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Sixth annual report of the Wisconsin Agricultural Experiment Association : Madison Wis., February 6, 7, 1908. Address of president, secretary's report with papers and addresses given by members of the...

Wisconsin Agricultural Experimental Association
Madison, Wisconsin: Democrat Printing Company, State Printer,
1908

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SIXTH ANNUAL REPORT

OF THE

WISCONSIN

Agricultural Experiment Association

Madison, Wis., February 6, 7, 1908.

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.



MADISON, WISCONSIN
DEMOCRAT PRINTING COMPANY, STATE PRINTER
1908

"The bud will soon become a flower,
The flower become a seed
Then seize, oh Youth, the present hour,
In that thou hast most need.'

123319
OCT 16 1908

LETTER OF TRANSMITTAL.

WISCONSIN AGRICULTURAL EXPERIMENT ASSOCIATION.

Madison, Wis., 1908.

To His Excellency, JAMES O. DAVIDSON,

Governor of the State of Wisconsin:

SIR—I have the honor to submit for publication, as provided by law, the Sixth 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 6-7, 1908.

Respectfully submitted,

R. A. MOORE,

Secretary.

TABLE OF CONTENTS.

	PAGE
Letter of Transmittal	iii
Officers and Committees of the Association	vii
Constitution and By-laws	viii
List of Members (alphabetical)	xi
List of Members' (according to counties)	xxi
Program for Annual Meeting	xxx
 President's Address	1
Secretary's Report for 1907	4
In Memoriam, Hon. H. D. Hitt, by L. M. Hatch.....	10
Horticultural Opportunities Afforded in the State to Members of the Wisconsin Experiment Association, W. H. Han- chett	12
Opportunities for Co-operative Work in Northern Wisconsin, E. J. Delwiche	14
Publicity to Experiment Association Work, A. J. Meyer.....	16
The Agricultural Press, C. H. Everett	19
The Future of Agriculture, Hon. J. M. True	25
 <i>Co-operative Experiments with Oderbrucker Barley:</i>	
Roy T. Harris	72
J. Frank Bradley	72
O. C. Heidemann	73
Orla J. Bussewitz	74
Louis Heyroth	74
Guy A. Booth	75
Otto C. Kurtze	76
 <i>Co-operative Experiments with Manshury Barley:</i>	
Arthur Rosenow	73
Louis H. Fischer	77
P. V. Becker	78
H. E. Krueger	79
Clarence Jordalen	79
G. Muehleisen	80
Prize Winning Corn, Robert Lachmund	80
 <i>Corn:</i>	
Planting and Cultivating the Crop, Joseph N. Bohl	82
Harvesting for Silage and Ear Corn, J. H. McNown.....	84
Curing Seed Corn, G. A. Freeman	83
 <i>Experiments with Silver King (Wis. No. 7) Corn:</i>	
H. N. Longley	88
R. W. Chatterton	89
H. E. Krueger	90
D. W. Collin.....	91
Fred P. Grebe	91

Table of Contents.

v

<i>Experiments with Early Yellow Dent Corn (Wis. No. 8):</i>	Page
Albert J. Blakely	93
O. C. Heidemann	94
Clark's Yellow Dent (Wis. No. 1), Andrew I. Finsnes.....	94
Toole's North Star Yellow Dent, William Toole.....	95
Business Meeting	97
Treasurer's Report	98
Secretary's Report on State Appropriation.....	100
Display of Grains and Forage Plants for 1908	101
Parties Awarded Premiums, February, 1908	102
Special Prize Awards	105
Premium List, Awards to be made February, 1909	106
Rules and Regulations under which Premiums are Given	108
<i>A Few Articles on Timely Topics, B. A. Moore:</i>	
Selection of Seeds for the Season's Crop	109
Growing Peas for Seed and Grain	110
Growing Clover for Seed	112
Where is the Farm Machinery?	114
<i>Division of Farm Crops, R. A. Moore:</i>	
Plan of Work for the Coming Year	115
Experiment No. 1, Alfalfa	117
Experiment No. 2, Seed Corn	120
Experiment No. 3, Potato Scab	124
Experiment No. 4, Oat Smut	125
Experiment No. 5, Swedish Select Oats	127
Experiment No. 6, Oderbrucker Barley	128
Experiment No. 7, Forage Rape	130
Experiment No. 8, Soy Beans	134
Experiment No. 9, Barley Smut	136
Wisconsin Oat Crop, A. L. Stone	138
Experiment No. 10, Oat Crop	139
Experiment No. 11, Farmers' Loss from Weeds	141
Division of Bacteriology, H. L. Russell—Bovine Tuberculosis in Wisconsin	142
Division of Agricultural Engineering, C. A. Ocock—A Building for Curing Seed Corn; All Corn Desired for Seed Should be Fire-Dried	154
<i>The Wisconsin Corn Crop, R. A. Moore:</i>	
Breeding, Growing, Judging and Dissemination	158
Official Score Card	161
Explanation of Points in Corn Judging	162
Rules to be Used in Judging	163
Explanation of Points and Rules for Judging Dent Corn....	164
<i>Corn Judging:</i>	
Lesson I. Trueness to Type or Breed Characteristics....	165
Lesson II. Shape of Ear, Cob and Kernels	166
Lesson III. Color of Grain and Cob	168
Lesson IV. Market Condition	169
Lesson V. Butts and Tips	170
Lesson VI. Kernel Study	172
Lesson VII. Circumference and Length of Ears	173
Lesson VIII. Furrows Between Rows and Space Between Kernels at Cob	173
Lesson IX. Percentage of Corn on Cob	174
Lesson X. Selecting Corn of High Oil and Protein Content	175

	Page
Wheat—Points to be Observed	177
Rule for Cuts	181
Official Score Card	178
Oats—Points to be Observed	179
Official Score Card	180
Rule for Cuts	182
Barley—Points to be Observed	181
Rule for Cuts.....	182
Official Score Card	183
Discussion on the Judging of Small Grains, A. L. Stone.....	184
Wisconsin Seed Grain Growers.....	189
Swedish Select Oats (Wis. No. 4).....	189
Oderbrucker Barley (Wis. No. 55).....	193
Manshury Barley (Wis. N. 62).....	200
Soy Beans—	
Ito San Variety.....	201
Early Black.....	201
Black	201
Medium Early Green.....	202
Yellow	202
Brown	202
Corn—	
Silver King (Wis. No. 7).....	202
Early Yellow Dent (Wis. No. 8).....	208
North Star Yellow Dent (Wis. No. 11).....	210
Golden Glow (Wis. No. 12).....	210
Clark's Yellow Dent (Wis. No. 1).....	211
Clover—	
Medium Red.....	211
Alsike	213
Mammoth	213
Buckwheat—	
Japanese	213
Silver Hull.....	214
Alfalfa Seed.....	214
Timothy Seed.....	214

OFFICERS, 1908.

President—A. L. STONE.....	Madison
Vice President—H. A. MAIN.....	Ft. Atkinson
Secretary—R. A. MOORE.....	Madison
Treasurer—J. N. BOHL.....	Beaver Dam
Clerk and Stenographer—IDALYN BIBBS.....	Madison

COMMITTEES.

Program:	Officers of the association.
Executive:	Thos. R. Ford.....Milwaukee Chas. L. Hill.....Rosendale O. R. Frauenheim.....Random Lake W. H. Hanchett.....Spartan H. E. Krueger.....Beaver Dam Chas. I. Brigham.....Blue Mounds H. W. Griswold.....West Salem E. W. Lee.....Granton H. A. Martin.....Gotham O. Scott Tomkins.....Ashland J. Frank Bradley.....Somers Henry Michels.....Malone
Resolutions:	H. P. Howell.....Spartan A. J. Meyer.....Howell, Mich. H. A. Main.....Ft. Atkinson H. J. Renk.....Sun Prairie
Co-operative Experiments:	Farm Crops.....R. A. Moore Soils .....A. R. Whitson Farm Engineering.....C. A. Ocock Bacteriology .....H. L. Russell

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.

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.

Section 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 terms 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 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 on 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.

Amendment No. 1.—Adopted Feb. 9, 1906.

Any person residing within the state having completed a course in agriculture in any college equivalent to that given by the Wisconsin University may become a member of this association under the same regulation as students from the Wisconsin College of Agriculture.

By-Laws.

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—1908.

[Arranged in alphabetical order.]

Names.	Post-Office Address.	Names.	Post-Office Address.
Aastrum, Chas. J..	Spring Valley, R. 3	Bechtolt, A. B.	Monroe.
Aavang, H. O.....	Barneveld.	Bechtolt, J. D.	Monroe.
Abbs, Fred, Jr.....	Fond du Lac, R. 3.	Behrens, Bernhard.	Grafton.
Abel, Ernie	Cedarburg.	Beilke, Walter.....	Fairwater.
Aberg, Jacob	De Soto.	Belda, Wm. F.	De Forest.
Accola, John	Madison.	Bell, Geo. S.	Madison.
Accola, Lawrence.	Steuben.	Bell, Lewis C.	Wantoma.
Aderhold, H. T....	Athens.	Bell, William E.	Oconomowoc.
Adkins, M. V.....	Ripon.	Bendickson, I. E. ..	Cambridge.
Adland, P. H.....	North Cape.	Benedict, E. L.	Beloit.
Ahlars, Walter	Grafton.	Bennett, C. S.	Holmes, Montana,
Akins, Clyde	Warren, Ill.		Tu Ranch.
Alberts, Will	New Richmond.	Bennett, H. J.....	Cherry Valley, Ill.,
Alcalay, S. J.	Madison, N. J.,		R. 1.
	Florham Farms.	Bennett, Wm. L. .	New Richmond.
Allen, C. L.	Eau Claire.	Benson, Ed. E.	Mt. Horeb.
Allyn, Joseph	Delavan.	Berg, C. J.	Tigerton.
Almon, Perry T. .	Weyauwega.	Berg, Julius	Sturgeon Bay, R. 3
Anderson, A. W. .	Portage.	Berge, Anton O.	Valders.
Anderson, A. M. .	Denmark.	Berge, Otis J.	Valders.
Anderson, Alvin M.	Whitewater, R. 5.	Berge, William	Cambridge.
Anderson, H. C. .	Cambridge.	Berger, John H.	Oshkosh, 181 Mon-
Anderson, Thos. E.	Wild Rose.		roe Ave.
Andrews, A. L. ...	South Wayne.	Berns, Xavier	Guttenberg, Ia.
Andrews, J. S.	Wilton.	Bestul, O. O.	Scandinavia.
Angvick, Lars	Cottage Grove.	Beule, E. A.	Fox Lake.
Anthes, Henry	Jefferson.	Bewick, W. W.	Madison, 824 W.
Anthony David C. .	Oregon, R. 2.		Johnson St.
Ascott, W. H.	Sparta.	Beyer, Herman C. .	Peebles, R. 37.
Ashton, A. B.	Monroe, R. 3.	Bigford, Walter W.	Manawa.
Ashton, W. L.	Belmont.	Biglow, L. F.	Brooklyn .
Austin, Alpheus ...	Janesville.	Bilderbach, W. T. .	Mondovi.
Austin, Alva G. ...	Janesville.	Bille, J.	Waupaca.
Austin, Chas.	Janesville.	Birkrem, Clarence .	Deerfield.
Austin, W. B.	Janesville.	Birkenkott, M. J. .	Klevenville.
Austin, Wilbur D. .	Janesville.	Bixby, P. T.	Appleton.
		Blackmun, E. G. .	Quincy, Wash.
Babcock, J. G.	Evansville.	Blakely, A. J.	Neenah.
Bachhaus, F. G. ...	Kewaskum.	Bleasdale, J. R. ...	Janesville, R. 5.
Baeseemann, Otto .	Edgar, R. 2.	Blodgett, Gordon .	Neenah, R. 10.
Baker, Dwight	Blanchardville.	Blonien, Peter	Elkhart.
Ballestad, Lars	Manitowoc.	Blotz, Elmer	Dodgeville.
Barron, R. E.	Platteville.	Boehnen, John	Black Earth.
Barstow, Jos. E. ...	Randolph.	Bohl, Anton	Beaver Dam.
Bartlett, Geo. W. .	Menomonee Falls.	Bohl, Joseph N.....	Beaver Dam.
Barton, Otto	Mt. Horeb.	Bonsack, H. M.	La Crosse.
Basse, Wm. H.	Milwaukee, Station	Bonsack, Theo.	West Salem.
	A, R. 4.	Bonzelet, J. P.	Eden.
Bast, John	Malone.	Booth, Geo. S.	Cuba City.
Bauer, Adolph H. .	Manitowoc, R. 2.	Booth, Guy A.	Cuba City.
Beach, Glenn	Loyal.	Boss, S. J.	Oshkosh, R. 7.
		Boss, U. C.	Oshkosh, R. 7.

MEMBERSHIP, 1908.—Continued.

Names.	Post-Office Address.	Names.	Post-Office Address.
Botten, E. K.	Boscobel.	Christensen, C. W.	Roberts.
Bouscein, E. F. ...	Detroit Harbor.	Christensen, John ..	Hartland.
Bouscein, Gust	Detroit Harbor.	Christensen, P. W. ..	Marshfield.
Boudnik, John	Kewaunee.	Christenson, C.A.M.	Walsh.
Bowden, C. B.	Rosendale, R. F.D.	Christoph, T. F.	Chilton.
Boyce, Charlotte ...	Dane.	Chrysler, Harvey ..	Osseo.
Boyd, Jos. T.	Waukesha, R. 7.	Church, A. P.	Whitewater.
Boyle, Frank E.	Oconomowoc.	Chynoweth, H. E.	Madison.
Bradley, J. Frank ..	Somers.	Clapham, B.	Peebles, R. 7.
Brager, Henry A. ...	Mt. Horeb.	Claridge, Wallace ..	Spring Green.
Brandt, Chas., Jr. ..	West Salem.	Clark, Chas. F.	Babcock.
Brehm, E. A.	Colby.	Clark, W. E.	Stevens Point, R. 1.
Bremer, Paul	Milwaukee, 130 Lincoln Ave.	Clausing, Adolph ..	Thiensville.
Brickson, Abram ...	McFarland.	Clavadatscher, T.	Sauk City.
Brickson, Andrew ...	Cottage Grove, R. 3.	Clayton, Alvin W.	Madison, R. 5.
Bridgman, C. R.	Darlington.	Clusen, Reinhold ...	Manitowoc, R. 6.
Briggs, J. W.	Peebles.	Cobb, Homer A.	Sun Prairie.
Briggs, Lynn W.	Peebles.	Cobleigh, Rollo S.	Delton.
Brigham, Chas. I. ...	Blue Mounds.	Coburn, Ora	Whitewater.
Brodtt, Clarence	Bridgeport.	Coleman, C. H.	Perry Center, N. Y.
Brown, E. D.	West Salem.	Colenso, J. E.	Monroe, N. Y., Box 71.
Brue, N. H.	De Forest.	Colladay, C. M.	Madison.
Brueckner, Justus ...	Ft. Atkinson.	Colladay, W. E.	Stoughton.
Bruhn, John T.	Two Rivers, R. 1.	Collin, D. W.	Luxembourg.
Bruins, H. A.	Brandon.	Comfort, Alfred	Randolph.
Brunner, Robert W. ...	Hudson.	Conant, W. A.	Boston, Mass., 17 Milk St.
Brunson, Levi E.	Rosendale.	Cooke, Carl H.	Independence.
Bryant, K. J.	Hazel Green.	Cook, George L.	Burlington.
Bryson, Donald	Elizabeth, Ill.	Cook, I. O.	Nashotah.
Buchanan, P. H.	Indianapolis, Ind., 1902 N. Mev. St.	Coon, Elam P.	Milton Jet.
Buck, Clarence W. ...	Eldorado.	Coon, Leslie	Haley, N. Dakota.
Buehler, J. G.	Twin Bluffs.	Cooper, Maurice W. ...	Edgerton.
Bullamore, Grant	Kenosha, R. 36.	Corneliusson, T.	Eau Claire.
Bullamore, R. G.	Kenosha, R. 36.	Costello, Dan A.	Hamilton.
Bundy, Andrew	Peshigo.	Craig, Geo. D.	Oconomowoc.
Burce, Ruth.	Eau Claire.	Crandall, W. T.	Milton.
Burton, Roy	Eagle.	Cross, A. J.	Allenville.
Buschman, Hugo	Forestville.	Curran, W. F.	Taylor.
Bussewitz, Orla J. ...	Juneau.	Cutler, James L.	Dodgeville, R. 1.
Bussewitz, W. E. ...	Juneau.		
Bussey, W. P.	Omro.		
Butts, Wm. F.	Brooklyn.		
		Dahle, L. O.	Deerfield.
Caldwell, John	Mazomanie.	Dahlen, Anton J. ...	Coon Valley.
Call, H. H.	West Prairie.	Dahlen, M. O.	Coon Valley, R. 1.
Cannon, E. A.	Pardeeville.	Daley, Edwin S.	De Forest.
Capener, Walter R. ...	Baraboo.	Daley, Julius	De Forest.
Carey, Clinton H.	Vans Harbor, Mich.	Daley, J. K.	McFarland.
		Daley, O. S.	De Forest.
Carey, Henry	Redgranite, R. 1.	Daley, S. S.	De Forest.
Carey, Jas. E. L.	Redgranite, R. 1.	Dalton, Ernest E.	Pardeeville.
Carlsen, Niels P.	Hudson.	Dalton, R. E.	Pardeeville.
Carmichael, Allen ...	Waukesha.	Davidson, W. L.	Verona.
Carnecross, J. E.	Okee.	Davies, David E.	Waukesha, R. 8.
Carpenter, L. A.	Fond du Lac.	Davies, Llewellyn ...	Mineral Point.
Chappel, Steve J. ...	Dodgeville.	Davis, Harvey	Poynette.
Chase, J. P.	Sun Prairie.	Davis, J. L.	De Soto.
Chatterton, R. W. ...	Basco.	Day, James	Hamilton.
Cherveney, Wenzel ...	Kewaunee, R. 2.	Dean, C. E.	Madison, 503 W. Doty.
Chetlain, Louis A. ...	Galena, Ill.	Deleglise, Leo. L.	Devon, Pa.
Childs, Sidney S.	Boscobel.	Delwiche, E. J.	Ashland.
Chipman, W. R.	Morrisonville.	Deneen, Michael	Blue Mounds.
Cholpant, Aaron H. ...	Neeah.	Dennerlein, Arthur ...	Plymouth, R. 28.
Christlaw, A. M.	Rice Lake, R. 3.	Dennison, Nicholas ...	N. Milwaukee.
Christlaw, Geo. O. ...	Madison.	Dettinger, W. F.	Hixton.
Chrisler, Elvin C. ...	Lodi.	Dettwiler, John	Monroe, R. 4.
Chrisler, Harley E. ...	Lodi.	Devine, C. B.	Evansville.
Christ, Albert	Cambridge.	Dexter, Walter S. ...	Kenosha.
		Dietrich, John J.	Black River Falls.

MEMBERSHIP, 1908.—Continued.

Names.	Post-Office Address	Names.	Post-Office Address.
Digman, Fred	Madison.	Gallagher, J. F. ...	Reedsburg, R. 1.
Dineen, C. F.	Pewaukee.	Galster, Frank L. .	Alma Center.
Dittmar, Wm.	Elizabeth, Ill.	Gamerding, John .	Kendall.
DiVall, W. F.	Montfort.	Gangstad, J. O. ...	Deerfield.
Doerfer, Carl	Madison.	Garey, James	Grimms.
Donaldson, H. A. ...	Eau Claire.	Garside, Harry	Cedar Grove.
Dopp, Paul B.	Oconomowoc.	Gasser, Roy	Prairie du Sac.
Dougan, W. J.	Beloit.	Gelbach, Parke	Lancaster, R. 9.
Downey, Urso	Whitewater, R. 2.	Gensman, E. D.	Schleisingsville.
Dreger, Emil	Madison, R. 6.	Germann, H. L.	Fall Creek.
Duerkop, W. P.	Alma Center.	Ghastin, Wm. J. ...	Twin Bluffs.
Dunbar, Harold ...	River Falls.	Gibbard, Peter J. .	Ripon, R. 17.
Dunbar, Harry	Elhkorn.	Giebel, Karl	Fond du Lac.
Dunklow, W. H.	Franksville.	Gillette, R. A.	Verona.
Durand, Mrs. S. S. .	Lake Forest, Ill.	Gillies, J. H.	Stoughton.
Durnford, G. A. ...	Rockbridge.	Glindinning, H. L. .	Shullsburg, R. 2.
		Gloecker, Theo.	Portage.
Eastman, F. A. ...	Sheboygan Falls.	Goetsch, Albert A. .	Juneau.
Eastman, S. A.	Sheboygan Falls.	Gordon, A. L.	Mineral Point.
Ebert, Francis E. .	Tomah.	Gordon C. D.	Mineral Point.
Eggun, Lewis	Mt. Horeb.	Gordon, J. Roy	Mineral Point, R. 2
Egre, John S.	Cambridge.	Gorges, Louis	Readfield.
Ehrhardt, Daniel ...	Knowles.	Graham, P. S.	Fennimore.
Einfeldt, Albert	Withee, R. 1.	Grafer, Edwin	Helenville.
Eiseman, Ben	Mishicot.	Graser, A. H.	Waukesha, R. 4.
Ellickson, A. C.	Arlington.	Grass, Anthony V. .	Burlington.
Elver, E. C.	McFarland.	Graves, E. H.	Madison.
Emery, George	Loganville.	Grebe, Fred P.	Fox Lake.
Emery, Geo. Q.	Poynette.	Greenow, A. L.	Menomonee Falls.
Emery, S. L.	Edgerton.	Grenzow, Jesse H. .	Juda.
Emmert, H. L.	Johnson Creek.	Gridley, Ben	Wauwatosa.
Empey, Geo. A.	Dorchester.	Griffith, James	Spencer.
Engel, Philip	Luxembourg.	Grimwood, Ivan J. .	Bristol, Ill.
Engleman, John	Hixton.	Grinde, Arthur	De Forest.
Erickson, Louis E. .	Kewaunee, R. 3.	Griswold, H. W.	West Salem.
Erickson, Ole C.	Detroit Harbor.	Gross, Waldo E.	Merrimac.
Ernst, John A.	Milwaukee.	Groth, Chas. A.	Cedarburg, R. 2.
Evans, Wm. D.	Pickett.	Grove, Christian ...	Columbus, R. 6.
Evans, Thos. H. ...	Wales.	Grub, C. H.	Baraboo.
Evans, William H. .	Wales, R. 31.	Guenther, N. W. ...	S. Milwaukee, R.17
		Guitzkow, Arthur .	Madison.
Fadness, John	Deerfield.	Gullickson, C. E. ...	Cushing.
Falarsh, Frank	Peshigo, R. 2.	Gupthill, L. R.	New Auburn.
Farwell, Roy	Ridgeway.	Gustaveson, Chas. .	Manitowoc.
Faville, A. D.	Lake Mills.	Gustafson, Theo. .	Stockholm, k. 1.
Feigum, John	Cottage Grove.	Guttenberg, F., Jr.	Jefferson.
Fenske, John	Fairwater.	Haass, Otto	Merton.
Finegan, Louis	Sparta.	Hackett, Charles ...	Baraboo, R. 6.
Finnses, Andrew I. .	Chippewa Falls.	Haeyers, Martin ...	Luxembourg, R. 4
Fischer, Henry	Juneau.	Hagestad, A. C.	Etrick.
Fischer, Louis H. .	Haven.	Haigh, Thomas	Cream.
Fish, Esli	Janesville.	Haines, Jos. K. ...	Mt. Ephraim,
Fisher, Clayton E. .	Evansville, R. 17.		N. J.
Fjelstad, J. C.	Mt. Horeb.	Halderson, J. M. ...	Holmen.
Fleishauer, Charles.	Arkansas.	Halley, Guy R.	Rockford, Ill.
Foley, Robert	Wauwatosa.	Halsted, U. W.	Lena.
Follstad, Anton	Elcho.	Hamann, Edgar C. .	Sheboygan.
Ford, J. F.	Mazomanie.	Hamilton, T. S.	Westfield.
Ford, Lewis R.	Brooklyn.	Hamlyn, W. W.	West Bend.
Ford, Thos. R.	Aurora, Ill.	Hanchett, W. H. ...	Sparta.
Foth, F. D.	Norwalk.	Hancock, Levias ...	Tomah.
Fox, C. L.	Leon.	Hankinson, J. H. .	Union Grove, R. 6
Frauenheim, O. R. .	Random Lake.	Hanna, O.	Mt. Horeb.
Frederickson, Fred.	Spring Green.	Hansen, Carl F. ...	Sparta.
Freeman, G. A.	Sparta.	Hansen, Christian.	Detroit Harbor.
Frey, E. J.	Bridgeport.	Hanson, Elmer	Waupaca, R. 2.
Fritz, Mark	Belleville.	Hanson, H. Ed....	Appleton, 433 Calu-
Fuller, LeRoy	Lake Geneva.		met St.
Fuller, Sidney	Orfordville.	Hanson, N. P.	Amherst Jet., R.2.
		Hanson, Ole C.	Detroit Harbor.

MEMBERSHIP, 1908.—Continued.

Names.	Post-Office Address.	Names.	Post-Office Address.
Hanzlik, Otto J. . .	Wonewoc.	Hogan, Dominic . .	WaunaKe.
Hardy, John	Wauwatosa.	Holcomb, W. R. . .	Excelsior, Minn.
Hargrave, Robert .	Ripon.	Holloway, John W.	Union Grove.
Harr, Ernest B. . .	Bangor.	Holmes, V. C. . . .	Evansville.
Harriman, F. E. Jr.	Shawano.	Holscher, A. C. . .	Cottage Grove.
Harrington, C. E. . .	Verona, R. 1.	Holscher, Chas. J.	Sun Prairie.
Harris, Benjamin . .	Delavan, R. 2.	Holzhauser, Walter.	Marshall.
Harris, Jesse S. . .	Delavan.	Hopkins, B. F. . . .	Morrisonville.
Harris, R. E.	Warrens.	Houkom, Stephen .	Mpls., Minn.
Harris, Roy T. . . .	Madison.	Houslet, Neal	Packwaukee.
Harrison, George . .	Omro.	Howard, A. E. . . .	Whitewater.
Haskin, I. O.	Prairie du Sac.	Howard, Geo. A. . .	Ft. Atkinson.
Haskins, Leon . . .	Montello.	Howe, John	Comstock.
Hass, Reinhold A. .	La Crosse, R. 1.	Howell, Horace P.	Sparta.
Hatch, K. L.	Winneconne.	Howland, W. L. . .	Waupun.
Hatch, L. M.	Chapin, Iowa.	Howitt, C. H. . . .	Randolph.
Hatch, Orin E. . . .	Oakfield.	Hoxsey, Edw. H. . .	Serena, Ill.
Hatleberg, O. C. . .	De Forest.	Hoxsey Frank	Serena, Ill.
Hauck, N.	Alton, California.	Hubbard, E. S. . . .	Norwalk.
Haus, Enoch	Junction.	Hubbard, Sherman .	Evansville, R. 18.
Hauser, Emil	La Crosse, R. 3.	Hudson, Dwight . .	Reedsburg.
Hauser, Ferdinand .	La Crosse, R. 2.	Huebsch, L. A. . . .	Lake Forest, Ar.
Hawkins, A. B. . . .	Farley, Iowa.		cady Farm, Ill.
Hayden, John	Grimms.	Hughes, William . .	Waukesha.
Heasty, Ralph W. . .	Sparta.	Huhn, Wm.	Madison, 910 W.
Hecketsweiler, O. J.	Alma Center.	Humphrey, J. M. . .	Dayton.
Hedlund, Adolph . .	Clayton.	Huser, Henry	Grand Rapids.
Heinecke, W. E. . . .	Madison.	Hustad, M. C. . . .	Modena, R. 1.
Heiningway, G. L. .	Manover.	Hutchinson, W. D.	Rubicon, R. 1.
Heinke, Alvin E. . .	Stratford, R. 1.		
Heldstab, C. O. . . .	Rice Lake, R. 5.	Ingold, John	Monroe.
Hemker, Fritz H. . .	West Salem.	Illian, W. L.	Adell, R. 19.
Hendricks, J. H. . .	Campbellsport.	Ives, Lovell W. . . .	Granton.
Hendricks, L. E. . .	Campbellsport.		
Hensel, Claire	Walnut, Ill.	Jacklin, R. H. . . .	Redgranite.
Hensgen, M. J. . . .	Union Grove.	Jacky, Gilbert . . .	Malone, R. 39.
Herrich, S. F.	Adell, R. 19.	Jacobs, A. F.	Coloma Station.
Herrmann, Fred . . .	Osseo.	Jacobson, Fred E . .	Oconomowoc, R. 27.
Herold, Rudolph Jr.	Stoddard.	Jahnke, J. F.	Pepin.
Herrbold, J. W. . . .	Sturgeon Bay.	James, George A. . .	Richland Center.
Herwig, Theo. E. . .	Delton.	Jamison, Clarence . .	Appleton.
Hessel, Louis	Manitowoc, R. 6.	Jamison, Robert . . .	Appleton.
Hetts, Eugene	Ft. Atkinson.	Jamison, W. G. . . .	Appleton.
Hetts, John	Ft. Atkinson.	Jenish, J. E.	Twin Bluffs.
Heyroth, Louis H. .	Mishicot, R. 3.	Jeffery, H. B.	Menomonee Falls.
Hicken, Alfred B. . .	Waukesha, R. 7.	Jensen, Peter	Argyle.
Hicks, Earl	Pepin.	Jenson, William . . .	Waupaca, R. 3.
Highbarger, H. . . .	Seward, Ill.	Jerde, Alfred O. . .	Deer Park.
Hildemann, Alex. . .	Belle Plaine.	Jerde, Perry S. . . .	Deeronda.
Hill, C. C.	Tomah.	Joice, Geo.	Waterloo.
Hill, Charles L. . . .	Rosendale.	Jones, Albert	Dousman, R. 32.
Hill, Chas. T.	Brookfield.	Jones, Chas. Lloyd .	Hillside.
Hill, J. Thos.	Brookfield.	Jones, E. E.	Rockland.
Hill, Otto C.	Mt. Horeb.	Jones, John G. . . .	Beaver Dam.
Hillier, H. B.	Brownsdale, Minn.	Jones, Owen Jr. . . .	Beaver Dam.
Hine, Geo. S.	Madison.	Jones, Scott, Lloyd .	Hillside.
Hinrichs, Ernest . .	Reedsburg, R. 4.	Johnson, Albert I. .	Bloomer, R. 5.
Hitchcock, C. E. . .	Sparta.	Johnson, Billie . . .	Strong's Prairie,
Hitchcock, H. R. . .	Pecatonica, Ill.		R. 1.
Hintz, William F. . .	Oakfield, R. 25.	Johnson, L. M. . . .	Ashland, R. 2.
Hinz, A. F.	Ripon.	Johnson, Henry W.	Woodford.
Hirsch, Brynjoll . .	Washburn, R. 1.	Johnson, S. J. . . .	Sun Prairie, R.
Hjelle, Ole K.	Soldiers Grove, R. 5.	Johnston, Frank R.	Appleton, R. 6.
		Joos, Frank B. . . .	Fountain City.
Hoague, Charles C. .	Janesville.	Jordan, Clarence . .	Stoughton.
Hocks, Walter	Sturgeon Bay.	Joyce, Karron	Redgranite.
Hoefner, Herbert . .	Manitowoc, R. 1.	Juergens, Henry . . .	Hartford.
Hoefner, W. H. . . .	Manitowoc, R. 2.	Jung, A. E.	Randolph.
Hoelt, Chas. A. . . .	Oshkosh, R. 6.		
Hoffman, H. F. . . .	Portage.		

MEMBERSHIP, 1908.—Continued.

Names.	Post-Office Address.	Names.	Post-Office Address.
Jungbluth, Wm. ..	Milwaukee Sta- tion A, R. 5.	Lachmund, Robert.	Sauk City.
Kaderabek, John ..	Delafield.	Laird, Wm. J.	Shiocton.
Kalscheur, L.	Klevenville.	Landt, Newton A..	Kilbourn.
Kaltenberg, A.	Waunakee.	Larsen, A. C.	Madison, Washing- ton Ave.
Karmath, William.	Cameron.	Larson, Charles L.	Chicago, Ill., 839 Spaulding Ave.
Kaste, Charles ..	Cream.	Larson, J. M.	Wautoma, R. 1.
Kastein, Herman ..	Waupun, R. 22.	Larson, Le Roy, ..	Iola.
Katel, W. C.	Kewaunee, R. 7.	Larson, W. B.	Ogdensburg.
Keeney, E. R.	Rockton, Ill.	Lawrence, F. W.	Bangor.
Kendell, Geo. W.	Sun Prairie.	Lawrence, W. J.	De Soto.
Kendall, Myron	Iola, R. 3.	Lean, Floyd	Elkhorn.
Kendall, V. F.	Iola, R. 3.	Lebeis, F. J.	Bloomer, R. 5.
Kent, H. W.	Rusk.	Lee, E. W.	Granton.
Kent, J. S.	Rusk.	Lee, Lewis Johnson	De Forest.
Keogh, Harry	Forestville..	Lee, P. A. G.	Deerfield.
Ketterer, Ralph G.	Werley.	Lee, Sever A.	Deerfield.
Keuber, Aaron	Helenville.	Lee, Sever T.	Black Earth.
Kieffer, Mike	Fredonia.	Lefebvre, Wilbur F.	Evansville.
Kimble, N. G.	Milton Jct.	LeGresley, N. W.	Woodstock, Vt.
Kindschy, George .	Waumandee.	Lehmann, Theo.	Watertown, R. 1.
Kinkel, Arthur	New London.	Leith, B. D.	Van Dyne, R. 9.
Kinnear, James	Standart.	Leonard, Mike	Plymouth.
Kinstler, C. L.	Washburn.	Leonard, Wm. R. ..	Ft. Atkinson, R. 1.
Kircher, H. W.	Chilton, R. 3.	Lepien, John	Marshfield.
Kitchen, Jas. H.	Edmund.	Lewerenz, Roy B.	Tomahawk.
Kielland, Christian	Viroqua.	Leverich, J. W.	Sparta.
Klann, Adolph	Hayton.	Lewis, E. H.	Whitewater.
Klassy, Henry	Monticello.	Lewis, Lloyd L.	Stevens Point, R. 1.
Klein, W. C.	Orfordville.	Lewis, Lester M.	Monticello, R. 1.
Kloehn, Irwin G.	Picketts, R. 27.	Lev, John P.	Dodgeville.
Klofanda, Reuben..	Racine.	Libby, John L.	Madison, R. 4.
Klov Dahl, J. J.	Wittenberg.	Lien, Andrew P.	Stanley.
Kluck, F. E.	Lena, Ill.	Lindas, Theo. A.	Marshall.
Kluck, R. E.	Lenz, Ill.	Lingard, Albert	Mt. Horeb.
Klumb, Oscar	Rockfield.	Linse, Charles	La Crosse.
Klussendorf, F. E.	Phillips, R. 1.	Lloyd, Evan B.	Cambria.
Knecht, Ulrich, Jr.	Cochrane.	Logan, R. G.	New Palestine, Ind.
Kneip, William	Wauwauaga.	Loewe, Arthur P.	Shiocton.
Kneser, John	Milwaukee Sta- tion D, R. 3.	Longley, Harvey N.	Dousman.
Knoke, E. A.	Shiocton.	Loomis, Geo. E.	Men-dovi.
Knoke, Hugo J.	Readfield.	Lowe, William	Strum, R.
Knuteson, E. L.	Wautoma, R. 5.	Lowell, Lloyd S.	Sharon.
Koemich, Edw.	Kewaunee, R. 2.	Luetischer, Irvin ..	Plain.
Kohne, Henry,	Little Suamico.	Lyman, Chas. A.	Sun Prairie.
Koenecke, E. H.	Reedsburg.	McCauley, Rex	Osseo.
Kohlwey, Otto	Grafton.	Mack, Warren	Whitewater.
Koll, C. A.	Eau Claire.	MacVannel, A. P.	St. Marys, Ont., Can.
Koltjes, J. F.	Dane.	Maeder, J. W.	Oregon.
Koltjes, Leo. J.	Dane.	Mahoney, David	Juneau.
Konz, John, Sr.	Fairchild, R. 2.	Main, H. A.	Ft. Atkinson.
Kraft, Albert	Kendall.	Mair, C. A.	Arlington.
Kramer, H. F.	Bloomer.	Malde, O. G.	Grand Rapids, R. 3.
Kramer, J. C., Jr.	Montfort.	Marck, F. R.	Honey Creek.
Krase, Henry	Two Rivers, R. 1.	Marck, L. G.	Honey Creek.
Krause, Ed.	Ripon.	Marken, Otis	Valders.
Krause, Fred W.	Thorpe.	Markey, W. E.	Madison.
Krenzke, John L.	Lamberton.	Markev, W. H.	Sullivan.
Krogstad, O. J.	Eau Claire, R. 4.	Markham, Fred C.	Independence.
Kronholm, V. E.	Grand Rapids.	Marsden, J. R.	Fennimore.
Krueger, Alexander	Watertown.	Marshall, A. C.	Omo.
Krueger, H. E.	Beaver Dam.	Marshall, W. S.	Delton.
Kruschke, Geo. H.	New Richmond.	Marston, Albert	Gotham.
Kubat, W. H.	Neillsville.	Martin, H. A.	Chippewa Falls.
Kuehn, Chas. A.	Brandon.	Martiny, L. P.	Monticello.
Kuen, Clarence E.	Brownsville.	Marty, Matthias ..	Brandon.
Kuhlman, A. H.	Lowell.	Mathews, Lee G.	
Kundert, William ..	Monroe, R. 3.		
Kurtze, Otto C.	West Allis, R. 15.		

MEMBERSHIP, 1908.—Continued.

Names.	Post-Office Address.	Names.	Post-Office Address.
Mathews, Milton D.	Helenville, R. 1.	Muth, E.	Sheboygan.
Mathis, Adolph	Lansing, Ia., R. 1.	Myrick, Mead O.	Bristol.
Matthys, Walter	Barron.		
Mattison, Thos.	Blair.	Nagle, Lee	Bridgeport.
Mau, H. G.	Brodhead.	Nathen, Paul R.	Kendall.
Maug, Arthur J.	Ripon.	Nau, Ray H.	Franksville.
May, Henry	Mondovi.	Nelson, Edwin	Viroqua.
Mayo, J. Harold	Eau Claire, R. 5.	Nelson, Emil	River Falls, R. 6.
McCarthy, Geo. M.	Fredonia.	Neprud, Nels O.	Coon Valley.
McConnell, F. J.	Darlington.	Ness, Andrew	Brooklyn.
McCormick, F. W.	Fond du Lac.	Neuberger, Wm.	Reeseville.
McDonald, J. J.	Sparta.	Nicholls, H. G.	Stoughton.
McDowell, David P.	Packwaukee.	Nicolaus, C. A.	Waukesha.
McGilvra, Ed. A.	Baraboo.	Nicolaus, D. C.	East Troy.
McGilvra, Geo. B.	Baraboo.	Nies, Peter	Greenleaf, R. 3.
McGinnis, Chas. G.	Baraboo.	Nordlie, Alfred	Deerfield.
McIntyre, Ivan	Ft. Atkinson.	Norrborn, C. G.	Eland, Box 43.
McNown, J. H.	Mauston.	Norsman, Jerome O.	Madison.
Meacham, C. W.	Downing.	Northrop, Jessie	Waupun.
Meekin, H. W.	Fond du Lac.	Nuttleman, Adolph.	West Salem.
Mell, Andrew	Madison.	Nuttleman, Alf. L.	West Salem.
Menne, John N.	Elkhorn.	Nyre, Lawrence A.	Mondovi.
Merkel, Henry	Appleton, R. 3.		
Meurer, Paul	Genoa Junction.	Ochsner, A. C.	Plain.
Meyer, Alfred	Oakwood, R. 13.	Ochsner, A. G.	Cochrane.
Meyer, A. J.	Howell, Mich., R. 7.	O'Connor, Edw. F.	Lodi, R. 1.
		O'Connell, James	Hartford.
Meyer, John	Madison, R. F. D.	O'Connell, M. H.	Grimms.
Michels, Henry	Malone.	Oestreich, Louis J.	Kewaunee.
Michels, Matthew.	Madison.	Oestreich, R. C.	Kewaunee, R. D.
Mielke, J. E.	Basco.	O'Hearn, Dennis	Eldorado.
Mihills, D. R.	Fond du Lac.	Ohren, Martin	Sturgeon Bay.
Mikkelsen, Carl	Deerfield.	Oldenburg, G. H.	Bailey's Harbor.
Miller, A. H.	Waupun.	Oleson, James P.	Ripon, R. 13.
Miller, Henry C.	Allenville.	Oliver, C. S.	Eau Claire, R. 2.
Miller, John	Oconomowoc.	Olsen, Gabriel C.	Westby.
Miller, L. A.	Sparta.	Olson, W. B.	Holmen.
Millman, D. R.	Platteville.	Orth, A. F.	Muscoda.
Mills, Stanley	New Auburn.	Orvis, L. C.	Salem.
Miritz, O. F.	Fond du Lac, R. 7.	Osborne, Jno. F.	Linden.
Mistele, William	Kendall.	Osborne, Oliver M.	Madison.
Mitchell, Dean S.	Brookfield.	Osborne, Wm. F.	Linden.
Mitchell, James T.	Cottage Grove.	Ostenson, Lewis	Racine.
Mitwede, Henry	Waukesha.	Osterday, E. G.	Stockton, Ill.
Moe, G. Julius	La Crosse.	Oswald, Oscar	Haven.
Moen, Gilbert T.	Eleva.	Otterholt, Henry	Chetek, R. 1.
Moen, Herman C.	Cambridge.	Owen, David	Waukesha, R. 9.
Monroe, Royal H.	Fond du Lac, R. 3.	Owen, Thos. M.	Portage.
Montague, C. R.	North Prairie.	Owens, Dan	Fisk Station.
Moore, Harry	McFarland.	Owens, H. C.	Fox Lake.
Moore, Henry G.	Mauston.		
Moore, R. A.	Madison.	Pabst, Fred	Oconomowoc.
Morgan, Chas.	Albany.	Page, G. F.	Berlin.
Morrill, A. M.	Taylor.	Palmer, Howard	Baraboo.
Morris, Geo. C.	Madison, 729 W. Johnson St.	Palmer, Levi	Verona.
		Parrish, J. O.	Plymouth.
Morris, John L.	Waukesha.	Parrish, Ralph	Sheboygan Falls, R. 9.
Morris, Leslie D.	Waukesha, R. 8.		
Morrissey Bros.	Arena.	Parsch, Gustav A.	Stoddard.
Morrissey, Lawr.	Reedsville.	Parsons, William A.	Ft. Atkinson.
Morse, W. A.	Camden, N. Y.	Patterson, J. L.	Glen Haven, R. 3.
Moseley, Arthur G.	Catact.	Paulson, Gust.	Clayton.
Muehleisen, Gottl.	Tell.	Paulson, Hilbert	Hollandale.
Mueller, Ed. O.	Appleton, R. 1.	Paulsen, J. E.	Manitowoc.
Mueller, Henry	Johnson Creek.	Paulson, P. A.	Hudson.
Mueller, Math.	Edgerton, R. 2.	Peck, Henry N.	Marshall.
Mulder, B. W.	Midway, R. 1.	Pederson, Peter	Eleva.
Murdock, John R.	Brohead.	Peebles, C. E.	Peebles.
Murphy, Lawr. F.	Hartford.	Peebles, E. C.	Fond du Lac.
Musback, Wm.	Fredonia.		

MEMBERSHIP, 1908.—Continued.

Names.	Post-Office Address.	Names.	Post-Office Address.
Peebles, John	Oconomowoc.	Rhodes, Louis	Kansasville.
Peik, Arthur	Chilton, R. 4.	Rich Brothers	Baraboo.
Peik, Edmund	Chilton.	Richards, Wm. L.	Columbus.
Peppers, Gale	Beloit.	Richardson, Lyell..	Evansville.
Perry, Will H.	Gratiot.	Riederer, Blasius ..	Cato.
Persen, Alfred	Bryant.	Riek, Anthony	Plain.
Peterka, Joseph	Racine, R. 7.	Rietz, Geo. L.	Athens.
Peters, Ezra	Sharon, R. 2.	Ristau, Edward	Osseo.
Peters, John	Madison, R. 6.	Riter, Geo.	Platteville.
Peterson, Chas. A.	Orange.	Ritland, Carl	Elroy.
Peterson, C. T.	Waukesha, Care of R. W. Rowlands.	Roberts, F. W.	Woodworth.
Peterson, E. C.	Whitewater, R. 4.	Roberts, R. E.	Corliss, R. 5.
Peterson, Henry N.	New Holstein.	Roberts, Thos. J.	Randolph, R. 1.
Peterson, James	Pine River.	Roberts, Wm. E.	Randolph, R. 3.
Peterson, John H.	Cashton.	Roberts, William J.	Burlington, R. 20.
Peterson, O. P.	Blair.	Rockwell, LeGrand ..	Elkhorn.
Peterson, Perry O.	Amherst.	Rodda, Matt	Hazel Green.
Peterson, Peter	Walworth.	Rodewald, W. C.	Baraboo.
Peterson, William	Curtiss.	Rodger, Ray	Endeavor.
Petrie, Merton E.	Elkhorn, R. 5.	Roeckel, Jos. P.	Lark.
Phillips, F. N.	Wycena, R. 1.	Roethel, Herman	Kiel.
Phillips, Jesse	Elizabeth, Ill.	Rohwell, Elvin R.	Whitewater.
Pierner, Fred	No. Milwaukee.	Rolfson, Clarence E.	Waterford.
Pierner, John W.	Thiensville.	Rood, O. C.	South Wayne.
Pierstorff, H. H.	Madison.	Rood, M. C.	South Wayne.
Pinkerton, A. J.	Waupaca.	Root, Alvin	Fond du Lac.
Pirner, Fred	Sugar Bush.	Root, Frank	Fond du Lac.
Poole, Earle B.	Twin Bluffs, R. 1.	Rorer, Wm. A.	Mt. Gretna, Pa.
Port, Mike	Grafton.	Rosenow, Arthur	Oconomowoc.
Porter, Joseph B.	Evansville.	Rosenow, H. E.	Oconomowoc.
Porter, W. B.	Evansville.	Rosenow, H. G.	Waumandee.
Porter, W. L.	Fond du Lac.	Rosenow, L. J.	Waumandee.
Portz, Albert	Pewaukee.	Rosenow, Wm. F.	Waumandee.
Post, H. L.	Sextonville.	Rosholt, Jacob A.	Scandinavia.
Poston, R. H.	Duluth, Minn., Farm Jean Duluth.	Royston, Thos.	Mazomanie.
Poulter, Chas. W.	Cumberland.	Rudd, Louis D.	Reedsburg.
Preston, Wm. N.	Juda.	Rude, H.	Burke.
Price, Arthur	Bristol.	Ruesink, H. G.	Waupun.
Price, Fred	Bristol, Ill.	Runde, August	Sinsinawa.
Pritchard, John T.	Flambeau.	Runde, Martin C.	Cuba City.
Pritzl, John	Cato.	Rundell, J. E.	Livingston.
Puis, John	Hartford, R. 4.	Rundell, Wilbur ..	Livingston.
Purinton, C. G.	Monticello.	Russell, A. C.	Augusta.
		Ruste, C. O.	Blue Mounds.
		Ryan, Malachi	Kaukauna.
Raam, Peter	Ferryville.	Sanborn, E. H.	Middleton.
Raessler, N. R.	Beloit.	Sandman, W. D.	Holmen.
Raht, John T.	Waukesha.	Savage, Albert	Quincy, Fla.
Raichle, Carl	Galesville.	Savage, Max	Edgerton.
Randall, Sidney	Waupun.	Saxe, William	Baraboo, R. 1.
Randall, S. M.	Waupun.	Schaefer, Henry G.	Plymouth.
Ranney, P. C.	Elkhorn.	Schaefer, Chas. H.	Waukesha, R. 7.
Rasey, Edwin L.	Beloit, R. 27.	Schaefer, R. J.	Appleton, R. 1.
Rasmussen, G. S.	Franksville.	Scheid, Byron	Bay City.
Rather, Armand P.	Peebles, R. 37.	Schiller, Claude E.	Beaver Dam.
Rather, Walter A.	Peebles, R. 37.	Schlapman, F. W.	No. Milwaukee, R. 10.
Rauchenstein, John ..	Rice Lake.		
Ray, W. F.	Kewaunee, R. 1.	Schlotz, Geo. F.	Turtle Lake.
Rayner, Ethel F.	Madison.	Schmit, Albert	Appleton.
Reese, Louis S.	Brooklyn.	Schmit, Alois E.	Hortonville, R. 22.
Rehbein, A. E.	St. Croix Falls, R. 1.	Schmit, Anton N.	Appleton, R. 2.
		Schmit, A. W.	Appleton, R. 2.
Reindahl, A. K.	Madison.	Schmit, Geo.	Greenville.
Reinheimer, W. F.	Spencer.	Schmit, John A.	Hortonville.
Renk, Henry	Sun Prairie.	Schneider, G. P.	Keyeser.
Repp, William F.	Sun Prairie.	Schoephorster, H.	Prairie du Sac.
Rheingans, W. H.	Chippewa Falls.	Scholze, Theo. A.	Ft. Atkinson, Care of Hoard's Farm.
Rhiner, Albert	Riley.	Schottler, C. J.	So. Germantown.

MEMBERSHIP, 1908.—Continued.

Names.	Post-Office Address.	Names.	Post-Office Address.
Schroeder, H. F.	Milwaukee, Station D, R. 3.	Stevenson, J. W.	Winnebago, Minn.
Schroeder, Robert.	Morrisonville.	Stewart, Blaine G.	Antigo, 1018 Superior St.
Schulte, W. L.	Garnaville, Ia.	Stewart, Geo. L.	Lodi.
Schultz, W. W.	Neillsville.	Stewart, Joe H.	Wales.
Schwandt, William.	Stanton.	Stewart, John W.	Blanchardville.
Schwantes, Wm. F.	Kewaunee, R. 7.	Stienstra, Samuel J.	Swedeberg, M.
Schwartz, J.	Troy Center.	Stillman, Edw. B.	Waukesha.
Searles, Wm. L.	Boscobel.	Stivarius, Geo. A.	Fennimore.
Seibon, Cornelius	Westby.	Stone, A. L.	Madison.
Seeger, Carl	Beloit, Care of Morgan Farm.	Straka, Ed. E.	Kellnersville, R. 2.
Selsing, Andrew	Wautoma.	Straug, Frank	Lone Rock.
Sette, O. E.	Juneau.	Strommen, Geo. H.	Cambridge.
Shannon, M. J.	Oconomowoc.	Strommen, M. A.	Cambridge.
Sharpee, Endre A.	Rio.	Stroup, Fred G.	Fond du Lac.
Sharpee, Johannes A.	Rio.	Strowig, Wm. A.	Cleveland.
Sharpee, Peter A.	Rio.	Subr, Adolph A.	Cochrane.
Sheldon, Ben F.	Brandon.	Subr, Otto A.	Cochrane.
Shepard, R. A.	Columbus.	Sullivan, Jas. A.	Grimms.
Shepperd, Nelson.	Oshkosh.	Sullivan, J. J.	Forestville.
Showers, Milton W.	Mazomanie.	Swan, L. W.	Mukwonago.
Shultis, A. D.	Waukesha.	Swan, N. J.	Wauwatosa.
Sias, Benjamin	Sparta.	Swenson, Gust	Deerfield.
Siegert, A.	Junction.	Swenson, O. S.	Nelsonville.
Siegert, Jos.	Granville.	Swerig, Carl	Stoughton.
Sietz, Adam	Waukesha.	Swoboda, F. G.	Dousman.
Sievers, Geo.	No. Milwaukee, R. 9.	Sylvester, W. W.	Seymour.
Silver, A. E.	Belleville.	Tascher, Werner	Mt. Vernon.
Sims, Orley	Melrose.	Tenney, Horatio A.	Calamine.
Simonsen, J. O.	Deerfield.	Thacher, Ed. F.	Zenda.
Singer, Henry	Chicago, Ill., 554 45th St.	Thiege, M. G.	Westby.
Skare, Albert	McFarland.	Thieleke, Ed. A.	Kiel.
Skindrud, Martin	Klevenville.	Thiers, L. M.	Kenosha.
Slinde, H. Norman.	De Forest.	Thomas, Ernest	Sugar Bush.
Smiley, J. B.	Albany.	Thomas, J. E.	Nashotah.
Smith, Alva J.	Gratiot.	Thomas, Roy E.	Dodgeville.
Smith, E. B.	Dousman.	Thompson, Adolph.	Black River Falls.
Smith, E. P.	Hancock.	Thompson, A. N.	Delavan.
Smith, Edgar W.	Evansville.	Thompson, Melvin.	Mt. Horeb.
Smith, John F.	Darlington.	Thompson, R. K.	Bottineau, N. D.
Smith, J. G.	Farmington, Minn.	Thompson, Theo.	Curtiss.
Smith, L. E.	Beloit.	Thompson, T., Jr.	Wadena, Ia.
Smith, Samuel A.	Oakfield.	Thompson, W. E.	Somers.
Smith, S. L.	Oshkosh, R. 5.	Thuerwachter, L.	Calumetville.
Smithwick, M. W.	Kewaunee.	Thulin, Edwin	Hayward.
Snyder, H. A.	Oxford.	Tice, Ray	Redgranite.
Snyder, R. B.	Clinton Jet.	Tice, Roy	Redgranite.
Solberg, Louis.	Viroqua.	Tipple, R. E.	Madison.
Solverson, Oscar.	Viroqua.	Tochterman, C., Jr.	Monroe.
Sorenson, Hilbert.	Marinette, R. 2.	Toepfer, Otto	Madison, R. 6.
Southcott, Fred	Wauwatosa, R. 14.	Tomkins, A. Pearce	Ashland, R. 2.
Spartz, N. A.	Union Grove.	Tomkins, O. Scott.	Ashland.
Spaulding, C. F.	Oconomowoc.	Toole, W. A.	Baraboo.
Spaulding, Leslie C.	Mondovi.	Torgerson, B. S.	Cottage Grove.
Spaulding, W. H.	Oconomowoc.	Treleven, Guy	Omo.
Stafford, Walter F.	Fox Lake.	Tretsen, Oscar	Milltown.
Stauffer, A. J.	Monroe.	Truax, Eugene	Monticello.
Stebnitz, Fred	Arena.	Trumpy, Fred	Clarno.
Steeze, Christ	Viroqua.	Turgasen, John H.	Richland Center.
Steidtmann, Edwin	Prairie du Sac.		
Steinback, Otto J.	Kendall, R. 2.	Unger, Max E.	No. Milwaukee, R. 9.
Steiner, Geo. J.	Brownsville.	Uhlin, Frank E.	Clayton, R. 1.
Steiner, William	Brownsville.	Uhlin, Albin	Clayton.
Steinhoff, Walter	Platteville.	Umlauf, Rudolph.	Dorchester.
Steuber, L. J.	Lodi.	Usher, Earl	South Wayne.
Stevenson, Carl	Soldiers Grove, R. 5.	Usher, John M.	South Wayne, R. 2.

MEMBERSHIP, 1908.—Continued.

Names.	Post-Office Address.	Names.	Post-Office Address.
Van Blaricon, Edw.	Spring Green.	West, R. N.	Ripon.
Van Buskirk, G. W.	Plover.	West, William	Neillsville, R. 1.
Vandercook, R. I.	Linden, Mich.	Weston, John	Burnett.
Van Seggern, Fred.	Denmark.	White, F. G.	Oregon.
Velum, Tollef	Stoughton, R.	Whitehead, H. W.	Leon.
Vetter, Chas.	Madison.	Whitehead, J. L.	Leon.
Voight, Alvin	Oconomowoc, R. 26	Whitmore, H.	Brandon.
Vonder Ohe, W. H.	Reedsburg.	Whittaker, Horace.	Fond du Lac.
Von Lanyi, Oscar..	Duluth, Minn., Care of S. F. Snidely.	Wichern, Carl W.	Baraboo.
Vosberg, Henry ...	Whitewater.	Wichern, Louie M.	Baraboo.
Wagner, Arthur L.	Haven.	Wick, William F.	Mauston.
Wagner, Geo. R.	Stevens Point, R. 1.	Wiegand, O. R.	Cleveland.
Wagner, J. M.	Union Center, R. 1.	Wieland, Charles ...	Lancaster.
Wahler, Adolph	Woodford.	Wigen, Walter	Manitowoc.
Walker, R. C.	Plainville.	Wilhelmsen, H.	Ixonia.
Wall, Floyd	Weyauwega.	Wilkinson, Edward	Wilton.
Wall, William	Weyauwega.	Wilkowske, Hugo.	Mishicot, R. 2.
Wallace, H. M.	Norwalk.	Williams, H. T.	Waukesha, R. 1.
Warren, Robert	Prairie Farm.	Williams, Orson P.	Waukesha.
Warmington, P.	Honey Creek.	Williams, Wm. S.	Dodgeville, R. 1.
Warner, R. C.	Whitehall.	Wilson, Mathias ...	Bloomer.
Warzynakoski, A.	Oakwood, R. 18.	Winge, William ...	Wautoma.
Waterstreet, Wm.	Spring Green.	Winter, L. H.	Eau Claire.
Way, Lee A.	Riley.	Wippermann, Wm.	Chilton.
Wayne, Joseph	Boscobel.	Wiseman, Paul	Bridgeport.
Webster, Ralph W.	Columbus.	Wittenberg, E. F.	Middleton.
Wehrwein, Walter.	Manitowoc, R. 2.	Wolzein, Carl	Sturgeon Bay, R. 2.
Weifenbach, Fred..	Madison, 1316 W. Dayton St.	Wood, Calvin D.	Oshkosh, R. 4
Weir, Wilbert W.	Mukwonago, R. 39.	Wood, Josh	Albany.
Welles, M. L.	Rosendale.	Wright, Geo. T.	Eau Claire, R. 4.
Welsh, S. L.	Tavera.	Wright, H. W.	Waukesha.
Welton, Seth	Woodford.	Wright, John	Whitewater.
Werner, W. A.	Paso del Rio, Es- tado de Colima, Mexico.	Wulff, Fred, Jr.	Grafton.
Wernick, Wm. H.	De Forest.	Wunsch, Hugo	Haven.
West, Henry P.	Ripon.	Wussow, Chas. A.	Seymour.
West, Mark H.	Elkhorn.	Wyatt, E. E.	Tomah.
		Zabel, Edward	Deerfield.
		Zahrt, F. H.	Hortonville.
		Zerbel, L. R.	Madison.
		Zerbel, Paul	Humbird.
		Zillmer, Wm. C.	Brookfield.

HONORARY MEMBERS.

Ames, W. L.	Oregon	Newman, Geo. N.	Ladysmith
Babcock, Dr. S. M.	Madison	Philips, A. J.	West Salem
Cary, Prof. C. P.	Madison	Renk, Katharine.	Sun Prairie
Emery, Prof. J. Q.	Madison	Russell, Dr. H. L.	Madison
Hays, W. M., Ass't Secretary Agr., Washington, D. C.		Shauer, Hon. A. G.	Madison
Henry, Dr. W. A.	Madison	Toole, William	Baraboo
*Hitt, Hon. H. D.	Oakfield	True, Hon. John M.	Madison
Karel, Hon. L. A.	Kewaunee	Utsunomiya, S. T. Sapporo, Hokkaido, Japan	
Lehmann, Mrs. Eva.	Neosho	Whitmore, Mary	Janesville
McKerrow, Supt. Geo.	Sussex		

* Deceased.

MEMBERSHIP—1908

[Arranged by Counties.]

ADAMS COUNTY.

Johnson, Billie.....Strongs Prairie, R. 1
Walker, R. C.....Plainville

ASHLAND COUNTY.

Delwiche, E. J.....Ashland
Johnson, L. M.....Ashland, R. 2
Tomkins, A. Pearce.....Ashland, R. 1
Tomkins, O. Scott.....Ashland

BARRON COUNTY.

Chrislaw, A. M.....Rice Lake, R. 3
Heldstab, C. O.....Rice Lake
Howe, John.....Comstock
Karmath, William.....Cameron
Matthys, Walter.....Barron
Otterholt, Henry.....Chetek, R. 1
Poulter, Chas. W.....Cumberland
Rauchenstein, John.....Rice Lake
Schlotz, Geo. F.....Turtle Lake
Warren, Robert.....Prairie Farm

BAYFIELD COUNTY.

Hirsch, Brynjoll.....Washburn, R. 1
Kinstler, C. L.....Washburn

BROWN COUNTY.

Anderson, Alfred M.....Denmark
Nies, Peter.....Greenleaf, R. 3
Roedel, Jos. P.....Lark
Van Seggern, Fred.....Denmark

BUFFALO COUNTY.

Bilderbach, W. T.....Mondovi
Haigh, Thomas.....Cream
Hustad, M. C.....Modena, R. 1
Joos, Frank B.....Fountain City
Kaste, Charles.....Cream
Kindschy, George.....Waumandee
Knecht, Ulrich, Jr.....Cochrane
Loomis, Geo. E.....Mondovi
May, Henry.....Mondovi
Muehleisen, Gottlieb.....Tell
Nyre, Lawrence A.....Mondovi
Ochsner, A. G.....Cochrane
Rosenow, H. G.....Waumandee

Rosenow, L. J.....Waumandee
Rosenow, William F.....Waumandee
Spaulding, Leslie C.....Mondovi
Suhr, Adolph A.....Cochrane
Suhr, Otto A.....Cochrane

BURNETT COUNTY.

Peterson, Chas. A.....Orange

CALUMET COUNTY.

Christoph, Theo. F.....Chilton
Kircher, H. W.....Chilton, R. 3
Kiann, Adolph.....Hayton
Peik, Arthur.....Chilton, R. 4
Peik, Edmund.....Chilton
Peterson, Henry N.....New Holstein
Wippermann, Wm.....Chilton

CHIPPEWA COUNTY.

Finsnes, Andrew I.....Chippewa Falls
Guptill, L. R.....New Auburn
Johnson, Albert I.....Bloomer, R. 5
Kramer, H. F.....Bloomer
Lebeis, F. J.....Bloomer, R. 5
Lien, Andrew P.....Stanley
Martiny, L. P.....Chippewa Falls
Mills, Stanley.....New Auburn
Rheingans, Walter H.....Chippewa Falls
Wilson, Mathias.....Bloomer

CLARK COUNTY.

Beach, Glenn.....Loyal
Empey, Geo. A.....Dorchester
Einfeldt, Albert.....Withee, R. 1
Ives, Lovell W.....Granton
Krause, Fred W.....Thorpe
Kubat, W. H.....Neillsville
Lee, E. W.....Granton
Peterson, William.....Curtiss
Reinheimer, W. F.....Spencer
Schultz, W. W.....Neillsville
Thompson, Theo.Curtiss
Umlauf, RudolphDorchester
West, WilliamNeillsville, R. 1
Zerbel, PaulHumbird

MEMBERSHIP, 1908—Continued.

COLUMBIA COUNTY.

Anderson, Adolph W.Portage
Cannon, E. A.Pardeeville
Carnecross, J. E.Okee
Chrisler, Elvin C.Lodi
Chrisler, Harley E.Lodi
Davis, HarveyPoynette
Dalton, Ernest E.Pardeeville
Dalton, Roy E.Pardeeville
Ellickson, A. C.Arlington
Emery, Geo. Q.Poynette
Grove, ChristianColumbus, R. 6
Hoffman, Herman F.Portage
Gloeckler, Theo.Portage
Landt, Newton A.Kilbourn
Lloyd, Evan B.Cambria
Mair, C. A.Arlington
O'Connor, Edw. F.Lodi, R. 1
Owen, Thos. M.Portage
Phillips, F. N.Wyocena, R. 1
Richards, Wm. L.Columbus
Schneider, G. P.Keyeser
Sharpee, Endre A.Rio
Sharpee, Peter A.Rio
Sharpee, Johannes A.Rio
Shepard, R. A.Columbus
Steuber, Lawrence J.Lodi
Stewart, Geo. L.Lodi
Webster, Ralph W.Columbus

CRAWFORD COUNTY.

Accola, LawrenceSteuben
Brodt, ClarenceBridgeport
Childs, Sidney S.Boscobel
Frey, E. J.Bridgeport
Hjelle, Ole K.Soldiers Grove, R. 5
Nagle, LeeBridgeport
Raam, PeterFerryville
Stevenson, CarlSoldiers Grove, R. 5
Wiseman, PaulBridgeport

DANE COUNTY.

Accola, JohnMadison
Anderson, H. C.Cambridge
Anquick, LarsCottage Grove
Anthony, David C.Oregon, R. 2
Barton, OttoMt. Horeb
Belda, Wm. F.De Forest
Bell, Geo. S.Madison
Bendickson, I. E.Cambridge
Benson, Ed. E.Mt. Horeb
Berge, WilliamCambridge
Bewick, W. W.Madison, 824 W.
Johnson St.
Birkrem, ClarenceDeerfield
Birrenkott, M. J.Klevenville
Boehnen, JohnBlack Earth
Boyce, CharlotteDane
Brager, Henry A.Mt. Horeb
Brickson, AbramMcFarland
Brickson, AndrewCottage Grove, R. 3
Brigham, Chas. I.Blue Mounds
Brue, N. H.De Forest
Caldwell, JohnMazomanie
Chase, J. P.Sun Prairie
Chatterton, R. W.Basco
Chipman, W. R.Morrisonville
Christ, AlbertCambridge

Chrislaw, George O.Madison, 436 W.
Main St.
Chynoweth, H. E.Madison
Clayton, Alvin W.Madison, R. 5
Cobb, Homer A.Sun Prairie
Colladay, C. M.Madison
Colladay, W. E.Stoughton
Dahle, L. O.Deerfield
Daley, Edwin S.De Forest
Daley, Julius.De Forest
Daley, J. K.McFarland
Daley, O. S.De Forest
Daley, S. S.De Forest
Davidson, W. L.Verona
Dean, C. E.Madison, 503 W. Doty
Deneen, MichaelBlue Mounds
Digman, FredMadison
Doerfer, CarlMadison
Dreger, EmilMadison, R. 6
Eggum, Lewis,Mt. Horeb
Egre, John S.Cambridge
Elver, E. C.McFarland
Emery, S. L.Edgerton
Fadness, JohnDeerfield
Feigum, JohnCottage Grove
Fjelstad, J. C.Mt. Horeb
Ford, J. F.Mazomanie
Fritz, MarkBelleville
Gangstad, J. O.Deerfield
Gillette, R. A.Verona
Gillies, J. H.Stoughton
Graves, E. H.Madison
Grinde, ArthurDe Forest
Guitzkow, ArthurMadison
Hanna, O.Mt. Horeb
Harrington, C. E.Verona, R. 1
Harris, Roy T.Madison
Hattleberg, O. C.De Forest
Heinecke, William E.Madison
Hill, Otto C.Mt. Horeb
Hine, Geo. S.Madison
Hogan, DominicWannakee
Holscher, A. C.Cottage Grove
Holscher, Chas. J.Sun Prairie
Holzhuter, WalterMarshall
Hopkins, B. F.Morrisonville
Humphrey, J. M.Madison, 919 W.
Dayton.
Johnson, S. J.Sun Prairie
Jordalen, ClarenceStoughton
Kalscheur, LawrenceKlevenville
Kaltenberg, AnthonyWannakee
Kendell, Geo. W.Sun Prairie
Koltes, J. F.Dane
Koltes, Leo. J.Dane
Larsen, A. C.Madison, Wash. Ave.
Lee, Lewis JohnsonDe Forest
Lee, P. A. G.Deerfield
Lee, Severt A.Deerfield
Lee, Sever T.Black Earth
Libby, John L.Madison, R. 4
Lindas, Theo. A.Marshall
Lingard, Albert.Mt. Horeb
Lyman, Chas. A.Sun Prairie
Maeder, J. W.Oregon
Markey, W. E.Madison
Mell, AndrewMadison
Meyer, John.Madison, R. 6
Michels, Matthew.Madison
Mielke, J. E.Basco
Mikkelsen, Carl.Deerfield
Mitchell, James T.Cottage Grove
Moen, Herman C.Cambridge

MEMBERSHIP, 1908—Continued.

Moore, Harry.....	McFarland
Moore, R. A.....	Madison
Morris, Geo. C., Madison, 720 W. John-	son St.
Nicholls, H. G.....	Stoughton
Nordlie, Alfred.....	Deerfield
Norsman, J. O.....	Madison
Osborne, Oliver M.....	Madison
Palmer, Levi.....	Verona
Peck, Henry N.....	Marshall
Pierstorff, Henry H.....	Madison
Raymer, Ethel Frances.....	Madison
Reindahl, A. K.....	Madison
Renk, Henry.....	Sun Prairie
Renk, William F.....	Sun Prairie
Rhiner, Albert.....	Riley
Royston, Thos.....	Mazomanie
Rude, H.....	Burke
Ruste, C. O.....	Blue Mounds
Sanborn, E. H.....	Middleton
Savage, Max.....	Edgerton, R. 2
Schroeder, Robert.....	Morrisonville
Showers, Milton W.....	Mazomanie
Silver, A. E.....	Belleville
Simonsen, J. O.....	Deerfield
Skare, Albert.....	McFarland
Skindrud, Martin.....	Klevenville
Slinde, H. Norman.....	De Forest
Stone, A. L.....	Madison
Strommen, Geo. H.....	Cambridge
Strommen, M. A.....	Cambridge
Swenson, Gust.....	Deerfield
Swerg, Carl.....	Stoughton
Tasher, Werner.....	Mt. Vernon
Thompson, Melvin.....	Mt. Horeb
Tipple, R. E.....	Madison
Toepfer, Otto.....	Madison, R. 6
Torgerson, B. S.....	Cottage Grove
Velum, Tollef.....	Stoughton
Vetter, Chas.....	Madison
Way, Lee A.....	Riley
Wernick, Wm. H.....	De Forest
White, F. G.....	Oregon
Wittenberg, E. F.....	Middleton
Zabel, Edward.....	Deerfield
Zerbel, L. R.....	Madison

DODGE COUNTY.

Barstow, Jos. E.....	Randolph
Beule, E. A.....	Fox Lake
Bohl, Anton.....	Beaver Dam
Bohl, Joseph N.....	Beaver Dam
Bussewitz, Orla J.....	Juneau
Bussewitz, W. E.....	Juneau
Comford, Alfred.....	Randolph
Ehrhardt, Daniel.....	Knowles
Fischer, Henry.....	Juneau
Goetsch, Albert A.....	Juneau
Grebe, Fred P.....	Fox Lake
Howitt, C. H.....	Randolph
Hutchinson, Wm. D.....	Rubicon, R. 1
Jones, John G.....	Beaver Dam
Jones, A. Owen, Jr.....	Beaver Dam
Jung, A. E.....	Randolph
Krueger, H. E.....	Beaver Dam
Kuen, Clarence E.....	Brownsville
Kuhlman, Arthur H.....	Lowell
Mahoney, David.....	Juneau
Neuberger, Wm.....	Reeseville
Owens, H. C.....	Fox Lake
Randall, Sidney.....	Waupun

Roberts, Thos. J.....	Randolph, R. 1
Roberts, William E.....	Randolph, R. 3
Schiller, Claude E.....	Beaver Dam
Sette, O. E.....	Juneau
Stafford, Walter F.....	Fox Lake
Steiner, Geo. J.....	Brownsville
Steiner, William.....	Brownsville
Weston, John.....	Burnett

DOOR COUNTY.

Berg, Julius.....	Sturgeon Bay, R. 3
Boncese, E. F.....	Detroit Harbor
Boncese, Gust.....	Detroit Harbor
Buschman, Hugo.....	Forestville
Erickson, Ole C.....	Detroit Harbor
Hansen, Christian.....	Detroit Harbor
Hanson, Ole C.....	Detroit Harbor
Herrbold, J. W.....	Sturgeon Bay
Hocks, Walter.....	Sturgeon Bay
Keogh, Harry.....	Forestville
Ohern, Martin.....	Sturgeon Bay
Oldenburg, G. H.....	Bailey's Harbor
Sullivan, J. J.....	Forestville
Wolzein, Carl.....	Sturgeon Bay, R. 2

DUNN COUNTY.

Kent, H. W.....	Rusk
Kent, J. S.....	Rusk
Meacham, C. W.....	Downing

EAU CLAIRE COUNTY.

Allen, C. L.....	Eau Claire
Burce, Ruth T.....	Eau Claire
Corneliusson, T.....	Eau Claire
Donaldson, H. A.....	Eau Claire
Germann, H. L.....	Fall Creek
Koll, C. A.....	Eau Claire
Konz, John, Sr.....	Fairchild, R. 2
Krogstad, O. J.....	Eau Claire, R. 4
Mayo, J. Harold.....	Eau Claire, R. 5
Oliver, C. S.....	Eau Claire, R. 2
Russell, A. C.....	Augusta
Winter, L. H.....	Eau Claire
Wright, Geo. T.....	Eau Claire, R. 4

FOND DU LAC COUNTY.

Abbs, Fred Jr.....	Fond du Lac, R. 3
Adkins, M. V.....	Ripon
Bast, John.....	Malone
Belke, Walter.....	Fairwater
Beyer, Herman C.....	Peebles, R. 37
Bonzelet, J. P.....	Eden
Bowden, C. B.....	Rosendale
Briggs, J. W.....	Peebles
Briggs, Lynn W.....	Peebles
Bruins, H. A.....	Brandon
Brunson, Levi E.....	Rosendale
Buck, Clarence W.....	Eldorado
Carpenter, L. A.....	Fond du Lac
Clapham, B.....	Peebles, R. 7
Costello, Dan A.....	Hamilton
Day, James.....	Hamilton
Fenske, John.....	Fairwater
Gibbard, Peter J.....	Ripon, R. 17
Giebel, Karl.....	Fond du Lac
Hargrave, Robert.....	Ripon

MEMBERSHIP, 1908—Continued.

Hatch, Orin E.....Oakfield
Hendricks, L. E.....Campbellsport
Hendricks, J. H.....Campbellsport
Hill, Charles L.....Rosendale
Hinz, A. F.....Ripon
Hintz, William F.....Oakfield, R. 25
Howland, W. L.....Waupun
Jacky, Gilbert.....Malone, R. 39
Kastein, Herman.....Waupun, R. 22
Krause, Ed.....Ripon
Kuehn, Chas. A.....Brandon
Leith, B. D.....Van Dyne, R. 9
Mathews, Lee G.....Brandon
Maug, Arthur J.....Ripon
McCormick, Fred W.....Fond du Lac
Meekin, H. W.....Fond du Lac
Micheels, Henry.....Malone
Mihills, D. R.....Fond du Lac
Miller, A. H.....Waupun
Miritz, O. F.....Fond du Lac, R. 7
Monroe, Royal H.....Fond du Lac, R. 3
Northrop, Jessie.....Waupun
O'Hearn, Dennis.....Eldorado
Oleson, James P.....Ripon, R. 13
Peebles, C. E.....Peebles
Peebles, E. C.....Fond du Lac
Porter, W. L.....Fond du Lac
Randall, S. M.....Waupun
Rather, Armand P.....Peebles, R. 37
Rather, Walter A.....Peebles, R. 37
Root, Alvin.....Fond du Lac
Root, Frank.....Fond du Lac
Ruesink, H. G.....Waupun
Sheldon, Ben F.....Brandon
Smith, Samuel A.....Oakfield
Stronp, Fred G.....Fond du Lac
Thuerwacher, Louis.....Calumetville
Welles, M. L.....Rosendale
West, Henry P.....Ripon
West, R. N.....Ripon
Whitmore, H.....Brandon
Whittaker, Horace.....Fond du Lac

GRANT COUNTY.

Barron, R. E.....Platteville
Booth, Guy A.....Cuba City
Booth, Geo. S.....Cuba City
Botten, E. K.....Boscobel
Bryant, K. J.....Hazel Green
DiVall, W. F.....Montfort
Farwell, Roy.....Ridgeway
Gelbach, Parke.....Lancaster, R. 9
Graham, P. S.....Fennimore
Ketterer, Ralph G.....Werley
Kramer, John C., Jr.....Montfort
Marsden, J. R.....Fennimore
Millman, D. R.....Platteville
Orth, A. F.....Muscodia
Patterson, J. L.....Glen Haven, R. 3
Rodda, Matt.....Hazel Green
Runde, August.....Sinsinawa
Runde, Martin C.....Cuba City
Rundell, J. E.....Livingston
Rundell, Wilbur.....Livingston
Searies, Wm. L.....Boscobel
Steinhoff, Walter.....Platteville
Stivarius, Geo. A.....Fennimore
Wayne, Joseph.....Boscobel
Wieland, Charles.....Lancaster

GREEN COUNTY.

Ashton, A. B.....Monroe, R. 3
Bechtolt, A. B.....Monroe
Bechtolt, J. D.....Monroe
Biglow, L. F.....Brooklyn
Butts, Wm. F.....Brooklyn
Dettwiler, John.....Monroe, R. 4
Ford, Lewis R.....Brooklyn
Grenzow, Jesse H.....Juda
Ingold, John.....Monroe
Klasy, Henry.....Monticello
Kundert, William.....Monroe, R. 3
Lewis, Lester M.....Monticello, R. 1
Marty, Matthias.....Monticello
Mau, H. G.....Brohead
Morgan, Chas.....Albany
Murdock, John R.....Brohead
Ness, Andrew.....Brooklyn
Preston, Wm. N.....Juda
Purinton, C. G.....Monticello
Reese, Louis S.....Brooklyn
Smiley, J. B.....Albany
Stauffer, A. J.....Monroe
Tochterman, C., Jr.....Monroe
Truax, Eugene.....Monticello
Trumpy, Fred.....Clarno
Wood, Josh.....Albany

GREEN LAKE COUNTY.

Page, G. F.....Berlin

IOWA COUNTY.

Aavang, H. O.....Barneveld
Blotz, Elmer.....Dodgeville
Chappel, Steve J.....Dodgeville
Cutler, James L.....Dodgeville, R. 1
Davies, Llewellyn.....Mineral Point
Gordon, A. L.....Mineral Point
Gordon, C. D.....Mineral Point
Gordon, J. Roy.....Mineral Point, R. 2
Jones, Chas. Lloyd.....Hillside
Jones, Scott Lloyd.....Hillside
Kinnear, James.....Standart
Kitchen, Jos. H.....Edmund
Ley, John P.....Dodgeville
Morrisey Bros.....Arenia
Osborne, Jno. F.....Linden
Osborne, Wm. F.....Linden
Paulson, Hilbert.....Hollandale
Stebnitz, Fred.....Arenia
Thomas, Roy E.....Dodgeville
Williams, William S.....Dodgeville, R. 1

JACKSON COUNTY.

Curran, W. F.....Taylor
Dettinger, W. F.....Hixton
Dietrich, John J.....Black River Falls
Duerkop, W. P.....Alma Center
Engleman, John.....Hixton
Galster, Frank L.....Alma Center
Hecketsweiler, O. J.....Alma Center
Morrill, A. M.....Taylor
Sims, Orley.....Melrose
Thompson, Adolph.....Black River Falls

MEMBERSHIP, 1908—Continued.

JEFFERSON COUNTY.

Anthes, Henry.....Jefferson
 Brueckner, Justus.....Ft. Atkinson
 Emmert, H. L.....Johnson Creek
 Faville, A. D.....Lake Mills
 Graper, Edwin.....Helenville
 Guttenberg, Frank, Jr.....Jefferson
 Hetts, Eugene.....Ft. Atkinson
 Hetts, John.....Ft. Atkinson
 Howard, Geo. A.....Ft. Atkinson
 Joice, Geo.....Waterloo
 Keuber, Aaron.....Helenville
 Klein, W. C.....Orfordville
 Krueger, Alexander.....Watertown
 Lehmann, Theo.....Watertown, R. 1
 Leonard, Wm. R.....Ft. Atkinson, R. 1
 Main, H. A.....Ft. Atkinson
 Markey, W. H.....Sullivan
 Mathews, Milton D.....Helenville, R. 1
 McIntyre, Ivan.....Ft. Atkinson
 Mueller, Henry.....Johnson Creek
 Parsons, William A.....Ft. Atkinson
 Scholze, Theo. A.....Ft. Atkinson, in care
 of Hoard's Farm.
 Wilhelmson, Hartwick.....Ixonia

JUNEAU COUNTY.

Hanzlik, Otto J.....Wonebec
 McNow, J. H.....Mauston
 Moore, Henry G.....Mauston
 Ritland, Carl.....Elroy
 Wagner, J. M.....Union Center, R. 1
 Wick, William F.....Mauston

KENOSHA COUNTY.

Bradley, J. Frank.....Somers
 Bullamore, Grant.....Kenosha, R. 36
 Bullamore, R. G.....Kenosha, R. 36
 Dexter, Walter S.....Kenosha
 Myrick, Mead O.....Bristol
 Orvis, L. C.....Salem
 Price, Arthur.....Bristol
 Price, Fred.....Bristol
 Roberts, F. W.....Woodworth
 Thiers, L. M.....Kenosha
 Thompson, W. E.....Somers

KEWAUNEE COUNTY.

Boudnik, John.....Kewaunee
 Chervency, Wenzel.....Kewaunee, R. 2
 Collin, D. W.....Luxembourg
 Engel, Philip.....Luxembourg
 Erickson, Louis E.....Kewaunee, R. 3
 Haegers, Martin.....Luxembourg, R. 4
 Katel, W. C.....Kewaunee, R. 7
 Koemich, Edw.....Kewaunee, R. 2
 Oestreich, Louis J.....Kewaunee
 Oestreich, R. C.....Kewaunee, R. 1
 Ray, W. F.....Kewaunee, R. 1
 Schwantes, Wm. F.....Kewaunee, R. 7
 Smithwick, M. W.....Kewaunee

LA CROSSE COUNTY.

Bonsack, H. M.....La Crosse
 Bonsack, Theo.....West Salem
 Brandt, Chas., Jr.....West Salem
 Brown, E. D.....West Salem
 Griswold, H. W.....West Salem

Halderson, J. M.....Holmen
 Harr, Ernest B.....Bangor
 Hass, Reinhold A.....LaCrosse, R. 1
 Hauser, Emil.....La Crosse, R. 3
 Hauser, Ferdinand.....La Crosse, R. 2
 Hemker, Fritz H.....West Salem
 Jones, E. E.....Rockland
 Lawrence, F. W.....Bangor
 Linse, Charles.....La Crosse
 Moe, G. Julius.....La Crosse
 Muelder, B. W.....Midway, R. 1
 Nuttleman, Adolph.....West Salem
 Nuttleman, Alfred L.....West Salem
 Olson, W. B.....Holmen
 Sandman, W. D.....Holmen

LA FAYETTE COUNTY.

Akins, Clyde.....Warren, Ill.
 Andrews, Arthur L.....South Wayne
 Ashton, W. L.....Belmont
 Baker, Dwight.....Blanchardville
 Bridgman, C. R.....Darlington
 Glindinning, H. L.....Shullsburg, R. 2
 Jensen, Peter.....Argyle
 Johnson, Henry W.....Woodford
 McConnell, F. J.....Darlington
 Perry, Will H.....Gratiot
 Riter, Geo.....Platteville
 Rood, M. C.....South Wayne
 Rood, O. C.....South Wayne
 Smith, Alva J.....Gratiot
 Smith, John F.....Darlington
 Stewart, Jno. W.....Blanchardville
 Tenney, Horatio A.....Calamine
 Usher, Earl.....South Wayne
 Usher, John M.....South Wayne, R. 2
 Wahler, Adolph.....Woodford
 Welton, Seth.....Woodford

LANGLADE COUNTY.

Follstad, Anton.....Elcho
 Persen, Alfred.....Bryant
 Stewart, Blaine G.....Antigo, 1018 Superior
 St.

LINCOLN COUNTY.

Lewerenz, Roy B.....Tomahawk

MANITOWOC COUNTY.

Ballestad, Lars.....Manitowoc
 Bauer, Adolph H.....Manitowoc, R. 2
 Berge, Anton O.....Valders
 Berge, Otis J.....Valders
 Bruhn, John T.....Two Rivers, R. 1
 Clusen, Reinhold.....Manitowoc, R. 6
 Eiseman, Ben.....Mishicot
 Garey, James.....Grimms
 Gustavson, Charles.....Manitowoc
 Hayden, John.....Grimms
 Hessel, Louis.....Manitowoc, R. 6
 Heyroth, Louis H.....Mishicot, R. 3
 Hoefner, Herbert.....Manitowoc, R. 1
 Hoefner, William H.....Manitowoc, R. 2
 Huhn, Wm.....Cleveland
 Krase, Henry.....Two Rivers, R. 1
 Marken, Otis.....Valders
 Morrissey, Lawrence.....Reedsburg
 O'Connell, M. H.....Grimms

MEMBERSHIP, 1908—Continued.

Paulsen, J. E.....Manitowoc
Pritzel, John.....Cato
Riederer, Blasius.....Cato
Roethel, Herman.....Kiel
Straka, Ed. E.....Kellnersville, R.
Strowig, Wm. A.....Cleveland
Sullivan, Jas. A.....Grimms
Thieleke, Ed. A.....Kiel
Wehrwein, Walter.....Manitowoc, R. 2
Wieland, O. R.....Cleveland
Wigen, Walter.....Manitowoc
Wilkowske, Hugo.....Mishicot, R. 2

MARATHON COUNTY.

Aderhold, Herman T.....Athens
Baesemann, Otto.....Edgar, R. 2
Brehm, E. A.....Colby
Griffith, James.....Spencer
Heinke, Alvin E.....Stratford, R. 1
Reinheimer, W. F.....Spencer
Rietz, Geo. L.....Athens

MARINETTE COUNTY.

Bundy, Andrew.....Peshtigo
Christenson, C. A. M.....Walsh
Falarsch, Frank.....Peshtigo, R. 2
Sorenson, Hilbert.....Marinette, R. 2

MARQUETTE COUNTY.

Hamilton, T. S.....Westfield
Haskins, Leon.....Montello
Houslet, Neal.....Packwaukee
McDowell, David P.....Packwaukee
Rodger, Ray.....Endeavor
Snyder, H. A.....Oxford

MILWAUKEE COUNTY.

Basse, Wm. H.....Milwaukee, Station
A, R. 4.
Bremer, Paul.....Milwaukee, 130 Lincoln
Ave.
Dennison, Nicholas.....No. Milwaukee
Foley, Robert.....Wauwatosa
Ernst, John A.....Milwaukee
Gridley, Ben.....Wauwatosa
Guenther, Nelson W.....So. Milwaukee,
R. 17.
Hardy, John.....Wauwatosa
Kneser, John.....Milwaukee, Station D,
R. 3.
Jungbluth, Wm.....Milwaukee, Station
A, R. 5.
Kurtze, Otto C.....West Allis, R. 15
Meyer, Alfred.....Oakwood, R. 18
Pierner, Fred.....No. Milwaukee
Schlapman, Fred W.....No. Milwaukee
Schroeder, Herman F.....Milwaukee, Sta-
tion D, R. 3.
Siegert, Jos.....Granville
Sievers, Geo.....No. Milwaukee, R. 9
Southcott, Fred.....Wauwatosa, R. 14
Swan, N. J.....Wauwatosa
Unger, Max E.....No. Milwaukee, R. 9
Warzynakoski, Arthur.....Oakwood, R. 18

MONROE COUNTY.

Andrews, J. S.....Wilton
Ascott, W. H.....Sparta
Ebert, Francis E.....Tomah
Finegan, Louis.....Sparta
Foth, F. D.....Norwalk
Fox, C. L.....Leon
Freeman, G. A.....Sparta
Gamerdinger, John.....Kendall
Hanchett, W. H.....Sparta
Hancock, Levias.....Tomah
Hansen, Carl F.....Sparta
Harris, R. E.....Warrens
Heasty, Ralph W.....Sparta
Hill, C. C.....Tomah
Hitchcock, Clarence E.....Sparta
Howell, Horace P.....Sparta
Hubbard, E. S.....Norwalk
Kraft, Albert.....Kendall
Leverich, J. W.....Sparta
McDonald, J. J.....Sparta
Miller, L. A.....Sparta
Mistelet, William.....Kendall
Moseley, Arthur G.....Catawact
Nathen, Paul R.....Kendall
Peterson, John H.....Cashton
Sias, Benjamin.....Sparta
Stienback, Otto J.....Kendall, R. 2
Wallace, Harrison M.....Norwalk
Whitehead, John L.....Leon
Whitehead, H. W.....Leon
Wilkinson, Edward.....Wilton
Wyatt, E. E.....Tomah

OCONTO COUNTY.

Halsted, V. W.....Lena
Kohne, Henry.....Little Suamico

OUTAGAMIE COUNTY.

Bixby, P. T.....Appleton
Hanson, H. Edward.....Appleton, 439
Calumet St.
Jamison, Clarence.....Appleton
Jamison, Robert.....Appleton
Jamison, W. G.....Appleton
Johnston, Frank R.....Appleton, R. 6
Knoke, E. A.....Shiocton
Laird, Wm. J.....Shiocton
Loewe, Arthur P.....Shiocton
Merkel, Henry.....Appleton, R. 3
Mueller, Ed. O.....Appleton, R. 1
Pirner, Fred.....Sugar Bush
Ryan, Malachi.....Kaukauna
Schaefer, R. J.....Appleton, R. 1
Schmit, Albert.....Appleton
Schmit, Alois E.....Hortonville, R. 22
Schmit, Anton N.....Appleton, R. 2
Schmit, A. W.....Appleton, R. 2
Schmit, Geo.....Greenville
Schmit, John A.....Hortonville
Sylvester, Walter W.....Seymour
Thoma, Ernest.....Sugar Bush
Weiffenbach, Fred.....So. Kaukauna
Wussow, Charles A.....Seymour
Zahrt, F. H.....Hortonville

MEMBERSHIP, 1908—Continued.

OZAUKEE COUNTY.

Abel, Ernie.....Cedarburg
 Ahlers, Walter.....Grafton
 Behrens, Bernhard.....Grafton
 Clausing, Adolph.....Thiensville
 Groth, Chas. A.....Cedarburg, R. 2
 Kieffer, Mike.....Fredonia
 Kohlwey, Otto.....Grafton
 McCarthy, Geo. M.....Fredonia
 Musback, Wm.....Fredonia
 Pierner, John W.....Thiensville
 Port, Mike.....Grafton
 Wulff, Fred, Jr.....Grafton

PEPIN COUNTY.

Fleishauer, Charles.....Arkansas
 Gustavson, Theodore.....Stockholm, R. 1
 Hicks, Earl.....Pepin
 Jahnke, J. F.....Pepin

PIERCE COUNTY.

Aastrum, Chas. J.....Spring Valley, R. 3
 Dunbar, Harold.....River Falls
 Nelson, Emil.....River Falls, R. 6
 Scheid, Byron.....Bay City

POLK COUNTY.

Gullickson, Chas. E.....Cushing
 Hedlund, Adolph.....Clayton
 Jerdee, Perry S.....Deronda
 Paulson, Gust.....Clayton
 Rehbein, A. E.....St. Croix Falls, R. 1
 Tretsven, Oscar.....Milltown
 Uhlin, Albin.....Clayton
 Uhlin, Frank E.....Clayton; R. 1

PORTAGE COUNTY.

Clark, W. E.....Stevens Point, R. 1
 Hanson, N. P.....Amherst Jct., R. 2
 Haus, Enoch.....Junction
 Lewis, Lloyd L.....Stevens Point, R. 1
 Peterson, Perry O.....Amherst
 Siegert, A.....Junction
 Swenson, O. S.....Nelsonville
 Van Buskirk, G. W.....Plover
 Wagner, Geo. R.....Stevens Point, R. 1

PRICE COUNTY.

Klussendorf, Fred E.....Phillips, R. 1

RACINE COUNTY.

Adland, P. H.....North Cape
 Cook, George L.....Burlington
 Dunklow, Walter H.....Franksville
 Gruss, Anthony V.....Burlington
 Hankinson, J. H.....Union Grove, R. 6
 Hensgen, Michael J.....Union Grove
 Holloway, John W.....Union Grove
 Klofanda, Reuben.....Racine
 Krenzke, John L.....Lamberton
 Nau, Ray H.....Franksville
 Ostenson, Lewis.....Racine
 Peterka, Joseph.....Racine, R. 7
 Rasmussen, Gordon S.....Franksville

Rhodes, Louis.....Kansasville
 Roberts, William John.....Burlington, R. 20
 Roberts, R. E.....Corliss, R. 5
 Rolfson, Clarence E.....Waterford
 Spartz, N. A.....Union Grove

RICHLAND COUNTY.

Buehler, J. G.....Twin Bluffs
 Durnford, G. A.....Rockbridge
 Ghastin, Wm. J.....Twin Bluffs
 James, George A.....Richland Center
 Jaquish, J. E.....Twin Bluffs
 Martin, H. A.....Gotham
 Poole, Earle B.....Twin Bluffs, R. 1
 Post, H. L.....Sextonville
 Straug, Frank.....Lone Rock
 Turgasen, John H.....Richland Center
 Welsh, S. L.....Tavera

ROCK COUNTY.

Austin, Alpheus.....Janesville
 Austin, Alva G.....Janesville
 Austin, Chas.....Janesville
 Austin, W. B.....Janesville
 Austin, Wilbur D.....Janesville
 Babcock, J. G.....Evansville
 Benedict, E. L.....Beloit
 Bleasdale, J. R.....Janesville, R. 5
 Coon, Elam P.....Milton Jct.
 Cooper, Maurice W.....Edgerton
 Crandall, W. T.....Milton
 Devine, C. B.....Evansville
 Dougan, W. J.....Beloit
 Emery, S. L.....Edgerton
 Fish, Esli.....Janesville
 Fisher, Clayton E.....Evansville, R. 17
 Fuller, Sidney.....Orfordville
 Hemingway, Geo. L.....Hanover
 Hoague, Charles C.....Janesville
 Holmes, V. C.....Evansville
 Hubbard, Sherman.....Evansville, R. 18
 Klein, W. C.....Orfordville
 Kimble, N. G.....Milton Jct.
 Lefeber, Wilbur F.....Evansville
 Mueller, Math.....Edgerton, in care of
 J. Q. Emery.
 Marston, Albert.....Beloit
 Peppers, Gale.....Beloit
 Pitt, Ernest H.....Milton, R. 11.
 care Geo. Duckett
 Porter, Joseph B.....Evansville
 Porter, W. B.....Evansville
 Raessler, N. R.....Beloit
 Rasey, Edwin L.....Beloit, R. 27
 Richardson, Lyell.....Evansville
 Seeger, Carl.....Beloit, in care of Morgan
 Farm.
 Smith, Edgar W.....Evansville
 Smith, L. E.....Beloit
 Snyder, R. B.....Clinton Jct.

RUSK COUNTY.

Pritchard, John T.....Flambeau

ST. CROIX COUNTY.

Alberts, Will.....New Richmond
 Bennett, Wm. L.....New Richmond
 Brunner, Robert W.....Hudson

MEMBERSHIP, 1908—Continued.

Carlson, Niels P.....Hudson
Christensen, C. W.....Roberts
Jerdee, Alfred O.....Deer Park
Kruschke, Geo. H.....New Richmond
Paulson, P. A.....Hudson
Schwandt, William.....Stanton

SAUK COUNTY.

Capener, Walter R.....Baraboo
Claridge, Wallace.....Spring Green
Clavadatscher, Tobias.....Sauk City
Cobleigh, Rollo S.....Delton
Emery, George.....Loganville
Fredrickson, Fred.....Spring Green
Gallagher, J. F.....Reedsburg, R. 1
Gasser, Roy.....Prairie du Sac
Gross, Waldo E.....Merrimac
Grub, C. H.....Baraboo
Hackett, Charles.....Baraboo, R. 6
Haskin, I. O.....Prairie du Sac
Herwig, Theo. E.....Delton
Hinrichs, Ernest.....Reedsburg, R. 4
Hudson, Dwight.....Reedsburg
Koeenecke, Edw. H.....Reedsburg
Lachmund, Robert.....Sauk City
Landt, Newton A.....Kilbourn
Luetscher, Irvin.....Plain
Marshall, W. S.....Delton
McGilvra, Ed. A.....Baraboo
McGilvra, Geo. B.....Baraboo
McGinnis, Chas. G.....Baraboo
Ochsner, A. C.....Plain
Palmer, Howard.....Baraboo
Rich Brothers.....Baraboo
Riek, Anthony.....Plain
Rodewald, Walter C.....Baraboo
Rudd, Louis D.....Reedsburg
Saxe, William.....Baraboo, R. 1
Schoephorster, Henry.....Prairie du Sac
Steidtmann, Edwin.....Prairie du Sac
Toole, W. A.....Baraboo
Van Blaricon, Edw.....Spring Green
Vonder Ohe, W. H.....Reedsburg
Waterstreet, William.....Spring Green
Wichern, Carl W.....Baraboo
Wichern, Louie M.....Baraboo

SAWYER COUNTY.

Thulin, Edwin.....Hayward

SHAWANO COUNTY.

Berg, C. J.....Tigerton
Harriman, Fred E., Jr.....Shawano
Hildemann, Alex.....Belle Plaine
Klodahl, J. J.....Wittenberg
Norrborn, C. G.....Eland, Box 48

SHEBOYGAN COUNTY.

Blonien, Peter.....Elkhart
Dennerlein, Arthur.....Plymouth, R. 28
Eastman, F. A.....Sheboygan Falls
Eastman, S. A.....Sheboygan Falls
Fischer, Louis H.....Haven
Frauenheim, O. R.....Random Lake
Garside, Harry.....Cedar Grove
Hamann, Edgar C.....Sheboygan

Herdrich, S. F.....Adell, R. 19
Illian, W. L.....Adell, R. 19
Leonard, Mike.....Plymouth
Muth, E.....Sheboygan
Oswald, Oscar.....Haven
Parrish, J. O.....Plymouth
Parrish, Ralph.....Sheboygan Falls, R. 9
Schaefer, Henry G.....Plymouth
Wagner, Arthur L.....Haven
Wunsch, Hugo.....Haven

TREMPEALEAU COUNTY.

Chrysler, Harvey.....Osseo
Cooke, Carl H.....Independence
Erickson, Chris.....Ettrick
Hagestad, A. C.....Ettrick
Hermann, Fred.....Osseo
Lowe, William.....Strum
McCauley, Rex.....Osseo
Markham, Fred C.....Independence
Mattison, Thos.....Blair
Moen, Gilbert T.....Eleva
Pederson, Peter.....Eleva
Peterson, O. P.....Blair
Raichle, Carl.....Galesville
Ristau, Edward.....Osseo
Warner, R. C.....Whitehall

VERNON COUNTY.

Aberg, Jacob.....De Soto
Call, H. H.....West Prairie
Dahlen, Anton J.....Coon Valley
Dahlen, M. O.....Coon Valley, R. 1
Davis, J. L.....De Soto
Herold, Rudolph, Jr.....Stoddard
Kjelland, Christian.....Viroqua
Lawrence, W. J.....De Soto
Nelson, Edwin.....Viroqua
Neprud, Nels O.....Coon Valley
Olsen, Gaberial C.....Westby
Parsch, Gustav A.....Stoddard
Sebion, Cornelius.....Westby
Solbrey, Louis.....Viroqua
Solverson, Oscar.....Viroqua
Stegene, Christ.....Viroqua
Thiege, M. G.....Westby

WALWORTH COUNTY.

Allyn, Joseph.....Delavan
Anderson, Alvin M.....Whitewater, R. 5
Church, A. P.....Whitewater
Coburn, Ora.....Whitewater
Downey, Urso.....Whitewater, R. 2
Dunbar, Harry.....Elkhorn
Fuller, LeRoy.....Lake Geneva
Harris, Benjamin.....Delavan, R. 2
Harris, Jesse S.....Delavan
Howard, A. E.....Whitewater
Lean, Floyd.....Elkhorn
Lewis, E. H.....Whitewater
Lowell, Lloyd S.....Sharon
Mack, Warren.....Whitewater
Marek, F. R.....Honey Creek
Marek, L. G.....Honey Creek
Menne, John N.....Elkhorn
Meurer, Paul.....Genoa Junction
Nicolaus, D. C.....East Troy
Peters, Ezra.....Sharon, R. 2
Peters, John.....Lake Beulah, R. 26

MEMBERSHIP, 1908—Continued.

Peterson, E. C.....	Whitewater, R. 4
Peterson, Peter.....	Walworth
Petrie, Merton E.....	Elkhorn, R. 5
Ranney, P. C.....	Elkhorn
Rockwell, LeGrand.....	Elkhorn
Rohwell, Elvin R.....	Whitewater
Schwartz, J.....	Troy Center
Thacher, Ed. F.....	Zenda
Thompson, A. N.....	Delavan
Vosberg, Henry.....	Whitewater
Warmingtun, Prentice.....	Honey Creek
West, Mark H.....	Elkhorn
Wright, John.....	Whitewater

WASHINGTON COUNTY.

Backhaus, Franklin G.....	Kewaskum
Christensen, John.....	Hartland
Genzman, Edward D.....	Schleisingserville
Haugen, Winsor W.....	West Bend
Jumjens, Henry.....	Hartford
Klumb, Oscar.....	Rockfield
Murphy, Lawrence F.....	Hartford
O'Connell, James.....	Hartford
Puls, John.....	Hartford, R. 4
Schottler, C. J.....	So. Germantown

WAUKESHA COUNTY.

Bartlett, Geo. W.	Menomonee Falls
Bell, William E.	Oconomowoc
Boyd, Jos. T.	Waukesha, R. 7
Boyle, Frank E.	Oconomowoc
Burton, Roy	Eagle
Carmichael, Allen	Waukesha
Christensen, John	Hartland
Cook, I. O.	Nashotah
Craig, Geo. D.	Oconomowoc
Davies, David E.	Waukesha, R. 8
Dineen, C. F.	Pewaukee
Dopp, Paul B.	Oconomowoc
Evans, Thos. H.	Wales
Evans, William H.	Wales, R. 31
Graser, A. H.	Waukesha, R. 4
Greengo, A. L.	Menomonee Falls
Haass, Otto	Merton
Hicken, Alfred B.	Waukesha, R. 7
Hill, Chas. T.	Brookfield
Hill, J. Thos.	Brookfield
Hughes, William	Waukesha
Jacobson, Fred E.	Oconomowoc, R. 2
Jeffery, H. B.	Menomonee Falls
Jones, Albert	Dousman, R. 32
Kaderabek, John	Delafield
Longley, Harvey N.	Dousman
Miller, John	Oconomowoc
Mitchell, Dean S.	Brookfield
Mitwede, Henry	Waukesha
Montague, C. R.	North Prairie
Morris, John L.	Waukesha
Morris, Leslie D.	Waukesha, R. 8
Nicolaus, C. A.	Waukesha
Owen, David	Waukesha, R. 9
Pabst, Fred	Oconomowoc
Peebles, John	Oconomowoc
Peterson, C. T.	Waukesha, in care of R. W. Rowlands.
Portz, Albert	Pewaukee
Ralt, John T.	Waukesha
Rosenow, Arthur	Oconomowoc
Rosenow, H. E.	Oconomowoc
Schafer, Chas. H.	Waukesha, R. 7
Shannon, M. J.	Oconomowoc

Shultis, A. D.	Waukesha
Sietz, Adam	Waukesha
Smith, E. B.	Dousman
Spaulding, C. F.	Oconomowoc
Spaulding, W. H.	Oconomowoc
Stewart, Joe H.	Wales
Stillman, Edwin B.	Waukesha
Swan, L. W.	Mukwonago
Swohoda, F. G.	Dousman
Thomas, J. E.	Nashotah
Voigt, Alvin	Oconomowoc, R. 26
Weir, Wilbert W.	Mukwonago, R. 34
Williams, H. T.	Waukesha, R. 1
Williams, Orson P.	Waukesha
Wright, H. W.	Waukesha
Zillmer, William C.	Brookfield

WAUPACA COUNTY.

Almon, Perry T.	Weyauwega
Bestul, O. O.	Scandinavia
Bizford, Walter W.	Manawa
Bille, J.	Waupaca
Gorges, Louis.	Readfield
Hanson, Elmer.	Waupaca, R. 2
Larson, W. B.	Waupaca
Jenson, William.	Waupaca, R. 3
Kendall, Myron.	Iola, R. 3
Kendall, V. F.	Iola, R. 3
Kinkel, Arthur.	New London
Kneip, William.	Weyauwega
Kuoek, Hugo J.	Readfield
Larson, LeRoy.	Iola
Larson, W. B.	Ogdensburg
Pinkerton, A. J.	Waupaca
Rosholt, Jacob A.	Scandinavia
Wall, Floyd.	Weyauwega
Wall, William.	Weyauwega

WAUSHARA COUNTY.

Anderson, Thos E.....	Wild Rose
Bell, Lewis C.....	Wautoma
Carey, Henry.....	Redgranite, R. 1
Carey, Jas. E. L.....	Redgranite, R. 1
Jacklin, B. H.....	Redgranite
Jacobs, A. F.....	Coloma Station
Joyce, Karon.....	Redgranite
Knuteson, Ernest L.....	Wautoma, R. 3
Larson, J. M.....	Wautoma, R. 1
Peterson, James.....	Pine River
Selsing, Andrew.....	Wautoma
Smith, E. P.....	Hancock
Tice, Ray.....	Redgranite
Tice, Roy.....	Redgranite
Winge, William.....	Wautoma

WINNEBAGO COUNTY.

Berger, John H.	Oshkosh, 184 Monroe Ave.
Blakely, A. J.	Neenah
Blodgett, Gordon	Neenah, R. 10
Boss, S. J.	Oshkosh, R. 7
Boss, U. C.	Oshkosh, R. 7
Bussey, W. P.	Omro
Cholpant, Aaron H.	Neenah
Cross, A. J.	Allenville
Evans, Wm. D.	Pickett
Harrison, George	Omro
Hatch, K. L.	Winneconne
Hoefft, Chas. A.	Oshkosh, R. 6
Kloehn, Irwin G.	Picketts, R. 27
Marshall, A. C.	Omro

MEMBERSHIP, 1908—Continued.

Miller, Henry C.....Allenville
Owens, Dan.....Fisk Station
Shepperd, Nelson.....Oshkosh
Smith, S. L.....Oshkosh, R. 5
Treleven, Guy.....Omro
Wood, Calvin D.....Oshkosh, R. 4

WOOD COUNTY.

Christensen, Peter W.....Marshfield
Clark, Chas. F.....Babcock
Huser, Henry.....Grand Rapids
Kronholm, V. E.....Grand Rapids
Lepien, John.....Marshfield
Malde, O. G.....Grand Rapids, R. 3

NON-RESIDENTS.

Hauck, N.....Alton, California
MacVannel, A. P.....St. Mary's, Ont.
Savage, Albert.....Quincy, Florida
Buchanan, P. H.....Indianapolis, Ind.,
1902 N. Mev. St.
Logan, R. G.....New Palestine, Ind.
Bennett, H. J.....Cherry Valley, Ill., R. 1
Bryson, Donald.....Elizabeth, Ill.
Chetlain, Louis A.....Galena, Ill.
Dittmar, Wm.....Elizabeth, Ill.
Durand, Mrs. S. S., Lake Forest, Ill.
Ford, Thos. R.....Aurora, Ill.,
234 Flagg St.
Grimwood, Ivan J.....Bristol, Ill.
Halley, Guy R.....Rockford, Ill.
Hensel, Claire.....Walnut, Ill.
Highbarger, Howard.....Seward, Ill.
Hitchcock, H. R.....Pecatonica, Ill.
Hoxsey, Edw. H.....Serena, Ill.
Hoxsey, Frank.....Serena, Ill.
Huebsch, L. A.....Lake Forest,
Arcady Farm, Ill.

Keeney, E. R.....Rockton, Ill.
Kluck, F. E.....Lena, Ill.
Kluck, R. E.....Lena, Ill.
Larson, Chas. L.....Chicago, Ill.,
889 Spaulding Ave.
Osterday, E. G.....Stockton, Ill.
Phillips, Jesse.....Elizabeth, Ill.
Price, Fred.....Bristol, Ill.
Singer, Henry, Chicago, Ill., 554 E. 45th
St.
Berns, Xavier.....Guttenberg, Ia., R. 1
Hatch, L. M.....Chapin, Ia.
Hawkins, A. B.....Farley, Ia.
Mathis, Adolph.....Lansing, Ia., R. 1
Schulte, W. L.....Garnaville, Ia.
Thompson, Thor, Jr.....Wadena, Ia.
Conant, W. A.....Boston, Mass.,
17 Milk St.
Werner, W. A., Paso del Rio, Estado
de Colima, Mexico.
Carey, Clinton H., Vans Harbor, Mich.
Meyer, A. J.....Howell, Mich., R. 7
Vandercook, R. I.....Linden, Mich.
Hillier, H. B.....Brownsdale, Minn.
Holcomb, W. R.....Excelsior, Minn.
Houkom, Stephen.....Minneapolis, Minn.
Poston, R. H.....Duluth, Minn.,
Jean Duluth Farm.
Smith, J. G.....Farmington, Minn.
Stevenson, J. W.....Winnebago, Minn.,
R. F. D.
Von Lanyi, Oscar.....Duluth, Minn.,
in care of S. F. Snidely
Stienstra, Samuel J.....Swedeborg, Mo.
Bennett, C. S.....Holmes, Montana,
Tu Ranch.
Colenso, J. E., Monroe, N. Y., Box 71.
Coleman, C. H.....Perry Center, N. Y.
Morse, W. A.....Camden, N. Y.
Alcalay, S. J.....Madison, N. J.,
Florham Farms.
Haines, Jos. K.....Mt. Ephraim, N. J.
Coon, Leslie.....Haley, N. D.
Thompson, R. K.....Bottineau, N. D.
Deleglise, Leo L.....Devon, Pa.
Rorer, Wm. A.....Mt. Gretna, Pa.
LeGresley, Norris W.....Woodstock, Vt.
Blackmun, E. G.....Quincy, Wash.

SEVENTH 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 discussions.

PROGRAM.

Thursday, 9 A. M.—Room 61, Agricultural Hall.

Annual Address of President.....A. L. Stone
Secretary's Report.....R. A. Moore
Horticultural Opportunities Afforded in the State to Members of
the Wisconsin Experiment Association.....W. H. Hanchett
Opportunities for Coöperative Work in Northern Wisconsin....
Supt. E. J. Delwiche
Publicity to Experiment Association Work.....A. J. Meyer
Eradication of Farm Weeds.....O. R. Frauenheim
General Discussion.

Thursday, 1:30 P. M.—Auditorium.

Election of officers, reports of committees, etc.

Plan of Work for the Coming Year:

Division of Farm Crops.....R. A. Moore
Division of Soils.....A. R. Whitson
Memorial Address.....L. M. Hatch
Our Successes and our Failures.....A. J. Phillips
Coöperation of the Experiment Association With Public Schools
in the Dissemination of Good Seed.....Supt. G. W. Davies

Coöperative Variety Tests: Oats—

Improvement.....A. L. Stone
Testing the Seed and Treating for the Prevention of Smut..

E. L. Dreger

Preparation of Soil and Proper Rotation.....C. F. Spaulding

Sowing as a Grain and Nurse Crop.....W. F. Renk

Harvesting, Threshing, and Marketing.....H. L. Post

General Tests with *Swedish Select Oats* (Wisconsin No. 4):

C. H. Howitt, A. C. Hagestad, H. F. Kramer, Alexander Krueger,

W. A. Toole, H. E. Krueger, Fred G. Stroup, Henry Rosenow,

J. P. Bonzelet.

Friday, 8:30 A. M.—Room 61.

Horse Breeding Operations in Wisconsin.....Dr. A. S. Alexander

Draft Horses.....O. R. Frauenheim

Wisconsin as a Horse Breeding State.....W. L. Houser

Barley:

General Information.....A. P. MacVannel

A Farm Forage Crop.....Henry Michels

A Ready Money Crop.....H. W. Meekin

Testing the Seed and Preparation of Seed Bed.....L. R. Zerbel

Sowing for the Season's Crop.....E. A. Beule

Harvesting and Threshing.....H. A. Main

Rotation of Crop.....H. N. Longley

How Barley Centers Can be Established.....W. L. Illian

General Test with *Odertrucker Barley* (Wisconsin No. 55):

J. F. Bradley, O. J. Bussewitz, Frank Gallagher, O. C. Heidemann,

Gilbert Jacky, Roy T. Harris, Otto C. Kurtze, A. J. Dennerlein,

G. A. Booth, B. L. Fruit, Geo. Hine, L. H. Heyroth, P. W. Christen-

sen, A. C. Russell.

Manshury Barley (Wisconsin No. 62):

L. H. Fisher, H. E. Krueger, Arthur Rosenow, I. J. Grimwood,

G. Muehleisen, P. V. Becker, B. L. Fruit, Clarence Jordalen,

A. C. Hagestad.

Friday, 8.30 A. M.—Room 61.

Corn Session:

Growing Prize Corn.....Robert Lachmund

Testing Seed Corn.....J. C. Kramer

Planting and Cultivating the Crop.....J. N. Bohl

Harvesting for Silage and Ear Corn.....J. H. McNow

Growing and Marketing Seed Corn.....H. W. Meekin

Curing Seed Corn.....G. A. Freeman

Tests with *Silver King* (Wisconsin No. 7) Corn:

R. W. Chatterton, E. B. Lloyd, H. E. Krueger, F. P. Grebe, Alois

Schmidt, H. A. Main, Ivan McIntyre, A. C. Ochsner, D. W. Collin.

*Program of Meeting.**Early Yellow Dent (Wisconsin No. 8) Corn:*

H. W. Meekin, O. R. Frauenheim, O. C. Heideman, A. J. Blakely,
Supt. E. J. Delwiche, H. L. Jacky, Horace Whittaker.

Clark's Yellow Dent (Wisconsin No. 1):

A. E. Jung, Andrew Finsnes, H. D. Dunbar, H. N. Longley.

Toole's North Star (Wisconsin No. 11):

Wm. Toole, Chas. Hackett, Henry Carey.

Friday, 1:30 P. M.—Auditorium.

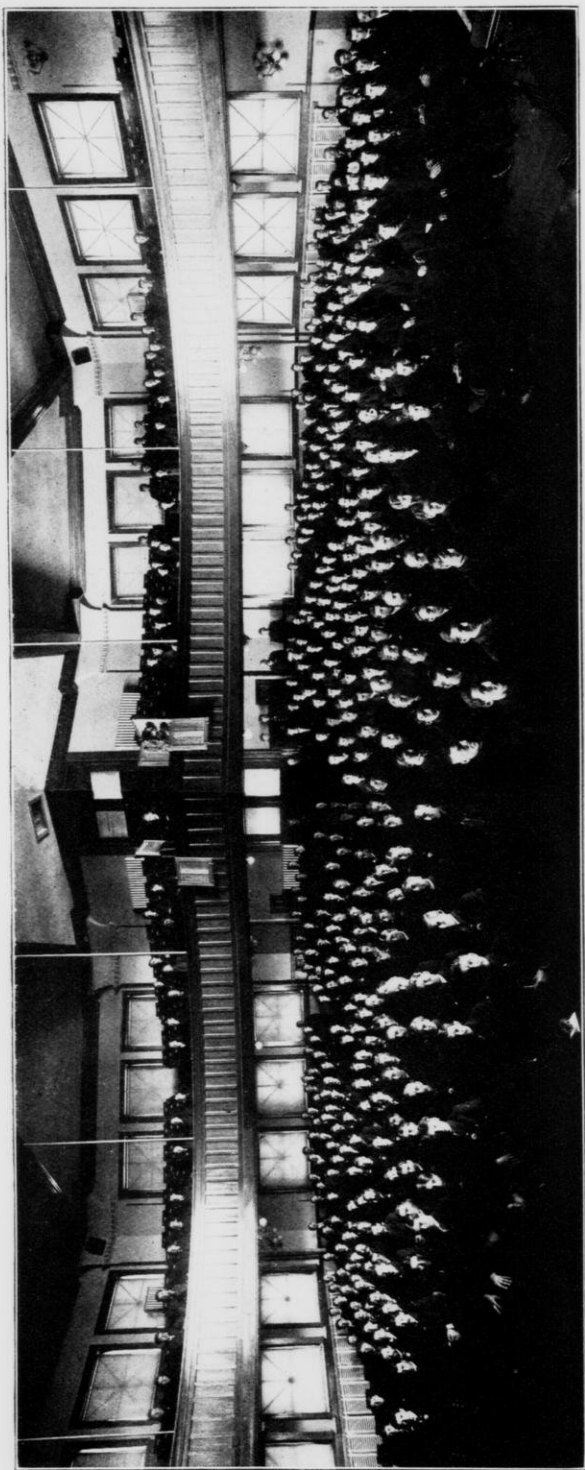
The Farmer's Ideal.....Prof. Wm. Hill, University of Chicago
The Future of Agriculture.....J. M. True, Sec. State Board of Agr.
How Members of the Experiment Association Can be Helped in
Preserving the Wisconsin Forests.....State Forester Griffiths
Agricultural Press.....C. H. Everett

Friday, 7:30 P. M.—Auditorium.

Joint Session of the Experiment Association, Short Course Alumni
and Short Course Literary Society. Long Course and Farmer Course
Students invited to attend.

Instrumental Music.....Orchestra
Words of Welcome.....Dean H. L. Russell
Vocal Music.....Walter and Mary Moyle
Remarks.....Hon. W. D. Hoard
Piano Solo.....Mrs. Geo. C. Humphrey
Address.....Prof. P. G. Holden
Instrumental Music.....Orchestra





Wisconsin Experiment Association in session at its Seventh Annual Meeting-February 6-7.

SIXTH ANNUAL REPORT

OF THE

Wisconsin Agricultural Experiment Association

ANNUAL ADDRESS OF PRESIDENT.

A. L. STONE, MADISON, DANE COUNTY.

It is amazing with what rapidity the time passes and what changes a few short years may bring. Your Secretary and President have watched this Association grow and expand in a space of seven short years to be the greatest Agricultural Association in this State. Now it devolves upon us as a consequence of this expansion and I hope increased usefulness, to reflect for a moment upon how this affects our relations with others and the world at large. The fact that it has become so large and promising should arouse in us a pride in our Association which should bind us closer together and give the members a fellowship that should eventually be akin to brotherhood. In my annual address a year ago I mentioned that one of the hoped for results of our common experiments and meetings was a closer co-operation among farmers as a whole. We must prove the fallacy of the statement that it is impossible for farmers to cooperate advantageously or profitably.

As we demonstrate the benefits accruing to us from our association here it should teach us the value of co-operation in other lines of agricultural effort. This is essentially an age of combinations and co-operations and to hold his rightful place in the race the farmer too must learn to combine. I am no more in favor of monopolies or trusts which control the prices of the necessities of life than is the ordinary man, and

I believe farmers are still conservative enough to halt short of such a consummation. I do believe, however, in *just* remuneration for the labor and products of every vocation and of late it has often seemed that the farmer had not yet reached this point in our national economy.

You perhaps know that the Extension Department of the State University is now establishing farmers' clubs throughout the state in which are to be discussed matters of local and state policy. I urge the members of this Association to be active in every local enterprise so far as is practicable. The advantages you have had should make you natural leaders in your communities if you will only exert yourselves. The standing of our Association depends more or less upon the character and activity of its individual members, and the more each member exerts himself and the more useful he becomes to his friends and neighbors, the greater luster does he reflect on this Association. We want this Association to be not only the largest in the State, but the most useful as well. The time should come when no one may speak of the Wisconsin Experiment Association except in words of praise and respect, but this will only be brought about when every member views each act of his in the light of the Association's interest and not his own.

No seeds should be shipped to any one, and more particularly outside the state, which you are not proud to send and which you are not reasonably sure will give satisfaction. Numerous complaints have come to the office of seeds purchased from Association members which were not up to the standard guaranteed. The only safe, and in the long run, profitable course is to ship no seeds which are not up to standard. Do not let one year's transactions lose your customers for years to come, and remember that every unsatisfactory lot of seed received from an Association member reflects upon the Association as a whole.

It is my opinion that the next session of the legislature will pass a stringent law on the subject of seeds and their control and we will then be compelled to have seed in good condition or be liable to prosecution. Much more should we prefer to have our members be a law unto themselves and voluntarily clean and guarantee their seeds. I would recommend that whenever an order for seeds is received that a sample be sent to the prospective customer. Some men are much more particular than others and while one might be very well satisfied with your seed, another might not. Where purchase is made from sample, however, there can be no cause for complaint

providing a representative sample is sent. I take it for granted no Association member would be guilty of sending a doctored sample.

There are several graders and fanning mills on the market at the present time which will clean grain almost perfectly, no matter what the mixture and our members who intend to make seed growing a business cannot afford to be without one. Poorly cleaned grain loses many a customer that might otherwise have been well pleased.

Weed seeds of any kind found in a sample of grain intended for seed will at once lead to its rejection. This leads me to another subject in which I should like the co-operation of our members. Few farmers realize the loss they sustain from weeds and particularly from noxious weeds. We are about to open a campaign on weeds and only as farmers realize what is lost annually and are willing to co-operate to get rid of them can much in this line be accomplished. Fence corners and every odd corner on the farm should be cleared of weeds as well as the fields themselves. A seed farm upon which patches of weeds can be seen at once leads to suspicions concerning the seed produced thereon.

I am hoping for the time when it may be said that the farms owned by Association members are the best producing, the cleanest, and finest appearing farms in the state. And here I wish to say a word about those farms and their exploitation. If you have your farm in good shape, if you are producing the best products and are proud of it, advertise it. Have business cards printed which you can hand or send to possible customers. Your card in his hand helps a busy man to keep your name in mind. Placed in his card rack it is a constant reminder that he will not overlook when orders for seed are to be given. When you get that order fill it so that he will order again.

Have your farm named and have the name in some conspicuous place where everyone who passes may see it. Then have letterheads printed to use in all business correspondence and let them bear the name of your farm, your shipping station, and post office address, and a list of the products you have for sale. Farmers must be business men and use business-like methods to make the most of what they produce.

In my address last year I also mentioned the value of good roads to the farmer and resolutions were passed approving favorable legislation to secure them. Since that time there has been organized a State Good Roads Association and at the

next election the people of the state are to vote upon a constitutional amendment which will permit the state to contribute aid to the counties in the work of road construction. As our law now stands it is illegal for the state to contribute funds for works of internal improvement. Use your influence to get this amendment passed and I would suggest a strong resolution in its favor be presented to the Association for action at this meeting. Poor roads help to consume time, increase labor, wear and tear on horses and vehicles and reduce farm profits generally. With the multiplying telephone lines, steam and electric railroads, rural free delivery, and automobiles, we lack only a system of good roads to give the farmer all the advantages he ought to enjoy. Experiment Association members should have the best of these things and before many more years have rolled by I expect to have statistics show that they do have them and others also.

Nothing is too good for us that we can win fairly and honestly.

If we keep our ideal high and work steadily toward it the result is sure. We will wield a power for good that God alone can measure, and lift Wisconsin to where she rightfully belongs, first and brightest in Old Glory's galaxy of stars.

SECRETARY'S REPORT—1907.

R. A. MOORE, MADISON.

On the 22nd day of February, 1901, our Association was founded with a charter membership of two hundred and seventeen. That the organization has well fulfilled its mission is acknowledged by the public in general. Many letters of commendation have come to the office speaking of the merits of the work performed by our Association.

MEMBERSHIP.

The membership of the Experiment Association has steadily increased from year to year. January 1, 1908, we had a paid up membership of 936. We probably will reach the twelve hundred mark before the close of 1908.

APPROPRIATION.

Owing to the increase in membership and the desire to carry on more co-operative work, it seemed to the best interest of all concerned to ask the legislature of 1907 for additional funds. The legislature after carefully considering the work done in past years and prospects for future work, generously raised our annual appropriation to \$2,000. The bill passed also provides that of the five thousand copies of the annual Report published, three thousand shall be bound in cloth.

WIDESPREAD DISSEMINATION OF SEED GRAINS.

The seed grains grown by the Experiment Association are becoming known for their excellence far and near; one seed firm alone paid members no less than twenty thousand dollars for seed within the past six months.

If members throw intelligence and integrity into the work of growing and disposing of an excellent grade of farm seeds, the time is near at hand when these seeds will be called for generally by seedsmen and farmers. One very encouraging feature of the seed work is the fact that European and Asiatic countries are in the market for the seed grains grown by the Wisconsin Experiment Association.

THE WISCONSIN EXPERIMENT STATION.

The Experiment Station stands ready to assist in every possible way and is breeding grains and forage plants that will soon become leaders in our state. The Station in the way of encouragement to the Association plans to sell select seed grains to the Association at a nominal figure so as to have these choice grains, that have been bred through a long course of years, used exclusively for experimental purposes.

WORK CARRIED ON DURING THE PAST YEAR.

Several lines of work were undertaken during the past year as outlined on pages 147 to 168 of the Fifth Annual Report of the Association. Experiments with barley and corn were pushed strenuously and much valuable data acquired that will be of good use to the members of the Association. We feel more certain than ever that great good can be accomplished

throughout Wisconsin by the establishment of select seed grain centers in every township in the state. Pure bred seed should be grown in preference to scrub stock until whole towns and counties become known for certain select seeds grown.

BARLEY.

The fact that Wisconsin has scores of different strains of barley reacts much to our discredit. The market demands one straight breed of barley in order to secure that uniformity in size and quality of berry and germination that is required by the malster and barley pearler.

The Oderbrucker, Wisconsin No. 55, meets the demand of the markets and is also, on account of its high protein content, a good feeding barley. Through several years tests it has shown a yield several bushels in excess to other barleys. It then seems plain that it is our duty to grow and disseminate this breed of barley in preference to other varieties. No less than one and one-half million bushels of this barley were grown in the state in 1907, more than sufficient to seed the entire barley area of Wisconsin. It seems from the interest manifested in this select strain of barley that at least one-half of the entire barley area will be sown to this one select breed, the coming season.

CORN.

Our select breeds of corn are rapidly pushing out the scrub varieties and we trust the time is near at hand when no more scrub corn will be shipped into the state. The success of the Association in the growing and disseminating of select strains of corn will largely depend upon the method of curing. We cannot depend upon air dried corn in Wisconsin, we must have kiln-dried corn. With little expense, seed houses can be arranged, into which the corn can be carried in the fall and kiln-dried. Racks must be erected in the seed house and a shielded stove set up in the center. Good ventilation is absolutely necessary. Corn readily cures in a couple of weeks where a fire is made frequently to drive off the moisture. The Experiment Association has not found it difficult to get members to grow the corn properly, but there has been much more difficulty experienced in getting the members to cure and care for the corn properly.

There is a steady demand for good kiln-dried ear corn at three dollars per bushel, and the members who get into this work properly will be the ones who will make the money besides doing a great work for the state in general. Wisconsin must not take a backward step in the great corn work under way, but must put forth every endeavor to push the select seed corn work until we head the list of states in yield of corn per acre.

Data secured from members of the Association, who were carrying on various lines of work are given in the following tables:

SWEDISH SELECT OATS (WIS. NO. 4).

Number of members reporting.....	96
No. counties in the state.....	71
No. counties from which reports have been received..	42
No. sowing on fall plowed land.....	64
No. sowing on spring plowed land.....	32
No. sowing with drill.....	44
No. sowing with seeder.....	46
No. cases where oats stood up well.....	58
No. treating for the prevention of smut.....	25
No. cases where oats were smutted.....	17
No. cases where oats rusted badly.....	61
Average yield per acre of No. 4 oats (bushels).....	27.9
Average yield per acre of any other variety (bushels)..	24.3

ODERBUCKER BARLEY.

Number of parties reporting to date.....	227
No. counties from which reports have been received..	54
No. sowing on fall plowed land.....	149
No. sowing on spring plowed land.....	73
No. sowing with drill.....	92
No. sowing with broadcast seeder.....	121
No. sowing by hand.....	4
No. reporting that barley remained erect.....	180
No. reporting that barley lodged.....	37
No. reporting that barley rusted badly.....	38
No. reporting that barley rusted slightly.....	54
No. reporting that barley did not rust.....	122
No. reporting that barley developed smut.....	101

No. reporting that barley was not smutted.....	105
Average yield of Oderbucker barley (bushels).....	30
Average yield of any other variety.....	24.9

MANSHURY BARLEY.

Number reporting to date.....	18
No. sowing on fall plowed land.....	8
No. sowing on spring plowed land.....	6
No. sowing with drill.....	8
No. sowing with seeder.....	10
No. reporting barley as standing erect.....	12
No. reporting barley rusted.....	7
No. reporting that smut developed.....	9
Average yield per acre (bushels).....	27

SILVER KING CORN (WIS. NO. 7).

Number members reporting.....	75
Number counties in state.....	71
Number of counties from which reports were received.....	36
Average per cent germination of the seed.....	94.3
Number reporting corn as well matured.....	33
Number reporting failure to mature.....	36
Maximum yield (bushels shelled corn per acre).....	92
Minimum yield (bushels of shelled corn per acre).....	20
Average yield per acre (bushels of shelled corn).....	54.5
Average yield per acre any other variety.....	46.8
Difference in yield in favor of No. 7 corn.....	7.7
Average yield per acre on fall plowed land.....	64
Average yield per acre on spring plowed land.....	50.3
Number parties planting on fall plowed land.....	22
Number parties planting on spring plowed land.....	49

EARLY YELLOW DENT (WIS. NO. 8).

Number members reporting.....	23
No. counties in the state.....	71
No. of counties from which reports were received.....	16
Average per cent of germination of the seed.....	96.5
No. reporting corn maturing well.....	12

No. reporting failure to mature.....	11
Per cent of corn failing to mature north of Marathon county.....	7
Per cent of corn failing to mature south of Marathon county.....	4
Maximum yield per acre (bushels shelled corn)....	50
Minimum yield per acre (bushels shelled corn)....	20
Average yield per acre (bushels shelled corn).....	45.5
Average yield per acre any other variety.....	60
Average yield per acre fall plowed land.....	53
Average yield per acre spring plowed land.....	49.5
Average yield per acre planted in checkrow... ..	54
Average yield per acre planted in hills by hand.....	51

SOY BEANS.

Number of members experimenting.....	21
No. counties in the state from which reports were received	15
No. members reporting beans as ripening evenly.....	14
No. members reporting beans as ripening unevenly....	5
No. members planting beans on fall plowed land.....	9
No. members planting beans on spring plowed land..	9
No. members using bacteria-laden soil.....	13
No. members reporting nodules on roots of bean plants where soil was inoculated.....	12
Average yield per acre (bu.).....	28
Stock ate green and cured forage readily in nearly all cases.	

IN MEMORIAM.

HON. H. D. HITT.

L. M. HATCH, CHAPIN, IOWA.

In accepting the invitation of our Secretary to speak to you today on the life-work of one of our most worthy and distinguished members, I did so with a full realization of my inability to do entire justice to him or to his work.

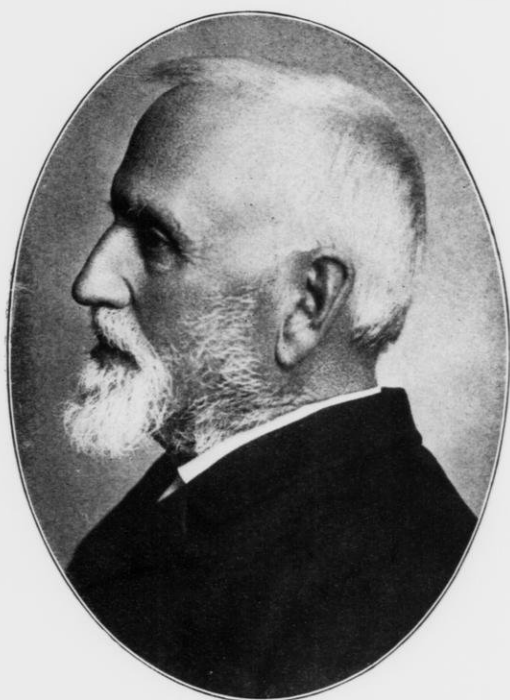
Excepting for my parents, Mr. Hitt is the first person of whom I have a distinct recollection and it has been my great good fortune to know him personally, yes, intimately ever since, and many are the pleasant memories that cluster about his name.

Hon. Henry D. Hitt was born September 15th, 1823, in the town of Danby, Rutland county, Vermont. His education was received in the common schools and in the academy at Ferrisburg, Vermont. After leaving the academy he assisted his father with the farm work in the summer and taught school during the winter months.

He came to Wisconsin in 1847, resolved to locate if everything seemed favorable. The journey through the state was made on foot and resulted in the purchase of 160 acres of land in the town of Oakfield, Fond du Lac county. Here he erected a frame dwelling and, in the spring of 1849 he returned to Vermont where, on the 26th day of June, he was united in marriage to Miss Lydia Bristol. The young couple at once left for the home awaiting them on the Western frontier, where they resided for the first thirty years of their married life, when they built a modern and more commodious residence a few rods from the old home.

Mr. Hitt held nearly all of the town offices at different times and in 1857-1858 represented his district in the general assembly. He was a director of the First National Bank of Fond du Lac for more than forty years and had been vice-president of that institution for many years up to the time of his death.

For more than forty years he was a member of the school



The late H. D. Hitt, Oakfield, Wis., Honorary Member of the
Experiment Association.



board, laboring earnestly for the advancement of education, and it was largely through his efforts that the high school building was erected in the little village of Oakfield in 1890.

In 1881 he became a member of the State Board of Agriculture, continuing until 1889.

Mr. Hitt was appointed regent of the university of Wisconsin by Governor Rusk and served for six years, from 1883 to 1889, in connection with Hon. Hiram Smith of Sheboygan Falls and Hon. Charles H. Williams of Baraboo. These three men composed the Farm committee. At that time there was only the Long Course in Agriculture. There was much complaint of the lack of students, and a committee of the regents was appointed, consisting of Hon. Wm. F. Vilas, Hon. E. W. Keyes and Mr. Hitt, to report on the situation and recommend something that would improve the conditions. The long report this committee submitted and the discussions which followed resulted in the establishment of the Short Course.

In 1889 dairying was represented at the Agricultural College by a few cows and a building which combined a dairy room and ice house, built at a cost of five or six hundred dollars. At a meeting of the Farm committee, it was decided that the building should be enlarged and a thousand dollars was set aside for the purpose. In this building, in January, 1890, was inaugurated the first dairy school in America. How proud were Mr. Hitt and his earnest co-workers at this great accomplishment! And well they might be!

Thus we see that Mr. Hitt was one of the moving spirits in inaugurating both the Short Course and the Dairy Course of instruction at the University of Wisconsin. Mr. Hitt was more than faithful to his duties. He rarely missed a meeting of either the regents or the Farm committee and made many trips to Madison aside from those required in his official relations.

Agricultural education owes a great deal to the Hon. H. D. Hitt and the memory of his efforts should endure in the annals of the Agricultural College and the Experiment Association.

Mr. Hitt died June 23rd, 1907, at the age of 83 years, 9 months and 8 days, leaving a widow and five children, all of whom now reside in Fond du Lac county. It is singular coincidence that the funeral occurred on the 58th anniversary of the wedding day, June the 26th. As a business man he was careful, honest and reliable; as a friend he was thoughtful, kind and loyal, a man who will be sadly missed by his family and many friends.

HORTICULTURAL OPPORTUNITIES AFFORDED IN THE STATE TO MEMBERS OF THE WISCONSIN EXPERIMENT ASSOCIATION.

W. H. HANCHETT, SPARTA, MONROE COUNTY.

When we speak of Horticultural Opportunities I have no doubt but the thoughts of a large portion of this audience fly away to the sunnier climes of California or the gulf states, or protected Michigan; and when we intimated that there are horticultural opportunities offered right here in Wisconsin that are worthy of the consideration of the members of this intelligent Association you feel the waves of skepticism creeping into your minds and you recall the many times that the wily Tree Tramp with his book of beautifully colored plates has inveigled you into parting with your hard earned dollars for a few worthless novelties at exorbitant prices, but as you have attained the necessary intelligence to become a member of this organization we are not without hope that you have learned better business methods and that you have so far learned to sift the wheat from the chaff that you will recognize a good thing when you find it and reject all else.

While the field of horticultural opportunity may not be as broad in Wisconsin as it is in more favored locations it is broad enough so that every member of this Association who owns a farm-home may profit thereby to a greater or less extent.

To those who do not care to attempt anything in this line as a commercial venture there always remains the opportunity to beautify the home surroundings by the judicious planting of shade and ornamental trees and shrubs, and the supplying the home table with fresh fruits and vegetables from their own gardens thus adding to the beauty of their home surroundings and increasing the joy of the home people.

This is an opportunity that all should embrace, and it frequently occurs that where a thorough going farmer such as the members of this Association are supposed to be, plants and cares for fruits and vegetables with the primary object the supplying of the needs of his own household that he learns as by accident from the surplus of a fruitful year which he is able to dispose of to his less provident neighbors that the land

thus occupied is the most profitable spot on his farm. Or perhaps the wife and children learn, that while the lord and master is busily engaged in that fascinating occupation of "fattening more hogs to buy more land to raise more corn," that they may in this way increase the beauty of the home surroundings and finance its equipment with those things which add to its comfort and contentment, until even *he* is attracted from the subjects of his most solicitous care to take a little pride and enjoyment in a beautiful farm home.

The principal object of this paper, however, is to call the attention of the members of this Association to the fact that there are ample opportunities for young men with limited capital to engage in horticulture as an occupation with the full assurance that they make it a means of a livelihood and the building up of a home and as proof of this I wish to cite a few facts that have come under my personal observation in different parts of the state.

At Sparta this year approximately \$60,000 worth of berries were marketed through the fruit association as the product of about 300 acres. An acre of Wealthy apples just across the river in Minnesota brought its owner \$400 for a single crop on the trees and he had not put any labor in the orchard other than to mow the grass for several years. A year's product of an acre of grapes was sold on the La Crosse market for over \$400. A strawberry farm in St. Croix county sold a single crop from about 15 acres on the Minneapolis market for over \$6,000. A party near Sparta bought a farm for \$4,000, running into debt for the entire amount, and planted 2½ acres to blackberries and 2½ acres of red raspberries which have in seven years paid in net profits above the cost of all labor and expense for the farm, built a \$1,500 barn and equipped the farm with livestock and machinery. The product of a single half acre of strawberries near Superior was sold for over \$500. The product of a little orchard containing but a few square rods in the garden of a resident of the city of Ashland brought its owner \$60 in one season. The product of a 5 acre cherry orchard in the Sturgeon Bay district sold this past season for \$3,300 and its owner assures me that during the past twelve years it has produced twelve crops.

These are but a few of the many instances that might be cited showing what has and can be done in the horticultural line in this state. I have chosen examples from several parts of the state to show that opportunities in this line are not confined to any particular locality but may be found in most any

part of the state if one will but take up that particular branch which is adapted to the location in which he lives.

At the present time I believe there are splendid opportunities for young men of nerve and ability even though their available supply of capital is limited to build up homes and fortunes in that region, known as the Bayfield Peninsula by becoming pioneers in horticulture there, and were I to change locations that would be the land of promise that I would seek, with the full assurance of success.

I wish to drop this warning, however. Whenever the natural advantages of a region are exploited there the ever active real estate agent gets busy and the unwary are liable to get unmercifully taken in. The nursery agent also sees his opportunity and never fails to take advantage of it, so I must advise the careful inspection of land before purchase and that the prospective planter makes sure that he is buying advisedly before he places an order for nursery stock.

In things pertaining to what to plant, when to plant, how to plant, and how to cultivate, I would advise the individual to place himself under the protection of our State Horticultural Society. As the Experiment Association seeks to protect the farmer in the matter of seed grains, and forage crops, so the Wisconsin Horticultural Society seeks to protect the horticultural planter and a few volumes of its reports will form a valuable reference library in everything that pertains to Wisconsin horticulture.

OPPORTUNITIES FOR CO-OPERATIVE WORK IN NORTHERN WISCONSIN.

E. J. DELWICHE, SUPERINTENDENT NORTHERN SUB-STATION
FARMS, ASHLAND, WIS.

Perhaps no part of Wisconsin offers better opportunities for co-operative work with field crops than does the northern third of this state. The country is new, only a few varieties of grains and forage crops have been tried and in general we may say that no standard varieties are yet widely cultivated. Agriculture there, is much in the formation stage and needs to be developed along all lines. New varieties of grains and

forage crops are under trial at the sub-stations, at Superior, Ashland and Iron River. As soon as those are found to be worthy of introduction they should be tried by farmers under a greater range of soil conditions in order to further test their adaptability to the northern section. Members of this Association as a rule are better fitted to carry on these further trials than is the ordinary farmer, inasmuch as the special training you have received here at the Agricultural College has made you more or less familiar with the methods of experimentation. Consequently much valuable data can be obtained in this way.

During the past season the Agronomy section of the Northern sub-stations has carried on co-operative grain and forage tests with some ninety or one hundred farmers in the northern counties,—some of them members of this Association. We have been able to get valuable data as to the value of some of our crops, more could be had if better trained men were to make the trials.

This co-operative work ought to be of great value to this section and ought to offer fine financial returns to growers of the grains and forage crops well adapted to the region. There is a great and growing demand for good seed as evidenced by the number of inquiries received. I know a farmer located near Ashland, who last spring sold his entire crop of Oder-brucker barley, for twice the average market price. Oats, wheat, corn, and clover seed are also in demand. The quality of seed obtainable from local houses is often poor—hence the urgent need of some systematic work in the production of good home raised seeds. As soon as members of this Association have demonstrated that they have seed grain better than the ordinary, and they can easily do that, calls for such seed will increase rapidly. Not only can the product be sold to local dealers, but also directly to farmers. Members in northern Wisconsin who advertise what they have for sale will have no trouble in disposing of their surplus at good figures.

Not only is this producing of pure bred grains and seeds a paying proposition, but in a new section like northern Wisconsin it affords a grand opportunity for helping in the development of the country. Few things will aid the section more than the introduction of varieties of grains, grasses and clovers that are well adapted to the northern section. The members of the Experiment Association, working in co-operation with the Experiment Station can, and let us hope, will accomplish much in this matter of dissemination of good seeds.

Every member from the northern counties should consider

himself something of a missionary in helping along the cause of good farming in his own immediate neighborhood,—and the best sermon he can preach to his brother farmer is that which he writes out in green and gold on his own farm by means of good crops of clover, barley, oats, or corn. Nothing has hindered the development of agriculture in the northern section of the state more than the lazy, shiftless, unprogressive moss-back, who posing as a farmer, pre-empted the land simply to dispoil it of its timber, and nothing will help it more than the presence of industrious, intelligent men, who by making good use of the opportunities offered are carving out good modern farms. Opportunities for co-operation in all lines of farming in northern Wisconsin are numerous, and the fruit thereof is bound to be of great value, not only to the co-operators themselves, but the whole section of the state itself.

PUBLICITY TO EXPERIMENT ASSOCIATION WORK.

A. J. MEYER, HOWELL, MICHIGAN.

Mr. President, and Members of the W. A. E. A.: No one realizes more fully than do I, the inadequacy of paper in dealing with the subject assigned me, and, equally, no one regrets more than I, the situation that compels my absence from this, our seventh, annual meeting.

In my short talk to you last year I suggested that it might prove beneficial to us should we become more liberal patrons of the agricultural press. I believed then, as I do now, that our mission should be a broader one than that of merely growing seed grains. In a measure, I desire to make this paper a sequel to the one already alluded to, and I trust that the suggestions I have to offer may be made the basis of formal action at your regular business session.

“Publicity to Experiment Association Work,” does not exactly express the thought I wish to present today. As a matter of fact, I feel that our organization requires very little publicity other than that necessarily resulting from thorough, conscientious effort along the lines indicated by our leaders.

Let the good we do speak for us in presenting our just claim to public favor. We who live in farming communities, know all too well the mistrust with which a large proportion of the rural population view the acts and professions of those whose affiliations they do not understand. Neighbor Smith will accept with eagerness my recommendation of a new variety of barley so long as he regards me merely as a brother farmer, but let me approach him as a member of the W. A. E. A. with the very same recommendation, and Neighbor Smith promptly sidesteps. He immediately jumps to the conclusion that my recommendation is not without bias, and reads into it an intimation of graft, machine politics, or some other vagary that haunts, too commonly, the mind of the oft-gulled farmer.

The agricultural world is full of Smiths. They are the very men we want to reach, and if we can pound our gospel into them without their knowing it we shall be able to pile up results, fast and certain. It is one thing to grow and offer for sale choice varieties of seeds; it is quite a different problem to make people buy. We can do it, however, by instituting a campaign of education that shall reach every farmer in the state who reads an agricultural journal. Teach the man with the scrub grains the advantages of the improved varieties and we'll have him buying our seeds a lot sooner than if we go at him, hammer and tongs, trying to convince him, on the authority of the Wisconsin Agricultural Experiment Association that Silver King corn, Oderbrucker barley or Swedish Select oats are the proper varieties for him to grow.

There is a market in Wisconsin for ten times the quantity of seed grain that is being sold there at present. But it requires development. I believe the time is ripe for our organization to open up that market by each one of us doing a little toward educating the grain and grass growers of the state to a thorough realization of the necessity for using improved varieties and adopting better cultural methods.

I might urge the taking up of this line of work purely from a philanthropic standpoint, as a just and fitting return to the state for aid given us, but I know that such an appeal lacks the force of the one attuned to the "chink" of the "little iron dollar." Fellow members, we are considering a simple question of dollars and cents, if so be it please us to regard it in no higher light. With the rapid increase in the membership of our organization, it is only a matter of time when we will be compelled to take some concerted action in order to open up an outlet for the fancy seeds we grow. Let us do it now and

right here at home instead of waiting and finally being forced to drum up trade in other states. Let us give old Wisconsin a boost by leading every farmer in the state to clamor for better seeds and incidentally, pull ourselves up a notch or two by the bootstraps.

Now how can all this be accomplished? Let your business session decide. As a suggestion I would offer the following general scheme. At the regular meeting of our society provide for an editor and six associate editors, all to be elected by the Executive committee rather than by the society at large. There is no question but that the Wisconsin Agriculturist would be glad to give us the use of one page each week, not to exploit the Wisconsin Agricultural Experiment Association or to advertise our seeds, but to tell its 60,000 readers in good plain English without any brass-band-between-act vaudeville the advantages of good seeds, and to give specific instruction in regard to seeding, cultivating, harvesting and marketing the resultant crops. Make it the duty of the editor to plan the year's work and pass final judgment upon the articles submitted for publication. The "re-hashing" and editing of the original matter may largely be left to the associates. There should be no compensation offered or expected for any of this work. A canvass of the society will locate the members who are willing to contribute and the subject they desire to write upon. There are a hundred other details that I cannot present in a necessarily short paper.

In order to expedite matters, the editor elected might be appointed a committee of one to make terms with the Wisconsin Agriculturist or such other journals as he may select and put the scheme into operation. It would mean a little extra work for him at the start, but would gain in not having a lot of strange ropes to learn later on. Whatever arrangements are made should finally be approved by Secretary Moore.

On first thought, it will appear that the plan I propose is one that imposes a great burden upon the editorial staff. If their work is rightly planned, however, I believe there will be no occasion for considering it a hardship. Of course, we can't use a man on the staff who is looking for a "snap."

This scheme in its entirety is merely suggestive and is not offered as a solution of the problem presented for your consideration. I give it simply to make my idea of "Publicity to Experiment Association Work" more specific than I could by speaking in general terms.

THE AGRICULTURAL PRESS.

C. H. EVERETT, EDITOR, WISCONSIN AGRICULTURIST,
RACINE, WIS.

The Wisconsin Agricultural Experiment Association is one of the strongest and most important organizations for the promotion of agricultural knowledge and work, in existence. I have watched its development and growth carefully, and I want to congratulate you individually and collectively for the good work you are doing in placing Wisconsin right in the front rank as a great agricultural state.

There are many strong factors in connection with your Association that are not found in other organizations. In the first place your members have youth,—you are young farmers, full of life and ambition. You are all students of one school and have had a similar training and one adapted to the conditions under which you live. You are scattered over the state, living on your own farms and working under all the conditions of soil, moisture and climate found within our borders. Some of you are experimenting in the production of grains, others are growing alfalfa, while others are stockmen, dairymen, horticulturists, etc. You cover all branches of agriculture and the work you are doing is of untold value to the farmers everywhere and to the state at large.

The education you have received from the College of Agriculture has been practical and it has broadened you intellectually. It enables you to think more clearly, to reason and to sift out the useful from the useless; what we all need is to constantly cultivate the mind. We need to study and think. I once heard Uncle Theodore Louis, the veteran swine breeder of this state, who but a short time ago passed on from the labors of this life, say, "The higher we climb the broader the field of vision and the more we study the better understanding we have of our own ignorance." Never was a more truthful or wiser statement made. Uncle Theodore was a plain German farmer and swine breeder, but he was a student, he studied while he worked and unraveled many of the problems connected with the science of breeding and feeding swine and helped many a man whose vision was obscured because he had not tried to help himself and was not high enough up in his own business to see clearly, and so I say to you the more you train and cultivate your mind the better will you cultivate your fields.

The first thought of every man who works is profit, but the farmer must look a little further into the future than men engaged in other pursuits, for his profits depend largely upon the productiveness of his farm coupled with an intelligent understanding of what he is trying to do. He must put into practice such methods of culture as will increase and conserve the fertility of his soil. Land is continually increasing in price, labor is scarce and expensive and larger crops must be produced in less acres. Nitrogen-gathering crops must be grown to enrich the soil in nitrogen, and enough live stock must be kept to consume all of the crops grown, thus making the most of the feeding value of crops and saving the manurial value as well, which must be fed back to the land. Clover, live stock and crop rotation coupled with good culture will maintain a fertile soil and bring prosperity.

I see farmers everywhere who just make one hand wash the other. They do not get ahead. They work hard, but somehow they do not seem to understand their business. They do not understand the science of agriculture. Science means, to know, and these men do not know the truth about farming. Do you know what ails such farmers? It is because they don't read, study, and reason, they refuse to cultivate the mind, to think.

A man may turn a good furrow, but if he does not know whether to plow deep or shallow or whether the furrow slice should lie down flat or be left on edge, he can not be called a successful farmer, for he does not know why he plows thus and so does not understand the science—the truth about plowing. He is a mechanical worker. Another man may be a liberal feeder of dairy cows, give them all they will eat, yet if he does not know something about the composition of milk and feeds and the influence that feeds exert upon animal growth, life and character, he can not be called a wise feeder for he does not understand the business in which he is engaged—does not know the truth about it. He, too, is a mechanical worker—a machine—works with his hands but not with his head.

What ails this class of men, why are they content to go through life working hard with the hands but refusing to cultivate the mind; turning away from the light as it shines out through the agricultural press and from hundreds of other sources? Men educate themselves, become successful in life to a marked degree by reading and thinking.

STORY.

There are many opportunities for training the mind, chief among which is the agricultural press. It is the farmer's teacher, his school, his agricultural college, his experiment association, his veterinary college, his horticultural and poultry instructor, his question box. It goes to him once a week, chuck full of facts about his business. If it is edited by a man who knows practical agriculture and understands all of the conditions under which farmers he seeks to help, live and work, if he has been a farmer himself and knows from years of experience, then his sympathies are right, his heart is in his work, he gets close to his constituency and stays there; farmers have confidence in him, and the paper he sends to them is the strongest of all factors created to help them solve the problems constantly before them.

The Agricultural College has done and is doing a splendid work for farmers, it is constantly clearing up the mysteries of agriculture and helping the tillers of the soil in a thousand ways. Your Association has not an equal among kindred organizations in its ability to get close to the truth about agriculture and to scatter correct ideas among the farmers of the state. No organization has done more for the dairy industry in the past than the State Dairymen's Association. The cheese makers and butter makers are organized, we have several strong live stock breeders' associations, the horticulturists, poultrymen, beekeepers, and other interests are organized and all are doing splendid work, but none of these institutions nor all of them combined have the power possessed by the agricultural press in disseminating agricultural knowledge—in spreading the gospel of agriculture among the masses. It carries the deliberations of this and all similar organizations to a multitude of farmers, who are too busy to attend all such meetings in person, but who have time to read their farm papers and to keep in close touch with the advancement constantly being made in their profession. The editor of a good agricultural paper selects, boils down and publishes only such matter as is of direct value to his readers. The matter is fresh, timely and helpful. In no other way can all of this valuable information be conveyed to the class whom it is intended to benefit.

As a class farmers do not take kindly to bulletins, reports, etc. They do not understand many of the terms in such publications and the figures and tables are often unintelligible to

them. It costs a vast amount of money to publish and distribute such literature and it does not accomplish the purpose for which it is intended. It remains for the agricultural editor to sift out, condense, simplify, and make plain the facts, as found by the Agricultural College, your Association and other like organizations, so that farmers become interested at once and acquire practical useful knowledge thereby.

The cost of all this valuable work is but a trifle to the farmer, probably not more than one cent a week, and to you and all other institutions seeking to help the agriculture of the state and nation, the cost is nothing. Can you not realize the power and value of this medium through which you speak to 60,000 or more farmers without cost? Do you not understand that if you would at once become well known for the good work you are doing, you must use the columns of such a paper?

There is no power, gentlemen, that equals the agricultural press in its ability to convey facts and to impress them. You may make a valuable discovery of great value to the farmers of this state and you may shout it from the housetops, but it will be several years before you or your discovery will become known; but if you will go to a paper like the Wisconsin Agriculturist with your information nearly every farmer in this great state will know about you and what you have done, in one week's time.

The agricultural press goes to its readers regularly 52 times a year, its pages are replete with useful practical up-to-date information. It is the farmer's friend and adviser and has great power in shaping public opinion. It advocates what is good for citizens and state. It is not under the control of any corporation or clique. It seeks not to injure any man nor belittle any worthy undertaking. It is constantly seeking the truth and is fearless in advocating right principles and correct ideas as well as in denouncing wrong methods and dishonest acts. It can not be coaxed nor hired to admit anything to its columns of a doubtful character or that may prove detrimental to the best interests of its readers. The editor of a good agricultural paper stands between the public and the farmers who read his paper. He is ever alert in their behalf and seeks to guard their interests as he would his own. He has their confidence and they come to him daily in large numbers for advice which is given to the best of his ability. They lean on him and trust him because he is painstaking and careful in their behalf and has never knowingly given them bad advice.

This Association, as well as every other organization created for the betterment of mankind needs publicity, and I want to impress upon you the power and value of the agricultural press in this respect. There is no way in which you can accomplish so much for the agriculture of the state and bring so much credit to yourselves individually and collectively as by the liberal use of the agricultural papers that circulate in your state. When you have found out something that is of value to farmers generally, go to your paper with it. The editor will always be glad to publish it and to give you full credit. I receive many letters every day asking for information about growing alfalfa, soy beans, vetches, rape, clover, millet, silo construction, dairy rations, swine feeding, etc., every one of which is answered either through the paper over which I preside or by mail. Farmers are hungry for information. They are ambitious to succeed and to get on in the world, they are constantly urged by their agricultural paper to sow clean pure seed, to grade up their herds and flocks, to build silos, etc., and they want them from practical farmers like yourselves. A farmer has more confidence in the advice he gets from a man who has met success in the same line of effort, than that from any other source on earth. He believes in the successful farmers and likes to read about his methods, so I say to you, let your light shine through your farm paper. Tell the farmers what you are doing, how you do it and the results. That is the quickest and surest way in which you can make this Association the greatest factor in agricultural advancement in existence and also do yourselves and the farmers of your state the most good.

There is another point in connection with the agricultural press that is of interest to you as breeders of grains and live stock, and that is the publicity such a paper can give to your business wants. Many of you are growing seed grains and raising pure bred live stock for which you want a market. There is a great field in this direction. You haven't begun to enter it and have no idea of the inquiries I am getting daily for Oderbrucker seed barley, Swedish Select oats, Wisconsin No. 7 and 8 seed corn, etc. Every inquiry is answered and the writer is referred to some one who is or who has advertised such seeds in season and the further assurance is given that such advertiser is reliable and honorable.

Some men seem to have a mistaken idea about advertising. They seem to think that if they can get a circular into the hands of some one who is in need of what they have to sell,

that it is the best kind of advertising. They forget the fact that no one has time or use for circulars and that they are usually thrown away unread. They also forget that it will cost \$12 to \$15 to have printed and mail 1,000 circulars, and that for \$2 or \$3 they can publish the facts contained in the circular, in an agricultural paper where it will be seen by 60,000 farmers who are buyers.

If you are producing something that you desire to sell to farmers there is but one economical and effectual method of disposing of it, and that is by advertising in the agricultural papers that have a good circulation.

Such a paper is the most constant, powerful and helpful friend that the farmers have today, and yet I know of farmers who do not take such a paper nor any other kind. What do you think of such men? Is there any help for the man who won't help himself? Can you suggest any way in which such men can be made intelligent farmers? Can you think of any scheme by which their powers of reasoning may be set agoing? Can they be reached and made to see themselves as they really are? It won't do to tie such a man up a tree where he can not get away and then tell him that he doesn't know anything that he is not an intelligent farmer, that he is chuck full of self conceited notions.

This Association, through its individual members, by precept and example and a little personal exertion or persuasion, perhaps, can do more in arousing this class of farmers, in stirring them up and opening their eyes to the possibility before them, than all other influences together. It is pretty difficult to do anything with them in any way which will lead them to think that they are being taught anything. They don't propose to be advised by any one for they know it all now. You must show them quietly. Let your methods, crops, live stock and whole farm be a constant living example for them. The truth about agriculture will slowly soak into them and they will begin to take notice and to ask questions. When that time comes there is hope for them.

THE FUTURE OF AGRICULTURE.

HON. J. M. TRUE, BARABOO, SAUK COUNTY.

Of the world's great industries, Agriculture seems to have been the least progressive. In all countries, in its early stages, it has been satisfied by rude and wasteful processes to rob the soil of its fertility to meet its immediate wants, regardless of future needs or capability of production.

Scarcely any agricultural section of our own country has escaped this period of ignorant or thoughtless waste of natural resources, so long as its virgin soil needed only to be indifferently cultivated to produce a harvest; and men were brought to a consideration of better methods only by the failure of a deteriorated soil longer to respond to their ruinous practices.

Some of us remember when the Wisconsin farmer's revenue was almost completely dependent upon his wheat crop; when his live stock consisted of the farm team and a few cattle and hogs running upon the commons or upon the public highway. The farmer of those days had few progressive ideas. He was not actively seeking for them, but, on the contrary, was distrustful of any thought or method that was at variance with long-held and firmly established opinions and practices.

The average farmer was almost of necessity narrow in his views of public affairs, and often mean in his administration of personal matters. He took little interest in the business world, and when he had occasion to deal with it he felt compelled to act largely upon the defensive, to protect himself from his better posted and often unscrupulous opponent.

Frequently he emerged from the contact conscious that he had been over-reached, and in consequence he became sore and distrustful of business men generally, and sought means whereby he might get even with him with whom he would next deal.

This prompted the putting of the poor grain in the middle of the sack; the over-feeding of livestock just before weighing for sale, and a score of other disreputable practices, often quoted to prove the meanness of the farmer.

He has been the special victim of the lightning-rod agents; patent right venders; peddlers of "Cheap John" goods; school apparatus chats, and tree merchants. In derision he has been hailed as "granger," "buckwheat," and "hay-seed," by brainless, flippant, representatives of the "upper class." In politics he

has been duped, and used by the crafty leader to furnish votes, while his interests have been disregarded or discriminated against.

There is little wonder then, that under such influences the farmer became narrow, sour, and, consequently, non-progressive.

That agriculture at the present time is so far advanced from conditions just described, is attributable in general terms, to agricultural education. Perhaps not all the potential influences would in a technical sense be termed educational; neither has the education employed been always technically agricultural, but the reason that the farmer of today differs so much from the farmer of fifty years ago may be traced to observation, study, and the practice of new ideas and new methods largely suggested by leaders of thought and investigation along agricultural lines.

I can think of no single instrumentality that has done more to scatter broadcast the leaven of improvement in agricultural conditions than the Farmers' Institute. The bringing directly to the farmer, by a brother farmer, of experiences and actual results attained in his work,—making up the gospel of easier methods, larger productions, and better prices, started a wave of thought, experimentation, and actual work, that has produced wonderful results.

When the Farmers' Institutes were first started a small percentage of the farmers of the state were in sympathy with the movement. Many would not attend the meetings, others went to criticise or ridicule, while open opposition and disturbance from farmers was not an unusual occurrence.

In every community some men were found who accepted the teachings of the Institute and practiced them upon their farms. Incredulous neighbors noted results, and in time fell in line, usually without giving credit to the source of information until today there is scarcely a farmer in the state who is not receiving direct benefit from the teachings of the Institute. Through this means was first brought to the attention of the farmer improved methods of dairying, the difference in profit between good and poor dairy cows—resulting in the Babcock milk test; the silo, dragging and shallow cultivation of corn,—the best methods of handling and applying stable manures, the balanced ration for live stock, and a score of other practical questions that had not previously been given attention.

It is true, mistakes were made in the early Institute days; extravagant statements were made, and methods recommended that were not advisable, and the work was hindered thereby. To illustrate, the recommendation of the building of cheap wooden silo did much to discredit a good thing in our state.

But I am today supposed to exercise the gift of prophecy and talk of "The Future of Agriculture."

Had it been possible, fifty years ago, to have held a meeting like this, and had someone in discussing the topic assigned me today, truthfully predicted what has since taken place in agricultural advancement, his reputation, if not his liberty, would have been jeopardized. To us it seems impossible that an equal advance in agricultural thought, method, and result, can be made during the next twenty-five years, to that of a like period just passed, and it is doubtful if the gains to be made can be as striking, not to say spectacular—as in the recent past;—but as in the perfecting of a difficult piece of machinery, finer and more intricate work is required than in the construction of the frame work, so the new work in agriculture will be of higher character and better quality.

Our farmers are ceasing to be frightened at the use of scientific research as applied to their work, and from this field large drafts will be made in the future.

Agricultural colleges, experiment stations, and the Government Department of Agriculture will undoubtedly furnish much material consideration and adoption. There may be some danger that these influences may be compromised by a tendency to allow theory to overshadow practical work, and to overfeed the farmers upon undigested or overestimated propositions, but the coming farmer can be counted upon to largely regulate these matters by his own practical judgment.

I think I am safe in predicting that in the future agriculture will be conducted more thoughtfully, more intensively, and that as a vocation it will gain in popularity.

Thought induces study, and study leads to investigation that produces results. Too much agricultural work is yet done thoughtlessly. Customs prevail that have become habits, based upon theories that never had any practical value, and are followed from mere force of habit.

In the future, the farmer will consider his farm as a distinct proposition with which to deal. He will study the character of its soil, or soils, and their adaptation to the growing of different crops, the best fertilizers available, and the soil and crop to which they are best applicable, and the in-

fluence of different methods of cultivation upon soils and crops. He will consider his location with reference to markets as helping to determine the character and extent of his work. In the selection of seeds for planting, as well as in the breeding of farm animals, he will recognize the truth of the proverb that "Like begets like," and will form high and correct ideas of quality. To do this he will of necessity familiarize himself with the best specimens of breeds and their peculiarly strong points, that in selecting he may adapt them to his farm and chosen work.

In his farm buildings and surroundings he will consult comfort, convenience, and taste. The farmer's home will lack none of those conveniences of heating, lighting, water supply, and sanitary construction that we find elsewhere, and in the enjoyment of these he will be free from burdensome rates charged his city friends.

The agriculture of the future will be more intensive. The element of waste now enters too largely into farm operations, waste of labor, waste of soil resources, waste of products. There can be no doubt that labor-saving machinery is to enter still more largely into the solution of the labor problem of the farming of the future. As today it enables us to do infinitely more work and in better form than did the methods of our fathers accomplish, so in the future will it perfect work already commenced, and enter new fields of operation. The farmer of today hesitates to buy the improved machine put upon the market this year, because he feels sure that next year's output will possess some marked improvement over the present.

We have not yet begun to reach the capabilities of farm production, even in our more advanced districts. We pretend to cultivate too much land, with the result that little is handled, while broad acres of rich soil upon nearly every farm are allowed to grow up to useless and unsightly brush and rank weeds, or from want of proper drainage is inaccessible and practically worthless for farm purposes.

With the increase of population of the country, and the corresponding necessity for larger farm production, farms must be worked more intensively. Not only must every rod produce some useful crop, but by intelligent selection of seed, thorough preparation of soil, and economy of space in growing, the chances of production will be largely increased.

In the handling of live stock, debit and credit will be kept with the different animals, and only those retained which show

the largest percentage of profit, and selection for breeding purposes from such animals will produce progeny with the highest capabilities.

It is said that the profits of the Standard Oil company are largely represented by what is obtained from the by-products of the industry; while in our great packing establishments not a particle of the slaughtered animal goes to waste.

So the farmer of the future will discover means whereby many by-products that are now wasted, or used for results in a crude way, may be made to contribute to his revenue.

It has been demonstrated that much of the refuse of agricultural products may be converted into alcohol, capable in industrial enterprises of performing the same work for which gasoline is now so extensively used. The United States Department of Agriculture is now pushing investigation, and while work in this direction is being vigorously opposed by the Standard Oil company and its emissaries in congress, it may safely be counted among the coming agricultural enterprises.

With the general attractive outlook for agriculture that is already apparent, and with the undoubted assurance that its future is to increase in interest and profit, there is little reason for wonder at the general trend of popular sentiment toward agricultural pursuits. Wealth acquired in other channels is being invested in farm and live stock enterprises. Our agricultural colleges are thronged by bright young men who read the signs of the times, and wisely choose this field rather than the already overcrowded ones of the so-called professions, and many of these young men come from city homes.

Yes, agriculture is surely coming into its rightful position among the world's industries. The farmer will cease to be considered society's jest; the sharper's plunder; or the politician's dupe. He will recognize that nothing is too good for him if he really wishes and appreciates it.

To the present telephone and rural mail service is to be added the parcel's post, and postal saving's bank. He must soon overcome that unaccountable prejudice so tenaciously held by many against good roads movements, an enterprise from which he will surely reap greater benefits than the representative of any other avocation.

In "the good time coming," while the responsibility and activity of the farmer will in no sense be diminished,—for the old adage will still hold, that,

"He who by the plow would thrive,
Himself must either hold or drive,"

muscular strength will be secondary in importance to mental activity.

While I distinctly remember the peculiarities of belief and method of the agriculture of fifty years ago, and have since then been constantly in place and disposition to note the marvelous changes that have occurred, my faith today is so great in the future of agriculture, that I count it one of the greatest misfortunes of advanced age, that I may not personally have a larger part in its accomplishment.

COOPERATION OF THE EXPERIMENT ASSOCIATION WITH PUBLIC SCHOOLS IN THE DISSEMINATION OF GOOD SEED.

SUPT. G. W. DAVIES, NORTH FREEDOM, SAUK COUNTY.

Wisconsin's motto is "Forward." Our nation's motto signifies that in union there is strength. The subject of this paper combines the sentiment of both mottoes in suggesting the union or co-operation of school and farm interests in this forward movement for the dissemination of pure seed throughout state and nation.

The school should train for vocation. We should look to the farm for the farmers of the future, hence we must look to the country school to furnish the technical training that will fit our farm boys and girls for a useful farm career.

Now that agriculture is being taught in our schools, we should seek every means possible to make the teaching more practical that more good may result.

The co-operation of this Experiment Association with the schools in the dissemination of good seed, will be a powerful influence that will be felt in many ways, and I anticipate a bountiful harvest of ripened grain.

In addressing you, I realize that I am speaking to an unselfish body of men—men whose motive it is to place Wisconsin in the front rank of states as a seed producer.

No other factor is so essential to the success of any great move-

ment as that it be backed by men, "high minded men, men who their duties know, but knowing their rights, dare maintain." Emerson says, "the truest test of civilization is not the census, nor the size of cities, nor the crops; but the kind of men the country turns out," and J. G. Holland would add, "Tall men, sun crowned, who live above the fog in public duty and in private thinking." Then let us have our registered cattle and horses, our pure bred and pedigreed corn or barley, cared for and improved by *pure bred men*.

ERADICATION OF WEEDS.

We can not hope to properly spread the gospel of pure bred seeds while we allow our fields and our grain to be infested with troublesome weeds or weed seeds. As stated in that most valuable and artistic bulletin, "Farm Weeds of Canada," issued by the Department of Agriculture at Ottawa, "There is no weed known which can not be eradicated by constant attention if only the nature of its growth be understood."

Too much stress can not be laid on the economy of using well cleaned seed for all crops, even if what seems to be a very high price has to be paid for it. In this connection it seems wise to adopt the plan of growing one's own seed grain, carefully selected to a desired type, upon a plot of land especially prepared and kept clean for the purpose. The institution of such a plan of securing high class seed will affect the condition of the whole of a man's farm; for he will have an eloquent object lesson of what a large yield may be produced by careful work on a small area, and also how much larger monetary returns may be secured in his whole crop by adopting similar measures.

GOOD SEED IN EAU CLAIRE COUNTY.

Miss Lura A. Burce, superintendent of Eau Claire county schools, has a very practical and efficient way of getting valuable agricultural bulletins in every school library in her county by preparing a list of bulletins desired for school use, in the form of a letter of application to the Department of Agriculture forwarded to every teacher for signature of name and address, with request that it be mailed at once. When an especially good bulletin or circular is published either by the state or United States Departments a list of teachers' names

is sent to the Department, asking that they receive the bulletin for school use.

Miss Burce is also distributing good farm seeds as well as agricultural thought. Oats, barley, corn, soy beans and inoculated soil were received from Prof. Moore, together with flower and garden seeds from the United States Department of Agriculture, and distributed to pupils making application for the same. The different seeds or grains were planted at the farm homes by the children. Parents and pupils are much interested in the movement and the results in Eau Claire county show that the spread of pure seed grains by co-operation with the schools, is a movement "worth while."

SAUK COUNTY CORN CONTEST.

As a means for the encouragement of the growth of better corn and the development of better boys, a corn growing contest was announced by the county superintendent in a circular letter sent to every school.

The two varieties of corn grown were the North Star (Yellow Dent), donated by Toole Bros., Baraboo, and the Wisconsin No. 7 (White Dent), sent free by Secretary Moore. Boys desiring to enter the contest sent applications for seed together with postage to cover expense of mailing; three cents for 300 kernels; five cents for 500 kernels. Each boy was required to do the entire work of planting, cultivating and caring for his corn.

Two hundred boys were supplied with seed and on July 3rd, a letter was sent to every boy in the contest with suggestions as to frequency and depth of cultivation; the dust mulch; agricultural bulletins to be ordered; selection and care of seed and exhibition ears; record of area and yield of corn plot, computing yield per acre; and the advisability of visiting the best farms in his locality.

A competent judge will score the corn at the winter Farmers' Institute when a prize of five dollars for the best ears and several other prizes, will be given.

The schools adjacent to the place of holding the Farmers' Institute will be invited to attend one day of the meeting when the program will be of especial interest to the pupils and teachers of the country schools.

Elementary work in corn judging by the use of the score card, will be taken up and next season boys will be encouraged

to plant larger fields of corn keeping a systematic record of the product of each ear.

For the contest work Prof. Moore informs me that no pure bred oats are available for distribution by the Association this year, and only those who first apply can secure the Oder-brucker barley, while doubtless all may be supplied with seed corn. A plot of ground two by four rods will require five pounds of oats or barley or two pounds of soy beans.

LOCAL CLUBS.

I believe that it will add greater interest to your individual experiments if you succeed in interesting five or ten or twenty young people in your community in grain experiments similar to those being carried on by you.

This suggests the desirability of having meetings at definite times for discussion and comparison of methods and results. It will result in the organization of local clubs of the young people of a town or community, who are drawn together by a common interest, which may be the production of better corn, the raising of soy beans or alfalfa, or the capturing of a prize at the State Fair or National Corn Show.

Young man, if it is possible for you to become the center of such an organization you need not worry about the compensation so extreme will be your pleasure and so great the satisfaction.

EDUCATIONAL EXCURSION.

The educational excursion to the College of Agriculture has continued to be a means of quickening the people's interest in better education for the farm.

Three excursion trains carrying about fifteen hundred people, were required for the Sauk county excursion June 1st, 1907. The boys of the corn growing contest who were in attendance, were given a very interesting talk by Prof. R. A. Moore on the cultivation of corn, care and testing of seed, and some points to be observed in selecting ears for breeding or contest purposes.

If satisfactory arrangements can be made, the 1908 excursion will be run to the Minnesota College of Agriculture.

CROSBY ON BOYS' CLUBS.

In a bulletin on "Boys' Agricultural Clubs," issued by the United States Department of Agriculture, Mr. Dick J. Crosby speaks encouraging words for the movement and gives the following summary:

(1) Through their agricultural clubs the boys have been affected in many ways. Individually they have been led to observe more closely, to recognize good and bad qualities in the crops they have raised, and in the insects, fungi, and other things affecting these crops; they have met and learned to solve some of the problems in the improvement of crops; they have learned that improvement in one direction is not always, or even usually, accompanied by improvement in all directions; they have learned the value of labor, the cost of producing crops, and how to keep simple accounts with different crops, they have been encouraged to read good literature, and have learned some of the sources of agricultural literature; their views have been broadened by contact with others and by visiting institutions of learning, highly developed farms, and other points of interest, and, finally, the power of taking the initiative has in many cases been strongly developed in them.

(2) Collectively the boys have learned the value of organized effort, of co-operation, and of compromise, and the social instinct has been developed in them—a matter of great importance in rural districts, where the isolated condition of the people has always been a great drawback to progress.

(3) The influence upon the communities at large, the parents as well as the children, has been wholesome. Beginning with an awakening of interest in one thing—better seed corn—the communities have rapidly extended their interest to other features of rural improvement, with the result that in the regions affected by the boys' agricultural club movement there has come about a general upward trend to the thoughts and activities of the people."

You young men who have the interests of your community at heart; you who wish to do something for your neighborhood and your state, interest yourselves in the welfare of the little country school at the cross roads. Visit the school. Talk with the teacher and pupils both during school hours and outside. Talk about the soil, its care and improvement; about plant food and how obtained; about balanced rations and the

feeding value of different farm crops; the care and breeding of farm animals; pure bred seed grains, showing the merits of the different varieties of oats, barley or corn; give methods of preparing seed bed and methods of cultivating and harvesting grain. Tell how to prevent fungus diseases of plants; how to destroy weeds; tell of the care and selection of seed and give a simple method of testing the germinating power of seeds. When you visit the school take with you samples of highly bred corn and other grains; explain the methods of improving by careful selection and breeding and interest the boys and girls in corn judging.

You will find these boys and girls good listeners, eager questioners and they will be your friends. Encourage them to experiment with little plots of ground of their own and aid them in the county contest.

Tell them of the Wisconsin College of Agriculture with its massive buildings, commodious barns, beautiful lawns and opportunities for study.

You will inspire these young people with a love for the farm and farm labor and implant a desire for further light in agricultural education. You will increase their love for school and good books. You will arouse in pupil and parent enthusiasm for better, more wholesome country life and extend the movement for the dissemination of pure seed and broader education along agricultural lines.

EXTERMINATION OF FARM WEEDS.

O. R. FRAUENHEIM, RANDOM LAKE, SHEBOYGAN COUNTY.

Members and Friends of the Association: In Adam's garden, as in all gardens, weeds grew. Thence the order that Adam should earn his bread by the sweat of his brow. Seed from this garden has poisoned every field in the world and still the lot of the farmers is to fight weeds unceasingly.

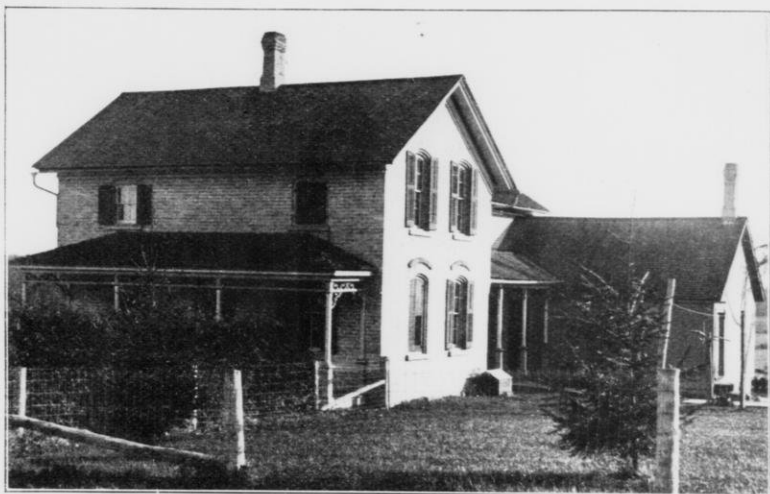
And still weeds come. We not only have the weeds of our field but find weeds in our cultivated crops and herds and I think I may say farmers. We may plant the best seed and some of the resulting plants will be inferior, the same is true of our herds, we will always have to be on the look-out for the

unprofitable producers. I will however not discuss these types of weeds on the farm but will confine myself to the weeds of our fields and give some practical methods for their control and eradication.

Weeds are a great menace to the members of the Association, especially those that make a practice of growing select grains. Therefore we should co-operate in the work of their destruction, not only ridding our farms but helping our neighbors how to do so with the best methods. Weeds cost farmers millions of dollars annually, both in direct losses and in expenditures for labor and material necessary to protect their crops. In glancing over statistics of farm crops of our country and allowing a loss of only five per cent, which is much too low, one will be impressed by the great sums of money lost annually by the farmers. Is it not time that we will all join in the warfare toward the destruction of the pests?

The old adage, an ounce of prevention is worth a pound of cure, is something every farmer should adhere to, providing he has none of the bad weeds but most farms have weeds of some sort. Weeds are spread in various ways, but the careful farmer is forever on the look-out whenever he purchases seeds or millfeeds, for often-times farms become badly infested through these sources. Some of the worst ones are spread by the wind and birds, and yet birds are some of the best natural forces at work in the destruction of weed seeds. Persistent and thorough work are the main essentials required in the extermination of weeds. The remarkable vigor and prolificacy caused by the struggle for existence among weed families, make them well fitted to drive out other plants, therefore we cannot expect to succeed if we employ slipshod methods.

The main object in weed destruction is the prevention of leafage, thereby destroying the protoplasm of the roots. This can easily be accomplished by cutting with a scythe or spud, where only a few are to be destroyed, but it is a laborious task in fields overrun with one or another species. With the use of sulfate of iron for the eradication of weeds, particularly those having wide leaves, it will be comparatively easy to prevent leaf growth and subsequent seed production and ridding our fields of some bad weeds. This method was first used for the eradication of wild mustard, but the experiments showed that the solution had a detrimental effect on other weeds growing in the fields treated. The growing grain was practically unharmed.



Farm Home of O. R. Frauenheim, Random Lake.



Dairy Barn, Granary, and other buildings on the Frauenheim farm.

In applying sulfate of iron, a twenty per cent solution is sprayed over the fields infested with mustard, with a machine designed purposely for the work. The solution does the most effectual work when the plants are in the fourth leaf. If the plants are larger, the efficiency of the solution is increased with the addition of two per cent sulfuric acid. The sulfate of iron has a detrimental effect on daisies, cockle-bur, bind weed, milk weed and annual sow-thistle. Last spring lawns and meadows were overrun with dandelions. In carrying on experiments in cooperation with the experiment station, I conceived the idea of applying the sulfate on the dandelions growing on the lawn. One careful application with the addition of two per cent sulfuric acid did very effectual work, making an easy and cheap job of getting rid of those yellow flowers that are so troublesome on our lawns. I afterwards learned that work along the same line had been carried on at several of our experiment stations with the same results.

I also experimented with the sulfate of iron on sow and Canada thistles. We consider these pests the worst of any of the farm weeds. The solution was applied at various stages of growth of the thistles, but did not find it effectual in any case.

We have worked with a method in the control of sow and Canada thistles for several years past and find that we can obtain good crops on fields infested where otherwise no paying crop could be grown at all. We sow an early maturing crop on infested fields, preferably barley. Our aim is to put the plow at work as soon as the crop has matured and is removed. Plowing very shallow, not deeper than three or four inches. A plow of three gangs, cutting a furrow of nine inches to each plow does very good work and is well suited for this purpose. We disk and harrow at intervals of a week in order to prevent all leaf growth. If rain prevents frequent cultivation, we use a home made surface cultivator. The aim at all times is to prevent all leaf growth. The land is finally plowed deeper late in fall thereby exposing the roots to the frost. Some advise growing corn on land infested with these thistles, but we have always found that corn is the poorest crop to grow on such fields, as deep cultivation cannot be successfully practiced without injury to the corn.

Leaving the land lie as meadows for a long term of years generally kills these thistles but land is too valuable for growing common hay after it has been grown on the same field for several years. Alfalfa is better adapted for this purpose than any other crop, for if carefully managed will yield paying crops

for years. It has a fast and dense growth, frequent cuttings and long stand which all tend to subject these pests by preventing all leaf growth and finally starving the plant. One objection to alfalfa, is that these weeds will grow on land too wet for alfalfa. For such places a good timothy sod has a detrimental effect and must be depended upon.

Summer fallowing has good results in a dry season but is not always effectual in the eradication of sow and Canada thistles, but can generally be depended upon in the destruction of quack grass.

One word about the weed laws of the state. We have good weed laws but they are seldom enforced. It is the general practice for the highway commissioner to hand the tax-payers of his district the weed notices and never pay any attention, whether the weeds are cut or not. The laws are for a good purpose and we should see that they are enforced for in this way the introduction of weeds on uninfested farms can be prevented to a large degree. Absolutely no excuse exists for the dilapidated weed-grown farms of this state. The farmer who allows weeds to riot and seed around his farm is slipshod in his methods and unless he mends his ways will become slipshod in his mind.

HORSE BREEDING IN WISCONSIN.

A. S. ALEXANDER, V. S.

In conducting an active educational campaign against the use of grade and "scrub" stallions and in favor of utilizing pure-bred, registered stallions in the horse breeding operations of the country, one of the strongest arguments raised against the latter class of sires is the weakness of their colts at foaling time. We do not mean to say that all pure-bred stallions sire weak colts; we do mean, however, that here and there, in far too many instances, the accusation is correct, and "pity 'tis true." On the contrary, it is correctly alleged in favor of the mongrel, cheap, grade, or scrub stallion that his progeny is robust, strong, "able to stand up and suck" at birth and seldom, if ever, afflicted with the several ills and ailments so commonly characteristic of the offspring of the big, fat, pampered

"company stallion" that cost so dear, proves so difficult to keep in shape, and often is a positive nuisance to the member of the company to whose lot the keeping of him falls. And often it is because the said member knows little or nothing of the proper methods of caring for and managing the stallion that the results of his maintenance and use are so distressingly disappointing not only to the stockholders but to those who have paid their money in service fees and drawn blanks at foaling time.

There is no good or logical reason for the general use of grade and mongrel stallions for breeding purposes other than the one that they are likely to beget a large proportion of lusty, vigorous colts, whereas those from the registered horse, that stands at a much bigger fee, are apt to come into the world weak and puny, crooked legged, or fat, flabby, delicate and with big, thick, slowly healing navel cords. Perhaps one might credit the non-registered stallion side of the argument with the additional fact in their favor that registered horses are often too dear and too scarce, hence the need and prevalence of the non-registered, mongrel and mixed-bred nondescript cheap stallions throughout the country. Be that as it may, we heartily deplore the fact that pure-bred stallions so commonly are pampered, hence rendered partially impotent and too often the sires of weak foals.

The owner of the grade or scrub stallion puts his "stud" to work in harness just the same as any other horse on the farm and so the beast becomes docile, instead of a squealing, rearing, kicking or biting beast; and work renders the fat out of him or keeps it from forming and his muscles wax large and strong and as his blood is kept pure by perfect circulation and perfect excretion the product of that blood—procreative fluid—likewise is perfect in quality and its union with female ova—germ cells—of the worked mare results in the formation of a rugged colt. The said scrub stallion costs little to start with and no more to keep than the ordinary work horse, hence his service fee is put down low enough to be attractive to the average mare owner and he gets plenty of business because of his cheap fee, his handiness to the farm where the mare is kept, the friendship that exists between the neighbors, the popularity of the owner and for the last and most weighty reason, that foal will be likely to prove strong and active at birth and then go on without mishap until he grows into a pretty decent looking, general purpose work horse.

To the credit of the pure-bred registered stallion should be placed a majority of these "grade" stallions if we are to believe

the statements of their owners. Anyhow most of them claim that their studs were sired by such horses and few of them will confess to pure-scrub blood in the veins of their breeding animals. Often, however, the blood is much mixed and in reality the stallion is not a "grade" but a "mongrel;" but in many other instances we find that the non-registered stallions have one or more straight top-crosses of pure-blood or that of standard-bred sires, as the case may be, whether the animal is of draft or light breed. The blood then is not that which counts with the farmer in the use of the grade, scrub, mongrel or mixed-bred stallion. He is after the cheap fee and the handiness to his farm and the known fact that the said stallion begets rugged stock.

Granting all this we come to the case of the registered stallion and it must be confessed that in a majority of instances where he is worked just as if he were a scrub and had cost but a few hundred dollars his colts come strong and the number of them is sufficient as a due proportion from the number of mares served. But few there be that so treat their expensive pure-bred company horse. His pedigree is a fine one; his fame is loudly advertised by word of mouth and printed statement; his owners are anxious to make a lot of money from his use; the farmers of the big district through which his fame is noised abroad are sufficient in number to insure plenty of mares—too many of them in fact—and so the stallion is allowed to over-exert himself in service when he has not been properly prepared for the task and is not sufficiently exercised to keep him in muscular condition. That he may "live up to" his advertised reputation for good looks, that make him different from the "common horde," his attendant stuffs him with rich food prior to the breeding season and quite likely he seldom takes him out of his box stall. In several instances we have heard of such stallions staying indoors from the end of the breeding season to the opening of the next one and some of them have inhabited basement stables. As a result of overfeeding and lack of exercise the pampered stallion tends to become fat and flabby and as excretion is poorly carried out in his system it becomes clogged with effete matters and deficient in healthy tissue cells and sperm cells, which endow his semen with the power of procreation. Always throughout nature the production of cells in tissue is dependent upon the pre-existence of cells and as truly the character of new cells must intimately depend upon the character of the parent cells. If the latter are weak the produced cells will be weak; if the parent cells are strong they will produce

strong cells if combined with equally strong cells from the female side of the equation. If they are weak and mated with strong cells of the female, part of the weakness possibly may be offset by that fact, but never is it possible for a combination of one weak and one strong element to make a perfectly strong product. But when two equally strong elements are blended the resultant product should be as strong as the strength of either parent or stronger as a result of the blending of two strong elements. And so the male or sperm cell of the pampered stallion is likely to be weak, while that of the worked, muscular scrub or grade stallion is as likely to be strong and in the use of the two animals the truth of this theory is forcibly brought out.

We have noticed that, as a rule, when the navel cord of a new born foal is extra thick and the foal is correspondingly fat and flabby there is great likelihood that it will die. Such foals often are unable to stand up and suck and often they suffer from leaking navels or the navel and joint disease regarding which we recently have written. It also has been proved beyond question that such foals are apt to result from the mating of pampered stallion with a mare that is insufficiently worked or exercised and excessively fed during pregnancy. On the other hand the foal that is born with a small navel cord is most likely to be up and sucking from the first and will likely go on growing and escape the ailments so common to foals of pampered stock.

Apparently the best results have throughout the world come from the mating of work stallions with work mares. Where large bands of mares are kept in idleness and are bred to stallions that never do a turn of work and all the while are highly fed there is an inherent tendency to weakness in the progeny. Where, on the contrary, a single mare is kept on the farm or there are but a few mares and these are used for work and breeding purposes, the results are most favorable and where the stallions, like the mares, also are worked or properly fed and thoroughly exercised every day of their lives the results will be most perfect and profitable.

It is high time that wherever attempts are being made to produce heavy draft horses of fine type and character farmers should, as occasion offers, buy a pure-bred mare or two and in addition keep and work high grade mares. The pure-bred mares, mated with worked pure-bred stallions will soon stock the country with an adequate supply of pure-bred stallions and mares and then we will not have to buy at fancy prices the im-

ported, pampered stallions that often are unsound and usually partially impotent while becoming acclimated and then apt to stay so when kept fat and under-exercised. The heavy draft stallion is intended to beget colts that shall grow up into work horses. If like produces like we may most confidently expect work horses from work sires and work mares; therefore the pressing necessity is that every draft stallion, and all other stallions, should have an adequate amount of work in harness or exercise to halter or in the cart to keep the entire body in as perfect health as possible.

Everywhere the scrub, grade and mongrel stallions should be castrated as soon as their places can be taken by virile, robust, potent, pure-bred, registered stallions. The principle of using registered stallions is sound in every particular and that being the case it is urgently required that such stallions should be relieved of the present correct and humiliating accusation against their virility and potency. The remedy for the evil is in common sense, hygienic methods of stabling, feeding and management and the constant remembrance of the too little understood or appreciated fact that as "like produces like," health, strength, pure-blood and work ability are absolutely necessary on the part of both stallion and mare if they are to produce progeny endowed with like attributes and the ability to work.

DRAFT HORSES.

O. R. FRAUENHEIM, RANDOM LAKE, SHEBOYGAN COUNTY.

Fellow members and Friends: As a general rule, farmers always keep their eyes on the work done by graduates of the Agricultural College. Always ready to offer criticism, whenever we do not do our work according to their ideas, yet will always follow example of a good thing.

In growing select seed grain, corn and alfalfa, we have set a good example, which our neighbors have been anxious to follow. By this means, we have created a fame for our standard-bred grains and corn and fame for our Association as well. Some of our members have entered other fields and have been instrumental in the organization of local and county breeders

associations. Yet the majority have paid little attention to the improvement of our draft horses.

From time immemorial, the horse furnished the motive power for the tiller of the soil. As the machinery was invented and improved, the use of the horse widened. While today, with the scarcity and high priced labor comes the tendency to do the work on our farms with more and larger machines, necessitating the use of larger and more horses to successfully handle these machines. Therefore the draft horse is the most natural animal for the farmer to produce. The draft colt is easy to raise, he has the capacity for large quantities of roughage, grows and puts flesh on rapidly. The draft horse can be put to work at an early age. When he arrives at the age of five or six years he has earned his living and if of good conformation and weight can easily be disposed of at a price that will make a good profit to the producer.

The department of horse breeding of the University has already accomplished great work in putting poor and unsound sires out of commission but there is a greater work yet to be done. We members of the Association having received instruction along these lines, will naturally be looked upon to do a large share of the work. And if we all pull together, will certainly give fame to Wisconsin as a draft horse state.

In order to help in this work, we can work on the same plan as in the introduction of select grains. Breeding and producing good draft horses, thus demonstrating to our neighbors that good profits can be derived from the business. I will not advocate that we all should go into the business exclusively but that at least one of our work horses can be a heavy brood mare that will supply us with good draft colts. Good drafters may be bred from all of the breeds of draft horses. The fundamental principle is: Pay due attention to quality which is often neglected, to breed our best mates to the largest stallions and then feed the resulting foals from birth to maturity. Weight will always sell but weight with quality is the combination that brings the money. We must always remember that the drafter is the result of years of careful selection and feeding for great size, therefore in order to be successful in the production of draft horses, feed and proper environment to produce size must never be lost sight of.

One drawback in the production of drafters in this state, has been the sale of the desirable young mares. In these days of high prices for the right sort, a good price is a great temp-

tation to most farmers, causing the sale of a great many mares that should stay on the farm.

Wisconsin cannot succeed in producing horses that the best markets demand as long as the grade and scrub sires are used. A grade stallion may have the best conformation and other qualities that belong to a good sire, but lacks the power to stamp these qualities onto his offspring, for the reason that there is a greater prepotency in the scrub mares that are mated with him. But there is a large class that demand this class of stallions. Men who have eyes and see not that they are losing money every time they save five or ten dollars in the service fee, by using a stallion of this sort. These men cannot see any value in pedigree. Their eyes must be opened so that they can see that a sire bred pure for many generations, as shown by his pedigree, is capable of reproducing himself to a marked degree in his offspring. I do not believe that any member of this Association is guilty of using a grade sire when they have the opportunity of using a purebred one.

I have only touched on several of the most important things that should demand our attention. Let us remember that the field in breeding draft horses is a wide one and the workers are few. Let us all fall in line and set an example, for a greater work can be accomplished in this way than by long and loud arguments. We must always have a high ideal in mind and strive to reach that ideal. Success is sure to follow, and ultimately the establishment of the draft horse as one of the leading products of our good old Wisconsin.

ILLUSTRATED ADDRESS GIVEN BY STATE FORESTER, E. M. GRIFFITH.

Besides emphasizing special features of the address by the use of stereopticon slides, Mr. Griffith said in part:

A year ago it was my privilege to tell the Farmers' Conference something of the forestry work that is being done by the state of Wisconsin. Today I wish to emphasize the value of forestry to the farmer, in the establishment and care of the woodlot.

The woodlot is of no less importance to the farmer in the southern part of the state than it is to the northern farmer who, perhaps, derives his largest and surest revenue from his wood-



Spruce and balsam with fine reproduction. The mature timber should be removed in order to give the young growth a chance.



At least a fringe of timber should be left around our beautiful northern lakes. The shores are then much more valuable for cottage and camp sites.

lot. It is a valuable asset to any farm and daily growing more so, as the prices of timber continually rise with the decrease of the supply. With a good woodlot, a farmer may be entirely independent of the lumber market and may even derive a steady income from the sale of poles, posts, fuel, bark, etc.; but it is a great mistake to think that a woodlot will take care of itself. With very little thought and labor, a woodlot may be improving all the time instead of becoming less valuable.

It is poor management to take the best trees from your woodlot every year, leaving the poorer trees and less valuable species to develop and reproduce themselves. Ordinarily, the first thing to be done is to clean up the woodlot. Take out the trees that are dead, dying, suppressed or over mature. They are taking up room and not yielding any profit. Take out the less desirable species, and the large crowned trees that are taking up enough space for several other trees. However, do not open up the woodlot too rapidly, as the soil will dry out and grass may obtain a foothold. If the blanks formed by taking out trees do not restock by self sown seed from the best species still standing, sow seed yourself or plant with young seedlings obtained from a nurseryman or a forest near by. If the woodlot is open and park like, any sod that has been allowed to form must be destroyed. If there is no young timber to be injured, the grass may be burned off; otherwise, it must be plowed under; or seed cannot reach the soil and germinate. In an open woodlot that has no young growth, grazing does little harm, but a permanent woodlot should have young growth and no grass, and cattle, sheep and even horses should be rigorously excluded.

It is difficult to advise definitely as to what species should be encouraged, as so much depends on the character of the land and its location. If possible, the woodlot should be on the highest land on the farm that is not arable, so that it will hold the snow water like a great sponge until the hot months, when the moisture will sink to the cultivated fields on a lower level.

White pine is one of the best trees in Wisconsin. The timber will always be in demand and it is a good species to plant. Hardwoods can be grown easily by gathering nuts or acorns in the woods and planting them in the ground to a depth of from one and one-half to three inches.

If a farmer wishes to grow timber, he should look out for quality, but if he is growing trees for cordwood, he will look out for quantity. In both cases the stand must be kept dense, so that the trees will grow rapidly in height, instead of forming

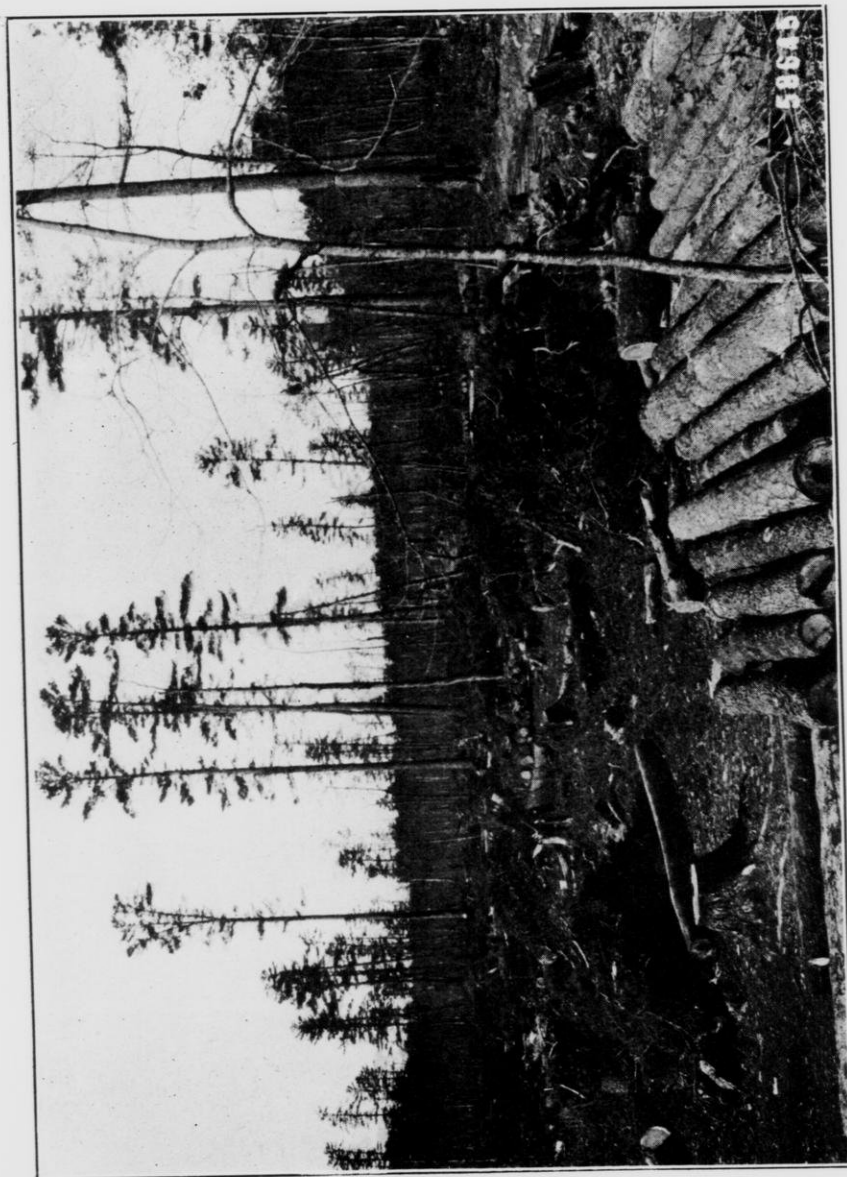
side branches. If the stand is not kept dense, there will be too much side light, which causes the dormant buds under the bark to develop into branches, and this means knots and, hence, poor lumber. A well stocked, even-aged forest will have the greatest amount of timber to the acre and if quantity is desired, the timber should be thinned out as soon as such thinnings will pay for themselves, before the stand has become so dense that there is a fierce struggle for existence, which lessens in general the increase in wood, although it results in the survival of the fittest. That is, such thinnings allow the trees to gain in diameter more rapidly, which makes quantity of wood, while if the stand had been kept dense and the struggle allowed to go on until the trees had attained their height growth, the surviving trees would have very long, clear trunks, which, after thinning, would increase rapidly in diameter with little tendency to form side branches.

If a woodlot is not too large, it may pay to do some pruning. With pine or other conifers, it is a comparatively simple matter, as the limbs can be cut off cleanly, close to the bark, with a sharp ax, as high as a man can reach. Pruning hardwoods is more difficult and less satisfactory and should not be undertaken unless there is certainty that it will pay. Pruning should be done only when the trees are young, so that the wounds will heal rapidly, and only to the trees that are to be allowed to mature.

In cutting, protect the young growth in every possible way. Do your cutting in deep snow, if possible, with this end in view. Dry tops, brush and defective wood should be burned in wet weather, so that they will not be left to feed a fire in dry weather. Fire, above all things should be guarded against. A fire that will not injure mature timber will destroy young growth, thus doing inestimable damage, and will sometimes burn off the humus or forest soil that is necessary for the development of young growth. A very large percentage of the forest fires in this state are caused by farmers who are clearing or burning for pasture and much greater care should be exercised by them.

I am often asked whether it would be a paying investment to start a timber plantation or woodlot from the beginning, and my answer is emphatically, yes. For years it has been thought that no timber growth but that which was mature was of any value. The growing scarcity of timber and its increasing value has brought about a change. There must be young growth for years before there can be mature timber, and even





Forestry management on Indian Reservation. The groups of fine white pine have been left to seed the cut-over land, and the brush is piled ready to be burned.

though a man may not live to see his timber plantation grown into mature, merchantable timber, he will live to see it have a money value as young growth, and will get returns from his thinnings in comparatively few years. The return on a woodlot as a long time investment may be estimated at from four to six per cent on the principal invested.

Under the present laws especially, is it wise to start plantations. Nearly every farm has some waste land that is not used for either field or meadow, perhaps because it is too steep and hilly, or of broken and uneven surface, or sandy, gravelly or even stony. The state has now made it possible for the owners of such land to put it under a valuable crop and hold it exempt from taxation for a period of thirty years, through the enactment of a law known as chapter 592 of the laws of 1907.

In view of the great public benefit that will result from the cultivation of timber trees, any owner of land is permitted to set apart a portion, not exceeding forty acres, and to plant it with timber trees not less than 1,200 to the acre, and be exempted from taxation for thirty years from the time of planting. This exemption does not apply to lands that are worth more than ten dollars an acre, nor to those that are within two miles of any incorporated city or village, but the State Forester may nullify the latter condition by a written approval. The trees must be kept alive and in a healthy condition, but after they have been planted ten years, they may be thinned out, but 600 must be left upon each acre. This privilege extends to corporations and co-partnerships as well as to individuals.

Any farmer who contemplates planting trees of particular species may write to the Forest Service, Washington, D. C., and get a list of "Forest Planting Leaflets" for the different species, any of which will be sent to him free of charge upon application.

PREPARATION OF SOIL AND PROPER ROTATION OF OATS.

C. F. SPAULDING, OCONOMOWOC, WAUKESHA COUNTY.

Fellow Members and Friends: In preparing the soil for an oat crop, it is best to fall plow the land, if possible, as the frost breaks apart the soil particles, thus aiding the decomposition of humus in the soil making available more plant food. Another reason that fall plowing is preferable is that in the spring the land is settled and compact, while with spring plowing it is more loose and more quickly dried out.

In the spring, harrow or cultivate with a seeder the land as soon as it can be worked well, and not too sticky or dry, for when too dry it involves more labor to get in fine tilth, but if worked at the proper time, good results will follow. After having harrowed, drag diagonally or across the opposite way from which it was harrowed.

If by this time the soil is of fine tilth, sow it the opposite way from which it was last dragged. After sowing redrag to insure that all grain is covered. Then roll in order to compact the soil closely around the seeds so the germination will start quickly, thus insuring a strong growth. After rolling redrag with a smoothing harrow, so as to leave the surface in a rough state, this forms a mat, causing capillary water attraction, thus aiding germination and preventing moisture evaporation. In rotating for the oat crop, it is preferable to have it follow either corn or grain crop, as for on sod the plant food is not great enough in available form for oats. At any rate it is safe to sow oats on the poorer soil, if it has not been run too hard, or cropped too often, without manuring.

By planting corn on sod, well manured, follow with another corn or barley crop, then with oats, the stand will be better, less liable to lodge and will have a greater yield.

OATS AS A NURSE AND GRAIN CROP.

W. F. RENK, SUN PRAIRIE, DANE COUNTY.

Oats have proven themselves by many tests to be one of the most valuable of grain crops to the farmers of Wisconsin as they thrive well and yield heavy crops of usually plump berries.

Our experience with oats sown as a grain crop is that in order to get the best results they should be sown just as early in spring as the land will work well, using two and one-half bushels of seed per acre broadcast or two bushels drilled. Sow preferably on upland soil as the oats will not lodge as easy on this as on looser soil usually found on lower lands.

It will not be necessary for me to give the preparation of the soil as speakers before me have already ably presented this part of the problem, but I wish to say a few words further in regard to oats as a grain crop.

In order to get the best crop, and all members of this Association want to raise a good crop, we must use the plump-est and purest seed obtainable and preferably one of the purer varieties such as Swedish Select oats for instance as we might then sell the oats for seed purposes and realize from ten to twenty-five cents more per bushel than selling them in the open market or feeding them, thus obtaining a good cash profit per acre for them.

A good crop usually yields from 40 to 50 bushels per acre and if sold for seed at 55 to 60 cents bring good returns. To offset the fertilizers removed from the soil by selling them we can purchase bran or other feeds at a less cost than the seed oats are sold for. When sown as a nurse crop we do not seed so thickly, probably from one-half to two-thirds as thick as we wish to have more room for the crop that we have seeded it to. We have found from many years experience that a better catch of grass can be obtained by sowing the oats rather thin, and mowing them while in the milk for hay, yet a good stand of grass can usually be obtained by letting the oats mature and cutting and shocking them providing we have sufficient moisture.

When possible, however, we prefer to use barley, wheat, or rye for a nurse crop especially if we let the nurse crop mature as these crops mature earlier allowing us to remove them be-

fore oats which leaves more moisture in the ground for the young clover plants. The crops mentioned do not cover the ground so densely nor lodge as easy as oats, consequently giving the young clover plants a better start in life.

On low, rich loose soil oats especially will lodge easily and this of course is detrimental to the tender young clover plants.

HARVESTING, THRESHING, AND MARKETING THE OAT CROP.

H. L. POST, SEXTONVILLE, RICHLAND COUNTY.

Mr. President, Fellow Members, Ladies and Gentlemen: When our Secretary wrote to me about preparing a paper for this meeting on "Harvesting, Threshing, and Marketing the Oat Crop," I at first thought it would be an impossibility for me to comply with his request, but after thinking along that line for a few days I concluded something might be said which would start some one else to thinking along the same line.

Since my subject begins with "Harvesting" I would like to say first of all "Be ready when the harvest time comes."

Be sure to have the binder in good repair; there are always rainy days or times when your work is not pressing, during the early part of the season, at which time such repairs as needed should be made.

I would also advise the buying of the twine early in the season and as for quality, under no circumstance would I use any other than a medium or high grade.

Harvesting should begin just as soon as the grain is ripe enough, as over ripe grain begins to crinkle down and shell, during cutting, and it is also in danger of being lodged by storm.

However there are times when it is practical to harvest before the grain is completely ripened as in case of fear of lodging or in extremely dry seasons to give young seeding a better chance.

If possible I prefer to have the straw, if not rusted, an even golden color before cutting. When harvesting begins it should be pushed hard until completed; there should be men enough in the field setting up the bundles to keep it shocked as fast as cut.

If the oats are ripe and not wet or snarled up I would have them set in round shocks, using twelve bundles, two of which being caps; and if the straw is green, wet or from lodged grain I would use the long shock instead, and always capping. I would never cut badly lodged oats with a mower and attempt to handle them loose as the loss is too great and expense of handling and threshing too high.

If the crop is badly lodged it can, in the majority of cases, be harvested with only a small per cent of loss by cutting one way, going the opposite way from which the oats are lodged.

When the oats stand up well and are in good condition the larger size bundle should be made as it saves twine, and time in setting up, although if badly lodged or wet I would make a smaller bundle.

Under favorable weather conditions stacking should begin in about a week or ten days after harvesting.

When the grain is to be used for pure seed purposes I would stack the cap bundles and any wet or weedy bundles by themselves which in turn should be threshed separately. However, if the grain is to be used for feeding purposes I would stack the cap bundles along with the rest, throwing out only the wet and weedy bundles by themselves.

In stacking, it is best to build a round stack of medium size, as they dry out better and also save labor at stacking and threshing time.

The stacks should not be built too closely together, but should have space enough between for the air to circulate freely which aids very much in curing out the grain.

If the threshing is to be done from the field it should be done as soon as possible after the grain has been in shocks for at least two weeks, at any rate you are running great risks of wet weather when letting grain stand in the field until threshed, and also you may be unable to get a machine just when you want it. Before threshing time is at hand the bins in the granary should be thoroughly cleaned and such repairs as necessary be made.

With hired help as scarce as it has been the past few years it is advisable for farmers in a neighborhood to change work during threshing as much as possible, but it is far better if possible to secure a machine which carries its own crew, because in working around a threshing machine there is always more or less time lost which if you are sending a hired man to do would be rather expensive.

When threshing begins close watch should be kept of the

grain and any that is wet or badly colored be put in separate bins. If the oats are from pure seed, which they should be, I would advise selling as much as possible for seed purposes, which can usually be done at an advance price and feeding oats or other material bought back at market prices.

I do not consider the raising of grain and selling it for market prices a profitable plan for the farmer because by selling the grain from the farm each year and adding nothing to the soil, the farm would soon be on an unpaying basis unless a commercial fertilizer was applied. As much of the crop as possible should be sold for seed oats and feeding material bought back; I always try to keep stock enough to eat all the oats, as well as other grains I can raise each year.

The reputation of Wisconsin seed oats has spread far and wide and shipments of the Wisconsin No. 4 oats have been made to distant lands.

The future of our business as well as the present should be considered; therefore, we should do our best to satisfy each and every customer; be honest and square in your dealing and in a few years you will be enjoying the benefits of a good oat market and good prices, if you do your part to furnish the best to be had.

TESTING OF SEED OATS AND TREATING FOR THE PREVENTION OF SMUT.

E. L. DREGER, MADISON, DANE COUNTY.

Fellow Members of the Experiment Association: The testing of seed and treating for the prevention of smut are two of the most important steps necessary in order to get a good crop.

All seeds should be tested before sowing to find out if a large enough per cent will germinate to warrant us in sowing them. At least 90% should germinate; if less germinate we will be likely to get a poor stand and a poor crop is the result.

The most convenient way of testing seed is to take two pie tins and two cloth pads, a little smaller than the tins. Moisten the cloth and lay one pad in the tin. Put one hundred kernels of grain on it, put the other pad over the grain and then place the other tin over this to prevent too rapid evaporation. The number of seeds germinating is the per cent.

Treating for prevention of smut is a simple operation. Take one pint of formaldehyde and put it in thirty-six gallons of water. Soak the seed five minutes in this solution. Experiments have shown that smut can be prevented in oats entirely by the above treatment.

Oats can be treated several days before sowing, if they are scattered on the barn floor and stirred daily so as to dry them.

A person should not sow oats without first testing seed and then treating for prevention of smut.

SWEDISH SELECT OATS.

W. A. TOOLE, BARABOO, SAUK COUNTY.

Most of the farmers in my neighborhood have a rich heavy clay soil and several farmers practice a three year rotation of oats, clover, and corn. Others practice a longer rotation but clover is turned under frequently. The land is also heavily manured, the farms being well stocked. A large quantity of manure may be had for the hauling from the two circuses wintering in the city.

These conditions make it difficult to grow oats which do not lodge. Lodged oats mean a heavy loss both because they do not fill as well and also much of the grain is wasted in harvesting.

We are hunting for a good yielding variety of medium height with stiff straw which will not easily lodge.

A local variety known as the Abbott oat has been grown by a number of our farmers. The stalk is short with small kernels. It usually stands up well and gives a medium yield. During the past season it was a failure with us because it seemed very susceptible to rust. Swedish Select oats gave a much heavier yield of grain in a part of the same field. The cultural conditions were the same.

Swedish Select oats have certainly been of great value to the state, and even though they go down badly we shall probably continue growing this variety for several years. There are local conditions which will require in the future that special varieties be bred to fit these peculiar conditions.

It is quite possible that a change in our methods of culture might lessen the tendency to lodge. If any one can give any information on this point I would be pleased to hear from him.

SWEDISH SELECT OATS.

H. F. KRAMER, BLOOMER, CHIPPEWA COUNTY.

Mr. President and Members of the Experiment Association: It gives me pleasure to testify to the merits of Swedish Select oats, which I have grown for the past six years, for they have surpassed any of the other varieties tried in this locality in appearance, weight, large plump kernels, early maturity, and a strong straw. While attending the Short Course in Agriculture during the winter of 1902, I saw these oats for the first time. They appeared to be so much better than any others that I determined to secure some for seed, and was one of the first to apply when Prof. Moore offered them to the Experiment Association for trial. The plot of ground on which they were sown was a good fertile soil, and the growing oats had a thrifty and healthy appearance all summer. When ready to harvest the oats averaged about five feet in height. The eighty pounds of seed which I had secured yielded fifty-six measured bushels or seventy by weight. The season of 1903 was an unfavorable one to the growth of oats, but they led all others that I noticed. Even this last summer of 1907, the poorest in years, the Swedish oats are ahead at least five bushels per acre, and in quality also. One more feature, they are practically free of smut and very easily kept so. I have tried both broadcast seeder and the drill with two and one-half bushels to three and one-half bushels per acre, but find that three bushels sown with a drill produces the best results. I have had a ready sale for all that I have grown, in fact never had enough to fill all of the orders I receive for seed. After shipping seed to various parts of the country, both by carload and in small lots I have yet to hear the first complaint. To sum it all up: they do well and take wherever tried.

SWEDISH SELECT OATS.

FRED G. STROUP, FOND DU LAC, FOND DU LAC COUNTY.

I was a member of the first Farmers' Course which was held at Madison in February, 1904, and on the recommendation of Prof. R. A. Moore I bought of the Wisconsin Experiment Association two sacks of the Wisconsin No. 4 or Swedish Select oats. These two sacks of oats I sowed on four acres with a drill. The land on which the oats were sown was black prairie soil which sloped to the west with good natural drainage. The land had had corn on it the year before, from the four acres we threshed 180 bushels, machine measure, or forty-five bushels per acre. The other oats that we raised that year in the same field following the same crop yielded fifty-two bushels, machine measure, but were sown two bushels per acre, while the Swedish Select were sown one bushel per acre. We consider that the Swedish Select oats did considerably the best, and have grown them exclusively during the past three years. We have had them yield as high as seventy-five bushels per acre by weight. We have sold quite extensively for seed to farmers living in our neighborhood, and there is not a single case where they did not do better than the other varieties. The neighboring farmers have been loud in their praise of the Swedish Select oats.

SWEDISH SELECT OATS.

H. E. ROSENOW, OCONOMOWOC, WAUKESHA COUNTY.

We have been growing the Swedish Select oats for the past four years with satisfactory results as compared with other varieties, although we have at no time had an extra heavy crop. Comparing the yield with a variety of yellow oat grown for several years past, we have found the Swedish to yield a few bushels more per acre when grown in the same field; both varieties seemed to be affected about equally with rust and during

the past three years the rust has no doubt lowered the yield considerably. The Swedish oats also lodged quite badly nearly every year but all other grain also went down and thus it cannot be said that some other variety has a stiffer straw as they all seemed to be treated alike during some of our heavy storms, but I believe if the Swedish is given a fair chance it will stand up with any other variety grown. It has a somewhat coarser straw than some smaller varieties of yellow oats grown about here and the kernel is also larger but in comparing the inside of the kernel it will hold its own with any variety regardless of color, as the hull is very thin thus increasing the feeding value considerably.

Owing to the weather conditions and to the blight which affected it last summer the yield was cut down considerably, our crop averaging 34 bushels per acre, but this compares well with the yield of other fields in the neighborhood. We treated the seed for prevention of smut the first and second year this variety was grown by us and since then have not noticed even a trace of smut in the crop, while some fields in the vicinity were affected from ten to twenty per cent.

The demand for pure seed from this variety has been exceptionally good during the past few years and we have always sold all we had to offer for seed at a fair price and have not only sold to growers in the neighborhood but have shipped a considerable quantity to other farmers as well as carloads to seed houses. It is just as easy to grow pure seed of any variety and there is certainly more profit and pleasure connected with it.

SWEDISH SELECT OATS.

ALEXANDER KRUEGER, WATERTOWN, JEFFERSON COUNTY.

I find the Swedish Select oats superior in quality as well as in yield to any oats I have grown. I raised the first Swedish oats four years ago. I bought my seed from Renk Brothers, Sun Prairie, Wis. The seeding last spring was very late, sowing the oats the 22nd day of April. The land was fall plowed on which I had raised a crop of winter wheat the year before. The soil was a red clay. I pulverized it well and

sowed with a broadcast seeder, putting on three bushels per acre. The oats came up well but shortly before they headed out were attacked with blight; a kind of red blight which damaged the oats badly. When headed they stood up well on the hills but lodged some on the lower ground.

The yield per acre last year was only thirty-five bushels, while most common oats in my neighborhood only yielded twenty-five to thirty bushels and very light in weight. In 1906 my Swedish Select oats yielded sixty-five bushels per acre. I find the Swedish Select a high yielder, has a very plump berry, a stiff straw, and does not rust as much as common oats.

I would advise any member of this Association to give the Swedish Select oats a trial. I am sure he will be pleased with them.

SWEDISH SELECT OATS.

H. E. KRUEGER, BEAVER DAM, DODGE COUNTY.

Mr. President, Fellow Members, Ladies and Gentlemen: My experience with Swedish Select oats has been short, but sufficient to warrant me in saying that they are the best we have ever raised; they are plump, heavy, and good yielders, on our clay loam soil.

As the past season was unfavorable for all small grain, of course the oats suffered also. The Swedish Select withstood the rust and rain better than any other variety in our locality.

The yield per acre was cut down considerably below that of other years, our average being 35 bushels per acre, which was 10 bushels above the average in our neighborhood of other common varieties. What there is of the Swedish are good heavy oats testing 35 lbs. per bushel. As I have the past few years treated the seed oats to prevent smut, there was hardly a trace to be found this year.

Some of the members were afraid that in a few years there would be no demand for Swedish Select seed oats, they are mistaken—the demand is good yet and will be for years to come. If you will take good care of your oats keep them clean and free from foul seed, cap the shocks after cutting and stack

them as soon as fit, so you will have nice bright seed. You will have no trouble disposing of your surplus at a figure much above the general market.

SWEDISH SELECT OATS.

CHAS. H. HOWITT, RANDOLPH, DODGE COUNTY.

Mr. President, and Fellow Members of the Experiment Association: We have been growing the Swedish oats for the past four years. In the spring of 1904 I secured $11\frac{1}{2}$ bu. of seed from L. L. Olds Seed Co. This was sown on $\frac{3}{4}$ of an acre of ground along side of our common variety. The soil was of a heavy clay nature. There was a difference to be seen all through the growing season, the Swedish being of a darker green color and seemed to make a heavier growth. About ten days before ripening they lodged quite badly on account of a storm and accordingly the grain that we threshed was rather light weight. The yield was at the rate of 50 bu. per acre.

The following spring we sowed eight acres of the Swedish and six acres of our common variety in separate fields on the same kind of soil and both following a crop of barley. The Swedish yielded a trifle over 50 bu. per acre and the common variety 40 bushels per acre, a difference of 10 bushels in favor of the Swedish oats. The past two years we have grown the Swedish oats entirely for our main crop with very satisfactory results.

The Swedish oats are now grown quite extensively in our neighborhood, and from what I have been able to learn from those who have grown them they seem to be the best adapted to a well drained heavy soil.

"GENERAL INFORMATION ON BARLEY."

A. P. MAC VANNEL, ST. MARY'S, ONTARIO, CANADA.

Barley belongs to the great family of grasses and is of the same tribe as wheat and rye. It differs from these in that the spikelets are one-flowered and that there is more than one

spikelet at each joint of the rachis. When the plants are young it is easy to tell them from oats and wheat, for they are of a lighter green color and have broader leaves. The mature plants are not unlike wheat in general appearance except in the spike or head. The flowers of the spike are arranged much as the flowers of the wheat plant but their individual make-up is enough different to make it easy to tell the two apart.

Barley is known in the market as one of the coarse grains and has been cultivated for a longer time than any other cereal with probably the exception of wheat. The ancient Egyptians, Assyrians and other people about the Mediterranean sea grew barley for over a thousand years B. C. These people used it extensively for bread-making and as a food. They believed it to be an exceptionally strengthening food, consequently barley continued to be the chief bread plant of Europe until the 16th century, when the wide cultivation of potatoes and wheat brought about its decline.

The barley grain is believed to be indigenous to southwestern Asia, but it has been known in Egypt, Switzerland and China since prehistoric times. However, the early history of the plant is very obscure but we have sufficient evidence to assure us that it was early and extensively used by the ancients and the nations from which we derive our ancestry.

Barley was grown extensively in Great Britain and introduced into America (probably first into Nova Scotia) by the colonists about 1600. We have records of it growing in Virginia in 1611. At Lynn, Mass. in 1629, and that it formed the chief agricultural product of Rhode Island in 1796. Since that time it has spread rapidly over the entire North American continent.

The early centers of production in America, were of course, confined to the New England states. Later, we find that the states of New York and Pennsylvania to be the great producers, while at the present time the greatest producing states are California, Minnesota and Wisconsin. In 1850 New York and Pennsylvania produced sixty per cent of the total crop in the United States while in 1906, while producing the same number of bushels contributed but 2.5 per cent of the total crop.

Although these states are the great producers nearly every state in the Union may be said to be a producer of barley. The northern states grow more than the southern states. However, our interest in this crop is more directly confined to Wisconsin and in order to show you the importance of this crop I

wish to resort to a few statistics which I draw from the Year Books of the United States Department of Agriculture. In 1906 there were 1,282,019,000 bushels of barley produced in the world. Of this amount the United States produced 178,916,000 bushels. California contributed to this amount 38,760,000 bushels, Minnesota 31,591,420 bushels and Wisconsin 22,349,600 bushels.

Although Wisconsin ranks third in total production we find that it is credited with, according to the same authority, producing more bushels to the acre than either California or Minnesota. In 1906 Wisconsin grew 728,000 acres of barley which yielded an average of 30.7 bushels per acre. This amount at 45c per bushel (the average price received by the farmer in Wisconsin for the year) netted the farmers of the state \$10,057,370 or an average of \$13.82 for every acre given to barley.

The United States Department of Agriculture, when comparing the value of the various crops for the whole country found that barley ranks fourth in value among the cereals. But in Wisconsin the barley crop ranks third being exceeded in value only by corn and oats.

We said that an acre of barley netted the farmer \$13.82. Now, if we quote the same authority, an acre of wheat is valued at \$11.73 and an acre of oats at \$11.59. In general practice it has been found that it costs the same to produce an acre of one as an acre of the other. It seems, then, quite reasonable to venture the prediction that the area of barley in the state of Wisconsin will be very greatly increased in the near future.

Ancient Egyptian history tells us that barley was one of the first grains to be used as a food for man. We are also told that it was one of the principal foods of the poor classes of people until late in the history of civilization (about 1600). Since that time it has been used more as a stock food and less by man. At the present time its use as a human food is limited, its use being confined to a few preparations known as pearl barley. On the Pacific and Atlantic coasts the grain is used extensively for feeding horses and to cut for hay. It is also used to a considerable extent to feed swine and poultry. As a food for hogs, especially those of bacon type, it is very valuable and is becoming more popular as farmers learn its value.

Although barley is used as a food; and as a feed for domestic animals the chief use in America is for malting purposes. Much more than half of the barley which goes to market is pur-

chased by the malt manufacturers, and, it is upon its value for malting purposes that the selling price is quite largely determined. Therefore it is important that the farmer produce a barley that meets the requirements of this trade.

The barley crop seems to be well adapted to take an important place in Wisconsin agriculture. It is one of the hardiest of our cereals and can be raised through a great range of climate. It is cultivated with success north of the Arctic circle and at high altitudes in the Torrid zone. Comparing it with the other cereals we find it to be relatively free from attacks of insect pests and fungus diseases. The rusts and smuts are the most destructive and will be considered by another speaker.

There are two distinct groups into which all barleys grown may be grouped. These are called the two-rowed and the six-rowed because of the way the kernels are arranged on the spike. There are also bearded, beardless and hull-less varieties of the same groups. There is also a four-rowed type but owing to the fact that such is not constant it is usually classed along with the six-rowed sorts. They are but a variation of the six-rowed type, as often the six-rowed drops two rows midway up the spike, the upper part being merely furrowed.

Wisconsin seems particularly well adapted to the growing of the six-rowed varieties of barley; consequently a great deal of attention has been given by the Experiment Station to the securing of those varieties which would give better results throughout the state, than the kinds which had been grown in former years. The results of experiments carried on by the Experiment Station and reports from members of the Experiment Station show that Oderbrucker and Manshury have given decidedly the best results for several years.

The two-rowed varieties of barley are easily distinguished from the others by the head being somewhat more elongated and by there being only two rows of grain from one end of the head to the other. The heads of some varieties of two-rowed barleys are long and slender and taper toward the extremity. The two-rowed barley is largely cultivated in Great Britain and other countries in Europe, but is not grown to any great extent in this country. They have not produced as large yields as the six-rowed sorts and are very often weak in the straw.

The beardless and hull-less varieties of barley, although popular at certain times in many respects have not given results that would warrant their general cultivation in the state. The Success beardless and the Gey Mayle hull-less are the most

satisfactory. However, they are not unlike the two-rowed sorts in that they do not yield high and have a tendency to be weak in the straw.

Although the barley crop represents an immense amount of money to the farmers of the state we cannot say the condition of the industry is entirely satisfactory. Since the price is largely influenced or determined by the malting and brewing industries it is imperative that we grow varieties that meet their demands. The malster and brewer demand a barley that is not only light in color, uniform in size and shape, free from broken kernels and musty odors but, above all things a barley that is uniform in type and of the same variety, which will all germinate at the same time. It is impossible to get these results with the barleys as grown today since a distinct variety, a pure race, is not in general cultivation. The farmer grows the different varieties together. As a result the growth of barley is not uniform during the manufacture of malt and no high grade of malt can thus be obtained. The varieties commonly grown, as Manshury and others, although excellent varieties cannot be said to be pure, distinct races but a mixture of several. The Experiment Station is endeavoring to improve the situation by eliminating these mixed varieties and substituting pure races for them.

The introduction of pure races or the improvement of the barleys may be worked out in three ways. The same principles are applicable to barley as the President, Mr. Stone, outlined for the improvement of oats. Briefly, these are: First, the introduction of new varieties from other states and countries; second, by hybridization, and third by selection.

Hybridization is accomplished by fertilizing one flower with the pollen from another flower, either of the same or different variety. The hybrid or resultant cross thus obtained combines the qualities of the two parents and thus produce a stronger and more desirable progeny.

The improvement by selection consists of growing the progeny of a single seed or plant, and weeding out each year the poorer plants while the strongest and most desirable plants are retained.

The first method—the introduction of new varieties from other localities—needs no comment other than that the Experiment Stations are better situated to carry on this work than the individual farmers. These varieties must be experimented with and fully acclimated to determine their worth before they are disseminated throughout the state.



Characteristic heads of the select Oderbrucker and Manshury barleys. Oderbrucker on left; Manshury on right. The attachment of kernels to the rachis is shown in the center. Two thousand seed-growing centers of these varieties of barley established in the state through the co-operation of the Experiment Station and the Experiment Association.

HOW BARLEY CENTERS CAN BE ESTABLISHED.

WM. L. ILLIAN, ADELL, SHEBOYGAN COUNTY.

Fellow Members of the Wisconsin Experiment Association: The Wisconsin Experiment Station has been doing a great work in breeding, improving and introducing new varieties of barley and other pure bred grains.

At the present time it is difficult for a grain or seed buyer to go into a community and buy a carload of one select variety of barley.

In some instances we find that grain buyers have paid from fifteen to twenty cents more per bushel for some superior or improved barley, where they could purchase a considerable quantity.

There is ample room for a better and more uniform barley on our markets. Fewer and better varieties are what we want.

Here is where the work of the members of the Experiment Association comes in, and where we can make ourselves useful, namely by "establishing barley centers." We have come to be the seed producers of Wisconsin. Let us then join together and establish great pure bred barley and grain centers, in different counties and townships, of this and other states, wherever you may live.

The desire now is to have the farmers of whole communities or counties grow only one select variety of barley or other grain. The Oderbucker barley is bound to become the leader. If only one variety is grown, it will then be possible for parties desiring to purchase, to buy thousands of bushels of one select breed in a community.

I have been doing some work in the line of establishing barley centers during the past season with excellent results. I have succeeded in getting several of the leading farmers of this vicinity, with good clean farms, to grow the Oderbrucker barley. It is sometimes difficult to interest some, but by making them a good and fair proposition, even if you should gain nothing financially by the deal, you will win and be a benefit to the neighbors. I have always cleaned the barley for them all and gave them the best I had.

I let them have it at their own figures. They too have helped to maintain the Agricultural College, where you and I have derived so much benefit. Why not pay a little back

to them. I do not expect more of them than the market price. Some return the seed barley the following season.

These farmers are all well satisfied with the barley, as they had good returns. Some of these are selling seed to a large number of their neighbors, and thus the "barley center" is covering quite a large territory. It is spreading fast and no one can say where it will end. Have several other farmers which intend to start in the same way this season. Thus the work goes on.

Let us all as members try to do our best for our neighbors, and for our Association. We will thus be public benefactors, which is of more value than the dollars that we may gain.

TESTING THE SEED, AND THE PREPARATION OF THE SEED BED.

L. R. ZERBEL, MADISON, DANE COUNTY.

Fellow Members, Ladies and Gentlemen: The testing of the seed is perhaps the first step that the farmer should take in growing a crop. This may seem to some people a minor point, but allow me to say that it is one of the most important, and the first step taken in the growing of a successful crop.

We cannot judge the viability of the seed by simply looking at it. It may be bright in color, very plump, and have a healthy appearance, but when put in a seed tester to germinate we may be greatly surprised to find that perhaps seventy-five per cent would germinate or perhaps even a smaller per cent. Then by sowing seed of this nature at the rate of two bushels per acre, we would have a thin stand and likewise receive a small yield.

We cannot afford to sow grain of a poor germinating power on our high priced land, so it becomes necessary as well as profitable to test the seed for its germinating power before sowing. This may be done by using a common seed tester composed of two tin plates and two cloth pads. Put a moist pad in one of the tin plates, sprinkle the seed on the pad and cover the same with another moist pad, placing the tin plate over the pads to keep them from drying out. We can also take a box and put in it about one inch of moist saw-dust, well-firmed, which makes a good germinator. We put the seed on

the saw-dust, and cover it with a moist cloth, or a board will do, anything that will keep the seed moist. The tester should be placed in a warm room and kept at a temperature of about 70 degrees Fahrenheit. The time required to make a germinating test is about five to six days.

The preparation of the seed bed is an important feature. Fall plowing is in general the most favored on clay and other heavy soils. The fall plowing has the advantage that it leaves the surface in a loose and rough condition which has a tendency to absorb more of the winter's rain and snow, thereby conserving more moisture than the unplowed land would.

Another advantage of fall plowing, especially with clay soil is the effect that the alternate freezing and thawing of the winter has upon the physical condition of the soil, all lumps are crumbled and broken down and the soil is consequently made more mellow. Fall plowing should be disked early in the spring, as early as possible without injuring the texture of the soil.

If the soil is left lumpy it will be necessary to go over it with a roller or planker, to break up the lumps. This should always be followed with a fine tooth harrow to make a mulch and leave the seed bed in a fine level condition.

Spring plowing does not require as much disking as fall plowing, depending a great deal on the condition of the soil. The farmer must use good judgment and keep in mind that a deep, well pulverized and level seed bed is necessary. By having these conditions we can sow our seed at an even depth which will allow the seed to come up more evenly, and the crop will be more uniform in ripening.

SOWING BARLEY AS A FARM CROP.

E. A. BEULE, FOX LAKE, DODGE COUNTY.

Fellow Members and Friends: The great improvement and dissemination of Wisconsin corn in the past few years has almost placed our state in the lead in corn production per acre. This is only a proof of what can and ought to be done with our barley crop. In fact we are already in the lead. We have not only brought about this result by care-

ful selection of seed, careful testing (both for germination and feeding quality, careful harvesting and storing and careful preparation of the soil; but it also took great care in sowing for the season's crop.

We have a few such men as Prof. Moore who have devoted years of their lives to the scientific perfection of some cereal. We can not all follow their lines of experimenting and testing and developing. We are not all qualified to carry on the same work that they do. Few of us have the patience or perseverance to begin with one kernel and develop and perfect it into a "Manshury" or "Oderbrucker;" and it seems to me that it is well that we are not so qualified.

There is a great work that we are qualified to do and that is to take up the work of improvement after proper varieties of grains have been bred for our state. This Association each year gives out to its members large quantities of seeds for experiment, and I believe this term "for experiment" has proven to mean "for study and improvement." I am certain that our method has done much good, not only among our own members but also among our neighbors. The benefit to our neighbors so far has been mostly through our members supplying them with better seed grain of better varieties. Some of them have not yet learned the lessons that the selection of the seed, the harvesting, the care of it from harvest to seeding time, and by no means the least valuable, the sowing, all have a marked effect upon both the quantity and quality of the harvest.

I wish to dwell but briefly upon the latter. The quality of the crop is much affected by careless sowing as well as the quantity. If the ground is lumpy or otherwise uneven some of the seed is buried deep while other seeds lie upon the surface. This alone causes an uneven stand and the grain will ripen unevenly and the same cause has injured our quality for some of the heads will be plump while others not being fully matured the kernels will shrink and when offered for sale will not pass inspection as No. 1 grain.

For my part I prefer fall plowing. This allows of the beneficial effects of the frost and the ground becomes more settled. Then in the spring begin to work the land just as early as possible being careful that it does not work greasy. When ready for sowing the ground should be mellow, free from large lumps and have a smooth surface. The smoother the surface the more evenly can you sow the grain and the better you have worked the land the greater are your chances for an even germination because you have thoroughly aired

it and improved it for holding the heat and retaining the moisture.

The experiments among our members I believe shows quite conclusively that where the drill has been used the yield has been quite a bit better than where the seeder was used. This, no doubt is due to the fact that the drill buries the seed with a more uniform depth and more evenly.

The amount of barley or any other grain to sow to the acre depends largely upon the soil and the season. The one we can each study out pretty well for ourselves but the other is hard to guess. About two bushels of barley seems to be the general practice and about right. If we sow too sparingly we are apt to induce excessive growth and late maturity.

The only thing to do is to study each piece of land, learn its peculiarities, and work and sow it accordingly.

BARLEY AS A FARM FORAGE CROP.

HENRY MICHELS, MALONE, FOND DU LAC COUNTY.

East of the Rocky Mountains barley has not been used extensively as a feed for horses, but to a limited extent to other farm animals, but its value has long been recognized in the old world, where it has been fed with excellent results to all classes of stock. The Arabs maintain their horses almost wholly on unground barley. The Danes feed it extensively to dairy cows, and it is claimed that it exerts a beneficial influence on the quality of milk and butter. In England and northern Europe it constitutes the larger portion of the grain ration for hogs and produces firm pork of the very best quality. The corn-fed hogs in the United States are usually soft and fatty, and, largely for this reason do not command the high price paid for Danish bacon.

One of the reasons why barley is not more generally fed in this country is that an unfounded prejudice against its use exists among stockfeeders, some even claiming it to be poisonous in its effect. The experience of the old world, however, is entirely against this. Analyses show that, as regards nutrition, barley compares favorably with other cereal crops grown on the farm. In the short time which has been given me for this subject, it will not be possible to discuss exten-

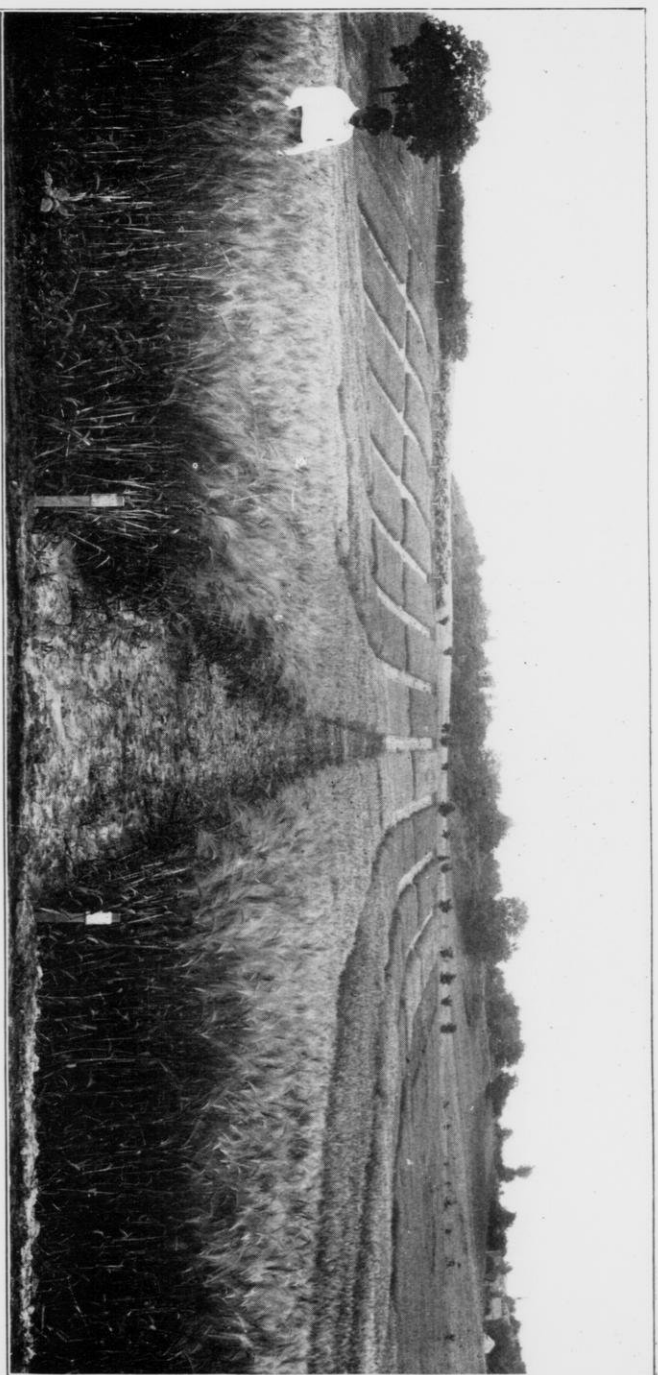
sively the feeding value of barley as compared with other grains. Under ordinary feeding conditions, the element that is most frequently deficient is protein, and for this reason the values of feeds may be assumed to be approximately in proportion to the amounts of protein they contain. Prof. Henry's Feeds and Feeding places the protein content of oats at 9.2%, corn, 7.9%, and barley 8.7%. According to this, barley is slightly less valuable as a feed than oats; but oats are an uncertain crop and in a poor year when they rust and smut badly and are light, the difference is very much reduced.

For members of the Experiment Association and others who are growing improved varieties of barley there is another factor to be taken into consideration. Prof. Moore has succeeded very well in crowding the scrub varieties out of the state and is replacing them with Oderbrucker and Manshury barleys. For many years, these varieties have been selected with especial reference to protein content until now we have a grain that in this respect at least, is superior to bran. By careful work, instead of 8.7% protein found in our scrub varieties we now find 12% and even 15% in our select varieties. With such grain we may well look forward to the time when barley shall occupy a respectable place on the list of farm feeds.

Another objection to the feeding of barley is the price. It is spoken of as being a ready money crop and so it is; but it does not occur to the farmer when he sells his grain, that at the same time he is selling a valuable part of his farm. He does not realize that every time he takes a bushel of barley off the farm, the soil is robbed of 14.5 cents worth of fertility which is a total loss. If fed to the stock on the farm this grain would bring bigger returns and besides, the feeder would retain nearly all of the fertilizing constituents with which to replenish the soil.

True, the price of barley is occasionally so high that the farmer can afford to sell his fertility with the grain and depend upon some other thing to keep up the fertility of his farm. It more frequently occurs, however, that barley is badly discolored by being exposed to rains for long periods. The feeding value of such grain has been injured very little; but from the brewer's standpoint it is objectionable and no farmer who has stock, should ever be guilty of forcing it upon the market where it must sell at from 4 to 6 cents per bushel less than bright grain.

For the past ten years, the average price of barley in Wisconsin has been 43 cents per bushel. Deducting from this the



Registered varieties of Odebreucker barley. Agronomy field, Madison. The type and progeny secured through eight years' consecutive work in the breeding plots. Will be disseminated in 1909 by the Agronomy Department of the College of Agriculture in co-operation with the Experiment Association.



14.5 cents worth of fertility removed from the soil, there is left 28.5 cents per bushel to pay for land rent, labor, etc. This small price has been a sufficient inducement for many a farmer to rush his hogs to market in a half-finished condition and to underfeed his cows in order that he might sell his grain. This practice seems wasteful enough; but there are men who go even farther than this and throw upon the market, discolored grain which can be sold only at a large discount, and which nets only 24 or 25 cents a bushel. To show that, at such figures grain can be profitably fed, the production of butter will serve as an illustration. The average price of this product during the last ten years was 21 cents a pound. When butter is sold, practically no fertility is removed from the farm. It is apparent, then, that a pound of butter brings almost as large returns as a bushel of barley, and when such conditions exist, it is a very poor cow indeed that will not pay handsome profit. Yet hundreds of farmers say they cannot afford to feed full rations to their stock because grain is too expensive.

What has been said about the economy of keeping the barley on the farm applies as well to other grains. But as other grains are usually fed on the farm, it may be better to say that if it pays to feed oats and corn, it will be just as profitable to utilize barley in this way. This is especially true because it yields more heavily than oats, and requires less work and removes less fertility from the soil than corn. It may be safe to say that when once the farmers recognize the value of this crop which is so productive, requires so little labor and may be grown under such a variety of conditions, that practically all of the poorer grades of barley will be fed on the farm and only the best put on the market.

BARLEY: ROTATION OF CROP.

H. N. LONGLEY, DOUSMAN, WAUKESHA COUNTY.

Mr. Chairman, Members of the Association: Barley will fit well into any rotation that may be desired. Although it adapts itself to any rotation, there seems to be but one place, for it in any of them, and that is immediately preceding clover or alfalfa, for which it will act as a nurse crop.

For instance in a three year rotation, we may have corn the first year. After gathering this crop in the fall, we may plough the land and have it in readiness for barley the following spring. After a thorough preparation of the land, in the spring, barley and clover may be sown together. Both crops will come on rapidly if the season is at all favorable, and choke out nearly all weeds. The barley will ripen early, and is soon harvested and off the land. This gives the clover a chance to establish itself securely in an unfavorable year, or to make such a growth as to admit of some pasturing in a favorable year.

Then the next year we are almost sure of a good crop of clover, after which the field may be manured and again fitted for corn.

This may be easily changed to a four year rotation by sowing timothy seed with the clover and barley. In this way we will secure a crop of mixed hay, the year after we get the one of clover, or the fourth year.

Better yet if we are so fortunate as to live in a locality where alfalfa grows well, we will find our barley as excellent a nurse crop for that as for clover or mixed hay, and thus use barley in a five or even six year rotation.

Thus we can use barley in whatever rotation we find best suited to our needs. By simply following the general plan of planting corn after clover or alfalfa, following this with barley which will act as a nurse crop for the clover or alfalfa we get an excellent rotation.

The clover or alfalfa will feed upon a deep layer of soil, enrich it with nitrogen, and improve its texture. Potash and phosphorus are supplied in stable manure. All combine to make a good place for corn which will feed upon a trifle more shallow layer of soil, and an excellent crop is assured.

The next year the soil is in just the right condition for barley which is a short rooted plant, and will thrive well upon plant food not used by corn the previous year, besides acting as a nurse crop for more clover or alfalfa which will complete the cycle.

By using a rotation of this kind we soon rid our land of foul weeds for none of our common weeds will retain a foothold long in the face of a thorough cultivation one year. A quick growing crop the first of the second year and a dense clover or alfalfa sod following that, until time for corn again.

Thus we secure the two main advantages of rotation of crops:

- 1st. Maintaining and improving the fertility of the soil.
- 2nd. The eradication of weeds.

In the meantime our farm work is well divided and we are getting excellent returns from our land each year.

Now this rotation may not work in all localities, but it does well in the southern part of the state, and some form of it ought to give satisfaction elsewhere if the conditions are at all similar.

HARVESTING AND THRESHING BARLEY.

H. A. MAIN, FT. ATKINSON, JEFFERSON COUNTY.

Mr. Chairman, Members of the Association and Interested Friends: I would have much preferred to have had this subject taken by an older member who has had more years of experience in harvesting barley but since our Secretary has put me on for the subject I will endeavor to tell you what I know, or think I know, of the subject with only two years' experience back of me and what I have read in the farm papers.

I prefer to cut barley before advanced ripening as I think it is brighter and plumper. The straw usually stands up straighter at this time than later.

Before harvesting my first crop I had read that barley when cut should be set up in small shocks and capped in preference to the old style of long shock. So I started in to make shocks of eight bundles and two more for cap. An old barley grower stopped when passing and said he thought it would mold but I kept on and never regretted it, for after many rains I was able to stack my barley in fairly bright condition.

This past season I varied this by setting up three pairs of bundles north and south—one on the outside of each center bundle—drawing tops together and capping with two bundles with heads to south and west to resist the wind more effectually. The cap sheaf should be bent about the band which also helps to keep the bundles on and makes the top round.

I also like to use hay caps as far as they will go.

I prefer to have barley stacked and sweated before threshing. Much of the unkind comment that has been instrumental in lowering the grade of Wisconsin barley on the open market has been brought about by threshing from the shock and letting the barley go through the sweat after it is stored in the granary.

ODERBRUCKER BARLEY.

ROY T. HARRIS, WARRENS, MONROE COUNTY.

In our system of farming—if I may be allowed to apply the word “system” to our efforts in the direction of tilling the soil—we plan to sell little grain or hay, as such, but feed out as much as possible on the farm. Since we sell our grain in the form of butter, pork, or beef, the comparative market prices of the different cereals is not a matter of so very great importance to us. For this reason, we try to grow those crops that will yield the greatest returns as feed with the smallest outlay of labor and land and that will supply needed variety to the rations of our stock. We have grown barley only four years—two years one of the beardless varieties and during the past two years the Oderbrucker. The latter has thus far shown itself well suited to our needs, the yield comparing well with that of oats on our clay loam soil, and we expect to continue growing it as long as it satisfies our conditions and gives yields in comparison with other crops equal to those of the past two seasons,—that is, if we find nothing better.

In 1906 we secured two bushels from the Experiment Association and also purchased one more from a fellow member. This was sown on $1\frac{3}{4}$ acres and yielded not quite ninety bushels by weight. The past season was not so favorable for any small grains and we obtained a yield of but ninety bushels, machine measure, from $6\frac{1}{2}$ bushels sown on three acres.

ODERBRUCKER BARLEY.

J. FRANK BRADLEY, SOMERS, KENOSHA COUNTY.

My experience in growing Oderbrucker barley is limited but what I have seen of its growth, yield and quality is very satisfactory.

In the spring of 1907 I purchased ten bushels of Oderbrucker barley from a member of the Experiment Association which I sowed broadcast April 25, on two acres slightly rolling black soil, which had been heavily manured the spring before for cabbage.

Owing to the late and wet spring the ground was not plowed but worked up well with the disc harrow. The weather was unfavorable after sowing, the seed lay dormant about ten days, but then started and made a rapid growth, and stood up well. The straw is much stiffer than most varieties, although it lodged in some places by the heavy storms.

It was cut July 25th, put in shocks, and stood there one week and stacked before any rain had fallen upon it. I threshed 35 bushels from one acre, machine measure.

The barley was of a fine quality and all was saved for seed purposes.

ODERBRUCKER BARLEY.

O. C. HEIDEMANN, KIEL, MANITOWOC COUNTY.

Mr. President, Fellow Members of Experiment Association: I will try to relate to you as briefly as possible my experience with Oderbrucker barley.

In the spring of 1906 I received two bushels of Oderbrucker barley, from the Wisconsin Agricultural Experiment Association, and sowed it at the rate of two bushels per acre; the same day I sowed some other barley, on another field, which was practically the same as to drainage, fertility and nature of soil; but when the time for harvest came the Oderbrucker barley was fully a week ahead of the other barley (this makes it a nice nurse crop) and it yielded better per acre when threshed; this convinced me that the Oderbrucker barley was the best barley for me. In the spring of 1907 I sowed the Oderbrucker barley again, at the same time conducting a smut test, with hot water, although there was very little smut in the Oderbrucker barley, yet by the hot water method I eradicated it almost entirely, and think that this coming season I will be able to do so, as I am going to practice the same method again.

This last year the entire barley crop around my neighborhood was only a half crop, although the Oderbrucker barley was not as good as last year, yet it held its own.

I have sold all my seed barley, right in my neighborhood and could sell more if I had it, this surely speaks well for the Oderbrucker barley.

ODERBRUCKER BARLEY.

ORLA J. BUSSEWITZ, JUNEAU, DODGE COUNTY.

Last spring I procured two bushels of Oderbrucker barley from this Association and purchased in addition to this twenty-four bushels from a neighbor who had been growing Oderbrucker for several years. It was sown broadcast April 25 on rich black ground with a clay sub-soil. This seed covered thirteen acres which had been fall-plowed following corn in rotation. The barley grew rank and was not as good as it might have been expected, conditions being unfavorable for all grains in my vicinity. It lodged a little, the kernels did not fill well and ripened rather unevenly. It was harvested July 30 and was threshed directly from the field as soon as it was dry enough. The average yield was thirty-five bushels per acre machine-measure which was a very good yield in our neighborhood last season. We were so well satisfied with this trial that we will sow all Oderbrucker barley the coming season.

ODERBRUCKER BARLEY.

LOUIS HEYROTH, MISHICOT, MANITOWOC COUNTY.

Mr. President, Fellow Members: In the spring of 1906, as a member of the Experiment Association I received two bushels of Oderbrucker barley which I took to my home farm. This seed was sown on a piece of fall plowed clay loam where a crop of corn was grown the year previous.

The barley came up fine and made a splendid growth throughout the season.

It ripened evenly and showed no smut.

This barley had stiffer straw and did not lodge as did the other varieties on the same kind of ground.

It was cut about the last of July and taken into the barn before any rain fell upon it.

The yield of this $\frac{3}{4}$ acre was 30 bushels making a yield of about 40 bushels per acre.

The scrub varieties only gave an average yield of 30 bushels an acre. In the spring of 1907 I put in about $7\frac{1}{2}$ acres of

the barley. It being an unfavorable year I only got a yield of 30 bushels to the acre which was five bushels above the average yield of any other variety. Considering all points as far as my experience goes the Oderbrucker barley is a better yielder and has better quality than any other variety in my vicinity.

ODERBRUCKER BARLEY.

GUY A. BOOTH, CUBA CITY, GRANT COUNTY.

Mr. President, Fellow Members, Ladies and Gentlemen: Last spring I joined the Wisconsin Agricultural Experiment Association and received two bushels of pure bred Oderbrucker barley, one of which I was to treat for the eradication of barley smut. I treated in accordance with the hot water treatment and had good success. Before sowing the barley I worked the ground which had been fall plowed several times with pulverizer and followed by harrow, leaving a good mulch to prevent evaporation of moisture. It was held back by cold weather about the time it began to appear above the ground but did find later in the season. Just at ripening period, July 10th, it was affected by a heavy wind and rain by which considerable of it lodged. The larger part of it straightened up and ripened well. I harvested it the 17th of July and stacked it 10 days later, leaving it in the stack for four weeks before threshing so as to go through a good sweating process.

When threshed I had 35 bushels per acre; had conditions been more favorable I would have had a considerably larger yield.

In the barley treated for the eradication of smut I found less than one per cent of smut while in that not treated no less than 6 per cent was found.

I was well satisfied with the returns from my barley and I think the smut treatment a grand thing when used as directed by the Wisconsin Experiment Association. It will have a very beneficial effect upon future barley crops.

This year I will continue with Oderbrucker barley on a large scale and treat for smut all that is sown.

ODERBRUCKER BARLEY.

OTTO C. KURTZE, WEST ALLIS, MILWAUKEE COUNTY.

Mr. President. Members of the Wisconsin Agricultural Experiment Association: I received two bushels of Oderbrucker barley from the L. L. Olds Seed Co., in the spring of 1907. I did not test it for germination. I sowed it on the 28th day of April on about one acre of land. The patch was right along side of my common barley with about two feet of space between. Part of the field was a clay loam and part a black loam soil. It was not as well prepared as it might have been on account of the weather looking so unfavorable, and as a thunder storm came up suddenly I was unable to harrow it after sowing. The barley came up rather thin and I noticed no difference in the barleys until they headed out. The Oderbrucker headed three or four days later than the common barley; it had stiffer straw, and while some of the common barley lodged the Oderbrucker did not. It ripened about a week later than the common barley and was harvested on the 3rd of August. My yield was 18 bushels per acre, which was a fair average yield in my locality.

MANSHURY BARLEY.

ARTHUR ROSENOW, OCONOMOWOC, WAUKESHA COUNTY.

Our experience with the Manshury barley may not be as successful as that reported by other members, but perhaps the conditions are not all alike. In the first place the seed we secured from a fellow member contained considerable oats mixed through it and the seed sown each year has been thoroughly recleaned each time but still it is not as free from oats as it might be. We have grown the barley for several years and find it about the same as other varieties at least there is little difference in yield, although it produces a long well filled head with a good quality of kernel which will no doubt compare well with any other variety so far as the grain is concerned. In comparing the crop with a variety of blue barley grown little difference was noticeable, in fact on several occa-

sions the blue barley has yielded slightly better. Grown in the same field with Oderbrucker last year the yield was about one bushel less per acre, all varieties seemed to lodge about the same as a considerable portion of the crop has been lodged the past few years, especially on rich soil. In ripening it is the same as the Oderbrucker but both varieties are nearly a week later than other varieties grown in the neighborhood thus delaying the harvest somewhat, but when grown in connection with an earlier sort it can generally be harvested as soon as the other is all cut.

Owing to weather conditions last year the crop was exceedingly light and the season was also late; the last field sown to both Manshury and Oderbrucker was sown on May first and harvested August first and second, the yield was twenty bushels per acre, although some other fields sown earlier yielded about twenty-seven bushels.

MANSHURY BARLEY.

LOUIS H. FISCHER, HAVEN, SHEBOYGAN COUNTY.

Mr. President, Members, Ladies and Gentlemen: We have now grown the Manshury barley for a number of years, and it has done exceedingly well, except last year when it failed; we only had two acres seeded down on a plot of rich and well prepared soil, part of it was fall manured and plowed under, and the rest we topped dressed.

The seed sprouted nicely but it must have got too much rain just at the time it was up and the manure must have kept it too wet.

It grew to a height of fourteen inches and the spikes were only about half their original size. We secured a yield of about twenty bushels per acre.

If we had all our land sown with this barley it would have been a great loss to us, but fortunately we had fourteen acres seeded with Oderbrucker barley which gave exceedingly good results yielding forty-six bushels per acre of good barley.

Mr. Stone tested it and found that from the purity standpoint it tested 99.9 per cent, and freedom from foreign matter 99.4 per cent.

We consider the Oderbrucker quite superior to any variety grown in our district.

MANSHURY BARLEY.

P. V. BECKER, PLYMOUTH, SHEBOYGAN COUNTY.

Members of the Experiment Association: My experience with this barley dates back four years. The first year it followed corn on old pasture covered with a light coat of manure. It stood about four and one-half feet in height, did not lodge save a few small patches, had very large heads, berry not well filled. It yielded thirty bushels per acre. The seed was sown with a disc drill at the rate of six pecks per acre. The second year this barley occupied the same ground, the same amount of seed being sown per acre as previous year. It did not grow so heavy in straw, none of it being lodged. The heads were not so large but berry well filled and yielded thirty-five bushels per acre.

The third year, I got better results on account of being a more favorable season, the barley was sown on fall plowed stubble land, at the rate of three pecks per acre, sown as a nurse crop for alfalfa. It stood quite thin where land was badly run out but where the soil was fairly rich the stand was fair, there was plenty of straw, had large heads, some of which contained ninety well-filled berries. This season's crop in spite of being sown three pecks per acre, yielded forty bushels per acre, and also a pretty good stand of alfalfa. On the same ground last year Manshury barley was sown in two different fields both being fall plowed and both carrying about the same amount of fertility. Field No. 1 was sown at the rate of three pecks per acre, sown as a nurse crop for alfalfa, and yielded twenty-two bushels per acre.

Field No. 2 was sown at the rate of five pecks per acre, with a narrow strip of Oderbrucker barley alongside comprising one and one-fourth acres. The Manshury barley yielded twenty-five bushels per acre while the Oderbrucker yielded thirty, with unfavorable conditions.

In conclusion will say that the Manshury barley is a stiff-strawed, six-rowed, bearded variety, a close second to Oderbrucker.

MANSHURY BARLEY.

H. E. KRUEGER, BEAVER DAM, DODGE COUNTY.

Mr. President, Ladies and Gentlemen: According to the Experiment Station reports, Manshury barley has been grown in Wisconsin for about 45 years, sometimes the yield has declined but on the average it has kept steadily in the lead under all sorts of conditions until the past few years the Oderbrucker seems to have gotten the lead. The Manshury has been grown on our farm for 15 years and still has a place there. Although the average yield of Oderbrucker was six bushels more per acre.

We sowed our barley this year the first week in May, this of course was late and with us the late sowing is always light in weight but we have no reason to complain considering the season with so much rain and cold. The barley gives a weight of 48 lbs. per measured bushel. I think considerable is due to capturing the grain in shock, and stacking as soon as dry. The shock threshing leaves the barley out in the sun and rain too long which gives it a dull look and leaves it lighter in weight.

Some people think it does not hurt the kernels of grain to leave them exposed to sun and weather but I am of the opinion that there is a great loss in weight the same as in timothy hay which by exposure gets lighter and loses a large part of its feeding value. I always sow our barley on ground that is fall plowed and following corn in rotation.

MANSHURY BARLEY.

CLARENCE JORDALEN, STOUGHTON, DANE COUNTY.

My first experiment with the Manshury barley was in 1905 when I raised two acres of it. I found it far superior to the barley we had grown before. The most noticeable difference, I observed, was in the uniformity of growth of the straw and in the development of the grain. It yielded about 50 bushels of heavy plump grain to the acre.

In 1906 I raised ten acres of the Manshury. I took special care that year with the seed, cleaning it several times and also treating again thoroughly with formaldehyde for prevention of

smut as it was not entirely clear from smut the first year. The barley showed excellent thrift during its growth and when threshed, there was a marked improvement over the year before both in the quality of the barley as well as in the increase in yield. The condition of the soils that the barley was sowed on, both years, was much the same.

Last year I again repeated the experiment but as the season was rather unfavorable the crop did not turn out as was expected; however, a fair yield was secured.

With these experiences, I found the Manshury to be a good barley. It is a good yielder and proves excellent for feed. One of the essentials for a good crop I find is to use good clean seed.

MANSHURY BARLEY.

G. MUEHLEISEN, TELL, BUFFALO COUNTY.

I have been growing this barley for four years and like it better every year. I am growing this barley in large quantities, we cannot grow too much of it. This year's crop was not quite as good as years before, owing to a backward season it did not head out quite heavily enough. Our average yield per acre this year was 34 bushels. I have grown the Oderbrucker barley right along side of it, on the same kind of soil. I can't see a great deal of difference between the two kinds. In growth they appear the same. I am well satisfied with both varieties, we will continue to grow more.

PRIZE WINNING CORN.

ROBERT LACHMUND, SAUK CITY, SAUK COUNTY.

Although it was my good fortune to be rather successful at the recent National Corn Exposition I do not pretend to be an authority on corn culture. Nevertheless that good fortune did put me in a position where I think I can say some things that

may benefit those who seek success with corn at fairs and expositions.

My success was not due to any particular care which the corn received nor was that corn raised with any idea of exhibiting it. It was simply due to a careful selection of the sample from an ordinary field of corn. Briefly I shall give an account of my method of procedure this year, and will then endeavor to give the best method of procedure to raise prize-winning corn.

When the corn was fit for harvesting I went ahead of the binder and snapped the seed ears only, carefully avoiding all that were on shanks that were too long or too short and ears which were too high or too low on the stalk. By taking two rows at a time I could just about get around the field once by the time the binder made two rounds. By these means I did not have to carry the ears far and could always deposit them where horses and binder would not injure them. By the time the field was cut the good ears were all snapped and we were ready to gather them. As soon as they were gathered they were husked and placed on drying racks. While placing them on the drying racks I would throw out the exceptionally fine ears. In this manner I got about several hundred which I took and dried separately in the kitchen. By going over and over this lot I finally selected the ten ears which should constitute my exhibit.

Now for those who want to specialize in raising prize-winning corn I will say—first of all get good seed ears. These should of course be pure-bred and conform rigidly to the characteristics of the breed. Then it would be well to score each ear and note in what particulars they are deficient. Have the ears as uniform as possible, especially in kernel. Do not plant before testing and be sure that each shows a high germination test and strong vitality.

Next take the corn from each ear separately and plant according to the ear-to-the-row method.

I will not dwell upon the method of cultivation but will simply say that the most persistent and thorough cultivation is necessary.

We will assume that everything has progressed favorably and that the corn is mature. It now only remains to harvest it and select the samples. These matters of course vary with conditions and everyone should adapt himself to his circumstances.

In closing I want to emphasize the three fundamental requisites for success, viz., good seed, good cultivation, and good care and selection of samples.

CORN.

PLANTING AND CULTIVATING THE CROP.

JOSEPH N. BOHL, BEAVER DAM, DODGE COUNTY.

The subject of Planting and Cultivating the Corn Crop is one that is much too large to be thoroughly discussed in the short time allotted to me. So I will hold to the management of the general cornfield where bushels are aimed at and not attempt to go into the details of managing a breeding plot or fancy seed field.

The manner of preparing the seed bed is probably the most important point, next to that of good seed, to be considered in the growing of a corn crop. As to the time of plowing for corn I prefer to plow late in the fall as it tends to destroy such enemies of corn as cutworms, etc., by exposing them to the action of the hard nightly frost so common in the fall. The ground if plowed late has the advantage of the mellowing influence of the winter's frosts. In the spring then as soon as the ground is in good working condition it should be thoroughly disked to about the same depth as it was plowed the fall previous. This tends to warm up the soil quickly and tempts the weeds to sprout, which is an important factor, since, if we can kill a large share of the weeds before planting our crop we are doubly sure of a bountiful yield. Then from the time of this disking until we are ready to plant we should manage to go through a weed killing process; this can successfully be done by harrowing the field well once a week or so, if weather conditions are favorable. The best date for planting will of course vary largely with the season but the soil should be at least 60°F. at the depth of planting. The old Indian sign, which is to plant corn when the leaves of oak trees are as big as a squirrel's ear, is not much at fault and is a good one to follow. Just before planting the field should be well disked and harrowed again and in most cases firmed down with a land roller or plank float. None but tested and graded seed should be planted. No cut and dried rule can be given as to the manner of planting, but in most sections of the state the checkrow system is preferable. The hills are put 3 ft. 8 in. apart each way and planted at the rate of four kernels per hill, this can be done very accurately with the edge drop planters where the seed has been

graded. The advantage of the checkrow system over the drill system is that it allows cultivation both ways, this is very desirable for several reasons which I will not mention at this time. A day or two after planting I would go over the field with a light harrow to further check the weeds and to perfect the surface mulch which prevents the evaporation of soil moisture and helps the even germination of the seed. The field can now be left to itself until the rows can be plainly seen which ought not to take more than three or four days if the weather is favorable, when cultivation should commence. Here again no cut and dried rule can be laid down as to the number and date of cultivations as they vary according to seasons and localities. The two horse sulky is probably the best tool to use, however, until the corn has made considerable growth. Shields should be attached to the rigs of the cultivator to protect the plants the first two or three cultivations. The objects of cultivation are: First, to kill and prevent the growth of weeds and foreign vegetation; Second, to keep the soil loose and to conserve the soil moisture; Third, to make the plant food easily available to the roots of the corn plant.

Since the weeds are worse when the corn is small the cultivations at this time must be mainly to kill the weeds, therefore, the first cultivation should be the closest to the plants as well as the deepest. Later on as the root development increases the cultivations must be shallower and farther from the plants so as to prune the roots too severely which might cause a serious setback to the growth of the plants. When the corn has once reached the height of two feet or so the danger from the weed side has passed and further cultivations need only create a surface mulch to check the evaporation of the soil moisture. A very good tool for this purpose is the single horse cultivator and a more general use of this tool at the right time would mean an increase of several bushels of corn per acre to the farmers of Wisconsin.

HARVESTING FOR SILAGE AND EAR CORN.

J. H. MCNOWN, MAUSTON COUNTY.

A couple of well rounded out chapters could be written on this subject and, perhaps easier than the writing of a short article as it is hard to incorporate into a short article all the essential or main points which should be brought out and discussed.

In corn growing for ear corn (and that is the principal object for which we grow the crop) the first essential is *good land*, well fertilized and kept at all times during the growing season in the best tilth possible.

In referring to good land for corn I wish to state that in central Wisconsin, and perhaps all over the state there are thousands of acres of land that are unfit for corn land, and no greater mistake can be made than in trying to raise corn on such lands.

Every farmer should study and experiment with his own farm carefully and leave corn out of the crop rotation on such fields as will not produce good results in a majority of seasons. Having located your fields best adapted to corn, follow a well-defined rotation, always manure well, plow and prepare well before planting and the work is well begun and the battle more than half won.

An observer in traveling over the prairie districts or sections of the corn belt, cannot help but notice the lack of rotation practiced, but will find corn grown consecutively year after year upon the same field. Such methods tend to waste the fertility, and ruin the mechanical condition of the soil.

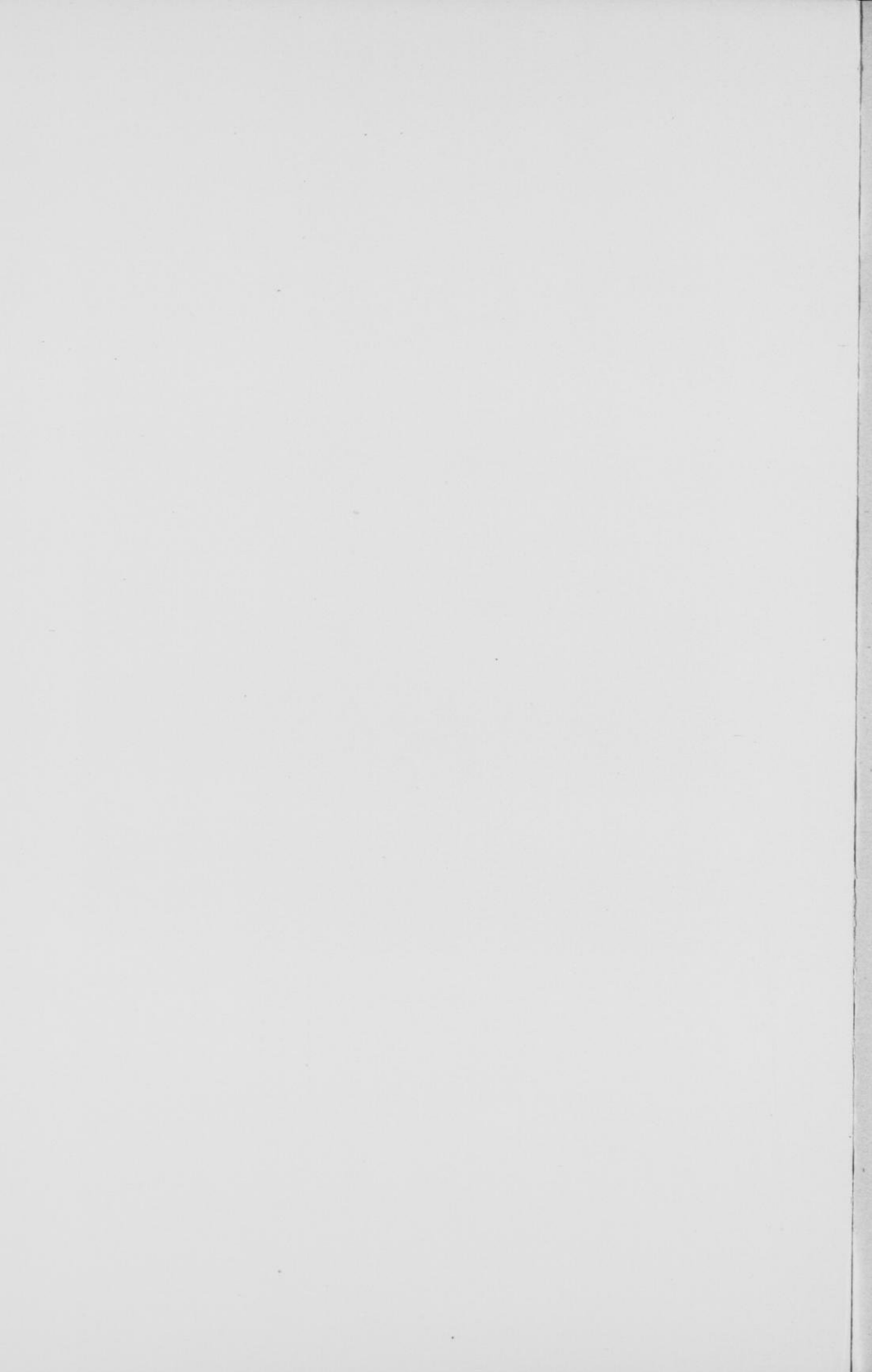
As a result the corn belt shows a smaller average yield than we obtain up here in Wisconsin where we are considered out of the corn belt. Up here out of the corn belt (so called) a large number of progressive farmers are obtaining, on their good fields, yields of from 60 to 80 bushels of (shelled) corn per acre. Back in the early nineties the writer entered a corn contest for prizes given by the J. H. Sanders Publishing Co., and obtained on a measured acre 83 bushels of (shelled) corn per acre.

Others in the contest reported well over the 100 bushel mark running up to 126 bushels. Such results are not obtained by indifferent methods or misdirected effort.

Next in importance to good rich land, well tilled, is that of having good seed.



Silver King Corn (Wisconsin No. 7), grown by J. H. McNown, Mauston, Wisconsin. Yield, sixty-five bushels shelled corn per acre.



Well bred or pedigreed seed corn of first class vitality, the most important characteristic that corn possesses, is its ability to produce abundantly a good quality of ears.

In selecting a variety of corn for any particular Wisconsin locality one must remember that a good corn for any section is a corn that matures in time to escape frost, and that produces corn of good quality and a heavy yield. An error that is perhaps often noticed in central and northern Wisconsin, is in attempting to grow a corn that is not sufficiently early in maturing. Yet we should always select a corn that will utilize the whole growing season.

"There are a number of visible characteristics that a good ear should possess, and a corn having them in addition to the characteristic of great productivity is the one that should be selected. The improvement of the visible characteristics of a corn is perhaps not as difficult as the improvement in power to yield abundantly, but both can be accomplished at the same time by persistent selection to type from the progeny of the most productive ears."

An ear of cylindrical shape, well rounded at each end, affords the largest percentages of grain per cob as well as kernels of the most uniform shape. The cob should be neither too large nor too small, and should possess the property of drying out quickly. The kernels should fit compactly together throughout their full length—on both sides and edges, and should be uniform in shape and length on all portions of the ear. In poorly selected strains of corn, undesirable ears of almost every possible size and form occur. Corn bred for several years for increased production will produce, with exactly the same good treatment 10 to 20 bushels more per acre than unselected seed. This increase figured at our current prices (sixty-five cents) makes a gain worth striving for.

In conclusion I must state that while I have not followed the text entirely in this brief article, yet if I have brought out any point that will be of use to any one I will be well satisfied. The silage part of the topic I have ignored entirely as I do not raise corn for silage, therefore must beg to be excused.

CURING SEED-CORN.

G. A. FREEMAN, SPARTA, MONROE COUNTY.

Recollections of early childhood recall the familiar view of the farm house with its front porch decorated with strings of seed corn hung there at husking time, or perchance before the corn was cut, and there it stayed until planting time in the spring. Of my own home this was not true. In this particular case the house was of oak logs, and the rafters were of second growth round oak peeled; this proved a very convenient place to hang heavy strings of seed-corn braided together by the husks. There was no plastered ceiling in this structure but heat from stoves was permitted to rise to the chamber, besides the stove pipe passing through the chamber furnished heat to counteract possible moisture which might be in the room during damp weather. We do not remember that it was ever explained to us just why seed corn was invariably treated with so much partiality, nor do I remember of a single year that our seed corn failed of being first class as regards its germinating qualities. If we ever had a few pounds to spare after planting, some of our neighbors were very apt to want it to replant where their corn had failed to germinate.

All other things being equal the same rule will apply now as then,—corn of same type and quality, hung in a warm, airy room becomes dry enough in two months so that an ordinary freeze would not affect it. But times have changed, and where we then harvested twenty bushels of corn per acre we now gather forty, and that, too, without twice as much cob as formerly.

Our improved varieties of corn are much more heavily grained than those formerly grown, thus requiring much more attention as to curing. For this reason it perhaps would never become so flinty unless fire-dried and consequently remains much more susceptible to moisture during damp, "muggy" weather.

As I pass along the road between my farm and the city I meet some of the different methods of caring for seed corn. One farmer hangs dent corn in the attic of the summer kitchen and piles flint corn on the south porch and covers it with canvas or blanket when the weather is stormy. Another spreads his on chamber floor at husking time, there to remain until planting time. Another hangs it over the driveway of the buggy-shed between two corn-cribs. Another spreads his out in a thin layer

on a floor over the machine shed, and a fifth hangs his seed corn to the rafters of the south porch.

According to the report of Secretary Wilson for the year 1906, "Actual field demonstrations have shown that, taking in the average—that is, corn from different parts of the U. S. as ordinarily saved for seed by farmers—the yield would be increased about 15% if the vitality were perfect."

Experience of many growers of improved varieties of seed corn the past two years is sufficient to convince many of us that the only absolutely safe method of handling it is to gather before freezing weather sets in and in some manner subject to artificial heat, in other words, to fire-dry it beginning with a temperature of 70° to 80° and where desirable to complete the process as soon as possible, and never thereafter subject the corn to damp air or a freezing temperature. For racks upon which to stack the corn in the drying room, I would recommend that boards 1x6' or anything as a convenient substitute for the same be used for uprights set two feet apart with common lath (or a substitute therefore), be let into the uprights every fifteen inches in pairs on the same level beginning three feet from the floor, allowing for a bottom shelf one by six 21 inches from the floor. Now if desired to make this rack mouse proof, put sufficient supports under this shelf and on top of each 21 inch post used between shelf and floor put an old tin pan or some old tin or stove-piping that will hang down at all sides and a few inches from the post. These racks may be made as stationary and fastened at top to beam or rafter, or they may be made movable from one side of the room, thus allowing for more storage without inconvenience in filling and emptying, in use of the latter the uprights must be plumb, and "stayed" at the top. If these racks are to be stationary, a passage-way may be left between each fourth and fifth rack, as two on each side of the aisle may be readily filled.

For a ventilator, would suggest using a T in the stove-pipe instead of an elbow, and connecting to that another pipe to extend to within a foot or so of the floor, and would admit fresh air at or near ceiling as in stable ventilation.

For those who have it, there is little doubt as to the advisability of using a good airy furnace room for curing seed corn, provided that it is not used at the same time for storing liquids, and would add further that the floor should be of concrete to check the upward movement of soil moisture and depredations by vermin. At any rate it is a very good place to store the corn after removal from the dry-kiln.

WISCONSIN NO. 7 CORN.

H. N. LONGLEY, DOUSMAN, WAUKESHA COUNTY.

Three years ago the coming March, Prof. Moore gave me twenty-five ears of No. 7 corn, with which to carry on an experiment, and so my experience with Silver King corn commenced.

Our land is a rich clay loam, that responds well to cultivation. Up to this time yellow dent corn was raised almost exclusively. Consequently it was with some hesitation that I took the white dent for I knew what sort of a reception it would receive.

The ears that I received were a trifle short, and much of the tip was exposed. They received severe criticism from all who saw them, that is, until they were shelled; after that the criticism was less severe.

To cut a long story short, I managed to plant the seed, but under such adverse conditions, which continued all summer, that the corn did not yield as much as the old yellow dent.

However, I was determined to give it another trial, and the following year planted two acres, upon the condition that if it did not prove as good as the yellow dent, I should not ask for another trial.

This year it had a fair trial, proved its worth, and won over the strongest friends of yellow dent.

The next year, which was the past one, Silver King was the only variety planted on the farm. From our best acre we secured 80 bushels shelled corn and three loads of stover, with just ordinary good care.

Three acres of light land and about two acres in hollows that produced almost nothing, brought the average back to 50 bushels per acre for twenty-six acres. This is considerably more than any other variety has done in this locality.

The corn was well matured and is keeping well in both crib and bin.

Many neighbors have purchased seed corn and as for myself, Silver King is the only variety I shall attempt to grow until Prof. Moore produces something better.



Active farm operations on the Arpke Farm. P. V. Becker, Proprietor.
Specialties—Select Seed Grains, Guernsey Cattle, and Berkshire Hogs.



Silver King Corn (Wisconsin No. 7), grown at the Elms Stock and Grain Farm,
Delton, Wis. W. S. Marshall, Manager.
Yield, seventy-five bushels per acre.



SILVER KING CORN.

R. W. CHATTERTON, BASCO, DANE COUNTY.

I am asked to give you my experience with Silver King corn. It was quite varied the past year I can assure you, being from a record breaking crop in one field, and that on an off corn year, to so far the other way that we were almost obliged to harvest a part of the crop with a boat. However, it is the record field that I will speak of, as it usually is the one discussed, and holds the most interest.

I secured my seed two years ago of Prof. Moore. Jack Frost cut my crop severely that year and I was lucky to get my seed. I took extra care of this seed, which gave a perfect test the spring of 1907.

The soil varied from sandy loam to stiff clay, with a clay and gravel subsoil at a depth of 4 to 6 feet.

This field had been used for a hog pasture and night cow-pasture. It was twice heavily manured, the last time the fall of 1906, and had a heavy June grass sod. We plowed it five inches deep early in May; disked both ways, lapping half each time; harrowed till as fine as a garden, then rolled it.

Began planting May 18th, and put the seed rather deep owing to fineness and depth of soil. Because of the large amount of clods I did not harrow again, but started the eight shovel sulky corn plow to break the crust, straddling the planter tracks; at first not using the shields, and later using them, which was best as filling the planter tracks weakened the corn plant before it could get to light.

My planter was an edge drop, and I drilled the corn as close as possible. My reasons for doing this were: That the soil could carry a full crop. Half of our 1906 corn crop was destroyed by white grubs and I plowed up a heavy crop of these in this field.

I had to allow for cut worms, gophers and crows. It took over two weeks for the corn plants to show above ground, but no damage was done except a little by gophers.

This field was cultivated five times and all weeds pulled by hand the fore part of July. It was then seeded to crimson clover at last cultivation for cover crops. The stalks were from 10 to 14 feet high and it was almost impossible to pass from one row to another the stand was so thick. Picked my first sample for corn exposition middle of September, but as I had the house

work to do at this time, the sample was neglected. Thus I was forced to hustle a second sample, and got it off the Monday before the National Exposition opened. I was rather surprised to be inside the money under the circumstances. The crop was harvested the last week of September and husked by hand.

Father insists that it went 100 bushels shelled corn to the acre; I put it at 90 to insure its holding out. We weighed a bushel and a half basket of two year old corn, and the same basket of this corn on November 1, and were surprised to find the weight identical, 79 pounds. The basket was filled as nearly alike as possible each time and no special pains were taken in putting the corn in basket. I have great respect for Wisconsin No. 7 corn.

SILVER KING CORN.

H. E. KRUEGER, BEAVER DAM, DODGE COUNTY.

Mr. President, Ladies and Gentlemen: Last March when our school closed I took home with me twenty ears of Silver King corn, which together with some I bought of one of the members was planted the 18th of May. The corn was planted in hills three feet eight inches each way. As the weather was wet and cold right after planting it did not appear above ground for three weeks. Two weeks after planting I went over the field every day and dug out a hill here and there, to see if it had sprouted but it seemed to show no signs of sprouting. The fourth week we had a warm rain and all corn seemed to come and I had a good stand. It matured well and yielded 70 bushels per acre.

If my seed had not been kiln dried I would have had a very thin stand the same as my neighbors, or would have had to replant as many did and that did not mature this year.

So I have learned a lesson and hereafter my seed corn will be fire dried in the fall and not in the spring after the first planting does not grow, which is the trouble with too many Wisconsin farmers. For good fire dried seed corn will stand twice as much cold and wet before it will rot in the ground, as that which is air dried and weak in the start.

SILVER KING CORN.

D. W. COLLIN, LUXEMBURG, KEWAUNEE COUNTY.

My experience with Silver King corn began with the spring of 1905. I secured from the Experiment Association a limited quantity of seed ears which on test gave a germination of 96 per cent. The soil on which it was planted, was a dark sandy loam, was manured and plowed in spring. After preparing the soil, the corn was planted about May 20 in checkrows 3 ft. 10 in. apart. The ground was cultivated at regular intervals till July.

The corn was fairly matured by October 1st, the estimated yield was 68 bushels per acre. The plot was about 100 yards from the home corn, which was practically on the same soil and treated in the same manner. The home corn was matured about 10 days earlier but was out-yielded by about 15 bushels per acre.

The corn crop of 1906 was remarkable, many stalks reaching a height of nine feet, ears of extra size, true to type, which attracted so much attention that almost all the farmers of the neighborhood called for seed.

Last year's corn crop was not a success owing to a cold spell and wet weather immediately after planting. Only about 25 per cent of the corn germinated, the growing season was short and the early frost was detrimental. Other varieties of corn suffered from frost as did the No. 7. I had a fair crop and I stand by the Silver King. I saved a goodly quantity of seed ears, and am positive that by careful selection, Wisconsin No. 7 corn will within a few years, be adapted to this vicinity and almost all the lakeshore counties.

WISCONSIN NO. 7 CORN.

FRED P. GREBE, FOX LAKE, DODGE COUNTY.

Members of the Association and Friends: In the growing of field corn, the main object is to obtain the greatest yield of grain per acre, whereas in the case of forage, when used green as for silage, a large proportion of stalk and leaf is desirable. Now, we are out of the Iowa and Illinois corn belt, but don't let

that worry you for Wisconsin has a corn belt which will furnish all the conditions necessary for successful corn culture, and if we do our share of work in the way of selection and care as thoroughly as nature has done her work in providing favorable conditions we need not spend any time deploring the fact of our being outside "the corn belt." While we are growing some very good varieties of corn—I don't know of any that will give better satisfaction than the Wisconsin No. 7. I have been growing this variety for the past four years and have always had a large yield which averages about 150 baskets per acre. Though this past season was very unfavorable for corn, my Silver King was as well matured at harvesting time as my neighbors', who are growing the common dent corn of a much less yield. But where can you find dent corn that has been grown this last season, which is as well matured and hard as it has been the few seasons before. Perhaps you can find a few acres here and there where the soil is sandy. Last spring I planted my corn May 10th, the weather being wet and cold it was about three weeks from the time of planting before I could see enough of a row to go through with a cultivator, but during this time I harrowed this field five times. Having good seed it did come at last and I tried to do my share to keep it growing as well as I knew how. I cultivated it five times and hoed it once. I cut the corn during September 27th and October 3rd, this field I cut by hand as a corn binder would knock off most all of the largest and best ears and those are the ones I wished to save for seed. Absolute rules for the time of planting for all sections of the country are obviously impossible. However there is a time every season which is favorable for planting. It is the business of the farmer to have the seed bed prepared in order to take advantage of this propitious time. There is a decided loss to the grower by planting corn under unfavorable conditions or by having it cut down by frost. If cut off by frost the seed will regeminate and for that reason I would rather plant early than late. If planted too late the plant doesn't have time enough during the season to mature. So I always try to go by the old saying which in most all cases you will find to come true, that is, "It's the early bird that catches the worm."

WISCONSIN NO. 8 CORN.

ALBERT J. BLAKELY, NEENAH, WINNEBAGO COUNTY.

My experience with the No. 8 corn covers only last season. The two previous seasons I raised the No. 7 on gravelly and sandy soil with good success. Last spring I had a field of fall plowed land, the north half of which was all clay and the south half sandy, and gravelly. I thought I would plant the north half to No. 8 as the land was rather cold and some parts of it wet. The south end I planted first, because it was dry before the other and used No. 7 corn. That was the 28th and 29th of May. The 30th and 31st I planted the clay ground to No. 8 corn. I made one great mistake with the whole field. I had prepared the ground thoroughly and had marked most of it one way when a heavy rain packed it all down. I had been hindered so much already by rains while preparing the ground and it was getting so late for planting that I worked over again only the small side of the field where I had not marked. The rest of the field I marked crossways and planted it using a hand planter. I hoped to make it right later on by cultivating the marks before the corn came up and following with the drag with its teeth slanted back. It rained again as hard as before. Three weeks of cold wet weather followed. Most of the corn never came up but the side of the No. 8 that was worked again after that rain had a fair stand. All of the No. 8 had to be replanted by hand, but the spring tooth harrow and drag had to go on to the No. 7 land although that was much the warmer and drier soil. After refitting that, we drilled flint corn for fodder, which was coming up in four days after planting. Even with such rough treatment the No. 8 grew well and nearly all ripened. I am convinced that it is far safer to plant this variety on clay land than the No. 7, especially in a backward season. The seed of the No. 8 is evidently hardier to withstand the tendency to rot in cold and wet soil.

WISCONSIN NO. 8 CORN.

O. C. HEIDEMAN, KIEL, MANITOWOC COUNTY.

Mr. President, Fellow Members of the Experiment Association: My experience with Wisconsin No. 8 corn is limited to one season, yet I am fairly well satisfied with the results obtained; I planted one acre of the Wisconsin No. 8 corn, on a sandy soil by the check row method, cultivated it twice cross ways, and as we had time we hoed around the stalk, thereby destroying all the weeds, the corn grew well and matured about fully a week sooner than Wisconsin No. 7 which I had planted on a similar field; the corn was harvested and husked by hand.

The Wisconsin No. 8 corn is in my opinion, an excellent corn for localities where there is a late spring, and an early fall.

CLARK'S YELLOW DENT.

ANDREW I. FINSNES, STOUGHTON, DANE COUNTY.

Two years ago I secured enough Clark's Yellow dent to plant four acres. It was planted May 10 with a checkrow planter, three to four kernels to the hill. The soil was a rich dark loam. In six days it was all up and grew well throughout the season.

September 10 it was mature, maturing one and one-half to two weeks earlier than our old variety. It yielded 80 bushels of shelled corn per acre, while our old variety grown on the same kind of soil, with the same care only yielded 60 bushels.

Last year we planted nearly all our corn land to this variety, but on account of a poor stand it did not yield as well as the year before. Just after planting we got a very heavy rainstorm, making a crust of about 2 inches thick, which some of the young sprouts were unable to break through. It matured about September 20, and yield estimated at 50 bushels.

The stalk of this variety is from medium to large in size, with very few suckers and barren stalks. The kernel is long, quite thick and broad and the cob is small, making it a good sheller. I also found it to be easily husked.

With a little careful breeding and selection I believe this variety will be one of the very best for southern Wisconsin.

TOOLE'S NORTH STAR YELLOW DENT.

WILLIAM TOOLE, BARABOO, SAUK COUNTY.

We have not made comparative tests of the Toole's North Star Yellow dent with other varieties of corn for a number of years, because we have been unwilling to imperil its purity by proximity to other varieties, but every year we have opportunity to make comparisons with other kinds with the result that we are satisfied it is better to continue improving what we have than to make change.

Over thirty years ago and up to twenty-five years since my brother and myself tried many different varieties of corn and our first efforts were with southern grown early varieties, as the dealers used to advertise such sorts which were claimed to ripen in from ninety to one hundred days. Perhaps they would in their own localities, but we learned by experience as have others, that a variety brought from any considerable distance south takes a much longer time to develop to maturity than it did in its natural home. Change of environment and climate conditions induce so much variation from the original type that by the time it has become acclimated, it has become practically a new and most often an inferior variety. The Leaming seemed to be the most promising variety to experiment with, but after a few years growing our Leaming was something else, not at all satisfactory.

About twenty-six or seven years ago, we procured a variety from a Saint Paul seed house which was called the North Star Golden, and I think they called this firm the North Star Seed Store. This variety and the Pride of the North seemed at that time to be the two kinds of yellow dent best adapted to south central Wisconsin, and our preference was given for the North Star Golden. We for a number of years have aimed to hold this variety to at least its original standard of excellence and purity. During that time we have shipped seed to many others. There is always with some growers an inclination to tempt Providence by growing large late varieties hoping for a large yield, but a number of unfavorable experiences of late years have shown many the folly of this, and we noted that at the last two Sauk County fairs the exhibits of yellow dent corn were largely of the North Star variety or showing the characteristics.

Another extreme to which some incline is seeking extra earliness, which may be desirable for some special uses, but it does

not pay with the general crop to plant a small early variety and during the latter part of the season have the corn field idle with two or three weeks of good corn making weather going to waste. Our practice has been in the past, to each year make a close selection of the best ears for stock seed, planting these by themselves, to give opportunity to select from the best breeding. Our experience in other lines of plant breeding than that of corn, had taught us the value of individual prepotency in plants as a factor in continued improvement. Our sons decided to make use of this principle in corn improvement, and for the last five years have planted the selected ears separately, keeping a record of the performances on the different lots, retaining the lines which indicated decided improvement and rejecting any that did not hold to certain standards. From this experience much has been learned, including as follows:—

Very important it is that the corn breeder should have a definite standard in his mind to which he wishes to hold or reach for:

That it needs careful discrimination to choose for earliness, which shall make a variety safe for the soil and latitude for which it is intended, and yet get all the possibilities of growth there in an average season.

That we must in this latitude, hope to get our fullest yield from circumference, even more than from length of ear, therefore, the standard of proportions suited for further south must be modified for adaptation to our conditions.

That the cylindrical ear is desirable because of the accompaniment of regular sized grain more generally than with the ear which drops its rows.

That the short ear well capped at the end is not so desirable as one fully matured and longer, even though not so completely tipped out.

That the eye alone is not to be depended on in judging size of ear, because the cylindrical ear will often seem shorter than the tapering one which proves to be no longer when measured.

That to the man who follows out a definite line of pedigree breeding, the best ears of his own growing, are more valuable to him than to anyone else, and he cannot afford to part with them for any ordinary premium, just as the animal breeder should retain his best to keep up the quality of his herd.

That in making comparison of varieties especially in regard to earliness, due consideration should be given to difference in soil and surroundings, for instance in 1906, Toole Brothers furnished Mr. D. A. Drew with some ears of corn

from one special breeding lot and themselves planted from the same, all being the product from one ear. Planted at the same time, Mr. Drew's corn reached the same stage of maturity fully twenty days before the other. In 1907 an ear was divided and planted by the two different parties as in the year preceding, and a difference of fully two weeks was shown in reaching the same stage of maturity. This difference being due to difference in soil.

That the value of corn for fodder is of so much importance in Wisconsin, we should require of a variety not only that it shall be leafy but also of keeping green to, or beyond the time when it has reached the proper stage to be cut up and shocked.

More might be mentioned in this line but probably this paper is becoming too lengthy to fit in among the many good things I see offered on the program of this meeting.

BUSINESS MEETING.

Business meeting of the Wisconsin Agricultural Experiment Association, Thursday, February 6, 1908, 2 P. M., Agricultural Hall.

Called to order by the President, A. L. Stone. The minutes of the last meeting were read and adopted, after which the following officers were elected:

President.....A. L. Stone, Madison.
Vice-President H. A. Main, Ft. Atkinson.
Secretary R. A. Moore, Madison.
Treasurer J. N. Bohl, Beaver Dam.

On motion, Dean H. L. Russell, Madison, and Hon. A. G. Schauer, Tisch Mills, were made honorary members of the Experiment Association.

RESOLUTION.

The following resolution was reported by the committee and unanimously adopted:

Realizing the importance of good roads to the farmers and believing that Wisconsin should do as practically all other progressive states are doing to bring about good roads, it should appropriate state money to help pay for these roads;

Therefore, be it resolved, That it is the sense of the Wisconsin Agricultural Experiment Association now assembled, that each member should put forth his best efforts to bring about the passage of the constitutional amendment which will make it lawful, in the words of the amendment, for the state to "appropriate money in the treasury, or thereafter to be raised by taxation, for the construction or improvement of public highways."

Chairman, Committee on Resolutions.

HORACE P. HOWELL,

TREASURER'S REPORT.

H. W. Meekin, Treasurer of the Association, made the following report, which was duly accepted.

Report as rendered by Treasurer, February 6, 1908.

Receipts.

1907		
Feb. 8.	From clerk as membership fees.....	\$317 00
Feb. 20.	From P. A. Dukleth (former treas.) as balance.....	57 63
Feb. 20.	From P. A. Dukleth as membership fees.....	2 00
Mar. 6.	From T. R. Ford as membership fee.....	50
Mar. 11.	From clerk as membership fees.....	25 50
Mar. 18.	From G. M. Wagner & L. H. Fisher, membership fees	1 00
Mar. 25.	From clerk as membership fees.....	32 50
Apr. 10.	From clerk as membership fees.....	37 00
Apr. 12.	From clerk as membership fees.....	20 00
May 11.	From clerk as membership fees.....	11 00
May 14.	From clerk as membership fees.....	6 00
Dec. 12.	From clerk as membership fees.....	8 00
Jan. 28.	From clerk as membership fees for 1908.....	85 00
Total receipts.....		\$604 13

Disbursements.

1907		
Feb. 8.	H. E. Krueger for premiums.....	\$8 00
Feb. 8.	Earl Usher for premiums.....	2 00
Feb. 8.	Horace Whittaker for premiums.....	4 00
Feb. 8.	J. P. Bonzelet for premiums.....	7 00
Feb. 8.	H. A. Main for premiums.....	1 00
Feb. 8.	D. L. Bryson for premiums.....	1 00
Feb. 8.	O. F. Miritz for premiums.....	50
Feb. 8.	O. C. Heiderman for premiums.....	3 50
Feb. 8.	G. A. Stivarius for premiums.....	3 00
Feb. 8.	T. Thompson for premiums.....	3 00
Feb. 8.	W. L. Illian for premiums.....	4 50

Feb. 8.	G. A. Freeman for premiums.....	1 00
Feb. 8.	Alvin Heinke for premiums.....	1 00
Feb. 8.	F. B. Grebe for premiums.....	10 00
Feb. 8.	E. A. Beule for premiums.....	5 00
Feb. 8.	C. H. Howitt for premiums.....	22 00
Feb. 8.	Clyde Akins for premiums.....	7 00
Feb. 8.	Ike Blood for premiums.....	3 00
Feb. 8.	J. H. McNown for premiums.....	7 50
Feb. 8.	Geo. Schmit for premiums.....	1 00
Feb. 8.	Theo. Christoph for premiums.....	3 00
Feb. 8.	Jos. N. Bohl for premiums.....	3 00
Feb. 8.	Ray N. West for premiums.....	17 00
Feb. 8.	Harvey N. Longley for premiums.....	5 50
Feb. 8.	W. A. Toole for premiums.....	3 00
Feb. 8.	W. L. Ilian for barley purchased in Dec.....	1 50
Feb. 9.	Horace Whittaker for 23 hours work.....	3 45
Feb. 9.	H. A. Main for expenses attending annual meeting	4 30
Feb. 11.	Supt. L. D. Harvey attending annual meeting.....	22 77
Feb. 11.	Andrew Simonson for 700 copies Wis. Agriculturist	10 00
Feb. 12.	Idalyn Bibbs for office expenses.....	10 00
Feb. 15.	Mary Moyle, attending annual meeting.....	7 15
Feb. 18.	Eva Lehman, attending annual meeting.....	6 05
Feb. 19.	L. L. Olds for judging grain and forage plants.....	9 20
Feb. 28.	L. A. Carpenter for premiums.....	50
Feb. 28.	E. C. Elver for premiums.....	50
Feb. 28.	H. W. Meekin for premiums.....	13 50
Feb. 28.	H. W. Meekin, attending annual meeting.....	8 45
Mar. 10.	O. R. Frauenheim, Wis. No. 8 seed corn.....	4 75
Mar. 10.	H. F. Kraemer for premiums.....	50
Mar. 10.	H. W. Whitehead for premiums.....	1 00
Mar. 16.	J. B. Smiley for premiums.....	1 00
Mar. 16.	M. C. Lilley & Co. for 200 badges.....	13 50
Mar. 16.	H. P. Howell, traveling expenses.....	8 50
Mar. 16.	H. W. Meekin for 1 bu. Wis. No. 8 seed corn.....	2 50
Mar. 22.	Prof. G. F. Snyder, attending annual meeting.....	2 10
Mar. 26.	Idalyn Bibbs for office expenses.....	25 00
Mar. 26.	S. A. Eastman for premiums.....	50
May 4.	Idalyn Bibbs for office expenses.....	25 00
June 13.	Idalyn Bibbs, office expenses.....	15 00
Sept. 16.	C. M. Dengler for sign cloth and photo. views.....	5 08
Sept. 16.	Idalyn Bibbs for office expenses.....	10 00
Oct. 7.	M. C. Lilley & Co. for state fair badges.....	17 75
Oct. 7.	Idalyn Bibbs for office expenses.....	25 00
Oct. 7.	Idalyn Bibbs, stamps rec'd as fees.....	26 00
Nov. 28.	Idalyn Bibbs for office expenses.....	25 00
Jan. 25.	H. W. Meekin for expenses incurred in treas. office..	3 11
Jan. 29.	Whitehead & Hoag Co. for badges.....	56 00
Feb. 1.	Idalyn Bibbs for office expenses.....	10 00

Total disbursements..... 501 16

Feb. 6. Forward total receipt \$604 13

Total disbursements..... 501 16

Balance in hands of treasurer..... \$102 97

Respectfully submitted,

HAMILTON W. MEEKIN,

Treasurer.

SECRETARY'S REPORT ON STATE APPROPRIATION.

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

Money in the state treasury, February 5, 1907, date of making last report.....	\$100 39
Amount drawn from passage of Bill 163, A., Chapter 43, Laws of 1907, to July 1st, pro rata.....	208 75
State appropriation for 1907.....	2,000 00
By notary fee in bill which the Secretary of State refused to pay in a former bill, and errors not reported to this office	1 50
Total	\$2,310 64

Disbursements.

1907	
Mar. 1. Miss Bibbs, clerical services (February).....	\$5 00
Mar. 26. Miss Bibbs, clerical services (March).....	5 00
Mar. 26. Wisconsin Experiment Station, 50 bu. Wis. No. 7 corn	50 00
Apr. 6. L. L. Olds Seed Co., 10 bu. No. 8 corn.....	25 00
Apr. 18. Whitall, Tatum Co., Philadelphia, 4 cases 2 gross qt. iron mould salt mouths.....	43 83
Apr. 23. Miss Bibbs, clerical services (April).....	5 00
May 9. E. W. Keyes, postmaster, 2,500 1c stamps.....	25 00
May 9. E. W. Keyes, postmaster, 1,000 postal cards.....	10 00
May 22. Miss Bibbs, clerical services (May).....	5 00
June 22. Miss Bibbs, clerical services (June).....	5 00
July 16. A. L. Stone, traveling expenses, Janesville.....	7 40
July 23. Miss Bibbs, clerical services (July).....	15 00
Aug. 3. E. W. Keyes, postmaster, 1,000 3c stamps.....	30 00
Aug. 13. E. W. Keyes, postmaster, 1,000 1c stamps.....	10 00
Aug. 27. Miss Bibbs, clerical services (August).....	15 00
Sept. 5. E. W. Keyes, postmaster, 300 10c stamps.....	30 00
Sept. 5. E. W. Keyes, postmaster, 500 1c stamps.....	5 00
Sept. 17. A. L. Stone, traveling expenses, freight, etc, State Fair	26 03
Sept. 18. Lewis Zerbel, traveling expenses incurred at State Fair	14 89
Sept. 23. H. E. Krueger, Beaver Dam, traveling expenses incurred at State Fair.....	13 31
Sept. 23. J. P. Bonzelet, Eden, traveling expenses incurred at State Fair.....	11 42
Sept. 23. Miss Bibbs, clerical services (September).....	15 00
Sept. 25. Wisconsin Experiment Station, 500 bu. Oderbrucker barley at 70c.....	350 00
Sept. 30. Democrat Prtg. Co., 5,000 32 page seed growers' lists	98 00
Oct. 1. Parsons Prtg. Co., 3,000 letterhead.....	9 50
Oct. 1. Parsons Prtg. Co., 3,000 No. 10 envelopes.....	9 00
Oct. 11. F. C. Neilson, negatives, prints.....	4 80
Oct. 18. E. W. Keyes, postmaster, 5,000 1c stamps.....	50 00
Oct. 18. E. W. Keyes, postmaster, 300 10c stamps.....	30 00

Oct. 18.	E. W. Keyes, postmaster, 1,000 2c stamps.....	20 00
Oct. 18.	Haswell Furniture Co., filing case.....	10 00
Oct. 23.	Miss Bibbs, clerical services (October).....	15 00
Nov. 11.	Parsons Prtg. Co., 3,000 letterheads.....	9 50
Nov. 11.	Parsons Prtg. Co., 6,000 No. 10 envelopes.....	15 00
Nov. 11.	Parsons Prtg. Co., 3,000 No. 6½ envelopes.....	6 00
Nov. 27.	Miss Bibbs, clerical services (November).....	15 00
Dec. 11.	R. A. Moore, expenses, attending International Fat Stock Meeting	9 95
Dec. 19.	Democrat Prtg. Co., 4,000 tags.....	3 25
Dec. 19.	Wisconsin Experiment Station, 150 bu. No. 7 corn at \$2	300 00
Dec. 19.	Miss Bibbs, clerical services (December).....	15 00
Jan. 2.	R. A. Moore, expenses, National Corn Associa- tion meeting	14 75
Jan. 3.	Milwaukee Bag Co., Milwaukee, grain sacks.....	104 79
Jan. 22.	Miss Bibbs, clerical services (January).....	15 00
Jan. 22.	E. W. Keyes, postmaster, 1,000 1c stamps.....	10 00
Jan. 22.	E. W. Keyes, postmaster, 1,000 2c stamps.....	20 00
Total		\$1,506 42
1908		
Feb. 5.	Total receipts in State Treasury.....	\$2,310 64
Feb. 5.	Total disbursements from State Treasury.....	1,506 42
Balance in State Treasury.....		\$804 22

We, the undersigned committee, appointed to examine the Treasurer's and Secretary's reports on receipts and disbursements of funds for the past several years, beg leave to report that we found them correct.

(Signed) E. J. DELWICHE,
W. H. HANCHETT,
O. R. FRAUENHEIM.

Sixth Annual Meeting, Feb. 6-7, 1908.

DISPLAY OF GRAINS AND FORAGE PLANTS FOR 1908.

Perhaps one of the most attractive features of the last annual meeting of the Experiment Association was the display of grains and forage plants. Approximately to the value of three hundred dollars in cash and special prizes had been set aside for premiums to be paid for the best exhibits of pure-bred seed grains. The quality of the grain displayed was of a high stan-

dard and the interest taken in the exhibit was such that the Association deems it advisable to continue this line of effort on a much larger scale. Cash and special prizes to the approximate value of six hundred dollars will be given to the growers of best seeds at the next annual meeting. A list of special prize offerings will be sent to members of the Association later in the year.

All members of the Association should exhibit seed grains at the State Fair in Milwaukee and the International Corn Show at Omaha, as well as the Experiment Association Contest. We desire to let farmers and seedsmen far and near know what we are able to produce.

We feel that much can be done in the way of encouraging the dissemination of good seeds free from obnoxious weeds that have 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. 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 in the production of choice grains and forage plants for our next display.

PARTIES AWARDED CASH PREMIUMS AT THE WISCONSIN AGRICULTURAL EXPERIMENT ASSOCIATION MEETING, FEB. 6TH AND 7TH, 1908.

Class 1a—Best $\frac{1}{2}$ peck Swedish Select Oats (Wis. No. 4).

First premium—	H. F. Kramer, Bloomer.....	\$1 00
Second "—	J. P. Bonzelet, Eden.....	3 00
Third "—	C. H. Howitt, Randolph.....	2 00
Fourth "—	H. E. Krueger, Beaver Dam.....	1 00

Class 1b—Best $\frac{1}{2}$ peck of any other variety of Oats.

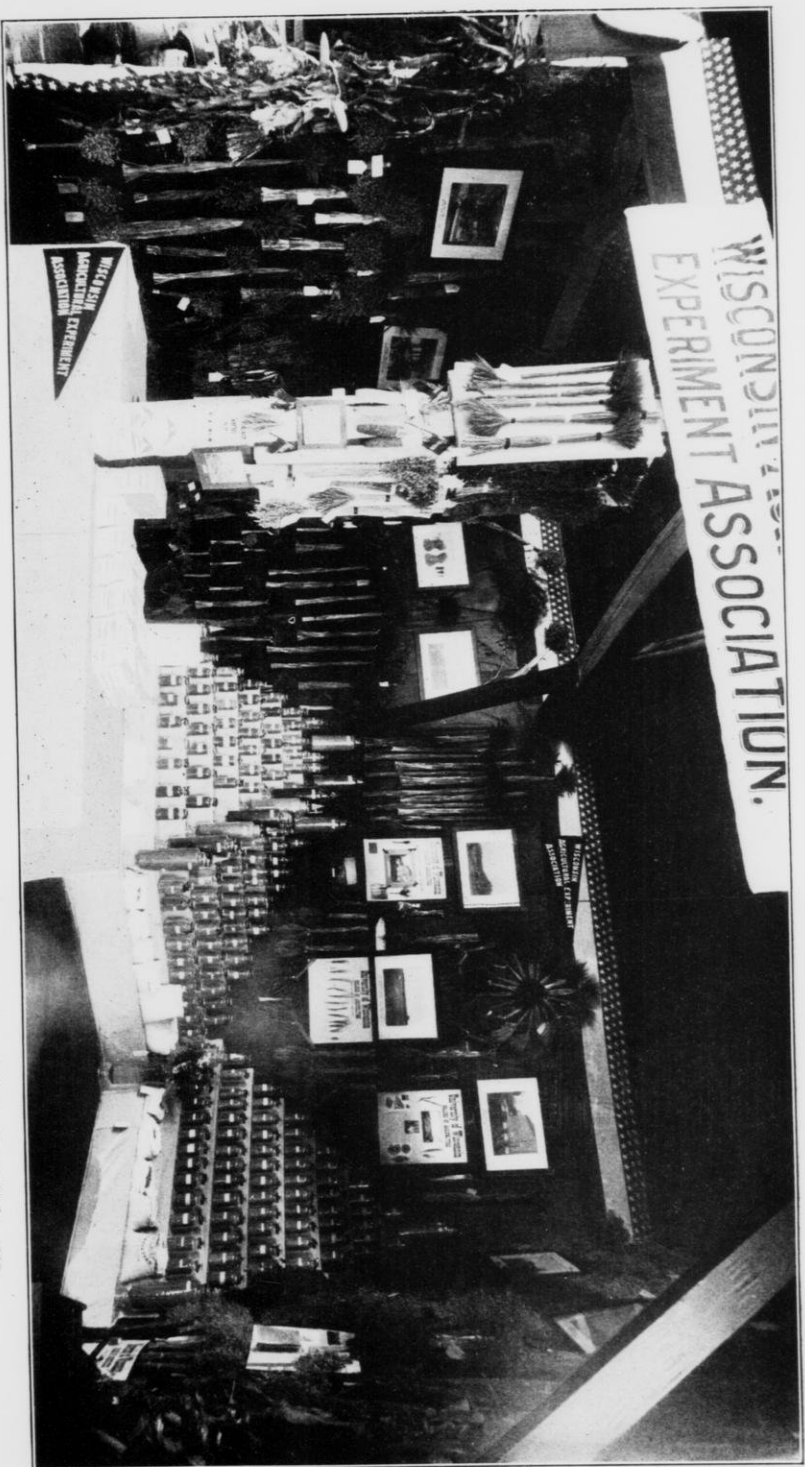
First premium—	C. H. Howitt, Randolph.....	\$4 00
Second "—	F. P. Grebe, Fox Lake.....	3 00
Third "—	H. W. Meekin, Fond du Lac.....	2 00
Fourth "—	R. N. West, Ripon.....	1 00

Class 2a—Best bundle Swedish Select Oats in sheaf.

First premium—	C. H. Howitt, Randolph.....	\$4 00
Second "—	R. N. West, Ripon.....	3 00
Third "—	H. E. Krueger, Beaver Dam.....	2 00
Fourth "—	F. P. Grebe, Fox Lake.....	1 00

Class 2b—Best bundle of any other variety of Oats in sheaf.

First premium—	C. H. Howitt, Randolph.....	\$4 00
Second "—	R. N. West, Ripon.....	3 00
Third "—	F. P. Grebe, Fox Lake.....	2 00
Fourth "—	R. N. West, Ripon.....	1 00



Annual Display of Grain and Forage Plants made by the Wisconsin Experiment Association, State Fair, 1907.

Class 3a—Best $\frac{1}{2}$ peck Manshury Barley.

First premium—	H. E. Krueger, Beaver Dam.....	\$4 00
Second “—	C. H. Howitt, Randolph.....	3 00
Third “—	R. N. West, Ripon.....	2 00
Fourth “—	John Puls, Hartford.....	1 00

Class 3b—Best $\frac{1}{2}$ peck Oderbrucker Barley.

First premium—	H. E. Krueger, Beaver Dam.....	\$4 00
Second “—	C. H. Howitt, Randolph.....	3 00
Third “—	J. P. Bonzelet, Eden.....	2 00
Fourth “—	J. N. Bohl, Beaver Dam.....	1 00

Class 3c—Best $\frac{1}{2}$ peck any other variety of Barley.

First premium—	R. N. West, Ripon.....	\$1 00
Second “—	R. N. West, Ripon.....	3 00
Third “—	H. E. Krueger, Beaver Dam.....	2 00
Fourth “—	J. N. Bohl, Beaver Dam.....	1 00

Class 4a—Best bundle Manshury Barley in sheaf.

First premium—	C. H. Howitt, Randolph.....	\$1 00
Second “—	H. E. Krueger, Beaver Dam.....	3 00
Third “—	J. N. Bohl, Beaver Dam.....	2 00
Fourth “—	R. N. West, Ripon.....	1 00

Class 4b—Best bundle of Oderbrucker Barley in sheaf.

First premium—	H. E. Krueger, Beaver Dam.....	\$1 00
Second “—	C. H. Howitt, Randolph.....	3 00
Third “—	F. P. Grebe, Fox Lake.....	2 00
Fourth “—	J. P. Bonzelet, Eden.....	1 00

Class 4c—Best bundle of any other variety of Barley.

First premium—	C. H. Howitt, Randolph.....	\$4 00
Second “—	F. P. Grebe, Fox Lake.....	3 00
Third “—	H. E. Krueger, Beaver Dam.....	2 00
Fourth “—	R. N. West, Ripon.....	1 00

Class 5a—Best ten ears Clark's Yellow Dent Corn (Wisconsin No. 1).

First premium—	Andrew Finsnes, Stoughton.....	\$4 00
Second “—	C. H. Howitt, Randolph.....	3 00
Third “—	G. R. Blodgett, Neenah.....	2 00

Class 5b—Best ten ears Silver King Corn (Wisconsin No. 7).

First premium—	Harvey Longley, Dousman.....	\$4 00
Second “—	Prentice Warmington, Honey Creek.....	3 00
Third “—	Eugene Hetts, Ft. Atkinson.....	2 00
Fourth “—	F. P. Grebe, Fox Lake.....	1 00

Class 5c—Best ten ears Early Yellow Dent Corn (Wisconsin No. 8).

First premium—	C. H. Howitt, Randolph.....	\$4 00
Second “—	G. Q. Emery, Poynette.....	3 00
Third “—	H. W. Meekin, Fond du Lac.....	2 00
Fourth “—	F. P. Grebe, Fox Lake.....	1 00

Class 5d—Best ten ears North Star Yellow Dent Corn.

First premium—	W. A. Toole, Baraboo.....	\$4 00
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Class 5e—Best ten ears Yellow Flint Corn.

First premium—	Clyde E. Akins, Warren, Ill.....	\$4 00
Second “—	H. E. Krueger, Beaver Dam.....	3 00
Third “—	Earl Usher, South Wayne.....	2 00
Fourth “—	J. N. Bohl, Beaver Dam.....	1 00

Class 5f—Best ten ears White Flint Corn.

First premium—	W. Rodell Ward, Ft. Atkinson.....	\$4 00
Second “—	M. O. Myrick, Bristol.....	3 00
Third “—	H. E. Krueger, Beaver Dam.....	2 00

Class 5g—Best ten ears, any variety Corn.

First premium—	Earl Usher, South Wayne.....	\$4 00
Second “—	Donald Bryson, Elizabeth, Ill.....	3 00
Third “—	E. L. Dreger, Madison.....	2 00
Fourth “—	W. L. Schulte, Garnavillo, Ia.....	1 00

Class 5h—Best single ear of Corn, any variety.

First premium—	Eugene Hetts, Ft. Atkinson.....	\$4 00
Second “—	Clyde E. Akins, Warren, Ill.....	3 00
Third “—	H. E. Krueger, Beaver Dam.....	2 00
Fourth “—	J. G. Babcock, Evansville.....	1 00

Class 6a—Best $\frac{1}{2}$ peck of medium Red Clover Seed.		
First premium—	O. R. Frauenheim, Random Lake.....	\$4 00
Second "—	C. H. Howitt, Randolph.....	3 00
Third "—	Leslie Spaulding, Mondovi.....	2 00
Fourth "—	W. L. Illian, Adell.....	1 00
Class 6b—Best $\frac{1}{2}$ peck Mammoth Red Clover Seed.		
First premium—	H. E. Krueger, Beaver Dam.....	\$1 00
Second "—	Leslie Spaulding, Mondovi.....	3 00
Third "—	R. N. West, Ripon.....	2 00
Class 6c—Best $\frac{1}{2}$ peck of Alsike Clover Seed.		
First premium—	R. N. West, Ripon.....	\$1 00
Second "—	O. R. Frauenheim, Random Lake.....	3 00
Third "—	H. W. Meekin, Fond du Lac.....	2 00
Fourth "—	H. E. Krueger, Beaver Dam.....	1 00
Class 7a—Best $\frac{1}{2}$ peck (black) Soy Beans.		
First premium—	Harry Garside, Cedar Grove.....	\$3 00
Second "—	R. N. West, Ripon.....	2 00
Third "—	J. N. Bohl, Beaver Dam.....	1 00
Fourth "—	F. P. Grebe, Fox Lake.....	50
Class 7b—Best $\frac{1}{2}$ peck (green) Soy Beans.		
First premium—	Clyde Akins, Warren, Ill.....	\$3 00
Second "—	Earl Usher, South Wayne.....	2 00
Class 7c—Best $\frac{1}{2}$ peck (yellow) Soy Beans.		
First premium—	H. E. Krueger, Beaver Dam.....	\$3 00
Second "—	F. P. Grebe, Fox Lake.....	2 00
Third "—	J. N. Bohl, Beaver Dam.....	1 00
Fourth "—	A. C. Ochsner, Plain.....	50
Class 8a—Best bundle of Soy Beans in sheaf.		
First premium—	H. E. Krueger, Beaver Dam.....	\$3 00
Second "—	Clyde Akins, Warren, Ill.....	2 00
Third "—	A. C. Ochsner, Plain.....	1 00
Fourth "—	F. P. Grebe, Fox Lake.....	50
Class 9a—Best $\frac{1}{2}$ peck of Alfalfa Seed.		
First premium—	R. N. West, Ripon.....	\$4 00
Second "—	H. E. Krueger, Beaver Dam.....	3 00
Class 10a—Best sample of Alfalfa Hay.		
First premium—	F. P. Grebe, Fox Lake.....	\$3 00
Second "—	H. W. Meekin, Fond du Lac.....	2 00
Third "—	J. W. Briggs, Peebles.....	1 00
Fourth "—	W. L. Illian, Adell.....	50
Class 11a—Best $\frac{1}{2}$ peck Winter Rye.		
First premium—	R. N. West, Ripon.....	\$3 00
Second "—	H. E. Krueger, Beaver Dam.....	2 00
Third "—	P. A. Paulson, Hudson.....	1 00
Fourth "—	H. W. Meekin, Fond du Lac.....	50
Class 11b—Best $\frac{1}{2}$ peck Spring Rye.		
First premium—	R. N. West, Ripon.....	\$3 00
Second "—	J. N. Bohl, Beaver Dam.....	2 00
Third "—	H. E. Krueger, Beaver Dam.....	1 00
Fourth "—	Levi Palmer, Verona.....	50
Class 12a—Best $\frac{1}{2}$ peck Timothy Seed.		
First premium—	R. N. West, Ripon.....	\$3 00
Second "—	A. C. Ochsner, Plain.....	2 00
Third "—	Clyde Akins, Warren, Ill.....	1 00
Fourth "—	H. E. Krueger, Beaver Dam.....	50

SPECIAL PRIZE AWARDS.

The Zenner Disinfectant Co., Detroit, Mich., offered the following premiums:

Best ten ears Clark's Yellow Dent (Wisconsin No. 1), 1 gallon Zenoleum Disinfectant and Animal Dip, value \$1.50.

Awarded to Andrew Finsnes.....Stoughton

Best ten ears Silver King (Wisconsin No. 7), 1 gallon Zenoleum Disinfectant and Animal Dip, value \$1.50.

Awarded to Harvey Longley.....Dousman

Best ten ears (Wisconsin No. 8), 1 gallon Zenoleum Disinfectant and Animal Dip, value \$1.50.

Awarded to C. H. Howitt.....Randolph

Best ten ears North Star Yellow Dent, 1 gallon Zenoleum Disinfectant and Animal Dip, value \$1.50.

Awarded to W. A. Toole.....Baraboo

Best ten ears Yellow Flint, 1 gallon Zenoleum Disinfectant and Animal Dip, value \$1.50.

Awarded to Clyde AkinsWarren, Illinois

Best ten ears White Flint, 1 gallon Zenoleum Disinfectant and Animal Dip, value \$1.50.

Awarded to W. Rodell Ward.....Ft. Atkinson

Best ten ears, any other variety, 1 gallon Zenoleum Disinfectant and Animal Dip, value \$1.50.

Awarded to Earl Usher.....South Wayne

Best single ear of corn, any variety, 5 gallons Zenoleum Disinfectant and Animal Dip, value \$6.25.

Awarded to Eugene Hetts.....Ft. Atkinson

The J. I. Case Manufacturing Co., Racine, Wis., offered one of their J. I. Case round hole corn planters complete with check rower and 80 rods of wire, valued at \$40, to the person securing the greatest value in corn premiums.

C. H. Howitt, Randolph, Clyde Akins, Warren, Ill., and H. E. Krueger, Beaver Dam, tied for first place and were given joint ownership of planter.

Johnson & Field Mfg. Co., Racine, Wis., offered one complete Racine Fanning Mill, with bagging attachment, grain separating attachment, alfalfa, timothy and clover attachment, seed corn sorting attachment, together with all other sieves and screens, valued at \$45, to the person winning cash prizes to the greatest value on small grains, alfalfa, clovers and timothy seeds.

Won by R. N. West, Ripon.

PREMIUM LIST, 1908.

(Awards to be made February, 1909.)

DEPARTMENT OF FARM CROPS.

Class 1. Oats.

- Best $\frac{1}{2}$ peck Swedish Select oats (Wis. No. 4), \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
- Best $\frac{1}{2}$ peck any other variety, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.

Class 2. Oats in Sheaf.

- Best bundle Swedish Select oats, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
- Best bundle any other variety, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.

Class 3. Barley.

- Best $\frac{1}{2}$ peck Manshury barley, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
- Best $\frac{1}{2}$ peck Oderbrucker Barley, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
- Best $\frac{1}{2}$ peck any other variety, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.

Class 4. Barley in Sheaf.

- Best bundle of Manshury barley, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
- Best bundle of Oderbrucker Barley, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
- Best bundle of any other variety, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.

Class 5. Corn.

- Best ten ears, Clark's Yellow Dent (Wisconsin No. 1), \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
- Best ten ears Silver King (Wis. No. 7), \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
- Best ten ears, (Wisconsin No. 8), \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
- Best ten ears, Golden Glow (Wisconsin No. 12), \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
- Best ten ears, North Star Yellow Dent, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
- Best ten ears, Yellow Flint, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.



New Agronomy Building.

Headquarters of the Wisconsin Experiment Association. The next Annual Grain Display will be made in this building.



Ito San Soy Beans grown by H. W. Meekin, Spring Brook Stock Farm,
Fond du Lac.

Yield of seed beans, twenty-five bushels per acre.



- Best ten ears, White Flint, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
- Best ten ears, any other variety, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, 1.00; 5th, 50 cents.
- Best single ear of corn, any variety, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.

Class 5½. Special.

- Best fifty ears of Silver King (Wisconsin No. 7) corn, \$10.00; 2nd, \$6.00; 3rd, \$3.00; 4th, \$2.00; 5th, \$1.00.
- Best fifty ears of any Wisconsin Standard Yellow Dent corn (Wisconsin No. 8, Clark's Yellow Dent, Golden Glow, North Star), \$10.00; 2nd, \$6.00; 3rd, \$3.00; 4th, \$2.00; 5th, \$1.00.

Class 6. Clover Seed.

- Best ½ peck of medium red clover seed, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
- Best ½ peck of mammoth red clover seed, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
- Best ½ peck of alsike clover seed, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.

Class 7. Soy Beans.

- Best ½ peck (black) soy beans, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.
- Best ½ peck (green) soy beans, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.
- Best ½ peck (yellow) soy beans, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.
- Best ½ peck (brown) soy beans, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.

Class 8. Soy Beans in Sheaf.

- Best bundle of soy beans, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.

Class 9. Alfalfa Seed.

- Best ½ peck of alfalfa seed, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.

Class 10. Alfalfa Hay.

- Best sample of alfalfa hay, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.

Class 11. Rye.

- Best ½ peck winter rye, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.
- Best ½ peck spring rye, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.

Class 12. Timothy Seed.

Best $\frac{1}{2}$ peck timothy seed, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.

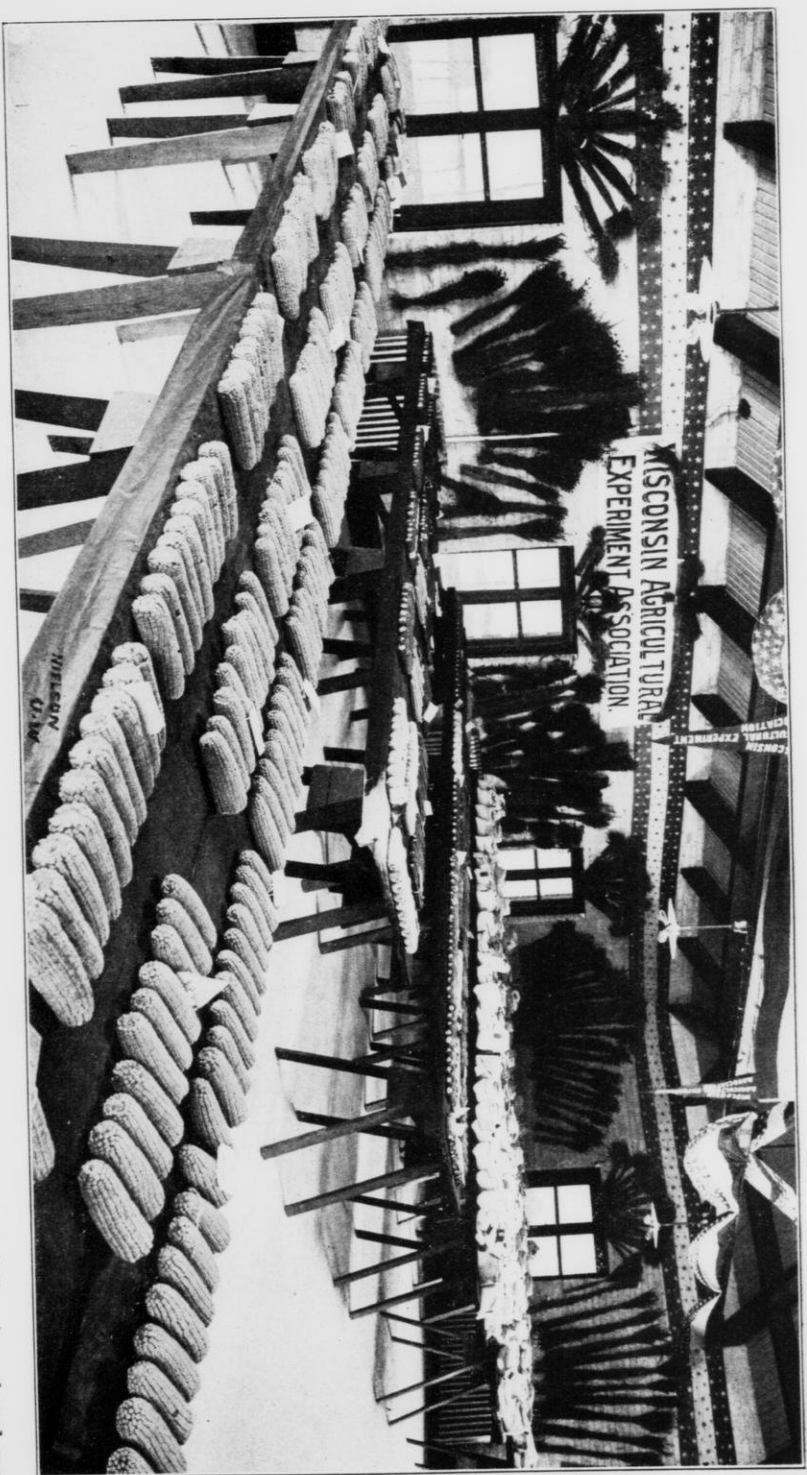
Class 13. Buckwheat.

Best $\frac{1}{2}$ peck Silver Hull buckwheat, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.

Best $\frac{1}{2}$ peck Japanese Buckwheat, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.

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 as the property of the Wisconsin Experiment Association and will be sold at auction to the highest bidder after the awards are made.
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 cash premiums on the same variety of grain or forage plant.
8. A proper entry of all grains, seeds, etc., must be made in the entry book at the Secretary's office before they are placed on exhibition tables.
9. Expert judges will be secured to place the awards.
10. Where doubt exists in regard to grains being entered according to rules and regulations the exhibitor may be required to verify by oath or affidavit to the correctness of the entries.
11. The meeting of the association will be held at Madison in the Agronomy Building and rooms have been secured in that building for the exhibits.



Competitive Display of Seed Grains at the Seventh Annual Meeting of the Wisconsin Experiment Association. Eight hundred dollars in cash and special prizes will be given at the next Annual Exhibition, February, 1909.



A FEW ARTICLES ON TIMELY TOPICS.

R. A. MOORE.

SELECTION OF SEEDS FOR THE SEASON'S CROP.

NO ONE THING ON THE FARM NEEDS SO CAREFUL ATTENTION.

From actual experience farmers have found that to make progress in breeding animals only the best foundation stock should be used in order to reap the best results. Farmers no longer look for progress in their herds by using scrub sires from the fact that "like begets like" is a saying with them which is now put into common practice. The question of farm seeds for the season's crop is of equal importance when we consider that the field crops of Wisconsin are valued at one hundred million dollars annually.

This great valuation can be increased one-fourth by careful selection of seeds all other things equal. During the winter months before the rush of spring work, the farmer should clean and grade his seed grain, test all seeds as to their viability and vitality. Where clover or alfalfa seed is to be purchased, it is well to send to some of the leading seed firms early for samples and test before placing the order. Many times the entire success or failure of clover and alfalfa fields are determined by the vitality of the seed. Alfalfa and clover seed are often injured by being stored in deep bins after hulling where the temperature is raised to such a degree that the vitality often becomes impaired. Such seed is often put upon the market and unless detected reaches the farmer and is the means of crop failure. Good alfalfa and clover seed should test 90% or above; no seed should be sown that does not test at least 80% though we increase the amount of seed sown per acre. Where the viability of seed is low we can be assured that practically all the seeds are injured even though a portion germinates.

There is no seed of which a farmer should be more careful of than his seed corn as there is usually a wider variation in quality and vitality in seed corn than in any other seed. No

farmer can afford to take the risk of planting "any kind" of seed corn for his season's crop.

The time to select seed corn should begin at the ripening season of the crop and then a few diligent hours' work may be the means of doubling the yield of corn the following year.

The writer is firmly convinced that all seed corn for Wisconsin should be fire dried in order to lock all the energy and vitality of the corn in the kernel until time of planting. Where the desire is to cure merely four or five bushels a place can often be arranged in one of the living rooms or the attic. Where large quantities are to be fire dried, a little building with shielded stove in center conveniently arranged with corn racks is preferable. Many members of the Experiment Association of the state are now making a specialty of growing and curing seed corn in co-operation with the Experiment Station, and great advancement in yield and quality is looked for.

One safe rule a farmer should follow when purchasing seed corn is to insist that it shall be sent him in the ear. Our best seedmen and corn breeders handle seed corn in this way and it is the only safe way to secure it.

We trust the time is at hand when the scoop-shovel method of handling seed corn, which has wrought such widespread damage in our state, will be relegated to the past. Although the farmer will have to pay a higher price for his seed corn in the ear, yet he is reasonably certain to get good seed which is to a great extent determines the success of the season's corn crop.

GROWING PEAS FOR SEED AND GRAIN.

Wisconsin ranks well as a pea growing state and as far as quality is concerned she takes the lead. This is especially true of the peas grown in the lake shore counties, as the climate is there perfect for the full development of the vines and pods. Northern and eastern Wisconsin contains the pea growing centers of the state and there grow them abundantly for seed and feeding peas. Peas can be grown in southern Wisconsin but the conditions are not ideal, the climate is too dry and warm. The peas are apt to be troubled with weevil and occasionally over one-half of the entire crop will be affected.

In the lake shore counties and northern Wisconsin, farmers regard the pea crop of the utmost importance and it there forms one of the principal crops.

Farmers making a business of growing peas for seed or the general market usually plow the land in the fall so as to have it ready for the early spring.

Rotation. In rotation the pea crop is grown on clover sod or follows corn which the previous year was on sod land. Peas belong to the legume family and hence has the power through minute organisms that inhabit nodules, that grow upon its roots, to gather nitrogen from the air to build plant tissue and store a supply in the ground for the further use by plants. On account of the pea crop being a soil renovator, usually barley, oats or wheat follow that crop to good advantage.

Preparation of the seed bed. Like many other crops, peas respond readily where given the proper attention, consequently it is well to thoroughly prepare the land by double disking and free use of roller and fine tooth harrow.

Sowing the seed. From two to three bushels of seed are used per acre, depending upon the size of the peas sown, the smaller the peas the less seed is necessary. Some of the large varieties require as high as three and one-half bushels of seed per acre in order to get the best returns.

The ground should be prepared as soon in the spring as machinery will work well on the land, and the peas sown with drill or seeder. The drill seems preferable as the seed can be put in at a greater and more uniform depth, which is very essential. When sown with drill peas should be put in at a depth of from three to four inches.

After the peas are sown use a roller or planker so as to get a nice even seed bed for running harvesting machinery later. Use fine tooth harrow after roller or planker so as to create a mulch and prevent too rapid evaporation of moisture.

Harvesting. The peas should be cut when the larger portion of the vines and pods have turned yellow. The most common practice of harvesting is with mower and bunching attachment. A pea harvester is now on the market which is said to do exceptionally good work.

After the peas are cut they are left to cure and dry on the field for a few days, and then drawn to the barns on ordinary hay racks and stored. When peas are stacked before threshing it is well to cover the stack with marsh hay or canvas as rain penetrates the stacks quite readily.

Threshing. Peas are threshed with the ordinary grain thresher but usually blank concaves are used or at least one blank and the other with only a few teeth left therein.

Peas thresh quite as readily as the small cereals and often a day's run exceeds one thousand bushels.

Storing. Peas are stored in granaries or are drawn direct to market where ready sale at good prices usually awaits the farmer. The straw, if peas are not too ripe when cut, makes a fine feed for sheep. Other farm animals also relish good pea straw.

The Canadian field pea of which there are some two hundred varieties, are grown generally in Michigan, Wisconsin and Minnesota.

The Scotch Green pea seems to be one of the leaders in the lake shore counties of Wisconsin and is there grown for seed and dry market peas.

GROWING CLOVER FOR SEED.

The high prices paid for clover seed during the past few years has caused many farmers of Wisconsin to consider the advisability of turning their attention to this line of effort. It seems quite conclusive from the success experienced by those who have pursued the raising of clover seed, giving the subject the thought and care due to so important a crop, that Wisconsin farmers can raise clover seed in conjunction with a hay crop at a good profit.

Some localities of the state are more especially adapted to raising clover than others, and in these favored districts the clover does not only grow better but the heads seem to fill out with seed better. This fact has led many farmers who live in what is known as the clover belt to raise clover for seed extensively and attract buyers of clover seed to that section of the state. These farmers realizing the money that can be made by growing this important legume for seed purposes have given the plant special care and attention, in other words, have made a study of growing clover. It seems quite conclusive that this clover belt proper could be made much wider and longer, as a matter of fact, could be made to extend all over the state if farmers made a study of the proper conditions under which clover is raised for seed. It also seems quite conclusive, that it would be an important crop for the general farmer to turn his attention to, as Wisconsin seems naturally adapted for raising most legumes, and especially clover.

The Medium red, June or common red clover is the clover most commonly grown by farmers of this state. The Mammoth, Alsike and white clovers are also grown but not so exten-

sively as the medium red, consequently we will consider the common clover specifically and the other varieties generally.

The medium red clover is a biennial plant, the seed being sown one season and the harvest proper to take place the following year. If sown without a nurse crop often a cutting of hay may be produced the first season. The usual practice followed by most farmers is to sow in the spring with barley, oats or some cereal as a nurse crop, and depend on the crop for hay the year following. Which ever practice in sowing is followed to get the best seed crop it seems advisable to retain the second cutting of medium red and the first cutting of other varieties named the year following seeding. Where the first cutting of clover is retained for seed it should be pastured or clipped back by running mower over the same about June 1st. The reason for reserving the second cutting of medium red clover for seed is from the fact that it ripens quite unevenly at first and few bees and other insects are present to aid in fertilizing the many tiny florets of the numerous blossoms, which is not the case later in the season when the white and alsike clovers are out of bloom and bees are forced to work upon the red clover. This is very essential as unless pollination is quite complete it does not pay to harvest the crop.

Where the second crop is to be retained for seed it is quite essential that the first crop be cut somewhat earlier than if the desire was not to save the second cutting for seed. When the field is nearly in full bloom, before any of the blossoms turn brown, is about the proper time to cut to insure the best chances for a good seed crop. After the first cutting has been removed for hay, the clover plants come on quite evenly and reach the blossoming period approximately at the same time.

When the clover heads begin to turn brown an examination of the crop should be made to determine if it will pay to retain the crop for seed. Fifty or one hundred heads should be selected from different parts of the field and each head examined and the seed taken out.

From estimates that have been carefully made by clover growers it has been found that if from the number of heads examined the number of seeds found only averaged twenty per head and the clover considered a fair stand, the yield would be about two bushels per acre; if thirty seeds to the head, three bushels per acre, etc.

Unless approximately one and one-half or two bushels could be secured per acre, it would not be advisable to wait and cut the clover for seed. It could be cut for hay or turned under as a fertilizer.

If from the test it should be found that a yield of two bushels per acre or over could be secured it is then well to wait until the heads are brown and the leaves turning dark, then cut with self-rake reaper adjusted so that sufficient clover will accumulate on the table before being raked off to make the gathering of the clover most convenient. A mower can be used to advantage with buncher attachment. The clover should remain in piles until thoroughly dry when it can be hauled directly to the machine and hulled. In parts of the state where only a limited number of farmers raise clover for seed it will be hard to get a clover huller to thresh from the field in which case it will be necessary to stack or place on the barn floor or some other convenient place where the seed can be saved to the best advantage. Clover should be hauled in a rack with tight bottom so as to save the seed which shells. Under no circumstances should damp clover be stored away in barns, stacks or hulled direct from the field. After threshing if a large quantity of seed is on hand place in shallow bins and shovel over from time to time. In no case leave the newly threshed clover in sacks or deep bins as there is danger of heating thereby reducing the germinability of the seed.

WHERE IS THE FARM MACHINERY?

The close competition for farm labor the past few years has forced farmers to do the farm work largely with labor saving machinery. The great advancement made in the way of improving farm machinery and inventing new machines for the handling of the various crops on the farm has been a great boon to the farmer, who would otherwise have been forced to leave the farm for want of help. No farm would now be considered up-to-date without the necessary working tools to operate such farm. From wide observation made by the writer it seems that there is no line of effort so sadly neglected on the farm as the proper care of the farm machinery. No mill, factory or machine shop would be expected to run with any degree of accuracy, if the machinery lay out exposed to the elements for a large portion of the year, yet to many farmers it seems that because the farm machines have no nerves that any old place on the farm is good enough for its storage. Often valuable machinery which is only used for a few weeks in the year is housed on a forty acre lot with no protection but the skies. At

other times a little more thought is given to the machinery and it will be carted into the fence corner or behind some farm building where together with snow drifts and the sides of buildings a little protection is given.

Well may the question be asked at this time, Where is the farm machinery? Every farmer worthy of the name should be able to respond without the loss of farm pride that the machinery is safely under cover. No farmer can afford to invest in farm machinery and have the same in the fields subject to the elements for a large portion of the year. The loss on farm machinery alone would take a large portion of the farm profits. No money should be invested in farm machinery until first ample provisions are made for the proper care of such farm machinery.

DIVISION OF FARM CROPS.

PLAN OF WORK FOR THE COMING YEAR.

R. A. MOORE.

I desire the energy of the Experiment Association concentrated on the corn and barley work again the coming season. We are now at the threshold of success and any delay on our part would mean the losing of the vantage ground already obtained. The call from all over the country for seed grains grown by our Association leads me to see that the farmers are quick to perceive the importance of growing crops from select seeds instead of continuing the mongrel bred varieties. The favor so far obtained for select seed grains can only be continued by observing strict rules of honest practice.

If for any reason our seed crop should be damaged or contaminated with noxious weed seeds we should at once notify the Secretary and refrain from selling such seed. All seeds of questionable character should be fed on the farm or sold as feed, and not listed as seed grains.

Our work in establishing standard varieties of corn for Wisconsin should be continued and pushed with the utmost vigor.

No longer should we encourage the scoop-shovel method of supplying seed corn, but insist that the only true way of furnishing seed corn is in the ear and that to be kiln-dried corn. No seedsman can advance a single argument of value for not selling seed corn in the ear. Where shelled corn is supplied the farmer for seed, the danger of mixing and getting an inferior grade of seed is too great to be safely advocated. The only true way of preparing seed corn for market is to fire dry it and then store safely in a room for shipment. All seed corn should be shipped in the ear for which the grower should receive ample returns for his extra labor. By adhering strictly to the above principle, we will be able to throw new life and vigor into the corn plant and lead the world in production per acre. Ohio was the only state in America that led Wisconsin in yield of corn per acre in 1906.

Our experiments for the coming year are outlined in our last report and members of the Association who desire carrying on these experiments can be governed by these outlines and will be furnished report blanks in due time for the purpose of reporting the experiments.

We should bear in mind that whatever experiment is undertaken the Secretary should have knowledge of the same so as to be able to compile the data for publication.

In my travels throughout the state, I frequently visit members of the Association who are growing and testing seed grains, but do not think it necessary to make a report. The value and importance of the work is lost entirely to others if we neglect so important a duty. In order to be placed on the seed grower's list one must notify the Secretary of the kind and amount of seed, the price per bushel, a quart sample of the seed, and any other data that may be well for the Secretary to know.

The grower of pure bred seed grains should be a business man in the strictest sense and should have business cards and letter heads for business correspondence. These cards and letter heads should be modest, giving the name of the farm, the owner's name, the seed grains grown, and any specialties.

OUTLINE OF COOPERATIVE EXPERIMENTS.

EXPERIMENT 1.

Trials with Alfalfa to Determine if It Can be Grown in Wisconsin Successfully as a Forage Plant and the Relative Value of Soil Inoculation and Sowing with and without a Nurse Crop.

No forage crop has been given more attention in the United States during the past ten years than alfalfa, and while it is in the experimental stage in some parts of Wisconsin, yet, where proper precautions are taken it can be grown with a reasonable degree of success on any of our older and well cultivated farms.

Wisconsin is a great dairy State and the milk products bring to our farmers annually some fifty million dollars. A considerable portion of this money is expended for high protein feeds, as oil meal, oil cake, cotton seed meal, bran, etc., with which to balance the feed ration. The cost and the time expended in carting the feeds make them expensive for the farmer and take from him a large portion of what would otherwise be profit.

Alfalfa supplies the dairymen and stockmen with valuable forage and saves for them a large portion of the money annually expended for high protein feeds. The value of alfalfa as a feed for all farm animals including swine and poultry, is so well known that it is unnecessary to speak extensively of its merits here. No single forage plant combines the materials for a profitable ration for dairy cows, sheep, and brood sows so well as does alfalfa.

For seven years alfalfa has been grown successfully on the Station Farm near Madison, and many tests made to determine the best method of growing it under different conditions of soil and climate. When grown in comparison with red clover, timothy, and brome grass during the season of 1904, the yield per acre of hay was 5.4 tons for alfalfa, 2.5 tons for clover, 2.3 tons for timothy and 1.3 tons for brome grass. As a green forage the weight of alfalfa grown per acre was double that of clover, three times that of timothy, and five times that of brome grass. The per cent of protein found in the hay was as follows: 18.7 for alfalfa, 13.28 for clover, 4.74 for timothy, and 6.07 for brome grass. In total yield of protein per acre alfalfa pro-

duced three times that of clover, nine times that of timothy and twelve times that of brome grass.

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, for several 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 from May 20 to June 10 if the land is not weedy, at the rate of twenty pounds of good seed per acre.

Having procured American alfalfa seed, proceed as follows: Select land that never overflows and that which is well drained and had grown a cultivated crop the previous season; 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 on half of the plot and cover as usual; then sow alfalfa broadcast at the rate of twenty pounds of seed per acre and drag once. 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 at all the first season and only sparingly thereafter as it injures the alfalfa 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.

After carefully preparing the seed bed, scatter bacteria-laden soil on the higher portion of the plot before sowing the seed. Mark distinctly that portion on which the soil is sown so as to determine the difference, if any, on that part of the field where the soil is scattered and that which was not treated. Sow the bacteria-laden soil across one end of the plot so that it will cover ground where alfalfa is sown with and without a nurse crop.

REPORT BLANK, EXPERIMENT 1.

*Getting a Stand of Alfalfa and Testing the Relative Value of
Soil Inoculation and Sowing with and
without a Nurse Crop.*

- Name of experimenter.....
P. O.....; County.....; State.....
1. Date of sowing oats or barley and alfalfa.....
 2. What variety of alfalfa used?.....
 3. Nature of soil?.....
 4. How prepared?.....
 5. When were the alfalfa plants first noticeable?.....
 6. Was the grain crop left to ripen?.....
 7. Did you secure a good thick stand of alfalfa?.....
 8. At what rate did you sow the alfalfa seed per acre?.....
.....
 9. At what rate did you sow the oats or barley per acre?....
 10. At what time did you sow the alfalfa seed without a nurse
crop?
 11. Which seems preferable, sowing with or without a nurse
crop?
 12. Did you examine the roots of the plants on both sections
of the field for bacteria-laden nodules?.....
 13. Were any nodules found?.....
 14. Were the nodules as plentiful on the roots of the plants
growing on that portion of the field that was not
inoculated as where the ground was scattered?
 15. Could you detect any difference in the growth of the al-
falfa?
 16. Date of making this report?.....
 17. Give in a brief way your opinion on growing alfalfa in
Wisconsin, and the benefit, if any, from the inocula-
tion of the soil.

EXPERIMENT 1. A.

Alfalfa after First Year's Seeding.

Through the encouragement of the Experiment Association many of its membership sowed in past years from one to two acres of alfalfa. The Association is desirous to learn the success of those who have sown alfalfa previous to 1907 and will send blanks and return envelope to any one who will agree to send in report.

REPORT BLANK, EXPERIMENT 1. A.

Report of Alfalfa after First Year's Seeding.

To be sent to the Secretary by October 1, 1908.

- Name of experimenter.....
 Post Office.....; County.....; State.....
1. Year and season alfalfa was sown.....
 2. Was the alfalfa sown with or without nurse crop?.....
 3. Variety of alfalfa seed used.....
 4. Amount of seed per acre.....
 5. Was crop cut for hay the year of sowing?.....
 6. If so, the amount obtained per acre.....
 7. Nature of the soil.....
 (Clay, muck, highland, lowland, etc.)
 8. Was good stand noticeable before the fall frosts?.....
 9. What per cent, if any, winter killed?.....per cent.
 10. How many cuttings did you get the year after seeding?..
 11. Weight of hay from all cuttings for the season—
 (actual) (estimated)
 12. Did you experience any difficulty in curing the crop for
 hay?
 13. Did you use hay caps?.....
 14. Did the plants develop the proper nodules on their roots?

 15. Was the ground on which the alfalfa was sown inoculated
 with alfalfa or sweet clover soil?
 16. Date of making this report.....

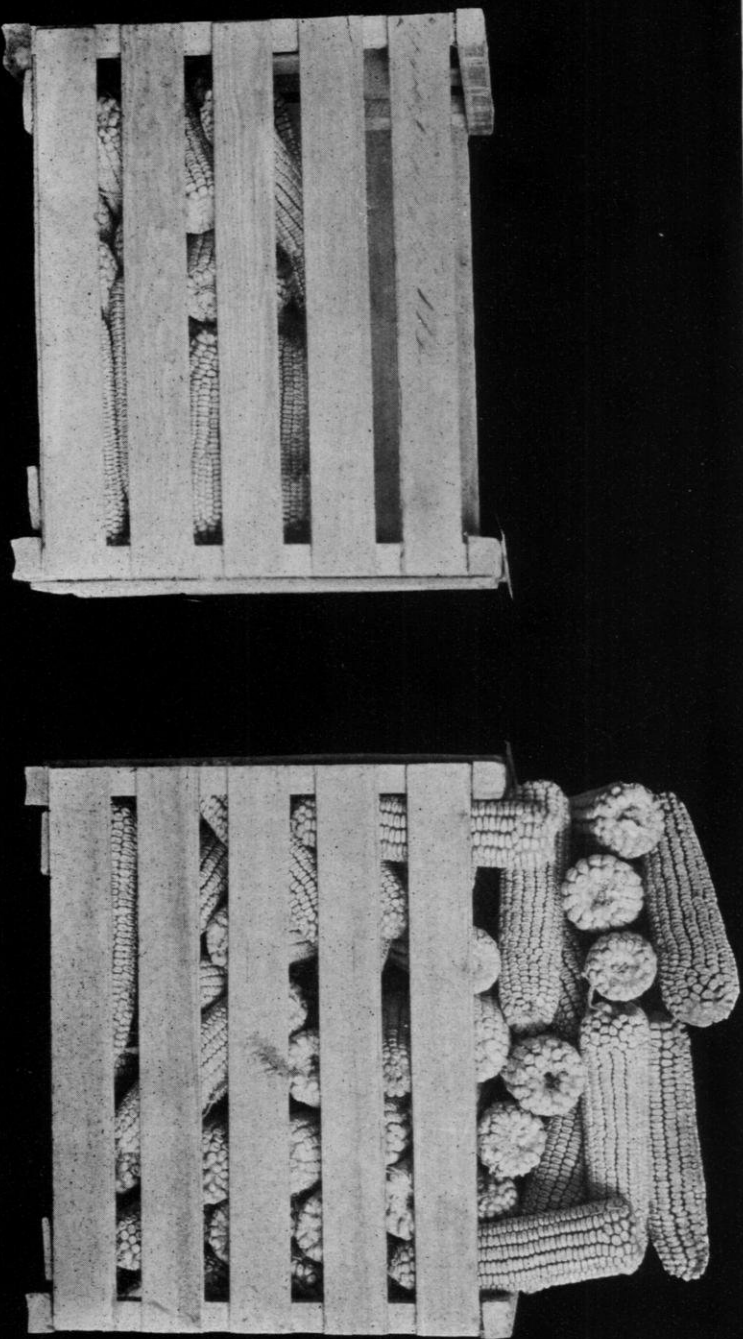
Please give in a brief way your method of growing alfalfa
 and your views as to its value as a forage plant for Wisconsin.

EXPERIMENT No. 2.

Wisconsin Seed Corn—Ten Ear Test.

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, and proper curing of the same, 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 good for the communi-



Ear-to-the-row method of corn breeding as practiced by the Wisconsin Experiment Station. Variations in yields of good seed corn from rows planted with seed from two different ears. Crate on left, row 18, 19 pounds seed corn; crate on right, row 11, 62 pounds seed corn. Good seed corn worth three dollars per bushel in the ear. Only the ears from the high yielding rows retained as seed corn for further experiments. Over two thousand seed corn centers of the above variety or corn (Wisconsin No. 7) have been established through the co-operation of the Agronomy department of the Wisconsin College of Agriculture and the Experiment Association.



ties 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?

Twenty-five ears of corn are given to each member who desires to assist in corn improvement, only 10 ears of which will be used in the experiment proper. The corn from each ear is to be planted in a separate 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 with the corn shelled from the remaining 15 ears and planted in close proximity.

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 pollenizing season is from that direction and the corn is liable to cross.

REPORT BLANK No. 2.

Wisconsin Seed Corn—Ten Ear Test.

- Name of experimenter.....
 Post Office.....; 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 number of times and method of cultivation?

12. Did corn mature well?
13. Total number of stalks in each row
14. Number of barren stalks in each row
15. How harvested?
16. Yield per acre, actual; estimated
17. Yield per acre, any other variety, actual
estimated
18. Compare yield with home variety of corn if possible.
19. The yield should be determined on the shelled corn basis,
two bushels of ears being considered one bushel of
shelled corn.

REPORT BLANK.—EXPERIMENT NO. 2.

Wisconsin No. 7 Corn.

- Name of experimenter
- P. O.; County; State
1. Where was seed secured?
 2. Germinating test, per cent Date of planting
 3. Nature of soil
 4. Fall or spring plowed?
 5. Following what crop?
 6. How planted?
 7. When first noticeable above ground?
 8. Did corn germinate evenly?
 9. Give number of times and method of cultivation
 10. Did corn mature well?
 11. Did corn smut badly? Approximate amount of smut ...
.....
 12. What per cent of barren stalks was noticeable?
To find per cent of barren stalks, count the whole
number of barren and fruitful stalks present in a
definite number of hills and divide the number rep-
resenting the barren stalks by the number represent-
ing the whole number of stalks. Counts can be made
in four or five places in the field and averaged.
 13. How harvested?
 14. How many acres harvested?
 15. Yield per acre, actual; estimated

16. Yield per acre best other variety, actual
estimated
17. Compare yield with home variety of corn if possible. The
yield should be determined on the shelled corn basis,
two bushels of ears being considered one bushel of
corn.
18. How many bushels of fire-dried corn in the ear will you
have to sell for seed?
Give brief description of what you think of the No. 7 corn.

REPORT BLANK.—EXPERIMENT No. 2.

Wisconsin No. 8 Corn.

- Name of experimenter
P. O.; County; State
1. Where was seed secured?
 2. Germinating test, per cent Date of planting
 3. Nature of soil
 4. Fall or spring plowed?
 5. Following what crop?
 6. How planted?
 7. When first noticeable above ground?
 8. Did corn germinate evenly?
 9. Give number of times and method of cultivation
 10. Did corn mature well?
 11. Did corn smut badly? Approximate amount of smut ...
 12. What per cent of barren stalks was noticeable?
To find the per cent of barren stalks, count the whole
number of barren and fruitful stalks present in a
definite number of hills and divide the number rep-
resenting the barren stalks by number represent-
ing the whole number of stalks. Counts can be made
in four or five places in the field and averaged.
 13. How harvested?
 14. How many acres harvested?
 15. Yield per acre, actual; estimated
 16. Yield per acre best other variety, actual
estimated
 17. Compare yield with home variety of corn if possible. The
yield should be determined on the shelled corn basis,
two bushels of ears being considered one bushel of
corn.

18. How many bushels of fire-dried corn in the ear will you have to sell for seed?
Give brief description of what you think of the No. 8 corn.

EXPERIMENT No. 3.

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

The potato crop of Wisconsin in 1907 is estimated at 22,750,000 bushels valued at approximately \$10,000,000. Only a portion of the yield is retained, the remainder shipped to market, for which the farmers of Wisconsin receive a sum one-fourth 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 scabs 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 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 scabby.

REPORT BLANK, EXPERIMENT NO. 3.

Treating Potatoes for the Prevention of Scab.

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

Method of Treating Seed Oats for the Prevention of Smut.

—The method that has proved to be the most effective during the past nine years, and that now generally used by the farmers of the state, is the formaldehyde method. If the desire is to treat one hundred bushels of seed oats, purchase at least four pints of formaldehyde from your druggist, and make up the solution by pouring one pint of the formaldehyde into thirty-six gallons of water. Put the solution in barrels or in a tank and submerge the sacks of seed oats in the solution at least ten minutes. Raise the sacks of oats from the solution and let them drain for a minute or two, in order to save solution, and then empty on a threshing floor, platform, or on a canvas to dry. Do not spread out immediately, but let the oats remain in a heap for two hours after treating. If the wet sacks or a canvas is spread over the pile of oats after treating it will prevent the rapid escape of the formaldehyde gas and make the treatment more effective. After the expiration of two or three

hours the oats should be spread out and shoveled over at intervals, to facilitate drying.

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 its instructions.

Experiment.—1. Take three bushels, or the usual allowance for seeding one acre, that were threshed from a field that was worse 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 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 seeds were 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 of oats affected with smut.

EXPERIMENT No. 5.

Tests With Swedish Select Oats.

The Swedish Select oats (Wis. No. 4) through several years' tests have proven to be satisfactory on the high well drained lands and on the poorer grades of soil in Wisconsin. On rich loose prairie soils the oats are such rank growers that they often lodge. 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 previous to sowing that were at all affected the year previous.
2. Must be sown on land that is free from Canada thistles, mustard or quack grass.
3. If possible a comparison with another variety of oats should be made.
4. All oats shipped for seed purposes must be well cleaned with fanning mill or grain grader.
5. A report must be sent to the Secretary immediately after threshing.

REPORT BLANK, EXPERIMENT No. 5.

Swedish Select Oats.

- Name of experimenter
 P. O.; 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 the 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.

Test with Oderbrucker Barley.

(Wis. No. 55.)

In 1898 the Wisconsin Experiment Station received from the Ontario Agricultural College five pounds of barley known as the Oderbrucker. This barley had been obtained from Germany and grown several years on the college farm at Guelph, previous to being secured by the Wisconsin Station.

For nine years this barley has been grown on experiment in comparison with fifty other varieties and improved by selection until we feel confident that it is superior to other varieties of barley. The Oderbrucker barley is a stiff-strawed, heavy yielding, six-rowed, bearded variety, and is the most satisfactory barley from all points of view grown on the Station Farm. From malting tests made by the Wahl-Henius Institute of Fermentology, Chicago, the Oderbrucker barley compares favorably with all other barleys on test for malting purposes. It is a high protein barley, containing fifteen per cent of that element which makes it a good feeding barley.

At the present time Wisconsin farmers are growing many scrub breeds and types of barley which should be discarded. The Experiment Station with the aid of our Association is desirous of getting pure bred grains of the best breeding into the hands of the general farmer at the earliest possible moment. Five hundred bushels of this high grade barley has been given to two hundred and fifty members of the Experiment Association and acre tests will be made in every county of Wisconsin. Members carrying on the experiments are requested to report as soon as the tests are completed. Blanks for making the reports will be sent by the Secretary in due time for the report.

REPORT BLANK, EXPERIMENT NO. 6.

Oderbrucker Barley.

(Wis. No. 55.)

- Name of experimenter
- P. O.; County; State
1. Date of sowing
 2. Amount of seed sown
 3. Amount of ground covered (approximately)
(As near as possible try to cover one acre with seed obtained.)
 4. Nature of soil?
 5. Fall or spring plowed?
 6. Sown with drill or seeder?
 7. Following what crop in rotation?
 8. Were heads of any other grain noticeable within the plot on which barley was sown?
 9. Were they removed?

10. Did the barley stand up well?
11. Was the ground on which the barley was sown free from
Canada thistles, mustard and quack grass?
12. Did the barley rust?
13. Was any smut noticeable?
14. When was barley cut?
15. Yield per acre of Oderbrucker
16. Yield per acre of any other variety of barley grown
17. May we put you on the seed growers' list?
18. Please give a brief description of what you think of the
Oderbrucker barley, Wisconsin No. 55.

EXPERIMENT NO. 7.

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 fond of the plant and fatten readily when pastured upon it. Care should be taken not to let sheep feed upon it while the plants are wet with dew, or when the sheep have been kept for several hours without food, as they then eat so abundantly that it often leads to serious bleating 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, and for considerable less in large quantities.

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.

A. Sow broadcast on one acre or more which you have previously sowed to oats and which are about one inch in height at the time of sowing the rape. Cover with 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 hurdle fence is used and changed from time to time, the rape eaten will come on rapidly and soon be fit to pasture again.

B. Sow one acre or more to rape, which has been properly prepared with disk harrow or otherwise, using drill and putting the seed in about 30 inches apart between the rows so as to cultivate once or twice.

C. Sow one acre or more broadcast or with the 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, 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.

D. Sow one acre or more broadcast, without dragging, when 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 pounds 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 the best results for next crop.

If 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 the market, a small grain ration should be fed at regular intervals.

REPORT BLANK, EXPERIMENT NO. 7. 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 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 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 animals fed upon rape thrive?.....
16. Were the rape plants affected by any insect enemies or fungus disease?.....
17. Approximately, how much green fodder did the rape produce per acre?.....
18. Did you notice any detrimental effects from the feeding of rape?.....
19. Briefly give your opinion as to the value of rape as a soil-ing crop.....

REPORT BLANK, EXPERIMENT No. 7. 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 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 animals fed upon 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 soil-ing crop.....
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REPORT BLANK EXPERIMENT No. 7. 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 oats on plot where rape was sown?.....
 10. Did the rape interfere with the drying out of the bundles?
 11. How long after oats were cut before rape was fit for feeding?

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. 7. 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 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 the 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?
17. Briefly give your opinion as to the value of rape as a soiling crop

EXPERIMENT No. 8.

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 and China it is used extensively as a human food, but in this country it is grown for the seed, as a forage plant, and 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 green forage per acre at the Wisconsin Experiment Farm in 1900 and yielded thirty-eight bushels of seed beans per acre in 1902, and forty bushels per acre in 1903. It makes an excellent 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, fairly 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 and about three inches apart in the drill. When planted in drills as described, from two or three pecks of seed per acre should 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 prevent 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 bacteria-laden 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 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. 8.

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 beans.....
 18. Did you use any bacteria-laden soil for inoculation pur-
 poses?
 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.....

EXPERIMENT NO. 9.

Barley Smut.

I am anxious to have a test for the eradication of barley smut made by members of the Experiment Association. For several years we have labored to find out an effectual remedy and it was not until 1906 that we succeeded.

The treatment is simply this: Soak sack of barley twelve hours in cold water, let drain for one hour,—put in cask of warm water, not over 130° F., for a minute or two to take off chill and then submerge in barrel of warm water held at constant temperature of 130° F. for five minutes. After removing sack of barley, empty on threshing floor to cool, and sow as soon as possible thereafter. If left for two or three days before sowing, barley will sprout. Use gunny sacks in which to put barley for treatment and do not have them more than half filled as this will allow the penetration of the temperature readily.

For the experiment use the barley secured from the Wisconsin Experiment Association this year or some of the product of that you secured last year. Treat one bushel in accordance with above directions and sow one bushel without treatment.

When the barley is beginning to head make tests for smut. Make one test as soon as barley is headed, and the other a little later in the season and average the results.

To make tests use hoop or square that will enclose about four square feet. Throw or place hoop over heads of barley in a spot not previously selected by the operator; count all heads within the hoop, smutted and not smutted, then count merely the smutted heads and divide this number decimally by the total number of heads within the hoop which will give the per cent of smut.

A report blank will accompany the outline for the experiment to enable you to determine in advance approximately what data are desired.

REPORT BLANK, EXPERIMENT No. 9.

Barley Smut.

- Name of experimenter.....
P. O.....; County.....; State.....
1. Did you treat barley according to directions?
2. How much treated for experiment?
Size of plot
3. How much sown on experiment the seed of which was
not treated?
Size of plot

4. Did you treat your seed that was sown for general purposes?
 - (a) How much treated?
 - (b) How much not treated?
 5. What were the results on the treatment of the general crop?
 - (a) Per cent of smut from untreated seed?
 - (b) Per cent of smut from treated seed?
 6. Date of sowing treated barley on experiment

Date when plants first appeared above ground
 7. Date of sowing barley that was not treated

Date when plants first appeared above ground
 8. How many tests were made for smut?
 9. What per cent of barley was affected with smut on plot the seed of which was not treated?
 10. What per cent of barley was affected with smut on plot the seed of which was treated?
 11. Per cent saved by treatment
- Give a brief description of what you think of the barley smut treatment.

Send in report as soon as the experiment is completed.

THE WISCONSIN OAT CROP.

A. L. STONE.

In many portions of our state the grain rusts have become so prevalent that the amount of damage done by them can scarcely be estimated.

Scientists have thus far been unable to discover any remedy for this fungous growth. In order to gain some idea of the nature and extent of these rust attacks throughout the state, and to determine if possible to what extent they affect the quality and quantity of grain grown, I am enclosing you herewith a report sheet. As we are particularly interested in oats at this time, the questions on this sheet are confined wholly to them.

You will note that the questions require observations to be made this fall and winter as well as the coming spring and summer. I ask your hearty co-operation in obtaining the information called for. It is to the interest of every farmer in the state to know, approximately at least, how much he is losing every

year from the attacks of fungus diseases. I am anxious, therefore, to know to what degree rust develops on oats in your locality. This can be determined by observation of the diseased plants themselves and by comparison of the yields with those in portions of the state with similar soil, but where rust does not appear. Hence, I ask you to try and secure from as many farmers as possible, their opinion as to the per cent of crop injured by rust and the average yield of grain per acre. Try to get a careful estimate, if possible.

The careful conducting of these investigations and the preservation of the reports until the first of August, 1908, when they should be returned to the office, will necessitate some inconvenience on your part. I trust, however, that your interest in the improvement of grain production in the state will influence you in carrying these investigations through to a successful conclusion.

Make careful observations throughout the season so that if a report is requested for another year the facts will be available.

REPORT BLANK, EXPERIMENT No. 10.

THE WISCONSIN OAT CROP.

- Name of experimenter.....
- P. O.....; County.....; State.....
1. What is the average number of acres of oats grown by the farmers in your neighborhood?
 2. What is the average yield per acre?
 3. What variety of oats do you grow?.....
 4. What kind of soil have you?.....
 5. What influences, such as rust, smut, and insects, most seriously affected the oat crop in your part of the state?
 6. If rust is prevalent, at what date in the spring or summer does it first appear?
 7. Have you ever noticed rust on grasses anywhere on the farm but especially near oat fields?
 8. What is your estimate as to the per cent of crop lost through attacks of rust?.....
 9. Are self sown oats common in the fall?.....
 10. If so, are they ever rusty?.....
 11. Do the plants ever survive the winter?.....
 12. If not, what is the latest date at which they may be found?
- Month....., Day.....

13. If any plants survive the winter can rust be found on them in the spring?.....
14. If rust can be found on self sown oat plants at any time during the winter take note of date and send sample to A. L. Stone, Madison, Wisconsin, for examination.

Time of the Appearance of Rusts and their Effects on Standing Qualities and Yields of Oats.

Name of experimenter.....

P. O.; County; State

1. How many acres of oats will you raise this year?
2. What variety?.....Yld. per acre?.....
3. Kind of soil?.....
4. What are the most serious causes of damage to the oat crop in your locality? Rust, smut, insects, etc.,....
.....
5. What is the earliest date at which you are able to detect rust on oats?.....
6. Have you ever noticed rust on grasses especially near oat fields? If so on what grasses?.....
.....
7. Give a careful estimate of the per cent of your oat crop lost through rust this year?.....
8. Are self sown oats common in the fall?....If so are they ever rusty?
9. Do the plants live through the winter?.....
10. Take note of the latest date in the winter you are able to find live oat plants.....
.....
11. If rust can be found on oat plants at any time after December 1st, send a sample of the same to A. L. Stone, Agronomy Bldg., Madison, Wisconsin.
12. Any other observations you have made concerning this matter since my former letter to you will be gladly received. Use back of this sheet for anything further you may have to give.

DIVISION OF BACTERIOLOGY.

H. L. RUSSELL.

BOVINE TUBERCULOSIS IN WISCONSIN.

The economic importance of this subject is such as to demand the attention of every stock raiser in this state. The disease of tuberculosis is unquestionably the most important stock disease with which we have to contend today, and its rapid spread in recent years, not only in cattle, but more particularly in swine, makes it absolutely necessary that the stock owner should give the utmost attention to his herd. Tuberculosis is spread among stock generally in one of two ways. First, by the purchase of animals affected in the early unrecognizable stages of the disease;—second, through the medium of infected factory by-products, skim milk, whey, etc., where the same have been contaminated with tubercle organisms from affected animals. In this state at the present time the first method of dissemination is by far the most important. Several instances have come to our attention where the disease has been widely disseminated in localized communities through the infection of factory by-products but the most common method of introduction of the disease into the herd is through the purchase of animals from outside sources.

This may come about either through the attempt to improve the quality of the herd by bringing into the same, pure bred sires or cows, or it may come from the general sale of grade or common stock. While the improvement of our cattle has been entirely brought about by the introduction of improved animals from outside sources, this has also been the means of introducing this disease into our common herds.

Our records that have been accumulated during the last year or so, show about one hundred fifty instances of where the disease has originated in a herd by the purchase of animals from outside sources. You can therefore see the absolute necessity of knowing beyond all question the actual condition of the ani-

mals that are brought into the herd as to whether they are free from the disease or not.

The only way that the actual condition of these animals can be determined with certainty is to apply the tuberculin test. The disease of tuberculosis is one that is exceedingly insidious in its development and consequently cannot be recognized in the early stages, even by the most skilled expert. Animals that are in good flesh, with soft pliable skin and apparently in the best of health may be suffering from this disease. The actual condition of these animals can only be determined by post-mortem examination.

The introduction, however, of what is known as the tuberculin test affords an opportunity for the early recognition of the disease and is of the greatest possible help to the stock owner as to the determination of the actual condition of his herd.

The tuberculin test can be applied to stock so readily that all stock owners should be thoroughly posted as to the nature of the same, and how it can be used. While it has been customary in the past to have this test applied by veterinarians, our experience for several years has led us to see the necessity of a much widespread introduction of the test among the herds of the actual stock raisers than seems possible at the present time if its use is confined exclusively to the veterinary profession.

It would of course be unwise for persons not having any experience, to carry on the test without any sort of supervision or control. The method which has been in progress for the past several years under the auspices of the Experiment Station has proven so successful that we believe that it can be used by a large percentage of the stock owners of our state. This method is essentially as follows:

The stock owner himself or some other person who has been given special training at the Short Course or Farmers' Course at the University or by special correspondence can carry on the details of applying the test to his own herd. Full and explicit directions can be given the owner which will aid him after a little experience to make this test in a satisfactory manner as far as the application is concerned. The temperature records which are secured by him in this work are then submitted to the Department of Bacteriology at the Experiment Station for supervision and interpretation and after the consideration of this data, the owner is advised as to the results of the test. This work is carried on in close conjunction with the State Live Stock Sanitary Board and arrangements have been

made for the disposal of the animals which react to the tuberculin test. Each test is considered on the basis of its own intrinsic merits and if properly performed and reacting animals revealed thereby, the State Veterinarian is notified and a disposal of these animals is carried on by him, he reserving the right to accept or reject the results of the test on the basis of the test sheets submitted. In this way owners can determine for themselves the actual condition of their herds and can take such steps to eradicate the disease from their midst as will result in a minimum loss to themselves.

For the benefit of those who are not familiar with the conditions under which the animals may be disposed of by the State Live Stock Sanitary Board, the following explanation is submitted:

Either one of three methods may be followed in the disposal of the animals which are found to react in the tuberculin test.

First. The cattle may be appraised by three appraisers appointed by the local justice of the peace. The owner receives two-thirds of the appraised valuation, the maximum appraisal not to exceed fifty dollars. In order to secure payment for stock disposed of in this manner, the owner must have the local health officer send a signed statement to the Secretary of State Live Stock Sanitary Board at Madison, as evidence that the barns and premises, in which the reacting stock had been kept, have been efficiently disinfected. The cattle are shipped by the state authorities to be slaughtered under federal inspection. The returns from their sale go to the State.

Second. In case the owner does not accept the option of receiving two-thirds of the appraised valuation from the state he may if he prefers ship these animals himself under the name of the State Live Stock Sanitary Board to the packing centers where they are killed under federal inspection. In this case he receives the full net value of the carcass provided it passes inspection. This method is preferable where the animals are apparently affected in the early stages and the disease is not sufficiently advanced to warrant the condemnation of the carcass by the federal authorities.

In the case of beef animals which pass federal inspection the value of the meat would frequently be much more than could be secured on the basis of the first option which could only give the owner the maximum of two-thirds of fifty dollars or thirty-three and one-third dollars.

Third. In the case of valuable animals that are apparently

affected in the early stages it may be preferable to hold them for a period of time in quarantine so as to secure healthy calves from the same. Experience has demonstrated that the latter can be done *almost without exception* and in the case of pure bred animals of extra quality, it is desirable to isolate the reactors and use them for a time at least for breeding purposes. In case this is done the animals are placed in quarantine by the Live Stock Sanitary Board and must be cared for in accordance with the rules and regulations of this Board, which simply looks to the prevention of the spread of the disease.

A large number of the members of the Experiment Association have already taken up this matter and tested their own herds and in many instances the herds of their neighbors. As members of the Short Course in Agriculture all of you have had extended instruction along this line by teaching as well as by demonstration, and you are in position to take up this work and carry it on much better than the average farmer, who has had no experience in this matter. It is therefore incumbent on you as progressive young men in your respective localities to do what you can to help in the matter of the eradication of tuberculosis. In doing this it is first preferable of course for you to make the test upon your own herd so as to show by your example that you thoroughly believe in the principles of the matter. After this is done it may be possible for you to take up the testing of animals in your vicinity. In a number of instances students have tested as high as one thousand head of stock. You can see at once what a potent influence your Association can exert in educating the agricultural communities in this matter.

There is here inserted a blank form of application for tuberculin, also a copy of the report blanks that are made out by the party in making a test upon his herd and a summary description of the tuberculin test and the manner of its application.

APPLICATION FOR TUBERCULIN.

To be furnished by Wisconsin College of Agriculture.

Application is hereby made for doses of tuberculin for testing head of mature animals and head of young stock on the farm of, Wisconsin.

1. The test shall be made within thirty days after the receipt of the tuberculin and the temperature records made out on

blank furnished, sent at once to the Agricultural Experiment Station, Madison, Wis., which will report to the owner the results of the test.

2. In case any tuberculous animals are found in the herd, the owner agrees to remove them at once from the healthy portion of the herd, so as to prevent further spread of the disease. Reacting animals may be disposed of by the State under the rules of the Live Stock Sanitary Board (see p. 5). Address Secretary, Madison, Wis.

3. In case tuberculous animals are found in the herd, the owner agrees to thoroughly disinfect the stables occupied by the herd. (See p. 6.)

In making application for tuberculin, state whether you suspect the presence of the disease in your herd

If so, what reason have you for such suspicions?

.....
(Signed),

Owner of herd.

(Signed),

Person making test.

THE TUBERCULIN TEST AND ITS MANNER OF APPLICATION.

Tuberculin is a product of the growth of the tubercle organism in artificial cultures. In its preparation it is so treated as to destroy the vitality of all organisms and is a perfectly harmless product when used as directed. It does not injure a healthy animal, nor will it cause the disease to spread in a tuberculous animal. The value of this agent in determining the presence of tuberculosis is now undisputed. When used with ordinary judgment, the errors are only a few per cent, and in skilled hands it is almost infallible. In Pennsylvania, 4,000 animals that had given characteristic reactions were slaughtered and examined, and the presence of the disease was demonstrated in all but eight animals.

The test is very simple in its application and requires no especial technical skill. The introduction of the tuberculin causes a temporary fever in affected animals. The test consists in making a simple hypodermic injection and in taking a series of temperatures with a clinical or self registering thermometer. Anyone who is familiar with the handling of cattle can make a successful test, if the details which are mentioned in describing the method of procedure are carefully observed.

Time to apply the test.—The most advantageous time to apply the test is during the seasons in which the animals are stabled. During the summer the animals become restive if kept in the stable during the day, and in very hot weather, the normal temperatures may be so high as to lead to erroneous results.

What animals not to test.—As a rule animals should not be tested within four or five days before or after calving, nor while in "heat." These normal functions usually do not cause any marked changes in temperature, but in some cases, they may; but in order to be certain, it is well to exclude such animals from the test. Animals suffering from any disease (fever, garget, etc.) should be excluded. Animals which show a temperature of 103.5° to 104° F. should not be injected. As a rule calves less than three months old should not be tested.

The temperatures of cattle.—In cattle the normal daily temperature varies considerably, often $1-2^{\circ}$ F. in the course of a few hours. A number of factors may produce such changes. Cold water when taken in considerable quantities may reduce the temperature several degrees. A temporary excitement may cause a rise; excessive summer heat also increases the normal temperature. This is especially true where animals are kept in the stable in the summer. The average normal temperature of milch cows generally runs from 101° to 102.5° F.

Treatment of animals during the test.—On account of the ease with which these variations in temperature are caused, it is important to keep the animals that are being tested, in as nearly a normal condition as possible. They should be fed as usual. The animals should not be allowed free access to cold water during the period in which temperatures are being taken. Water can be given in moderate amounts, preferably in the stable, and at such times as will least influence the temperature of the animals.

The testing outfit.—A hypodermic syringe of at least 5cc. capacity is needed. The same should be provided with a number of stout needles, which should be kept in good condition by sharpening on an oil stone. At least two clinical or fever thermometers will be needed, and where more than five animals are to be tested, a large number should be provided. In order to prevent breakage of thermometers, some device should be used to fasten the same to the animal. A string may be tied around the thermometer at the constriction just above the bulb, and again near the top. This is attached to a small "bull-dog"

clamp, procurable at almost any stationery store. After inserting the thermometer, the clamp is fastened to the long hairs at the base of the tail. If the thermometer is then thrown out of the rectum, it will not be broken by dropping on to the floor.

As local drug stores do not always keep the proper instruments for this work on sale, and as much difficulty is experienced in securing them in good condition, C. Hoffmann, Madison, Wis., is prepared to supply any demands for the same, at the prices stated below, remittance to be in the form of a bank check, postal or express money order.

For an ordinary herd, one hypodermic syringe at \$2.50, and at least two thermometers at 60 cents apiece are required. In case of herds having more than ten animals, more thermometers are recommended. Extra needles may be secured at 25 cents each, and bull-dog clamps for holding the thermometers at two for 5 cents.

MAKING THE TEST.

The test is divided into three parts. 1, taking the normal temperatures before injection; 2, the injection of the tuberculin; 3, taking of temperatures after injection.

Normal temperatures.—During the day preceding the injection, at intervals of two or three hours, take a series of four or five temperature readings on each animal.

Injection of tuberculin.—The injection should be made in the evening of the day on which the normal temperatures have been taken (8-10 P. M.).

Temperatures after injection.—Eight to ten hours after the injection of the tuberculin, temperature readings should be begun. These readings should be taken every two hours until at least five have been made. Where animals show a marked rise, it is well to take readings more frequently and temperature observations should be continued on these until a permanent decline toward the normal is noted.

Taking the temperatures.—The thermometers used are self-registering, *i. e.*, the mercury remains at the highest point reached until shaken down by the operator. Shake the column of mercury down until it is below 99° F. Always read the thermometer before inserting to see that it is properly shaken down. Smear the end of the bulb with a little vaseline and insert thermometer full length in rectum. Do not push with much force, and use care in inserting the instrument. After four or five minutes, remove, read, record, shake down

the mercury below 99° F. and insert in the next animal. Thoroughly familiarize yourself, especially in the matter of reading the thermometer and if any trouble is experienced, ask your druggist or doctor to show you how.

In reading the thermometer grasp in both hands, holding it horizontal and with the mercury bulb to your left. Always look upon that edge of the thermometer which comes between the figures and the lines. Then by slowly revolving to and from you, the broad band of silver-like mercury will soon be seen. Each degree is divided into five equal parts, so that each line or division represents two-tenths (0.2) of a degree.

Dose of tuberculin.—The tuberculin furnished by this Experiment Station is supplied by the United States Department of Agriculture and is in such a concentration that a proper dose consists of 2cc. per 1,000 pounds estimated live weight. Proportionate doses are used for larger or smaller animals. Moderate variations in the dose will have no injurious effect. One cubic centimeter (cc.) equals $\frac{1}{4}$ dram, or 15 drops. Ordinary hypodermic syringes are generally graduated in drams or cubic centimeters.

Making the injection.—The injection is usually made in front of the shoulder where the skin is thin and loose, but can be made elsewhere. The syringe should be sterilized by placing in cold water in a basin and gradually bringing the water to a boil. Fill the syringe through the needle from the bottle of tuberculin. The needle can be inserted through the skin while on the syringe. Beginners will have less trouble, however, if the needle is inserted and the syringe attached later. A fold of the skin is made with the left hand, and the needle inserted in the pocket thus formed. Push the needle downwards through the skin, parallel to the side of the animal. Then grasp the end of the needle through the hide, so as not to allow it to work inwards into the flesh and unnecessarily excite the animal. Attach the syringe and inject the requisite amount of tuberculin. Before withdrawal of the needle distribute the tuberculin underneath the skin by gentle pressure with the fingers about the puncture. The secret of success in injecting is to have stout sharp needles. It is a good idea to sharpen needles on oil stone from time to time as they will become blunt by long usage.

INTERPRETATION OF THE TEST.

Animals which are affected with tuberculosis, even in the incipient stages, will begin to show a rise in temperature from 8

to 14 hours after injection. If the maximum temperature after injection is approximately 2° – 2.5° F. or more above the average normal temperature, and the fever persists for some hours, the animal is tuberculous. Some consider a rise of 1.5° F. above the normal maximum as sufficient to indicate a positive reaction. Usually the reaction fever is much more marked, the temperature rising from 3° to 5° . When the temperature reaches 104° F., or above, and is maintained for some hours, the animal is usually regarded as tubercular, if no fever was shown before injection. Sudden elevations of temperature that are not continued for some hours should not be looked upon as reactions. When the temperature rises only 2° or a little less above the average normal temperature the case should be regarded as "suspicious." Such animals should be retested in the course of two months or so, but not before as there must be time for the elimination of the first tuberculin from the system. Experience and a knowledge of all conditions that may have an influence on the temperatures are necessary in making a correct interpretation. Where tuberculin is sent out by the Experiment Station, the temperature record sheets are to be returned as soon as the test is completed and an interpretation of the results, with recommendations as to disposal, will be made.

DISPOSAL OF TUBERCULOUS ANIMALS.

As soon as any animal is found to be tuberculous, it should be removed from the remainder of the herd, so as to prevent further spread of the disease. The subsequent disposal will depend upon varying conditions. Tuberculous animals cannot be disposed of, except under such conditions as are provided for by the State.

The owner has three options as to the method of disposal.

- 1st. The cattle, if in good physical condition, may be shipped under the auspices of the State Live Stock Sanitary Board to some packing center, where they can be examined by federal inspectors. The owner receives the full net value of the cattle in case the same pass federal inspection. This amount will depend upon whether the meat is condemned or not on account of the extent of the disease. When the disease is in the early stages in the glands, the carcass is entirely safe for food.

- 2d. The cattle may be appraised by three appraisers appointed by the local justice of the peace. The owner receives two-thirds of the appraised valuation, the maximum appraisal not to exceed fifty dollars. In order to secure payment for

stock disposed of in this manner, the owner must have the local health officer send a signed statement to the Secretary of State Live Stock Sanitary Board at Madison, as evidence that the barns and premises, in which the reacting stock had been kept, have been efficiently disinfected. The cattle are shipped by the state authorities to be slaughtered under federal inspection. The returns from their sale go to the state.

3d. If the affected cattle are valuable, pure-bred animals, the owner may hold them in quarantine, under the rules of the State Live Stock Sanitary Board. Which of these options ought to be adopted by the owner will depend upon the circumstances of each individual case, and the College of Agriculture holds itself ready to take up a consideration of these cases individually.

DISINFECTION OF THE STABLE.*

It is exceedingly important after the disposal of the affected animals that the stable should be disinfected. All dust, dirt, and manure should be removed from the ceilings, walls and floors. Loose and broken feed boxes and mangers should be removed before applying disinfectant.

A thin whitewash prepared from *fresh unslaked* lime is to be applied by means of a spray pump, if possible, to the walls, ceilings, and floors. The whitewash should be thin, if a pump is used, and if applied hot will be more effective. It is well to add one pound of chloride of lime (bleaching powder) to each three gallons of whitewash. Do not use air-slaked lime as this has no disinfecting value. The mangers and feed boxes can be scrubbed with a hot saturated solution of sulphate of iron (copperas). The stables should be whitewashed two to three times yearly.

GRATUITOUS DISTRIBUTION OF TUBERCULIN.

The United States Department of Agriculture, recognizing the fact that the eradication of this cattle scourge is largely dependent upon the wholesale use of the tuberculin test, makes tuberculin which is distributed under certain conditions. Stock owners can secure this tuberculin, free of charge, by complying with the rules laid down by this Station. Application for such tuberculin can be made on following blank. Read carefully conditions presented.

*A bulletin of the State Live Stock Sanitary Board on the matter of barn disinfection will be sent to any applicant. Address either the Experiment Station, or State Live Stock Sanitary Board, Madison, Wis.

In case there are any communities in which it is desired to have a large number of herds tested, the Station upon proper application, will furnish them with competent and experienced men who will do the work at a reasonable price.

DIRECTIONS FOR MAKING TESTS.

During the test animals must be kept in as nearly a normal condition as possible. Before injection take four temperatures, about two hours apart. Inject in the evening about nine o'clock; eight to ten hours after injection begin taking temperatures, and continue until at least five temperatures, two hours apart, have been taken. In case any animal shows an abnormally high temperature at end of this period, continue taking temperatures until a decided drop toward the normal is noted. Register all fractions of a degree in decimal tenths, as for example: 101.5. Be sure and shake mercury column in thermometer well below 100° before inserting in the next animal.

WATERING.

Water stock before beginning temperature readings the first day of test; on second day give small quantity (a pail full or so in barn) if necessary, and turn out stock in afternoon for further watering. Large quantities of cold water reduce temperature and if animals are watered at usual time in morning, on day following injection, marked errors may be caused in the test.

State if any animals are near calving or in heat.

Should you have any unopened bottles of tuberculin on hand kindly return same to us.

THE TESTER WILL PLEASE SEE THAT THE FOLLOWING DATA ARE RECORDED.

How many of this herd were bought?.....
 Do any of the animals of this herd show persistent coughing? Are they emaciated?
 If so, give test number of each such animal.....
 Answer following questions for each animal that has a temperature of 104° F., or above.

Test No. of animal.....	.....	.....	.....	.....	.....
Bought or raised.....	.....	.....	.....	.....	.....
When purchased.....	.....	.....	.....	.....	.....
Of whom.....	.....	.....	.....	.....	.....
Address.....	.....	.....	.....	.....	.....

Test No. of animal.....	.....	.....	.....	.....	.....
Bought or raised.....	.....	.....	.....	.....	.....
When purchased.....	.....	.....	.....	.....	.....
Of whom.....	.....	.....	.....	.....	.....
Address.....	.....	.....	.....	.....	.....

DIVISION OF AGRICULTURAL ENGINEERING.

C. A. OCOCK.

A BUILDING FOR CURING SEED CORN—ALL CORN DESIRED FOR SEED SHOULD BE FIRE-DRIED.

The illustrations which are here shown represent a modern corn-curing house, which is simple and economically built.

The structure rests upon twelve concrete posts six inches in diameter and two feet high. Over the top of each post is placed an inverted tin pan. This will prevent mice or rats from entering the building. The only means of their entering with such a construction will be by being carried in with grain which is being stored. To construct the posts is an easy matter, for all that is necessary is a couple of galvanized iron forms slit up one side, but lapped over in such a manner as to prevent leaking while being filled. Two clamps should be provided and so placed as to hold the form securely while being filled with concrete. A good footing should also be provided for each post, and should be below the frost line to prevent heaving.

The sills of the building may be either solid timber or built up. The girder which carries the joist in the middle should be of good material and may be built up if the owner so desires. To aid in carrying the joist a piece of 1"x2" is nailed to each side of the girder. This will overcome the necessity of mortising and tenoning, and also adds strength to the girder.

The floors should be laid as soon as the joist and sills are ready. The studding should be erected after the floor has been laid, a piece of 2"x4" being laid upon the floor as shown in the cross section.

A good grade of drop siding is recommended for the sides and ends. The roof may be of any material desired, so long as it is water tight.

In the floor plan may be seen the arrangement of the stacks for holding the corn, while being dried, or it may be desirable also to leave the corn here for storage. The stove should be placed as shown and connected to the chimney. The chimney is built upon brackets. The brackets should be of number one material and securely fastened to the wall high enough to be out of the way of a person's head.

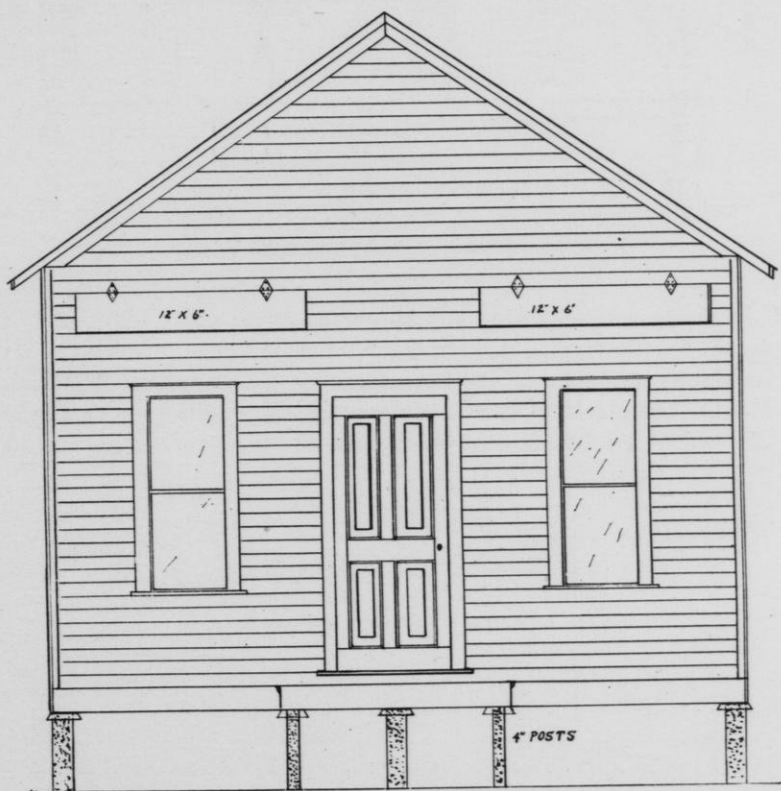


Fig. 1.—Front Elevation.

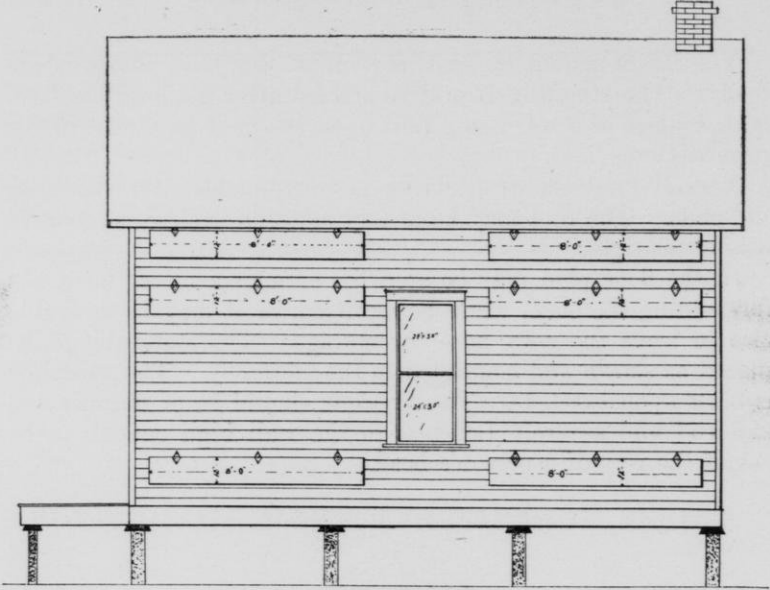


Fig. 2.—Side Elevation.

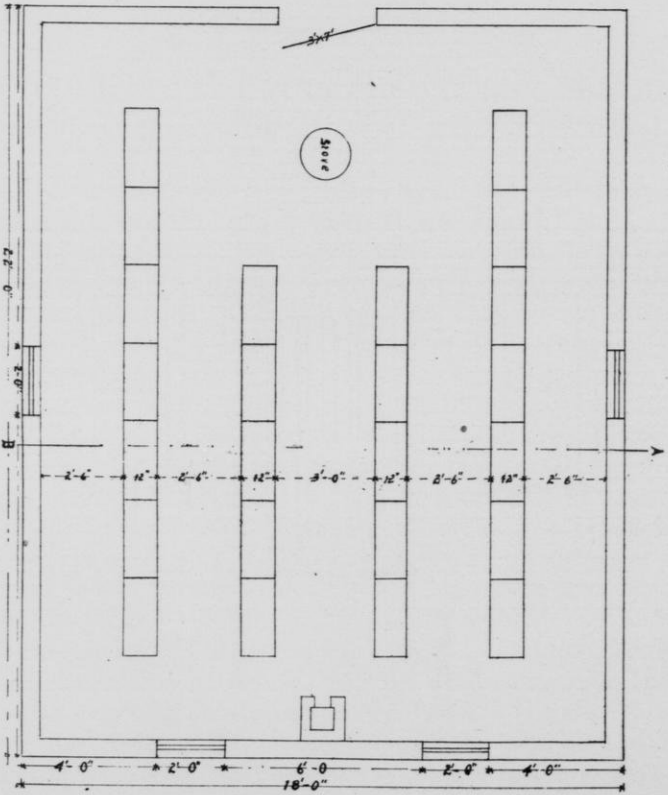


Fig. 3.—Floor Plan.

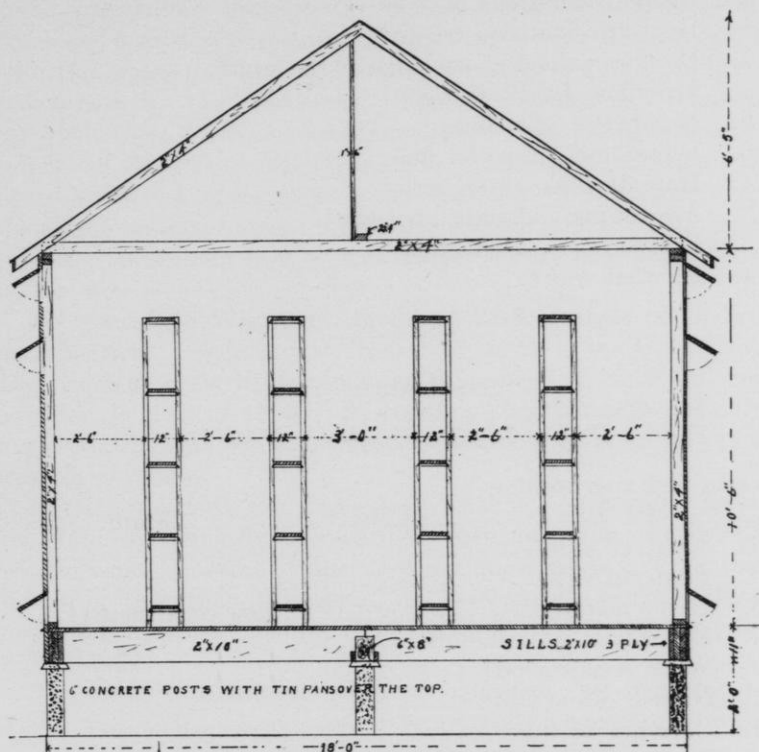


Fig. 4.—Cross Section at A. B. of Floor Plan.

The ventilating doors shown in the side elevation should be built alike in both sides. Two windows and two ventilating doors should be placed in the back end, the same as shown in the front elevation. Wooden ratchets may be made and hinged to the ventilating doors to hold them open to the desired width.

VENTILATION OF BARNs.

Report Blank—Experiment No. 12.

- Name of Experimenter
 P. O.; County; State.....
1. System of ventilation
 2. When installed?
 3. Number of outlet flues
 4. Height of outlet flues

5. Inside dimensions of flues
6. How are flues constructed?.....
7. Do flues extend above ridge of the roof?.....
8. Are flues fairly straight?.....
9. Number of inlet flues.....
10. Dimensions of outlet flues.....
11. How do these enter barn?.....
12. Are ceiling and walls air tight?.....
13. Is the system satisfactory?.....
14. In what way?.....

SILO CONSTRUCTION.

Report Blank—Experiment No. 11.

- Name of Experimenter.....
- P. O.; County; State.....
1. Kind of silo.....
 2. Shape of silo.....
 3. Home made?.....If so, how constructed?....
 4. By whom manufactured?.....
 5. When constructed?.....
 6. Dimensions of silo?.....
 7. Capacity of silo.....
 8. Does silage freeze in winter?.....
 9. How satisfactory do you find silage?.....
 10. When do you feed silage? before or after milking?....

THE WISCONSIN CORN CROP.

BREEDING, GROWING, JUDGING AND DISSEMINATION.

R. A. MOORE.

For many years Wisconsin has been handicapped in corn growing. Our southern neighbors have told us that we were out of the "Corn Belt," and unless we could come over into the corn belt, there was little use of growing anything except flint corn in Wisconsin.

A careful survey of the climate and other conditions seemed to show that Wisconsin is not out of the corn belt, but is very

much inside and underneath the belt proper. All that seems necessary is to stop purchasing air dried seed corn in accordance with the scoop-shovel method and stop trying to adapt southern grown corn for our conditions. The corn needed is Wisconsin corn belt corn, bred and acclimated especially for different localities of the state. The Wisconsin Experiment Station undertook the task of developing the varieties of corn and with the aid of the Experiment Association within six years have established Wisconsin corn, "true Badger corn," in every county of the state.

Six years ago Wisconsin produced 28.2 bushels of shelled corn per acre. Secretary Wilson sent forth in the U. S. Crop Reporter the remarkable yield for Wisconsin of 41.2 bu. per acre for the year of 1906. Wisconsin's yield per acre was only surpassed by the state of Ohio, which had a yield of 42.6 bushels per acre.

Parties who have not understood what has been going on in the state of Wisconsin in regard to corn breeding, can hardly realize what is meant by the figures I have given. What that means is this, that Wisconsin in 1906 grew twenty million bushels more corn on approximately the same acreage than she did in 1902.

The climatic conditions seriously affected the corn crop of 1907, and while the acreage of corn was increased to the extent of one million acres in the United States over that planted in 1906, the crop was five hundred million bushels less. Wisconsin suffered like other states and our general yield reduced to thirty-two bushels per acre. Members of the Wisconsin Experiment Association received an average yield of sixty-five bushels per acre and the Experiment Station on best acre field received the remarkable yield of 98.6 bushels of shelled corn per acre.

The breeding, acclimating and dissemination of select varieties of corn for various sections of the state has been an important factor in bringing about this increased yield. The Wisconsin Experiment Association has come to the rescue for better corn production. By the establishment of several thousand corn centers, the improved varieties have been grown and acclimated in all sections of the state and farmers now have within easy reach good seed corn, which they can purchase fire dried in the ear that has been grown under their own local conditions.

It is surprising what an association of 1,500 young farmers

can accomplish when all proceed in a systematic way along one line of effort.

During the six years' work with corn at the Experiment Station a few things have been learned that are of vital interest to the Wisconsin corn breeder and will be herewith given with the hope that some farmer will be benefited thereby.

For improvement of yield we should observe careful selection of seed ears when stalk study is permissible. The ears should not be taken from the stalks till well matured. Seed corn should not be dumped on a floor but hung in a well ventilated room or top of corn crib to dry. A well ventilated furnace room is an admirable place to cure corn. Small outside buildings, well ventilated, with corn racks arranged and shielded stove in center of room is preferable for drying large amounts of seed corn. After seed corn is well dried, it will stand cold weather without serious results providing it is kept in a dry place.

The ear we desire should be cylindrical and true to type; tapering ears are objectionable as they do not carry uniform kernels. Kernels should be of medium depth and of practically the same width from butt to tip with edges fitting closely from crown to cob. Ears having sixteen to twenty rows are preferable for our latitude, as by carrying that number of rows, they dry out more readily than if carrying more. A slightly roughened seed coat is desirable and the corn should come well down around the shank, which should be of medium size. The tips of the ears should be fairly well filled, but the ear should not be discarded if a few tip kernels are missing when other good characteristics are present.

Ears should be of uniform size, 8 to 10 inches in length, and 6 to 7 inches in circumference. Uniformity in size of ear usually carries with it uniformity in size of kernels.

The secret of good crops is largely in the seed. Only the best should be planted. No uniformity of stand can be secured unless seed has good germinating power. All corn of doubtful character should be tested. General test should first be made by taking at least two kernels from each of fifty ears and making test in simple plate tester. If test is from 98 to 100% strong and vigorous, and corn was cured under similar conditions, the farmer can be reasonably certain the corn is all right. Resort to the ear test, if general test is low, or if any doubt exists, as it will amply repay for time and trouble.

Before testing make general selection of ears that have kernels of about the same size. Use planter plate that will plant

by check row system three or four kernels to a hill. Stay by planter until it will drop four kernels eighty out of a possible one hundred times.

Shelled corn should not be purchased for seed. Every corn grower should insist on having seed corn shipped in the ear so that he can test the same before planting and discard it if of no value. There is no good reason why any honest seed corn dealer should refuse to sell corn in the ear.

Bear in mind that in order to lock the vitality of seed corn in the kernel until time of planting the corn should be fire dried and then stored in a safe place.

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 to emphasize corn improvement in Wisconsin.

WISCONSIN OFFICIAL CORN SCORE CARD.

	1	2	3	4	5
1 Trueness to Type or Breed characteristics 10					
2 Shape of ear 10					
3 Color: a. G ain. 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 be ween rows .. 5					
b Space between kernels at cob 5					
11 Percentage of corn 10					
Tot l. 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 mould, 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 ears.* Northern section 8 to 9 inches, central section $8\frac{1}{4}$ to $9\frac{1}{4}$ inches, southern section, $8\frac{1}{2}$ to $9\frac{1}{2}$ inches. Long ears are objectionable because they usually have poor butts and tips, broad, shallow kernels, and hence a low percentage of corn.
9. *Circumference of ear.* Northern section 6 to $6\frac{1}{2}$ inches, central section $6\frac{1}{4}$ to $6\frac{3}{4}$ inches, southern section $6\frac{1}{2}$ to 7 inches.
10. *a. Furrow between rows; b. Space between furrows at cob.* The furrow between the rows of kernels should be small. Space between kernels near the cob is objectionable.
11. *Percentage of corn:* The percentage of corn is determined by weight; depth of kernels, size of cob and maturity all affect the percentage.

RULES TO BE USED IN JUDGING.

1. *Length of ear*—The deficiency and excess in length of all ears not conforming to the standard should be added together, and for every inch thus obtained a cut of one point be made.
2. *Circumference of ear*—The deficiency and excess in circumference of all ears not conforming to the standard should be added, and for every inch thus obtained a cut of one-half point should be made. Measure the circumference at one-third the distance from the butt to the tip of the ear.
3. *Percentage of corn*.—Per cent of corn should be from 85 to 87. In determining the percentage of corn, 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 should be made.
4. *Color of corn and cob*.—A red cob in white corn, or a white cob in yellow corn, should be cut five points. For each mixed kernel a cut of one-tenth point should 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 one inch of the cob is exposed, a cut of one-half point should 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.

EXPLANATION OF POINTS AND RULES FOR JUDGING DENT CORN.

Points.	Perfect score	Things to consider.	Rule for cuts.
1 Trueness to type or breed characteristics.	10	Approximate approach to type in form of kernel, indentation, shape of ear and color of grain.	Cut $\frac{1}{2}$ point for each ear badly off type and less as judgment of scorer dictates.
2 Shape of ear.	10	Ear shape should conform to standard for variety. Should not be crooked, too pointed, etc.	Cut 1 point for each poorly shaped ear.
3 Color. (a) Grain.	5	Should be free from mixed or missing kernels and true to color for the variety.	Cut 1-10 point for each mixed or missing kernel. Variations in color of grain to be cut according to judgment of scorer.
(b) Cob.	5	Cobs should be a dark, cherry red for yellow corn and a glistening white for white corn.	Cut 5 points for every white cob in yellow corn or red cob in white corn.
4 Market condition.	10	Corn should be ripe, sound and free from injuries or disease. Should be bright in color.	Cut one point for every diseased, chaffy, injured or immature ear.
5 Tips.	5	Kernels should extend over the tip in regular rows. Should cover the tip and be uniform in size and shape.	Cut $\frac{1}{4}$ point for every badly covered tip. Cut 1 point for every inch of exposed tip.
6 Butts.	5	Kernels should extend over butts in regular rows and should be well developed, not flat. Butts should be well covered.	Cut 3-10 point for every butt, well covered but with flat kernels. Cut $\frac{1}{2}$ point for every uncovered butt.
7 Kernels. (a) Uniformity.	10	Should be alike in shape and size.	Cut 1 point for each set of kernels lacking in uniformity.
(b) Shape.	5	Kernels should be perfect wedge shape, narrower or wider according to variety.	Cut $\frac{1}{2}$ point for each poorly shaped set of kernels.
8 Length of ear.	10	Should have standard length for the section where corn is grown.	Cut 1 point for every inch of excess and deficiency in length.
9 Circumference of ear.	5	Should have standard circumference for section.	Cut $\frac{1}{2}$ point for every inch of excess and deficiency in circumference.
10 Space. (a) Furrows between rows.	5	Space between kernels at crowns. Furrows should be straight.	Cut $\frac{1}{4}$ point for 1.32-1.16 inch in width. Cut $\frac{1}{2}$ point for 1.16 inch and above.
(b) Between kernels at cobb.	5	Space between the tips of kernels at point of attachment to cob.	Cut $\frac{1}{2}$ point for each ear showing space between kernels at the cob.
11 Proportion of grain to ear.	10	Should conform to standard for the variety.	Cut 1 point for each percent. short of standard weight for the variety.

CORN JUDGING. LESSON I.

Trueness to Type or Breed Characteristics.

The study of corn like the study of stock is now taken up from a practical and scientific standpoint, and we trust will be carried forward to a successful issue. Score cards have been adopted by colleges in different states where the subject of corn judging is taught, with slight variations. By following the suggestions accompanying the score card and the general discussions given therein on the different divisions under which corn is judged one may without an instructor become quite familiar and proficient in judging corn under the score card system.

Fairs and other associations where prizes are given for best display should provide that ten ears should be considered as a sample, as that number is now used at exhibitions in other states and should become uniform throughout Wisconsin. This number is taken as it furnishes an easy basis for calculation. The samples of corn should be arranged on tables so that the judge can have easy access to the same, pass judgment in a comfortable position and have abundant space for comparison.

The first subject to be considered in judging a sample is trueness of type or breed characteristics for which ten points are allowed if the sample is perfect. Corn like cattle belongs to a great family, this family being subdivided into species or types. We are interested in particular with the flint and dent species of corn which are grown generally. Other species we might mention are pop corn, pod corn, sweet corn and soft corn. Each of the above species are divided into numerous breeds or varieties, which is brought about by the ingenuity of man combined with variation in climate, soil, cultivation, etc. The Dent corn is the great commercial corn of the United States, and that with which so much progress has been made by breeding during the past five or six years, consequently we will consider this corn specifically and the other groups generally.

The score card is arranged for Dent corn and the rules and suggestions given in connection with the score card refer to the Dent in general.

Different breeds of corn, like different breeds of cattle, have distinctive characteristics by which they are recognized. Those

breeds having a particular color are easy to distinguish between as Boone County White from Reid's Yellow Dent, or either of these races from the Calico or Strawberry Dent. When one wishes to distinguish between breeds of the same color it is more difficult, and it is only by actual experience in handling and studying the markings that one can become proficient. The markings of pure breeds are quite distinct as the breeder working for improvement has been trying to make prominent one or more desirable characteristics. This is plainly noticeable in the Reid's Yellow Dent and the Leaming, two of the pure yellow breeds of Illinois. These varieties differ in shade of color, the Reid's being a pale yellow while the Leaming is more highly colored, approaching an orange color. In other characteristics the Reid's Yellow Dent has a cylindrical ear and furrows running from butt to tip, while the Leaming has more of a tapering ear and occasionally drops one or more furrows at the middle of the ear. Different seed coats are allowable in the Reid's Yellow Dent, which may be either rough or smooth with a variation in the indentation from a round dimple dent to a wide narrow dent. The Leaming has a roughened seed coat which is characteristic of the breed. The breeds of the white corn like the yellow have certain characteristics peculiar to each, and are readily distinguished after an acquaintance is formed.

The corn breeders of Wisconsin by becoming acquainted with the desired characteristics of seed corn will work with a common interest of producing and improving these desired qualities in the different breeds of corn that are to become standard varieties in various portions of the state. By several hundred working with the same purpose in view a breed of corn will be bred having the characteristics which will be known on account of those similar traits and the more nearly the corn conforms to this type the higher the marking can be given to it in uniformity and breed characteristics.

CORN JUDGING. LESSON II.

Shape of Ear, Cob and Kernels.

In judging a sample of ten ears of corn after considering trueness to type and breed characteristics we next examine closely the shape of the ear. Ten points are allowed if the ears

are perfect in shape but it is as difficult to find an ear of corn perfect in shape as it is to find cows, horses, and sheep perfect in shape.

The shape of ears of the different varieties of corn differ as widely as the shape and form of the different pure-bred breeds of cattle. Each race and variety has a characteristic shape peculiar to the variety to which it belongs. For example, the Boone County White Corn has a long cylindrical ear, large in circumference, while the Leaming has an ear considerably shorter, finer in cob and a general taper to cob and ear.

If the characteristic shape desired in the Leaming corn were found in Boone County White, or Reid's Yellow Dent, it would be scored severely as it would not be characteristic of those breeds.

The shape most desirable to be found in corn is a cylindrical ear from butt to tip, and corn breeders are trying to secure this shape in all varieties, consequently we may expect to find in the future more uniformity in shape in the different breeds of corn.

Where ears are inclined to taper it will be noticed that two or more rows, as a rule, are dropped near the middle of the ear, otherwise the kernels on the cob are irregular being deeper and larger at the butt than at the tip. This makes the kernels vary in size throughout the ear, and renders the corn almost totally unfit for seed. No planter can plant kernels of this type so as to give a uniform stand, one of the desired characteristics of a field corn.

In scoring corn on shape one must take in consideration the soil and climatic conditions, under which the corn is grown.

The shape of an ear desirable for central Illinois would differ in many respects from the shape most desirable for central Wisconsin. Our shorter season demands a shallower kernel which will carry with it a different characteristic shape than that grown further south.

The characteristic wedge shape of kernel is the most desirable and this should receive consideration in judging samples or in the selection of seed for the season's crop. The wedge shape kernel carries with it a greater depth, more rows to the ear, and a greater proportion of corn to cob.

Prof. A. D. Shamel, former instructor in corn judging at the University of Illinois, says: "It has been found that there is a correlation between the shape of the kernel and the composition. For instance, a kernel having a thin tip is low in per cent of oil and protein and high in per cent of starch. It is

usually true that such pointed kernels are low in vitality or lack constitution. The most desirable shape is plump tips, having about the same thickness as the upper portion of the kernel.

No set rule can be given as to the exact number of points to be taken from the full score on account of any particular weakness in regard to shape. The scorer after carefully noting the deficiency in shape will rely on his individual judgment in marking the score and not be dependent on any set rule.

CORN JUDGING. LESSON III.

Color of Grain and Cob.

Having already considered breed characteristics and shape of ear, the next essential to examine is color which we consider under two heads, viz., color of grain and color of cob. Five points are allowed on color of grain and five on color of cob where each is perfect.

Yellow corn should have a red cob and white corn a white cob in pure-bred varieties. Anything to the contrary would show defectiveness in purity of breeding and should be cut severely by the corn judge and rejected as seed by the corn breeder.

The color of the corn varies with the breed, the Reid's Yellow Dent has a pale yellow color, while the Leaming has a brighter shade of yellow and these shades predominate and are characteristic of the breed. Other yellow breeds vary slightly in color from a pale yellow to a deep orange, and are only known by a thorough acquaintance with the variety of corn under consideration and are then cut accordingly.

The cob in yellow corn should be a bright cherry red and as the color of cobs vary from this standard, a cut should be made by the scorer. A bright cherry red cob denotes health and vigor in corn and a pale or dark red cob denotes lack of constitution or vitality. The white cobs should be a glistening white and not a dead pale color. The above points should be considered when scoring corn at fairs or when the corn breeder is carefully selecting seed for the season's crop.

General questions, however, are often asked as to whether it is preferable to grow white or yellow corn, and which is the richest in the food elements, and which will produce the most grain and forage per acre, etc.

From tests made by careful breeders of corn, and by Experiment Stations, it has been found that in general, color makes no difference as far as quality is concerned, and it is merely a matter of taste to the grower as to the color of corn he desires.

White or yellow corn through careful breeding of one variety and neglect of the other would soon show a marked difference in regard to yield and quality in favor of the variety to which attention had been given, regardless of color.

Like the breeder of live stock, the corn grower had better select that breed of corn that suits his ideal taste best, keeping in mind that the quantity and quality of marketable corn per acre are the essential characteristics sought for.

CORN JUDGING. LESSON IV.

Market Condition.

Ten points are allowed on the score card where market condition is perfect. By market condition we mean general excellence and that degree of ripeness or maturity that is taken note of from the grower's or feeder's standpoint. Corn that shows immaturity and a tendency to be loose on the cob with wide space between the kernels should be cut severely on the score card under market condition. Where market condition is perfect or nearly so the kernels are firm on the cob and the ear gives a rasping sound when twisted. The kernels fit closely together lengthwise upon the cob between the rows and crosswise between the kernels of each row. Corn when scored from the feeder's standpoint is not cut so severely as from the grower's or seedsman's standpoint. When we consider that a bushel of corn plants approximately six acres and the importance to be attached to uniformity of stand we will fully appreciate the value of considering the market condition from the grower's standpoint in a critical way.

No one head under which corn is judged is so important to Wisconsin farmers as market condition, and all farmers of the state should not only be able to judge corn from that standpoint but should understand how to work for the perfection of that characteristic.

Several standard varieties of corn will have to be established in various portions of the state that will ripen properly under the conditions peculiar to that section. This can only be done

by securing seed corn having those desirable traits that would naturally adapt it to a certain section of the state, and put it through a test. If farmers were to try this plan individually it would be many years before known varieties would be established, but Wisconsin is fortunate in the fact that it has an association of twelve hundred young men who are working on the corn problem at the present time, and definite results may be looked for in a reasonable period.

The utmost importance is attached to market condition in carrying on trial tests as a variety of corn would be of little value to a community or division of the state, if it would not properly mature. Much can be done in the way of planting and cultivating the crop to hasten maturity, and this should be resorted to.

The check-row system of planting admits more sunlight and a freer circulation of air through the corn than the drill system.

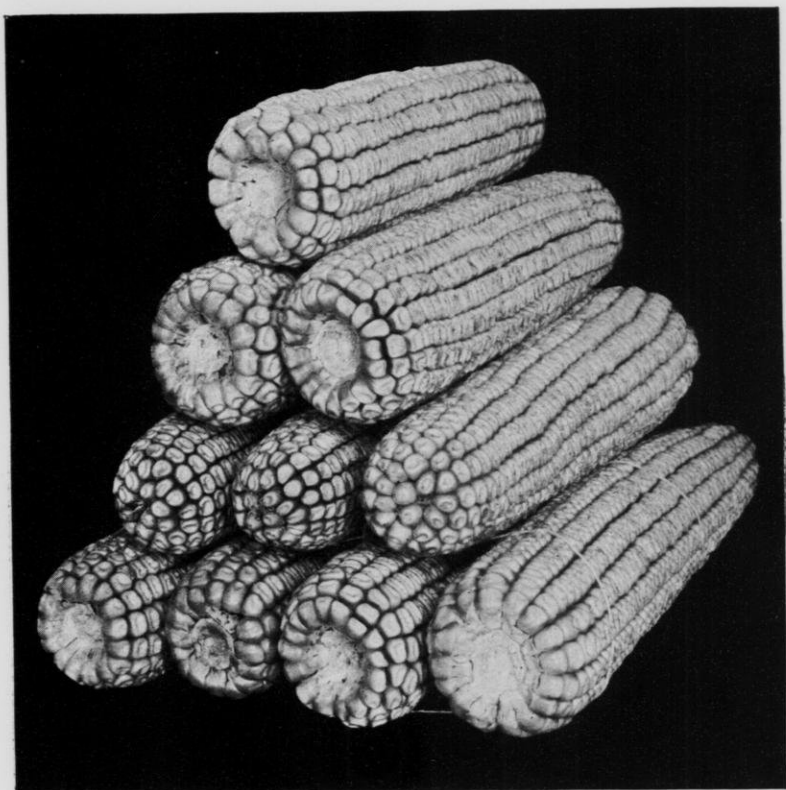
The cultivator can be worked more effectually to retain moisture, and keep down the weeds which enables the corn to gain several days in the race for maturity over corn of the same variety that has been planted in drills. Corn will gradually become accustomed to its environment and will adjust itself to varying conditions. By selecting those ears for seed that show good market condition, even if there be but few in the entire field the earliness of the corn can be improved upon materially.

It is possible to mature the Illinois dent corns in certain portions of Wisconsin by giving them special conditions, such as location, and planting merely one kernel in a hill the ordinary width of the planter. It seems that Wisconsin with her $1\frac{1}{2}$ million acres of land annually devoted to corn should propagate in the shortest possible time, varieties best adapted for various localities, and then to hold to those established strains that annually show good market condition.

CORN JUDGING. LESSON V.

Butts and Tips.

In scoring butts and tips we allow five points for each if perfect, but cut down in accordance with imperfections. A well filled butt that is symmetrical and not bulging is desirable. The corn should come well over toward the shank so when snapped a rounded hollow space would be plainly noticeable.



Characteristic sample of Silver King corn, Wisconsin No. 7. Yield on breeding plot Station farm in 1907, ninety-eight bushels of shelled corn per acre.



The corn breeder desiring to get a large proportion of corn to cob often goes too far in breeding for a small shank and full covered butt. Where the shank is too small the ears drop off during the ripening period or readily tear off while harvesting. Where this weakness is noticeable the butt should be cut accordingly on the score card. Poorly filled butts are caused by the first silks developing too far in advance of the pollen and drying to such an extent that they do not become fertilized when the pollen ripens. All ears, where the butts are partially filled, should be rejected or this characteristic may become permanent or partially so. If an earlier variety of corn or corn more advanced should be in an adjoining field the butt kernels are liable to be mixed by being fertilized with this foreign pollen instead of the pollen from their own variety. It is largely on account of chance crossing that occurs to the butt and tip kernels that those kernels are rejected when planting. Their peculiar formation makes them non-uniform which interferes in planting evenly and they also seem weaker in germination and more tardy in growth than kernels from the middle or intermediate parts of the ear. The tip kernels are apt to be flinty and pop corn shape which is undesirable in dent corn.

A perfect tip which has a center kernel termed a cap is hard to find but occasionally a few are found where large quantities of corn are handled. In a perfect tip the rows of corn should come over the tip in regular order and meet near the apex. The kernels should be uniform in size and shape and should not be mixed or shallow. Where bare tips are noticeable to quite an extent throughout the field, we allude the same to the fact that the silks formed last, which represent the tips, were too late for the pollen, and as a result were not fertilized.

By planting ears having defective tips that undesirable characteristic would soon become permanent or nearly so. Open tips have a tendency to increase the shallowness of kernels on the tip half of the ear which makes the corn on that portion of the ear undesirable for planting on account of the lack of uniformity compared with the kernels on the butt portion of the ear.

From the standpoint of the corn judge, butts and tips that do not meet the standard should be scored quite severely, and should carefully be rejected by the corn grower where the defect is too prominent.

CORN JUDGING. LESSON VI.

Kernel Study.

The seventh division under which ear corn is judged is kernel study for which 15 points out of 100 are allowed; 10 for uniformity and 5 for shape.

The kernels should be uniform in shape, size, and color and true to the variety type. The shape should be such that the edges of the kernels touch from tip to crown. The tip portion of the kernel, that part attached to the cob and which contains the germ, is rich in protein and oil and hence of the highest feeding value. For this reason the tip should be full and plump. A plump tip also denotes vitality and constitution. Corn growers should regard with suspicion corn that has weak and shriveled tips no matter how well the outside of the ear may look. At least 85 per cent of all the oil in the kernel is in the germ which extends from within the tip upward, hence corn of high oil content is preferable for factories where the manufacture of corn oil is emphasized. The time is approaching when corn may be purchased on a basis represented by its chemical constituents instead of by the pound or bushel. Milk and cream are now purchased almost universally by their butter fat content and grains will be the next in order. Tests by the Illinois Experiment Station show that the oil content in corn may vary from $2\frac{1}{2}$ to $7\frac{1}{2}$ and protein from $6\frac{1}{2}$ to 16 per cent. Protein is valued at 5 cents per pound while starch is less than 1 cent. It does not seem fair for a farmer who has used care in selecting high protein seed corn to be obliged to take the same price per bushel for his crop as one who is raising only ordinary corn. When Wisconsin farmers market more corn we feel confident that the matter of selling by the test will be carefully investigated. At the present time nearly all the Wisconsin corn is marketed through farm animals which undoubtedly is the best possible way of marketing farm crops. By so doing we put our animals in proper condition for the market and save middle men's profits on our crops as well as retaining the fertilizing elements contained therein to keep up the fertility of the farm.

If seed corn high in protein and oil content is planted the

progeny will be high in those desirable characteristics. One bushel of seed corn will plant about six acres, four kernels to the hill. Will it not then pay Wisconsin farmers to carefully select seed corn that is high in oil and protein?

CORN JUDGING. LESSON VII.

Circumference and Length of Ears.

The time will arrive in Wisconsin as it has in some of the older corn breeding states when each distinct variety of corn will have its respective measurements as to circumference and length. We have a standard measurement for corn that has been grown in northern, middle and southern Wisconsin. In general the circumference should be three-fourths the length. The length may vary from eight to nine and one-half inches within the state and the circumference from six to seven inches. The chief reason for distinct measurements is to secure uniformity and compactness in ears. We cannot accept those that are out of natural proportion but must be governed by some set uniform standard.

CORN JUDGING. LESSON VIII.

Furrows Between Rows and Space Between Kernels at Cob.

The straight rows are the most desirable as they give character and uniformity to the ear and admit of the kernels being placed in a more exact position. The kernels on ears with spiral rows are irregular as to depth, width, and shape of kernel and consequently are not wanted. From breeding experiments at several Stations it has been determined that irregularities are transmitted by the mother ear to the progeny, therefore if we desire to make the most rapid advancement in breeding to a highly developed type we should select only the most regular in all characteristics.

The furrow or groove should not descend to any great depth but merely mark the dividing line between the kernels from butt to tip. Where the furrow is deep thereby exposing a large por-

tion of the surface of the kernel it indicates a reversion of the dent corn to that of a flint type. The space between kernels at cob determines the maturity to quite an extent, the kernel tip in immature corn is shriveled and therefore leaves a space readily detected. In well matured corn no appreciable space will be detected but tips of kernels will fit tightly together from tip to crown. Abundant space between kernels near cob is an indication of immaturity, low viability and lack of vitality.

CORN JUDGING. LESSON IX.

Percentage of Corn on Cob.

Good well matured corn should give a percentage of from eighty-five to eighty-seven corn to cob. In other words if we were to shell one hundred pounds of ear corn we should expect approximately eighty-five pounds of kernel corn and fifteen pounds of cob. The tendency with some corn growers is to work for a small cob, thinking that feature of corn to be the leading desirable characteristic. In many instances the small cob theory has been practiced to such an extent that the yield has been materially reduced. We desire a medium sized cob that will carry from sixteen to twenty rows of kernels of medium depth; if we reduce the size of the cob the ear simply drops its rows by pairs until we have but ten or twelve rows remaining. If on the other hand the cob is too small and the grower has been working for high percentage of corn to cob, the kernels are apt to be of too great depth to mature well in Wisconsin latitude.

When judging corn for percentage of corn to cob we weigh five ears of the sample and record total weight. The corn should then be shelled and the kernel corn weighed and recorded. Divide decimally the number representing the weight of the shelled corn by the number representing the weight of ear corn and the result will be the percentage of corn on cob.

Example: If total weight of five ears of corn is 60 oz., and the kernel corn from the five ears weighed 51 ounces, 51 divided decimally by 60 hundredths equals 85, which is the percentage of corn.

Immature and chaffy corn always gives a relative low percentage of corn to cob compared with well ripened corn.

LESSON X.

Selecting Corn of High Oil and Protein Content.

From careful experiments carried out by the Illinois College of Agriculture extending through a series of years it has been determined definitely that the composition of the corn kernel can be materially changed. From many thousand tests at the Chicago Glucose factories it has been found that the composition of whole corn is approximately as follows:

Starch.....	70.0%
Water.....	11.4%
Protein.....	10.5%
Oil.....	4.5%
Fiber.....	2.2%
Ash.....	1.4%

It will be noted that the starch content is extremely high compared with the other elements, hence the claim that corn is a one sided ration for farm animals.

The farmer is particularly interested in the oil and protein content of the corn, consequently the richer the corn is in these elements the more money value per bushel the corn is worth for feeding purposes. Plants, like animals, do not improve if left merely to nature's laws but strive to maintain a certain standard. It has remained for man to step in and by changing environment and following certain definite principles accomplish beneficial results.

In the improvement of corn the farmer can by the proper selection of seed materially change the constituents, most desired, from a lower to a higher degree thus growing a corn of higher value for feeding farm animals. The composition of different kernels of corn taken from the same ear are approximately the same, hence a single kernel from an ear is a fair index of the composition of all the remaining kernels of that particular ear. By planting corn that is high in oil and protein the crop grown from that select seed is also high in those desirable elements.

By a physical examination of one kernel from each ear the relative composition as to oil and protein can be approximately determined. No difficulty will be experienced in distinguishing between ears that are high and low, in protein and oil after a few comparisons are made.

To make these determinations all the apparatus necessary is a pocket knife. Remove at least two kernels of corn from the ear and examine closely, if that portion of the kernel next to the cob known as the tip is pointed, shriveled and has a small face mark covering the germ, discard the ear at once, as it will be found not only low in oil but low in vitality as well. The face mark under which the germ is found should be broad and extend from the tip well up toward the top or crown of the kernel. This indicates a large germ beneath. Practically 85% of all the oil in the kernel is found in the germ which is also rich in protein, hence the desirability of a large and well developed germ. The kernel has to be cut in order to determine the protein content as that is noticeable within. The kernel should be cut from tip to crown through the narrow and broad dimensions, this will bring plainly to view the germ which is of a dark gray color; the starch is white, and a flinty composition which is of a grayish white in white corn, and a dull yellow in yellow corn. The large portion of the protein contained in the kernel is found in this flinty matter. If the flinty portion of the kernel fits closely to the germ and crowds the white starchy matter into comparatively small space, the corn upon the ear from which the kernel was selected is high in protein. After the examination of a few kernels one will make note of the relative size of the parts at a glance.

It seems that it will amply repay any farmer to select a few bushels of seed corn in this way from year to year until a high standard of corn is obtained.

WHEAT.

Points to be Observed.

1. All kernels of the sample should resemble one another in shape, color and general appearance.
2. Kernels should be the same size and shape throughout to secure uniformity.
3. Grain should all be of the same color. No mixture of red and white kernels.
4. There should be no mixture of oats, barley or any other grain. Must be pure wheat.
5. The sample as a whole should be large and plump, not small or shrunken.
6. The sample should be free from any kind of dirt or weed seeds. The percentage of foul material is determined by the use of sieves and scales. Remove and weigh the foul material. Then divide weight of foul material by weight of whole sample. This will give you percentage of foul material. Should the foul material consist of noxious seeds the cut on sample should be made more severe than if it is composed of practically harmless materials.
7. The sample should be free from smutty, musty or bin-burned kernels. Take one hundred average kernels and count the number of each of smutty or otherwise injured kernels. The number found will be the percentage of poor kernels.
8. Good wheat should weigh 60 or more pounds to the measured bushel. The weight per bushel may be determined by the use of the Winchester measure.
9. Wheat should give a germination of not less than ninety-five per cent.

Rule for Cuts.

1. Take 100 kernels, constituting a fair sample of the grain. Count out the kernels not true to type. For each kernel off type, cut 1-10 point.
2. Proceed as above and for each small or shrunken kernel cut 1-10 point.
3. For discoloration, cut according to extent. If only slightly discolored cut $\frac{1}{4}$ point and more as judgment dictates.

WISCONSIN COLLEGE OF AGRICULTURE.

MADISON.

DEPARTMENT OF AGRONOMY.

OFFICIAL WHEAT SCORE CARD.

NAME OR NUMBER OF SCORER..... DATE

SAMPLE NO. TABLE.....

		1	2	3	4	5
1. Trueness to type or breed characteristics	10					
2. Uniformity in size and shape of kernel	10					
3. Color of grain	10					
4. Freedom from mixture with other grains	15					
5. Size of kernel	10					
6. Per cent and nature of weed seed, dirt and other foreign material	15					
7. Per cent of damaged, smutty or musty kernels	5					
8. Weight of grain	10					
9. Viability	15					
Total.....	100					

Reasons for student's score on test sample.

Numbers below refer to the various heads under which the sample of grain has been judged.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8

4. Weigh the whole sample, separate and weigh the foreign grain. Divide weight of foreign grain by weight of whole sample. This will give percentage of other grains. For every per cent so found cut $\frac{1}{2}$ point.
 5. Sample should consist of large plump kernels not small ones. Cut as judgment dictates, considering variety characteristics.
 6. Cut sample one point for each per cent of foul material.
 7. Cut sample one point for each per cent of smutty, bin-burned and musty kernels.
 8. Cut one point for each pound below sixty pounds in weight.
 9. Cut $\frac{1}{2}$ point for each per cent the germination falls below 95%.
-

OATS.

Points to be Observed.

1. All kernels of the sample should resemble one another in shape, color, and general appearance.
2. Kernels should be the same size and shape throughout to secure uniformity.
3. Grain should all be white in color for white oats, bright yellow for yellow oats and a glistening black for black oats.
4. There should be no mixture of wheat, barley or any other grain.
5. The sample as a whole should be large and plump, not small or shrunken.
6. The sample should be free from any kind of dirt or weed seeds. The percentage of foul material is determined by the use of sieves and scales. Should the foul material consist of noxious weed seeds the cut on sample should be made more severe than if it is composed of practically harmless materials.
7. The sample should be free from smutty, musty or bin-burned kernels as indicated by the odor, which shall be sweet. Take one hundred average kernels and count the number of each of smutty or otherwise injured kernels. Repeat this three times and find the average of the three trials. The number found will be the percentage of poor kernels.

WISCONSIN COLLEGE OF AGRICULTURE.

MADISON.

DEPARTMENT OF AGRONOMY.

OFFICIAL OAT SCORE CARD.

NAME OR NUMBER OF SCORER DATE.....
 SAMPLE No. TABLE.....

		1	2	3	4	5
1. Trueness to type or breed characteristics	10					
2. Uniformity in size and shape of kernels	15					
3. Color of grain	5					
4. Freedom from mixture with other grains	5					
5. Size of kernel	10					
6. Per cent and nature of weed seed, dirt and other foreign material	15					
7. Odor—musty, smutty, sulphur	10					
8. Weight per bushel	10					
9. Percentage of meat to hull	5					
10. Viability	15					
Total	100					

Reasons for student's score on test sample.

Numbers below refer to the various heads under which the sample of grain has been judged.

- 1.....
- 2.....
- 3.....
- 4.....
- 5.....
- 6.....
- 7.....
- 8.....
- 9.....
- 10.....

8. Good oats should weigh 32 or more pounds to the measured bushel. The weight per bushel may be determined by the use of the Winchester measure.
9. Oats should give a germination of not less than ninety-five per cent.

Rule for Cuts.

1. Take 100 kernels, constituting a fair sample of the grain. Count out the kernels not true to type. Repeat three times and find average for the three trials. For each kernel off type, cut 1-10 point.
2. Proceed as above and for each small or shrunken kernel cut 1-10 point.
3. For discoloration cut according to extent. If only slightly discolored cut 1 point, and more as per cent of discoloration increases. Cut 1-10 point for each black, red or yellow oat in white oats.
4. Take 100 grains constituting a fair sample of the grain. Count out the foreign grain. Repeat three times and take the average of the three trials. This will give the percentage of foreign grain. For every per cent so found cut $\frac{1}{2}$ point.
5. Sample should consist of large plump kernels not small ones. Cut as judgment dictates, considering variety characteristics.
6. Cut sample one point for each per cent of foul material.
7. Cut sample one point for each per cent of smutty, bin-burned and musty kernels. If sample has musty odor cut 10 points.
8. Cut one point for each pound below 32 pounds in weight.
9. Cut $\frac{1}{2}$ point for each per cent the germination falls below 95%.

BARLEY.

Points to be Observed.

1. All kernels of the sample should resemble one another in shape, color, and general appearance.
2. Kernels should be the same size and shape throughout to secure uniformity.
3. Grain should all be light in color.

4. There should be no mixture of oats, wheat or any other grain. Must be pure barley.
5. The sample as a whole should be large and plump, not small or shrunken.
6. The sample should be free from any kind of dirt or weed seeds. The percentage of foul material is determined by the use of sieves and scales. Should the foul material consist of noxious weed seeds the cut on sample should be made more severe than if it is composed of practically harmless materials.
7. The sample should be free from smutty, musty or bin-burned kernels. Take one hundred average kernels and count the number of each of smutty or otherwise injured kernels. Repeat this three times and find the average of the three trials. The number found will be the percentage of poor kernels.
8. Good barley should weigh 48 or more pounds to the measured bushel. The weight per bushel may be determined by the use of the Winchester measure.
9. Barley should give a germination of not less than ninety-five per cent.

Rule for Cuts.

1. Take 100 kernels, constituting a fair sample of the grain. Count out the number not true to type. Repeat three times and find average for the three trials. For each kernel off type, cut 1-10 point.
2. Proceed as above and for each small or shrunken kernel cut 1-10 point.
3. For discoloration cut according to extent. If only slightly discolored cut 1 point, or more as per cent of discoloration increases.
4. Weigh the whole sample, separate and weigh the foreign grain. This will give percentage of other grains. For every per cent so found cut $\frac{1}{2}$ point.
5. Sample should consist of large plump kernels not small ones. Cut as judgment dictates, considering variety characteristics.
6. Cut sample one point for each per cent of foul material.
7. Cut sample one point for each per cent of smutty, bin-burned and musty kernels.
8. Cut one point for each pound below 48 pounds in weight.
9. Cut $\frac{1}{2}$ point for each per cent the germination falls below 95%.

WISCONSIN COLLEGE OF AGRICULTURE.

MADISON.

DEPARTMENT OF AGRONOMY.

OFFICIAL BARLEY SCORE CARD.

NAME OR NUMBER OF SCORER..... DATE

SAMPLE NO..... TABLE.....

	1	2	3	4	5
1. Trueness to type or breed characteristics 10					
2. Uniformity in size and shape of kernel 15					
3. Color of grain 15					
4. Freedom from mixture with other grains 15					
5. Size of kernel 5					
6. Per cent and nature of weed seed dirt and other foreign material 10					
7. Per cent of damaged or mutty kernels 5					
8. Weight of grain 10					
9. Viability 15					
Total .....100					

Reasons for student's score on test sample.

Numbers below refer to the various heads under which the sample of grain has been judged.

- 1.....
- 2.....
- 3.....
- 4.....
- 5.....
- 6.....
- 7.....
- 8.....
- 9.....

DISCUSSION ON THE JUDGING OF SMALL GRAINS.

A. L. STONE.

Trueness to Type or Breed Characteristics.

Trueness to type in any sample of grain consists of the characteristics which distinguish that sample from another of the same class. To be true to type all the kernels in any sample of grain should bear a close resemblance to each other. Some kernels may be smaller than the others but should have the same general appearance.

Some varieties of oats, for instance, have short plump grains, others have long, slender or pointed grains. Some with short plump grains have large kernels, others small, and the same is true of those having long, slender kernels. These same observations apply in a greater or less degree to barley, wheat and rye.

In general the points which determine type are color, size and shape of kernel, presence or absence of awns and hulls in oats; presence or absence of beards and hulls, and the straightness or crookedness of the kernel furrows in barley, the color, and size and shape of kernels in wheat. Oats may be hulled or hull-less. They may be white, yellow, gray, red or black, or have different sizes and shapes of kernels depending upon the variety. There should be no mixture of one with the other.

Barley may be either hulled or hull-less, bearded or beardless, black or white. The kernels may be long and slender or short and plump.

The furrows in the kernels of barley may be straight or crooked depending upon the arrangement on the flower stem. In six rowed barley two-thirds of the grains have crooked furrows. In two rowed barley the furrows are all straight.

No admixture of these various classes is allowable.

Wheat may vary in color from white to a dark red depending upon the variety and the region where grown. The kernels may possess a wrinkled surface or be perfectly smooth, or some be long and pointed and others short and oblong, depending upon varieties. It is important that these different types be not found in the same sample if it is to be true to type.

Uniformity in Size and Shape of Kernel.

In an ideal sample of grain all the kernels should be the same size and shape. They may all be small or all be large but must be *uniform*. This is important because the grain will be sown at a more uniform rate and all plants are apt to be of equal strength and vigor.

Color of Grain.

All kernels in the sample should be of the same color. No black, red, gray or yellow oats should be found in a sample of white oats. No black barley mixed with white, or white amber or macaroni wheat mixed with red. The last rule, of course, applies equally to the grains of other colors. This point must be closely watched as it is an indication of mixture or a lack of breeding.

Freedom From Mixture With Other Grains.

Little need be said in explanation of this point as every one realizes that the value of grain for seed is greatly reduced whenever there is a mixture of other grains. Special application of this point can also be made to wheat and barley. Wheat to make the best flour should be absolutely pure and the best prices can only be obtained for it when it is pure.

In the manufacture of malt maltsters wish to use only pure barley and a mixture of other grain is undesirable. Oats in barley are especially noxious as it is extremely difficult to separate the two.

Size of Kernel.

The matter of *uniformity* of kernels has already been discussed. The *size* of the kernels is now to be considered. In any grain it is desirable to have the kernels as large as possible up to a certain limit.

Therefore all the grains of a sample should be large for the variety as this is an indication of a well matured and probably prepotent grain. In other words, while not exactly uniform in size the kernels should be large, not undersized or shrunken. A grain buyer will always pay more for a lot of grain containing large kernels.

Per Cent and Nature of Weed Seed, Dirt and Other Foreign Material.

The grain should be free from all kinds of foul material. For exhibition purposes or for sale a sample is at once scored against if not thoroughly clean. The cut should be much more severe if among the weed seeds in the grain there are those of noxious weeds such as Canada thistle, quack grass, wild mustard, etc. Much of the material in the way of cracked and shrunken grain and weed seeds can, by grinding, be converted into a very good grade of ground feed for stock. The farmer should make this separation himself. The increased price obtained for the cleaned grain will ordinarily more than pay for the decreased weight resulting from the cleaning and the farmer still has the screenings for his own use. The grain can be cleaned on rainy days or in winter when the value of labor is low. Few farmers have yet come to a realization of the money which can be saved by the use of a good fanning mill.

Weight of Grain Per Bushel.

The weight of grain per measured bushel is generally an indication of quality and the principal point by which grain inspectors and buyers determine the grade and market value of grain.

In wheat high weight is indicative of comparatively high protein or, more specifically, gluten content, and it is the amount of gluten in wheat which determines its bread making qualities.

In barley the same thing is true. Brewers in the United States wish a high protein barley. They mix corn and rice grits with barley in the manufacture of beer. This cheapens the cost of beer production and as corn and rice are both high in starch content they furnish sufficient sugar so that the barley need have but little starch but must be high in protein. A good brewing barley for the use of the United States brewers then must be high in protein and as protein is heavier than starch a good barley is determined largely by its weight per bushel.

In oats, the higher the percentage of meats the better the feeding value of the oats. The heavier the oats weigh the higher the percentage of meats and the lower the percentage of hulls. As the hulls consist largely of crude fiber the smaller proportion of them there is the better. The average per cent of meats to hull for oats in the United States is seventy per cent but

may vary greatly depending upon the season and on the variety of oats.

The standard weights of grains in Wisconsin are as follows: Barley, 48 lbs.; Oats, 32 lbs.; Wheat, 60 lbs., and Rye, 56 lbs. per measured bushel.

Viability.

No grain should give a germination of less than ninety-five per cent for the best results. The higher the percentage of germination the better. That all the grain germinates is not sufficient, however. The germination should be strong and vigorous resulting in a strong rapidly growing young plant. As the success or failure of the crop depends upon it this is an important point.

Besides these general points which apply to all the grains there are special points which apply to each grain separately and these will be taken up in detail.

Wheat and Barley—Per Cent of Damaged, Smutty or Musty Kernels.

Wheat should contain no smutty or musty kernels. The smut darkens the flour and gives it a bitter flavor. If musty kernels exist in any quantity in the wheat the flavor can at once be detected in the flour. Both of these conditions lower the value of the wheat for any purpose and where very bad render it utterly useless for flour making.

Barley should also be free from these same defects as the quality of the beer will otherwise be affected. As the manufacture of a good beer depends upon a good malt, and a good malt depends upon uniform and as nearly complete germination of the grain as it is possible to get, there should be no cracked or broken kernels in the barley. These broken kernels will not germinate but mold or rot and they destroy the flavor of the beer. Smutty or musty barley also makes poor feed for stock.

Oats—Odor.

The odor of oats should be sweet. There should be no musty or burnt odor showing that oats are not in good keeping condition or that they have been over heated in bin or stack.

Such conditions have a tendency to destroy both the seed and feed value of the grain. Oats should also be free from smut.

Elevator men often resort to a process of bleaching to whiten oats which have been blackened or otherwise injured by exposure to the weather. Sulphur is used as the bleaching agent and oats thus treated often retain the scent of sulphur. Oats treated in this way should be avoided as they are apt to be injurious as feed and often the vitality or germinating power is also destroyed.

WISCONSIN SEED GRAIN GROWERS 1908.

Members of the Experiment Association are rapidly becoming the seed growers of the state, and by systematic selection of seed and care in culture and curing of the crop, produce a fine grade of pure-bred seed grains. These seed grains are sold by the producers either in small or large quantities, at reasonable rates.

Growers of Swedish Select oats (Wisconsin No. 4).

Name of Grower.	Address.	County.
Tomkins, O. Scott.....	Ashland, R. 2.....	Ashland.
Chrislaw, A. M.....	Rice Lake	Barron.
Heldstab, C. O.....	Rice Lake	Barron.
Poulter, C. J.....	Cumberland	Barron.
Tomkins, A. Pearce...	Ashland, R. 2.....	Bayfield.
Nies, Peter.....	Greenleaf, R. 3.....	Brown.
Roeckel, Joseph P.....	Lark	Brown.
Joos, Frank B.....	Fountain City	Buffalo.
Muehleisen, Gottlieb...	Tell	Buffalo.
Spaulding, L. C.....	Mondovi	Buffalo.
Peterson, H. N.....	New Holstein	Calumet.
Christiansen, W. O....	Chippewa Falls, R. 6.	Chippewa.
Guptill, L. R.....	New Auburn	Chippewa.
Kramer, H. F.....	Bloomer	Chippewa.
Lebeis, F. J.....	Bloomer	Chippewa.
Martiny, L. P.....	Chippewa Falls	Chippewa.
Cannon, E. A.....	Pardeeville	Columbia.
Chipman, W. R.....	Morrisonville	Columbia.
Ellickson, A. C.....	Arlington	Columbia.
Lloyd, Evan B.....	Cambria	Columbia.
Accola, Lawrence	Steuben	Crawford.
Chatterton, Ray W....	Basco	Dane.

Growers of Swedish Select oats (Wisconsin No. 4)—continued.

Name of Grower.	Address.	County.
Hopkins, B. F.....	Morrisonville	Dane.
Kaltenberg, Anthony ..	Waunakee	Dane.
Mikkelsen, Carl.....	Deerfield	Dane.
Mitchell, J. T.....	Cottage Grove	Dane.
Renk Bros.....	Sun Prairie	Dane.
Thorstad, N. H.....	Deerfield	Dane.
Wernich, Wm. H.....	Deforest	Dane.
Bussewitz, W. E.....	Juneau	Dodge.
Ehrhardt, Daniel	Knowles	Dodge.
Goetsch, Albert A.....	Juneau	Dodge.
Jones, John G.....	Beaver Dam, R. 4....	Dodge.
Howitt, C. H.....	Randolph	Dodge.
Jones, Owen R., Jr....	Beaver Dam	Dodge.
Krueger, Henry E....	Beaver Dam	Dodge.
Owens, H. C.....	Fox Lake	Dodge.
Schiller, Claude E....	Beaver Dam	Dodge.
Steiner, W. H.....	Brownsville	Dodge.
Boucsein, Gust L.....	Detroit Harbor	Door.
Erickson, Ole C.....	Detroit Harbor	Door.
Lindberg, E. J.....	Itasca	Douglas.
Kent, H. W.....	Rusk	Dunn.
Millar, Will.....	Menomonie	Dunn.
Donaldson, H. A.....	Eau Claire	Eau Claire.
Russell, A. C.....	Augusta	Eau Claire.
Briggs, L. W.....	Peebles	Fond du Lac.
Briggs, J. W.....	Peebles	Fond du Lac.
Carpenter, L. A.....	Fond du Lac	Fond du Lac.
Hargrave, Robert L....	Ripon	Fond du Lac.
Hinz, A. F.....	Ripon	Fond du Lac.
Hintz, William F.....	Oakfield, R. 26.....	Fond du Lac.
Kuehn, Chas. A.....	Brandon	Fond du Lac.
Mathews, Lee G.....	Brandon	Fond du Lac.
Meekin, H. W.....	Fond du Lac	Fond du Lac.
Stroup, Fred G.....	Fond du Lac	Fond du Lac.
West, R. N.....	Ripon	Fond du Lac.
Whittaker, Horace E..	Fond du Lac	Fond du Lac.
Barron, R. E.....	Platteville	Grant.
Booth, Guy A.....	Cuba City	Grant.
Searles, Wm. L.....	Roscobel	Grant.
Wiseman, Paul	Bridgeport	Grant.
Biglow, L. F.....	Brooklyn	Green.
Dettwiler, John	Monroe	Green.
Marty, Matthias	Monticello	Green.
Gordon, A. L.....	Mineral Point	Iowa.
Gordon, C. D.....	Mineral Point	Iowa.
Gordon, J. Roy.....	Mineral Point	Iowa.
Jones, Owen Lloyd ...	Hillside	Iowa.
Dettinger, Wm. F.....	Hixton	Jackson.
Engleman, John.....	Hixton	Jackson.
Anthes, Henry	Jefferson	Jefferson.
Bell, William C.....	Oconomowoc, R. 27 ..	Jefferson.
Brueckner, Justus.....	Ft. Atkinson	Jefferson.

Growers of Swedish Select oats (Wisconsin No. 4)—continued.

Name of Grower.	Address.	County.
Church, A. P.....	Whitewater	Jefferson.
Guttenberg, Frank, Jr.	Jefferson	Jefferson.
Ward, W. Rodell.....	Ft. Atkinson, R. 1...	Jefferson.
Wagner, J. M.....	Union Center	Juneau.
Bradley, J. Frank.....	Somers	Kenosha.
Myrick, Mead O.....	Bristol	Kenosha.
Orvis, L. C.....	Salem	Kenosha.
Roberts, F. W.....	Woodworth	Kenosha.
Katel, W. C.....	Kewaunee, R. 1.....	Kewaunee.
Oestreich, R. C.....	Kewaunee	Kewaunee.
Smithwick, Jas.....	Kewaunee	Kewaunee.
Griswold, H. W.....	West Salem	La Crosse.
Jones, E. E.....	Rockland	La Crosse.
Nuttleman, Adolph....	West Salem	La Crosse.
Nuttleman, Alfred L..	West Salem	La Crosse.
Sandman, W. D.....	Holmen	La Crosse.
Bridgman, C. R.....	Darlington	Lafayette.
Stewart, J. W.....	Blanchardville	Lafayette.
Vinger, Milo J.....	Argyle	Lafayette.
Lewerenz, Roy B.....	Tomahawk	Lincoln.
Clusen, Reinhold.....	Manitowoc	Manitowoc.
Garey, James	Grimms	Manitowoc.
Klann, Adolph.....	Hayton, R. 1.....	Manitowoc.
Roethel, Herman.....	Kiel	Manitowoc.
Strowig, Wm. A.....	Cleveland, R. 1.....	Manitowoc.
Sullivan, James A....	Grimms	Manitowoc.
Wiegand, Otto R.....	Cleveland	Manitowoc.
Baesemann, Otto.....	Edgar	Marathon.
Falarsh, Frank.....	Peshtigo	Marinette.
Olson, Otto W.....	Walsh	Marinette.
Houslet, Neal.....	Packwaukee	Marquette.
Basse, Wm. H.....	Milwaukee, St. A. R. 4	Milwaukee.
Butler, Ed.....	No. Milwaukee, R. 11	Milwaukee.
Pierner, Fred.....	No. Milwaukee	Milwaukee.
Ebert, Edmund D.....	Tomah	Monroe.
Ebert, Francis E.....	Tomah	Monroe.
Fox, C. L.....	Leon	Monroe.
Freeman, G. A.....	Sparta	Monroe.
Howell, H. P.....	Sparta	Monroe.
Leverich, J. W.....	Sparta	Monroe.
Letts, Edward F.....	Appleton, R. 4.....	Outagamie.
Mueller, Edw. O.....	Appleton	Outagamie.
Wussow, Chas. A.....	Seymour	Outagamie.
Zahrt, F. H.....	Hortonville	Outagamie.
Clausing, Adolph	Thiensville	Ozaukee.
Kieffer, Mike	Fredonia	Ozaukee.
Kohlwey, Otto	Grafton	Ozaukee.
Pierner, John W.....	Thiensville	Ozaukee.
Wulff, Fred.....	Grafton	Ozaukee.
Gullickson, Chas. E....	Cushing	Polk.
Nelson, Peter C.....	Milltown	Polk.
Hanson, N. P.....	Amherst Jct., R. 2...	Portage.

Growers of Swedish Select oats (Wisconsin No. 4)—continued.

Name of Grower.	Address.	County.
Ghastin, Wm. J.....	Union Grove	Racine.
Holloway, John W.....	Racine, R. 1.....	Racine.
Klofanda, Reuben.....	Burlington	Racine.
Wilson, William C....	Twin Bluffs	Richland.
Post, H. L.....	Sextonville	Richland.
Turgasen, J. H.....	Richland Center	Richland.
Austin, A. G.....	Janesville, R. 6.....	Rock.
Devine, C. B.....	Evansville	Rock.
Hoague, Chas. C.....	Janesville, R. 7.....	Rock.
Howe, Louis H.....	Brodhead	Rock.
Beebe, A. G.....	Bruce	Rusk.
Brunner, R. W.....	Hudson	St. Croix.
Imholt, B. A.....	Houlton	St. Croix.
Paulson, P. A.....	Hudson	St. Croix.
Clavadatscher, Tobias.	Sauk City	Sauk.
Frederickson, Fred....	Spring Green	Sauk.
Riek, Anthony.....	Plain	Sauk.
Toole, W. A.....	Baraboo	Sauk.
Berg, C. J.....	Tigerton	Shawano.
Kloydahl, John J.....	Wittenberg	Shawano.
Dennerlein, Arthur J..	Plymouth	Sheboygan.
Eastman, F. A.....	Sheboygan Falls	Sheboygan.
Illian, W. L.....	Adell, R. 19	Sheboygan.
Parrish, J. O.....	Plymouth	Sheboygan.
Wagner, Arthur L....	Haven	Sheboygan.
Hegge, E. A.....	Pigeon Falls	Trempealeau.
Mattison, Thos.....	Blair	Trempealeau.
McCauley, Rex.....	Osseo	Trempealeau.
Cass, Leonard E.....	Viroqua	Vernon.
Sebion, Cornelius	Westby	Vernon.
Anderson, Alvin M....	Whitewater	Walworth.
Coburn, Orrie.....	Whitewater	Walworth.
Dunbar, Harry D....	Elkhorn	Walworth.
Meurer, Paul	Genoa Jet.....	Walworth.
Warmington, Prentice.	Honey Creek	Walworth.
Puls, John	Hartford	Washington.
Bartlett, Geo. W.....	Menomonee Falls	Waukesha.
Burton, Roy.....	Eagle, R. 35	Waukesha.
Rosenow Bros.....	Oconomowoc	Waukesha.
Schafer, Chas. H.....	Waukesha, R. 7.....	Waukesha.
Schroeder, F. C.....	Hartland	Waukesha.
Spaulding, C. E.....	Oconomowoc	Waukesha.
Swoboda, F. G.....	Dousman	Waukesha.
Van Buren, E. W.....	Waukesha, R. 2.....	Waukesha.
Williams, Arthur R....	Waukesha	Waukesha.
Williams, D. T.....	Waukesha, R. 8.....	Waukesha.
Kneip, William.....	Weyauwega	Waupaca.
Larson, LeRoy.....	Iola	Waupaca.
Pirner, Fred.....	Sugar Bush	Waupaca.

Growers of Swedish Select oats (Wisconsin No. 4)—continued.

Name of Grower.	Address.	County.
Clark, J. J.....	Berlin, R. 1.....	Waushara.
Blakely, Albert J.....	Neenah	Winnebago.
Blodgett, Gordon R....	Neenah	Winnebago.
Miller, Henry C.....	Allenville	Winnebago.
Schaefer, R. J.....	Appleton	Winnebago.
Non-residents.		
Hitchcock, H. R.....	Pecatonica	Illinois.
Phillips, Jesse.....	Elizabeth	Illinois.
Thompson, Thor, Jr....	Wadena	Iowa.
Meyer, A. J.....	Howell, R. 7.....	Michigan.
Von Lanyi, Oscar.....	Duluth	Minnesota.

Growers of Oderbrucker Barley (Wisconsin No. 55).

Name of Grower.	Address.	County.
Johnson, L. M.....	Ashland, R. 2.....	Ashland.
Tomkins, O. Scott....	Ashland, R. 2.....	Ashland.
Chrislaw, A. M.....	Rice Lake	Barron.
Heldstab, C. O.....	Rice Lake	Barron.
Kamrath, William	Cameron	Barron.
Poulter, Chas. W.....	Cumberland	Barron.
Rauchenstein, John ..	Rice Lake	Barron.
Nies, Peter.....	Greenleaf, R. 3.....	Brown.
Roeckel, Joseph P.....	Lark	Brown.
Muehleisen, Gottlieb..	Tell	Buffalo.
Spaulding, L. C.....	Mondovi	Buffalo.
Kircher, H. W.....	Chilton, R. 3.....	Calumet.
Peik, Arthur.....	Chilton	Calumet.
Peik, Edmund.....	Chilton	Calumet.
Peterson, Hy. N.....	New Holstein	Calumet.
Christianson, W. O....	Chippewa Falls, R. 6	Chippewa.
Finsnes, A. I.....	Chippewa Falls	Chippewa.
Guptill, L. R.....	New Auburn	Chippewa.
Johnson, Albert I.....	Bloomer	Chippewa.
Kramer, Henry F.....	Bloomer	Chippewa.
Lebeis, F. J.....	Bloomer	Chippewa.
Martiny, L. P.....	Chippewa Falls	Chippewa.
Beach, Glenn H.....	Loyal	Clark.
Imig, Arthur H.....	Neillsville	Clark.
Krause, Fred W.....	Thorne	Clark.
Umlauft, Rudolph	Dorchester	Clark.

Growers of Oderbrucker Barley (Wisconsin No. 55)—continued.

Name of Grower.	Address.	County.
Chipman, W. R.....	Morrisonville	Columbia.
Dalton, Ernest E.....	Pardeeville	Columbia.
Dalton, Roy E.....	Pardeeville	Columbia.
Ellickson, A. C.....	Arlington	Columbia.
Grove, Christian	Columbus	Columbia.
Hoffman, Herman	Portage	Columbia.
Lloyd, Evan B.....	Cambria	Columbia.
Sharpee, Endre A.....	Rio, R. 1.....	Columbia.
Sharpee, J. A.....	Rio, R. 1.....	Columbia.
Steuber, L. J.....	Lodi	Columbia.
Accola, Lawrence	Steuben	Crawford.
Anthony, David C.....	Oregon	Dane.
Bawick, W. W.....	Madison	Dane.
Brigham, Chas. I.....	Blue Mounds	Dane.
Brue, N. H.....	De Forest	Dane.
Chase, J. P.....	Sun Prairie	Dane.
Chatterton, R. W.....	Basco	Dane.
Cobb, Homer A.....	Sun Prairie	Dane.
Coldwell, John	Mazomanie	Dane.
Colladay, W. E.....	Stoughton	Dane.
Dreger, E. L.....	Madison	Dane.
Graves, E. H.....	Madison	Dane.
Hill, Otto C.....	Mt. Horeb	Dane.
Holscher, A. C.....	Cottage Grove	Dane.
Hopkins, B. F.....	Morrisonville	Dane.
Kaltenberg, Anthony ..	Waunakee	Dane.
Kendell, Geo. W.....	Sun Prairie	Dane.
Koltes, Jos. F.....	Dane	Dane.
Mikkelsen, Carl	Deerfield	Dane.
Mitchell, J. T.....	Cottage Grove	Dane.
Palmer, Levi	Verona	Dane.
Pack, Henry M.....	Marshall	Dane.
Reindahl, A. K.....	Madison	Dane.
Renk Bros.....	Sun Prairie	Dane.
Showers, Milton W....	Mazomanie	Dane.
Skare, Albert	McFarland	Dane.
Thorstad, N. H.....	Deerfield	Dane.
Wernich, Wm. H.....	De Forest	Dane.
Wrabetz & Semb	Madison, R. 6.....	Dane.
Zabel, Edward	Deerfield, R. 1.....	Dane.
Bohl, Anton	Beaver Dam, R. 1....	Dodge.
Bohl, Jos. N.....	Beaver Dam	Dodge.
Bussewitz, W. E.....	Juneau	Dodge.
Ehrhardt, Daniel	Knowles	Dodge.
Goetsch, Albert A.....	Juneau	Dodge.
Grebe, Fred P.....	Fox Lake	Dodge.
Howitt, Chas. H.....	Randolph	Dodge.
Hutchinson, Wm. D....	Rubicon	Dodge.
Jones, John G.....	Beaver Dam, R. 4....	Dodge.
Jones, Owen R., Jr....	Beaver Dam	Dodge.
Krueger, Alexander ...	Watertown, R. 2....	Dodge.
Krueger, Henry E.....	Beaver Dam	Dodge.

Growers of Oderbrucker Barley (Wisconsin No. 55)—continued.

Name of Grower.	Address.	County.
Mahoney, David	Juneau	Dodge.
Neuberger, William ...	Reeseville	Dodge.
Owens, H. C.	Fox Lake	Dodge.
Schiller, Claude E.	Beaver Dam	Dodge.
Steiner, W. H.	Brownsville	Dodge.
Boucsein, Gust L.	Detroit Harbor	Door.
Buschman, Hugo	Forestville	Door.
Erickson, Ole C.	Detroit Harbor	Door.
Keogh, Harry	Forestville	Door.
Sullivan, J. J.	Forestville	Door.
Lindberg, E. J.	Itasca	Douglas.
Millar, Will	Menomonie	Dunn.
Allen, C. L.	Eau Claire	Eau Claire.
Donaldson, H. A.	Eau Claire	Eau Claire.
Konz, John, Sr.	Fairchild	Eau Claire.
Russell, A. C.	Augusta	Eau Claire.
Wright, W. C.	Eau Claire, R. 4.	Eau Claire.
Briggs, L. W.	Peebles	Fond du Lac.
Briggs, J. W.	Peebles	Fond du Lac.
Giebel, Karl A.	Fond du Lac, R. 7.	Fond du Lac.
Hargrave, Robert O.	Ripon	Fond du Lac.
Hinz, A. F.	Ripon	Fond du Lac.
Hintz, William F.	Oakfield, R. 26.	Fond du Lac.
Howland, W. L.	Waupun	Fond du Lac.
Jacky, Gilbert G.	Malone, R. 39	Fond du Lac.
Jacky, H. L.	Malone, R. 39	Fond du Lac.
Kuehn, Chas. A.	Brandon	Fond du Lac.
Mathews, Lee G.	Brandon	Fond du Lac.
Maug, Arthur J.	Ripon	Fond du Lac.
Meekin, H. W.	Fond du Lac	Fond du Lac.
Michels, Henry	Malone	Fond du Lac.
Sheldon, Ben F.	Brandon	Fond du Lac.
Stroup, Fred G.	Fond du Lac	Fond du Lac.
Welles, M. L.	Rosendale	Fond du Lac.
West, R. N.	Ripon	Fond du Lac.
Whittaker, Horace E.	Fond du Lac	Fond du Lac.
Barron, R. E.	Platteville	Grant.
Bennett, Ora F.	Glen Haven	Grant.
Booth, Guy A.	Cuba City	Grant.
Farwell, Roy R.	Ridgeway	Grant.
Orth, A. F.	Muscoda	Grant.
Rodda, Matt.	Hazel Green	Grant.
Runde, August	Sinsinawa	Grant.
Searles, Wm. L.	Boscobel	Grant.
Stivarius, Geo. A.	Fennimore	Grant.
Wayne, Joseph	Boscobel	Grant.
Wieland, Charles	Lancaster	Grant.
Barmore, T. J.	Monroe	Green.
Bechtolt, A. B.	Browntown	Green.
Bechtolt, J. D.	Browntown	Green.
Marty, Matthias	Monticello	Green.
Mau, H. G.	Brodhead	Green.

Growers of Oderbrucker Barley (Wisconsin No. 55)—continued.

Name of Grower.	Address.	County.
Olson, William	Browntown, R. 2....	Green.
Aavang, Henry O.....	Barneveld	Iowa.
Berryman, Chas. H....	Dodgeville	Iowa.
Buss, Will G.....	Mineral Point	Iowa.
Gordon, A. L.....	Mineral Point	Iowa.
Gordon, C. D.....	Mineral Point	Iowa.
Gordon, J. Roy.....	Mineral Point	Iowa.
Jones, Chas. Lloyd....	Hillside	Iowa.
Jones, Orren Lloyd ...	Hillside	Iowa.
Kitchen, Jos. H.....	Edmund	Iowa.
Paulson, Hilbert	Hollandale	Iowa.
Thomas, Roy E.....	Dodgeville	Iowa.
Curran, W. F.....	Taylor	Jackson.
Dettinger, Wm. F....	Hixton	Jackson.
Engleman, John	Hixton	Jackson.
Hecketsweiler, O. J....	Alma Center	Jackson.
Thompson, Adolph ...	Black River Falls ...	Jackson.
Church, A. P.....	Whitewater	Jefferson.
Joice, Geo. E.....	Waterloo	Jefferson.
Main, H. A.....	Ft. Atkinson	Jefferson.
Mathews, M. D.....	Helenville	Jefferson.
McIntyre, Ivan	Ft. Atkinson	Jefferson.
Parsons, Wm. A.....	Ft. Atkinson	Jefferson.
Hanzlik, Otto J.....	Wonewoc	Juneau.
Wagner, J. M.....	Union Center	Juneau.
Bradley, J. Frank ...	Somers	Kenosha.
Myrick, Mead O.....	Bristol	Kenosha.
Roberts, F. W.....	Woodworth	Kenosha.
Blahnik, Geo. F.....	Algoma	Kewaunee.
Boudnik, John	Kewaunee, R. 7.....	Kewaunee.
Collin, D. W.....	Luxemburg	Kewaunee.
Katel, W. C.....	Kewaunee, R. 1.....	Kewaunee.
Oestreich, R. C.....	Kewaunee	Kewaunee.
Smithwick, Jas.....	Kewaunee	Kewaunee.
Bonsack, Theo.....	West Salem	La Crosse.
Harr, Ernest B.....	Bangor	La Crosse.
Hass, Reinhold A.....	La Crosse, R. 1.....	La Crosse.
Jewett, Harry	Bangor	La Crosse.
Jones, E. E.....	Rockland	La Crosse.
Lawrence, F. W.....	Bangor	La Crosse.
Nuttleman, Alfred L...	West Salem	La Crosse.
Sandman, W. D.....	Holmen	La Crosse.
McConnell, F. J.....	Darlington	La Fayette.
Rood Bros.....	South Wayne	La Fayette.
Stewart, J. W.....	Blanchardville	La Fayette.
Usher, J. M.....	South Wayne	La Fayette.
Vinger, Milo J.....	Argyle	La Fayette.
Ballestad, Lars	Manitowoc	Manitowoc.
Berge, Otis I.....	Valders	Manitowoc.
Clusen, Reinhold	Manitowoc	Manitowoc.
Gustaveson, Chas.	Manitowoc, R. 4.....	Manitowoc.
Heidemann, O. C.	Kiel, R. 2.....	Manitowoc.

Growers of Oderbrucker Barley (Wisconsin No. 55)—continued.

Name of Grower.	Address.	County.
Hessel, Louis	Manitowoc, R. 6.....	Manitowoc.
Klann, Adolph	Hayton, R. 1.....	Manitowoc.
Paulsen, J. E.....	Manitowoc, R. 4.....	Manitowoc.
Roethel, Herman	Kiel	Manitowoc.
Straka, Edward E.....	Kellnersville	Manitowoc.
Strowig, Wm. A.....	Cleveland, R. 1	Manitowoc.
Sullivan, Jas. A.....	Grimms	Manitowoc.
Wiegand, Otto R.....	Cleveland	Manitowoc.
Wilkowske, Hugo	Mishicot	Manitowoc.
Baesemann, Otto	Edgar	Marathon.
Falarsh, Frank	Peshtigo	Marinette.
Olson, Otto W.....	Walsh	Marinette.
Houslet, Neal	Packwaukee	Marquette.
Basse, Wm. H.....	Milwaukee, St. A, R. 4	Milwaukee.
Guenther, Nelson W...	So. Milwaukee, R. 17.	Milwaukee.
Kurtze, Otto C.....	West Allis, R. 15.....	Milwaukee.
Meyer, Alfred	Oakwood, R. 18.....	Milwaukee.
Pierner, Fred	No. Milwaukee	Milwaukee.
Andrew, J. S.....	Wilton	Monroe.
Ebert, Edmund D.....	Tomah	Monroe.
Ebert, Francis E.....	Tomah	Monroe.
Fox, C. L.....	Leon	Monroe.
Freeman, G. A.....	Sparta	Monroe.
Hanchett, W. H.....	Sparta	Monroe.
Howell, Horace P.....	Sparta	Monroe.
Whitehead, H. W.....	Leon	Monroe.
Jamison, Robert	Appleton	Outagamie.
Letts, Edward F.....	Appleton, R. 4.....	Outagamie.
Merkel, Henry	Appleton, R. 3.....	Outagamie.
Mueller, Edward O....	Appleton	Outagamie.
Ryan, Malachi	So. Kaukauna	Outagamie.
Schmit, A. W.....	Appleton	Outagamie.
Schmit, Geo.	Greenville, R. 16.....	Outagamie.
Schmit, John A.....	Hortonville	Outagamie.
Wussow, Chas. A.....	Seymour	Outagamie.
Clausing, Adolph	Thiensville	Ozaukee.
Pierner, John W.....	Thiensville	Ozaukee.
Port, Mike	Port Washington	Ozaukee.
Wulff, Fred	Grafton	Ozaukee.
Fleishauer, Chas. K...	Arkansaw	Pepin.
Hicks, Earl L.....	Pepin, R. 1.....	Pepin.
Nelson, Emil	River Falls	Pierce.
Scheid, Byron J.....	Bay City	Pierce.
Christensen, Herman ..	Milltown	Polk.
Hedlund, Adolph.....	Clayton	Polk.
Nelson, Peter C.....	Milltown	Polk.
Uhlín, Albin	Clayton, R. 1.....	Polk.
Uhlín, Frank	Clayton	Polk.
Hanson, N. P.....	Amherst Jct., R. 2....	Portage.
Klofanda, Reuben	Racine, R. 1.....	Racine.
Nau, Ray H.....	Franksville	Racine.
Wilson, Wm. C.....	Burlington	Racine.

Growers of Oderbrucker Barley (Wisconsin No. 55)—continued.

Name of Grower.	Address.	County.
Post, H. L.	Sextonville	Richland.
Turgasen, J. H.	Richland Center	Richland.
Austin, Alpheus	Janesville	Rock.
Austin, A. G.	Janesville, R. 6.	Rock.
Austin, W. B.	Janesville	Rock.
Devine, C. B.	Evansville	Rock.
Dougan, W. J.	Beloit	Rock.
Hoague, Chas. C.	Janesville, R. 7.	Rock.
Marston, Albert	Beloit, R. 30.	Rock.
Smith, L. E.	Beloit, R. 30.	Rock.
Snyder, Robert B.	Clinton	Rock.
Beebe, A. G.	Bruce	Rusk.
Bennett, Wm. L.	New Richmond	St. Croix.
Imholt, B. A.	Houlton	St. Croix.
Kruschke, Geo. H.	New Richmond	St. Croix.
Paulson, P. A.	Hudson	St. Croix.
Clavadatscher, Tobias ..	Sauk City	Sauk.
Frederickson, Fred ...	Spring Green	Sauk.
Gallagher, J. G.	Reedsburg	Sauk.
Herwig, Theo.	Delton	Sauk.
Marshall, W. S.	Delton	Sauk.
Ochsner, Arthur C.	Plain	Sauk.
Riek, Anthony	Plain	Sauk.
Thulin, Edwin	Hayward	Sawyer.
Klov Dahl, John J.	Wittenberg	Shawano.
Norrborn, C. G.	Eland	Shawano.
Blonien, Peter	Elkhart	Sheboygan.
Dennerlein, Arthur J. ..	Plymouth	Sheboygan.
Frauenheim, O. R.	Random Lake	Sheboygan.
Garside, Harry R.	Cedar Grove	Sheboygan.
Illian, W. L.	Adell, R. 19.	Sheboygan.
Parrish, J. O.	Plymouth	Trempealeau.
Chrysler, Harvey	Osseo	Trempealeau.
Cooke, Carl	Independence	Trempealeau.
Dean, Robert	Eleva	Trempealeau.
Markham, F. C.	Independence	Trempealeau.
Mattison, Thos.	Blair	Trempealeau.
McCauley, Rex	Osseo	Trempealeau.
Aberg, Jacob	De Soto	Vernon.
Kjelland, Christian ...	Viroqua	Vernon.
Sebion, Cornelius	Westby	Vernon.
Anderson, Alvin M.	Whitewater	Walworth.
Coburn, Orrie	Whitewater	Walworth.
Downey, U. J.	Whitewater	Walworth.
Dunbar, Harry D.	Elkhorn	Walworth.
Harris, Jesse S.	Delavan	Walworth.
Lean, R. J., & Son. ...	Elkhorn	Walworth.
Mack, Warren L.	Whitewater	Walworth.
Marck, Fred R.	Honey Creek	Walworth.
Peterson, Peter	Walworth	Walworth.
Thompson, A. N.	Delavan	Walworth.
Lewis, E. H.	Whitewater	Walworth.
Meurer, Paul	Genoa Junction	Walworth.

Growers of Oderbrucker Barley (Wisconsin No. 55)—continued.

Name of Grower.	Address.	County.
Peters, Ezra	Sharon	Walworth.
Ranney, P. C.	Elkhorn	Walworth.
Thacher, Ed. F.	Zenda	Walworth.
Bast, Paul J.	Rockfield	Washington.
Klumb, Oscar	Rockfield	Washington.
Puls, John	Hartford	Washington.
Schottler, Conrad J.	So. Germantown	Washington.
Graser, Adam H.	Waukesha	Waukesha.
Greene, Howard	Genesee Depot	Waukesha.
Longley, H. N.	Dousman	Waukesha.
Montague, C. R.	No. Prairie	Waukesha.
Rosenow Brothers	Oconomowoc	Waukesha.
Schafer, Chas. H.	Waukesha, R. 7.	Waukesha.
Schroeder, F. C.	Hartland	Waukesha.
Spaulding, C. F.	Oconomowoc	Waukesha.
Swan, L. W.	Mukwonago	Waukesha.
Swoboda, F. G.	Dousman	Waukesha.
Weir, W. W.	Mukwonago	Waukesha.
Williams, Arthur R.	Waukesha	Waukesha.
Williams, D. T.	Waukesha, R. 8.	Waukesha.
Wright, H. W.	Waukesha	Waukesha.
Bestul, Otto O.	Scandinavia	Waupaca.
Bigford, W. W.	Manawa	Waupaca.
Kneip, William	Weyauwega	Waupaca.
Larson, LeRoy	Iola	Waupaca.
Pirner, Fred	Sugar Bush	Waupaca.
Rosholt, Jacob A.	Scandinavia, R. 1.	Waupaca.
Anderson, Thos E.	Wild Rose	Waushara.
Carey, Henry	Redgranite	Waushara.
Clark, J. J.	Berlin, R. 1.	Waushara.
Blakely, Albert J.	Neenah	Winnebago.
Blodgett, Gordon R.	Neenah	Winnebago.
Bussey, W. P.	Omro, R. 21.	Winnebago.
Cross, A. J.	Allenville	Winnebago.
Miller, Henry C.	Allenville	Winnebago.
Schaefer, R. J.	Appleton	Winnebago.
Smith, Seymour L.	Oshkosh	Winnebago.
Treleven, Guy T.	Omro	Winnebago.
Christensen, Peter	Marshfield, R. 3.	Wood.
Kieffer, J. C.	Auburndale	Wood.
Kronholm, V. E.	Grand Rapids	Wood.
Non-Residents.		
Brindley, T. H.	Hinsdale	Illinois.
Hitchcock, H. R.	Pecatonica	Illinois.
Hoxsey, Edw. H.	Serena	Illinois.
Mathis, Adolph J.	Lansing	Iowa.
Thompson, Thor, Jr.	Wadena	Iowa.
Meyer, A. J.	Howell, R. 7.	Michigan.

Growers of Manshury Earley (Wisconsin No. 62).

Name of Grower..	Address.	County.
Muehleisen, Gottlieb...	Tell	Buffalo.
Spaulding, L. C.....	Mondovi	Buffalo.
Lloyd, Evan B.....	Cambria	Columbia.
Koltes, Leo. J.....	Dane	Dane.
Mitchell, J. T.....	Cottage Grove	Dane.
Palmer, Levi	Verona	Dane.
Bohl, Anton	Beaver Dam, R. 1....	Dodge.
Bohl, Jos. N.....	Beaver Dam	Dodge.
Krueger, Henry E....	Beaver Dam	Dodge.
Allen, Chas. L.....	Eau Claire	Eau Claire.
Donaldson, H. A.....	Eau Claire	Eau Claire.
Konz, John, Sr.....	Fairchild	Eau Claire.
Hinz, A. F.....	Ripon	Fond du Lac.
West, R. N.....	Ripon	Fond du Lac.
Wiseman, Paul	Bridgeport	Grant.
Marty, Matthias	Monticello, R. 1....	Green.
Ward, W. Rodell	Ft. Atkinson, R. 1....	Jefferson.
Orvis, L. C.....	Salem	Kenosha.
Oestreich, R. C.....	Kewaunee	Kewaunee.
Sandman, W. D.....	Holmen	La Crosse.
Garey, James	Grimms	Manitowoc.
Falarsh, Frank	Peshtigo	Marinette.
Spartz, N. A.....	Union Grove	Racine.
Ghastin, Wm. J.....	Twin Bluffs	Richland.
Austin, Alpheus	Janesville	Rock.
Austin, W. B.....	Janesville	Rock.
Capener, Walter R....	Baraboo	Sauk.
Ochsner, Arthur C....	Plain	Sauk.
Eastman, F. A. & S. A	Sheboygan Falls	Sheboygan.
Illian, Wm. L.....	Adell, R. 19.....	Sheboygan.
Lean, R. J., & Son....	Elkhorn	Walworth.
Swan, L. W.....	Mukwonago	Waukesha.
Bussey, W. P.....	Omro, R. 24.....	Winnebago.
Cross, A. J.....	Allenville	Winnebago.
Miller, Henry C.....	Allenville	Winnebago.
	Non-Residents.	
Bryson, Donald L.....	Elizabeth	Illinois.

Growers of Soy Beans.

Ito San variety.

Name of Grower.	Address.	County.
Anthony, David C.....	Oregon	Dane.
Wernick, Wm. H.....	De Forest	Dane.
Bohl, Jos. N.....	Beaver Dam	Dodge.
Erickson, Ole C.....	Detroit Harbor	Door.
Meekin, H. W.....	Fond du Lac	Fond du Lac.
Whittaker, Horace E..	Fond du Lac	Fond du Lac.
Sullivan, Jas. A.....	Grimms	Manitowoc.
Post, H. L.....	Sextonville	Richland.
Ochsner, Arthur C.....	Plain	Sauk.
Frauenheim, O. R.....	Random Lake	Sheboygan.
Peterson, E. C.....	Whitewater	Walworth.
Rosenow Brothers	Oconomowoc	Waukesha.
Early Black.		
Kent, J. S	Rusk	Dunn.
Sullivan, Jas. A.....	Grimms	Manitowoc.
Schmitt, John A.....	Hortonville	Outagamie.
Wussow, Chas. A.....	Seymour	Outagamie.
Hicks, Earl L.....	Pepin, R. 1.....	Pepin.
Bennett, Wm. L.....	New Richmond	St. Croix.
Frauenheim, O. R.....	Random Lake	Sheboygan.
Black.		
Walker, Ray C.....	Plainville	Adams.
Dalton, Ernest E.....	Pardeeville	Columbia.
Dalton, Roy E.....	Pardeeville	Columbia.
Bohl, Joseph N.....	Beaver Dam	Dodge.
Jones, John G.....	Beaver Dam, R. 4....	Dodge.
Howitt, Chas. H.....	Randolph	Dodge.
Jones, Owen R., Jr....	Beaver Dam	Dodge.
Krueger, Henry E.....	Beaver Dam	Dodge.
Schiller, Claude E.....	Beaver Dam	Dodge.
Jones, Orren Lloyd....	Hillside	Iowa.
Heidemann, O. C.....	Kiel, R. 2.....	Manitowoc.
Mueller, Edw. O.....	Appleton	Outagamie.
Ghastin, Wm. J.....	Twin Bluffs	Richland.
Ochsner, Arthur C.....	Plain	Sauk.
Garside, Harry R.....	Cedar Grove	Sheboygan.
Schaefer, R. J.....	Appleton	Winnebago.
Non-Residents.		
Thompson, Thor, Jr...	Wadena	Iowa.

Growers of Soy Beans—continued.

Growers of Medium Early Green.

Name of Grower.	Address.	County.
Ehrhardt, Daniel	Knowles	Dodge.
Runde, August	Sinsinawa	Grant.
Wussow, Chas. A....	Seymour	Outagamie.
Swoboda, F. G.....	Dousman	Waukesha.
Yellow.		
Howitt, Chas. H.....	Randolph	Dodge.
Krueger, Henry E....	Beaver Dam	Dodge.
Brown.		
Meekin, H. W.....	Fond du Lac	Fond du Lac.
Whitehead, H. W....	Leon	Monroe.
Peterson, E. C.....	Whitewater	Walworth.

Growers of Silver King Corn (Wisconsin No. 7).

Name of Grower.	Address.	County.
Walker, Ray C.....	Plainville	Adams.
Nies, Peter	Greenleaf, R. 3.....	Brown.
Joos, Frank B.....	Fountain City	Buffalo.
Muehleisen, Gottlieb ..	Tell	Buffalo.
Spaulding, L. C.....	Mondovi	Buffalo.
Kircher, H. W.....	Chilton, R. 3.....	Calumet.
Peik, Arthur	Chilton	Calumet.
Peik, Edmund	Chilton	Calumet.
Peterson, Hy. N.....	New Holstein	Calumet.
Martiny, L. P.....	Chippewa Falls	Chippewa.
Cannon, E. A.....	Pardeeville	Columbia.
Dalton, Ernest E.....	Pardeeville	Columbia.
Dalton, Roy E.....	Pardeeville	Columbia.
Ellickson, A. C.....	Arlington	Columbia.
Gloeckler, Theo.	Portage	Columbia.
Grove, Christian	Columbus	Columbia.
Lloyd, Evan B.....	Cambria	Columbia.
Sharpee, Endre A.....	Rio, R. 1.....	Columbia.
Sharpee, J. A.....	Rio, R. 1.....	Columbia.
Steuber, L. J.....	Lodi	Columbia.

Growers of Silver King Corn (Wisconsin No. 7)—continued.

Name of Grower.	Address.	County.
Accola, Lawrence	Steuben	Crawford.
Hjelle, Ole K.....	Soldiers Grove	Crawford.
Stevenson, Carl	Soldiers Grove	Crawford.
Angvick, Lars	Cottage Grove	Dane.
Anthony, David C.....	Oregon	Dane.
Bewick, Wm. W.....	Madison	Dane.
Boyce, Charlotte	Dane	Dane.
Brigham, Chas. I.....	Blue Mounds	Dane.
Brue, N. H.....	De Forest	Dane.
Chase, J. P.....	Sun Prairie	Dane.
Chatteron, Ray W.....	Basco	Dane.
Coldwell, John	Mazomanie	Dane.
Colloday, W. E.....	Stoughton	Dane.
Davidson, Wm. L.....	Verona	Dane.
Gillies, J. H.....	Stoughton	Dane.
Graves, E. H.....	Madison	Dane.
Hill, Otto C.....	Mt. Horeb	Dane.
Hogan, Dominic.....	Waunakee	Dane.
Holscher, A. C.....	Cottage Grove	Dane.
Kalscheur, Lawrence ..	Klevenville	Dane.
Kaltenberg, Anthony .	Waunakee	Dane.
Kendell, Geo. W.....	Sun Prairie	Dane.
Koltes, Leo. J.....	Dane	Dane.
Koltes, Jos. F.....	Dane	Dane.
Mielke, J. O.....	Basco	Dane.
Mikkelson, Carl	Deerfield	Dane.
Mitchell, J. T.....	Cottage Grove	Dane.
Nordlie, Alfred	Deerfield	Dane.
Reindahl, A. K.....	Madison	Dane.
Rhiner, Albert	Riley	Dane.
Royston, Thos.	Mazomanie	Dane.
Schroeder, Robert	Morrisonville	Dane.
Showers, Milton W....	Mazomanie	Dane.
Swalem, P. O.....	De Forest	Dane.
Thorstad, N. H.....	Deerfield	Dane.
Wrabetz & Semb	Madison, R. 6.....	Dane.
Zabel, Edward	Deerfield, R. 1.....	Dane.
Barstow, Jas. E.....	Randolph, R. 1.....	Dodge.
Bohl, Anton, Jr.....	Beaver Dam, R. 1....	Dodge.
Bohl, Jos. N.....	Beaver Dam	Dodge.
Bussewitz, W. E.....	Juneau	Dodge.
Goetsch, Albert A.....	Juneau	Dodge.
Grebe, Fred P.....	Fox Lake	Dodge.
Jones, John G.....	Beaver Dam, R. 4....	Dodge.
Jones, Owen R., Jr....	Beaver Dam	Dodge.
Krueger, Henry E.....	Beaver Dam	Dodge.
Miller, A. H.....	Waupun, R. 24.....	Dodge.
Owens, H. C.....	Fox Lake	Dodge.
Randall, S. M.....	Waupun	Dodge.
Roberts, Wm. E.....	Randolph, R. 3.....	Dodge.
Schiller, Claude E.....	Beaver Dam	Dodge.
Hocks, Walter	Sturgeon Bay	Door.

Growers of Silver King Corn (Wisconsin No. 7)—continued.

Name of Grower.	Address.	County.
Allen, Chas. L.....	Eau Claire	Eau Claire.
Konz, John, Sr.....	Fairchild	Eau Claire.
Oliver, C. S.....	Eau Claire	Eau Claire.
Wright, W. C.....	Eau Claire, R. 4.....	Eau Claire.
Adkins, M. V.....	Ripon	Fond du Lac.
Briggs, L. W.....	Peebles	Fond du Lac.
Briggs, J. W.....	Peebles	Fond du Lac.
Hinz, A. F.....	Ripon	Fond du Lac.
Maug, Arthur J.....	Ripon	Fond du Lac.
Meekin, H. W.....	Fond du Lac	Fond du Lac.
Michels, Henry	Malone	Fond du Lac.
Peebles, C. E.....	Peebles	Fond du Lac.
Rather, W. A.....	Peebles, R. 37	Fond du Lac.
Root, Alvin W.....	Fond du Lac	Fond du Lac.
Root, Frank W.....	Fond du Lac	Fond du Lac.
West, R. N.....	Ripon	Fond du Lac.
Whittaker, Horace E..	Fond du Lac	Fond du Lac.
Barron, R. E.....	Platteville	Grant.
Bennett, Ora F.....	Glen Haven	Grant.
Booth, Guy A.....	Cuba City	Grant.
Childs, S. S.....	Boscobel, R. 6.....	Grant.
DiVall, W. F.....	Montfort	Grant.
Farwell, Roy R.....	Ridgeway	Grant.
Graham, P. S.....	Fennimore	Grant.
Millman, D. R.....	Platteville	Grant.
Rodda, Matt	Hazel Green	Grant.
Runde, August	Sinsinawa	Grant.
Searles, Wm. L.....	Boscobel	Grant.
Stivarius, Geo. A.....	Fennimore	Grant.
Wayne, Joseph	Boscobel	Grant.
Wieland, Charles.....	Lancaster	Grant.
Wiseman, Paul	Bridgeport	Grant.
Bechtolt, A. B.....	Browntown	Green.
Bechtolt, J. D.....	Browntown	Green.
Marty, Mathias	Monticello	Green.
Mau, H. G.....	Brodhead	Green.
Murdock, C. R.....	Brodhead	Green.
Murdock, John C.....	Brodhead	Green.
Olson, Wm.....	Browntown, R. 2....	Green.
Preston, W. N.....	Juda	Green.
Tochterman, C., Jr...	Monroe	Green.
Aavang, Henry O.....	Barneveld	Iowa.
Berryman, Chas. H...	Dodgeville	Iowa.
Buss, Will G.....	Mineral Point, R....	Iowa.
Gordon, A. L.....	Mineral Point	Iowa.
Gordon, C. D.....	Mineral Point	Iowa.
Gordon, J. Roy.....	Mineral Point	Iowa.
Jones, Chas. Lloyd ..	Hillside	Iowa.
Jones, Orren Lloyd...	Hillside	Iowa.
Kitchen, Jos. H.....	Edmund	Iowa.
Paulson, Hilbert	Hollandale	Iowa.
Thomas, Roy E.....	Dodgeville	Iowa.

Growers of Silver King Corn (Wisconsin No. 7)—continued.

Name of Grower.	Address.	County.
Engleman, John	Hixton	Jackson.
Thompson, Adolph	Black River Falls	Jackson.
Anthes, Henry	Jefferson	Jefferson.
Bell, Wm. E.	Oconomowoc, R. 27..	Jefferson.
Brueckner, Justus	Ft. Atkinson	Jefferson.
Church, A. P.	Whitewater	Jefferson.
Guttenberg, Frank, Jr.	Jefferson	Jefferson.
Joice, Geo. E.	Waterloo	Jefferson.
Lehmann, Theo.	Watertown, R. 1....	Jefferson.
Leonard, Wm. R.	Ft. Atkinson	Jefferson.
Main, H. A.	Ft. Atkinson	Jefferson.
McIntyre Bros.	Ft. Atkinson	Jefferson.
Parsons, Wm. A.	Ft. Atkinson	Jefferson.
Moore, Henry G.	Mauston	Juneau.
Ritland, Carl	Elroy	Juneau.
Wagner, J. M.	Union Center	Juneau.
Bradley, J. Frank	Somers	Kenosha.
Myrick, Mead O.	Bristol	Kenosha.
Orvis, L. C.	Salem	Kenosha.
Thiers, L. M.	Kenosha	Kenosha.
Collin, D. W.	Luxemburg	Kewaunee.
Griswold, H. W.	West Salem	La Crosse.
Harr, Ernest B.	Bangor	La Crosse.
Herold, Rudolph	Stoddard	La Crosse.
Jones, E. E.	Rockland	La Crosse.
Lawrence, F. W.	Bangor	La Crosse.
Nuttleman, Adolph	West Salem	La Crosse.
Nuttleman, Alfred L. .	West Salem	La Crosse.
Sandman, W. D.	Holmen	La Crosse.
Bridgman, C. R.	Darlington	La Fayette.
Rood Bros.	South Wayne	La Fayette.
Stewart, J. W.	Blanchardville	La Fayette.
Usher, J. M.	South Wayne	La Fayette.
Vinger, Milo J.	Argyle	La Fayette.
Berge, Otis I.	Valders	Manitowoc.
Garey, James	Grimms	Manitowoc.
Heidemann, O. C.	Kiel, R. 2.	Manitowoc.
Klann, Adolph	Hayton, R. 1.	Manitowoc.
Paulsen, J. E.	Manitowoc, R. 4.	Manitowoc.
Roethel, Herman	Kiel	Manitowoc.
Houslet, Neal	Packwaukee	Marquette.
Butler, Ed.	No. Milwaukee, R. 11	Milwaukee.
Kurtze, Otto C.	West Allis, R. 15....	Milwaukee.
Pierner, Fred	No. Milwaukee	Milwaukee.
Schlapman, Fred W. .	No. Milwaukee	Milwaukee.
Unger, Edward	No. Milwaukee, R. 9.	Milwaukee.
Andrew, J. S.	Wilton	Monroe.
Babcock, H. E.	Sparta	Monroe.
Ebert, Edmund D.	Tomah	Monroe.
Ebert, Francis E.	Tomah	Monroe.
Foth, F. D.	Norwalk	Monroe.
Fox, C. L.	Leon	Monroe.

Growers of Silver King Corn (Wisconsin No. 7)—continued.

Name of Grower.	Address.	County.
Freeman, G. A.....	Sparta	Monroe.
Hanchett, W. H.....	Sparta	Monroe.
Hansen, Carl F.....	Sparta, R. 3.....	Monroe.
Howell, Horace P.....	Sparta	Monroe.
Leverich, J. W.....	Sparta	Monroe.
Peterson, John H.....	Cashton	Monroe.
Steinbach, Otto	Kendall, R. 2.....	Monroe.
Whitehead, H. W.....	Leon	Monroe.
Hanson, H. Edward ..	Appleton	Outagamie.
Jamison, Robert.....	Appleton	Outagamie.
Letts, Edward F.....	Appleton, R. 4	Outagamie.
Ryan, Malachi.....	So. Kaukauna	Outagamie.
Schmit, A. W.....	Appleton	Outagamie.
Schmit, Geo.....	Greenville, R. 16.....	Outagamie.
Schmit, John A.....	Hortonville	Outagamie.
Wussow, Chas. A.....	Seymour	Outagamie.
Hicks, Earl L.....	Pepin, R. 1.....	Pepin.
Aastrum, Chas. J.....	Spring Valley, R. 3...	Pierce.
Scheid, Byron J.....	Bay City	Pierce.
Christenson, Herman..	Milltown	Polk.
Holloway, John W.....	Union Grove	Racine.
Klofanda, Reuben	Racine, R. 1	Racine.
Robers, William J.....	Burlington	Racine.
Spartz, N. A.....	Union Grove	Racine.
Wilson, Wm. C.....	Burlington	Racine.
Durnford, G. A.....	Rockbridge	Richland.
Ghastin, Wm. J.....	Twin Bluffs	Richland.
Post, H. L.....	Sextonville	Richland.
Austin, Alpheus.....	Janesville	Rock.
Austin, A. G.....	Janesville, R. 6.....	Rock.
Austin, W. B.....	Janesville	Rock.
Crandall, W. T.....	Milton	Rock.
Devine, C. B.....	Evansville	Rock.
Dougan, W. J.....	Beloit	Rock.
Hoague, Chas. C.....	Janesville, R. 7.....	Rock.
Howe, Louis H.....	Brodhead	Rock.
Marston, Albert.....	Beloit, R. 30	Rock.
Seeger, Carl.....	Beloit	Rock.
Smith, L. E.....	Beloit, R. 30	Rock.
Bennett, Wm. L.....	New Richmond	St. Croix.
Brunner, R. W.....	Hudson	St. Croix.
Imholt, B. A.....	Houlton	St. Croix.
Capener, Walter A....	Baraboo	Sauk.
Frederickson, Fred....	Spring Green	Sauk.
Gallagher, J. F.....	Reedsburg	Sauk.
Gasser, Roy.....	Prairie du Sac	Sauk.
Herwig, Theo.....	Delton	Sauk.
Koenecke, Edw. H.....	Reedsburg, R. 5.....	Sauk.
Lachmund, Robert	Sauk City	Sauk.
Marshall, W. S.....	Delton	Sauk.
Palmer, H. P.....	Baraboo	Sauk.
Rich Bros.....	Baraboo	Sauk.

Growers of Silver King Corn (Wisconsin No. 7)—continued.

Name of Grower.	Address.	County.
Rodewald, W. C.....	Baraboo	Sauk.
Wichern, L. M.....	Baraboo, R. 4.....	Sauk.
Berg, C. J.....	Tigerton	Shawano.
Garside, Harry R.....	Cedar Grove	Sheboygan.
Aberg, Jacob.....	De Soto	Vernon.
Cass, Leonard E.....	Viroqua	Vernon.
Haverley, H. L.	Victory	Vernon.
Anderson, Alvin M....	Whitewater	Walworth.
Downey, U. J.	Whitewater	Walworth.
Dunbar, Harry D.....	Elkhorn	Walworth.
Peterson, Peter	Walworth	Walworth.
Thompson, A. N.....	Delavan	Walworth.
Mack, Warren L.....	Whitewater	Walworth.
Meurer, Paul.....	Genoa Junction	Walworth.
Peterson, Ezra.....	Sharon	Walworth.
Peterson, E. C.....	Whitewater	Walworth.
Ranney, P. C.....	Elkhorn	Walworth.
Thacher, Ed. T.....	Zenda	Walworth.
Warmington, Prentice.	Honey Creek	Walworth.
Bast, Paul J.....	Rockfield	Washington.
Juergens, Henry.....	Hartford	Washington.
Puls, John.....	Hartford	Washington.
Schottler, Conrad J....	So. Germantown	Washington.
Bartlett, Geo. W.....	Menomonee Falls	Waukesha.
Burton, Roy.....	Eagle, R. 35	Waukesha.
Evans, Wm. H.....	Wales, R. 1	Waukesha.
Graser, Adam H.....	Waukesha	Waukesha.
Longlev, H. N.....	Dousman	Waukesha.
Mitwede, Henry	Waukesha	Waukesha.
Montagne, C. R.....	No. Prairie	Waukesha.
Rosenow Bros.....	Oconomowoc	Waukesha.
Rowlands, R. W.....	Waukesha	Waukesha.
Schroeder, F. C.....	Hartland	Waukesha.
Shultis, A. D.....	Waukesha	Waukesha.
Spaulding, C. F.....	Oconomowoc	Waukesha.
Swan, L. W.....	Mukwonago	Waukesha.
Swoboda, F. G.....	Dousman	Waukesha.
Van Buren, E. W.....	Waukesha, R. 2	Waukesha.
Weir, W. W.....	Mukwonago	Waukesha.
Wright, H. W.....	Waukesha	Waukesha.
Bestul, Otto O.....	Scandinavia	Waupaca.
Bigford, W. W.....	Manawa	Waupaca.
Kneip, William	Weyauwega	Waupaca.
Larson, LeRoy	Iola	Waupaca.
Pirner, Fred	Sugar Bush	Waupaca.
Rosholt, Jacob A.....	Scandinavia, R. 1	Waupaca.
Anderson, Thos. E....	Wild Rose	Waushara.
Bell, L. C.....	Wautoma	Waushara.
Clark, J. J.....	Berlin	Waushara.
Jacklin, B. H.....	Redgranite	Waushara.
Knutson, Ernest L....	Wautoma	Waushara.
Selsing, Andrew	Wautoma	Waushara.
Tice, Ray.....	Redgranite	Waushara.

Growers of Silver King Corn (Wisconsin No. 7)—continued.

Name of Grower.	Address.	County.
Tice, Roy.....	Redgranite	Waushara.
Bussey, W. P.....	Omro, R. 24	Winnebago.
Cross, A. J.....	Allenville	Winnebago.
Hatch, K. L.....	Winneconne	Winnebago.
Miller, Henry C.....	Allenville	Winnebago.
Schaefer, R. J.....	Appleton	Winnebago.
Smith, Seymour L....	Oshkosh	Winnebago.
Treleven, Guy T.....	Omro	Winnebago.
Non-residents.		
Bryson, Donald L....	Elizabeth	Illinois.
Hoxsey, Edw. H.....	Serena	Illinois.
Thompson, Thor, Jr..	Wadena	Iowa.
Meyer, A. J.....	Howell, R. 7.....	Michigan.

Growers of Early Yellow Dent Corn (Wisconsin No. 8).

Name of Grower.	Address.	County.
Johnson, J. M.....	Ashland, R. 2.....	Ashland.
Tomkins, O. Scott ...	Ashland, R. 2.....	Ashland.
Roedel, Joseph P.....	Lark	Brown.
Snauding, L. C.....	Mondovi	Buffalo.
Christiansen, W. O...	Chippewa Falls, R. 6.	Chippewa.
Finsnes, A. I.....	Chippewa Falls	Chippewa.
Kramer, Henry F.....	Bloomer	Chippewa.
Umlauf, Rudolph.....	Rochester	Clark.
Gloeckler, Theo.....	Portage	Columbia.
Steuber, L. J.....	Lodi	Columbia.
Peck, Henry M.....	Marshall	Dane.
Howitt, Chas. H.....	Randolph	Dodge.
Owens, H. C.....	Fox Lake	Dodge.
Roussin, Gust L.....	Detroit Harbor	Door.
Buschman, Hugo.....	Forestville	Door.
Erickson, Ole C.....	Detroit Harbor	Door.
Sullivan, J. J.....	Forestville	Door.
Allen, C. L.....	Eau Claire	Eau Claire.
Wright, W. C.....	Eau Claire, R. 4.....	Eau Claire.
Carpenter, L. A.....	Fond du Lac	Fond du Lac.
Hinz, A. F.....	Ripon	Fond du Lac.
Meekin, H. W.....	Fond du Lac.....	Fond du Lac.
Stroup, Fred G.....	Fond du Lac.....	Fond du Lac.
Curran, W. F.....	Taylor	Jackson.
Dettinger, W. F.....	Hixton	Jackson.

Growers of Early Yellow Dent Corn (Wisconsin No. 8)—continued.

Name of Grower.	Address.	County.
Smithwick, Jas.....	Kewaunee	Kewaunee.
McConnell, F. J.....	Darlington	Lafayette.
Rood Bros.....	South Wayne	Lafayette.
Paulsen, J. E.....	Manitowoc, R. 4.....	Manitowoc.
Straka, Edward E....	Kellnersville	Manitowoc.
Sullivan, Jas. A.....	Grimms	Manitowoc.
Wiegand, Otto R.....	Cleveland	Manitowoc.
Baesemann, Otto	Edgar	Marathon.
Falarsh, Frank	Peshtigo	Marinette.
Olson, Otto W.....	Walsh	Marinette.
Basse, Wm. H.....	Milwaukee, St. A, R.4	Milwaukee.
Andrew, J. S.....	Wilton	Monroe.
Leverich, J. W.....	Sparta	Monroe.
Merkel, Henry.....	Appleton, R. 3.....	Outagamie.
Wussow, Chas. A....	Seymour	Outagamie.
Wulff, Fred.....	Grafton	Ozaukee.
Hedlund, Adolph	Clayton	Polk.
Nelson, Peter C.....	Milltown	Polk.
Hanson, N. P.....	Amherst Jct., R. 2...	Portage.
Austin, Alpheus.....	Janesville	Rock.
Bennett, Wm. L.....	New Richmond	St. Croix.
Imholt, B. A.....	Houlton	St. Croix.
Thulin, Edwin.....	Hayward	Sawyer.
Dennerlein, Arthur J..	Plymouth	Sheboygan.
Eastman, F. A. & S. A	Sheboygan Falls	Sheboygan.
Frauenheim, O. R....	Random Lake	Sheboygan.
Herdrich, S. F.....	Adell	Sheboygan.
Illian, W. L.....	Adell, R. 19	Sheboygan.
Parrish, J. O.....	Plymouth	Sheboygan.
Coburn, Orrie.....	Whitewater	Walworth.
Lewis, E. H.....	Whitewater	Walworth.
Warmington, Prentice.	Honey Creek	Walworth.
Mitwede, Henry	Waukesha	Waukesha.
Shannon, M. J.....	Oconomowoc	Waukesha.
Anderson, Thos. E....	Wild Rose	Waushara.
Blakely, Albert J.....	Neenah	Winnebago.
Kronholm, V. E.....	Grand Rapids	Wood.

Growers of North Star Corn (Wisconsin No. 11).

Name of Grower.	Address.	County.
Martiny, L. P.....	Chippewa Falls	Chippewa.
Boyce, Charlotte	Dane	Dane.
Palmer, Levi	Verona	Dane.
Thorstad, N. H.....	Deerfield	Dane.
Randall, S. M.....	Waupun	Dodge.
Austin, Alpheus	Janesville	Rock.
Palmer, H. P.....	Baraboo	Sauk.
Toole, W. A.....	Baraboo	Sauk.

Growers of Golden Glow Corn (Wisconsin No. 12).

Name of Grower.	Address.	County.
Mills, Stanley	New Auburn	Chippewa.
Cannon, E. A.....	Pardeeville	Columbia.
Accola, Lawrence	Steuben	Crawford.
Raymer, Ethel F.....	Madison	Dane.
Grebe, F. P.....	Fox Lake	Dodge.
Howitt, Chas. H.....	Randolph	Dodge.
Owens, H. C.....	Fox Lake	Dodge.
Randall, S. M.....	Waupun	Dodge.
Steiner, W. H.....	Brownsville	Dodge.
Konz, John, Sr.....	Fairchild	Eau Claire.
Meekin, H. W.....	Fond du Lac	Fond du Lac.
West, R. N.....	Ripon	Fond du Lac.
Stivarius, Geo. A.....	Fennimore	Grant.
Bridgman, C. R.....	Darlington	Lafayette.
Bauer, Adolph H.....	Manitowoc, R. 2.....	Manitowoc.
Clusen, Reinhold	Manitowoc	Manitowoc.
Straka, Edward E.....	Kellnersville	Manitowoc.
Strowig, Wm. A.....	Cleveland, R. 1.....	Manitowoc.
Sullivan, Jas. A.....	Grimms	Manitowoc.
Houslet, Neal	Packwaukee	Marquette.
Ryan, Malachi	So. Kaukauna	Outagamie.
Schmit, A. W.....	Appleton, R. 2.....	Outagamie.
Ochsner, Arthur C. ..	Plain	Sauk.
Chrysler, Harvey	Osseo	Trempealeau.
McCauley, Rex.....	Osseo	Trempealeau.
Klumb, Oscar.....	Rockfield	Washington.
Swoboda, F. G.....	Dousman	Waukesha.
Boss, S. J.....	Oshkosh, R. 7.....	Winnebago.
	Non-residents.	
Meyer, A. J.....	Howell, R. 7.....	Michigan.

Growers of Clark's Yellow Dent Corn (Wisconsin No. 1).

Name of Grower.	Address.	County.
Finsnes, A. I.....	Chippewa Falls	Chippewa.
Dalton, Ernest E.....	Pardeeville	Columbia.
Dalton, Roy E.....	Pardeeville	Columbia.
Davidson, Wm. L.....	Verona	Dane.
Kendell, Geo. W.....	Sun Prairie	Dane.
Barstow, Jas. E.....	Randolph, R. 1.....	Dodge.
Howitt, Chas. H.....	Randolph	Dodge.
Biglow, L. F.....	Brooklyn	Dane.
Paulson, Hilbert.....	Hollandale	Iowa.
Wilson, Wm. C.....	Burlington	Racine.
Post, H. L.....	Sextonville	Richland.
Austin, A. G.....	Janesville, R. 6.....	Rock.
Coburn, Orrie	Whitewater	Walworth.
Dunbar, Harry D.....	Elkhorn	Walworth.
Blodgett, Gordon R....	Neenah	Winnebago.

Growers of Medium Red Clover.

Name of Grower.	Address.	County.
Tomkins, O. Scott.....	Ashland, R. 2.....	Ashland.
Chrislaw, A. M.....	Rice Lake	Barron.
Roeckel, Joseph P.....	Lark	Brown.
Joos, Frank B.....	Fountain City	Buffalo.
Spaulding, L. C.....	Mondovi	Buffalo.
Peterson, Hy. N.....	New Holstein	Calumet.
Dalton, Ernest E.....	Pardeeville	Columbia.
Dalton, Roy E.....	Pardeeville	Columbia.
Gillies, J. H.....	Stoughton	Dane.
Koltjes, Jos. F.....	Dane	Dane.
Palmer, Levi.....	Verona	Dane.
Krueger, H. E.....	Beaver Dam	Dodge.
Wright, W. C.....	Eau Claire, R. 4.....	Eau Claire.
Briggs, L. W.....	Peebles	Fond du Lac.
Briggs, J. W.....	Peebles	Fond du Lac.
Jacky, Gilbert G.....	Malone, R. 39.....	Fond du Lac.
Jacky, H. L.....	Malone, R. 39.....	Fond du Lac.
Meekin, H. W.....	Fond du Lac	Fond du Lac.
Dettinger, Wm. F.....	Hixton	Jackson.
Church, A. P.....	Whitewater	Jefferson.
Leonard, Wm. R.....	Ft. Atkinson	Jefferson.
Ward, W. Rodell.....	Ft. Atkinson	Jefferson.

Growers of Medium Red Clover—continued.

Name of Grower.	Address.	County.
Blahnik, Geo. F.....	Algoma	Kewaunee.
Harr, Ernest B.....	Bangor	La Crosse.
Bridgman, C. R.....	Darlington	Lafayette.
Usher, J. M.....	South Wayne	Lafayette.
Berge, Otis I.....	Valders	Manitowoc.
Clusen, Reinhold	Manitowoc	Manitowoc.
Garey, James	Grimms	Manitowoc.
Heidemann, O. C.....	Kiel, R. 2.....	Manitowoc.
Straka, Edward E.....	Kellnersville	Manitowoc.
Sullivan, Jas. A.....	Grimms	Manitowoc.
Falarsh, Frank.....	Peshtigo	Marinette.
Pierner, Fred.....	No. Milwaukee	Milwaukee.
Freeman, G. A.....	Sparta	Monroe.
Kieffer, Mike	Fredonia	Ozaukee.
Pierner, John W.....	Thiensville	Ozaukee.
Dennerlein, Arthur J...	Plymouth	Sheboygan.
Frauenheim, O. R.....	Random Lake	Sheboygan.
Illian, Wm. L.....	Adell, R. 19	Sheboygan.
Wagner, Arthur L.....	Haven	Sheboygan.
Meurer, Paul.....	Genoa Jct.....	Walworth.
Bast, Paul J.....	Rockfield	Washington.
Puls, John.....	Hartford	Washington.
Schottler, Conrad J....	So. Germantown	Washington.
Bartlett, Geo. W.....	Menomonee Falls	Waukesha.
Swan, L. W.....	Mukwonago	Waukesha.
Kneip, William	Weyauwega	Waupaca.
Clark, J. J.....	Berlin, R. 1.....	Waushara.
Miller, Henry C.....	Allenville	Winnebago.
Non-residents.		
Thompson, Thor, Jr...	Wadena	Iowa.

Growers of Alsike Clover.

Name of Grower.	Address.	County.
Barstow, Jas. E.....	Randolph, R. 1.....	Dodge.
Konz, John, Sr.....	Fairchild	Eau Claire.
Briggs, L. W.....	Peebles	Fond du Lac.
Briggs, J. W.....	Peebles	Fond du Lac.
Giebel, Karl A.....	Fond du Lac, R. 7....	Fond du Lac.
Jacky, Gilbert G.....	Malone, R. 39.....	Fond du Lac.
Jacky, H. L.....	Malone, R. 39.....	Fond du Lac.
Meekin, H. W.....	Fond du Lac	Fond du Lac.
Curran, Wm. F.....	Taylor	Jackson.
Hecketsweiler, O. J....	Alma Center	Jackson.
Anthes, Henry.....	Jefferson	Jefferson.
Harr, Ernest B.....	Bangor	La Crosse.
Klann, Adolph.....	Hayton, R. 1.....	Manitowoc.
Keiffer, Mike	Fredonia	Ozaukee.
Pierner, John W.....	Thiensville	Ozaukee.
Frauenheim, O. R.....	Random Lake	Sheboygan.

Growers of Mammoth Clover.

Name of Grower.	Address.	County.
Konz, John, Sr.....	Fairchild, R. 2.....	Eau Claire.
Klann, Adolph.....	Hayton, R. 1.....	Manitowoc.
Longley, H. N.....	Dousman	Waukesha.

Growers of Japanese Buckwheat.

Name of Grower.	Address.	County.
Tomkins, A. Pearce...	Ashland, R. 2.....	Ashland.
Palmer, Levi.....	Verona	Dane.
Dunbar, Harry D.....	Elkhorn	Walworth.
Carey, H.....	Redgranite	Waushara.

Growers of Silver Hull Buckwheat.

Name of Grower.	Address.	County.
Bohl, Anton, Jr.....	Beaver Dam, R. 1....	Dodge.
Bohl, Jos. N.....	Beaver Dam	Dodge.
Ehrhardt, Daniel.....	Knowles	Dodge.
Meekin, H. W.....	Fond du Lac	Fond du Lac.
Schmit, Geo.....	Greenville, R. 16	Outagamie.
Robers, William J.....	Burlington	Racine.
Post, H. L.....	Sextonville	Richland.
Lachmund, Robert.....	Sauk City	Sauk.
Bartlett, Geo. W.....	Menomonee Falls	Waukesha.

Growers* of Alfalfa Seed.

Name of Grower.	Address.	County.
Lindberg E. J.....	Itasca	Douglas.
Shannon, M. J.....	Oconomowoc	Waukesha.

Growers of Timothy Seed.

Name of Grower.	Address.	County.
Chipman, W. R.....	Morrisonville	Columbia.
Graham, P. S.....	Fennimore	Grant.
Wilson, Wm. C.....	Burlington	Racine.
Austin, W. B.....	Janesville	Rock.
Ochsner, Arthur C.....	Plain	Sauk.



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