
Anton Cherovsky	Kewaunee	Kewaunee.
Geo. Erickson	Kewaunee	Kewaunee.
A. J. Moe	Midway	La Crosse.
Edward Benson	Blanchardville	La Fayette.
O. C. Rood	South Wayne	La Fayette.
Joseph Reich	E. Gibson	Manitowoc.
C. J. Hessel	Francis Creek	Manitowoc.
E. L. Newbury	Peshtigo	Marinette.
David Swan	Wauwatosa	Milwaukee.
Francis E. Ebert	Tomah	Monroe.
G. R. Downer	Appleton	Outagamie.
M. Dineen	Cedarburg	Ozaukee.
Theo. Gustafson	Stockholm	Pepin.
John E. Charley	Ellsworth	Pierce, R. R. No. 1.
G. E. Grover	Junction City	Portage.
O. H. Knutson	Beloit	Rock.
L. L. Olds	Clinton	Rock.
W. C. Bradley	Hudson	St. Croix.
Wilbur Cahoon	Baraboo	Sauk.
William Toepel	Haven	Sheboygan, R. R. No. 6
W. L. Illian	Adell	Sheboygan.
John Bjorge	Whitehall	Trempealeau.
S. Houkom	Blair	Trempealeau.
J. H. McLees	Viroqua	Vernon,
Harry Dunbar	Elkhorn	Walworth.
J. C. Gould	Hartford	Washington.
A. B. Hicken	Pewaukee	Waukesha.
Henry E. Rosenow	Waukesha	Waukesha.
Ferd Kieckheifer	Pewaukee	Waukesha.
A. D. Larson	Waupaca	Waupaca.
L. M. Rowe	Waupaca	Waupaca.
E. F. Heuer	Wautoma	Waushara.
R. F. Moody	Oshkosh	Winnebago.

SOY BEANS.

The reports received from members experimenting with soy beans seem to indicate that very little difficulty is experienced in growing and maturing the early varieties, but the problem of harvesting, threshing and feeding will need considerable attention before perfection is reached.

Several members having silos have grown soy beans using for seed 1-3 soy beans and 2-3 corn and planting in drills at the usual width for corn. No difficulty was experienced in cutting with harvester and putting in silo and we believe a better grade of silage was thus obtained as the soy-bean is very high in protein and would have the effect of making a more evenly balanced ration of the silage. Soy bean plants do not readily develop nodules on the roots unless the ground has been inoculated with soy bean bacteria. The Experiment Station can ship to members of the association earth from the soy bean plots with which to start the growth of nodules the first season.

RAPE.

The experiments carried out with rape seem to meet with much favor especially where it is sown in drills for sheep. Where sown broad-cast with grain crops a limited quantity of seed should be used (not to exceed 1 lb. per acre), otherwise the rape plants will grow so closely together as to materially check the growth of the grain crop. This is especially true during a wet season when sown on rich black soil. Where sown with a grain crop using a small amount of seed per acre much valuable feed can be secured for fall pasturage. Sheep and cattle thrive on rape.

For hog pasture it seems preferable to sow broadcast using about 8 lbs. of seed per acre and turn the hogs in when the rape is about one foot in height. Where rape has been left until it reaches the height of two feet before pasturing hogs it seems to act in a detrimental way. Some report that hogs will become sore, the skin assuming a chapped appearance. It seems quite conclusive that where hogs are pastured in a rank growth of rape that the dew and other moisture collected on the plants and retained there for some time, become quite bitter and hogs coming in contact with the same and having their bodies wet for several hours daily with this water, finally have their skins

become chapped and this may continue until it assumes a serious form. Unlike the ruminant, the hog has but a single stomach and can not be expected to consume large quantities of rape like the sheep and cow. Hogs that are kept on rape pasture should be fed a liberal grain ration.

CORN.

Realizing the importance of the corn crop we seem justified in putting forth considerable energy in the way of improving this cereal.

Acting in accordance with this impulse your secretary visited Iowa and Illinois, and for a month made a careful study of corn. From observations made it seems that by actively pushing this line of work to a high degree of perfection in Wisconsin, we can be the means of putting good seed corn and methods of growing the same before the farmers of the state in such a practical way that the increased yield will amount to several million dollars annually.

SOME HELPFUL HINTS IN CORN STUDY.

Students in the Wisconsin College of Agriculture are this year given regular work in the study of corn and henceforth this study will be required of all Short Course students.

As an aid to members of the Experiment Association, who will not have an opportunity to take up the systematic judging of corn, I will herewith give the score card used by the students in the College together with explanations and suggestions that may be helpful to those members of the Association who expect to emphasize corn improvement in Wisconsin.

OFFICIAL CORN SCORE CARD.

		1		2		3		4		5	
1 Trueness to Type or Breed characteristics	10										
2 Shapeof ear	10										
3 Color: a. Grain	5										
b. Cob	5										
4 Market Condition	10										
5 Tips	5										
6 Butts	5										
7 Kernels: a. Uniformity of	10										
b. Shape of	5										
8 Length of ear	10										
9 Circumference of Ear	5										
10 Space: a. Furrow between rows	5										
b. Space between kerne's at cob	5										
11 Proportion of Corn to Cob	10										
Total	100										

EXPLANATION OF POINTS IN CORN JUDGING.

1. *Trueness to Type or Breed Characteristics:* The ten ears of the sample should possess similar or like characteristics and should be true to the variety which they represent.
2. *Shape of Ear:* The shape of the ear should conform to variety type, tapering slightly from butt to tip, but approaching the cylindrical.
3. *Color: a. Grain; b. Cob.* Color of grain should be true to variety and free from mixture. White corn should have white cobs, yellow corn red cobs.
4. *Market Condition:* The ears should be sound, firm, well matured and free from mold, rot or injuries.
5. *Tips:* The tips of the ears should not be too tapering and should be well filled with regular uniform kernels.
6. *Butts:* The rows of kernels should extend in regular order over

the butt, leaving a deep impression when the shank is removed. Opened and swelled butts are objectionable.

7. *Kernels: a. Uniformity of; b. Shape of.* The kernels should be uniform in shape, size and color, and true to the variety type. The kernels should be so shaped that their edges touch from tip to crown. The tip portion of the kernel is the richest in protein and oil, and hence of the highest feeding value. For this reason the tip portion should be full and plump.
8. *Length of Ear:* Northern section 8 to 9 inches, central section 8¼ to 9¼ inches, southern section 8½ to 9½ inches. Long ears are objectionable because they usually have poor butts and tips, broad, shallow kernels, and hence a low percentage of corn to cob.
9. *Circumference of Ear:* Northern section 6 to 6½ inches, central section 6¼ to 6¾ inches, southern section 6½ to 7 inches.
10. *a. Furrow between rows; b. Space between furows at Cob.* The furrow between the rows of kernels should be small. Space between kernels near the cob is very objectionable.
11. *Proportion of corn to cob:* The proportion of corn to cob is determined by weight; depth of kernels, size of cob and maturity all affect the proportion.

RULES TO BE USED IN JUDGING.

1. *Length of Ear*—The deficiency and excess in length of all ears not conforming to the standard shall be added together, and for every inch thus obtained a cut of one point shall be made.

2. *Circumference of Ear*—The deficiency and excess in circumference of all ears not conforming to the standard shall be added together, and for every two inches thus obtained a cut of one point shall be made. Measure the circumference at one-third the distance from the butt to the tip of the ear.

3. *Proportion of Corn to Cob*—Per cent. of corn should be from 85 to 87. In determining the proportion of corn to cob, weigh and shell every alternate ear in the sample. Weigh the cobs and subtract from weight of ears, giving weight of corn. Divide the weight of corn by total weight of ears, which will give the per cent. of corn. For each per cent. short of standard, a one-point cut shall be made.

4. *Color of Corn and Cob*—A red cob in white corn, or a white cob in yellow corn, shall be cut at least two points. For one or two mixed kernels, a cut of one-fourth point, for four or more mixed

kernels a cut of one-half point shall be made. Kernels missing from the ear shall be counted as mixed. Difference in shade or color, as light or dark red, white or cream color, must be scored according to variety characteristics.

5. *Scoring Tips*—Where the full diameter of the cob is exposed, a cut of one point shall be made, and a proportionate cut as the cob is less exposed. Regularity of the rows near the tip and the shape and size of the kernels must also be considered in scoring tips.

6. *Scoring Butts*—If the kernels are uniform in size and extend over the butt in regular order, give full marking. Small and compressed or enlarged or open butts are objectionable, as are also those with flat, smooth, short kernels, and must be cut according to the judgment of the scorer.

7. Ten ears of corn constitute a sample for scoring.

WISCONSIN GRAIN CROPS.

G. C. JULIUS SPOERRI, SECRETARY GRAIN SHIPPERS' ASSOCIATION, MILWAUKEE.

Mr. President and Gentlemen:—In reading over the Constitution of the Wisconsin Agricultural Experiment Association I find that your organization has for its object the promotion of the agricultural interests in the state of Wisconsin. The word "agriculture" covers a large latitude and many subjects come properly within the scope of its meaning.

The Wisconsin Grain Shippers' Association is vitally interested in any matters which concern the grain crops of Wisconsin, and one of the objects of this association is to create and develop wherever possible, a deeper and more intense interest in the production of cereals within our states.

When therefore your secretary extended to me an invitation to address at this convention the members of the Wisconsin Agri-

cultural Experiment Association, it appealed to me very strongly and it occurred to me this would be a most opportune time to dwell upon that aspect of agriculture which has to do with the growing of cereals, considering that which shall increase the *quantity* and improve the *quality* of the crops.

Actuated by a desire to co-operate with the Wisconsin Experiment Station and your Association along the lines indicated, with the hope that our efforts will result in mutual benefit to producer, handler and consumer, I take pleasure in availing myself of this opportunity of addressing the gentlemen here assembled.

Before proceeding with my remarks permit me to pay my respects to the large body of men classed as "The American Farmer." I am not unmindful of the exalted position he occupies in the development of the affairs of this nation. In a very large measure the progress and prosperity of the country are dependent upon him. He contributes largely to the commercial activity and success of our mercantile and manufacturing industries and this nation can justly say:

"By Agriculture we thrive."

The Annual Report of Secretary Wilson of the Department of Agriculture at Washington presents some convincing statistics in this respect.

WISCONSIN'S FARMS.

According to latest U. S. census figures there are 169,795 farms in the state of Wisconsin comprising 19,862,727 acres. Eighty-seven per cent. of these farms are operated by the owners; 6 per cent. are worked by tenants who pay a cash rental; 7 per cent. are farmed by those who work on shares. This indeed is a very creditable showing. As a general rule, the aim of the farmer is not so much to bring his land up to a high pitch of productiveness as it is to make the best possible use of the ways and means at his disposal. Good farming consists in getting the highest possible profit from the land, year in and year out.

The modes of arranging and managing different farms must differ widely, according to varying local circumstances. Conditions may make it necessary for one farmer to engage in sheep-

raising, another cattle-grazing, another dairy-farming, another in the production of tobacco, potatoes, hay, or grain.

Wisconsin farmers are no doubt engaged in all of these different branches but the one which I wish to direct your attention to in particular is the production of grain, with special stress upon barley and oats.

BARLEY.

The interest in the cultivation of this cereal has greatly increased in the past decade. In some sections of the country the acreage has doubled. Seventy-five per cent. of the barley crop of the United States is grown within the borders of *six* states. There is considerable room for improvement in Wisconsin's rank as a barley producer.

Barley, however, is a very tender plant and is easily damaged at any stage of its growth. It is a crop that responds very quickly to a generous diet, yet when food is lacking, it languishes equally as rapidly. No grain is more affected by soil and cultivation, than barley. Heavy land, unless exceptionally well tilled, is unfit for barley. Light, rich, friable loam is best suited for this grain.

The earlier barley is sown the better and this crop has great merit in that its term of growth is short, that is, it matures in a shorter period of time than any other cereal. Barley must be sown at a dry time, for a wet or muddy seed-bed is sure to diminish the yield considerably. Being a shallow rooted plant, barley suffers severely from drought, while on the other hand an excess of rain would cause the crop to run into a strong growth of straw. To the superficial observer, the *character* of the *seed-bed* might appear of little moment but barley is unusually sensitive and the exercise of great care on this point is necessary. Let us suppose for instance that you figure to sow 100 acres of barley. Conditions are favorable and you sow 50 acres, when up comes a heavy rain. Now it will be much more prudent and profitable for you to stop sowing and allow the soil to get into good condition again, before sowing the remaining fifty acres.

Barley is classed as two-rowed, four-rowed and six-rowed according to the number of rows of kernels on each side. Wisconsin produces almost entirely six-rowed barley.

While barley may be used for many purposes the two principal ones are for "feeding" and "malting."

The production of a good malting barley of a superior character is most remunerative to the grower. The average price for this class of barley on present crop has been about 55 cents delivered at Milwaukee or Chicago.

Barley is preferred above other grain for making beer, for the reason that when "malted" it contains a larger proportion of certain unorganized ferments. The process of malting is carried out for the purpose of converting the starch in barley into sugar. The percentage of starch determines the proportion of sugar, and this, in turn, regulates the quantity of spirit.

The barley best adapted for malting purposes coming from Wisconsin is grown in the eastern part of the state, in the counties of Calumet, Ozaukee, Washington, Fond du Lac and Sheboygan. Wisconsin barley acreage for 1903 is estimated at 480,000 acres with an average yield of 29½ bushels per acre, which amounts to 13,800,000 bushels.

Another period in the cultivation of barley which requires the exercise of good judgment and great care, is the harvest time. In harvesting barley more care is requisite than with any other grain, and in bad seasons it is often found very difficult to save it. On account of the softness of its stem and the tendency of its ears to vegetate, barley is more apt to be injured and even destroyed by wet weather than any of the other cereals.

Should barley "grow" in the ear before cut it is rendered unfit for malting purposes. Barley intended for malting purposes should not be cut before it is "dead-ripe." Certain conditions are necessary to produce a good sample of barley that will please the malster. This period of cutting is a matter which materially effects the barley.

If weather can be depended on, barley, after cut, should lie two or three days before binding, during which time it should be turned once or twice as the exposure to sunshine produces a fine color and the grain becomes mellow. In this practice, however, great care must be used and no chances taken, for continued damp weather would discolor the entire crop. Unless climatic conditions are such that the above practice can be adopted with certain safety, it is best to shock the barley at once.

The carting of other grain should be stopped to allow the barley to be gotten in. This is one of the reasons why farmers

in eastern Wisconsin are so successful with their barley crops. Realizing the peculiarities of barley, they attend to it at harvest time *first*. They have found it profitable economy to erect barns in which to place the barley under cover as soon as harvested. This done, they then proceed to care for their other crops.

Barley that is stacked when dry, does not, as a rule, "heat," but precaution must be taken in this respect for such "heating" reduces the germinating power of the seed and hence affects the value for malting purposes. However, nature must be given ample time to perform her operations, and barley in the stack should be allowed to go through the "sweating" period before threshing.

Then in threshing barley by machine, special care should be taken in not allowing the awns to be cut too closely, as this also destroys the germinating value of the barley.

Seed barley should be plump and uniform in color and weight. Do not sow shriveled barley for in an unfavorable season the crop from such will be delicate and off color while plump seed throws up strong healthy stems capable of resisting inclement weather and in more congenial weather, pushing forth with renewed vigor and redoubled strength.

Previously we mentioned that in order for barley to best be adapted for malting purposes it should be developed to an excess, should possess a very thin and delicate skin and should contain an excessive quantity of starch. These conditions however frequently prevent such barley from being hardy so it does not then necessarily follow that the best malting barley would make the best seed barley. In some cases it is true, good malting barley being used for seed manages to go through its duties satisfactorily but the safer course is to take some of the tail-barley from a superior lot and use that for seed.

OATS.

It has often been said that oats will grow on almost any soil that can be ploughed and harrowed for the oat can struggle against greater difficulties than other grains. There is a great difference in the quantity of oats grown per acre, as well as in the quality.

Wisconsin's oat production is something like 95,000,000 bu. but this amount could be increased fully 15 per cent. if farmers

were not so indifferent to the smut question. The loss to Wisconsin farmers from this source is from four to five million dollars annually. But why are farmers so slow to put to a practical test information they have regarding the treatment of seed-oats for prevention of smut?

What is smut? Smut is a plant, but one very low in the scale of plant life, belonging to a class called "fungi" and as smuts get their food from other living plants they are termed "parasitic fungi."

The smuts which infect oats may be classed as "loose smut" and "covered smut." The one affects the oats more generally from without while the other secures a lodging place under the hull of the healthy kernels. Oats affected by the one are left with stalks bare and the other operating unseen within the husk, in many cases the presence of the smut is undetected.

Smut in appearance is a dusty, powder-like, blackish brown mass of minute spores or seeds.

When oats are sown in spring that are infected with smut either under the hull or on the outside, the spores germinate and send slender threads into the young oat plant.

The smut threads grow on the inside of the oat stalk so that there is no external evidence of the presence of the smut plant. When the oats begin to head out, the smut threads penetrate the oat kernel.

At harvest time the oats affected by loose smut, are often entirely bare, the smut being blown away by the wind while the covered smut destroys only the kernels and leaves the outer chaff unaffected. When the husk is cut upen however, a mass of smut is found in place of the kernel. There are millions of these smut spores in each kernel.

The farmer is very apt to underestimate the loss which he sustains from smut especially on account of this hidden form and perhaps not one in a thousand has an adequate idea of the extent of its ravages.

Now seed oats can be treated and successfully too, for the prevention of smut. The treatment in no way affects the germinating power of the seed and does absolutely destroy the smut spores. The value of treating seed oats for smut has passed the experimental stage. The presence of smut in oats is prevalent throughout the state and the treatment of seed oats should become a general practice.

The process of treating seed oats is not difficult or expensive but requires some time.

Make a solution composed of one pint of 40 per cent. formaldehyde to every thirty-five gallons of water and stir thoroughly. This mixture can be placed in a barrel or tank. All that is required is to place the oats in a gunny sack and place in the solution taking pains to see that the oats are *completely submerged* for ten or fifteen minutes. Then remove the sack from the barrel allowing it to drain, in order to save the solution. Empty the oats on a platform to dry and repeat the process until all is treated. It might be well to shovel the treated oats over at intervals to permit of them being thoroughly dried, otherwise if the oats are damp some difficulty may be experienced in sowing with drill. If sown when damp the seeder or drill should be set so that it will sow about one bushel more per acre than when sowing dry oats.

A solution made from one pint of the formaldehyde will serve for treating forty bushels. Of course if a large quantity of seed oats is to be treated several barrels should be used thus facilitating the work. It is well to have plenty of the solution as the time saved more than repays the extra expense.

SEEDS.

In no feature of farm practice is niggardly economy or lack of proper attention more productive of disappointment and loss than in the failure to provide proper seed for sowing. It is universally recognized by agriculturists that the use of *poor seed* causes a loss of millions of dollars annually either directly or indirectly to the American farmer.

On the other hand, no department of farm work yields more beneficial results than the careful and intelligent selection of *good seed* for sowing. Too much emphasis cannot be laid on this point for the production and selection of good seed is as essential to continued success in agriculture as good soil or careful cultivation.

Cereal plants develop all their buds into branches, run them into ears and exhaust them in grain production, therefore the chief object in the growth of cereals is to obtain the grain. The

larger the proportion of living seed true to kind, the greater the chances of a perfect stand and a normal and healthy growth of crop. By careful selection and breeding, improved varieties of the different kinds of cereals have been developed.

The term "good seed" implies three things:

Purity—Freedom from foreign matter, as dirt, dust, weed-seed, chaff, etc.

Vitality—Capacity for growing under favorable conditions, that is, mature seed capable of germinating.

Genuineness—Trueness to type, which depends upon age, size, weight and smell.

A seed is said to have "vital" power when it can pass through that phase of growth called germination. As a rule seed more than one year old is less likely to germinate than fresh seed. The loss of vitality is gradual though more rapid in unripe seed than in well ripened seed. Then too, the larger and heavier seeds die more slowly than the smaller and lighter ones.

We have made mention that by breeding, improved varieties of seeds have been developed, but the natural tendency of the plant even under favorable conditions is to go back to its original and inferior state. One of the principal sources of this deterioration is "in-breeding." Where the same grain is raised year after year on the same place it is almost sure to suffer a loss of vigor if not of quality. Usually this may be remedied by the introduction of fresh seed.

The great bulk of the seed of the cereals is undoubtedly grown in the locality where it is to be used, the required amount for seeding being reserved from each crop, year after year.

From reading the Morrill and Hatch bills as originally introduced and passed, I learn that they provided for the establishment and endowment of Agricultural Colleges, the office of which shall be to investigate phenomena connected with farm life and the operations of farming and the dissemination among the people of useful information respecting agriculture and the mechanical arts.

In as much as your time is fully occupied, you cannot personally inquire into the whys and wherefores of things. It is just in this respect that you are entitled to the benefits of scientific research made by your Agricultural College and Experiment Station.

Every farmer should take advantage of the assistance to be had in this direction. The secretary of your association is no doubt in a position at times to give you very valuable information and you should not hesitate to communicate with him. If there are any questions which perplex you in regard to the best methods to pursue in the production of cereals or it is not clear to you just how seed oats should be treated for smut, write your secretary and seek his advice. Many points which may to you appear very difficult, may be made very plain by him and I am sure Mr. Moore is prepared at all times to render you such service. There must be a certain confidence both expressed and implied between the members of this association in order to obtain the best results and to create the greatest degree of interest in matters in which you all are vitally interested.

With this, I shall conclude my remarks believing that each and every one of you will readily understand that the exercise of great care in the selection of *good seed grain* is a matter of paramount importance.

THE PRESS AS AN IMPORTANT FACTOR IN PROGRESSIVE AGRICULTURE.

A. J. BILL, AGRICULTURAL EDITOR OF THE BLOOMINGTON (ILL.) PANTAGRAPH.

I take it "the press" means the agricultural press, the newspaper and all periodical literature. The press is the world's herald of ideas and ideals. Wherever it is desired to proclaim ideas and lead on toward ideals, there the press has such a work as no other agency can perform. Progressive agriculture has much to do with both ideas and ideals.

WEAKNESS OF ONLY HEARING.

A speaker's words fall on your ear in rapid succession; you can scarcely gather them all; you cannot hold for five minutes

the ones in your grasp; you miss the key word of a sentence; the very figures you want most slip from memory and shiver like glass.

Your mind vibrates with the speaker and is wonderfully illumined as his living sentences roll on. You carry away something of the impression, perhaps for all time, but the words unrecorded go almost as fast as they come; evaporate like the dew of a summer morning. You wake from the dream when his voice ceases. How much of it can you repeat to your friend at the end of an hour?

You do well if you catch a few of the principal ideas. The form of the words and their magical spell are broken forever. Several links in the chain are gone. You cannot tell for sure whether he said it this way or that. You are confused; you misunderstand; but you cannot go back over the sentences, weigh their meaning and untangle the thought. Much of what is said you cannot use or apply because you have forgotten the exact or the full statement.

Witness Lincoln's "lost speech," when the flood of great ideas carried Editor Medill off his feet and he forgot to write the words; nobody could recall them.

ADVANTAGES OF THE WRITTEN RECORD.

Here comes in the miracle of the press, and gives you in cold black and white just what was said—as near as the reporter gets it. You may sift out the ideas, released from the spell of the speaker, view them at leisure from any standpoint; make them stand or fall in the court of reason or experience; apply if you will the exact recipe, or save it for any future use. How much of this meeting can you preserve in any definite way without the record? The press may tell you tomorrow or next week more of it than you hear and far more than you will carry away. Fortunate if it doesn't tell you more than was said! Like the lightning stenographer who came out several words ahead of the speaker! Be grateful that the press leaves out so much that you didn't care to hear.

MULTIPLIES THE AUDIENCE.

The actual audience may be fifty or five hundred; but the press, with the deafening clatter and dizzy whirr of its revolu-

tions, extends the circle to fifty thousand or five million within a few hours.

But a few from a limited territory get to the meeting, but the press gets the meeting to all the people. The very men you wanted present may stay away, but they cannot escape the newspaper, the journal and the magazine. Very important ideas and movements are originated in small gatherings of big men; but these ideas are made powerful and far-reaching by the press. Without the press the agricultural organizations would be shorn of much of their strength and influence.

THE POWER OF REPETITION.

An Indian medicine troup came to town. After every round of laughs a ready and graceful speaker set forth the marvelous power of his nostrum. But the people didn't care to listen, and would hardly look at the medicine. But he lost no chance to enlighten the audience and his confidence was unshaken. I was sorry for him and thought it a pity to waste such earnest effort, but before the week was out I was more sorry for the audience. They drove in from miles away and many individuals bought six bottles for $5. The outfit took hundreds of dollars from that little village. It was to me a great object lesson on the power of artful repetition. Probably you recall similar instances.

IT WORKS, ALSO, WITH BETTER THINGS.

Now if human nature can be so impressed with the lawyer eloquence of a quack doctor within a few evenings, will it not finally respond to the truth? When that truth is spread upon an attractive page and comes under one's eye every week or day in the year? It does respond, consciously or unconsciously, willingly or unwillingly. If you read the truth it will grow upon you. You cannot get away from it. The very head lines will convict you of guilt. You become aware that many people —some of whom you know and respect—are interested in the given subject and acting upon the ideas set forth. Finally you are forced to admit—though you may not formulate it even to yourself—the evidence of results.

There is the power of magic in that quiet, unobstrusive line of type. It resents neither your anger nor indifference. You

may throw it down or burn it up, but there it is before you again next day, and it is before the whole world and they are talking about it. The press is precept upon precept, line upon line, here a little and there a little, and altogether a very great force in your thought and life—if you think and live—as sure as the sun shines, for it is built to carry out a great pedagogic principle.

Your men and your meetings may come and may go—with long intervals between—but the editor goes on forever. You throw him out a handful of texts in winter, and he preaches sermons all summer. With fresh shoulders to the wheel and hearty hurrahs you start the load, but the editor's plodding drudgery moves it on, down hill and up hill, day and night.

POWER OF PUBLICITY.

In an Illinois city about the size of your capital it was suspected that the quality of the milk sold was not up to the standard. Five reputable physicians acting in connection with the city council privately secured ten samples of milk as it was delivered to the homes of patrons by different milkmen; analyzed the milk and made an itemized report of what they found in each sample, naming the seller and explaining the findings. They reported formaldehyde in two samples and found the butter fat as low as 1½ to 2½ per cent. in a few instances. This complete report, over the signatures of the physicians, was published with the city council proceedings in the morning paper. The result was a sensation, and a sudden improvement in the quality of the milk. In overdoing their defense one milk firm disclosed unsanitary conditions of their plant, which were soon improved. The simple and immediate effectiveness of this publicity was far better and cheaper than uncertain court proceedings or even big fines.

We seldom stop to consider the mighty weight of decisions in the supreme court of public opinion or trace out their practical transformation of every day life, and the editor is prominent among those who preside in this court. There may be almost as much chaff and error as at any other bar of justice. But verdicts are handed in occasionally, and they may mold the destiny of not one life but a thousand, and may fix the fate of a cause instead of a prisoner. The labor unions and the

responsibility for the Iroquois disaster are more recent suits in this court. Often a newspaper is stronger than the whole police force in reforming or improving conditions.

The secret of this great power lies in the intelligent and righteous judgment of men and women when given the correct data and thought. It is the narrow or fraudulent scheme, the unworthy cause, that is afraid of the reporter. The more a good thing is known and discussed the better it appears and the stronger sanction it receives.

SOMETHING TO REPORT.

The press is not to make news but to tell news; not to create agriculture or theories of agriculture, but to reflect and advocate the best things in agriculture, the things you do and strive for. Stop your doing and the press is soon done. It gathers the life and the agriculture that is, and ever looks to others for the basis and material of its work. This is yours to furnish.

THE EDITOR AND THE FARMER.

From your side, you must take the editor as he is. He is trying to edit just as you are trying to farm or teach farming—the best he can under the circumstances. He has his own ideas, and he runs the paper. If he is to do you and your cause any good you must impress him agreeably and conform to his plan. For this reason you ought to find out his attitude, know his wishes, and let him know that you are willing to help him get the news about your business. His money and reputation and ideas and all his earthly interests and tastes are wrapped up in that paper, and you can neither question or fathom the rules or accidents that may shut you out of his columns. Because you have failed with him once or twice don't jump to the conclusion that he does not want any good item that you can give him. If possible find out what was the matter. Try again and above all try to make your trial fit the conditions, his conditions. The editor as a rule doesn't want your items after they have ceased to be news. Get them to him the first minute possible after the events happen. Sometimes you can get them to him before they happen. He wants the plainest, shortest and most direct statement of the facts, with due stress on the features.

THE FACTORS YOU CONTROL.

Why am I saying all this? Assuredly not to ask you to give something for nothing. If I were talking to editors I would present a quite different side of the question, but I am here indicating some factors that are under *your* control, the things that *you* can do—if you are devoted enough to the cause of progressive agriculture. Difficulties? Unreasonable or indifferent editors? Certainly. But what of that? You haven't succeeded in your work thus far in life by avoiding all the hard and complicated tasks. The time is ripe and the door open as never before to get agriculture in the press. There are a great and increasing number of editors who will welcome and use your items. In many sections it is getting to be the popular thing. There the problem is to make it so good and sensible that the service will not die out as a fad. It is well not to overdo the matter of "blowing your own horn," but don't let a real or false modesty blind your eyes to what you, as progressive agriculturists, owe to your cause, and to the farming public, and to your own sincere desire to disseminate the good things that you have proven. And you can adapt the matter to your own sense of propriety. You can do more than wish that the press would take up your matters; you can encourage and help the press to do so. No line of effort will bring better results; no investment pay better. Try this with the big press, the little press, the local press, the distant press; with the agricultural press, the news press and the magazine. If necessary press the press, but do it gently and gracefully.

It is wonderful how easily the press doors open to a live man who is doing large and worthy things, and who takes pains to accommodate the press and uses printer's ink freely himself. Witness the case of County Superintendent O. J. Kern of Illinois and his various school improvements, school gardens and school consolidation in the land of the Winnebagoes. Big men and little men, and the busiest of men, in other callings and spheres of life cater to the press, at no little sacrifice, and profit by it. Why should not the farmer?

Of course highest success in this will come only with unselfish fidelity to your side of the contract. You must prove to the editor that you will keep your promise, that you will get

for him or help him to get the items that *he* wants as well as what *you* want published; that you will be sincere and reasonable and not cause him to get "scooped." The last is the unpardonable sin in dealing with the press.

WHAT MIGHT BE DONE.

How many farmers' institutes and other gatherings of farmers are set forth as they should be in the local press, both before and after the meetings. Is the program published throughout the whole territory? Is special attention directed to its best features? Is it told who the strongest speakers are? Are special reasons set forth why farmers should attend? Are special letters and calls written through the press by the officers, over their signatures? Is this all done in time, and done as well, as uniquely, as attractively, as "fetchingly" as the gray matter of some good leader's brain can invent?

When the meeting is on, is every provision made for the press, including an honest welcome and sensible, efficient help in getting items? One who is acquainted with the speakers and themes and audience can greatly assist the reporters.

I am convinced that in some agricultural gatherings it would pay well to maintain a press bureau. Have somebody, with the necessary helpers, get up the news and distribute it where it will be received. How the influence of every farm gathering could be extended if it were made easy for every paper in that region to give a good account of the proceedings. This is hard work and needs a systematic plan and preparation several days or weeks in advance, particularly in getting in touch with the papers you would serve and finding out what they would take, but it would be a very interesting education to the one who undertakes it.

If the press is important to progressive agriculture, why shouldn't progressive agriculture use the press? If the press doesn't come to you go to the press. Go to it intelligently, persistently, progressively. There is no doubt that such means as are hinted at here would get more agricultural matter in the press, get it in more of the papers and have it in better shape. And not the meetings only; there are many papers that would be glad to get good items of crop yields, special methods that have brought success, experiments, farm management, figures

of cost and profit, timely reports of special conditions. There is news, the best of news, in all of these, and the press wants the news while it is news, and your neighbors, far and near, want the news of your farm or agricultural work, just as you want to know what they are doing. Use the press, help the press, educate the press. The end warrants no little thought and effort in this direction. If there were time a great deal might be said about the press as a connecting link between the agriculturist and the legislature. You cannot be in too close touch with the press when the time comes for getting the much needed appropriation.

THE PRESS AND THE BOOK.

Without a book report much of the work of a big agricultural organization is lost. But it should not be thought that this book, coming out four to fourteen months after the annual meeting, competes with or takes the place of the press report. The press gets the matter while it is news and there is fresh interest in it. The permanent report comes out after much of the event is forgotten, and it is impossible to revive the interest as it was at first. The press report is short and is administered in broken doses at several intervals. The book report is long and comes in one big piece. The press report generally deals in features and is set off by attractive headings. The permanent report is often a wilderness of straight reading matter with the good and the poor all thrown together without distinguishing between them or analyzing or heading the features for hurried readers who care for only certain things. The book goes to a few and chiefly to those already interested in its contents. The press report goes everywhere to everybody and sows your seed in new fields. Intrudes even where it is scarcely welcome and performs its brief mission where a big formal document would not be read. There is no clash of interest between the two; there is room and demand for both; the press will make a way and a welcome for your book, and lead to its being called for and read.

THREE HINDRANCES.

What are the things that keep progressive agriculture out of the newspaper or limit the space given to it? The editor doesn't

see the demand for it. Agricultural items are not so easy to get as town news. He doesn't know the subject any better than some of us know base ball, and finds it difficult to write intelligently about agricultural matters unless some one practically dictates the form of the item.

Can you think of some way to change these conditions? Can you do anything to show the editor there is a demand for agricultural matter in his paper, and that when given it is appreciated. Don't you think a dozen or so gracefully written letters, or personal inquiries or commendations would give him a better and more favorable idea of your view? It is a greatly appreciated thing by most editors to have good items written out for them and sent in or brought in.

WHAT HAS BEEN DONE.

Think of the substantial improvement in the agricultural press the past ten years. Think of the Review of Reviews, the World's Work, Success, the Saturday Evening Post, the Youth's Companion and many other magazines and high class papers giving agriculture a frequent or occasional place in their columns. Think of the several big city dailies and the scores of smaller newspapers throughout the country that have taken on agriculture as a regular feature. Think of such an artistic and high-priced publication as "Country Life in America" becoming a financial success almost from the start. And whom do you think are its chief patrons? School teachers. In handling exchanges I find that good agricultural items are copied from one paper to many others, thus increasing the dissemination and showing that the editor appreciates a good thing when he sees it. All this is barely a hint of the rapid progress of the press in representing progressive agriculture. To one who has watched its growth even for five years it seems a transformation of the press. It is ours to take wise advantage of this open door and show our appreciation of it. And there is ample evidence that the press has thus really helped agriculture.

THE ADVERTISING SIDE.

This whole paper might have been devoted to another phase of the question—that of advertising. Through the magazine

and newspaper advertisements the public is educated concerning almost every article that is manufactured—and concerning very few products as they come from the agricultural producer. Beautiful illustrations and catchingly worded sentences set forth the claims and brand and quality of the article, tell you where to get it and what it costs. Suppose cheese and apples and beef and butter were given as much space and thought, wouldn't it educate the consumers and increase the demand? With agricultural products graded to a standard, that standard made known and maintained, and the producer's brand on the goods, trade in those things is bound to increase. It is because the customer doesn't know what to call for, and isn't sure of getting it when he does call for it, that he buys less of farm products.

DISSEMINATION DOESN'T KEEP UP.

Dr. Frank H. Hall, special farm institute instructor in Illinois, found by actual vote in a great many county institutes of that state, that very few of those present had read the bulletins of the Illinois experiment station or knew of the important farm investigations which in some instances had been conducted very near them. And he concluded that dissemination is not keeping pace with investigation in agriculture, and made a very prominent point of this in his address to the Live Stock Breeders last week at the University of Illinois. This condition is by no means confined to Illinois. Now the press can be and should be used as a mighty factor in the dissemination of the results of agricultural investigation. Both the editors and the agricultural people have a big responsibility in this.

A DISTINCT FIELD.

Dean Davenport of the Illinois College of Agriculture in an address to the Illinois Agricultural Editors last October expressed the following ideas: The press has a distinct field that cannot be filled by the agricultural bulletin, the college man or the agricultural organization. The bulletin is published but once, and it needs the reiteration of the press to bring its ideas home to the people. The professor can point the right way but he cannot over and over urge the people to adopt it, as can the press. The organization meets annually or at long intervals;

the press visits the people every week or month. There is no other known way but that of the press to keep a matter before the people until it is adopted in their practice. Then the press is the place (and will be more than ever in the future) to "thresh out," thoroughly discuss and settle agricultural problems.

CUTTING CROSS CORNERS ON THE FARM, OR WAYS AND MEANS IN FARM ECONOMY.

W. L. AMES, OREGON, DANE COUNTY.

Young men of the agricultural college, it gives me pleasure to be permitted to briefly address you. I come to you not as a theorist but as one whose hands are familiar with the fork handle, the spade, the axe helve and the reins of the workteam, and as "necessity is the mother of invention," so scarcity of help in recent past years is and has been the root of many of my practices, a few of which I shall call your attention to in the brief time allotted to me in your program schedule.

I remind you at the outset, that I consider the advantages you enjoy in this "Agricultural Short Course" one of the most advantageous cross corners that you will ever experience or be able to cut.

GOOD AUTHORITY.

The authority that you have listened to in this course is of the best. The world wide reputation acquired by our beloved and honored Prof. Henry is not only a great credit to himself, but an honor to the state of Wisconsin. A few years ago it was my privilege to attend a National Agricultural Convention at Fort Worth, Texas, at which Prof. Henry and Ex-Governor Hoard were both active participants. During the time of the convention the Texas dairymen succeeded in engaging the attentions and services of these two men for an hour or more on their favorite themes of study, and if ever a body of men absorbed with wide open mouths the utterances of others, those

dairymen absorbed the expressed thoughts of those two distinguished lecturers. They listened to good authority.

HANDLING SHOCK CORN.

Taking up the year's farm work at about the present time (February 1st) we find yet considerable shock corn standing in the field. Up to about this time a horse may be used to good advantage in loosening the shock from the ground. Attach him with whipple tree to about a 15 foot stout rope with chain hook at the other end, proceed down the row of shocks, stopping at each long enough to throw the hook-end of the rope around the shock two-thirds the way up from the ground and hook the hook over the main rope. Start the horse, the rope will tighten and the shock will pull over. Loosen only an acre or so at a time, as may be needed. An acre may be thus loosened in a half hour or less.

GOOD HORSES.

But a good horse is needed or the operator may lose his temper, which again reminds us that good horses are marked essentials to successful and possibly pleasurable farming throughout. And what do I mean by a good horse? First of all reliability. One that will do, if required, to the utmost of his ability, and do it over and over again if asked to by a considerate owner or driver. Not one that is in the air a portion of the time or that would leave the driver at every drop of the reins. For draft work draft horses, light work or driving the medium and nimble horse. I use about seven or eight horses of which at least three must be drafters for plow, disk, binder and the like. My three double-furrow-plow horses, weighing 5,000 lbs., would actually handle that tool alone but for turning corners and setting plow in and out of the ground. The day is past of two-horse teams. Where three or more can practically be used, economy demands that they must be.

SPRING'S WORK

Spring work is the front door to the farm year. As this important season draws near, have every preparation made that can possibly be. Available manure removed, the year's wood

provided and prepared, every tool in repair, seed cleaned, every preparation made for treating the seed oats for smut prevention (The methods prescribed by the Experiment Station are reliable and a success), corn stalks or stubs crushed, the horses will thank you for it when they come to plowing, etc. Our so-called seed oats must invariably contain from a fifth to a fourth of wheat, we like it best for all purposes for which we use oats on the farm; for horses, cattle, calves, sheep and hogs, and we thereby raise an excellent substitute for so-called mill feeds and know of its purity. It also assists the crop to stand up when nearing harvest time. We almost invariably sow grass and clover seeds with all small grains, and quite regularly rape seed at the rate of a pound or more to the acre.

Pity the stupidity of the farmer who yet plows round and round his whole field, always throwing the furrows and top soil out, to nourish the surrounding old rail or wire fence. Evidences of such historic stupidity are plainly manifest yet in many a Wisconsin field.

GOOD TOOLS

Good tools are also an important element in up-to-date farming and second only to good horses. I prize the double-furrow plow as much in spring's work as I do the binder in harvest time. With it one man and three good horses will plow six acres a day, which counts well, and at minimum expense in precious seeding time. A good wide, three-section drag that will cover 40 acres in a half day is equally an essential. If, in the preparation of a seed bed, the disk and drag are both to be used before sowing or planting, attach a section of drag to the rear of the disk harrow by means of a chain, and with the three good horses one driver will easily handle both. My good man and I recently thus pleasantly fitted and planted 50 acres of corn in three days. Observing neighbors admitted that "they had not thought of that before." As to the gang plow on stony land. While our land is not absolutely free from stones, it is comparatively so; but the gang plow is a tool that never should be rushed by fast driving. Its appropriate gait is a slow but steady one, hence it can be advantageously used on much more stony ground than ours. On my drill box cover, and also on my drag I always have a shallow box attached in which I can carry easily a small stone or two from the middle of the field to the fence if I should

find one or more. By this means, practiced for years, very few such are to be found in our cultivated fields, and when we want a few stones, we know where to look for them.

GARDEN AND FARM ORCHARD.

The former is a necessity, and the latter an essential to a good farm home. The man who denies either of the above propositions, I consider neither fully realizes what a good farm home is, nor deserves one. A man once said to me in a public agricultural convention in answer to my above proposition, "Away with your farm orchard. I will plant the same ground to tobacco and receive for the crop enough money to buy fruit for the whole neighborhood." In reply I would say that I would rather my one little son would know the virtues of one good appletree than the virtues of all the tobacco that was ever grown. Pity the parents and especially the mothers whose prayer must essentially be, "Oh Lord, please keep my boy from using the filthy stuff, but encourage the other mothers' boys to use it; for thou knowest that it is one of our main crops, and some one must use it in order for us to receive a remunerative price for it."

MANURE HAULING.

At the close of the small grain seeding get at and keep at the remainder of the manure hauling to a finish, if possible, spreading from the wagon as you haul.

CORN PLANTING.

Strive, by the 10th of May, by having recently kept one man busy with the double plow, to have the bulk of the corn ground plowed, as I consider that from May 10th to 20th the most appropriate corn planting season for our latitude. Near the 10th for old land. Near the 20th for sod land in which cut worms may be harboring. Land well fitted is more easily and successfully tended. To secure an even stand, screen seed to uniform sized kernels.

GO FISHING.

With these main crops in the ground, and the most strenuous spring work accomplished, appropriate the first pleasant day

to a thorough relaxation of both mind and body from the remembrances of those labors. In our case we'll go fishing every time, and take the whole family, and if the neighbors are ready, take them also; and what a time we and the precious children will have! And the very next day see that the employees have the same slight reward for a season of faithfulness.

Between now and the first of June the odds and ends will be picked up, fences repaired, and corn occasionally dragged. And we forgot to say that the sheep were sheared about the first of April, and as they were yet around the buildings for two or three weeks, it was like finding something to see the hens wander among them in the yard as they lay in the sun and pick the few ticks from them as they—the ticks—had no long fleece to further hide in. Better than any sheep dip that I ever knew of for that purpose. A few sheep on every farm is one of the best paying of investments.

POTATO PLANTING.

Time, not earlier than June 1st for main crop. Seed cut to one eye to a piece. Planted one piece in a place 15 inches apart in the row, and rows 30 inches apart. In our case we plow them in, dropping seed close to land side in every other furrow of 14-inch plow, stretched to cut as wide as consistent and do good plowing. Result, too late for potato bugs and August blight, just enough good strong vines to produce for us never less than 200 bushels per acre and up to 400 bushels per acre of good large potatoes. Previous to following the above outline we were scarcely able to raise enough for our own use but by an entire revolution of our former practices and following the above method have never failed of a successful crop.

HAYING.

"Early at it," our motto. Mostly sun cured. Some sap in mow not objectionable, but outside moisture never. Quality of our hay always complimented when it has appeared on the market. A fork head in a 12-foot pole handle is a great labor saver on the mow by swinging and pushing the hay-fork load just as it is snapped. The low truck farm wagon is always in order on the farm and especially in haying, and with its basket rack will oftentimes nearly save a man on the load.

HARVESTING SMALL GRAIN.

Small grain is now universally harvested with the binder, but why some men leave off the bundle carrier is always beyond our comprehension. It is a great labor and time saver.

THRESH FROM THE FIELD.

Feed half or more of oats in the sheaf if possible. Who can give a good reason for adding 5 cents cost per bushel to every bushel of oats by separating the grain from the straw and then putting them both right back before the stock? Everything in the stock line likes sheaf oats. They are clean and easy to handle. They make good hog bedding; not a kernel will be wasted.

STACK WITH FORK.

Get down on your knees less to an oat bundle and other earthly objects and more to your Maker.

CORN CUTTING.

Probably most economically done with the corn binder, and the valuable store of fodder thus secured, even though it continues in the shock till used, is a small gold mine, and many of our most successful stock-feeders deliver it direct from shock to the combination of hogs-and-cattle.

SAVING SEED CORN

Is most satisfactorily done at about early corn-husking time, and it is not a bad idea to leave a limited acreage of best corn to ripen naturally and from which, as you husk it, to select and save seed from best portions of such. Dry in a non-freezing room of the house, if convenient.

PROMISCUOUS SHORT CORNERS AND ADVANTAGES BRIEFLY TOLD.

A stone water tank constitutes our main reservoir for out-building water supply. Dimensions, 4 feet deep, 5 feet wide and 12 feet long in the clear. Capacity 60 barrels. Outlet from bottom by means of faucet into trough. Walls of stone,

mortar and cement. Earth wall outside 6 feet thick. A load or two of straw over top prevents all freezing in winter.

Pure Bred Stock.—Cultivate an ideal and indulge in it in all possible ways, and there will still be scrubs enough for the other fellows that never attend a farm institute or gathering.

Dehorn all Cattle.—Horns, their primitive means of defense are no longer needed. Do it mainly by caustic potash on calves under a week old, as prescribed by Experiment Station years ago and still no method better.

Barley Fork.—You say you have not one? Take one from hardware next time you are at the village. It is a time, labor and patience saver.

Furnace heating for the farm home is a cheap luxury; once indulged in never to be relinquished. Fire box under the house and heat will rise and warm the floors first. Wood dirt all down cellar. No sparks to injure carpets. No stoves to take down and put up (just the day you had planned to do so much of something else). House cleaning in no sense dependent on the heating apparatus only that the women folks can get at it a full month earlier in spring than if the house were heated with stoves. Fire plant all in one place and that the safest place and not scattered all over the house.

The Farm Telephone.—The "quick-meal" employee of the whole institution. Ours was the first put in outside of my native village and I am proud of the fact. Too wonderful an art to be lost. Court its service at the earliest opportunity even if a few post holes have to be dug or posts furnished. You can't afford to be without it.

A Safe sufficient to hold all farm papers and practically fire proof, is a good investment and will serve many generations and in emergencies save from storm or fire the valuable papers pertaining to every farm.

Name on Farm Buildings.—Are you pleased to have passers-by know you live there? then put your family name where all may see it. If not, then clean up and improve until you are satisfied to have it known that that is your home. For a good farm house is one of the principal net profits of farming.

A Road Smoother made of a sawed railroad tie, with tongue mortised in at slight angle, an old grader blade bolted on to front lower edge, and all of which one good team can slowly

handle, and hitched onto occasionally and driven to your nearest village, upon one wheel track and back on the other, will do more to cause your neighbors to rise up and call you "blessed" than anything else of equal cost that you can do.

Acquire Useful Knowledge and Apply It.—To be able to thump a billiard ball or roll a ten-pin ball successfully, or to be able to trace a checker man away in advance will never do you nor any one else any real good, but to be able to intelligently and dextrously execute farm or any other work is a most worthy accomplishment.

Do things one of the many right ways; attend to important matters first, and time, if well used, shall be given you to bring up the details. Know what to omit, what to postpone, and what to assign others to do.

And lastly, young men, wishing no evil, but that heaven's choicest blessings may attend your labors in the grandest occupation and profession that Providence ever instituted among men, and that you may early know the value of money and all earthly possessions, my prayer for you is that the first thousand dollars of your own that you ever handle may never be bequeathed to you by a kind and well meaning parent, but that you will have to earn every cent of it.

"FAIR VIEW FARM," OREGON, WIS.

J. N. AMES & SON PROPRIETORS, W. L. AMES MANAGER.

One of the prettiest farm homes in the vicinity of Oregon, is that of the Ames family, located a mile south of the town. The place is properly called Fairview farm" and comprises over 400 acres of the best Southern Wisconsin land. The farm house, a large, comfortable home, surrounded by a grove of stately trees and a pretty lawn, is located a short distance back of the road, while the substantial and well painted barns and buildings are placed some distance in the rear of the home grounds. See Figs. 1 and 2.

The farm is owned by J. N. Ames, now past his eightieth year, and his son, W. L. Ames, manages the farm operations.

FIG. 1.—"Fair View Farm" Home of J. N. Ames & Son, Oregon, Wis.

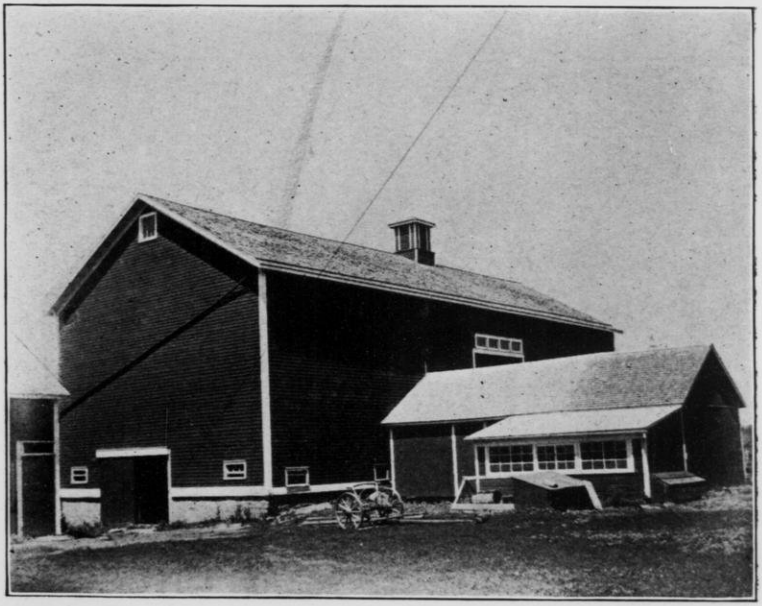

FIG. 2.—"Fair View Farm" Barns.

The senior Ames settled on the farm in 1870. He began life in Dane county with only $100, which he had saved from monthly wages received as a farm hand. By paying close attention to farm affairs and through proper cultivation of his land he was enabled to accumulate money and purchase more land. The son, W. L. Ames, takes great pride in beautifying the farm home and grounds, and believes that if many farmers would give more attention to making their homes and surrounding grounds more pleasant and inviting, life on the farm would be more enjoyable and farm environments more pleasant.

This large farm is devoted to general farming and live stock raising. Pure bred registered Shorthorn cattle and Shropshire sheep are specialties in live stock. A large number of hogs are annually fattened for market. Besides the large barn, granary and hen house shown in the illustration the farm buildings include a work shop, shed for farm implements, a long sheep barn, large hog house and other smaller outbuildings.

W. L. Ames is a progressive farmer and frequently takes part in farmers' institute work. He is an active officer in the Dane County Agricultural society and is a life member of the Farmers' National congress, at present being a member of the executive commmittee.

FARMERS' DAUGHTERS.

ELLA MENN, NORWALK, MONROE COUNTY.

A farmer's daughter living in a happy country home, surrounded by Nature's forces, enjoys a great blessing. The meaning of the word Home is dear to her.

Every human being should have a home, the single person his or her home, and a family its home. The home should offer to the individual rest, peace, quiet, comfort, health and that degree of personal expression requisite, and these conditions should be maintained by the best methods of the time. The home should be to the child a place of happiness and true development.

He who is fortunate enough to have a home in the country, so closely in touch with Nature, certainly ought to enjoy life, and consider himself blessed. An attractive home should be the ambition of all. A country home may be made attractive in many ways. Plant trees, shrubs, vines and flowers, so as to make the country home the ambition of all. Young people enjoy a happy home. If many country homes were made more attractive and the young people given more advantages, they would remain more on the farm.

We notice one thing in looking over farmers' families that the Wisconsin farmer seems almost altogether to consider the importance of the boys, while the girls seem to receive no attention whatever. They are not altogether superfluous on the farm, they are mighty handy to have around. Farmers' daughters ought to have the unqualified respect of all men and women.

Parents owe much to their children. They owe as much to the daughter as to the son, but they do not owe them a fortune in money or lands. They owe them above these things, home training and home surroundings which shall make thoughts, habits, character and ambitions, which are above the valuation of money standard. Outside the chances of misfortune they owe them a happy childhood.

The farmer's daughter has a right to be taught the detail and dignity of labor in the home. She has a right to it, because it is absolutely essential to her well being. No matter whether its a financial necessity or not its a moral necessity. You will find that nothing is drudgery, if done in the right spirit.

Many a "farmer's daughter" has not the privileges and advantages that her city cousin may enjoy, although the Rural Delivery System brings her in closer touch with the works of our great world and there is no reason why she should not be able to converse upon the subjects of the day as well as her city cousin. Numerous magazines and papers may be delivered at her father's door every day, and a few moments spent reading these articles will give her much valuable information, not this alone, the system of farmers' telephones gives her an opportunity to converse with her friends and neighbors. Here, free from the noise of the city, she can enjoy the beauties of the country.

Respect towards her parents is one of her first duties in life. Trying to have her own way in defiance of the opinions of her

own family will never make her happy. She fails in duty if she listens to any one who encourages her to disregard the wishes of her parents, or near relatives. Loyalty to one's family goes hand in hand with self respect. Cultivate moral courage, it is a noble quality, be frank in confessing a fault or a mistake. If you have distressed or displeased your parents, brothers or sisters say conscientiously that you are sorry, you will be a better and braver girl for this effort.

Sisters and brothers are sometimes inclined to say sharp things to each other, to criticise or to snub, but relationship does not give the privilege of being rude and disagreeable. Courtesy should be practised at home, if you would have good manners.

Let your speech never be idle, gossiping, irresponsible. Have you ever thought how far a little word may go? It may help or it may hinder, it may do good or evil, it may hurt or it may heal, have you ever thought that your own speech helps to form your own character?

Accomplishments are for home use. Perhaps you have a brother who loves music and would be glad to have you play accompaniments for his singing or his violin, would it not be worth while to help him?

Home life may be very much what you make of it yourself. Your nature, your character will influence the lives of others, and make happiness or the reverse. Cheerfulness and brightness are duties at home. An enemy to peace in your home is a sulky, unforgiving temper, any one who indulges in such feelings is selfish, and destroys the happiness of others.

Take the trouble to have everything as dainty and pretty as possible in your home; some may think in order to have an attractive home it will require a large out lay for a modern building and the necessary furnishings, here is where too many make a mistake. A little log house may be made beautiful and attractive if you know how to arrange furniture, pictures, flowers or how to prepare food. There are but very few "farmers' daughters" in their teens, who can not prepare and serve a good meal on short notice.

Let it be your duty to assist your mother, and relieve her as much as possible of her worry and care. She likes to receive appreciative words as much as you do. She goes without many things perhaps, so you may have them. She buys one new dress,

and manages that you may have several new ones. You forget that she has not outlived a fancy for nice things. Perhaps she has not been away from home for years, could you not plan a little outing for her? Remember that a daughter in a country home may be a great blessing and treasure. She may be like a ray of sunshine diffusing light and cheerfulness by her presence, she will make home beautiful by her sweet ways and by

"Little nameless unremembered acts
Of kindness and of Love."

Also assist your father in beautifying the home grounds or take charge of this yourself during the harvest season, it will keep you busy attending to the lawn, so that its appearance is always attractive. Have some choice beds of flowers, they add so much to the beauty of the home, keep an eye on the outside appearance of the house and farm buildings, call your father's attention to the needed repairs, or of a coat of paint, have him remove all small buildings and other unsightly objects, that occupy a prominent place in the yard to the rear.

Do not think it a disgrace to act as milk maid in case of necessity or your father's absence, he will always appreciate these kind acts of his daughter.

A "farmer's daughter" has also a right to other knowledge than that of the household; that a girl should know nothing beyond the fireside limits, is a thing of the past. She has a right to a thorough education, unless the question of money stands in the way. She has the same right that her brother has to a higher education, its value is as great to her as to him.

The farmer's daughter even has a greater right to be well educated than the boy. The boy knocks about among men more or less and develops mentally by the contact. The girl's life touches the world at fewer points, she is carried along in a narrow monotony of neighborhood thought and talk. The fact must not be overlooked however that the education which every farmer's daughter should have, is often beyond her reach, because of its cost, then the great majority must find their knowledge in the lower school and in their homes. Should not every effort be made to bring our rural district schools to a higher standard, not alone by our state but by the parents themselves?

Please visit with me a little country school and look over the register and see how many visits by parents and district officers

are recorded during the school year. I am sorry to say but very, very few. Should not the parents quite often step into the schoolroom and learn how little Mary and Johnnie are advancing in their studies, and have some encouraging words for them, and a word of praise to the teacher.

Too often she is left alone in charge of 25 or 50 pupils, laboring under difficulties, and not receiving the compensation she is entitled to. Let us make the little country school room more pleasant by pictures, flowers and neat white curtains and some musical instrument.

When going away to a higher school or college, or when choosing a profession or a business, let nothing sever the home ties or associations. Your parents have given the strength of their best years to you, their ambition has been to give you advantages in education and to fit you for life at the cost perhaps of much sacrifice to themselves. Do all that you can for them in return, you will never regret making sacrifices for them, but you will regret some day bitterly if you fail in plain duty.

Success in life does not always mean prosperity or fame, a very secluded life may be full of possibilities. To live up to a high ideal of womanhood is one of the noblest ambitions.

GROWING CLOVER FOR SEED.

J. H. MCNOWN, MAUSTON.

In introducing this subject I will not take up any of your time in discussing the value of clover as a hay crop or as a renovator of soils, these subjects have been brought to your attention and impressed upon you, so that they will remain indelibly upon your minds.

On the ordinary stock and grain farm in Wisconsin it seems as though growing clover for seed, in a three or four years' rotation, would enable the farmer to handle his farm easier and with less labor than he could otherwise, besides resting up that particular field which may be in clover each year.

In this brief article, I will endeavor to tell you how we handle

clover for seed in Juneau county, central Wisconsin, which is spoken of as the clover-belt.

During the last decade clover seed has paid more mortgages, swelled more bank accounts, bought more comforts and luxuries for the farmers, and raised the price of land I believe more than any other one thing, in proportion to the land devoted to it and the attention devoted to handling it.

It is raised in the vicinity of Mauston by the hundreds of bushels and in shipping season is handled by the carloads, numbers of farmers have in different seasons received checks for $1,000.00 and more for their clover.

In sowing clover with a view to raising a seed crop, sow clean seed on clean land preferably after some cultivated crop. Some pernicious weed seeds are apt to lurk in clover especially alsike which is a smaller seed than the red clover, and is hard to clean free from small fine weed seed.

Sow alsike on your low heavy lands at the rate of about two quarts per acre, and Mammoth and June clover on your lighter soils at the rate of about four quarts per acre, the ground being well prepared and preferably, after the grain crop has been drilled in and harrowed once. Sow with a regular hand seed mill, and follow once with light harrow or roller as you may prefer or both.

Avoid pasturing off in the fall, but pasturing off of Mammoth in the spring is to be recommended if your clover has wintered nicely and soil conditions will permit. If not pastured off, clip back with mower about June first, or just as the plants commence to joint up, do not wait too long, or disappointment in seed crop may result, conditions which I have noted in Juneau county a number of times.

This clipping or pasturing is done to reduce the straw and it seems to invariably increase the yield of seed. I also believe alsike can be pastured awhile in spring with good results, but am not very certain on this point, although knowing of several good yields of seed being obtained in this way.

With June clover you remove the first growth as a hay crop, cutting when just coming to full bloom, and letting the seed crop come last. If you attempt to let the first crop go for seed disappointment is apt to follow as a result, for new growth springs up before the first crop is mature and an unsatisfactory mess re-

sults. I have seen this tried a number of times and in each case the fields were abandoned, but the land got the benefit, and the loss was perhaps not so great after all. When seed clover comes to maturity, alsike especially needs very careful attention. Cutting alsike should commence before all heads are fully ripe, using either a reaper or a mower, if badly lodged or tangled a mower will probably give the best satisfaction, cutting when dew is on in early morning hours, or have men follow immediately after the mower with forks and bunch and pile out from under the horses' feet thereby avoid trampling.

As soon as dry, do not neglect but put the clover in barns or barracks or stack up and cover suitably or better still hull direct from the field, using tight rack beds on wagons and handle carefully to avoid shelling.

Mammoth and June clovers can be handled in much the same way, but as they are a great deal more bulky than alsike, it is more desirable to hull direct from the field, and as Mammoth or June clover does not shell off as easily as alsike, the damage is not so great in case of bad storms after being cut.

The season of 1903 was a very trying one on Wisconsin farmers and was especially disastrous to a great many who happened to get behind with their work at any time during the season, and especially at the harvest season, and the clover men had their share of troubles; a number in our section losing their entire crop of alsike clover by being a little tardy in securing the crop and getting caught with the extremely wet weather. It pays to act and act quickly when a clover crop is ready to handle. Always try and hull when the clover is perfectly dry, using a regular clover huller. Attempting to hull damp clover is extremely wasteful and must be avoided, also avoid using hulling attachments that are sometimes fitted onto regular threshing machines; the attachments cannot hull and save the seed as a regular huller can.

Before marketing, the seed should be recleaned with some regular seed mill made especially for the purpose. Such mills can be obtained by ordering from regular seed commission firms.

When the seed is cleaned, a sample may be sent to your seed commission firm, who will make a bid on the lot, and if you wish to accept you should notify them at once and your seed can be shipped a few days later.

The clover straw can be used on the farm the same as other straw, or be spread at once on the fields to be plowed under.

The alsike straw if gotten up without any rain is often fairly good feed for cattle or sheep, being fairly bright and not so coarse and woody as the straw from the red clover.

BARLEY.

J. D. CLARK, WHITEWATER.

De Candolle concludes that barley has been cultivated by man for over 4,000 years and that its original home was in western temperate Asia.

Fragmentary bits of history show that it was known to the Egyptians, the Lake-Dwellers of Switzerland, the inhabitants of the Canary islands, the Chinese and many other ancient peoples scattered over all the temperate portions of the Old World since pre-historic times.

By many of these people it was used as the principal grain for bread making, the word "barley" being derived from Hebrew words meaning bread-corn.

Botanists divide barley into three species; the two-rowed, four-rowed and six-rowed. DeCandolle, however, holds that the four and six-rowed species are variations from the two-rowed barley which is the only kind that he considers has been found in a truly wild state. There is little or no doubt that the beardless, hulless and innumerable other cultivated varieties are all derived from the three above mentioned species.

The crop statistics of the Year Books of the Department of Agriculture show that barley has a much higher value per acre than any other cereal crop.

The average farm value per acre of the cereal crops of the entire United States for the 10 years ending in 1902 are as follows:

Barley	$9.56
Wheat	8.17
Corn	8.07
Oats	7.45
Rye	7.00

The following table gives the average yield per acre, in pounds of the four small grains for the state of Wisconsin for the ten years ending with 1902 and also gives the digestible nutrients in the average acre of each grain.

	Average yield per acre.	Average farm value per acre.	Digestible Nutrients.		
			Protein.	Carbo-hydrates.	Ether extract.
	Lbs.		Lbs.	Lbs.	Lbs.
Barley	1358.4	$11.38	118.30	890.9	21.73
Oats	1072.	8.34	98.62	508.5	45.02
Wheat	930.	9.64	94.98	643.56	15.81
Rye	884.	7.04	87.51	587.48	9.72

These figures effectually prove the value of barley as a crop for sale or feeding purposes and it would seem that the grain growing farmer would do well to try it to a limited extent. There is a place in our agriculture that barley fills better than any other small grain.

In the southern part of the state where the oat crop often lodges on rich soils or rusts and in either case fails to fill properly, barley is rapidly replacing it; under the same conditions, the barley may lodge but it never fails to fill and it is not perceptibly injured by the rust. There is no doubt that barley is the very best nurse crop that we have for clover or alfalfa. The stock-farmer must of necessity depend largely on corn and legumes, but he must also in order to have a proper rotation of crops, have some small grain crop to succeed the corn, serve as a nurse crop to the clovers, and to furnish straw for bedding and grain suitable for sale or feeding purposes as the markets may indicate.

Barley is especially suited for these conditions and its more general culture must follow better acquaintance with it. It is essentially a grain adapted to intensive farming on rich, well-drained soils. Beardless barley is highly valued as a feeding crop near Racine, but in some sections of the state it is not regarded as nearly as good as the bearded sorts.

The two-rowed Bavarian barley has been grown at Ft. Atkinson, by Governor Hoard, with marked success.

The Oderbrücker, a six-rowed barley, is giving remarkably good results at the Experiment Station and is regarded as perhaps the most promising of any variety tried as yet.

The six-rowed Manshury, sometimes called University barley, has been more widely grown in this state than any of the other good varieties and has given better results under all sorts of conditions. The Oderbrücker will probably prove a formidable rival but has not been grown to any extent as yet.

Barley does not require early sowing; in the southern counties the last ten days of April are considered as about the proper time.

The most prevalent error in barley culture is the sowing of too much seed; this causes improperly developed plants and heads, and if continued for several generations injures the value of the strain considerably.

One bushel and three pecks of good clean barley is enough for an acre under any conditions in my opinion. I have seen some very fine barley grown from one bushel and one peck of seed per acre and no one would have considered it too thin.

We would place no more plants on an acre than the available plant food can properly develop.

Seed barley should be treated with formaldehyde as recommended for oat-smut. It not only destroys the barley smut but the plants are apparently much healthier, the straw stronger and of better quality. The formaldehyde apparently destroys some parasitic growths, that we are not as yet familiar with. It should be harvested as soon as the larger portion of the field is ripe; once ripened, the weight of the heads breaks over the straw very easily and it "crinkles down" making it very difficult to harvest.

It is preferable to shock it in round shocks and cap them well, unless the bundles are very green or wet, as exposure to the weather darkens the color of the berry and reduces the price.

OPPORTUNITIES OF SHORT COURSE STUDENTS AS FARM MANAGERS.

R. H. POSTON, OCONOMOWOC, WAUKESHA COUNTY.

Members of the Wisconsin Experiment Association, friends and fellow students: It affords me much pleasure on this occasion, to bring before you this subject. "Opportunities for Short Course students as farm managers." This is a subject that has taken but very little space in the agricultural press in the way of discussion, but we will no doubt see and hear more about it in the future. The very rapid, increasing interest that men of capital are taking, in our agricultural lands at the present time, and for many other reasons too numerous to mention here, have made farm managing a profession which has a very promising future before it, especially for the young man who has had training in our agricultural colleges. In the last decade agriculture has made a most wonderful stride in this country; farming is not carried on as it used to be; competition has forced upon the American farmer many improved methods, which are mostly based upon scientific principles. This with many other improvements has opened a large field for the man who has had training along this line. Never was there a time in the history of America, when there was such a demand for good agricultural land. Never was there a time when so many men of wealth were putting money into farms, as there are at the present time. Nor was there ever a time when farm managers were in such great demand as to-day. We see men from almost every industry in the world turning their attention to farming. And a great many of them have millions to back them. As a rule such men know but very little about the details of the farm. Their time has been spent far from the farm, and their lives have been buried in other business. Such men depend almost entirely upon our agricultural colleges for men to manage their farms. This is one reason why our colleges of agriculture receive so many more calls for men than can be supplied. I don't know of any profession to-day that affords its seekers better opportunities than farm managing, neither is there any, where the supply is so far below the de-

mand as in this vocation. During each year the Wisconsin college receives calls from almost every state in the Union for Short Course men to take charge of farms. If Prof. Moore should receive a call to-day for a dozen book-keepers or clerks, he could easily find them. Or if the call should be for lawyers or engineers, he could send them by the score, but if the call should be for farm managers, he would be puzzled to know where to get them. As the great American wheel of agriculture keeps rolling around, the demand still increases, so I say to the young man who is able to fill this position when he finishes school, that he has a very inviting future before him. We often hear the remark made by people that know but very little about the value of an agricultural education, "Don't go to Madison and take that Short Course, people won't be willing to pay you for what you know." Well now, when it comes to dollars and cents, the man that thoroughly understands farming with all its details, and is able to apply his knowledge will realize about as much out of it as any of them. Now, you young men, when you go to hire out on a farm you expect a certain sum and your board. We married men, hiring out as farm managers, don't expect to board with our employer, but we do expect such perquisites as a horse, fuel, rent and many other little things which add a great deal to our salary at the end of the year. For instance, we will take the young man seeking employment in other lines of work. I mean men who have fitted themselves for a certain profession which compels them to live in the city. Most of them live in rented houses, buy their fuel and almost everything they live on. We will say a fair average of their wages would be $50 per month. Now say he pays $150 a year for rent, $60 for fuel, $50 for milk, butter and cream, and $40 for potatoes, eggs and poultry, which makes $300 per year. This is half of his year's wages. Then he buys his family's clothes and pays the grocery and meat bills, also his incidental expenses, and what has he left at the end of the year? On the other hand, the farm managers' wages run from $45 to $75 per month. His house, fuel, milk, butter, cream and eggs are furnished free of charge. Allowing him just the same for his family's clothing, for certainly he has a right to just as good clothes if he does live on a farm, also the same for groceries and other expenses. These I stated cost the

city man $300 which you can see at once, the farm manager would have to put out at interest. I visited a farm not long ago, owned by a very wealthy man, and was told that when completed with buildings and stock ready for business it will have cost the owner $300,000. I understand this man will give any one $2,500 a year, who will take charge of that farm and make a success of it. A man of capital, who has two large farms now in operation, told me not long ago that he would buy another one worth $40,000, if he could get a competent man to take charge of it. But it seems to be the problem to secure good, responsible men as farm managers. I think it needs no argument on my part to convince you, that there is a very bright future before the young man who fits himself for this work. I know a Short Course student who finished in 1902, who now has a position in this state, and when all his bills are paid, including his family's living which consists of himself, wife and three children, he has $75 in cash at the end of each month. This is $900 a year and his family's board. To equal this in the city you would have to get over $100 per month. Without an agricultural education this young man would have been working for common wages. We believe that American agriculture is just entering the most wonderful era of its history. One thing is sure, if you come here to Madison, with the right motives in view and do your best, when the two years' work is finished you will leave, feeling amply repaid for what it has cost you. Then if you possess certain other qualifications that you can't obtain in school, you can step out into this busy world and make a success of the most noble profession that confronts the young man of to-day. The opportunities for Short Course students as farm managers are most wonderful, although just in their infancy. We believe ten years hence will find the demand double what it is now for such men. First prove to the world that you are master of your profession and no one will hesitate to pay you the price for your time.

DON'T KNOCK, BUT PUSH.

JOHN H. LIEBE, GRAND RAPIDS, WOOD COUNTY.

George Ade says, "Every knock is a boost."

How often in every-day life do we meet with a person who will spend his time and ours in running down his neighbor or his rival in business, never stopping to think, or perhaps not capable of thinking what the ultimate consequences of such knocking will be.

If we have a rival in business or an opponent in any kind of work and that rival or opponent is continually faultfinding and running us down among his friends and ours, we should take such things as cooly as possible. Never make haste to deny that which rumor and gossip sets afloat. For such people, whose worst weapons are their tongues and who kick trying to gain fame and notoriety by criticising and running down other people's affairs, belong to the very lowest order of humanity, and if we pay attention to these and deny publicly their sayings we are putting ourselves down toward the same level with them.

If we have been run down, let us patiently abide our time and prove by *actions* that such criticisms are without foundation.

If, for instance, anybody with intent to knock us runs down our manner of farming or methods of business, let us take it all in quietly. Don't try to get even by knocking back, let us keep our eyes and our ears open and our mouth shut, work diligently, honestly and unpretentiously, judge carefully and see if there is not a grain of advice in those criticisms. Then try our best, put our shoulders to the wheel and make a success of that particular thing and prove to the knocker and to the world by *actions* that we are on the right track. By so doing we will gain a double victory, first, by proving that the knocker is wrong, second, by making such particular thing a financial success which, by the way, is almost always the point desired in any kind of business. And he who has been trying to knock us has unconsciously given us a boost.

If we are in the dairy business and a rival dairyman trys to run down our methods and our products, let us not try to get even by running him down; let us remedy our faults if there

are any, for in our business, no matter how far advanced, there is always room for improvement. Let us strive for a more perfect system. Let us "push" steadily onward, never stopping to look backward, not even stopping to see how far the party who has knocked us is left in the rear. Our success will prove our right and we will gain the confidence and respect of our fellow men. Whereas if we had given blow for blow both parties would perhaps be on the verge of financial collapse.

It is true that some things do cross our paths that sorely test our patience, things that cut to the core, and we are oftentimes on the verge of explosion for anger and tempted to give a piece of our mind to brand as false things said and done to knock us. But words do not have the effect that actions have. Let us overcome our anger and *work, act, push,* and we shall and will gain a decided victory without descending to the low level of knocking.

Everywhere, in every line of business, in every profession and vocation we see and hear some people knocking, some person running others down. One firm is trying to draw trade by knocking the other. Editors call each others names that would do credit to a mule-driver, doctors and lawyers make scathing remarks about their rivals in their profession and even some of our ministers who should be the very best examples of purity, peace and good will are so often knocking each other and throwing stones right and left that their narrowmindedness is clearly evident.

Now to which class do we wish to belong? Do we wish to be knockers? Do we wish to gain success by throwing stones at others? Do we wish to boost our own state of Wisconsin by running down other states?

Is this our aim? Decidedly not. Our aim is self-improvement. Our ambition is to build, not to tear down. We want to push forward and onward. We want to remedy our mistakes and shortcomings. We want to increase the capacity for production by improved methods, by selection and experimentation. We want to prove to the agricultural world by our acts, by our productions, by the results obtained through our push that our state is a progressive one, and the Wisconsin Agricultural Experiment Association is the standard bearer for the coming generations of farmers of this state and we, as indi-

viduals and as a body, each and all of us as members of this association and other kindred associations should do all in our power to steadily and earnestly work in harmony and co-operation and by so doing we will make this, our own state of Wisconsin famous the world over for its agricultural attainments. And during all this time that we are striving for this ultimate end let our thoughts not be how far we can leave our neighbors in the rear, but let this be our sentiment: Let us see how far we can get ahead of them and keep gaining, so that as the years roll by the Wisconsin farmer shall stand pre-eminent in his profession, a power in the social and political as well as in the productive world; broad-minded and noble, proverbially an example of thrift, wealth and intelligence.

WISCONSIN TOBACCO.

THOS. H. BIGGAR, WALKERSVILLE, CANADA.

Tobacco, the world's most popular narcotic, is today one of Wisconsin's greatest products.

Fifty years ago the Pomeroy Brothers, Ralph, Orrin and William, settled on adjoining farms in the town of Fulton, Rock county, and grew ten acres of tobacco. William T. Pomeroy, the only surviving member of the three brothers who were the pioneer growers of Wisconsin and Ohio, has watched the growth of the industry from that small beginning of ten acres to the 40,000 acres grown in the season of 1903. From that small beginning in Rock county the industry spread to seventeen other counties of the state. In Dane county, one acre in every fifty-six produces tobacco.

Many trials of growing tobacco for different purposes have been made in the past fifty years with more or less success, but today Wisconsin is known to the tobacco world as the "Binder State." A cigar is composed of a filler, or the inside filling, the binder which binds these together and the wrapper or outside covering. Very few high grade domestic cigars have

anything but the Wisconsin binder. As was stated, many changes have taken place in the qualities of Wisconsin tobacco. We have grown the filler, the binder and the wrapper, but time and experience have shown that our great fort lies in the production of a high grade binder.

The promoters of every line of business should have an ideal for which to strive. Now an ideal crop for binder purposes is one in which the leaves are sound, spready, similar in shape and the veins smooth, small and colored the same as the leaf. In texture the leaf should be grainy and yet have a sufficient quantity of oil to insure a proper amount of fermentation. When it is on the cigar it must burn well and have an aroma which at least is not detrimental.

At least four things are necessary to obtain these results, favorable climatic conditions, proper soil well fertilized, pure seed, and proper handling.

Man can do little to change climatic conditions in Wisconsin, but by good judgment some men manage their work so that they get better results, under adverse circumstances, than their neighbors. Much has been said and written about how to care for the crop under different weather conditions, but my observation has been that the men who keep up with their work get the best results. However, there is a vast field for study and demonstration in the growing and curing under different conditions.

The remark is often made that tobacco is a bad crop for the farm. In a measure this is true for farmers make the mistake of putting all the barn-yard manure from an eighty acre farm on the same seven or eight acres of tobacco land year after year and try to grow corn and other grain on the remainder of the farm. This is a mistake in more ways than one. Barn-yard manure alone is not what produces the best quality but it is when used in connection with commercial fertilizers, that the best is obtained. By the use of fertilizers, more manure could be spared for the other crops or by using leguminous plants to aid in keeping up the farm, a judicious use of the farm manure and a liberal purchase of fertilizers, more and better tobacco could be grown and at the same time the other part of the farm could be kept under a high state of cultivation.

Sugar beets, which many are rushing into, while they are a

good paying crop, are much more exhausting to the soil than tobacco. An average crop of tobacco removes from the soil 89 pounds of nitrogen, 102 pounds of potash and 23 pounds of phosphoric acid. An average crop of sugar beets removes 110 pounds of nitrogen, 195 pounds of potash and 40 pounds of phosphoric acid. Comparing the two, the beets remove 21 pounds more nitrogen, 93 pounds more potash and 17 pounds more phosphoric acid.

The following interesting figures which were given me last summer by Wm. Clark of Janesville while I was there looking over the experiments with tobacco, which were being conducted by the University, will prove that tobacco is a paying crop. In 19 consecutive years, commencing in 1882 he grew a total of 116 acres for which he received 17,385 dollars or about 150 dollars per acre. He always grew the one variety known as Spanish. In 1884 he sold 8 acres which brought 2,440 dollars or 305 dollars per acre and one year he sold for 4 cents per pound or about 50 dollars per acre.

The most serious draw back to the grower here is, that he doesn't get enough for his labor and the reason he doesn't is because he doesn't produce the goods that command the price. We have the soil and climate necessary for a good quality of tobacco, but there is a lack of intelligent fertilizing. There is nothing which man can do that will produce the quantity and quality like intelligent systematic fertilizing. But let a grower be approached in regard to investing in commercial fertilizers and he is almost sure to say that it costs too much. That he has got along in the past and can in the future. This idea of being unwilling to invest a dollar and get out of the old rut is a serious matter for the future of Wisconsin tobacco. The science of tobacco fertilizing is much farther advanced in the Connecticut river valley than in any other section. They get larger yields and better prices than any place else in the United States. When our tobacco yields 1,200 pounds per acre on an average, theirs yields 1,400 pounds. When we are getting 5 to 9 cents per pound, they get 15 to 26 cents.

In the past few years many of the growers have tried to get a big yield by growing a coarse large variety. To my positive knowledge there are no less than seven different types of tobacco here when there should be but one standard variety. Some of

these types have good points which others have not. The blending of the good qualities of each so as to get one that best suits the trade means a lot of work, but it must be done if Wisconsin wants to hold her own. Some work is being done along this line now and it should not be allowed to drop.

The most serious drawback to the manufacturer who uses Wisconsin tobacco is that it lacks that sameness of quality which it should have. It is hard for the small manufacturer to get binders that are near enough alike for him to keep the same flavored brand of cigars before the public. There is nothing that kills a brand of cigars so quickly as to have it changed in flavor. The man who has been smoking a certain brand will notice any change at once. The new box may be just as good but he won't think so. He is sure that the manufacturer made them good until he got the brand to take and now he is putting in poor stock. He no sooner notices this change than he seeks another "favorite." Only the other day I was in a Detroit cigar factory and the manager told me he was using a Connecticut binder instead of a Wisconsin binder. He said it cost him more than twice as much as the Wisconsin, but it was so much more uniform that it paid. I asked him what he thought was the cause of Wisconsin tobacco not running more even and he said, "Lack of fertility and to many poor growers."

In every line of business there is a class of men who will only half do their work. Of course the saying that, "we reap that which we sow," applies to this class as well as those who put in the best and get the best. There are cases, however, where a man not only reaps that which he sows himself but also some of the other fellow's as well and I know of no work where this applies more forcibly than in the tobacco business.

The trade looks upon the different lots grown here last season as one whole crop and they call it the 1903 crop of Wisconsin. There were 40,000 acres grown here by eight to ten thousand good and poor farmers. Poor crops and good crops all go to make up the 1903 crop. It is a case of "the tail goes with the hide" and when we have a year that experience, push, energy and a determination to get the best possible is necessary for a fair crop, there are so many of the half way fellows and those who lack experience, that there is too much tail for the hide. Consequently the hide, which may be good, has to go at a lower figure.

Some years almost any one can grow a fair crop, but the past two years have been wet and many people hung their tobacco up wet or harvested just after big storms, while others strip and bale it in high case. Many of the growers don't even know that a wet year crop requires more care in regard to handling in low case than one grown in a dry season.

Many people lay the slow movement of the 1903 crop to the uncertainty of the money market, lack of case weather, etc., but the great cause in my mind is the uncertainty of the outcome after it has gone through the sweat. I would say though in this connection that the lack of case weather may prove a benefit after all for the tobacco is far more apt to go through the sweat alright than it would if stripped last fall. This uncertainty of the outcome is due more to the poor handling than anything else. The man with the good crop has to hold his goods just because of a class of growers who make nothing out of the business themselves and are in reality a public nuisance in so far as they affect the tobacco industry.

The state, the grower and the buyer should do their utmost to cause the half way fellow to quit growing and to encourage and educate the man who tries to get a good crop. The new beginner should study well the conditions necessary for success before he goes into growing. He should remember that not all the soil here is fit for tobacco and that it is only when well fertilized that any of it will produce what is wanted. He must not forget that there is no crop grown here that requires the care and experience and while it often pays well, yet there is a chance to lose as well.

Many of these detrimental conditions which have much to do with the success or lack of success can be removed. The state should make appropriations each year to be used in experiments in fertilizing, improving the seed, construction of curing barns, and the printing and distribution of bulletins on tobacco culture. Compared with Connecticut and Massachusetts, Wisconsin has done very little to assist the grower to improve his methods and because of this lack of interest the state should be the more prompt to respond to the demands which should and will be made in the future.

TEACHERS OF AGRICULTURE.

ROSS C. PRESTON, SUPERINTENDENT INDUSTRIAL BOARDING SCHOOL, LOWER BRULE, S. DAK.

Stop! Why do you pass along paying no heed to the call of others? You with the jealous or selfish disposition! Those of you that have had opportunities laid down at your door, qualifying you to master the conditions brought about by the progress of time, fitting you not only to be intelligent in your agricultural pursuits, but qualifying you to be teachers in the line of work you have chosen as an occupation or profession. You have attained this height by the constant nagging and persuasive powers of friends or others who had a deep feeling toward you and the general welfare of your future. Finally you consented—you attended the Wisconsin Agricultural College. You were taught nature in its advanced forms, you were put abreast, as it were, with the conditions of the present time.

Now if you but will, you can take hold of the opportunities that are presenting themselves every day, with the mighty hand of intelligence, and work and mold, the stubborn and seemingly unfertile soil, until the actions of your hand, lead by an intelligent eye and brain, have conquered the unwilling soil, and it has humbled, as many of you must have humbled, as you were patted upon the head or shoulder with the trained hand administered with parental love.

At last you have taken the medicine, you have finished the "Course," it has dawned upon you that it was just what you needed, then it was that you buttoned a shield of greed and selfishness around you. You are in a position to take advantage of your neighbor, you do some of your work after dark at night and before daylight in the morning only because you are afraid your neighbor will learn of some more improved method you are following, by seeing you do it.

The unfortunate ones are looking for information, they were not able to attend the Wisconsin College of Agriculture and you were almost dragged into such an idea. You have got the training and the other fellow hasn't it. Unbutton that shield of sin that is holding *you* under! Be neighborly, be brotherly,

be Christian like, be willing to help some other person on his feet and give him an encouraging word to cheer him on.

When you have finished college you are in a position to begin to show what you are, and what you are made of. Don't think that you know it all, and that every man in the country doing a business is seeking your services at your own figures. Just so sure as you expect that so sure is your failure certain.

And now my dear fellow student, that you have finished your college course and are seeking some good honest and honorable employment, try to instill into your being, that, if in your work you have done some one some good—a great kindness, just so sure the work has done good two-fold. You have made some sad heart glad and the world will have been better for you having lived in it.

Some of you have not the opportunity of returning to a home to relieve the cares and burdens of an aged father, and those of you who do not, are the ones that I wish to speak a few confidential words to.

There are in the United States approximately 270,000 Indians and these Indians own 74,580,641 acres of land in these United States. During the past year about 29,000 of these Indians (which are of school age) were enrolled in different schools. To teach these Indian children, the government employs, under civil service rules, or otherwise, in round numbers 3,000 teachers.

It is the intention of the government to give their Indians a practical industrial training, placing particular stress on agriculture and stock raising. Why shouldn't they when the Indians have so much land? Now then the Indian service wants more industrious, energetic, alive and competent instructors on its force. Men with a good knowledge of agriculture and the handling of stock, and those that can teach it to the Indian. Good inducements are offered to those who prove themselves worthy. The Commissioner of Indian Affairs being ever ready and willing to give his assistance in helping his teachers to accomplish the best, and the most good results.

The Hon. Commissioner of Indian Affairs is advertising for applicants to take the examinations for teachers of agriculture. Places are vacant. Other positions that require equally as much qualification are teachers of industries, industrial teachers,

dairymen, farmers, etc. These positions pay from $600 to $1,000 per year.

At the present time there is a vacancy in the position of teacher of agriculture at the Pipestone Indian Training School at Pipestone, Minn., paying a salary of $900 per year, another vacancy in the same position is at Haskell Indian Training School at Lawrence, Kan., which pays a salary of $1,000 per year, and no eligibles to fill them.

If it is your desire to want to do mankind some good, do a missionary act, if you are honest and willing to be put on test for an efficiency record, understanding that the top of the ladder is reached round by round, then there are good opportunities in store for you in the Indian school service, at the same time doing a great good for humanity.

I trust that before another year has passed the Wisconsin College of Agriculture will have sent into the field of Indian civilization many earnest toilers and educators, and I will predict for them success, and for their work—teaching the Indian, the time will come when they can say that their labors were not in vain, and that the reward is of two-fold.

COOPERATION OF STUDENTS WITH THE EXPERIMENT ASSOCIATION.

G. A. FREEMAN, MADISON, DANE COUNTY.

Mr. President and Fellow Members of the Association:—

The topic assigned me is one which deserves more time and better talent than your humble servant is able to furnish at this time. Let us consider for a few moments some of the reasons why we as students should cooperate with the association, for I take it for granted that the word students as here used, refers to all students present, past and future of the College of Agriculture of the University of Wisconsin.

We are all members of one and the same grand institution that our ancestors planted many years ago on yonder hill, that it might be a guiding star in the upbuilding of the best possible

citizenship for all time. I refer to the College of Agriculture, the Alma Mater from which we drew our first nourishment to strengthen us for a higher citizenship and enable us to cope with the more difficult, practical and scientific problems of modern agriculture. And who is here so base that he would not help to support and strive to do honor to a mother in her old age. As a society we came into existence that we might accomplish a work that our older sister the Alumni was not able to do in that she lacked in membership.

For it is an undeniable fact that we as an association and as students in cooperation with this association may accomplish in a year or two, what would cost a few individuals unorganized the efforts of a lifetime. I believe the number of eligibles at present is ranging near the fifteen-hundred mark. With the number of members (all infused with the spirit of cooperation) scattered abroad throughout the state and I may say the United States with every known variety of soil, and climatic conditions, what a grand work could and would be accomplished in the departments of horticulture and farm crops alone.

Our aims were almost identical. We sought the guiding star that it might brighten our paths to a higher and nobler citizenship and let us not smother its rays with a shroud of selfishness and indifference, but as true reflectors do our duty to the state by diffusing all the light concentrated within us, in such a way that it may be felt and appreciated by the present generation as well as those to come. As a duty we owe to agriculture, we should strive to make some improvement or advancement along some lines, as there is no such thing as a stand still in our vocation. It must be progress or retrogression. And who would be the sluggard? I trust that his name has not yet been enrolled as a student in the Wisconsin College of Agriculture.

As a duty we owe ourselves as individuals for benefits which we would receive physically, as a duty we owe to society in general by showing good will and self sacrifice and in short becoming public benefactors. The field is long and wide and there is plenty of room for all to bear their respective shares of the burden without any clashing of elbows. Take for instance the department or division of farm crops. Note the benefits derived in the past year or two, as the results of the continued research and investigation carried on regarding the question of

oat smut and treatment of the seed oats to prevent smut. We can but do our duty if we urge our more careless skeptical farmer friends and neighbors to treat their seed grain with the formaldehyde process. Much work of this nature remains yet undone, which must be done before the state can gather the ripe fruit of the untiring efforts of our beloved benefactors, the results of whose efforts are just beginning to be appreciated. As I believe that we can breed desirable characteristics into our dumb animals, so do I firmly believe that we can breed desirable characteristics into our grain and forage plants as well as our garden plants, flowers, orchard trees and shrubbery.

France, by cooperation of her farmers in the sugar industry and determination of Napoleon to crush the prosperity of Great Britain by excluding English sugars from the French market, did succeed in raising the sugar content of the beet root from 5 per cent. to 16 per cent. In the light of these facts, are not we justified in the belief that the Wisconsin Experiment Association with our modern Napoleon at the helm to guide us, can raise the protein content of corn to 15 per cent. or better and raise so many soy beans per acre that it will put the price of middlings so low that even the poor man's hog can reach them.

Experimental work with soy beans should be continued as well as that with rape, sorghum and alfalfa. The potato crop, too, in Wisconsin is a very important one and one that may be much improved by proper selection and treating seed to prevent scab. In dairying there is yet room and reasons for continued experiment work in feeding, care and management of the herd. In horticulture the propagation of new varieties, the improvement of the old and the study of insect pests and how best to exterminate them will furnish a life work for those who choose horticulture as an occupation and are so situated as to be able to experiment along that line.

It remains for us as individuals to give to this Association our most hearty support and cooperation, thus not only enabling our Agricultural College to maintain the reputation which it now has for its high standard of excellence, but place Wisconsin at the head of the list as the most progressive agricultural state.

TREATING SEED GRAIN TO PREVENT SMUT.

HENRY O. JACOBSON, CAMBRIDGE, DANE COUNTY.

In the spring of 1902 I treated our seed oats for smut, using the old formula of 1 pound of formaldehyd to fifty gallons of water. But, owing to the formaldehyd being of inferior quality, this experiment was a complete failure.

In the spring of 1903 I determined to repeat the experiment, using 1 pound of the formaldehyd to 36 gallons of water. This experiment was quite successful, scarcely a trace of the smut was to be seen.

I also treated a small quantity of seed using I pound of formaldehyde to 9 gallons of water. This solution was so caustic that its effect was readily noticeable on the operator's hands and I thought that there would be considerable difference in the germinative powers of the two quantities of seed treated. The two quantities of seed were sown under exactly similar conditions. These two plots were closely watched and no marked difference was noticeable except in the case of the plot where the seed was treated with the 1:9 solution, there was a larger percentage of vigorous oats. In treating the seed grain, I always allowed it to soak 20 minutes and also disinfected the grain bags and seed drill with the same solution. In order to lessen the cost of treating the seed, I found it more economical to purchase 4 pounds of formaldehyde for every 100 bushels of grain to be treated and using 4 or 5 casks at first, reducing their number as the quantity of the solution diminished. In looking over the neighbors' fields I noticed a larger per cent. of smut in the fields of the farmers who practice sowing a large quantity of seed per acre. Evidently owing to the continuous stunting of each successive crop's growth causing a reduced vitality.

The elimination of smut is probably not the only benefit derived from treating the seed grain. I find a number of experimenters who agree that the continued treating of grain from year to year evolves an oat of greater vitality and vigor. This fact has not been fully established by experiment, but is probable, and well worth watching. An incidental benefit of treating seed grain is that one has his attention called more

closely to the oats individually and this may lead to greater discrimination in the selection of the seed oats in the first place. I thoroughly believe in the power of the formaldehyd solution to prevent smut in the small grains, and have been equally successful in treating seed wheat and barley for smut as in the case of seed oats. However, the job must be carefully executed and caution exercised to prevent reinfection of the seed, to attain the most satisfactory results.

E. L. DREGER, MADISON, DANE COUNTY.

Ladies and Gentlemen:—To have holes in our pockets where we try to carry our money and smut in our oat crop are about the same thing. We lose money in both instances. Both can be remedied, especially the smut in the oat crop which can be entirely prevented if a very small amount of money and a little labor are expended. The most satisfactory, from all points of view, is the formaldehyde treatment which is so strongly recommended by Prof. R. A. Moore, and with which I have been experimenting the past two seasons with the most satisfactory results. The first year I experimented with it I sowed about a bag full of untreated seed along side of some that had been treated. The oats were entirely free from smut and where the seed had not been treated there was a large per cent. of smut present. I, therefore, came to the conclusion that if smut could be prevented as easily as this it was unprofitable to sow oats which had not been treated. The second year I treated all the oats that were sown, and in a field of eighteen acres I was able to find only two heads of smut and these were right in the first foot sown from the fence. I think this association as well as the general public is greatly indebted to the Wisconsin Experiment Station for inducing the farmers to use this treatment which, if used throughout the state, would bring several thousand dollars to the pockets of the farmers, and the sooner the farmers learn these facts the better.

RUFUS GILLETT, VERONA, DANE COUNTY.

I use two barrels which I will call No. 1 and 2 respectively. Barrel No. 1 sits upon a box high enough from the ground so that an ordinary pail can be set under a spout which leads from the base of the barrel into the pail. The opening in the barrel into which the spout is fitted is covered by a screen on the inside of the barrel to prevent the oats running out through the spout. The barrel is then filled nearly full of oats and formaldehyd solution from barrel No. 2 is poured into barrel No. 1 until the oats are covered. It will take about 25 gallons of the solution to cover the oats in an ordinary kerosene barrel. Allow the oats to remain covered by the solution for the required length of time, then remove the plug which has previously been inserted in the tube and allow the solution to drain off. The oats may then be poured upon the floor to dry and the operation repeated until all the oats are treated. Several barrels may be used if preferable and as rapidly as the solution drains from one pour into the next and so continue. The advantages of this method are ease of operation, rapidity, efficiency and the simplicity of the outfit.

H. E. ROSENOW, OCONOMOWOC, WAUKESHA COUNTY.

We have used the fomaldehyd treatment for the prevention of smut for the past two years and have found that the time and money spent in making the treatment was a very profitable investment. Besides using the treatment on oats, we have also tried it on barley, but only in a small way, that is on only a few bushels of seed as the barley was only affected with about 3 per cent. of smut, and the treatment reduced it one-half, but I think it would have been more efficient and probably reduced it to a minimum if treated in a stronger solution as in our case the barley was treated after we had finished treating the oats and thus considerable strength of the solution had already been lost from the contact with the open air.

In regard to the experiment of treating the seed oats this last year, will say that we treated about 60 bushels, and about 2 bushels of untreated seed was sown. The solution was made as recommended by the Station, that is, one pint of formaldehyd to 36 gallons of water which was divided equally into two barrels and the oats placed into gunny sacks and submerged for ten minutes then let drain about a minute and spread on the barn floor to dry. As the weather was quite cold and wet in the fore part of April, the oats were left on the floor about one week before they were sown, and as it had been shoveled over occasionally it had become thoroughly dry in this length of time.

Several farmers in our vicinity who had signified their intention of treating their seed oats did not do so on account of the cold weather at that time. Our oats were sown about the second week in April and no difference was noticeable in the plants of the treated and untreated seed until about July 8, when the smutted heads could be seen in the plot of untreated seed; there was no smut in the fields of which the seed had been treated while the other was affected to 8.5 per cent., thus making a total gain of this much or about 7 bushels per acre of the treated over the untreated seed.

And from my experience thus far I believe it will be profitable for every farmer who has any smut in his oats to treat the seed before sowing.

GEORGE Q. EMERY, STOUGHTON, DANE COUNTY.

A year ago last spring on noting the bulletin published by the Experiment Station on treating oats for the prevention of smut I made a test.

In treating, I followed the directions given. After the oats were allowed to submerge in the solution, I emptied them on a large canvas, which was spread upon the ground. The grain was shoveled over several times until nearly dry when it was sown. As the oats were a little swollen when sown, I gave a little better measure than in those not treated. By sowing the grain in this condition, a little time was gained in germination.

Last spring with the exception of four bushels of Swedish

oats, I sowed seed from the grain which had been treated the previous year. There was no smut in the Swedish Select oats while in the other very little was found.

From the result of this experiment I think it would not be advisable to treat grain every year, but care should be taken that it does not become contaminated from other fields. If joining fields are badly infected, seed should not be saved from grain grown near that field. If oats which were badly infected had been stored in bins in which the seed is to be placed it would be well to have such bins sprayed with the fommaldehyde solution. By this careful selection and management of seed I would not think it necessary to treat oats more than once in five or six years.

RAPE AS A FORAGE PLANT FOR PIGS.

C. E. JONES, DOUSMAN, WAUKESHA COUNTY.

My experience in using rape as a forage plant for pigs has been within this last two years, although we have been growing rape for about five or six years. We farmers came to the conclusion that in order to raise hogs the most economical and thrifty way was to grow a bulky, succulent food for them to graze upon. By doing this you will enlarge the frame (or body) of the growing pig and expand his digestive system which will give him the power to digest grain feed closer.

Pigs fed in this way will make a quicker growth with less grain feed required for one pound of gain. The pig feeding experiments at our Experiment Station where rape was used as a forage plant will prove this to you. It even took less grain feed per pound of gain where rape was used than where clover was used. My experience has taught me that in order to produce rape as forage you need other pasture connected with it, such as clover, rye, etc. When you have a variety of feeds which sharpens their appetites, your pigs will not be troubled with scours. Two years ago I sowed one acre of rape connected with clover pasture. The pigs took as readily to the rape as to clover. It is best to allow rape to harden or until some of the lower

leaves turn brown before pasturing. By feeding at the proper stage you will have better results. The latter part of the season when old pastures are getting short and dry, we are in need of a forage crop for pigs. Rape is the very plant that fills the bill of fare. Using rape as a forage will give us an opportunity to change our pigs on different ground. This keeps down disease and produces cleanliness. Last season I plowed up our old hog yard, and sowed rape.

It produced enough forage for eight brood sows from September until winter. This is just the food for the brood sow. Pasturing on rape will make her more active and hasten growth of frame. It seems the only true way of making a good mother of her. The kind of soil we have grown rape on is a sandy loam. About two pounds of seed should be sown broadcast, per acre. Sow when the ground is moist or just before a rain so as to give it a start. You can sow rape from early spring until late in August. Allow me to urge upon every member of the Experiment Association who raises hogs to prepare a small piece of ground, sow it to rape and use it as a pasture crop for the pigs this coming season. Study the results and see if you do not reap a benefit and profit from it.

RAPE AS A PROFITABLE FORAGE PLANT FOR SHEEP.

HENRY J. RENK, SUN PRAIRIE, DANE COUNTY.

We usually sow from 4 to 5 lbs. of rape seed per acre broadcast, and harrow in the same as oats or barley. If the season is favorable it makes a very rapid growth, especially on rich loose soil. When from 12 to 18 inches high it is usually sufficiently matured to turn on to and pasture. But right here I wish to state that rape like clover is apt to cause bloat, unless necessary precautions are taken.

Never turn a sheep with an empty stomach on rape or when it is moist with dew or rain. After sheep are once accustomed to rape we prefer to let them run on it day and night. If they have access to hay or straw with plenty of salt and good water the

losses from bloat will be comparatively small. Occasionally sheep do not take to rape at first, and it is well then to shut them on to the rape to get them accustomed to it. When they once have an appetite for it they are as eager for it as a drunkard is for his drinks. They will eat up leaves, stalks and all. Of course in order to get the best results from the rape we should have a pasture of some kind adjoining the rape field. Clover or blue grass is very good. As you all know a variety of feeds are essential to successful stock production. Not only this alone, but hay, straw or an adjoining pasture will help to prevent scours in sheep or lambs. Rape fed alone is very apt to cause scours.

The most satisfactory results we ever got perhaps was from a 20 acre field. The rape seed was sown in the spring with the oats using a grass seeder attachment to seeder. The season was an unusually wet one causing a very rapid growth of both rape and oats. In places where the ground was rich the oats began to lodge. But the rape kept right on growing for further orders. I still remember the morning my brother and I got down to that field perched on our old Deering binders ready for business. You can imagine the serious expression on those two Dutch boys' faces as they approached this field and found the large rape leaves sparkling with a heavy dew. We stopped some time debating the best method of tackling it, while the dew was drying off. After a while it got dry and we went at it.

The first round we had to cut a full swath "couldn't help it." And you can imagine there was some tall talking done to the horses. The old binders geared up to the top notch. We finally succeeded in cutting all but about 4 to 5 acres. The oats yielded 50 bushels per acre and the rape was from 2 to 4 feet high making a double crop. This big football game or mix up could have been prevented however, had we sown only 2 lbs. of the rape seed per acre instead of 4 to 5 lbs, or had we sown the rape seed a little later than the oats.

Rape will mature when sown as late as August. We sometimes grow two crops per year from the same piece of ground. We have grown an early variety of peas this year and harvested them, then pulverized the ground and raised a good crop of rape. You may sow a piece to rye in the fall and pasture it awhile in the fall and spring. Then turn over and grow a crop of rape.

If your hay crop is poor and you do not expect a second crop, turn it over and sow to rape. A great many times you may grow two crops per year in this way which is quite an item on high priced land.

Now as to results of feeding rape to sheep. At weaning time we turned our flock of lambs on to this 20 acre rape field. Some of the lodged oats had shelled out and started to grow, making a variety of feeds. They had standing oats, rape and new sprouted oats, and free access to a straw pile. We never had lambs do better as long as we have raised sheep. It seems to us as though they had gained in three weeks time from 8–10 lbs. per head. At least they made remarkable gains. We shipped a car load of these lambs and came near topping the Chicago market. They brought us a little better than 5 cents per lb. at home. This was without any other grain, except what they picked up in this rape field.

Experiments also show us that an acre of rape in connection with pasture will produce over 400 lbs. of lamb mutton, at 4 cents per lb. this would bring $16.00 per acre and at 5 cents per lb. it would bring $20.00 per acre. Not very bad compared to grain farming, labor considered, as there is no reaping, shocking, stacking or threshing bill, or twine to pay for. Prof. Craig conducted an experiment at the Wisconsin station with 96 lambs. Putting 48 on rape pasture only and 48 on blue grass pasture feeding grain in connection to both lots. In four weeks' time the rape fed lambs gained 50 per cent. more than the lambs on the blue grass pasture. After this the lambs were put in pens and fattened in winter for twelve weeks and they found that it took 476 lbs. of grain for 100 lbs. of gain on the blue grass pastured lot and 429 lbs. of grain for the rape fed lambs. So the rape fed lambs made 100 lbs. on 47 less lbs. of grain. This shows that lambs fed on rape in the fall make better winter feeders.

EXPERIMENTS WITH GROWING ALFALFA IN WISCONSIN.

HENRY E. ROSENOW, OCONOMOWOC, WAUKESHA COUNTY.

Alfalfa has been grown with more or less success in every state in the Union; it is the best hay and soiling crop of the west; and has been highly recommended in the south as being a valuable addition to their list of forage grasses and clovers; in the middle and eastern states it promises to become a rival of the better known and more widely grown red clover; and surely there is no reason why it should not be grown more extensively in Wisconsin. To secure this result it becomes the duty of the members of this Association to get this valuable plant established and to learn the best conditions suitable to its growth in the different parts of our state.

My experience of growing the plant is limited to the knowledge gained from the experiments carried on in a small way for the past two seasons which have both been too wet for best results in getting a stand. The plot which I seeded previous to last year did not make as good a showing last spring as I had expected, a part of the field which was on lower ground was too wet in the spring and as a result the plants were killed, but the number killed by frost varied in different parts of the field, on some places the stand was light while other places it was good and also made better growth during the season, but all through the field there is considerable June grass sod getting started.

There were three crops of hay cut from the field last summer, the first cutting was made on June 17, the second July 30, and the third on Sept. 21, each crop yielded one ton per acre or three tons per acre for the season, the last crop was the only one we succeeded in getting in without any rain on it and it made some excellent hay which is relished more by the stock than any other hay on the place, a part of the hay has been reserved for the winter's feeding to the hogs and poultry which eat it greedily and without any waste.

I also sowed one half acre of Turkestan alfalfa this last season, it was sown the 23d of April, on a gravely loam soil which had been fall plowed and previous to seeding it was disced several times and then oats were sown for a nurse crop at the rate of 1½

bushels per acre, after which the alfalfa was sown at the rate of 20 lbs. of seed per acre and then the ground was harrowed once which covered the seed sufficiently, the young alfalfa plants were noticeable within 5 days of sowing.

The plants made good growth all season and during the month of June I noticed a considerable number of noxious weeds in the field, the seed of which must have been in with the alfalfa seed, most of the weeds were the European mustard which were all pulled out at that time; along in the first week in July the cattle broke into the plot and ate off most of the oats and trampled the young alfalfa plants some, but it did not seem to have injured them any. The remaining oat plants did not grow very large any more and also rusted considerably and on the 28th of July the plants were clipped off with a mower and left on the ground as a mulch. After this the young alfalfa plants seemed to get a good start and made an even growth of about 6 to 10 inches for the remainder of the season, this was left standing as a winter protection.

In regard to the alfalfa plants gathering nitrogen from the air in the soil and storing it in the tubercles on the roots; I examined the roots of a number of plants and occasionally there was a plant that had grown much larger and more branching and also had a darker color than other plants, on the roots of these plants I found a number of tubercles which contained the nodules produced by the nitrogen-gathering bacteria; while on the roots of the weaker plants these nodules were absent, therefore I believe it would be beneficial to apply some soil from an old alfalfa field, in which these bacteria were present, to a field newly seeded to alfalfa. Another way to secure the benefit of these nitrogen fixing bacteria on all the plants is to sow seed which had previously been inoculated with the same, and through the effort of the Bureau of Plant Industry of the Department of Agriculture I have made arrangements to secure a certain amount of inoculated alfalfa seed this coming season and compare the results with a plot sown with the uninoculated seed.

ALFRED B. HICKEN, WAUKESHA, WAUKESHA COUNTY.

My experiment with the alfalfa plant was to determine the drouth resisting properties of the Common versus the Turkestan varieties.

For the experiment I took one acre of well drained clay soil, with a heavy clay subsoil, that had produced potatoes the previous year and was not plowed in the fall.

Early in the spring I worked the land up thoroughly with a disk harrow, going over the piece four times, lapping it half, and then divided the piece into two equal parts sowing one with the common and the other with the Turkestan variety, at the rate of 30 lbs. per acre. I sowed one bushel of barley as a nurse crop, and cut it when ripe for grain.

The season was very wet and the plants were very strong and healthy. I couldn't see any difference between the two varieties last fall, and they went into winter quarters standing from eight to twelve inches high and covering the ground quite closely.

JOHN P. BONZELET, EDEN, FOND DU LAC COUNTY.

To grow alfalfa successfully one of the first and most essential conditions of the soil is good drainage. For as the saying is alfalfa will not grow with wet feet and from what experience I have had up to this time, I find that the saying holds good. But there are other conditions that must not be lost sight of, some of them are good seed, soil that is free from weeds, soil that is rich in fertility and has a porous subsoil so that the roots can penetrate through it. See Fig. 3.

In the selection of the ground on which to grow alfalfa let it be high rather than low, for water standing over the alfalfa plants for 48 hours will kill them, so it is very important that the ground be rolling enough at least so that the surplus water will run off readily. I prefer to sow on ground which the year previous had been planted to potatoes or some other cultivated

J. P. Bonzelet, Eden, Wisconsin, makes his first attempt at growing Alfalfa.

crop. The weeds will be pretty well killed out and on such land the ground will be in good tilth as it should be to grow alfalfa. The ground should be plowed deep the fall before sowing to alfalfa and as soon as dry enough to permit in the spring the ground should be cultivated so as to break up the crust and prevent evaporation and also to sprout and kill what weed seeds that may be left from the year before. The seed should not be sown until the danger of hard frosts is over in the spring. We must thoroughly prepare the soil on which the seed is to be sown and in regard to this very important operation let me say that no effort should be spared. First the ground should be well cultivated so as to make it mellow, after this has been done the harrow and roller must be used to break up the lumps and to smooth down the surface. The amount of seed required per acre varies from 15 to 30 lbs. according to germinating quality. I have sown 20 lbs. with good success and in what experience I have had I consider this amount sufficient, providing the ground is practically free from weeds and has been well prepared. Care should be taken not to cover the seed too deep; from ½ to 1 inch is plenty. After having tried both methods of seeding with and without a nurse crop I must say I prefer sowing without the nurse crop.

Last season I received two cuttings from my first year's seeding and had a good heavy growth left for winter protection. One of my chief objections to a nurse crop is the danger of it lodging and smothering the young alfalfa plants, or taking plant food out of the soil that is so badly needed by the tender young plants. It has been my experience that a nurse crop is detrimental if the ground is not weedy. If a nurse crop is sown and it lodges remove it at once or the alfalfa plants will be choked out. If sown without a nurse crop and the weeds should begin to get ahead of the alfalfa plants run the mower over and cut weeds, alfalfa and all about two inches from the ground. If at any time the alfalfa does not seem to be doing well, or in case of it turning yellow cut it at once. When it comes to the making of alfalfa hay be careful not to get in a hurry for if you do the chances are there will be some trouble or spoiled hay. The making of hay requires considerable skill on account of the nature of the plant. To make the best hay the alfalfa should be cut just when the first flowers commence to appear. If al-

lowed to go until in full bloom, or until the plants have finished flowering the stems become hard and woody and are unfit to be eaten by stock. To make good hay, cut alfalfa in the forenoon. Let it lie in the swath until the leaves are thoroughly wilted, but not dry and brittle, then rake in windrows and leave it until fairly dry. After properly cured remove it directly from windrows to stack or barn. The art of making good alfalfa hay is to be acquired by practice rather than by following directions, as the quality depends upon putting it in the stack when it is just sufficiently cured to keep without heating and yet is green enough to hold the leaves.

R. C. SCHREIBER, FALL RIVER, COLUMBIA COUNTY.

Last spring I received ten pounds of alfalfa seed from Prof. Moore, five pounds common and five pounds turkestan, to experiment with. The ground used in this experiment was part sod and part corn ground, some of it being fall plowed and some spring plowed. The sod was used as hog pasture the summer before. The ground was thoroughly worked up into a fine seed bed, and the seed was sown at the rate of twenty pounds per acre. I used spring wheat as a nurse crop, which I think is just as good as barley. It will ripen just as soon and not lodge. The wheat was sown as a nurse crop at the rate of a bushel per acre. About ten days after the seed was sown the young plants were noticeable. The plants were about eight or ten inches high when the wheat was cut. After the grain was cut the Turkestan variety grew quite well, while the common did not seem to do as well. It was four or five inches behind the turkestan in the fall. Both the varieties seemed to do better on the spring plowed corn ground. I did not cut the alfalfa, consequently did not carry on any experiments in curing or feeding the hay.

DAVID WILLIAMS, FT. ATKINSON, JEFFERSON COUNTY.

Select a heavy clay soil with a fair drainage, and sow about thirty pounds of alfalfa to the acre along with a bushel and a

half of oats or one bushel of barley to the acre. The seeding may be done about the first of May. The oats should be cut just when it begins to head or sooner if it is thick and lodged. In wet seasons if the stand of oats is thin it can be left until ripe. The alfalfa plant is very small and dainty at the start, but when properly managed it is a valuable and certain crop. Generally no crop can be secured the first year, but the second year you can make the first cutting before it is in full bloom. In fair drying weather cut it down one day and the next forenoon shake it up with a hay-tedder and in the afternoon it will be ready to bunch up in large cocks if the weather is fair. The cocks should be covered with a cotton hay cap and left to stand for a few days when it can be stacked or hauled into the barn. The alfalfa hay wants to be cured in the shade and for that reason we should expose it to the sun as little as possible, so it should be bunched up as soon as it is a little wilted. In Wisconsin the fourth crop should always be allowed to stand on the field as a winter protection, if you are expecting to raise another crop the following year. The effect which alfalfa leaves on the land can be seen by the way in which the soil becomes finer and more broken up besides adding greatly to its fertility.

E. E. JONES, ROCKLAND, LA CROSSE COUNTY.

Can we grow alfalfa in Wisconsin successfully, is a question which is receiving considerable attention in Wisconsin at present. Every stockman should aim to raise on his own farm the necessary feeding rations, so that he would have to depend less on the milling corporations to furnish him their high priced bran, shorts, etc. Chemical analysis shows that alfalfa is very rich in digestible protein and also in digestible ash, even richer than bran, and it will come nearer taking the place of bran than any other food we can produce on our Wisconsin farms. Alfalfa is being successfully grown in several sections of Wisconsin and I think that the time is near at hand, when it will be grown successfully throughout our state. Alfalfa is a deep

rooted plant and if you have a subsoil not too hard and a rich surface soil, then you will have the best conditions. Alfalfa requires rich soil with a porous subsoil, well prepared, so you can make the seed-bed early in the spring. Twenty pounds of seed to the acre is about the proper amount to sow.

As to the method of seeding there are several different ways advocated. Some prefer seeding alone, while others use a nurse crop and cut the nurse crop early for hay, while still others leave the crop of grain to mature. In the last mentioned, barley is considered the most satisfactory, for the reason that it matures earlier than any of the other crops. In case the crop is left to mature, the grain shocks should not be permitted to stand on the alfalfa more than three or four days, for the reason that it will kill out the young alfalfa plants. You should watch your alfalfa very closely and if you detect any yellow leaves, you should run the mower over the field and clip those leaves and let them remain on the field for a mulch. The first year is the hardest to get through the winter and it is well to cover the field with a thin layer of straw manure before the ground freezes.

We members of the Wisconsin Experiment Association should all try and grow alfalfa on a small scale at first, and let our fields grow larger as we gain experience.

HON. W. D. HOARD, FT. ATKINSON, JEFFERSON COUNTY.

I always enjoy hearing from the boys. The past month I have been lecturing in the Atlantic states and it is painful to see all the audiences there composed of gray headed men. I do not like to see agriculture represented entirely by men on the shady side of life. The boys are all gone. One man in Maine said to me, "My father took the old farm from his father, he from his father before him, I took it from my father, now my boy has refused to stay on the old farm. These old arms are growing weak, and mother and I cannot stay here much longer. It seems hard to bear."

New York has lost in the last thirty years a billion and one-half dollars in the decline of value of her farm lands, because the boys did not take sufficient interest in agriculture. The Atlantic

states are just waking up to shape the minds of the boys toward agriculture. It is valuable to Wisconsin that a different ferment is in the minds of the young men of our state. I believe the law of ferment applies to mind. Mental ferment is as necessary to the mind as brewer's ferment is to the malt, as the baker's ferment is to the bread.

Nine years ago I commenced the study of alfalfa having concluded that alfalfa could be grown in Wisconsin. Thirty years ago a man in Koshkonong sowed some alfalfa. There are roots now in the fence corners. I soon became convinced that I must know what to do with it from a Wisconsin standpoint. No man had yet considered it from a Wisconsin point of view. It had been considered from the standpoints of Kansas and Nebraska and other western states. Having some vacant lots in the village I sowed some alfalfa thereon. I was as green as the alfalfa that grew on them. It is easier to teach an ignorant man than one who knows it all, as an ignorant man carries a blank page in his mind on which you can write. The man who is wrongly educated carries a scribbled page which you must first erase. Don't carry a scribbled page around in your head. It is hard to get it out. I heard of an old preacher whose head was so full of what he didn't know that he was foggy.

My first attempt growing alfalfa was on these village lots, which have a black soil with a blue clay sub-soil and the water table is about twenty feet below the surface. The alfalfa grew well.

Professor Roberts of Cornell came to visit me for a few days and I took this wise old man out to show him my alfalfa. Something was the matter, and I wanted him to tell me what it was. He immediately said "dodder." "Dodder is a parasite that grows on all leguminous plants. It must be cut out immediately and burned. It is a good thing to have had experience with dodder."

I grew alfalfa on other soils. From my experience I have learned the following: First; the soil must be well prepared. Many farmers think that alfalfa can be grown the same as clover on poorly prepared soil, but it cannot. You must give special preparation to the soil. I plow once, disc twice, and harrow twice, then sow thirty pounds of seed to the acre. The thicker you sow the seed the more it seems to defend itself against the winter's frost and the better it will do. Second; some say it

should be cut the first year. They cut it two or three times the first year to kill the weeds, but bless your heart, what will kill the weeds will kill the alfalfa too. It must be allowed to form good strong roots the first year; sow alfalfa enough to make it uncomfortable for the weeds. Several of my neighbors secured seed containing seed of the Russian thistle. They were all frightened and all but one man plowed up their alfalfa. This one man kept his head, and the Russian thistle was persecuted unto death the next year. Third; never allow a hoof on an alfalfa field in Wisconsin. An old German neighbor of mine had a fine field of alfalfa at Ft. Atkinson, Wisconsin, on which he turned his cows. I met him and said to him, "Fritz I am afraid you have spoiled your alfalfa." "Ach no!" he said. "What do these newspaper men know about farming." "Well, I am afraid the pasturing will kill it." I thought, "all right old fellow, fry in your own fat." There is nothing like a man furnishing his own fat to fry in. He pastured his alfalfa and killed it. His neighbors jollied him, asking him if he was going to raise any alfalfa. He finally came to me and wanted to talk about alfalfa. Christ said, "Except ye become little children ye cannot enter the kingdom of heaven." I say, except ye become as little children ye cannot enter the kingdom of alfalfa. The crowns of alfalfa plants are very sensitive. Where a load has been hauled through a field, wheel marks can be plainly seen the next year, where the plants have been set back by the pressure. Fourth; the growth must be left high for winter protection. I had a field of eight acres which furnished seven tons of alfalfa hay per acre. This was worth ten dollars per ton. Yes, it was worth more than ten dollars per ton. My foreman thought it would be too bad to waste all of the fourth cutting so one day when I was absent, he commenced cutting around the filed. He had cut about five acres, when I came home and stopped him. It seemed to be doing very well through the winter, but along in February or March, we could see that the snow melted off that part which had been cut, but was left on the part uncut. That part that was cut you could pull up the plants and three-quarters of them were rotted. I broke up the outside, and seeded it but it did not do well. Cut five or six tons to the acre this last summer on the center that was left and then I broke up the whole field last fall.

Last spring the whole of my farm with the exception of my

alfalfa field, plowed up shiney. You all know what it means to have a field plow up shiney. That shows the soil is too moist. The ground does not break down as it should. It took three good horses to plow up that alfalfa and you could hear the roots crack for twenty rods, but the soil was mellow and in fine condition.

HOW TO CURE.

Don't undertake to cure without muslin hay caps. It must go through the first sweat in the cock. Cut when it commences to blossom. Rake up and cock, then put on caps. The caps are made of muslin forty inches wide, and cut in forty inch pieces. I went to the blacksmith shop and bought a lot of old horse shoes and had them cut in two. Had a hole punched near one end and tied one of these to each corner. When the wind blows this end sticks into the hay and holds it. The cocks must be moved every day or two to prevent the killing of alfalfa underneath them.

Be careful to give horses only a limited quantity. They are so fond of it that they will eat too much. Last winter I wintered nine brood sows on nothing but alfalfa hay. Had seventy-eight pigs in the spring and only one titman. Never saw a brighter, thriftier, healthier lot of pigs. Saved seventy-five of them and marketed them this fall. It only cost me one dollar and fifty cents each to winter the brood sows. I am keeping six this winter. Poultry is very fond of alfalfa. I have had a flock of Buff Plymouth Rocks feeding on the alfalfa fields all the past summer.

Alfalfa has a fondness for lime. Dress the land with thirty bushels of lime to the acre. I bought five or six hundred bushels of ashes to put on my alfalfa at the rate of thirty to forty bushels to the acre. Never plant alfalfa on land where the water table is less than fifteen or twenty feet from the surface.

"Put that in your mental pipe and smoke it."

Select land with good slope so surface water will drain off quickly and not leave little hollows for the water to freeze during March for this will kill the alfalfa.

Question. What experience have you had in pasturing?

Answer. Not any. I don't pasture. I don't dare. I supported a drove of hogs on an acre and a half of alfalfa by cutting

it three times a day and feeding it to them. I never saw sows give milk as these did.

Question. Don't you think you could get them to ruminate if you kept at it?

Answer. If you mean mental rumination I don't know but I could. They seem to stand and think. (Applause.)

Question. What crops do you follow with alfalfa?

Answer. No special crop, but have nearly always followed with corn.

Question. Do you cut the hay with feed cutter for your brood sows?

Answer. No, but think it would be a good thing to do.

Question. Do you think it does better in a wet or dry season?

Answer. Can be seeded in an exceedingly dry season.

Question. Do you use a nurse crop?

Answer. I use a bushel of oats or barley to the acre. I don't think I make anything by using a nurse crop.

PROFESSOR MOORE.

In speaking of alfalfa as a drought resistant plant, compared with clover, will say that I carried on, with the United States Department of Agriculture, a cooperative experiment with clover using twenty-four different varieties. This was in 1901, the season of great drought in southern Wisconsin, as you all well know. I sowed alfalfa in plots next to the clover plots and when the hot dry weather began to come on the clover began to wilt till all had disappeared. Not so with the alfalfa. It appeared to enjoy the drought and I got an excellent stand. I have got three cuttings of alfalfa annually since from the same plots.

Pasturing means death to alfalfa. This has been tried several times on the Experiment plots and the pasturing in every instance has killed or greatly thinned the alfalfa.

If your alfalfa is submerged by water for only a few hours it will smother. You should plan on having a good stand of alfalfa, at least a foot high, for winter protection.

Question. I would like to ask Gov. Hoard how he would grow alfalfa for seed?

Answer. I have been trying for a number of years but have not succeeded. Alfalfa is susceptible to "yellows," a parasitic disease. The lower leaves turn yellow and drop off, until some-

times the ground will be covered with yellow leaves. The alfalfa must be cut on the first appearance of "yellows."

Question. When is the best time to sow without a nurse crop?

Answer. About the time of sowing barley.

Question. Do you advise breaking it up in fall or spring?

Answer. I don't know. I never tried anything but fall plowing, to any extent. If I wished to break up alfalfa ground for corn would do so late in the fall. Alfalfa produces a splendid mechanical effect on the soil and nitrogenizes the land the same as does clover. I am going to try and go over the whole of my upland plow land with alfalfa. I believe it will prove a great soil renewer and fertilizer. Every farmer ought to make a special study of this wonderful forage plant by sowing every spring in plots of a few acres and so get his mind and judgment with the principles that govern its growth. It is a very exacting plant and is bound to be treated exactly right or it refuses to grow. Hence the necessity of every farmer knowing something about it from the standpoint of his own farm experience.

GROWING SOY BEANS IN WISCONSIN.

J. ROY GORDON, MINERAL POINT, IOWA COUNTY.

Immediately after corn planting, in well prepared soil, I drilled in with a corn planter the *Ito San* variety of soy beans. I cultivated them four times with a Janesville disc riding corn cultivator, and at harvest time they had scarcely a weed in them. They ripened nicely and were perfectly hard before frost. I intended to harvest them with a corn-harvester, and think that would have worked all right, but I found that I had planted them too thickly and they did not grow high enough to cut in that way. We had to pull them. We piled them in piles and let them dry for two days but were afraid of rain and after the second day hauled them to the barn. They were

threshed with a threshing machine that had all the concaves taken out, and boards substituted, therefore you can see by the sample here, that but very few were injured by threshing. Owing to the excessive wet weather, some of the beans on the lower part of the stalks were pounded down upon the ground and this caused them to turn black. The sample here is a couple of handfuls just as they came from the bin. In fact it was dark when I got them and I took the first I came to. Had I the means of cultivating them I should have gone over the field again with the planter straddling the rows and thus increased the yield. I have had no experience with soy beans as a hay or forage crop. Have fed a few to pigs and find that they like them. We have fed them to our chickens this winter mixed with oats for a morning feed, and they pick out all the beans first. One of the boys was telling me yesterday that he sows rape and soy beans together for hog pasture, and that he finds it all right. That was Mr. Osterday of Lafayette county, perhaps we can hear from him in the discussion.

W. ANDREWS, LIVINGSTON, GRANT COUNTY.

The soy bean is yet in the experimental stage. I never saw a soy bean till I grew them last season. The soy bean has given such good results in feeding trials with hogs that I concluded to carry on an experiment with them and determine whether they could be grown to maturity under our conditions of soil and climate. I got the seed of Mr. Edw. Evans of West Branch, Mich. The seed was northern grown and had become acclimated. If they had not been acclimated they probably would not have given very good returns. I tried several varieties and all the early varieties were ripe before frost came. I found that one of the best varieties to grow when a crop of seed is desired is the extra early black; this is one of the earliest and it produces a very large amount of seed in proportion, to the amount of vines. For this reason the rows should be planted close and the beans should be drilled closer in the rows than the late varieties that make more growth. The soil did not contain the right

kind of bacteria for forming nodules on the roots of the plants to enable them to take nitrogen directly from the air. The soil was a good clay loam and probably contained all the nitrogen that the beans needed in their growth. If the soil is to be benefited by the growing of any leguminous crop on it the soil should be inoculated with the right kind of bacteria. The worst difficulty in growing soy beans for seed is to get them harvested. When a convenient way of harvesting them is found I think they will soon become a very important and profitable grain crop to grow for feeding farm animals, particularly hogs. When they have been fed to swine in small quantities in connection with corn very satisfactory gains have been obtained. They may also become very useful for the purpose of planting with corn and cutting them with the corn for silage or fodder.

P. A. DUKLETH, BIG BEND, WAUKESHA COUNTY.

There is not a dairyman who does not feel tempted to ignore the feeding of coarse and concentrated feeds that contain a high per cent. of protein, when the same have to be bought upon the market or from dealers that handle such feeds, on account of such feeds commanding very high prices, and have to be fed to dairy cattle with the utmost skill and best judgment in order to obtain a small margin for the money and labor invested in the undertaking. But experiments have demonstrated that, when milch cows have been fed exclusively upon coarse feed, that is generally grown on the farm, such as corn, timothy and clover hay the ration will be too wide, and, therefore, will have to be substituted with other feeds that contain a higher per cent. of protein, in order to obtain the best results.

Now it becomes a question at once with the progressive dairymen, how can we grow a crop on our farms that can balance the feeding ration of milch cows, more than the above mentioned crops and save the expenses, not only the feed alone but also the profits that are retained by middlemen who handle these feeds, from the time they are obtained from the grower until they reach the feeder, which in many cases amounts to a very respectable sum of profits.

Much is being said in the agricultural press concerning the home production of protein, mentioning such protein producing plants as the cow peas, field peas and soy beans. The latter has not as yet passed the experimental stage in Wisconsin, and therefore experiments have been carried on by this Association to determine the value of this bean and how it can be most successfully grown as a farm crop.

The soy bean is taller and stiffer than the other protein producing plants; will reach a height of from two to nearly four feet if the soil upon which it is grown is well cultivated and contains sufficient fertility to grow a crop of corn.

The silo has become one of the most important buildings on a dairy farm and corn has proven to be one of the cheapest crops to grow for silage, but as the corn silage contains a high per cent. of carbo-hydrates and a low per cent. of protein it does not become a perfect feeding ration and some other feeds have to be fed with it to make up a so-called "balanced ration." It becomes a very important question as to how we can grow a crop with the corn that has a high per cent. of protein.

Studying this question I have been induced to believe that the soy bean can be grown and harvested successfully with a crop of corn for silage purposes.

An experiment was carried on last year with the soy bean of the Ito San variety. The beans were mixed with corn in the proportion of one part soy beans and four parts corn, and the result was a favorable one as to growth and harvesting the crop.

A larger trial was made with the same variety the present season on our farm in Waukesha county. About ten acres were grown, using the same proportion of beans and corn as the previous year. The mixture was planted with a two-horse Deere corn planter, dropping the seed about four inches apart in the row.

Some trouble was found in this method of planting when the seed hoppers were filled full with the bean and corn mixture. The beans being smaller than the corn would work their way down faster than the corn, consequently the latter came to the top, caused by the jarring of the machine, the land being quite firm after heavy rains and time was not taken to re-pulverize the field. If the seed-bed had been loose and well harrowed the planter would have run smoother and the separating of the seed would not have been so rapid as in the case mentioned above.

After the field was planted it was cultivated with a two-horse riding cultivator straddling every row and cross harrowed with a smoothing harrow.

The beans and corn appeared through the ground about the same time.

A slanting tooth harrow was run over the field after the beans and corn were above ground. A considerable number of bean plants were covered over with dirt but this did not seem to check their growth for they soon were above ground again and showed no bad results.

The cultivation of the crop was started as soon as the corn was sufficiently large to allow the man on the cultivator to follow the row, but at this time the beans were not as tall as the corn, and when the shields of the cultivator were raised to allow some of the finer soil to be thrown towards the corn, it would cover some of the bean plants; for this reason the shields had to be lowered and this would be objectionable if the weeds had been allowed to start before cultivation could be started. After the bean plants had attained further growth there was no further trouble in cultivating.

In early September the beans were podding and the corn was fairly well eared, but the ears were only partially developed. Medium early corn was used in this trial, viz.: the Mastodon and White Cap Yellow Dent.

The mixture was cut October 11th to 17th, and bound successfully with the Milwaukee Corn Harvester, at which time the beans were well matured and considerable of the leaves had dropped off, the bean pods filled and the corn kernel commencing to glaze.

This was the second trial made in cutting the corn and bean mixture with a harvester. In both cases, however, some of the lower pods on the beans were left uncut. If the machine was tilted very low it would leave a very small per cent. of the bean pods, but would materially increase the draft.

This mixture was run through an ensilage cutter before it was put into the silo. The silage is being fed at the present time and is very satisfactory.

The objection found with the Ito San variety in this year's experiment was the same as the previous year, viz.: that this variety matured too early and practically all the leaves

dropped off before the corn was sufficiently matured to be cut for the silo.

The soy beans were also grown in a plot by themselves and they made a more rank growth than when grown with corn. It was believed at the time, however, that the increased cost of handling the crop (as it could not be harvested with a corn harvester when grown separately) more than counter balanced the value of the additional protein secured, and would not be mixed as uniformly with the corn silage as when grown with the corn.

GENERAL CONCLUSIONS.

1. Corn and soy bean seed can be mixed together and planted successfully with a two-horse corn planter.
2. The cultivation of the mixed crops can be made with the same machinery that is used for cultivating corn.
3. When a medium early bean was planted with the corn, the corn and soy beans would mature at the same time.
4. The mixture can be successfully harvested with a corn harvester and economically handled for silage.
5. The bean crop is unformly mixed with the corn silage when the two are grown together.
6. That the silage from soy beans and corn is eaten in a satisfactory manner by dairy cows.
7. That it has in a measure aided in increasing the supply of home-grown protein.

TRIAL WITH SWEDISH SELECT OATS (WIS. NO. 4).

EDWARD F. HEUER, WAUTOMA, WAUSHARA COUNTY.

Mr. President, Fellow Members of the Association and Short Course Students:—

It is always quite an honor and pleasure to be able to speak to a large audience and I greatly appreciate the pleasure of having the opportunity to say a few words to you about my

experiments and trials with Swedish Select oats. I have grown these oats for two years and am perfectly satisfied that they are well adapted for our county and that they are the most profitable, to my knowledge, grown in our community. A year ago last season, although somewhat dry, they grew up well from the ground, being about 3½ feet tall, and last season it being almost too wet they grew very vigorously and thriftily but on account of their heavy, stiff, bright straw they did not lodge although some were over 5 feet tall, and this, I think, accounts for their heavy yielding qualities. The straw being plenty stiff enough to carry the heavy, large, round heads with well filled, large, white, plump kernels. The oats are of the best quality having very large meat and very thin hull which makes them a very good oat for all feeding purposes.

I treated my seed with formaldehyde and there was scarcely a trace of smut to be found in them. One of the greatest values about these oats is in their early maturing qualities, for this reason they are well adapted as a nurse crop in which to sow clover and other grass seed. These oats get ripe and can be cut from 5 to 10 days earlier than most other varieties which makes a great difference with the small grass plants. On account of their earliness they escape being affected as badly with rust and also get out of the way of chinch bugs and other pests. Last season was a very poor oat year, but the Swedish Select oats did very well for me. I got about 40 bushels per acre. I did not sow any other kind for I was convinced by the first year's trial that they were the kind of oats to grow. The average increased yield per acre the year before last was enough more over the other oats to convince me that I did not want to take any chances in getting them mixed. My neighbor had a field near by and on practically the same soil and in about the same condition. His yielded him 26 bushels per acre where mine produced 40 bushels per acre, making a difference of 14 bushels per acre in my favor. Now figuring that at 35 cents per bushel would make a net profit of $4.90 per acre, and estimating that for 20 acres, the usual amount most farmers raise in our locality, would mean a net profit for one year of $98.

If the farmers could be induced to sow these oats it would mean many dollars to them and that would mean better farm buildings, better stock on the farm, more luxuries and more enjoyable living for the farmers and their families.

ERNEST A. DONALDSON, EAU CLAIRE.

Mr. President, Fellow Members of the Association:—

I don't know that my testimony in regard to the Swedish Select oats will be of any considerable value to you. A good many of those present at the annual meeting heard a large amount of favorable evidence last year, and as a consequence obtained some of the seed. I was among that number. I purchased seed of Mr. Ebert, of Tomah to the amount of ten bushels, at 75 cents per bushel. The ten bushels came in three ordinary grain sacks; One American A sack weighing over 120 lbs. We sowed them with a broadcast seeder on four and one-half acres of high clay ground, some of which was stony.

At the time of sowing we thought it was about the poorest piece of ground we had, but it turned out to be the best on account of our having so much rain.

As they grew and headed out one could easily tell where the division was in the field. They ripened about a week before the others did and were entirely free from smut. I couldn't find a single smutted head in the field. They yielded approximately 58 bushels to the acre, or about 10 bushels more than our old variety which we call No. 7, and paid $2.25 a bushel for at the time we first got the seed. I consider the Swedish Select oat a very superior one both for feeding on account of its thin hull and for its large yield. Our surplus seed is all spoken for at 60 cents and 75 cents per bushel at the granary. One man ordered 60 bushels for his own use. It has proven a very profitable investment for us and we will sow nearly all, if not all, of that variety the coming spring.

RUFUS GILLETT, VERONA, DANE COUNTY.

I began raising Swedish Select oats in the spring of 1902, obtaining one sack of the seed from Prof. R. A. Moore which I sowed on about one acre of ground. Owing to the nature of ground and condition of the season, I harvested only about 20 bu. of good oats as they lodged very badly. The spring of 1903

Stock and Grain Farm of Anton Cherovsky, R. D. 1, Kewaunee, Wisconsin.

Showing a Field of Swedish Select Oats that gave a yield of 81½ bushels per acre by weight.

I sowed the 20 bu. on 10 acres of loose, low prairie soil and had a very good stand, but owing to the rust they yielded only 40 bu. per acre by weight. In conclusion will say that I regard them the best oats there are to my knowledge as they, like our standard breeds of livestock, have a history behind them which tells of their performance in the past. Their superiority over most varieties of oats are earliness, even stand, heavy grain, and trueness to type.

JULIAN CHEROVSKY, KEWAUNEE, KEWAUNEE COUNTY.

Fellow Students:—We meet here today to see what improvements have been made since this Agricultural Experiment Association was formed. While sitting here yesterday and today, I have seen that we are taking great interest in our work (I say our work.) Why? because the future of agriculture depends quite largely on our boys who have graduated from the Short Course.

My subject today is a short talk on Swedish Select oats. I will in a brief way tell you my experience the past season. I sowed these oats on a sandy clay loam soil on which the year before potatoes were planted. I sowed them with a broad cast seeder on a well prepared seed bed. The oats were treated beforehand for smut. At the time of seeding I found they were swoolen somewhat, consequently I sowed them two and one-fourth bushels per acre with good success. They came up as green as a lawn until they were between three and four feet high standing as straight and stiff as a wall. I couldn't help but get a picture of them. See Fig. 4. I believe the treating of oats for smut greatly improved the crop, because the oats sprouted quicker and grew better.

All members present who have treated seed oats in the past for the prevention of smut can not help but note the great improvement in appearance and general character of the grain grown from treated seed.

The Swedish oats proved to be great yielders as we threshed 81½ bushels per acre which we considered an excellent yield for last year.

We can't farm as our forefathers farmed, we must find a better way if we wish to reach the highest degree of success.

JOHN P. BONZELET, EDEN, FOND DU LAC COUNTY.

While attending the Short Course in Agriculture I became interested in a variety of oats known as the Swedish Select oats. I purchased a sack of Prof. Moore, who had been growing them for some time, and had found them to be superior in quality as well as in yield to any that he had grown. My experience was a very satisfactory one. I sowed the Swedish oats on one end of a barley field so that they might not become mixed with our other variety of oats. They yielded about twenty-four bushels more per acre than did our own variety, and they did not rust nearly as badly. The rust was barely noticeable in the Swedish Select oats while in the others the rust was very bad. The Swedish oats stood up well, not a single plant lodged, while our home variety was lodged to quite an extent. In conclusion I will say that any one growing oats either for market or for feeding purposes cannot make a more profitable investment than to secure a few bushels of these oats for trial purposes.

SUMMER PASTURES FOR GROWING HOGS.

L. P. MARTINY, NORTH FREEDOM, SAUK COUNTY.

Before discussing how and what to have for our pastures for hogs in the summer time we might spend a moment in considering the value and importance of summer pastures.

In the first place abundant pastures are the cheapest feed we can supply our hogs and the more we can get them to graze the cheaper the cost of pork production. I doubt if there would be much profit in growing hogs; all the feed was carried to them in a concentrated form.

Pasture also furnishes the best kind of roughage for our hogs. So many feeders lose sight of the fact that, to get the best results in pig feeding as in other lines of live stock, the ration should have a certain amount of volume to it to get the best results. There is nothing that will answer this purpose better than good pastures where the pig can regulate the amount and bulk of his food to his heart's content and he can do it better than any feeder can do it for him.

Again we should keep in mind that pastures are about the only succulent feed our hogs get and all good feeders realize the importance of having some succulent food for our animals. The dairyman realizes this perhaps more than any other farmer because he sees the immediate effects in milk production, but it is just as necessary that we should have succulent feed for our hogs only we do not see immediate results quite so quickly as the dairyman does.

Another great advantage of pastures is that they furnish a lot of cheap protein and mineral matter that helps to balance the grain rations fed them and thereby develop in our hogs strong bones and muscles.

In planning our pastures for our hogs there are certain things that we should keep in mind. We should have pasture in the spring as early as we can possibly get it and as late in the fall, in fact we like to have as much as we can the year around.

Next in planning our pastures we should have a great variety so as to encourage as large a consumption of this cheap feed as we can.

In the planning of pastures we should have started last year by sowing a small piece of that most common and often times despised plant, winter rye. It should be sown in August or September in some old hog pasture, in the corn field at the time of the last cultivation or on some other piece of land especially prepared.

This rye will make a good fall pasture and in case of an open winter the hogs can get a great deal of green feed. The rye starts earlier in the spring and makes a more rapid growth than any other plant we have but we can not depend on this for any great length of time as it grows very rapidly and soon becomes coarse and fibrous. We use this for first early.

Next I would mention as a valuable pasture the common

blue grass or June grass as we call it. This comes on very early and will furnish a great deal in the way of the best kind of forage, but like the winter rye its season of usefulness is rather short as it soon ripens and its growth is nearly stopped until cold weather comes in the fall.

These two plants that I have mentioned, we can have on any farm without much difficulty, but from this time on is the difficult period of furnishing our hogs with good pasturage.

If we are successful in having a good catch of clover at this time we will have one of the best pastures we can get for a great part of the summer time, for I do not know of a better single pasture plant than the common clover, but in connection with this we want something else for variety and especially if we are not fortunate enough to have the clover.

For future pastures, as soon as we can get on the land in the spring we prepare a piece of land and sow it with a grain mixture of 2 bushels of barley and 1 bushel of peas per acre. We seed with this mixture 2 quarts of Dwarf Essex rape and 4 quarts of medium red clover.

We will sow two or three of these pieces at intervals of two or three weeks. When the barley in the first field gets about one foot high we turn the pigs in and they will eat the sweet and juicy barley stalks and the peas very readily, but at this time do not seem inclined to eat much of the rape. After this first pasture is picked down we turn in the second and so on. After the barley is picked down it does not make much of a growth but the rape and clover come on and make a good growth and as the rape gets a little more maturity we turn in this first pasture again and we have permanent pasture of rape and clover for the rest of the season as the rape and clover will always start up after being picked down but the peas and barley will not.

This is our method of preparing pastures for our swine. Some might ask why we sow the barley and peas? It is because it comes on and is ready to pasture earlier than the rape and it also furnishes a lot in the way of variety.

SUMMER PASTURE FOR HOGS.

A. L. BONNELL, POINT BLUFF, ADAMS COUNTY.

Ladies, Gentlemen and Fellow Students:—

It is with pleasure that I have this opportunity to say a few words on this great and important subject of such vital interest to all swine growers, and in thus speaking I do not presume to be presenting something new, but rather a very old practice now under consideration, and being revived and returned into actual use. Our ancestors, many of our grand-fathers raised their hogs on nature's wild and bounteous supply, the sows being turned out in the spring (sometimes were out), and were seldom if ever seen until late in fall when they were "rounded up" with their families, sleek, plump, and fat from pasture, finished with acorns which were very plentiful in those days in our section of the country (when nearly all was timber land). They were then slaughtered and packed for future use or piled like cord wood on an old sled and drawn many miles by oxen to some poor and distant market, and there sold at a very low figure. So much for the past. Why must we change? What conditions have we at present?

First: We have rivalry, hard universal competition in raising hogs for an open world-wide market which has to some extent forced the present generation to look for something cheaper to grow pigs, and carry over old breeding stock.

Second: Land is getting higher priced; in some localities very high, which compels hog-raisers as well as all farmers to try to reap all the revenue possible from a given area, in order to get even fair interest on money invested. When we first began to raise hogs to any great extent we built a hog-tight fence around about five (5) acres of low wood-land (nearly all the timber cut off, with running water on one side) as a permanent pasture, and that same pasture is still in use (fifteen years), although we have added more as necessity required, and it is getting better every year, the grass is thicker, grows faster, and suffers drouth less. This is blue-grass pasture, with the natural growth each year, of clovers, timothy, etc. Adjoining this pasture we had for several years a clover lot, but we found the hogs did better, were more satisfied, when they had the run of

both at the same time, so there is now no division fence, they will feed on one, and then go to the other and feed more.

In 1901 we sowed oats and clover early, April 8, for pasture, and turned the hogs on as soon as oats were 6 inches high, and it made an excellent run. Along later the clover came on and made good feed in September and October. In 1902 we followed about the same rotation except we also sowed considerable oats and rape which affords more pasture, but I believe of poorer quality, but possibly the greater quantity more than offsets the better quality. Both of these years we fed ground rye, some times mixed with bran, oats and corn for their slop.

Previous to 1900 we raised peas and oats and cut them as soon as they were in the dough, and hauled them into the pasture for the pigs—but that is unnecessary work, they can do the harvesting themselves,—and continued this until they were too ripe, so they shelled badly, and they gave most excellent results, often reducing the amount of other food to a very light ration. This past season we followed a little different rotation in as much as it was more extensive and continued, and I will also give you the dates of sowing and the method we followed in pasturing in rotation. The field where these hog pastures were the past season, is a deep black loam underlain with gravel subsoil, and was all fall plowed in October. The past spring was exceptionally wet, so the first sowing of oats and rape was late (April 17), the second sowing May 8, and the third June 10. We turned hogs on first sowing June 1, 44 days after sowing; the rape at this time was about a foot high. We turned on second field July 10, 64 days after sowing; the rape was an immense growth at this time, perhaps too large. The third sowing we turned brood sows onto, away from pigs and other hogs.

Our field peas were also sown late (April 23), and were in the dough and ready to turn into (we pasture them) July 28, 96 days after sowing, and when these were gone we turned into flint corn which ripened in 90 days (Aug. 15). After this our corn from the field was ready.

Now did it really pay to pasture so much? We must make a little comparison. We fed middlings the past season, some milk. We figured that when pasture was good they took one-third less feed. We actually know they did. This meant about 100 lbs. saved per day. An acre would last our drove (about 100

head) about twenty (20) days which would equal one ton of feed saved or $17.00, the price per ton. Now two crops of oats and rape may be grown on the same plot in one season. Fall sown rye pastured early (I will say here that we use rye as a substitute in the absence of clover, and sometimes in connection with clover), and then sown to oats and rape May 15 to June 1, and also the first early sowing may be followed later by another crop of oats and rape. You can sow as late as July 1 with good results unless exceptionally dry. The peas yielded about the same net returns as the oats and rape, as the seed was more expensive. But when the peas were mature and at their best, the pigs would not come to eat slop at all. You will understand that during all this pasturing the past season the pigs had access to a fountain of pure, fresh water, supplied from a tank always clean. The pigs make much more gain on peas, than on any other feed I know of, fed in this way. We put them in middlings and changed from one feed to another in that way, so that we may ever keep them hearty and feeling well.

In conclusion I will say I think land handled in this way will yield an average of $20 per acre, considering two crops on part of the land. And that is not all, even cash value doesn't cover it. In what condition are our pigs? Hearty, healthy, long in body, plenty of strong bone and muscle, and will stay on their feet, though pushed with a heavy grain ration through the fattening period. These things alone would warrant pasturing in my estimation, if there were no other real cash value in sight. And I think if there is any one thing we are in greater need of than "summer pasture for growing hogs" it is more and better pasture.

RELATION OF SHORT COURSE STUDENTS TO THE COUNTY FAIRS.

A. C. HAGESTAD, ETTRICK, TREMPEALEAU COUNTY.

Members of the Wisconsin Agricultural Experiment Association: —I am a beginner in the Management of county fairs, so will be unable to do justice to the subject assigned me. I hope that some of this paper may fall into rich soil and bear good fruit.

There are several good reasons why the short course students should take active parts in the management of our county fairs. Let us believe that we are still students (which we really are), only in a farther advanced class. We should take our places at the head of this class and work with a will that never tires, for a good end.

The state of Wisconsin supports this Short Course in Agriculture for young men, who wish to gain a better knowledge of practical and scientific farming, that they may become intelligent stock men, dairymen, gardeners, etc. The state gives aid or a certain per cent. of all the premiums paid at the county fairs, for the same purpose as the aid to the Short Course; namely, that of advancing and improving agriculture.

We are receiving the knowledge and training here at the college of agriculture, which we are supposed to put into practical use, when we get back to our homes and the county fair is the place where we can display the fruits of our labor. Is it not our duty to help the state along in this matter of county fairs as a small compensation for what she has done for us? It should be our highest ambition to put more into this world than we have taken out of it. Still further as students it widens our ability to think and act. It puts us in constant touch with the different classes of people, especially the agricultural class. It drives our minds to new and up-to-date methods in the line of agriculture. It is a great honor to the Wisconsin College of Agriculture to send out students from its different classes who are capable of taking responsible positions for the purpose of improving agriculture.

As members of this Experiment Association, we should take active part in extending its experiments to every county in the state of Wisconsin. And no better place can be had or found in a county for the center of this experiment work than the fair grounds. We should take the lead in these experiments. You will probably ask why should we take this lead? Simply because we are members of this association. We should encourage our neighbors to make experiments along certain lines, we should try and get the people over the whole country interested in this experimental work. What we wish to do is to get the people out of the old ruts.

The county fair is the place of gathering for all the farmers of that county and adjoining counties as exhibitors. They come

for the purpose of learning better methods in their chosen profession, thus leading others to investigate and study and to understand many things they did not know before. The county or community where you live should be greatly benefited by you as an active worker for the county fair. You have had ample training at the Short Course in all the lines of agriculture and therefore you should not take a back seat in its management. I do not want you to think that you should run for an office as one of your fair managers at once. But I do want to impress upon your minds to start as an exhibitor, superintendent or judge, get down on the lower step of the ladder and work yourself up. Be present at the annual meetings, do all you can to help the fair along. In a few years the people will find out that you are taking an interest in the fair and that you are an active worker for it. Then you will be climbing up the ladder and may be elected as one of its officers. Fill your place to the best of your ability, make the county fair a success by studying the people's wants. Now is the time to put your thinking cap on and act to the best of your knowledge. Let us put our shoulders to the wheel and push to the front.

TESTS WITH GRAIN AND FORAGE PLANTS.

R. A. MOORE, DIVISION OF FARM CROPS.

Approximately 400 members of the association signified a desire to carry on experiments with grains and forage plants and were furnished outlines and report blanks.

To give all members of the association a knowledge of the scope of the work copies of the outlines given those members desiring to cooperate are herewith published. Several of the experiments outlined for this season will be continued next year and members wishing to aid in the work will be furnished information sheets and report blanks on addressing the secretary of the association, R. A. Moore, Madison, Wis.

Reports on the various experiments should be sent to the secretary promptly in order to be compiled for the next annual report.

WISCONSIN AGRICULTURAL EXPERIMENT ASSOCIATION.

Experiment I.

Trials With Alfalfa to Determine if it can be Grown in Wisconsin Successfully as a Forage Plant and the Relative Value of the Turkestan Compared With Common Variety.

The value of alfalfa as a forage plant in the west is becoming more and more apparent and the area grown, which was very small a few years ago, has gradually widened until at the present time most of the stock producing states west of the Mississippi grow it in abundance. In Wisconsin alfalfa is yet in the experimental stage and until it has been further tried at the Experiment Station and by members of the Experiment Association, it will be well for the farmers of the state to refrain from sowing it in large quantities.

Alfalfa or lucerne is a perennial plant and belongs to the clover family. If not killed by frost, water or some other element, it can be cut the second year after sowing three or four times per season for hay and for many years without re-seeding.

It should be sown in the spring on land that is well drained, with oats or barley as a nurse crop or alone if the land is not weedy, at the rate of twenty pounds per acre.

Having procured good alfalfa seed, proceed as follows:—Select land that never overflows and that which is well drained; the richer the soil the better will be the growth of the alfalfa. Fall plowing is preferable to spring plowing, therefore, we should select a piece that has been fall plowed if possible; prepare the seed bed thoroughly and sow oats or barley and cover as usual; then sow alfalfa broadcast at the rate of twenty pounds of seed per acre and drag once. If the season is very wet and the nurse crop lodges, cut the crop for hay or bedding and give the alfalfa a better chance to grow. The alfalfa springs up readily after the nurse crop has been removed and if the season is favorable, in from thirty to forty days, it will be fit to cut and should yield from one to one and a half tons per acre. It is well to leave a fair growth as a cover crop for the winter, as like the clover, there is danger of its winter killing.

Do not pasture the first season as it injures the young plants.

By sowing the oats at the rate of one bushel per acre you will give the alfalfa a better chance to grow as the young alfalfa plants will not be crowded as they would be if the ordinary amount of oats was sown per acre. Barley sown three pecks to the acre is preferable to oats as a nurse crop.

The Turkestan alfalfa is said to have special drought and frost resisting qualities, but the price of seed is considerably more than that paid for the Common variety, consequently it remains to the Experiment Station with the assistance of the Experiment Association to demonstrate the relative value of each.

A small piece of alfalfa of each variety should be sown without a nurse crop where it is convenient, and the merits of the method compared with that sown with the nurse crop.

Report Blank, Experiment I. A.

Getting a Stand of Alfalfa, Turkestan vs. Common Variety.

Name of experimenter.....
P. O.....; County.....; State.....

1. Date of sowing oats and alfalfa.....
2. What varieties were used?.....
3. Nature of soil?.....
4. How prepared? ....
5. When were the alfalfa plants first noticeable?.....
6. Were the oats cut green or left to ripen?.....
7. How long after the oats were cut was the alfalfa cut?....
   ....
8. How much alfalfa hay did you procure per acre (estimated)?.....;Turkestan.....; Common.....
9. Did you experience any difficulty in curing it?.....
10. Did the stock as a rule relish the hay?.....
11. Did you feed any green?.....
12. How did the stock relish the green feed?.....
13. Have you a good thick stand of alfalfa?.....

14. How high is it?.....
15. At what rate did you sow the oats per acre?.....
16. At what rate did you sow the alfalfa per acre?.....
17. Which seems the best adapted for your locality the Turkestan or the common variety?.....
18. Which seems preferable sowing with or without a nurse crop?.....
19. Did the plants develop the bacteria-laden nodules naturally?.....

In examination of plants for nodules it is necessary to remove the ground from the plants carefully so as to not break the fine rootlets on which the clusters of nodules hang.

20. Date of making this report.....
21. Give in a brief way your opinion on growing alfalfa in Wisconsin from the knowledge you have thus far gained.

Experiment I. B.

Alfalfa after First Year's Seeding.

Encouraged by the ability of stockmen in the west to grow alfalfa, many of the former students of the Wisconsin College of Agriculture have been tempted to grow it in a small way. Through the encouragement of the Eperiment Association, many of its membership sowed from one to two acres last year. The association is desirous to learn the success of those who have sown alfalfa previous to this year and will send blanks and return envelope to any who will agree to send in report.

Report on Alfalfa after First Year's Seeding.

Report Blank, Experiment I. B.

To be sent to the Secretary, by October 1, 1904.

1. Name of experimenter.....
   Post Office .....; County .....; State .....
2. Year and season alfalfa was sown.....
3. Was the alfalfa sown with or without a nurse crop?.....

4. Variety of alfalfa seed used.....
5. Amount of seed per acre.....
6. Was crop cut for hay the year of sowing?.....
7. If so, the amount obtained per acre.....
8. Nature of the soil.....
   (Clay, muck, highland, lowland, etc.)
9. Was good stand noticeable before the fall frosts?.....
10. What per cent., if any, winter killed?.....per cent.
11. How many cuttings did you get the year after seeding?....
12. Weight of hay from all cuttings for the season—
    (actual).....(estimated) .....
13. Did you experience any difficulty in curing the crop for hay?.....
14. Date of making this report.....

Please give in a brief way your method of growing alfalfa and your views as to its value as a forage plant for Wisconsin.

Experiment No. 2.

Wisconsin Seed-corn.

Very little has been done in Wisconsin up to the present time in the way of breeding good seed corn or taking care of the season's crop.

We feel that by judicious selection of seed, farmers of the state can increase the yield from ten to twenty-five bushels per acre. We know that members of the Experiment Association can do much for the communities in which they reside by breeding a choice variety of corn. Due care must be exercised in planting, cultivating the soil, harvesting and curing the crop as well as rigid selection of the seed. No matter how good the seed if planted on weedy or poor, worn-out soil and not properly cared for we can not expect a good crop.

We expect to see great strides made in the improvement of corn within the next few years and may not the Wisconsin Experiment Association be the factor to bring this improvement about?

For this experiment ten ears will be used and each ear is to represent a row. Use the ear with the least number of kernels

first. Plant in hills three and one-half feet apart in the row and the same distance between the rows. The corn left from the different ears after planting individual rows can be mixed and one or more rows of the mixture can be planted.

Plant at least forty rods from any other corn, a greater distance if convenient. Avoid having a field of corn near the west or south of the plot as the prevailing wind during the pollinating season is from that direction and the corn is liable to cross.

Report Blank, Experiment No. 2.

Wisconsin Seed-corn.

Name of experimenter.....
P. O.....; County.....; State.....
1. Variety of corn planted.....
2. Where was seed secured?.....
3. Germinating test, per cent.....
4. Date of planting.....
5. Nature of soil?.....
6. Fall or spring plowed?.....
7. Following what crop?.....
8. How planted? .....
.....
9. When first noticeable above ground?.....
10. Did corn germinate evenly?.....
11. Give the number of times and method of cultivation?.....
.....
12. Did corn mature well?.....
13. What per cent. of barren stalks were noticeable in each row?
.....

To find the per cent. of barren stalks in a row count the whole number of barren and fruitful stalks present, and divide the number representing barren stalks by the number representing the whole number of stalks.

14. How harvested?.....
15. Yield per acre, actual.....; Estimated.....

Experiment No. 3.

Treating Potatoes with Formaldehyd Solution for the Prevention of Potato Scab.

The potato crop of Wisconsin in 1902 is estimated at 25,800,000 bushels, valued at $9,030,000. Only a portion of the yield is retained, the remainder shipped to market, for which the farmers of Wisconsin receive a sum one-third as great as the value of the dairy products of the state. The potato industry has become so important that it needs our immediate attention.

One of the evils the grower has to contend with is the potato scab which often renders the crop of potatoes unfit for market, or nearly so. The market demands a smooth, even grade of potatoes; consequently, where the potatoes have been made rough by the scab fungus they sell at a reduced price. The scab fungus attaches itself to the tuber where it makes the ugly looking scars so often found on the potato, or remains in the soil where it is able to survive varying conditions for several years.

The scab fungus on the seed potato can be killed readily by the formaldehyd treatment here recommended, and if the seed is then planted on land that has not before grown scabby potatoes or has not become contaminated with the scab fungus in any other way, the crop should be entirely free from scab.

Method of Treatment.—Put in a cask twenty gallons of water and pour in one pint of formaldehyd, and after stirring the solution, distribute in several barrels or tubs. Put in the uncut seed potatoes and submerge for two hours. If desired, the potatoes can be left in gunny sacks or bags while being treated.

After removing the potatoes from the solution they can be cut and planted as desired. In this test the experimenter will select a bushel of very scabby potatoes and treat half and retain the other half without treatment. Plant on ground that has never before grown potatoes, and note the result.

Do not let the treated seed come in contact with the untreated seed or any sack which has held untreated potatoes. The seed potatoes for the general crop should all be treated if at all scabby.

Report Blank, Experiment No. 3.

Treating Potatoes for the Prevention of Scab.

Name of Experimenter.....
Post Office.....; County .....

1. How much seed treated for the experiment?.....
2. How much seed untreated for the experiment?.....
3. Date of planting .....
4. Did you notice any characteristic difference in the growth of the potato vines during the growing period?.....
   .....
   .....
5. Date of digging potatoes.....
6. Yield from the seed treated.....
7. Yield from the seed not treated.....
8. No. of scabby potatoes found from the treated seed.....
9. No. of scabby potatoes found from the untreated seed.....
   .....

Experiment No. 4.

Treating Seed Oats to Prevent Smut.

Smut affecting oats is prevalent in all parts of this and adjoining states. The great loss sustained by farmers and the rapid increase of the smut area suggests that a remedy be found to stop this loss.

The accompanying sheets will give method of treatment to prevent oat smut.

It is the desire of the Association to know the effectiveness of this treatment by many observers, and to publish determinations in the next annual report.

Where smut has been noticeable in the oats the previous year, all seed should be treated to prevent a re-occurrence.

For the following experiment it will be necessary to treat about three bushels, sufficient to sow an acre, in accordance with plan outlined in instructions.

Experiment.—1. Take three bushels, or the usual allowance for seeding one acre, that were threshed from a field that was worst affected with smut the past season, and treat as stated in directions.

If the experimenter has no oats, he probably can obtain some from a neighbor whose grain has been afflicted with oat smut.

2. Take the same quantity from the same lot of oats and do not treat.

3. Sow both quantities on adjoining plots of one acre each. Be sure to have a distinct separation from the plot sown with the oats treated and that on which the oats are not treated.

4. After the oats are fairly headed take an ordinary barrel hoop and make several counts on the plot where oats were treated and on the plot where oats were not treated. This can be done by placing a hoop over the oats and counting all the heads within the circle and then note the number affected with smut, thus getting data to determine the percentage.

Report Blank, Experiment No. 4.

Treating Seed Oats to Prevent Smut.

Name of experimenter.....
P. O.....; County.....; State.....
1. Did you treat oats according to directions?.....
2. How much treated for the experiment?.....
Size of plot.....
3. How much was sown on experiment that was not treated?...
Size of plot.....
4. Did you treat your seed that was sown for general purposes? .....
1. Date of sowing seed not treated.....
2. Date when smut was first noticeable.....
3. When were oats cut?.....
1. Date of sowing seed treated.....
2. Date when smut was first noticeable.....

3. When were oats cut?.....
5. Did you make several counts after the oats were headed using the hoop in the manner suggested?.....
6. What per cent. of oats were affected with smut on plot where seed was treated to prevent smut?.....
7. What per cent. of oats were affected on plot where seed was not treated?.....
8. Per cent. saved by treatment.....

The data obtained by counting the heads within the circle of a hoop that are affected and those not affected is a fairly accurate method of arriving at the percentage affected with smut.

Send in this report as soon as the experiment is completed.

Experiment No. 5.

Tests With Swedish Select Oats.

The test made during 1903 with the Swedish Select oats (Wis. No. 4) was very satisfactory and shows that the oats are especially adapted for Wisconsin conditions. The desire is now to have them grown as extensively as possible by members of the association so that the variety will be in reach of all farmers.

In order to be placed on the list of seed growers it will be necessary to comply with certain conditions.

1. All seed oats must be treated for the prevention of smut.
2. Must be sown on land that is free from Canada thistles, mustard or any obnoxious weeds.
3. If possible a comparison with another variety of oats should be made.
4. A report must be sent to the secretary immediately after threshing.

Report Blank, Experiment No. 5.

Swedish Select Oats.

Name of experimenter.....
Post Office.....; County.....; State.....

1. Date of sowing.....
2. Amount of seed sown.....
3. Amount of land covered (approximately).....
4. Nature of soil?.....
5. Fall or spring plowed?.....
6. Sown with seeder or drill?.....
7. Were heads of any other grain noticeable within the plot on which oats were sown?.....
8. Were they removed?.....
9. Did the oats stand up well?.....
10. Did you treat the seed for the prevention of smut?.....
11. Did you notice any smut?.....
12. How much?.....
13. Was the ground on which oats were sown free from Canada thistles, mustard and quack grass?.....
14. Did oats rust?.....
15. When were oats cut?.....
16. Yield per acre of Swedish Select oats.....
17. Yield per acre of any other variety of oats grown.....
18. How many of the Swedish oats on hand do you intend to sell for seed oats?.....
19. Please give a brief description of what you think of the Swedish Select oats.

Experiment No. 6.

Tests With Forage Rape.

For several years rape has been grown for soiling purposes on the Experiment Farm with that degree of success which suggests that it is worthy of a trial by Wisconsin farmers in general.

Sheep and young stock are very fond of the plant and fatten readily when pastured upon it. Care should be taken to not let sheep feed upon it while it is wet with dew, or when they have been kept for several hourse without food, as they then eat so abundantly that it often leads to serious bloating or scouring.

The Variety Used:—The Dwarf-Essex rape has been the variety used most extensively at the Experiment Farm. This variety can be purchased from any good seed house, in five or ten pound lots for about eight cents per pound.

Rape can be grown late as well as early in the year, therefore it often serves as a good catch crop when other crops have failed, and will afford a goodly supply of green fodder when the pastures are dry and short. If possible, try four experiments with rape.

1st. Sow broadcast on one acre or more which you have previously seeded to oats, and which are about one inch in height at the time of sowing the rape. Cover with a slant tooth harrow or light drag which will not materially injure the oats. Let the oats ripen and when cut, the rape will come on rapidly and cover the stubble with its wide spreading leaves. It feeds to best advantage when about 18 inches in height or a little over. If a hurdle fence is used and changed from time to time, the rape first pastured will come on rapidly and soon be fit to pasture again.

2nd. Sow one acre or more which has been properly prepared with disc harrow or otherwise, to rape, using drill and putting in about 30 inches apart so as to cultivate once or twice.

3rd. Sow one acre or more broadcast or with drill at the time of sowing oats. The rape seed should be mixed with the oats. If the ground is not too rich the rape will not interfere with the oat crop or lessen the yield to any great extent. After harvesting oats, the rape will come on rapidly and in a few weeks be of sufficient height to pasture. If sown on rich ground in a wet season the rape will interfere with the grain crop.

4th. Sow one acre or more broadcast, without dragging, when the oat crop is from two to four inches in height. Sow about four pounds of rape seed per acre and if possible before or immediately after a shower. This method is especially recommended on low rich soils.

Amount of seed necessary:—When sown in drills, three pounds per acre is sufficient, when broadcast, on small areas,

five or six lbs. should be used; when sown with oats at the time of seeding use about one pound per acre mixed with the seed oats.

By reserving ten feet square or one square rod and cutting rape when about eighteen inches or two feet in height, then weighing, the amount of green fodder per acre can be readily determined.

Rape should be cut about four inches from the ground in order to get best results for next crop.

If the season is favorable you will succeed in getting three cuttings of rape from the same plot if it is sown early and alone.

Where the object is to fatten sheep for market, a small grain ration should be fed at regular intervals.

All reports should be sent to R. A. Moore, Madison Wisconsin.

Report Blank, Experiment No. 6. A.

Sowing Rape Broadcast on Oat Field and Dragging Ten or Twelve Days After Seeding With Oats.

Name of experimenter, ...
P. O.....; County.....; State.....

1. Date of sowing oats .....
2. Date of sowing rape .....
3. What variety of rape used?.....
4. Amount of seed used per acre?.....
5. Nature of soil?.....
6. How prepared? .....
7. What height were the oats when rape was sown?.....
8. Did dragging materially injure the oat crop from first observation? .....
9. When were the rape plants first noticeable? .....
10. When were the oats cut? .....
11. How did the yield of oats compare with the yield on land where no rape was seeded? .....
12. How long after the oats were cut before rape was fit for feeding purposes? .....

13. How many and what kind of animals did you pasture upon the rape? .....
14. Did you feed a grain ration also? .....
15. Did the animals fed upon the rape thrive? .....
16. Approximately, how much green fodder did the rape produce per acre? .....
17. Did you notice any detrimental effects from the feeding of rape? .....
18. Briefly give your opinion as to the value of rape as a soiling crop, ...
.....
.....
.....
.....

Report Blank, Experiment No. 6. B.

Sowing Rape With Drill.

Name of experimenter, ...
P. O.....; County.....; State.....

1. Date of sowing, ...
2. What variety? .....
3. Width between rows, ...
4. Amount of seed used per acre? .....
5. Nature of soil? .....
6. How prepared? .....
7. How long after sowing was the rape fit for feeding purposes? .....
8. How many and what kind of animals did you pasture upon rape? .....
9. Did you feed a grain ration also? .....
10. Did the animals fed upon the rape thrive? .....
11. Approximately, how much green fodder did the rape produce per acre? .....
12. Did you notice any detrimental effects from the feeding of rape? .....

13. Briefly give your opinion as to the value of rape as a soiling crop, ...
.....
.....
.....
.....

Report Blank, Experiment No. 6. C.

Sowing Rape on Plot With Oats in Accordance With Directions Given on Information Sheet.

Name of experimenter, ...
P. O....., County....., State.....

1. Date of sowing, ...
2. What variety of rape used?.....
3. Nature of soil? .....
4. Amount of seed used per acre? .....
5. How prepared? .....
6. When were the rape plants first noticeable? .....
7. When were the oats cut? .....
8. Did the rape interfere in any way with the growth of the oats? .....
9. Did you experience any difficulty in cutting and binding the oats on plot where rape was sown?.....
10. Did the rape interfere with the drying out of the bundles? .....
11. How long after the oats were cut before the rape was fit for feeding? .....
12. Which in your opinion is preferable, sowing the rape at the time of sowing oats or after the oats have reached the height of one or two inches? .....
.....
.....
.....
.....

Report Blank, Experiment No. 6. D.

Rape Sown Broadcast Without Dragging When Oat Crop is From 2 to 4 Inches in Height Immediately Before or After a Shower.

Name of experimenter, ...
P. O....., County....., State.....

1. Date of sowing oats, ...
2. Date of sowing rape, ...
3. What variety of rape used? .....
4. Amount of seed used per acre? .....
5. Nature of soil? .....
6. How prepared? .....
7. Did you sow rape seed immediately before or after a shower? .....
8. When were the rape plants first noticeable? .....
9. When were the oats cut? .....
10. How did the yield of oats compare with the yield on land where no rape was seeded? .....
11. How long after oats were cut before the rape was fit for feeding purposes? .....
12. How many and what kind of animals did you pasture upon the rape? .....
13. Did you feed a grain ration also? .....
14. Did animals fed upon the rape thrive? .....
15. Approximately, how much green fodder did the rape produce per acre? .....
16. Did you notice any detrimental effects from the feeding of rape? .....
18. Briefly give your opinion as to the value of rape as a soiling crop, ...
.....
.....
.....
.....
.....

Experiment No. 7.

Soy Beans.

The soy bean was probably introduced into the United States from Japan about fifty years ago and has been cultivated with success in the southern states. In Japan it is used extensively as a human food, but in this country it is grown for the seed, as a forage plant, and as a soil renovator. As a forage, its use as a soiling crop is becoming recognized, by stockmen and dairymen, as it withstands the drought exceptionally well and will give a good cutting of green forage at the time when other feeds are shriveled and wilted. Soy beans of the late variety gave a cutting of 9.9 tons of green forage per acre at the Wisconsin Experiment Farm in 1900, and an early variety yielded thirty-eight bushels of seed beans per acre in 1902, and forty bushels per acre in 1903. It makes a fairly good hay, and at the Kansas Station a yield of about three tons of cured hay per acre was secured.

Like the clover, the soy bean is a nitrogen gatherer and enriches the soil on which it is grown. It is said to grow on soil quite low in fertility, but a mellow, rich soil is preferable. It requires a well drained porous soil; in no case should the seed be sown on low ground that is saturated with water during most of the growing period or on a heavy clay soil that is inclined to bake.

When sown for hay or a soiling crop, a drill or broadcast seeder can be used to advantage. If sown for seed, use a corn or bean planter and sow in drills about thirty inches apart between the rows and about three inches apart in the row. When planted in drills as described, from two to three pecks of seed per acre will be used.

Soy beans should not be planted while the ground is cold; immediately after corn planting is a favorable time.

Sow in accordance with suggestions above given, for growing soy beans for seed, one-tenth of an acre.

When desired for hay, soy beans should be cut when the pods are partly developed. Try a few square rods sown broadcast for a soiling crop and for hay. When grown for seed they

should be harvested and threshed as our common variety of beans and put in a large open bin and shoveled over frequently to avoid heating.

If you have a silo try soy beans with corn. Plant in drills with the corn planter using one-third soy beans and two.thirds corn mixed. When planting with corn for the silo use the Medium Green variety as this variety is noted for its great leaf development. No difficulty will be experienced cutting the soy beans with the corn harvester at the time of harvesting corn. For pasture, hay or seed the Ito San variety will give excellent satisfaction and will usually ripen before the fall frosts.

Secure a sack of inoculated soil from the Experiment Station and scatter on a portion of the field that you desire to plant to soy beans, and note the development of nodules. The roots of the soy bean plants growing on that part of the field where the bacteria laden ground is scattered will have numerous nodules attached to them which decay in the fall and add much fertility to the soil. When a few square rods of ground are inoculated and soy beans are grown thereon, henceforth ground can always be secured from this source of supply to scatter on other fields where the desire is to have the nodules develop.

Report Blank, Experiment No. 7.

Soy Beans.

Name of experimenter, ...
P. O....., County....., State.....
1. Date of planting soy beans, ...
2 Character of soil, ...
3. What crop had been grown the previous year?.....
4. Was the land used, fall or spring plowed?.....
5. Give your method of planting, ...
6 How long after planting were beans first noticeable?.....
.....
7. Give your method of cultivation, ...
8. Did you try a few square rods for forage? .....

9. How many pounds of green forage did you cut from a square rod? .....
10. How many pounds of cured hay did you get from a square rod? .....
11. Did the stock eat the green and cured forage readily? .....
12. What kind of stock did you feed it to? .....
13. Did the beans left for seed ripen evenly? .....
14. Date of harvesting, ...
15. Manner of harvesting, ...
    .....
    .....
16. Method of threshing, ...
17. Yield per acre of marketable seed beans, ...
18. Did you use any bacteria-laden soil for inoculation purposes? .....
19. Were nodules noticeable on the roots of the soy beans at any time during the growing period where such soil was used? .....
20. Were they noticeable where the soil was not used? .....
21. Date of sending report, ...
22. Give in a general way your opinion of soy beans as a seed and forage plant for Wisconsin, ...
    .....
    .....
    .....
    .....

CO-OPERATIVE WORK IN LIVE STOCK.

GEO. C. HUMPHREY, DIVISION OF ANIMAL HUSBANDRY.

In recommending work pertaining to livestock investigation for members of the Association, I would first of all recommend that the work outlined and undertaken in former years be continued. We must keep in mind the fact that a single year's work of investigation does not stand for much so far as establishing new facts are concerned, and especially is this true in working along lines of investigation pertaining to animal husbandry.

In recommending a new line of work for our consideration, I have in mind the subject of economy in livestock production. Economy in production is a matter of vital importance to every manufacturing concern in our country, and the time is at hand when it should engage the attention of every farmer in his work as well.

Two factors enter into the matter of determining the profits to be gained in livestock production. One is the price we are able to secure for our animals when we put them upon the market, and the other is the actual cost involved in growing and fitting them to satisfy the market demands. The margin between the selling price and cost price determines the profits to be derived in the production of all commodities. Few livestock producers are able to say what the actual profits are in producing livestock of the various classes. As a general rule the livestock producer has little to do with fixing the market quotations which are variable from day to day and year to year, but it is within his power to determine the actual cost of producing his animals; and it is beyond doubt that the man who understands this factor in production stands in a position to increase his profits over what they are apt to be where no attention is given the matter of cost and economy in production.

The following method of procedure is suggested whereby we can determine the cost of producing pork from a single litter of pigs. Should any member see fit to work with any other class of stock or to take up the work more extensively he is at liberty to do so.

Method of Procedure:—1. Select a sow about to produce her litter; record her breeding, age, and her weight just previous to farrowing time. It will be best to weigh her on each of the three or four days previous to her farrowing time and take the everage of these weights for her weight at that time. Get her weight the day after she farrows and continue weighing her every two weeks thereafter up to the time the pigs are weaned.

2. Record the date the pigs were farrowed and weigh them the day the sow is weighed after farrowing, continuing to weigh them every two weeks until they are sold. Weighing the pigs individually will add interest to the work and not require much extra time where one must depend upon small platform scales to do all the weighing.

3. Commence a record of the feed given the sow and pigs after farrowing time, keeping a weekly record of this until the pigs are weaned when the sow can be removed from the lot and the record continued for the pigs until the time they are sold. Note the kind of feed consumed by the sow and pigs, including grain, hay, roots, and skim milk, also make note of the kind of pasture and the area to which she has access.

4. At the close of the feeding period when the pigs are turned off to market record the price received for them and proceed to make out a financial statement, showing the profits derived over the cost of feed.

The apparatus necessary for carrying out this experiment will be a pair of platform scales which every farmer should possess and a crate in which to weigh the pigs. Blanks for keeping records of weights and feed can be secured upon application for them.

MILKING EXPERIMENTS.

BY PROF. F. W. WOLL, CHEMIST, WISCONSIN EXPERIMENT STATION.

During the last few years the subject of milking has received considerable attention by dairymen in this country and abroad, mainly through the work of a Danish veterinarian and teacher, Dr. Hegelund, who published the so-called Manipulation Method of Milking a couple of years ago. It occurred to me that I could not do better at this time than to bring this method to the attention of the members of the Experiment Association and to acquaint you with some of the results of an investigation of the merits of the method which was conducted by the Chemical and Animal Husbandry Department of our Station. The results of the investigation are of considerable practical importance to all cow owners, and it will be well worth your while, I believe, to look into this subject and make experiments in your own herds along this line, in order to find out how thorough the milking is done in case of your different cows and whether they can be milked as clean as they should be by the ordinary methods of milking now in use.

The importance of the subject is suggested by a simple calculation of the value of an increase of, say one tenth of a pound of butter fat, for every cow in the state; the increase in the daily production of butter fat per cow of one tenth of a pound for the million dairy cows in this state would mean an annual gain of thirty million pounds of butter fat, if the cows give milk three hundred days of the year. Valuing butter fat at twenty cents a pounds, a figure considerably below the average Elgin price, we find that the value of such an increase to the dairy industry of the state would be about six million dollars per year.

Before mentioning the results obtained in the investigation of methods of milking at our Station, to which I referred, I will give a brief description of the various steps of the Hegelund or so-called Manipulation Method of Milking. The object in view by this method is to obtain all the last traces of milk elaborated in the udder of the cow at the time of milking. Every dairyman understands the importance of milking cows clean, and

FIG. 16a.—First manipulation of udder, right quarters.

FIG. 16b.—First manipulation, left quarters.

FIG. 17a.—Second manipulation, right fore quarter.

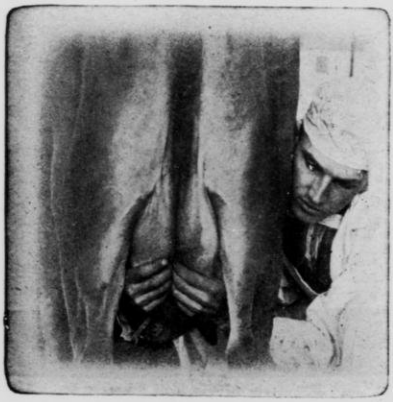

FIG. 17b.—Second manipulation, hind quarters.

FIG. 18.—Third manipulation.

knows that unless the milking is done thoroughly, the flow of milk will not only be diminished for each milking but the lactation period of the cow will be shortened through this practice. This is the way in which cows of marked dairy tendencies have to be dried off, by leaving some of the milk in the udder every time they are milked. Dr. Hegelund has interested himself in this subject of milking for years back and worked out a method of milking by certain manipulations of the udder after the milking by the regular method has been finished, which in many cases brought down considerable quantities of milk where a cow was believed to have been milked perfectly clean. In many cases the increase in the production of butter fat by the cows obtained by the manipulation method over and above the ordinary method of milking amounted to more than ten per cent. of the total production of butter fat.

The following description of the manipulation method of milking, with the accompaning illustrations (fig. ——), will give a fairly clear idea of the manner of procedure. It may seem complicated at first. It is often the case that it takes longer to tell how to do a thing than to do it. If some practice has been obtained in working the method it will be found to be a very simple thing after all.

DESCRIPTION OF THE HEGELUND METHOD OF MILKING.

The milking is done with dry hands and with the whole hand; after the milk flows readily, the milking is proceeded with as rapidly as possible and without interruption, until full streams of milk are no longer obtained. At this point the milker begins with the manipulations of the udder, which are three in number and may be described as follows:

First Manipulation.—The right quarters of the udder are pressed against each other (if the udder is very large, only one quarter at a time is taken), with the left hand on the hind quarter and the right hand in front of the fore quarter, the thumbs being placed on the outside of the udder and the four fingers in the division between the two halves of the udder. The hands are now pressed toward each other and at the same time lifted toward the body of the cow. This pressing and lifting is repeated three times, the milk collected in the milk cistern is then milked out, and the manipulation repeated until no more milk

is obtained in this way, when the left quarters are treated in the same manner. (See Fig. —, a and b.)

Second Manipulation.—The glands are pressed together from the side. The fore quarters are milked each by itself by placing one hand, with fingers spread, on the outside of the quarter and the other hand in the division between the right and left fore quarters; the hands are pressed against each other and the teat then milked. When no more milk is obtained by this manipulation, the hind quarters are milked by placing a hand on the outside of each quarter, likewise with fingers spread and turned upward, but with the thumb just in front of the hind quarter. The hands are lifted and grasp into the gland from behind and from the side, after which they are lowered to draw the milk. The manipulation is repeated until no more milk is obtained. (See Fig. —, a and b.)

Third Manipulation.—The fore teats are grasped with partly closed hands and lifted with a push toward the body of the cow. both at the same time, by which method the glands are pressed between the hands and the body; the milk is drawn after each three pushes. When the fore teats are emptied, the hind teats are milked in the same manner. (See Fig. —.)

In looking into the merits of this method of milking with cows in our University herd and elsewhere, we found that the claims made for the method by persons who had previously investigated it, were in the main correct. In order to test the value of the method I conducted three different experiments with cows in our herd during the summer of 1902, and the trials were later extended to twelve different Wisconsin dairy herds. These herds include cows of various breeds, Holstein, Guernsey, Jersey, Red Polled, as well as grades and native cows, and were kept under widely differing conditions as to housing, management, and system of feeding. The aim was in all cases to ascertain the gain in the production of milk and butter fat obtained by the manipulations of the udder, according to Hegelund's method, after the regular milking was finished; where the regular milker did not milk clean, the gain obtained by clean milking and by manipulation of the udder was ascertained The plan of the experiments was therefore such as to show the character of the work done by the different milkers. The main results of the investigation are briefly stated in the following summary:

1. In our University herd the average daily production of milk from twenty-four cows was increased by 4.5 per cent. by means of the manipulation method, and the production of fat was increased by 9.2 per cent. (range, 3.0–30.2 per cent. for individual cows), as the result of milking experiments continued for four weeks; the average gain in milk per cow and per day being one pound, and in fat, .09 of a pound.

2. A similar average increase in production was obtained for the twelve dairy herds tested, viz., a gain of 1.08 pounds in the daily production of milk per cow, and of .1 pound of fat. The results obtained in this investigation, extending over a period of four months, with cows in all stages of lactation, indicate that this gain is maintained through the whole period of lactation.

3. The largest amount of milk obtained from a cow by the manipulation method, after the regular milking was done, was 5.5 pounds per day, and the lowest .20 pound. The corresponding figures for fat production was .64 and .02 of a pound. The former figure is considerably above the average total daily production of cows in this or other states.

4. The greater portions of the gains obtained came through lack of care on the part of the regular milker as the cows were not milked perfectly clean. But even in herds where the milkers did their work well, there were always one or more cows that gave an increase of nearly a pound of milk and one tenth of a pound of butter fat per day by the manipulation method.

5. The difference in the work done by different milkers is brought out strongly by the results of the investigation. In several cases one milker did his work so much better than the others in the same herd as to be worth nearly $10.00 a month more to the owner, on account of the larger yields of milk and fat which he obtained from the cows milked by him.

6. The milk obtained by the manipulation method is similar in composition to that of "strippings;" on the average for all herds it contained 10.32 per cent. fat and was found to be about two and one half times richer than the ordinary milk. The highest per cent. of fat found in the after-milking from any cow was 23.0 per cent. and from a single herd, 14.41 per cent.

7. The results obtained in this investigation suggests that a thorough system of milking is a foundation requirement in successful dairying. For, aside from directly increasing the production of milk and fat from the cows, exhaustive milking will

be likely to maintain a maximum flow of milk throughout the lactation period and to permanently develop the dairy qualities of both the dam and her offspring.

A full discussion of the Hegelund method of milking will be found in Bulletin No. 96 of the Wisconsin Experiment Station (Investigations of Methods of Milking, Sept., 1902, 79 pages), and also in Bulletin No. 113 of the Pennsylvania Department of Agriculture (Methods of Milking, with Special Reference to the Manipulation Method, 1903, 96 pages). I would refer those of you who are interested in this subject to these publications for details as to the work done in carrying out these investigations as well as similar work done elsewhere. There can be no question as to the general immediate effect of this manipulation method of milking on the milk yield. Whether a continued favorable effect can be obtained through the exercise of a reasonable amount of care can only be settled by trials covering several lactation periods and with a large number of animals. On theoretical grounds we have, however, every reason to believe that a careful system of milking is a potent factor in the development of the dairy qualities of cows.

As an illustration of the importance of careful milking and as object lessons in this direction, I think you will find it both a most interesting and profitable line of experimentation to study up and try this new method of milking with your cows; you will be able to tell with certainty by this method whether the milking is done as it should be by yourself as well as by others who have charge of the milking in your dairy herd

EXPERIMENTS ON THE TREATMENT AND CULTIVATION OF SOILS.

PROF. A. R. WHITSON, DIVISION OF AGRICULTURAL PHYSICS.

The state of Wisconsin has a greater variety of soils than any other state of the northern Mississippi valley and there is much still to learn before we can get them to produce the maximum crops of which they are capable. Since it is necessary in studying the various soils to carry on experiments in different parts of the state where they occur it will be readily seen that the members of the experiment association can be of great aid in this work. Among the lines of experiment and observation which are of great importance and promise are the following: (1) the application of potash fertilizer to the marsh soils; (2) the cultivation of the soil to conserve moisture; (3) the methods of increasing the humus in the very sandy soils; (4) the use of lime on the soils in the southwestern part of the state particularly when seeding to clover and (5) the relation between the protein content of fodder crops and the fertility of the soil on which they are grown.

APPLICATION OF POTASH TO MARSH SOILS.

Experiments have been made in this and adjoining states which show that many crops growing on this soil are greatly benefitted by potash in moderate amounts. At the University farm the yield of corn has been from two to four and a half times greater where treated than where untreated.

During the season of 1902 Mr. T. A. Strande of Taylor carried on an experiment on the influence of potash on this soil growing timothy and reports that the yield was three times as large where treated.

Mr. A. P. Lalk of Koshkonong in an experiment made in 1901 found that the yield of oats was increased two and a half times. In this case the fertilizer was applied broadcast May 22, after the oats were well up but were light and yellow. This year experiments will be carried on in several different parts of the state on a larger scale with the hope of determining (1) the best form of potash fertilizer to use (2) the best means of applying it to the different crops and (3) the smallest amount needed to produce satisfactory results.

THE USE OF LIME ON SOILS IN THE SOUTHWESTERN PART OF THE STATE.

From considerations of the origin of soils in the southwestern part of the state including Grant, Iowa, La Fayette, Green and the western part of Rock and Dane counties, it is quite probable that the use of lime will be found helpful particularly in the growth of legumes. This will be especially true on hilltops and high lands generally.

A moderate application would be 1,000 to 1,500 pounds of slacked lime per acre.

RELATION BETWEEN PROTEIN CONTENT OF FODDERS AND FERTILITY OF SOIL ON WHICH THEY ARE GROWN.

During the season of 1902 it was found that there was quite a variation in the per cent. of protein in such crops as corn, oats and rape due to the fertility of the soil. These results are given in the annual report of the Experiment Station for 1902.

It is desirable that this matter be studied on the different soils of the state. In this work members of the association can be of great help by cooperating with the Experiment Station. Samples of fodders from the same variety of seed, grown on different soils and sent to the Experiment Station will be analyzed and the results published in the report.

CULTIVATION OF THE SOIL TO CONSERVE MOISTURE.

It is desirable that during dry seasons members of the association make observations as to the influence of cultivation to develop a mulch on the growth of such crops as corn and potatoes. This can be done by allowing a few rows to remain uncultivated especially after light showers have made a crust. The difference may not be large but it is desirable that the crop be harvested separately and weighed or measurd to compare with the cultivated rows adjoining. Often a profitable difference will be found in this way where no difference is apparent to the eye.

The writer will be glad to communicate with members of the association on any of the above mentioned subjects.

PURE BRED CEREALS FOR WISCONSIN.

To encourage the growing of pure bred cereals and forage plants the Wisconsin Experiment Association deems it advisable to offer premiums for those grains and forage plants placed on exhibition during the *next annual meeting* of the association, February, 1905, that show the highest degree of merit. The desire of the association will be to have every member who carries on experiments with grain or forage plants during the season to make an exhibit and assist in every way in making a display worthy of the association. We feel that much can be done in the way of encouraging the dissemination of good seed that has been grown in our own state.

As soon as the Experiment Association demonstrates to the seedsmen and farmers of Wisconsin that good seed can be grown within our borders which is acclimated to our home conditions, it will not be necessary for them to place their orders with growers from other states. The seedsmen of our state and of adjoining states will be only too pleased to assist in the dissemination of home grown seeds if they can be shown that the quality is equally as good or better than they can get elsewhere. It seems that if notified that a display will be made that many of them will be willing to have a representative on hand at the association meeting to note the character of seed grain displayed. Realizing the great improvement that can be made in the growing of farm crops we trust that every member of the association will do all in his power to assist in every possible manner the production of choice grain and forage plants for Wisconsin.

PREMIUM LIST.

DEPARTMENT OF FARM CROPS.

Class 1. Oats.

Best ½ peck Swedish Select oats (Wis. No. 4) $3.00; 2nd, $2.00; 3rd, $1.00; 4th, 50 cents.

Best ½ peck any other variety, $3.00; 2nd, $2.00; 3rd, $1.00; 4th, 50 cents.

Class 2. Oats in Sheaf.

Best bundle Swedish Select oats, $3.00; 2nd, $2.00; 3rd, $1.00; 4th, 50 cents.

Best bundle any other variety, $3.00; 2nd, $2.00; 3rd, $1.00; fourth, 50 cents.

Class 3. Barley.

Best ½ peck Manshury Barley, $3.00; 2nd, $2.00; 3rd, $1.00; 4th, 50 cents.

Best ½ peck any other variety, $3.00; 2nd, $2.00; 3rd, $1.00; 4th, 50 cents.

Class 4. Barley in Sheaf.

Best bundle of Manshury Barley, $3.00; 2nd, $2.00; 3rd, $1.00; 4th, 50 cents.

Best bundle of any other variety, $3.00; 2nd, $2.00; 3rd, $1.00; 4th, 50 cents.

Class 5. Corn.

Best ten ears, Reids Yellow Dent, $3.00; 2nd, $2; 3rd, $1.00; 4th, 50 cents.

Best ten ears, Leaming Yellow Dent, $3.00; 2nd, $2.00; 3rd, $1.00; 4th, 50 cents.

Best ten ears, Clark's Yellow Dent, $3.00; 2nd, $2.00; 3rd, $1.00; 4th, 50 cents.

Best ten ears, Iowa Silver King, $3.00; 2nd, $2.00; 3rd, $1.00; 4th, 50 cents.

Best ten ears, any other variety, $3.00; 2nd, $2.00; 3rd, $1.00; 4th, 50 cents.

Class 6. Clover Seed.

Best ½ peck of medium red clover seed, $3.00; 2nd, $2.00; 3rd, $1.00.

Best ½ peck of mammoth red clover seed, $3.00; 2nd, $2.00; 3rd, $1.00.

Best ½ peck of alsike clover seed, $3.00; 2nd, $2.00; 3rd, $1.00.

Best ½ peck of alfalfa seed, $3.00; 2nd, $2.00; 3rd, $1.00.

Class 7. Soy Beans.

Best ½ peck soy beans, $3.00; 2nd, $2.00; 3rd, $1.00.

Class 8. Soy Beans in Sheaf.

Best bundle of soy beans, $3.00; 2nd, $2.00; 3rd, $1.00.

Class 9. Alfalfa Hay.

Best sample of alfalfa hay, $3.00; 2nd, $2.00; 3rd, $1.00.

RULES AND REGULATIONS UNDER WHICH PREMIUMS ARE GIVEN.

1. The exhibitor must be a member of the Wisconsin Experiment Association.
2. Grain or forage plants must have been grown the season previous to exhibition by the exhibitor.
3. No fees will be charged for exhibiting in any classes.
4. The samples of grain and forage plants exhibited are to be retained by the Experiment Association unless a special permit is given to the exhibitor to take his sample away.

5. Exhibits are to be brought in by members of the association. If sent by express or freight all carrying charges should be prepaid.
6. Varieties of grain or forage plants not specifically named in the list can compete as "any other variety" in which case these different varieties compete against each other and not as an individual class.
7. Exhibitors cannot compete for two premiums on the same variety of grain and forage plants.
8. A proper entry of all grains, seeds, etc., must be made in the entry book at the Secretary's office before placed on exhibition tables.
9. Expert judges will be secured to place the awards.
10. The meeting of the association will be held at Madison in Agricultural Hall and rooms secured in that building for the exhibits.

BUSINESS MEETING.

Business meeting of the Wisconsin Agricultural Experiment Association, Thursday, February 4th, 1904, 8:30 A. M., Assembly Chamber.

Called to order by the vice president, J. P. Bonzelet. The minutes of the last meeting were read and adopted, after which the following officers were elected:

President—A. L. Stone, Madison.

Vice-President—L. M. Hatch, Oakfield.

Secretary—R. A. Moore, Madison.

Treasurer—P. A. Dukleth, R. D. 40, Mukwonago.

Resolutions:—The following resolutions were reported by the committee, and unanimously adopted:

Resolution No. 1:

WHEREAS, The people of the United States are greatly inconvenienced by the necessity of transporting parcels by express or freight which might easily be carried by mail at lower rates.

Be it resolved, That the Wisconsin Agricultural Experiment Association in convention assembled strongly favors the enactment by Congress of a law to establish a Parcel Post delivery, and heartily endorses the efforts now being made to secure the enactment of such a law, and

Be it further resolved, That each member of our association urge it upon his U. S. Senator and Representative in Congress to support such legislation.

Resolved, That these resolutions be entered in the records of this meeting and that copies be sent to the Agricultural Press.

Resolution No. 2:

WHEREAS, The State Agricultural Experiment Stations have become of inestimable value to the agricultural interests of the nation, and

WHEREAS, There has been introduced in Congress a bill, known as bill No. 8678, increasing the appropriations to the Agricultural Experiment Stations,

Resolved, That we heartily approve of the purpose and scope of this bill, as vitally effecting the farming interests of Wisconsin.

Be it further resolved, That the copies of these resolutions be forwarded to the President of the Senate, the Speaker of the House of Representatives, and to each Wisconsin delegate in Congress.

Resolution No. 3:

WHEREAS, There is no one thing that so effects the well being, comfort and prosperity of the farmer as good roads,

Be it resolved, That the Wisconsin Agricultural Experiment Association heartily approves of the efforts being put forth by the National Good Roads Congress to secure better roads.

Resolved, That the members of this association pledge themselves to aid, in every possible way, the good roads movement.

Committee on resolutions:—A. L. Stone, L. M. Hatch, E. A. Donaldson.

The membership committee recommended that honorary membership be conferred upon Hon. L. A. Karel, Kewaunee; Wm. Toole, Baraboo; A. J. Phillips, West Salem; W. L. Ames, Oregon; Mary Whitmore, Janesville, and Katherine Renk, Sun Prairie, which was unanimously adopted.

It was moved and carried that Miss Idalyn Bibbs, Madison, be appointed clerk and stenographer and be paid $5.00 per month for such services.

The advantages of the Association uniting with the U. S. Plant and Animal Breeders' Association was discussed and on motion was left to the officers to take such action as in their judgment was deemed most advisable.

SECRETARY'S REPORT ON STATE APPROPRIATION.

R. A. Moore, Secretary of the Association, made the following financial report which was duly adopted.

Receipts.

1903.		
May 5.	State appropriation by Chap. 157, Laws of 1903	$1,000 00

Disbursements.

1903.		
Oct. 29.	To Democrat Co., for binding reports	$120 00
Nov. 6.	To 2,500 2c stamps, 2,500 1c stamps, 2,500 Postal cards	100 00
Nov. 15.	To Fairbanks, Morse & Co., Chicago, scales and scoop	12 75
Dec. 2.	To Democrat Prtg. Co., for letter heads and envelopes	10 50
Dec. 5.	To J. D. Clark, Whitewater, 16 bu. seed corn, $2.50 per bu.	40 00
Dec. 22.	To Will Banks, Burt, Iowa, 23½ bu. corn	58 75
	To C. & N. W., freight on corn	6 00
1904.		
Jan. 18.	To R. A. Moore for traveling expenses	19 62
Jan. 25.	To Democrat Co., for Envelopes $6.50, L. envelopes $1.75, programs $6.25	14 50
Jan. 29.	To services rendered by Miss Bibbs	5 00
Jan. 30.	To L. L. Olds, Rape 38.00, Am. alfalfa $154.00, Turkestan alfalfa $153.80, sacks $2.38	348 18
Jan. 30.	To M'l. Bag Co., for bags, printing and freight	26 30
Jan. 30.	To freight on alfalfa and rape seed, C. N. W.	6 68
		$768 28
Feb. 4, 1904.	Total receipts in state treasury	$1,000 00
	Total disbursements from state treasury	768 28
	Balance in state treasury	$231 72

TREASURER'S REPORT.

H. J. Renk, treasurer of the association, made the following report which was duly accepted.

Report as rendered by H. J. Renk, February 4th, 1904.

Receipts.

1903.		
Feb. 6.	From J. G. Milward, former treasurer....	$79 11
Mch. 9.	From Secretary as membership fees	22 00
April	From Secretary as membership fees.....	34 75
May 21.	From Secretary as membership fees	11 80
Feb. to Aug. 3.	From members as fees	4 50
		$152 16

Disbursements.

1903.		
Feb. 20.	To Jno. Heffron for Badges	$9 95
Feb. 20.	To Postage	1 64
Feb. 21.	To Groves Barnes Music Co., for organ....	1 50
Feb. 21.	To 2 order books.....	1 75
April 7.	To Postage	10 00
May 25.	To Postage	27 32
May 25.	To Democrat Printing Co. for Report	98 00
		$150 16

Feb. 4, 1903.	Total Receipts	$152 16
	Total Disbursements	150 16
	Balance on hand....	$2 00

DEMCO 291-B			