SEVENTH ANNUAL REPORT

OF THE

BOARD OF TRUSTEES

OF THE

ILLINOIS INDUSTRIAL UNIVERSITY,

FOR 1873-4.

WITH

ADDRESSES AT THE DEDICATION OF THE NEW BUILDING, INDUSTRIALS TATISTICS, ETC.

SPRINGFIELD:
STATE JOURNAL PRINTING OFFICE.
1875.

UNDER the old system it was book in the morning, book in the afternoon, book in the evening—an unceasing round of studying what men have said *about* things. Under the better system of the various institutions for scientific and industrial education, the student passes frequently from study about things to study of the things themselves: in laboratory or work-shop, in draughting-room or museum, or in the field. Every science must now have its laboratory practice.—[PRES. ANDREW D. WHITE. *Address before the New York Agricultural Society.*

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TO

GOVERNOR JOHN L. BEVERIDGE.

I have the honor to submit, herewith, the Seventh Annual Report of the Board of Trustees of the Illinois Industrial University, for the fiscal year terminating August 31, 1874.

W. C. FLAGG,
Cor. Sec. Board of Trustees.

October 15, 1874.

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OFFICERS AND INSTRUCTORS.

FACULTY.

HON. JOHN M. GREGORY,
Regent and Professor of Philosophy and History.

A. P. S. STUART,
Professor of Chemistry.

STILLMAN W. ROBINSON,
Professor of Mechanical Engineering.

THOMAS J. BURRILL,
Professor of Botany and Horticulture.

COL. SAMUEL W. SHATTUCK,
Professor of Mathematics.

COL. EDWARD SNYDER,
Professor of Modern Languages and Military Tactics.

DON CARLOS TAFT,
Professor of Geology and Zoology.

J. BURKITT WEBB,
Professor of Civil Engineering.

JOSEPH C. PICKARD,
Professor of English Language and Literature.

HON. WILLARD C. FLAGG,
Superintendent of the Experimental Farm.

DR. FREDERICK W. PRENTICE,
Lecturer in Veterinary Science.

*_____ _____,
Professor of Agriculture.

EDWARD L. LAWRENCE,
Head Farmer.

*To be appointed before the next year opens.

INSTRUCTORS AND ASSISTANTS.

N. CLIFFORD RICKER,
Instructor in Architecture.

CHARLOTTE E. PATCHIN,
Instructor in Free-hand Drawing.

JAMES D. CRAWFORD,
Instructor in Ancient Languages.

ALEXANDER C. SWARTZ,
Assistant in Civil Engineering and Foreman of Carpenter Shops.

CHARLES I. HAYS,
Florist and Assistant in Botany.

PANAJIOTTIS GENNADIUS,
Assistant in French.

ELNA A. ROBINSON,
Assistant in Mechanical Engineering and Foreman of Machine Shops.

JAMES P. CAMPBELL,
Assistant in Mathematics.

GEORGE R. SHAWHAN,
Assistant in Mathematics.

MELVILLE A. SCOVELL,
Assistant in Chemical Laboratory.

ARTHUR M. BARNES,
Assistant in Chemical Laboratory.

FERNARDO A. PARSONS,
Assistant in Book-keeping.

CHARLES P. JEFFERS,
Assistant in Chemical Laboratory.

LIST OF STUDENTS.

EXPLANATION.

The figures after the names indicate 1st, 2d, 3d and 4th year students. The courses of studies are indicated as follows: El., Elective; Mil., Military; Ag'l., Agricultural; Hor., Horticultural; M. E., Mechanical Engineering; C. E., Civil Engineering; Min. E., Mining Engineering; Arch., Architecture; Nat. His., Natural History; Chem., Chemistry; L. & S., Literature and Science; Com., Commercial.

GENTLEMEN.

Names.	Course.	Post Office Address.	County.
Abbott, Byron David 1	El	Mahomet	Champaign.
Abbott, Theo. Sperry 1	Min. E	Union Grove	Whiteside.
Adams, Chas. F 1	Ag'l	Urbana	Champaign.
Adams, G. C 3	Ag'l	Champaign	Champaign.
Alfred, B 1	Chem	Champaign	Champaign.
Allen, Chas W 1	Ag'l	Harristown	Macon.
Allen, H. C 2	Ag'l	Harristown	Macon.
Allen, E. A 3	C. E	Sheffield	Bureau.
Allen, James A 1	C. E	Creston	Ogle.
Allen, Ralph 2	Ag'l	Delavan	Tazewell.
Anderson, Geo. W 1	Ag'l	Ladoga, Ind	
Anderson, Jacob W 1	M. E	Ladoga, Ind	
Andrews, Chas. E 1	El	Maroa	Macon.
Ayers, Grover, Jr. 1	C. E	Springfield	Sangamon.
Bacon, Ernest 1	C. E	Princeton	Bureau.
Bailey, Willis Joshua 2	Ag'l	Argo	Carroll.
Bagby, John S 2	C. E. & Mil	Rushville	Schuyler.
Baker, Carroll 2	Ag'l	Tuscola	Douglas.
Baker, Ira O 4	C. E	Oaktown, Ind	
Baker, J. M 3	Ag'l	Tarboro, N. C.	
Balcom, Stephen F 2	C. E	Edgewood	Effingham.
Ballou, Edward L 3	M. E	Sherwood, Wis	
Baldwin, Jesse A 1	Ag'l	Greenwood	McHenry
Barnard, D. E 4	Ag'l	Manteno	Kankakee.
Barnes, A. M 2	Ag'l & Mil	Champaign	Champaign.
Barnes, Arther E 3	Chem	Champaign	Champaign.
Bartholow, John H 1	Nat. His	Urbana	Champaign.
Barry, Charles Hart 2	L. & S	Alton	Madison.
Bentley, William N 2	Com	Rockton	Winnebago.
Blackall, Clarence H 1	Ag'l., Chem & Mil	Chicago	Cook.
Blake, A. E 2	C. E	Mendota	LaSalle.
Blake, Jay Neeley 1	Ag'l	Mt. Carroll	Carroll.
Bliss, Jr., Abel 2	C. E. & Mil	Joliet	Will.
Bohn, Jacob 1	Chem	Monticello	Piatt.
Boughton, Willis 1	L. & S	Sheffield	Bureau.
Bowers, John Hewins 3	El & Mil	Rankin	
Bowman, Thomas H 2	Ag'l	Piasa	Macoupin.
Boyer, Charles S 3	Min. E	Walla Walla, Wash. T.	
Breckenridge, Charles E 3	Ag'l	North Bennington, Vt.	
Brinkley, William J 1	Nat. His	Danville	Vermilion.
Brown, Dillon S 3	Ag'l	Genoa	DeKalb.
Brown, Frank Albert 2	C. E	Marengo	McHenry.
Brown, Ralph Lee 3	L. & S	Marengo	McHenry.

Names of Students—Continued.

Names.	Course.	Post Office Address.	County.
Buckingham, Wm. 1	M. E. & Mil.	Chicago.	Cook.
Bullard, Samuel A 2	Ag'l	Mechaniesburg	Sangamon.
Bumstead, James Edward. 1	El.	Marengo	McHenry.
Burgess, M. W. 1	El.	Tonica	LaSalle.
Butterfield, Albert M. 1	Ag'l	Champaign	Champaign.
Butterfield, L T. 2	C. E. & Mil.	Marengo	McHenry.
Byrd, Oliver Wilson. 1	Com. & Mil.	Ladoga, Ind	
Campbell, George Duncan 2	El.	Mt Carroll	Carroll.
Campbell, John P. 4	M E	McLeansboro	Hamilton.
Campbell, R. A. 2	El	Mt Carroll	Carroll.
Carpenter, E. 1	Ag'l	Champaign	Champaign.
Carr, James W. 2	L. & S.	Fenton	Whiteside.
Chandler, Wm. B. 2	Ag'l	Bourbon	Douglass.
Chase, Willis S. 4	El.	Chicago.	Cook.
Cheever, George H. 2	El.	Champaign	Champaign.
Childs, Joel Goodell. 1	L. & S.	Buda	Bureau.
Clark, Charles Wright. 2	C. C.	Champaign	Champaign.
Clark, J. C. 2	L. & S.	Elvaston	Hancock.
Clay, John Ridgway 1	M. E.	Cobden	Union.
Clay, Luther G. 3	Hor. & Mil	Cobden	Union.
Cleveland, Harry 3	L. & S.	Champaign	Champaign.
Clendenen, Taylor 1	Ag'l	Dawson	Sangamon.
Codington, Vantile William 3	Arch	Menomonee, Wis.	
Coffman, Noah Berry 1	Nat. Hist	Urbana	Champaign.
Colditz, William D. 1	El.	Rochelle	Ogle.
Collins, Daniel Prather 1	El.	Clement	Clinton.
Colvin, Albert 1	Com	Mt Palatine	Putnam.
Cook, Phineas Sylvester 1	L & S.	Earlville	LaSalle.
Cowdery, George Sabin 1	C E	Cobden	Union.
Cowen, R. H. 2	C E. & Mil.	Champaign	Champaign.
Crawley, John Joseph. 3	E L.	Tuscola	Douglas.
Crayne, W. H. 4	E L.	Champaign	Champaign.
Culver, Lucien M. 1	Com.	Henry.	Marshall.
Cushing, John Jenckes 1	M. E. & Mil	Sterling	Whiteside.
Davis, Leroy 1	E L.	Hamilton	Hancock.
Dean, Arthur Abbott. 1	Mil. & El.	Joliet	Will.
Dighton, John N. 1	L. and S. and Mil.	Monticello.	Piatt.
Dimon, Jacob V 2	L. and S.	Creston	Ogle.
Dobson, Franklin Pierce. 3	C. E. and Mil.	Minonk	Woodford.
Drake, James Frederic 3	L and S.	Belvidere	Boone.
Drewry, Ebenezer L. 4	El.	Mason.	Effingham.
Dunlap, Burlegh Arthur 3	C E.	Savoy.	Champaign.
Dunlap, Henry 4	El	Champaign	"
Dunning, Albert 2	C E.	Jefferson	Cook.
Davis, John M. 1	El	Rossville	Vermilion.
Eaton, Herbert 3	Ag'l.	Philo	Champaign.
Elliott, Charles Gleason. 1	C E.	Tonica	LaSalle.
Ellis, William Cushing 4	C E.	Champaign	Champaign.
Estep, Harvey C 4	C E.	Rantoul	"
Everhart, Winfield Scott 3	L and S. and Mil.	Neoga	Cumberland.
Eyman, Walter 3	Arch	Belleville	St. Clair.
Farnsworth, David 1	El and Mil.	Blue Mound	Macon.
Farson, John W. 2	El.	Champaign.	Champaign.
Faulkner, James 4	Hor. and Mil.	Clement	Clinton.
Faulkner, Richard Douglas. 1	Ag'l and Mil.	Cement	"
Ferguson, William Dugan. 2	Hor	St Charles	Kane.
Fessenden, Arthur L. 1	M E	Xenia, Ohio	
Fidler, William Allen. 2	L and S.	Neoga	Cumberland.
Filson, William F 2	Ag'l.	Xenia	Clay.
Foster, Charles William 4	El.	Champaign	Champaign.
Fox, Nathaniel M 1	L. and S and Mil.	Hainesville	Lake.
Fredenbur, John W. 1	L and S.	Urbana	Champaign.
Fredenbur, W. M. 1	El.	Urbana	"
Francis, Fred. 1	El.	Kewanee	Henry.
Gabriel, Gregory 4	Ag'l.	Armenia, Asia Minor.	
Gaither, Charles 1	El	Pekin	Tazewell.
Gardiner, William Rodney. 2	Chem.	Mahomet	Champaign.
Garst, J. 1	El	Champaign	"
Gennadius, Panajiottis. 4	Ag'l.	Athens, Greece	
Gibson, Charles Brockway. 1	Chem. and Mil	Springfield, Vt	
Gilkerson, Hiram 2	Ag'l and Mil.	Ney	DeKalb.
Gilkerson, John 2	El.	Ney	"
Gill, Joseph A. 2	Com.	Springfield	Sangamon.
Gill, John David 3	L. and S.	Antwerp, New York	
Gillen, Elijah Fisher. 2	El.	Champaign	Champaign.
Gillette, Stephen Loren. 1	El. and Mil.	Aurora	Kane.
Garrod, Janes A 1	El.	Keenville	Wayne.
Glass, Wilbur Smith. 1	L. and S. and Mil.	Marengo	McHenry.
Gore, Fred. Harry. 2	C. E. and Mil.	Byron.	Ogle.

Names of Students—Continued.

Name.	Course.	Post-office address.	County.
Gore, Simeon Thomas 2	Arch	Ashley	Washington.
Gray, Elmer W 2	El	Rantoul	Champaign.
Greene, Frederick James 1	Chem. and Mil	Peoria	Peoria.
Grigsby, Hugh DeLoss 1	El.	Pittsfield	Pike.
Groves, Charles W 2	Com.	Champaign	Champaign.
Groves, John I 2	Com.	"	"
Gould, Charles Edward 1	El.	"	"
Gunder, Jasper W 2	Chem	Fairmount	Vermilion.
Haas, Charles Martin 1	Ag'l	Woodstock	McHenry.
Hall, Charles William 1	Ag'l	Sweetwater	Menard.
Hall, Walter Orlando 3	Ag'l	Rankin	Randolph.
Hallett, Douglas Frank 1	Com.	Mt. Carroll	Carroll.
Hamilton, George G 1	M. E	LaHarpe	Hancock.
Hannah, Richard Henry 3	Hor	Rossville	Vermilion.
Hannah, Samuel 1	El.	"	"
Hauser, Henry 2	El.	Mascoutah	St. Clair.
Hawley, Millard Gideon 1	Com.	Pekin	Tazewell.
Head, Eugene 1	Chem	Carlinville	Macoupin.
Hiett, George Washington 1	Ag'l.	Sugar Grove, Ind	
Hodges, George Irving 2	Com.	Champaign	Champaign.
Hollenbeck, Horace Orlando 1	El. and Mil	Clark's Hill, Ind	
Howard, Edwin Monroe 2	Chem	Champaign	Champaign.
Huggins, John Clinton 1	Ag'l.	Woodburn	Macoupin.
Hughes, Charles A 1	L. and S.	Monticello	Piatt.
Jack, Irwin 1	Chem	Beaucoup	Washington.
James, Miner Peleg 1	El. and Mil	Mendota	LaSalle
Jeffers, Charles Perry 4	Chem	Lyndon	Whiteside.
Johnson, Frederick L 2	C. E and Mil.	Springfield, Vt	
Jolley, Albert Rembrandt 1	El. and Mil	Cerro Gordo	Piatt.
Jones, James Francis 1	C. E	Chester	Randolph.
Kaw, William Alexander 2	L. and S. and Mil..	Fitt's Hill	Franklin.
Kasson, Myron C 2	El.	Woodstock	McHenry.
Kelley, A. M 1	El.	Paxton	Ford.
Kelley, John Campbell 2	El.	"	"
Kennedy, Allan Gilmour 1	C. E and Mil.	Eau Claire, Wis	
Kenower, George Frederic 3	L. and S.	Clement	Clinton.
Kidder, Edward M 1	C. E	Eau Claire, Wis	
Kingsbury, Charles S 3	C. E	Bowensburg	Hancock.
Kitchell, William W 2	Hor	Olney	Richland.
Knapp, Wilbert 1	M. E.	Gilman	Iroquois.
Knibloe, Walter Elliott 2	M. E.	"	"
Lee, Charles Mylo 2	Ag'l.	Millersburg	Mercer.
Lee, Eddy Orlando 1	L. and S.	Mt. Carro l	Carroll.
Leflar, John Emerson 3	L. and S.	Batavia	Kane.
Leitch, Samuel M 1	C. E	Charleston	Coles.
Lewellin, Joseph C 1	Arch	Sterling	Whiteside.
Lewis, Edward Vernon 1	El and Mil	Chatham	Macoupin.
Linard, Charles Wesley 1	El.	Dayton, Ohio	
Low, James Eli 2	El.	Waukegan	Lake.
Lyford, Charles Chamberlain 4	Ag'l.	Roscoe	Winnebago.
Lynch, Edward 4	El.	Monticello	Piatt.
Lynch, Henry E 2	C. E	"	"
Love, S. S 3	Ag'l.	Philo	Champaign.
Mabin, George G 3	L. and S.	Belvidere	Boone
MacKay, Daniel Grover 2	L. and S.	Oakville	Vermilion.
MacKay, James Henry 2	L. and S	Oakville	Vermilion.
MacKay, William Alexander 2	C. E. and Mil	Oakville	Vermilion.
Mahan, Henry Weston 2	L. and S. and Mil...	Champaign	Champaign.
Makemson, Samuel Clinton 2	El	Wilmot, Ind	
Mann, Frank Irving 3	L. and S. and Mil ..	Gilman	Iroquois.
Mann, H. A 3	L. and S	Champaign	Champaign.
Mann, James Robert 2	El. & Mil.	Gilman	Iroquois.
Marshall, George Edward 1	El	Mokena	Will.
Martin, Parks M 1	Chem	Ladoga, Ind	
Mathews, Newman Hamlin 2	M. E	Mackinaw	Tazewell.
McCauley, John Charles 3	L. and S.	Lincoln	Logan.
McDonald, Alexander 2	Chem	Champaign	Champaign
McFadden, Sharon Carter 1	M. E	Champaign	Champaign.
McFall, James Allison 2	Chem	Mattoon	Coles.
McPherson, Jr., John 1	C. E	Rockford	Winnebago.
Miller Alexander Vidder 2	Com	Champaign	Champaign.
Mills, Willis B 1	El	Magnolia	Putnam
Mitchell, Rufus Steret 2	C. E	Champaign	Champaign.
Moffett, John 1	El	Derinda	JoDaviess.
Moore, Aaron Henry 3	L. and S	Louisville	Clay.
Moore, John Fremont 1	Arch	Davenport, Iowa	
Morehouse, Kussuth B 1	Ag'l	Sommers	Champaign.
Morris, George W 1	El	Lexington	McLean.

Names of Students—Continued.

Names.		Course.	Post Office Address.	County.
Morris, John Calvin Calhoun	4	El	Lincoln	Logan.
Morrow, A T	4	C. E.	Jonesboro, Ind.	
Morse, J H	3	L. and S.	Belvidere	Boone
Mosely, Roland Edward	1	C. E.	Princeton	Bureau
Nebeker, Corie Aquilla	3	El	Mahomet	Champaign.
Ness, Joseph	3	L. and S.	Rossville	Vermilion.
Noble, Louis Reeder	2	M. E. and Mil	Mattoon	Coles.
Oliver, William Forrest	2	Chem. and Mil	Ladoga, Ind	
Ormsby, William L	1	L. and S.	Springfield	Sangamon.
Page, Calvin Samuel	3	L. and S.	Champaign	Champaign.
Paige, James Albert	2	C. E.	Brush Valley, Pa	
Palmer, Frank Mitchell	3	El	Clinton	DeWitt.
Parks, James Harvey	3	C. E. and Mil	Orion	Henry.
Parsons, Fernando Alston	3	L. and S.	Waterloo, Iowa	
Patch, Emory Edward	4	M. E.	Janesville, Wis	
Paton, John	3	M. E	Lincoln	Logan.
Patterson, W. Fremont	1	Hor	Mt. Carroll	Carroll.
Payson, Edward	1	M. E	Chicago	Cook.
Phillips, Richard	1	El	Rantoul	Champaign.
Pickrell, Watson	3	Ag'l	Mechanicsburg	Sangamon.
Pickrell, William	4	Ag'l	Mechanicsburg	Sangamon.
Pierce, Elon A	2	Ag'l	Belmond, Iowa	
Pierce, John L	4	L. and S	Champaign	Champaign.
Pierce, W. R.	2	El	Flora	Clay.
Pierpont, Watson Taylor	1	El	Rockford	Winnebago.
Plaine, Thomas Henry	1	El	Champaign	Champaign.
Pollock, William Clarence	3	Chem	Mt. Vernon	Jefferson.
Poole, Franklin Rand	3	El. and Mil	Cobden	Union.
Porterfield, Emet	1	El	Sidney	Champaign.
Prescott, William Henry	1	C. E	Rockford, Mich	
Prickett, Charles Mortimer	3	El	Ringwood	McHenry.
Puckett, Ralph W. E.	3	Ag'l	Nora	JoDaviess.
Quinby, Edward Vincent	1	El	Pittsfield	Pike.
Reed, Frank Mortimer	1	El	Rockford	Winnebago.
Reinhardt, Adolph	2	Ag'l	Granville	Putnam.
Reynolds, Henry Sheldon	5	Ag'l	Urbana	Champaign.
Rhodes, James Frederick	2	L. and S	Dwight	Livingston
Rice, George Clark	1	L. and S	Fithian	Vermilion.
Robarts, Heber	1	Ag'l	Champaign	Champaign.
Robertson, Henry Wright	2	El	Compromise	Champaign.
Robinson, Elna Alphonso	4	M. E.	Champaign	Champaign.
Roop, Christian Y	4	Chem. and Mil	LaGrange, Ind	
Russell, Sullivan J	3	C. E	Elmwood	Peoria.
Rutan, Abram Rharson	2	Com	Dwight	Livingston
Schardon, Louis F	2	El	Hillsboro	Montgomery
Scovell, Melvill Amasa	3	Chem	Champaign	Champaign.
Scribner, Artemas Coffin	2	Ag'l	Bradford	Stark.
Scudder, Clarence O	3	L. and S	Creston	Ogle.
Searles, Frank Wesley	2	H. and L. and Mil	Hadley	Will.
Seymour, John James	1	C. E. and Mil	Seymour	Champaign.
Shaw, Franklin Davis	2	El	Paxton	Ford.
Shawhan, George Robert	3	L. and S	Sidney	Champaign.
Sheffield, Willis B	1	Ag'l	Champaign	Champaign.
Sheldon, Clarence F	2	L. and S.	Urbana	Champaign.
Simm, Coler Lindley	2	L. and S	Urbana	Champaign.
Sizer, Daniel A	1	M. E. and Mil	Mahomet	Champaign.
Smith, Charles A	4	M. E.	Mt. Vernon, Ind.	
Spence, Franklin	1	El.	Hamilton	Hancock
Spence, John I	1	C. E	Hamilton	Hancock
Spence, William Wright	1	Ag'l	Hamilton	Hancock
Sperry, Jasper Newton	1	L. and S.	Urbana	Champaign.
Spitler, Jonas Beaver	3	L. and S.	Brunnersburg, O	
Sprague, Martin	1	El. and Mil	Blue Mound	Macon.
Staley, Calvin C	1	L. and S.	Champaign	Champaign
Stanton, Samuel Cecil	2	Nat. Hist	London, England	
Starr, Frank A. E	3	H. and S. and Mil	Elsah	Jersey.
Stayman, John Mather	2	C. E	Champaign	Champaign.
Stephens, J. L	1	Ag'l	Champaign	Champaign.
Stewart, Charles Evans	2	El	Champaign	Champaign.
Stewart, Robert E	1	Ag'l	Champaign	Champaign.
Stoddard, Ira J	1	C. E. and Mil	Pella, Iowa	
Storey, George	4	C. E.	Champaign	Champaign.
Stookey, Daniel Wesley	2	M. E	Harristown	Macon.
Stripp, R. G	1	Ag'l.	Champaign	Champaign.
Stull, Louis	1	El.	Marengo	McHenry.
Stull, William	2	L. and S.	Marengo	McHenry.
Sutton, John Thompson	1	El.	Champaign	Champaign.

Names of Students—Continued.

Names.	Course.	Post Office Address.	County.
Thomas, Stephen M. 1	L. and S.	Mt. Carroll	Carroll.
Tomlinson, Josiah J. 1	El.	Magnolia	Putnam.
Trowbridge, Silas 3	M. E.	Champaign	Champaign.
Tyndale, Hector Hilgard 3	C. E. and Mil.	Springfield	Sangamon.
Vaughn, Josiah 1	Chem.	Fidelity	Jersey.
Vartanian, Avadis 1	Ag'l.	Bittis, Up. Armenia, Asia	
Wade, J. B. 1	Chem. and Mil	Jerseyville	Jersey.
Wade, Thomas A. 1	Chem. and Mil	Jerseyville	Jersey.
Wakefield, Chas. Clemson 1	Ag'l.	Monroe City, Mo.	
Wakefield, Jos. Campbell 1	M. E.	Bolivar, Pa	
Walker, Enock. 3	M. E.	Clinton	DeWitt.
Walker, Ralph Manning 1	M. E.	Monroe City, Mo.	
Ward, Walter P 1	L. and S.	Terre Haute	Henderson.
Warner, Lyman Fenn 3	C. E.	Rockford	Winnebago.
Warren, Frank 1	M. E.	Chicago	Cook.
Warrington, George 1	M. E.	Chicago	Cook.
Waterman, Jamas D. 1	El.	Sycamore	DeKalb.
Watts, William 4	Arch. and Mil	Watts	Sangamon.
Welch, Thomas Jefferson 3	L. and S.	Sidney	Champaign.
Weston, Charles. 3	L. and S.	Champaign	Champaign.
Wharry, Walter Ward 4	El. and Mil.	Sycamore	DeKalb.
Wharton, Jacob W.	Sp'l Min. E.	Bement.	Piatt.
Wheeler, Herbert 2	El.	Yellowhead	Kankakee.
White, Alfred 4	L. and S.	Champaign	Champaign.
White, Wallace 1	C. E.	Hale.	Ogle.
Whitham, Robert Farwell. 2	C. E. and Mil.	Paxton	Ford.
Whitlock, John Franklin 1	El.	Dwight.	Livingston.
Wild, George Alfred 2	C. E. and Mil	Marengo	McHenry.
Williams, George Aurelius 1	Ag'l.	Quincy	Adams.
Williams, Thomas T. 2	L. and S.	Sterling.	Whitesides.
Wood, Frederick Lansing 3	Hort.	Chicago	Cook.
Wood, Charles N 1	El.	Sycamore.	DeKalb.
Woodworth, Alvin Orton 1	C. E. and Mil	Champaign.	Champaign.
Worrell, Robert Edwin 3	L. and S.	Bowensburg	Hancock.
Wright, Frank E 3	L. and S.	Arcola.	Douglas
Wright, Myron Jerome 1	Com.	Woodstock.	McHenry.
Zeller, Charles Alexander 1	Com.	Spring Bay	Woodford.
Zeller, George Anthony 1	El.	Spring Bay	Woodford.

LADIES.

Adams, Nettie V 2	El.	Urbana	Champaign.
Anderson, Ella Jane 2	L. and S.	Champaign	Champaign.
Anderson, Laura Morris 3	L. and S.	Champaign	Champaign
Ayers, Lettie 2	L. and S.	Urbana	Champaign.
Baker, Jennie 2	L. and S.	Champaign	Champaign.
Barber, Hattie Louisa 1	El.	Champaign	Champaign.
Bernstein, Joanna 1	El.	Champaign	Champaign.
Bergen, Lavina E 1	El.	Lilly	Tazewell.
Beyer, Amelia 1	El	Sadoris	Champaign.
Blasdel, Maria 3	L. and S.	Champaign	Champaign.
Bogardus, Eva 1	El.	Champaign	Champaign.
Broshar, Cornelia 2	El.	Champaign	Champaign.
Burgess, Ada Augusta 1	El.	Tonica	LaSalle.
Burgess, Mary Celia 2	El.	Tonica	LaSalle
Burt, Ida Kate 2	El.	Urbana	Champaign.
Burt, Nora 2	L. and S.	Urbana	Champaign.
Burwash, Carrie L 1	El	Champaign	Champaign.
Burwash, Harriet Lovina 2	El	Champaign	Champaign.
Campbell, Amanda 3	L. and S.	Philo	Champaign.
Carley, Isotta 2	El.	Champaign	Champaign.
Carpenter, Emma Agnes 1	El	Champaign	Champaign
Chapman, Agnes E. 2	El	Richmond, Ind.	
Cheever, Alice. 4	L. and S.	Champaign	Champaign.
Clark, Emma Josephine 1	El.	Champaign	Champaign.
Clark, Mary Naomi 1	El.	Champaign	Champaign.
Coffman, Ada O 1	El.	Urbana	Champaign.
Columbia, Emma E 1	El.	Champaign	Champaign.
Columbia, Francis Mae 3	El.	Champaign	Champaign.
Conn, Emma Anna 1	El.	Champaign	Champaign.
Davis, Nancy Jane 1	El	Monticello.	Piatt.
Day, Mrs. Marian 1	Chem.	Urbana	Champaign.

Names of Students—Continued.

Names.		Course.	Post Office Address.	County.
Deardorff, Sarah C	1	El.	Cobden	Union.
Denney, H. A	1	El.	Champaign	Champaign.
Dobson, Susan Ann	1	El.	Minonk	Woodford.
Dobson Kate	1	El.	Champaign	Champaign.
Dunlap, Maggie E	2	L. and S.	Champaign	Champaign.
Eaton, Ada	1	El.	Philo	Champaign.
Everhart, Ophelia	2	L. and S.	Neoga	Cumberland.
Falls, Ida Belle	1	El.	Champaign	Champaign.
Foos, Florence Ida	2	El.	Champaign	Champaign.
Gish, Margaret	1	El.	Covington, Ind.	
Givan, Evvie	1	El.	Chicago	Cook.
Goodwin, Nellie J	1	El.	Urbana	Champaign.
Goodwin, Jessie	2	El.	Urbana	Champaign.
Gregory, Carrie L	2	El.	Urbana	Champaign.
Gregory, Lucy M	2	El.	Urbana	Champaign.
Greuzard, Eugenia	2	El.	Champaign	Champaign.
Hall, Ellen Elizabeth	2	El.	Urbana	Champaign.
Hammond, Emily Almina	1	El.	Rantoul	Champaign.
Harris, Maggie	2	El.	Champaign	Champaign.
Harris, Sallie Louisa	1	El.		Champaign.
Holton, Martha Gray	2	El.	Champaign	Champaign.
Johnson, Esther Ann	1	El.	Champaign	Champaign.
Kariher, Israella Kate	3	El.	Champaign	Champaign.
Kellogg, Flora Lorania	3	El.	Woodsville, O	
Kincaid Mattie	2	El.	Champaign	Champaign.
Kirkpatrick, Lizzie	1	El.	Mayview	Champaign.
Larned, Mary	2	El.	Champaign	Champaign.
Lee, Alice	3	El.	Champaign	Champaign.
Lemen, Anna Price	2	El.	Champaign	Champaign.
Longmate, Emma Jane	2	El.	Farmer City	De Witt.
Lyman, Emma Stewart	3	El.	Champaign	Champaign.
Mahan, Jennie C	2	El.	Champaign	Champaign.
Mansfield, Maria Pope	2	El.	Mansfield	Piatt.
Maxwell, Emily C	1	El.	Champaign	Champaign.
McFadden, Cordelia	1	El.	Champaign	Champaign.
McFadden, Mary A	1	El.	Champaign	Champaign.
McWhorter, Della	1	El.	Aledo	Mercer.
Page, Martha Ellen	1	L. & S.	Mackinaw	Tazewell.
Parsons, Nora E	1	El.	Waterloo, Iowa	
Piatt, Emma C	1	El.	Monticello	Piatt.
Pierce, Fanny	3	El.	Champaign	Champaign.
Potter, Frances Adelia	4	L. & S.	Champaign	Champaign.
Pugh, M. E				
Raymond, Jennie	4	L & S.	Sidney	Champaign.
Reynolds, Anna M	3	El.	Belvidere	Boone.
Scoggins, Sarah	1	El.	Champaign	Champaign.
Skinner, Ella V	1	El.	Champaign	Champaign.
Spence, Jennie E	1	Chem.	Hamilton	Hancock.
Stanton, Ellen Loise	2	L. & S., & Com.	London, England	
Steele, Mary C	3	El.	Urbana	Champaign.
Stewart, Maggie Esther	3	El.	Champaign	Champaign.
Stewart, Maggie L	2	El.	Champaign	Champaign.
Switzer, Gertrude	1	El.	Champaign	Champaign.
Thomas, Eliz. R	2	El.	Champaign	Champaign.
Van Horn, Emma R	2	El.	Champaign	Champaign.
Victor, Carrie	2	El.	Champaign	Champaign.
Wallace, Emma Eliza	1	El.	Champaign	Champaign.
Whitcomb, Emma L	3	El.	Urbana	Champaign.
Whited, Rose M	1	El.	Belmond, Iowa	

RECAPITULATION.

By Sexes.

Male Students	316
Female Students	90—406

By Years.

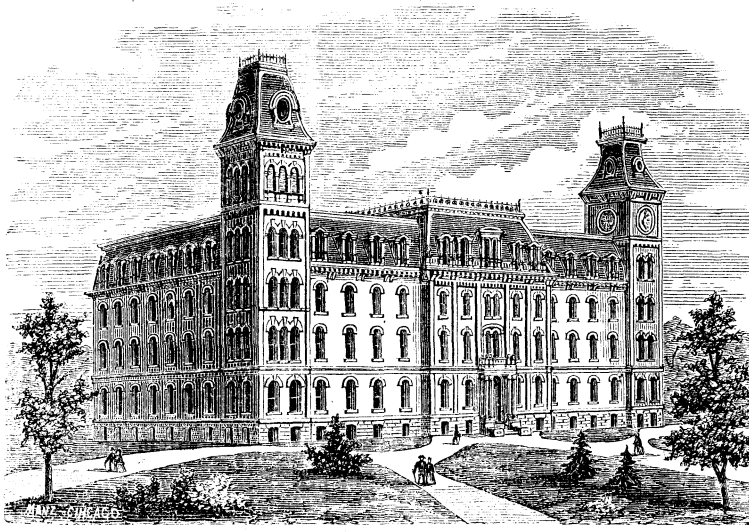
Students of 5 years' standing	1
" 4 " "	31
" 3 " "	74
" 2 " "	119
" 1 " "	179
Others not given	2—406

By Studies.

Agricultural	49	Horticultural	5
Agricultural and military	3	Horticultural and Military	2
	— 52		— 7
Architectural	5	Literature and Science	60
Architectural and Military	1	Literature, and Science and Military	7
	— 6		— 67
Chemical	17	Mechanical Engineering	7
Chemical and Military	7	Mechanical Engineering and Military	1
	— 24		— 8
Civil Engineering	31	Mining Engineering	17
Civil Engineering and Military	16	Mining Engineering and Military	3
	— 47		— 20
Commercial	13	Natural History	4
Commercial and Military	1	Various	7
	— 14		—
Elective	138		406
Elective and Military	12		
	—150		

By Residence.

Adams	1	Randolph	2
Boone	4	Richland	1
Bureau	5	Sangamon	9
Carroll	8	Schuyler	1
Champaign	139	Stark	1
Clay	3	St. Clair	2
Clinton	4	Tazewell	6
Coles	3	Union	5
Cook	9	Vermillion	10
Cumberland	3	Washington	2
DeKalb	6	Wayne	1
DeWitt	3	Whiteside	6
Douglas	4	Will	4
Effingham	2	Winnebago	6
Ford	4	Woodford	4
Franklin	1		—
Hamilton	1	Total from 59 counties of Illinois	357
Hancock	9		
Henderson	1	*From other States and Territories.*	
Henry	2		
Iroquois	4	Iowa	6
Jefferson	1	Indiana	13
Jersey	4	Michigan	1
Jo Daviess	2	Missouri	2
Kane	3	North Carolina	1
Kankakee	2	New York	1
Lake	2	Ohio	4
LaSalle	7	Pennsylvania	2
Livingston	3	Vermont	3
Logan	3	Washington	1
Macon	6	Wisconsin	5
Macoupin	4		—
Madison	1	Total 11 other States and Territories	39
Marshall	1		
McHenry	13	*From Foreign Countries.*	
McLean	1		
Menard	1	Armenia	2
Mercer	2	England	2
Montgomery	1	Greece	1
Ogle	6		—
Peoria	2	Total 3 Foreign Countries	5
Piatt	10	Error, and not given	5
Pike	2		—
Putnam	4	Total	406



New University Building.

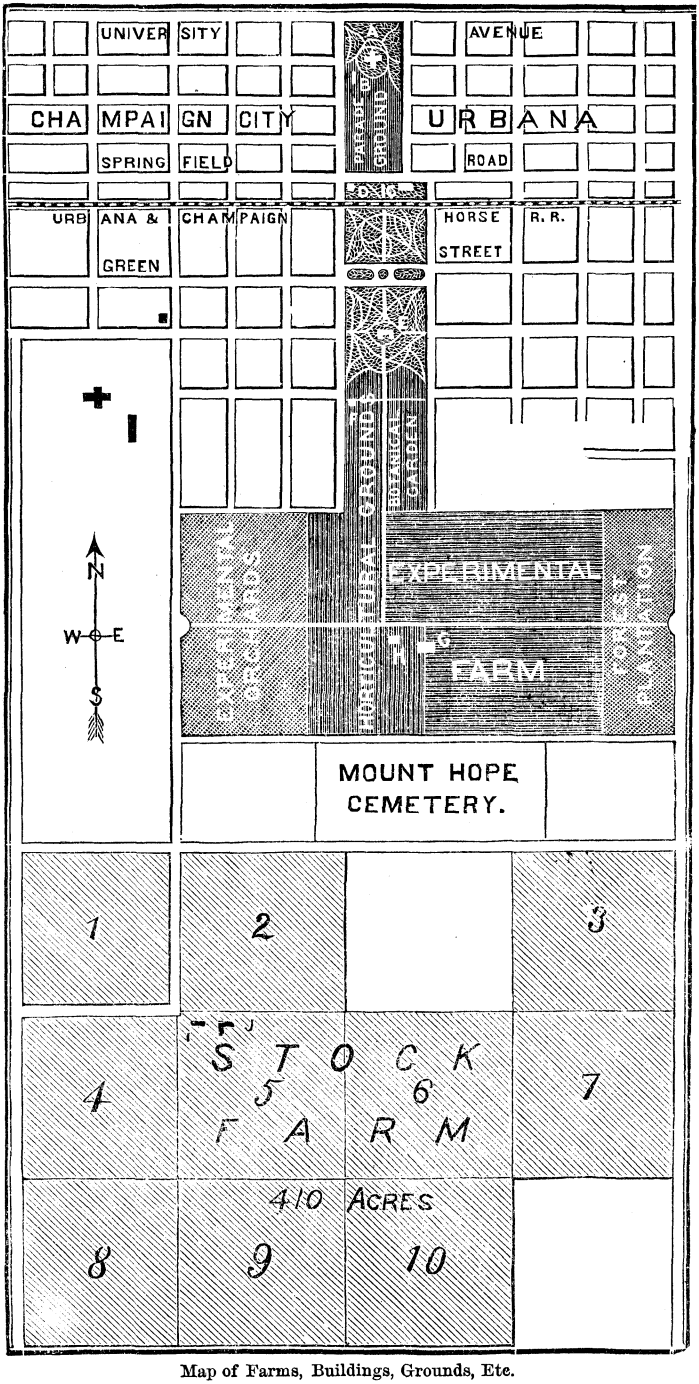
THE UNIVERSITY.

IS BOTH STATE AND NATIONAL IN ITS ORIGIN AND CHARACTER.

HISTORY.

The public movement which gave rise to this University, began a quarter of a century ago. Public meetings of the friends of industrial education were held in all parts of the State, and numerous petitions, signed by thousands of the agriculturalists and other industrial classes, flooded the State Legislature. At length, in 1854, the General Assembly adopted joint resolutions, asking Congress to make grants of public lands to establish colleges for industrial education. After long discussions, Congress passed the necessary law in July, 1862, making the magnificent grant of public lands out of which has arisen that long list of agricultural colleges and industrial universities now scattered over the continent.

Illinois, the first to ask, was among the first to accept the grant, and great public interest was excited in the question of the organization and location. Princely donations, in some cases of half a million of dollars, were tendered by several counties to secure the location of the institution. In February, 1867, a law was passed fixing the locality, and defining the plan of the University, and in May, the Board of Trustees met at the University Building, donated by Champaign county, and finally determined the location. During the year much of the script was sold or located, necessary alterations were made in the buildings, apparatus and library were purchased, a faculty partly selected, and preparations made for active work. On March 2, 1868, the University was opened for students, and on the 11th, formal inauguration exercises



Map of Farms, Buildings, Grounds, Etc.

were held. In the Autumn of 1871 the University was opened for the instruction of female students, and now it offers its advantages to all classes of society, without regard to sex, sect or condition.

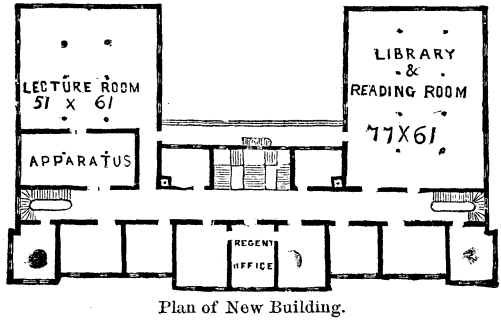
LOCATION.

The University is situated in the city of Urbana, adjoining the limits of the city of Champaign, in Champaign county, Illinois. It is one hundred and twenty-eight miles from Chicago on the Illinois Central Railroad. The Indianapolis, Bloomington and Western Railway passes near the grounds. The county is one of the most beautiful prairie regions in the West. The two contiguous cities, constituting really only one community, have together a population of 10,000, well supplied with churches and schools, and affording boarding facilities for a large body of students.

BUILDINGS AND GROUNDS.

The domain occupied by the University (see map of grounds, opposite page) embraces about 623 acres, including stock farm, experimental farm, orchards, gardens, nurseries, forest plantations, arboretum, botanic garden, ornamental grounds and military parade ground.

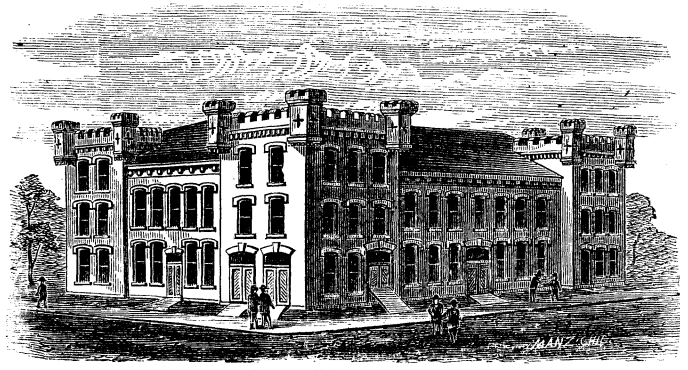
The old University Building (see page 15, A) now occupied partly by Chemical Laboratory, contains some eighty dormitories for students. It is 125 feet in length, and five stories in height, with a wing of 40 by 80 feet, four stories in height. The building was donated by the county.



Plan of New Building.

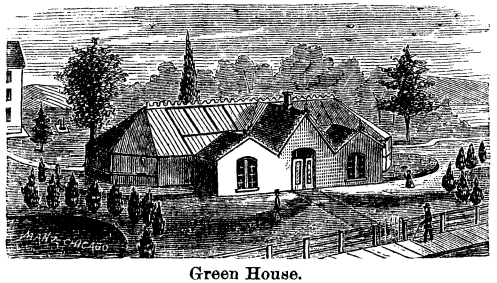
The new University Building, (see page 14, E,) is one of the most spacious and convenient to be found on this continent. It is 214 feet in length, with a depth on the wings of 122 feet. It is designed wholly for public use. The library wing is fire-proof, and contains five large halls devoted to the library and various cabinets and museums. The chapel wing affords a large physical laboratory and lecture-room, and spacious draughting-rooms. In the main part are thirty class rooms of good size, cloak and wash-rooms for both sexes, store rooms, and several large halls for students' literary societies.

The Mechanical Building and Drill Hall (see map, page 15, C,) is of brick, 128 feet in length by 88 feet in width. It contains a boiler, forge and tank room; a machine shop, furnished for practical use, with a steam engine, lathes and other machinery; a pattern and finishing shop; shops for carpentry and cabinet work, furnished with wood-working machinery; paint, printing and draughting-rooms, and rooms for models, storage, etc. In the second story is the large Drill Hall, 120 by 80 feet, sufficient for the evolutions of a company of infantry, or a



Mechanical Building and Drill Hall.

section of a battery of field artillery. One of the towers contains an armorer's shop and military model room, an artillery room and a band room.



Green House.

The Green House (page 15, B) is 70 feet by 36, and contains potting, seed and furnace rooms. There are two other green houses: one 12 feet by 36, the other 22 by 40.

The University has two large and valuable barns (see page 18, J and G,) belonging to the stock and experimental farms, and four dwelling-houses for the Superintendents.

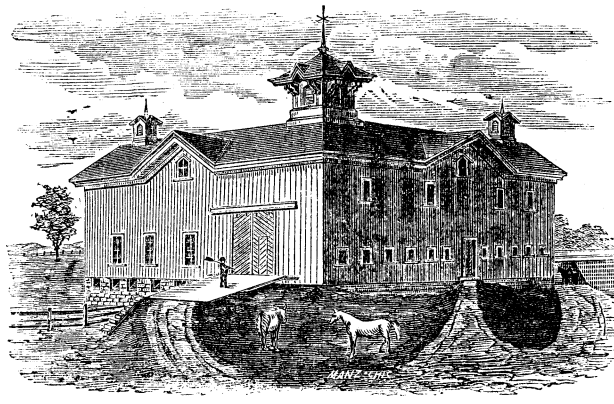
The Barn on the Stock Farm has north and west fronts of 80 feet each. Each limb, or ell, is 40 feet wide. It is of the kind known as a side-hill barn.

In the basement is a root cellar, a cook-room, furnished with a steam boiler to steam food, and a small engine to furnish power for grinding, threshing and cutting, a set of hog-pens, another set of pens or yard under the shed, which extends along both sides of the barn in the angle, a set of bull stalls for the several breeds, and a series of stalls for fine breeding cows, with calf pens in the rear. The first floor has horse stalls, a series of box stalls for breeding mares, grain bins, and a harness room.

For descriptions of the Mechanical Shops and Drill Hall, see Schools of Mechanical Engineering and Military Science.

PROPERTY AND FUNDS.

Besides the lands and buildings already described, which are, with furniture, library, etc., valued at $400,000, the University owns $25,000



Stock Farm Barn.

acres of well selected lands in Minnesota and Nebraska. It has also endowment funds invested in State and county bonds amounting to $319,000, besides other property and avails, valued at $33,000. The State has appropriated $25,000 to the Agricultural Department for barns, tools, stock, etc.; $20,000 to the Horticultural Department for green-house, barns, drainage, tools, trees, etc., $25,000 for Mechanical and Military Building, Machinery, etc.; $127,000 towards the erection of the Main building, and furnishing the same; $10,500 to furnish the Chemical Laboratory; and $20,000 for Library and Apparatus; $3,000 for the apparatus of a physicial laboratory, besides large amounts for agricultural experiments, etc.

LIBRARY.

The Library, which has been carefully selected with reference to the scientific studies required in the several practical courses, includes now about 10,000 volumes. The large Library Hall is fitted up as a reading-room, and is open throughout the day for study, reading, and consultation of authorities. It is well provided with American, English, French, and German papers and periodicals, embracing some of the most important scientific and art publications. For a list of the periodicals regularly received, see Table of Contents.

AIMS OF THE UNIVERSITY.

"Its leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the Legislatures of the States may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life."—*Act of Congress*, 1862, *Sec.* 4.

"The trustees shall have power to provide the requisite buildings, apparatus and conveniences; to fix the rates of tuition; to appoint such professors and instructors, and establish and provide for the manage-

ment of such model farms, model art, add other departments and professorships, as may be required to teach, in the most thorough manner, such branches of learning as are related to agriculture and the mechanic arts and military tactics, without excluding other scientific and classical studies."—*Act of General Assembly*, 1867, *Sec.* 7.

In accordance with the two acts above quoted, and under which the University is organized, it holds as its principal aim to offer freely the most thorough instruction which its means will provide, in all the branches of learning useful in the industrial arts, or necessary to "the liberal and practical education of the industrial classes, in the several pursuits and professions in life." It includes in this all useful learning —scientific and classical—all that belongs to sound and thorough scholarship.

Its practical aims will be best understood by a survey of the following departments of instruction, for which it offers the best facilities:

Scientific Agriculture.—Soil culture of all varieties, and for all crops, Animal Husbandry, Stock-breeding, Feeding, Veterinary Science, Agricultural Chemistry, Rural Engineering and Drainage.

Horticulture.—Market Gardening, Fruit Growing, Management of Nurseries, Forests, Green Houses, Propagating Houses, and Ornamental Grounds.

Mechanical Engineering.—Theory and Practice in Construction of Machinery, Pattern Making, and Working in Iron and Brass. Study of the Motors, Strength of Materials, and Mechanical Drawing.

Civil Engineering.—Land and Government Surveys, Railroads, Canals, Bridge Building, Topographical Surveys and Leveling.

Mining Engineering.—Mine Surveys, Sinking and Tubing of Shafts, Driving of Adits and Methods of Working, Assaying, Treatment of Ores, and Metallurgy.

English Language and Literature.—A thorough and extended course in higher Grammar, Rhetoric, Criticism and Essay Writing, to fit students for editorial or other literary work, or teaching.

Analytical Chemistry.—Chemistry applied to the Arts; Laboratory Practice with Re-agents, Blow-pipe and Spectroscope. A full course to fit students to become Chemists, Druggists and Pharmaceutists.

Architecture.—Architectural Drawing, Styles of Building, Plans, Materials, Estimates, Ornamentation.

Military Tactics.—Manual of Arms, Squad, Company and Battalion Drill, Brigade and Division Evolutions, Bayonet and Sword Fencing, Military Arms, Roads and Fortifications.

History and Social Science.—General and Special History, Political Economy, Rural and Constitutional Law.

Mental and Moral Philosophy—and Logic.

Modern and Ancient Languages.—French, German, Latin, etc.

Commercial Science.—Book-keeping, Commercial Law, etc.

Mathematical Science.—Pure and Applied, Physics, Astronomy.

Natural History.—Botany, Zoology, Geology, Physical Geography.

Drawing.—Mathematical and Free-hand.

FREEDOM IN CHOICE OF STUDIES.

Under the present laws of the State each student is required to study some of the branches relating to Agriculture and the Mechanic Arts.

The Trustees have accordingly made the following classification of studies, and require that each student shall take, each term, one study,

at least, from the first class. His second study must be of either the first or second class, and his remaining studies from either of the three classes.

CLASS I. Physics, Chemistry, Mineralogy, Physical Geography, Anatomy and Physiology, Botany, Zoology and Geology, Entomology, Algebra, Geometry, Trigonometry, Calculus, Drawing, Surveying, and Engineering, Mining and Metallurgy, Mechanics, Architcture, Principles of Mechanism, Hydraulics, Thermodynamics, Strength of Materials, Prime Movers, Mill Work, Machine Drawing, Origin and Treatment of Soils, Culture, etc., of Plants, Breeding of Domestic Animals, Veterinary Science, Farm Products and Manufactures, Roads and Railroads, Bookkeeping, Construction and Use of Machinery, Modeling and Patterns, Bridges, etc., Astronomy and Military Science.

CLASS II. English Langnage and Literature, German Language and Literature, French Language and Literature, General History, U. S. History, Ancient History, Mediæval History, Modern History, Constitutional History, History of Civilization, Logic, Political Economy, History of Agriculture, Constitutional Law, International Law, Rhetoric and Oratory.

CLASS III. Any study taught in the University not enumerated in the first and second classes.

The University being designed not for children, but for young men and women who may claim to know something of their own wants, powers and tastes, *entire freedom in choice of studies* is allowed to each student, subject only to such necessary conditions as the progress of the classes, the law, and the convenience in teaching require. It is not thought useful or right to urge every student, without regard to his capacity, taste or practical wants, to take entire some lengthened curriculum or "course of studies." Liberty everywhere has its risks and responsibilities as well as its benefits—in schools as well as in society; but it is yet to be proved that compulsory scholarship is necessarily better, riper, and more certain than that which is free and self-inspired. Each student is exhorted to weigh carefully his own powers and needs, to counsel freely with his teachers, to choose with serious and independent consideration the branches he may need to fit him for his chosen career, and then to pursue them with earnestness and perseverance, without faltering or fickleness.

It is necessarily required, first, that students shall be thoroughly prepared to enter and keep pace with the classes in the studies chosen; and, second, that they shall take these studies when they are being taught.

It is expected that each student shall have three distinct studies, affording three class exercises each day. But on special request, the Faculty may allow less or more, to meet the exigencies of his course.

No changes in studies can be made after the beginning of a term without permission of the Faculty.

It is recognized that students will often need advice in the selection of studies and in the arrangement of a proper course. To meet this need the Faculty have carefully arranged several Courses of Studies which are expected to be followed by those who have no special reasons for diverging from them. See "Courses of Study," *post.*

Due care will be taken to prevent as far as possible all abuse of the liberty of choice. Students failing to pass satisfactory examinations in their chosen studies, will not be permitted to remain and take other tudies without a vote of the Faculty.

ADMISSION.

Candidates for admission to the University must be at least fifteen years of age, of good moral character, and able to sustain a satisfactory examination in the following branches.

Candidates are requested to give heed to the following exhibit of the general scope of the examinations in the several branches:

English Grammar.—Formation of words, parts of speech, declensions, conjugations, etc., analysis and syntax of sentences, and use of modifying words and connectives.

Geography.—Form, size, motions and circular divisions of the earth; latitude, longitude and zones; the continents, grand divisions, countries and capitals of Europe and America; mountain systems and chief rivers and lakes of Europe and America; boundaries, capitals, chief towns, great railroads and canals of the States of the Union.

Arithmetic.—Decimal system of notation and numeration; the four grand rules or operations, with clear explanations of processes, reasons and proofs; fractions, reduction, addition, subtraction, multiplication and division of fractions; operations in decimals, percentage, interest, ratio, proportions, involution and evolution.

Algebra.—Definitions, notation by letters and signs, simple operations, changes of signs, algebraic fractions, equations, transformations of equations, solutions of problems, methods of elimination, calculus of radicals.

History of the United States.—Discovery and settlement of the several States, Indian and other wars, the early history of the West, the Revolutionary War.

Natural Science.—As the law requires that no student shall be admitted who shall not pass a satisfactory examination in the studies of the common schools, and as the new school law prescribes that the "elements of the natural sciences" shall hereafter be taught in the common schools, candidates for admission to the Industrial University must be prepared in the elements of human physiology, in botany and in natural philosophy, in addition to the studies heretofore required.

Students entering after the beginning of the first term must also pass examinations in the studies already pursued by their classes.

HOW TO ENTER THE UNIVERSITY.

In answer to the questions often received, the following *explicit directions* are given to those wishing to enter the University:

1. You must be over fifteen years of age, and of good moral habits. If unknown to the Faculty, you should bring a certificate of character.

2. You must possess a thorough knowledge of the common school branches, as given above, and of such other studies as you may find under the heading "Admission," in the College you wish to enter.

3. You should enter at the beginning of the year; but you *may* enter at any other time, if prepared to pass the additional examinations.

For the dates of Examinations, beginning of the year, Matriculation Fee, etc., etc., see Table of Contents, for "Calendar" and "Expenses" or read the miscellaneous matter following page 46.

COLLEGES AND SCHOOLS.

The University embraces the following Colleges and Schools. A School, it will be observed, is designed to provide a combined course of instruction made up of the branches of learning needful for some one profession. Schools naturally allied are grouped into a College.

I. THE COLLEGE OF AGRICULTURE.

School of Agriculture; School of Horticulture.

II. THE COLLEGE OF ENGINEERING.

School of Mechanical Engineering; School of Civil Engineering; School of Mining Engineering; School of Architecture.

III. THE COLLEGE OF NATURAL SCIENCE.

School of Chemistry; School of Natural History.

IV. THE COLLEGE OF LITERATURE AND SCIENCE.

School of English and Modern Languages; School of Ancient Languages and Literature.

V. OTHER SCHOOLS.

School of Military Science; School of Commerce; School of Domestic Science and Art.

Schools of *Wood Engraving*, *Printing*, *Telegraphing*, *Photography*, and *Designing*, it is hoped, will be added at an early day.

Upon pages 50 to 55 the student will find marked out the course of studies selected to fit him for his chosen pursuit. A completion of one of these courses, will be necessary to entitle him thus to graduate. A student desiring to pursue any branch of study farther than is provided for in the courses of the Schools, will find a statement of the extent of the course of instruction given in such branch, under the heading "Departments."

COLLEGE OF AGRICULTURE.

FACULTY.

The REGENT, Professor BURRILL, Professor SHATTUCK, Doctor PRENTICE, Professor STUART, Professor TAFT, Superintendent FLAGG.

SCHOOLS.

School of Agriculture; School of Horticulture.

CONTRIBUTIONS.

Many manufacturers have favored us with donations of implements and it is hoped this will continue until the large room devoted to the tools shall become a rich museum of all that is most important.

Appeal is made to friends everywhere for assistance in furnishing the fruit and tree plantations with the fullest possible stock, in the building and furnishing of the green-houses and conservatories, and in the enlargement of the scientific collections in the arboretum and botanical garden. The plants now in the houses and upon the grounds have been catalogued, and will be forwarded to parties wishing to exchange or contribute.

It requires a vast amount of money, time and skilled labor to make a large collection of useful agricultural and horticultural plants, yet the importance of such a collection at the University is recognized by all who are interested in these pursuits. New varieties of grains, vegetables, root crops, seeds and live plants may easily be sent and will always be thankfully received.

SCHOOL OF AGRICULTURE.

OBJECT OF THE SCHOOL.

The aim of this school is to educate scientific agriculturists. The frequency with which this aim is misunderstood by the community at large, demands that it shall be carefully explained. Many, who look upon agriculture as consisting merely in the manual work of plowing, planting, cultivating and harvesting, and in the care of stock, justly ridicule the idea of teaching these arts in a college. The practical farmer who has spent his life in farm labors, laughs at the notion of sending his son to learn them from a set of scientific professors. But all of this implies a gross misunderstanding of the real object of agricultural science. It is not to teach *how* to plow but the reason for plowing at all — to teach the composition and nature of soils, the philosophy of plowing, of manures, and the adaptations of the different soils to different crops and cultures. It is not simply to teach how to feed; but to show the composition, action and value of the several kinds of food, and the laws of feeding, fattening and healthful growth.

In short, it is the aim of the true Agricultural College to enable the farmer to understand thoroughly and profoundly, all that men can know about soil and seed, plants and animals, and the influences of light, heat and moisture on his fields, his crops and his stock; so that he may both understand the reason of the processes he uses, and may intelligently work for the improvement of those processes. Not "book farming," but a knowledge of the real nature of all true farming—of the great natural laws of the farm and of all its phenomena—this is the true aim of agricultural education. And when it is recollected that agriculture involves the principles of a larger number of sciences than any other human employment or profession, it will not be regarded as an unfit end of a sound collegiate training.

INSTRUCTION.

It has been the steady aim to give to the College of Agriculture the largest developement practicable, and to meet the increasing demand, the Trustees design to employ additional instructors the coming year. Agricultural students are specially invited.

The instruction unites, as far as possible, theory and practice—theory explaining practice, and practice illustrating theory.

The subjects are so arranged that those not requiring illustration upon the farm are taught in the winter, and sufficient educational labor is required in favorable weather to impress and illustrate the principles developed in lectures and recitations. In Veterinary Science the lectures are given by a graduate of the Schools of Veterinary Science in both Edinburg and London. Sick animals are brought in from the surrounding neighborhood, and are treated free of charge for the instruction of the classes.

APPARATUS.

The college has for the illustration of practical agriculture a large stock farm of 410 acres, provided with a large stock barn, fitted up with stables, pens, yards, cooking room, etc. See map, page 15, and description, page 17. It has also a fine stock of several breeds of neat cattle, embracing Short Horns, Herefords, Devons, Ayrshires, Jerseys. Also several breeds of swine and sheep, to illustrate the problems of breeding and feeding. An Experimental Department, aided by a special appropriation, exhibits field experiments, in the testing of the different varieties and modes of culture of field crops, and in the comparison and treatment of soils, carried on at the University Farm, where about sixty acres are devoted to this purpose, and at other points representing the different soils and climates of the State. It includes also experiments in horticulture and agriculture, under the direction of the Professor of Horticulture and of the Farm Superintendent, and experiments in feeding animals of different ages and development upon the various kinds of food. In common with similar departments in the several State Agricultural Colleges of the country, it attempts to create positive knowledge towards the development of an Agricultural Science.

A Veterinary Hall and Stable is provided, and a Clinic is held in the fall or winter term, to illustrate the lectures on Veterinary Science.

Surveying and Drainage are illustrated by practice in the field. Chemistry is pursued by work in the Laboratory. Collections of seeds, soils, plants, implements, skeletons of animals, models, and apparatus are provided to illustrate the several branches of Agricultural Science.

SCHOOL OF HORTICULTURE.

OBJECT OF THE SCHOOL.

The aim of this school is to afford a scientific and practical education specially adapted to the wants of those who cultivate garden and orchard plants.

INSTRUCTION.

The instruction is both theoretical and practical. The class-room recitations and lectures are supplemented by instructive practice in the fields and plant-houses. In connection with the lectures upon methods of obtaining and perpetuating new varieties of plants, students have practical exercises in cross-fertilizing, seeding, grafting, budding, etc., as a part of their regular education. So, in connection with the studies of ornamental plants and grounds, the care of the green-houses constitutes an essential feature of the student's work. Ladies can engage not only in the studies, but also in the practical exercises. The course which is recommended for those intending to prepare for the duties of the practical horticulturist, is given with the other courses, pages 50 to 55.

APPARATUS.

The apparatus for the practical portions of the course of instruction is well provided, and the means of illustration are fast accumulating.

Of 130 acres of land devoted to the use of the school, 20 are planted with forest timber trees, including nearly all the valuable kinds, both native and introduced. An apple orchard of 1,200 varieties is beginning to bear, nearly 200 different kinds of pears are growing, also many varieties of cherries, grapes, blackberries, strawberries, currants, gooseberries, etc. The nurseries are well filled with young ornamental and useful plants, and in the vegetable gardens a large collection has been made. An arboretum and a botanical garden have been commenced, in which it is proposed to gather all the native and hardy exotic plants. Twenty acres are devoted to the building and ornamental grounds, where much pains is taken to make both summer tnd winter ornamentation attractive and pleasing. A fine green-house, 36 by 70 feet, is filled with a rich collection of valuable plants. Two other structures afford ample room for the propagation of a large stock of plants, and also illustrate the different modes of heating. The cabinets include many illustrative specimens, and the library contains the best horticultural literature known to the world. See map of the grounds on page 15, and descriptions.

COLLEGE OF ENGINEERING.

FACULTY.

The REGENT, Professor WEBB, Professor SHATTUCK, Professor ROBINSON, Professor STUART, Professor TAFT, Instructor RICKER, Instructor PATCHIN.

SCHOOLS.

School of Mechanical Engineering; School of Mining Engineering; School of Civil Engineering; School of Architecture.

ADMISSION.

Applicants should be at least eighteen years of age, and none will be admitted under fifteen. Besides the requirements for admission into the University, given on page 21, they will be expected to pass their examination in Algebra, through Powers and Roots of any degree, and Quadratic Equations; also, in Geometry, both plane and spherical, but not in Trigonometry. The examinations in Mathematics will be most thorough.

PREPARATION.

Thorough preparation is essential to success in the professions of the Engineer and Architect, and applicants will do well to make sure of passing their examinations in Mathematics.

The studies are arranged so that those who will make further preparation than is required before entering, can make their courses more extensive and profitable, and the following suggestions will be of use to such as wish to make thorough work: One recitation a day is devoted to English and modern languages; by coming well prepared in English grammar and composition, with some knowledge of English literature, the whole of this time can be devoted to French and German, each of which should have at least one year. Some preparation in Latin will be of great assistance in these languages. The engineer or architect should be an adept in the various departments of drawing, and some previous study and practice of this branch will be of great advantage; "Warren's Draughting Instruments" may be used as a text-book, and the drawings made on smooth drawing paper, each plate eight inches by ten inches.

REGULATION PAPER.

The following sizes and qualities of paper will be required in all the College exercises. Two scales are used, agreeing very nearly in the actual sizes, but adapted, the one to American inches, and the other to French centimetres. One or the other must be adhered to for the same class of exercises.

Qualities—For manuscript and unimportant drawings, a heavy flat-cap paper, but slightly sized. For ordinary drawings, not colored, a heavy first quality smooth drawing paper. For drawings finished in colors, the best Whatman's cold-pressed paper. For topographical and right-line drawing, and lettering, the best three-sheet Bristol board.

For Problems and Exercises, and First and Second Vacation Journals—

American size—Size of page, 5 inches by 8 inches; width of margin, half an inch.

French size—Size of page, 12.5 cm. by 20 cm.; width of margin, 1.25 centimetres.

For Memoirs, Lectures, and other manuscripts, and for Geometrical, Projection, Topographical, Railroad, and Typographical Drawings—

American size—Size of page or plate, 8 inches by 10 inches; width of margin .75 inches.

French size—Size of page or plate, 20 cm. by 25 cm.; width of margin, 2 centimetres.

For Theses and Specimen Plates, to be deposited in the Library, the same size is used with an additional margin for binding, making the sheets 8 inches by 11.5 inches.

For Advanced Drawings, the Patent Office size, or the corresponding size in French measure, is selected. Larger sizes will be allowed only when deemed necessary by the Professor in charge.

American size—Size of page or plate, 10 inches by 15; width of margin, one inch.

French size—Size of page or plate, 25 cm. by 40 cm.; width of margin, 2.5 centimetres.

CONTRIBUTIONS.

Our friends and students are earnestly desired to send us specimens of material and manufactures, and drawings, models or photographs of machinery, bridges, and other engineering and architectural works. Finished and detailed working drawings, perhaps otherwise useless, would be of great value for purposes of instruction. Illustrated circulars and price lists of manufacturing firms are desired. Contributions will be labeled with the donors' names and placed in the cabinets of the College for the inspection of students, and the illustration of lectures.

THESES.

In all the Schools of this College a Thesis is required of those who graduate. It must be an original composition of suitable length, upon a subject appropriate to the School, and approved by the Professor in charge. The student must be prepared to read, explain and defend it before his class. It must be illustrated with such photographs, drawings and sketches as may be needed, and embellished with a title page neatly designed and printed with India ink, or colors. It must be upon Regulation Paper and securely bound. It will be prepared during the latter part of the fourth year and presented at the close of the course, after which it will be deposited in the Library of the College.

SCHOOL OF MECHANICAL ENGINEERING.

OBJECT OF THE SCHOOL.

This School is intended to prepare students for the profession of Mechanical Engineering. It is designed to supply a class of men long needed, not simply practical nor wholly theoretical, who, guided by correct principles, shall be fully competent to invent, design, construct, or manage machinery, in the various industrial pursuits. The instruction, while severely scientific, is thoroughly practical, aiming at a clear understanding and mastery of all mechanical principles and devices. Practice in the Mechanical Laboratory is combined with the theoretical training, and is counted as one of the studies of the course.

INSTRUCTION.

Instruction in this school is given in both Principles and Practice.

In Principles, the knowledge is imparted in lectures, combined with the use of plates and illustrative models, and recitations are made from text-books. Numerous examples are also given, showing the application of the theories and principles taught. Experiments in the testing of machines and motors are undertaken by the student.

In Practice, the instruction consists mainly in the execution of Projects, in which the student is required to construct machines, or parts thereof, of his own designing, and from his own working drawings. The student, in class exercises under competent teachers, use the machinery and tools of the Machine and Pattern Shops and Foundry, according to the most approved methods of modern practice. See "Projects."

The practical instruction is not intended merely to teach the trade, but is added as a necessary supplement to the theoretical training.

TECHNICAL STUDIES.

The course is given by the year and term in the tabular view, page 51, course 5. The order of studies there indicated should be closely followed, that the student may avoid interference of his hours of recitations. The following is a detailed view of the Technical Studies.

MATHEMATICS.—For a list of the subjects included under Pure Mathematics, see the Department of Pure Mathematics, page 46, as far as Calculus of Variations. The following are those included in Applied Mathematics:

Cinematics and Principles of Mechanism—Relative Motion of points in a system of connected pieces; Motion independent of Force; Velocity ratio; Investigation of the Motion of elementary parts of machines, as Friction and Curve Wheels in rolling contact, Cams and Curves in sliding contact; Correct-working Gear Teeth; Gearing Chains; Escapement Link-work. *Analytical Mechanics*—Equations of Equilibrium; Moments; Virtual Velocities; Centers of Gravity; Mechanical Powers; Friction; Dynamics. *Hydraulics*—Amount and Center of Pressure upon submerged surfaces; Flow of Liquids through Orifices, Weirs, Pipes and Channels; Distribution of water in cities. *Thermodynamics*—Thermal and Thermometric Units; Sensible, Specific and Latent heat; Expansion of heat; Absolute Temperature; Laws of Thermodynamics; Thermal Lines; Changes of Temperature and Pressure attending expansion of Gases; Laws of Work. *Pneumatics*—Flow of Gases through Orifices and Pipes; Density and Inertia of Gases; Distribution of Illuminating Gas.

NATURAL SCIENCE—*Physics and Descriptive Astronomy*—See Department of Physics and Astronomy. *Chemistry*—Inorganic Chemistry and Qualitative Analysis. *Geology*—Elements of Physiographic, Lithological, Historical and Dynamical Geology.

DRAWING—*Projection D.*—Use of Instruments in applying the Elements of Descriptive Geometry; Use of Water Colors; Isometrical Drawing; Shades and Shadows; Perspective. *Free-hand D.*—Sketches of Machinery; Ornamentation; Lettering. *Machine D.*—Working Drawings of original Designs; Finishing in Water Colors, and in Line-shading; Details for shop use according to the practice of leading manufacturers.

ENGINEERING—*Projects*—Proportions, dimensions and customary forms of Machinery; Designing and Detailing; Construction of Machines from Working Drawings in the Mechanical Labaratory. *Resistance of Materials*—See School of Civil Engineering. *Prime Movers*—Work developed by water-wheels, wind-wheels and by steam; Hot-air and Electric Engines; Economy of different Engines. *Mill-work and Machinery*—Principles of Mechanism; Correct forms for parts of Machines; Machinery of Transmission; Manufacturers' and Engineers' Machinery; Elastic and ultimate strengths of heavy machinery.

SPECIAL EXERCISES.

PROJECTS.—The Designing, Drawing and Shop Practice, has always a definite practical purpose. The students under the immediate direction of teachers, carefully determine the dimensions and shapes best suited for the parts of some machine, reduce them to neat and accurate working drawings, and make tracings for shop use. In the fourth year the drawings are completely finished with line-shading or colors, and detailed according to the best methods. The drawings are left for the further use of the school. No student will commence his shop practice without working drawings. The designs are such as require execution in iron, brass and wood, for the purpose of giving breadth of practice. The student is required to make the patterns and castings, finish the parts, and put them together in accordance with the working drawings and the required standard of workmanship. This acquaints the student with the manner in which the Mechanical Engineer carries his designs into execution, and teaches him to so shape, proportion and dispose the parts of a machine as to secure the greatest economy in construction, and durability in use.

Experiments in the testing of Prime Movers and other machines, are undertaken by the classes. They will take Indicator Diagrams from the engine of the Mechanical Laboratory and determine from them the power developed with different degrees of expansion.

VACATION JOURNALS AND MEMOIRS.

Journals of Travel are required to be kept during the summer vacations. Entries should be made as often as once a week, and consist of notices of manufactories, especially of their peculiar mechanical methods and machines. Dimensions of large or important machinery, such as stationery engines of water works, blowing and hoisting engines, and machinery in use in mining or other operations, may form a part of the record. The Journals of the first Vacation are to be read and discussed in connection with the class in Designing and Shop Practice; and those of the second, in connection with the class in Cinematics and Principles of Mechanism. They should be illustrated by sketches reproduced upon the blackboard.

Reports or memoirs upon visits and observations of the third vacation will be required instead of journals, to be read in the class in Machine Drawing during the middle term of the fourth year. These reports should be made upon rare and interesting mechanical operations or machinery, such as making gas pipe, spinning zinc, copper and brass ware, manufacturing saws, etc. They will be placed in the Library of the School, and should be illustrated by ample sketches and drawings.

APPARATUS.

This school is provided with plates and a cabinet of models for illustrating mechanical movements and elementary combinations of mechanism. This collection is rapidly increasing by our own manufacture, and by purchase from abroad. A supply of Riggs' models has lately been added, and others from the celebrated model manufactory of J. Schroeder, of Darmstadt, Germany. About two hundred valuable models have been received from the U. S. Patent Office.

The plan shows the arrangement of the Mechanical Laboratory. The bottom and left-hand side of the plan correspond to the two faces of the Mechanical building, shown in perspective on page 15.

In the Boiler and Furnace Room is a Root's Sectional Safety Boiler of 33 horse-power, which supplies steam for the engine, and for warming the building. The Forge and Furnace are in this room, and also a moulder's bench, with sand and the appliances for making brass, iron and other castings. Here, also, are the pumps, and Stillwell Heater and Lime Extractor for supplying the boiler with water.

In the Machine Shop is the Engine of 16 nominal horse-power, but capable of working to 30. It is regulated by a variable cut-off of new design and simple construction, by Professor Robinson. It was made by the students of the University. A Richards' Indicator of the most approved construction is fitted to the cylinder. The main line of shafting is cold-rolled iron, 72 feet long, and furnished with the best iron pulleys and hangers. Here, also, is a Putnam Engine Lathe of 20 inches swing by 10 feet bed; an Ames Lathe of 15 inches swing by 6 feet bed; a Putnam Planer for iron, planing 5 feet long; two Hand Lathes swinging about 10 inches by four feet: These were made by students; a stretch of about 100 feet of heavy hard-wood benches, fitted up with vises, drawers, tool cases, etc., the Steam-heating Coils of this room being under the benches; and the Grindstone, also a No. 1 Sturtevant Pressure Blower, for furnishing blast to the furnace and forge.

In the Pattern Shop are four complete sets of tools, benches and vises, each sufficient for a pattern maker; also, a small buzz saw.

In the Carpenter Shop are the following: A Whitney Planer, a Moulding Machine, a Tenoning Machine, a Jig Saw, a Cutting-off Saw, a Slitting Saw, a Mortising Machine, a Yankee Whittler, a Turning Lathe and three Power Grindstones. Also ten Work-benches, and a corresponding number of sets of Bench-tools. There is also at the back of the building a brick Drying-House, 25 feet by 14 feet, for drying lumber, containing 1,000 feet of three-quarter inch heating pipe.

SCHOOL OF CIVIL ENGINEERING.

OBJECT OF THE SCHOOL.

The school is designed to furnish a course of theoretical instruction, accompanied and illustrated by a large amount of practice, which will enable students to enter intelligently upon the various and important

duties of the engineer. Those who desire a preparation, at once broad and thorough, and who are willing to make persevering effort to obtain it, are cordially invited to connect themselves with this school.

INSTRUCTION.

It is desired that the student lay a broad foundation in general and disciplinary culture, which will enable him to pursue his professional studies with greater ease and advantage. With this view the subjects peculiar to civil engineering are not introduced until the second year.

The instruction is as usual given by lectures, text books and reading, to which are added numerous problems and practical exercises, as serving best to completely explain subjects and fix them in the mind. Models and instruments are continually used, both in lectures and by the students themselves.

COURSE OF STUDIES.

The complete course occupies four years. Upon page 50 will be found the tabular view, showing the arrangement of the subjects. The studies of the first three years will prepare students for undertaking many engineering operations, such as the building of railroads, canals, embankments, etc. The fourth year is intended to fit them for the higher engineering constructions, as the building of arches, trussed bridges, and supporting frames of all kinds.

Each year consists of thirty-six working weeks, divided into Fall, Winter and Spring terms. The four years is divided among the different branches nearly as follows: Languages, 360 recitations. Pure Mathematics, 360 recitations. Drawing of all kinds, 840 hours. Lectures with Mathematical Analysis, 100 hours. Surveying, recitations, drawing and field-practice, 200 hours. Physics, Mechanics, Hydraulics, Astronomy, Geology, Chemistry, Mental Philosophy, Logic, Political Economy, History, altogether 680 lectures, recitations and exercises. Practice in the Chemical Laboratory, 110 hours. Engineering Projects, 240 hours. Besides the above there are various special exercises requiring time, the amount of which cannot be assigned. Each recitation requires one hour in the class-room, and to its preparation should be given an average time of three hours.

TECHNICAL STUDIES.

MATHEMATICS.—For a list of the subjects included under Pure Mathematics, see that department, page 48, as far as "Calculus of Variations." The following are those included in Applied Mathematics:

Descriptive Geometry.—Problems on the Point, Right Line and Plane; Curved Lines and Surfaces; Tangents; Intersections; Warped Surfaces; Perspectives; Shades and Shadows; Practical Problems. *Analytical Mechanics and Hydraulics.*—See School of Mechanical Engineering. *Astronomy.*—The Observatory: Instruments and their Adjustments; Determination of time, latitude and longitude; Practical Exercises. *Geodesy.*—Figure of the Earth; Surveys of the Earth's Surface; Base-lines; Parallels and Meridians; Methods of the United States Surveys; Barometric Measurements. *Land Surveying.*—Areas; Distance; Omissions and Corrections; Standard Units; Metrical System; Refraction; Curvature of the Earth; Theories of Surveying Instruments; Adjustment of Instruments. *R. R. Surveying.*—Curves; Turnouts; Crossings; Obstructions; Slope Stakes; Earth-work; Grades; Curvature of Rails; Coning of Wheels; Calculation and use of Tables.

DRAWING.—*Projection D.*—Use of Instruments in applying the Elements of Descriptive Geometry; Use of Water Colors; Isometrical Drawing; Shades, Shadows and Perspective; Drawings finished in colors and by right-line shading; Bridges; Right and Oblique Arches. *Free-hand.*—Landscapes, Buildings, etc.; Lettering and Ornamental Work. *Topographical.*—Sketching, Ink Drawings; Conventional Signs, etc. *Mapping.*—Railroad, and City and County Maps. *Architectural.*—Designing and Drawing of Engineering Structures.

NATURAL SCIENCE.—*Physics and Descriptive Astronomy.*—See Department of Physics and Astronomy. *Chemistry.*—Inorganic Chemistry and Qualitative Analysis. *Geology.*—Elements of Physiographic, Lithological, Historical and Dynamical Geology.

ENGINEERING.—*Road Engineering.*—Location and construction of Roads and Railroads: Grades; Gauges; Tunnels, etc. *Resistance of Materials.*—Elasticity; Safe Limits; Shearing Stress; Flexure and Strength of Beams and Columns; Practical Formulæ. *Trusses.*—Analysis of a variety of Roofs and Frames, with methods of obtaining the strains. *Bridge Construction.*—Warren's, Howe's, and other Trusses; Tubular and Suspension Bridges; Arches, etc. *Stone Work.*—Stone; Limes and Mortars; Foundations, etc.

SPECIAL EXERCISES.

VACATION JOURNALS.—Journals are required to be kept by each student during his second and third vacations. They must be written as often as once a week, and will contain accounts of his travels and occupations, with special reference to matters pertaining to his chosen profession, and general attention to all scientific and industrial facts. They will be presented during the Fall terms, read before the class, interesting facts discussed, and marked and credited as studies of the course.

It is recommended that students employ their vacations in engineering practice. To facilitate this important part of their preparation, students of creditable standing at the ends of the second and third years of their courses, can obtain certificates to this effect from the professor in charge.

Projects and Vacation Memoirs.—During the Spring Term of the second year, an accurate topographical survey of a locality is made by the class, and instruction given in the use of the level, preparatory to a project in Railroad Engineering, which is executed in the Fall Term of the next year. The Plane-table is used as in the U. S. Surveys.

The project consists of a preliminary survey, locations, drawings and estimates.

The Preliminary survey will consist in an examination of the locality, and in running tangent lines, with leveling and topographical sketching.

The Location will consist in running the line over the route decided upon, with all the necessary measurements and calculations for establishing the grade, setting slope stakes, determining the amount of earthwork, designing the buildings, bridges, culverts, etc.

The Drawings will include Alignment, Profile, Plans, and Sections.

The estimates will give the cost of ground, earth-work, structures, rolling stock, etc.

A Memoir will be required at the opening of the fourth year upon an allowed subject, and a Project in Engineering construction will be executed during the year. See also "Thesis," page 27.

APPARATUS.

The school is provided with both English and American instruments for the different branches of engineering practice, and for the astronomical work of higher surveying. It has numerous models for illustration of its specialties, and access to the cabinets of the other schools. To facilitate the practice in trigonometrical and land surveying, it has a specially prepared area, in which the difficulties of plane surveying are presented to the beginner as he is able to meet them, and where he is taught practical methods of overcoming them. This area is subdivided by a large number of lines, the position of which are accurately known, but not by the student. He is then required to determine the positions of the "corners" by various methods, and to calculate the enclosed areas. Other problems are given in determining inaccessible distances,

passing obstacles, avoiding local attraction, etc., for which the ground is prepared. The number of divisions is so large that no two students need have the same problem, and so accurately laid out that the correctness of the student's work can at once be determined.

An astronomical observatory for meridian observations, and of suitable size for the practical exercises in astronomy, has been erected, and is in use. An equatorial telescope has also been mounted for the use of the students. A set of Smithsonian meteorological instruments has been procured and placed in suitable positions, and observations commenced.

SCHOOL OF MINING ENGINEERING.

OBJECT AND INSTRUCTION.

This school is intended to qualify the student for undertaking mining operations of all kinds. Its instruction consists of a thorough training in the principles of theoretical and applied chemistry, of chemical and blow-pipe analysis, of assaying and metallurgy, and of the engineering operations of mining.

STUDIES AND APPARATUS.

The course of studies will be found on page 49.

The cabinet already contains a quantity of mining models, and about $2,000 worth in addition are arriving from Europe.

SCHOOL OF ARCHITECTURE.

OBJECT OF THE SCHOOL.

The aim and object of the school is three-fold, viz:

1. To enable the student to obtain a full and thorough knowledge of the scientific principles of construction, employed in the erection of the most important classes of buildings.

2. To furnish him with an extensive, varied, and thorough course of practice in the preparation of general and detail drawings, plain, shaded and colored, with the specifications, estimates, etc., necessary in practice.

3. To afford the student an opportunity of acquiring a practical knowledge of construction in all its forms by a full course of shop practice.

To skilled mechanics who can pass the examinations for admission, an opportunity will be afforded of obtaining the Lectures on History of Architecture, Elements of construction, Projection, and Architectural Drawing, in a course of a single year.

SPECIAL ARCHITECTURAL STUDIES—*Construction*—Elements of construction and finish of all classes of buildings, in brick, stone, iron and wood walls, floors, ceilings, roofs, foundations, doors, windows, etc. *Shop Practice*—Construction of models to scale, from drawings, of the various elements of buildings. *Advanced Shop Practice*—Same, from original designs by students, for stairs, etc. *Stone Work*—Preparations of working drawings for the voussoirs, for the various forms of arches, vaults and domes. *Strength of Materials*—Roof and Bridge Trusses, their stability and construction.

DRAWING—*Free-hand*—Outlines and shaded copies, drawing from the cast and object in pencil and crayon. *Water Color Painting*—In ink, monochrome, and full color, as far as applied in the coloring of elevations and perspectives. *Shades and Shadows*—By single plane method perspectives. *History of Architecture*—Preliminary, a general view and comparison of the principal styles. Detailed, a full examination of the different styles, their spirit, construction, and decoration, successes and failures, applicability to American uses. *Architectural Drawing*—Working out of full sets of working drawings from sketches furnished by the instructor. *Architectural Designing*—Original competitive designs made by class for projects designated by instructor, with specifications, estimates and details. *Æsthetics of Architecture*—Principles of taste, as applied to the decoration of the more elaborate classes of buildings, by form and color. *Estimates*—Of cost of all kinds of buildings. *Specifications*—Agreements, contracts, liabilities and rights of architects, contractors and owners. *Ventilation*—Warming by direct radiation, hot air, steam, hot water, etc. *Water and Gas Supply.*

APPARATUS.

The school possesses a fine collection of plaster casts, 150 in number, made by Christian Lehr, Berlin, mostly from architectural subjects, for use in the drawing classes.

The library is large and well selected, containing the latest and most useful works and periodicals in the English, French and German languages, for study and reference, and a fine collection of colored plates illustrative of water color painting, and the different styles of finishing architectural drawings. See Carpenter Shop, Mechanical Laboratory, page 44.

COLLEGE OF NATURAL SCIENCE.

FACULTY.

The REGENT, Professor BURRILL, Professor STUART, Professor TAFT.

SCHOOLS.

School of Chemistry; School of Natural History.

SCHOOL OF CHEMISTRY.

OBJECT OF THE SCHOOL.

The object of this school is to impart such theoretical and practical knowledge of Chemistry as will enable the student to apply succesfully the principles of the science to any of the related arts, and to fit him for the more difficult but not less attractive field of original research.

INSTRUCTION.

A tabular view of the complete course is given on page 49, course 9. Each student who takes it is expected, in connection with other studies, to work two hours daily in the laboratory, five days in the week, during four years, beginning with the second term of the first year; and, in

order to graduate, each is expected, at the close of the course, to make an original investigation, and to write a thesis. See also "Department of Chemistry."

Students who pursue Chemistry only as a part of other courses, will find it to their advantage to work at least two consecutive hours daily during such time as their specialty may require.

TEXT-BOOKS—Roscoe's Chemistry; Will's Outlines of Chemical Analysis; Fresenius' Analysis; Miller's Chemistry; Rose's Analysis.

BOOKS OF REFERENCE—Gmelin's Handbook of Chemistry; Graham-Ottos Ausfuehrliches Lehrbuch der Chemie; Watt's Dictionary of Chemistry; Lehmann's Physiological Chemistry; Percy's Metallurgy; Mitchell's Practical Assaying.

APPARATUS.

The facilities here for obtaining a practical knowledge of Chemistry are confidently believed to be unsurpassed by those of any other institution in the West. In addition to the usual apparatus found in every laboratory is an extensive series of instruments recently purchased in Europe, including a large platinum retort for the preparation of hydrofluoric acid; a Dove's polarizer, with a complete suite of accompanying apparatus: a Geissler's mercurial air pump; a so-called Hofman's apparatus for illustrating in the lecture room of the composition of compound gases; a Soleil-Scheibler's saccharometer of the most recent and approved construction; an excellent set of areometers; a Hauy's goniometer; a camera with Ross' lenses; a Ruhmkorff's coil; galvanic batteries of Grove and Bunsen; also a potassium dichromate battery, a galvanometer and a thermo electric pile; a spectroscope and a large binocular microscope; two additional chemical balances, peculiar in the shortness of their beams, and remarkable for the accuracy and rapidity with which weighing can be executed with them. A Natterer's carbon dioxide condenser, and an extensive set of metallurgical apparatus, consisting of models of furnaces, etc., have been ordered, and are expected at an early date.

The Library of the school has recently been enriched with complete sets of standard scientific works; the Annalen der Chemie und Pharmacie; the Jahresbericht ueber die Fortschritte der Chemie; Dingler's Polytecnic Journal; the Handwœrterbuch der Chemie; Percy's Metallurgy; Silliman's Journal. See Table of Contents for the list of periodicals taken.

SCHOOL OF NATURAL HISTORY.

OBJECT OF THE SCHOOL.

The aim of this School is to thoroughly educate and prepare practical geologists, collectors and curators of cabinets and museums of natural history, and superintendents of scientific explorations and surveys.

INSTRUCTION.

The einstruction is given by lectures and text books, and excursions are made under charge of the professors. The Course of Studies will be found on page 51, course 8. Vacation Journals and memoirs are required, as in the College of Engineering.

APPARATUS.

Collections of specimens and illustrative apparatus are being rapidly provided by purchase, manufacture and donation.

In BOTANY the School has an extensive and valuable Herbarium, collected by several expeditions, and largely increased from other sources; also a Lignarium exhibiting woods in section. It has a fine collection of enlarged *papier-mache* models of flowers and fruits, made by Dr. Auzoux, of Paris, and dissected to exhibit perfectly the most minute organs and tissues; among these are a pink, a papilionaceous flower, a cherry, a strawberry, a pea-pod with peas, a vetch legume, a grain of wheat, etc. The Green-houses, Arboretum and Botanical Garden are open to the students of this School. See page —.

In ZOOLOGY the Cabinets contain: a human skeleton, purchased in Paris, and a manikin made by Dr. Auzoux; skeletons of a cow and other mammals, and of birds; stuffed preparations of a large number of birds, mammals, fishes, reptiles, etc.; a dissected horse's leg and hoof, a dissected eye, trachea, and vocal apparatus, in *papier-mache*, by Dr. Auzoux; collections of shells, fossils and insects.

In ENTOMOLOGY: Dr. LeBaron, State Entomologist, required by law to make collections for the University, is preparing a full suite of specimens. A large number have been received.

In GEOLOGY: a complete collection of specimens from the State Geological survey. In MINERALOGY, PALÆONTOLOGY, ETC.; large collections, with preparations of ores.

There is also a large dissolving view camera and slides, for illustrating Astronomy, Geology, Zoology and History.

COLLEGE OF LITERATURE AND SCIENCE.

FACULTY.

The REGENT, Professor SNYDER, Professor STUART, Professor SHATTUCK, Instructor CRAWFORD, Professsr PICKARD, Professor BURRILL, Professor TAFT, Instructor PATCHIN.

SCHOOLS.

School of English and Modern Languages; School of Ancient Languages and Literature.

ADMISSION.

Candidates for admission to either of these Schools must have the qualifications prescribed on page 21, and for the School of Ancient Languages and Literature, they will, in addition, be examined in Latin Grammar, Elementary Latin Prose Composition (Harkness or Arnold), four books of Cæsar's Commentaries, six orations of Cicero, and six books of the Æneid, or other selections from the same or other authors of equal amount and like character; also, in Greek Grammar, three books of Xenophon's Anabasis, and twenty-four exercises in Arnold's Greek Prose Composition.

The object of this College is to furnish a sound and liberal education to fit students for the general duties of life, and especially to prepare them for those business pursuits which require a large measure of literary and scientific knowledge and training. It is designed to meet the wants of those who wish to prepare themselves for the labors of the press as editors or publishers, for teachers in the higher institutions, or for transaction of public business.

Students in the agricultural and other technic schools desiring to educate themselves as teachers, writers and professors in their special departments, require a knowledge of the Ancient, as well as the Modern Languages, to give them full command of all the instruments and facilities required for the highest proficiency in their studies and proposed work. The University seeks through these schools to provide for this important part of its mission—the furnishing of teachers to the industrial schools of the country, and investigators and writers for the Arts. The large liberty alllowed in the selection of the special studies of his course will permit the student to give such direction to his education as will fit him fully for any chosen sphere or pursuit.

INSTRUCTION.

The plan of instruction embraces, besides the ordinary text-book study, lectures and practical exercises in all the departments, including original researches, essays, criticisms, proof reading, and other work intended to illustrate the studies pursued, and exercise the student's own powers. It is designed to give to all students voice culture and a training in elocutionary practice.

A prominent aim in this, as in all the departments of the University, will be to teach the right use of books, and thus prepare the student for self-directed investigation and study which shall extend beyond the curriculum of his school and the period of his graduation. With this view, constant use of the already ample and continually enlarging stores of the Library will be required and encouraged. As a farther aid in this direction, the members of the advanced English classes are expected to act as assistant librarians. In this service they are able to obtain much valuable knowledge of the various departments of English Literature, of prominent authors, and the extent and scope of their writings. Of special value as an incentive to, and means of practice in, English Composition, should be mentioned *The Illini*, a monthly paper edited and published by the students of the several colleges, each of which is appropriately represented in its columns. A printing office has been provided for in the new Mechanical Building, and a press with the requisite supply of type will be procured at an early day.

In the School of Ancient Languages and Literature, the methods of instruction, without swerving from their proper aim, to impart a sufficiently full and critical knowledge of the Latin and Greek languages and writings, will make the study of these tongues subservient in a more than usual degree to a critical and correct use of the English. With this view, written translations, carefully prepared, with due attention to differences, equivalences and substitution of idioms, and the comparison and discrimination of synonyms, will form part of the entire course.

In the school of English and Modern Languages, the instruction in Modern Languages will, for the present, be confined to German and French, and will extend through two years of the course. In the first the student passes over a complete grammar and a reader, acquiring a

knowledge of the technicalities of the idiom, and a sufficient vocabulary for the use of the books of reference within his course. The second year is devoted to a critical study of the languages and philological analysis, and a course of select classic reading, composition and conversation will enter largely into the year's work. A third year, in either language, if called for, will consist of a course of Rhetoric, Composition and History of Literature, with recitations in the language studied.

The library is well supplied with works illustrating the several periods of English and American Literature. It contains at present nearly ten thousand well selected volumes, and it is constantly growing by purchase at home and abroad. Valuable American and Foreign periodicals are regularly in the Reading Room, a list of which is given in the "Miscellany."

The courses of study recommended in this College are to be found on page 52.

SPECIAL EXERCIES.

Three Vacation Journals, with notices of readings, narratives of public events, and observations on the current literature and the progress of public affairs will be required.

OTHER SCHOOLS.

SCHOOL OF MILITARY SCIENCE.

OBJECT AND INSTRUCTION.

The aim of this School is not to make professional soldiers, but to teach Military Tactics to all the students of the University, as required by the laws of Congress and the State. To such as desire it, the leading principles of Military Science will also be taught.

The Instruction in this School is given in two sub-divisions:

Military Tactics—Practical instruction, for the present confined to the infantry arm, to all able-bodied students of the University, comprising the following branches:

Manual of arms; Squad and company drill; Bayonet exercise; Skirmish drill; Battalion drill; Guard and picket duty; Evolutions of the brigade; Target practice.

The exercises are confined to three hours' drill and instruction per week. There is now formed a battalion of six companies, officered by the students of the class in Military Science, for battalion and skirmish drills. Bayonet exercises are also practiced.

Military Science—There is taught a class in Military Science and Art, as far as is necessary for the duties of officers of the line. Students are

admitted into this class after having participated at least two terms in the general military exercises, and shown the proficiency and ability necessary to a utilization of the instruction thus received. The members of this class officer the companies, and act as drill sergeants and instructors for the lower classes.

The instruction and exercises occupy but five hours each week, arranged so as not to interfere with any courses of study, making it possible for the members of other schools to engage in it as an optional study. The course of studies will be found on page 49. It will be confined to two years' instruction until further facilities and teaching force can be obtained.

APPARATUS.

The Drill Hall is 124 by 75 feet. 350 rifle muskets are ranged around it in racks. There are also cavalry swords, fencing swords and muskets, an armory with a growing collection of arms, and models of arms and projectiles for practical instruction. The platform is large enough to accommodate over 250 visitors, and the galleries will hold 100 more, besides the University band. Below the Armorer's Room is the Artillery Room, and above it the Band Room.

The parade ground is shown on page 15. The University Library contains books on Military Science, Military History and Engineering.

A Gymnasium, at present in the Drill Hall, has been furnished with apparatus, and a club has been organized under a skilled leader.

The recent act of the Legislature requires that all male students shall take part in the Military Drill, unless exempted by physical disability, and wear the University Uniforms as prescribed.

SCHOOL OF COMMERCE.

The course in this School is given on page 49; the first term will be occupied in teaching the principles of book-keeping in general; the second, their application to special lines of business, general business forms and papers; and the third to the higher operations of a counting house, commercial law and political economy. Students who wish to prepare for a commercial career, and also acquire a general education, may extend this course through two or more years, by taking such collateral studies as their contemplated vocation may render desirable. The studies recommended for this purpose are: English and German, Mathematics, one or two terms of Chemistry (for druggists, etc.) and History, Political Economy and Commercial Law.

SCHOOL OF DOMESTIC SCIENCE AND ART.

The purpose of this School is to provide a full course of instruction in the arts of the household, and the sciences relating thereto. No industry is more important to human happiness and well-being than that which makes the home. And this industry involves principles of science, as many and as profound as those which control any other human employment. It includes the architecture of the dwelling house, with the laws of heating and ventilation; the principles of physiology and hygiene, as applied to the sick and the well; the nature, uses, preservation and preparation of animal and vegetable food for the healthful and for invalids; the chemistry of cooking; the uses, construction, material and hygiene of dress; the principles of taste as applied to ornamentation, furniture, clothing and landscapes; horticulture and culture of both house and garden plants; the laws of markets; and the usages of society and laws of etiquette and social life. It is intended eventually to develope the course to cover the topics named and whatever else may pertain to domestic economy.

The instruction in this School will be developed as fast as practicable. The full course will very nearly correspond with the course in English and Modern Languages, page 52, except that in the second and third years, lectures on the foregoing topics will take the place of the mathematical studies. Drawing is taught by a skilled instructor, music can be had as an "extra," and Painting will be provided for.

Negotiations are in progress to open a class in Wood Carving, Engraving and Designing, the coming year.

DEPARTMENTS.

EXPLANATIONS.

A department of study embraces a single branch of learning. The following statements are intended to show more fully than is done under the Schools of the University, the extent of the instruction given in the different branches. It will be seen that some of the branches can be pursued further than is required in any of the schools. The numerals indicate years corresponding to those of some of the courses, pages 49 to 52.

AGRICULTURE.

This department embraces a thorough course of instruction in the theory and practice of land culture and cropping in its several varieties; animal husbandry, including stock and dairy farming; sheep and swine husbandry; and the principles of stock breeding. It includes also the principles of the amelioration of soil, veterinary science, and the general management of farming estates. See also pages 38 and 44.

2. *The Farm*—Its measurements and mapping; Subdivisions—meadows, pastures, orchards, woodlands, gardens, etc., fences, hedges. Soil—Chemical elements and chemical treatment, classification and mechanical treatment, plowing, etc. *Fertilizers*—Composition, manufacture, preservation and application. Drainage. *Plant Culture*—Structure and physiology of plants; Classes of useful plants, their characteristics, varieties and values. Wheat culture; maize, grass and root culture. Insects injurious to vegetation.

3. *The Farm*—Farm implements—principles of structure and use. Road making. *Animal Husbandry*—Breeds and varieties of neat cattle, horses, sheep and swine; Principles of breeding, rearing, training, fattening, etc.; Chemical composition of food, and preparation of the several varieties; Poultry; Bees; Veterinary surgery and medicine. *Fruit Growing. Book-keeping*—Farm book, herd book, etc. *Rural Law*—Tenures and conveyances of land, highways, cattle, fences, noxious weeds, etc.; Laying out estates.
4. *Agricultural Economy*—The relation of agriculture to the other industries and to commerce; The several branches of agriculture; Farm buildings; Climate; Influence of light, heat and electricity on soils and vegetable growth; Foreign and ancient farming; Dairy farming and general farm manufactures—cheese, butter, cider, vinegar, etc.; History and literature of agriculture.

The instruction is aided by, and illustrated with practical exercises on the Experimental and Stock Farms, and in the management of fine and graded stock of several varieties. But it must be fully understood that it is no part of the business of the department to teach the mere manual processes of plowing, hoeing, harvesting, etc.; these can be learned in the employ of some good practical farmer, such as may be found in every township.

HORTICULTURE.

The studies in this department will include the formation, management and care of gardens, hot-beds, propagating-houses, green-houses, nurseries, orchards, tree plantation and ornamental grounds. The instruction will be from text-books and by lectures in the class-room, together with illustrations and applications in the propagating and green-houses, botanical garden and arboretum, and upon the vegetable and fruit grounds.

2. Composition and classes of soils, with reference to their uses; fertilizers, vegetable physiology and laws of growth of plants; chemical treatment of soils; manufacture and application of manure; laying out and mapping of grounds; mechanical treatment of soils; drainage; insects injurious to vegetation.
3. Fruit growing; planting and treatment of orchards; forest culture; management of nurseries; propagating, grafting, etc; plans of orchards, gardens, etc.; records; management of market and vegetable gardens; small fruit culture.
4. Care of hot and green-houses; propagating houses; conservatories; floriculture; garden architecture; ornamentation; green-house work; landscape gardening; ancient and foreign horticulture.

ENGINEERING AND ARCHITECTURE.

See the Schools of Engineering and the School of Architecture, pages 26 to 35; also the courses of study on pages 49 and 52.

CHEMISTRY.

To accommodate those who have a particular object in view, this department has three special courses of laboratory work arranged. See also pages 36 and 37, and list of Periodicals.

Agricultural.

1. Inorganic, organic, and agricultural chemistry; qualitative and quantitative analyses of salts; chemical physics.
2. Analyses of clays, marls, mineral waters, manures, soils, and vegetable products.
3. Isolation of organic acids and bases; Estimation of hydrogen, carbon, sulphur, sugar, tannin, etc.
4. Analysis of air, illuminating gas, etc.; Study of poisons.

Technical and Pharmaceutical.

1. The same as Agricultural, except Agricultural Chemistry.
2. Quantitative analysis of dolomite, marl, silicates and ores; Preparation of acids, alkalics and salts.
3. The same as in Agricultural, with electroplating, bleaching, dyeing, tanning and assaying.
4. Same as in Agricultural, with photography.

Metallurgical.

1. Inorganic chemistry; Chemical physics; Qualitative and blow-pipe analyses of alloys, etc.
2. Analysis of gold, silver, copper and other ores, also slags of furnaces; Assays of bullion, and ores of zinc, antimony, tin, etc.
3. Analysis of Iron; Steel, nickel, cobalt, etc.; Fuel; Electro-metallurgy; Preservation of wood; Lime, mortar and cements.
4. Same as in Agricultural.

NATURAL HISTORY.

The studies in this department begin with the second term in the Colleges of Natural Science and Agriculture. The increased prominence given to this class of studies by the new school laws of the State, will be met by increased efforts to make the instruction as thorough and practical as possible.

1. *Botany*—Essential parts of plants; Modifications of the root, stem, leaves, flowers, fruits, etc.; Laws of Morphology and Terminology; Structural, Physiologic and Systematic Botany; Microscopic Vegetable Anatomy; Life-work of plants; Classification and distribution of the flowering plants.
2. *Botany*—Flowerless plants; Anatomy and physiology of injurious plants; Lectures upon vegetable physiology; Practical work with microscopes. *Lectures* introductory to the study of Natural History; Illustrated lectures on Human Anatomy and Physiology. *Systematic Zoology*—Principles of Classification; Characteristics of Departments, Classes, Orders, etc. *Entomology* of injurious and beneficial insects.
3. *Comparative Anatomy*—Modification of plan by which animals are adapted to the various conditions of existence, in respect to respiration, circulation, embryology, peculiar modes of re-production and development, geological and geographical distribution, etc. *Geology*—Forces known to produce observed phenomena in the crust of the earth; Characteristics of the rocks, stratified and unstratified, constituent elements, crystalline structure, etc. Historic Development of the Earth, as revealed by Palæontology, or the entombed Fossils of the primeval inhabitants.
4. *Geology*—History of the origin and progressive phases of the Science. *Physical Geography and Meteorology*—Principles of the phenomena manifest in the Life of the Earth, or of the Earth's Physiology; Topography and Geology of Illinois, with excursions of observation and practical work.

ENGLISH LANGUAGE AND LITERATURE.

In the arrangement of the studies in this department, the endeavor is to present a thorough and extended drill in grammatical and philological study, and in the authors and history of the English language, affording a training equivalent to the ordinary studies of the classical languages. The course extends through three years, but may be shortened according to the ability and preparation of the student. Weekly essays, forensics, plans and criticisms are required. Instruction in Anglo-Saxon will be given to those who desire it. See the College of Literature and Science, and the courses of study in Languages; also, "Library" and "Periodicals."

Sources and History of the English Language; Advanced Grammar; Principles of Composition; Philological and Grammatical Analysis of Authors; History of their times and Contemporaries.

Rhetoric, Reading and Analysis of Shakespeare and the early Dramatists, Spenser, Chaucer, Gower, etc.

History of English and American Literature; Elements of Criticism; Principles of Taste; Methods of Philological Study, etc.

GERMAN.

This language, being of practical value to the farmer and artisan, is taught thoroughly. The first year should enable the student to read German scientific works; the second year completes the course, and should make him thoroughly acquainted with the language. Books of reference: Becker's Deutsche Grammatik; Grimm's Deutsche Sprache; Grimm's and Sanders' Dictionaries. See "Periodicals."

1. Comfort's Complete German Course. Etymology completed; Conversational Reader commenced. Syntax; Reader completed.
2. Review of Etymology; Classic Reader; Review of Syntax; Schiller's Jungfrau von Orleans; Goethe's "Iphigenia." Heyse's Leitfaden der Deutschen Sprache; German Composition and Conversation; Lectures on the German Language and Literature. Reading of German Papers. A third year of German Rhetoric and Composition, Literature and History, will be added to this course.

FRENCH.

The studies of the first year should enable the student to read French Scientific Works, and in the second he should become well acquainted with the language. See list of "Periodicals."

1. Review of Grammar; Classic French Literature. Modern French Literature, novels, comedies, etc. Composition; History of French Literature; written criticisms of French authors, weekly.
2. Etymology; Exercises in pronunciation. Written translations, English into French; Select readings. Syntax; Translations; French Composition.

LATIN.

(Other authors may be substituted for those given below.)

1. Cicero d'Amicitia; Livy; Odes of Horace; Roman History; Archæology; Prose Composition; Prosody; Written Translations and Comparison of parallel and equivalent idioms.
2. Horace—Satires and Ars Poet; Juvenal; Quintilian; Roman History and Archæology, continued.
3. Cicero d Officiis: Tacitus; Origin and Structure of the Language; Relations of the Latin and English Languages.

GREEK.

(Other authors may be substituted for those below given.)

1. Xenophon's Anabasis—4th book; Herodotus; Thucydides.
2. Iliad and Demosthenes de Corona.
3. Selections from Greek Tragedy; Xenophon's Memorabilia; Plato; Greek Philosophy.

HISTORY AND SOCIAL SCIENCE.

The studies afford a general view of the history, social organization and progress of the race. They embrace also the history of the Arts and Sciences, and of Civilization, the principles of civil polity and law, the philosophy of history, and the principles of political economy and constitutional law. The instruction is given chiefly by lectures, with readings of specified authors, and the study of historical geography and chronology. The course occupies two terms in the first, and three each in the third and fourth years of the University Courses.

1. Discovery, settlement and colonial history of the United States, with notices of other American States; American Geography, History of the United States from the time of the Revolution—two lectures or lessons a week.
3. Ancient history of Greece and Rome, with notices of other ancient nations; Ancient Geography, Mediæval History, Modern History, general European History, European Geography.
4. Constitutional History of England and of the United States—four lectures a week. History of Civilization, analysis of historical forces and phenomena, notices of the arts and of the inductive sciences, political economy.

PHILOSOPHY AND LOGIC.

The studies of this department are taught chiefly by lectures, with readings of specified authors and written essays.

4. *First Term*—Mental Philosophy. Analysis and classification of mental phenomena; Theories of perception, imagination, memory, judgment, reason, intuition. The æsthetic. Phenomena of dreaming, clairvoyance and insanity. Doctrines of the absolute and the unconditioned. Philosophy of education. *Second Term*—Moral Philosophy—three lectures a week. Theory of conscience; Nature of moral obligation; Moral Feeling; The Right; The Good. Practical ethics; Duties. Formation of character. Logic, formal and inductive—two lectures a week. *Third Term*—History of Philosophy. Ancient schools of philosophy; Scholasticism; Modern schools of philosophy; Influence of philosophy on the progress of civilization and on modern sciences and arts. Inductive logic.

PURE MATHEMATICS.

1. *Geometery*—Facts and principles, demonstrated, illustrated and applied, with reference to right-lines, circles, angles, triangles, polygons, planes, solid angles, prisms, pyramids, cylinders, cones and spherical surfaces, and the measurement of their lengths, areas and volumes. *Algebra*—Powers, roots and radicals of any degree; Binomial Theorem, Properties and summation of series, Exponential quantities, Logarithms, General theory and methods of solving equations. *Advanced Geometry*—Application of Algebra to Geometry, Transversals, Harmonic Proportion, etc. *Trigonometry*—Analytical, Plane and Spherical. Relations between the functions of an arc, Formation and use of tables, Solution of plane and spherical triangles.
2.—*Analytical Geometry*—Construction of equations by means of co-ordinates; Discussion in a plane of the point, right-line, circle, ellipse, parabola and hyperbola; Higher plane curves, cycloid, cissoid of Diocles, etc.; *Differential Calculus*—Differentials of algebraic and transcendental functions, Maclaurin's Theorem, Taylor's Theorem, Maxima and minima of functions, Equation of Tangents, normals, sub-tangents, sub-normals, etc.; Differentials of lines, surfaces and volumes. *Integral Calculus*—Integration of known forms and of rational fractions, rectification of curves, quadrature of plane areas and surfaces of revolution, and cubature of solids of revolution.
3.—*Analytical Geometry*—Loci in space; Surfaces of the second order. *Differential Calculus*—Differentials and maxima and minima of functions of two or more variables. Osculatory curves, radius of

curvature; Evolutes, involutes, envelopes; Discussion of algebraic and transcendental curves and surfaces; Tangent plane and normal, partial differentials of surfaces and volumes. *Integral Calculus*—Integration of transcendental and irrational differentials. Differentials of higher orders, Differential equations, Rectification, quadrature and cubature in general; Calculus of Variations.

PHYSICS.

A Physical Laboratory has been established in the new building, and amply furnished, by special state appropriation, with apparatus for experimental investigation. Here the student, in connection with the study of the principles, carefully repeats many of the most important experiments. Special attention is given to molecular force, properties of matter, laws of undulation, spectrum analysis, laws of heat, electricity and magnetism.

Chemical Physics is given in a special course of lectures.

ASTRONOMY AND GEODESY.

Temporary arrangements have been made for Observatory Practice by the erection of a small observatory and the mounting of instruments of convenient size for students' use. Descriptive Astronomy is given by lectures, with Lockyer's Astronomy for a text-book. The Equatorial Telescope is in constant use during favorable weather. Practical Astronomy is given by lectures, practical work with the Meridian Circle, Sextant, Theodolite, etc., and Astronomical Calculations. Geodesy is given by lectures, practice and calculations. Some first-class instruments have been ordered and trigonometrical stations will be erected.

MISCELLANY.

DRAWING.

Complete Courses in Geometrical and Projection, Architectural Engineering, Mechanical and Free-hand Drawing are given. Free-hand drawing is giving by personal instruction in the execution, with pencil and crayon, of "studies" by celebrated French and German artists, and in drawing from plaster models and other objects. The selections are made from a large and valuable stock purchased in Europe. Painting in Oil and Water colors will be provided for.

MUSIC.

Instruction is provided for on the Piano and Organ. This is charged for at the rate of $10 for a term of twenty lessons; and if a University instrument is used for practicing, the charge per term for such use is $2 for each hour daily practice. The class meets weekly for public practice, and at the end of the term they are examined in public and marked, as in the other classes.

EXAMINATIONS.

Frequent examinations will be held to test progress in study, and to letermine each student's fitness to remain in his classes. The University nsists on thoroughness in its own proper studies.

Regular examinations of all the classes are made at the close of each term. A record is kept of the standing of each student, and from this his final certificate of graduation is made up.

CERTIFICATES.

Under the law, any one who remains a year at the University, and maintains a satisfactory standing in his studies and in character, is entitled, on leaving the University, to a certificate of studies and standing.

The full certificate of the University will be given to those only who have satisfactorily completed a *four years'* course in some one of the colleges. Each certificate will state the college and course pursued, the actual studies taken, and the number of terms, with standing in each marked on a scale of 100. Hence, each diploma will have just so much value as the student shall have given it, by a more or less thorough mastery of his studies.

SUPERINTENDENT'S CERTIFICATES.

To prevent pecuniary loss to those living at a distance, not prepared to enter the University, but who might come, hoping to pass the examinations for admission, the following arrangement has been made:

County Superintendents of Schools will be furnished with questions and instructions for the examination of candidates, and those who pass creditably will, when they present the Superintendent's certificate to that effect, be admitted to the University Classes. They will pay their fees, but their Matriculation Papers may be withheld until they shall have passed the regular examinations of the first term of their attendance.

Applicants not personally known to a Superintendent must present to him introductory letters, and satisfy him as to their moral character.

DORMITORIES AND BOARD.

There are in the several University Buildings about one hundred private rooms, which are rented to the students who first apply. Each room is of ample size for two students, and is without furniture, as it is thought best that the students shall provide their own.

There are many boarding houses near the University, where either table board, or board and rooms can be obtained, with the advantages of the family circle. Boarding clubs are also formed by the students, by which the cost of meals may be reduced to $2 per week. Many students prefer to prepare their own meals, and thus reduce expenses still farther. Coal is purchased at wholesale, and furnished to the students at cost. For estimated expenses see page 48.

LADIES' BOARDING HALL.

Until the old University building can be thoroughly refitted and devoted to the use of lady students, and to the School of Domestic Science and Art, and other schools for women, young ladies may find suitable accommodations and care at the Hall, which has been opened near the University. This affords good rooms for about forty students, with parlor, dining room, kitchen, laundry and music room. The whole is under the charge of a competent steward and experienced matron. As the number who can be accommodated is limited, all who desire rooms should apply early to the steward, Rev. A. N. Page; no room will be reserved after the opening of the term. The private rooms, for two students each, are furnished with bedsteads, wardrobe, wash-stand, two chairs, table and stove. Those desiring it may have rooms fully furnished. The charges for room and board for the coming year will be as follows: Board, with unfurnished room, $3 a week; board, with rooms furnished as above, $3.50; board, with rooms fully furnished, $4. *Payment* must be made *monthly in advance.*

LABOR.

Labor is not compulsory, but is furnished as far as possible to all who desire it. It is classified into Educational and Remunerative labor.

Educational Labor is designed as practical instruction, and constitutes a part of the course in several schools, and students are credited with their proficiency in it as in other studies. Nothing is paid for it.

Remunerative Labor is prosecuted for its products, and students are paid what their work is worth. Those desiring enployment must join the *Labor Classes*, which go out four hours each alternate day. The maximum rate paid for farm, garden and shop labor is *ten cents*, and for that about the buildings and ornamental grounds, *eight cents per hour.* Efficient students, who desire to earn more money, can often obtain work for extra hours; or they may be allowed to work by the piece or job, and thus, by diligence or skill, secure more.

Some students, who have the requisite skill, industry and economy, pay their entire expenses by their labor; but, in general, young men cannot count upon doing this at first, without a capital to begin with, either of skill, or of money to serve them till a degree of skill is acquired. With this, however, and with a judicious use of time during vacations, many students have been able to meet their entire expenses.

STUDENTS' ORGANIZATIONS.

UNIVERSITY BATTALION.—Commander, Colonel Edward Snyder; Captains, W. W. Wharry, I. P. Dobson, James Faulkner, William Watts, W. S. Everhart, F. M. Palmer. *University Cornet Band.*—Fifteen instruments; Henry S. Dunlap, Leader.

LITERARY SOCIETIES.—*Adelphic.*—C. P. Jeffers, Pres.; W. Mackay, Sec. *Philomathean.*—D. Mackay, Pres.; H. H. Tyndale, Sec.

SCIENTIFIC ASSOCIATION. — C. C. Syford, Pres.; E. Walker, Sec. *Alethenai.*—Miss M. E. Stewart, Pres.; Miss Jennie Baker, Sec.

CHRISTIAN ASSOCIATIONS.—*Y. M. C. A.*—C. P. Jeffers, Pres.; R. H. Hannah, Sec.

MUSICAL SOCIETIES.— *University Choir.*— C. E. Elliott, Chorister; Miss A. Cheever, Organist. *Apollothemesians.*— —— ———, Pres.; —— ———, Sec.

GYMNASIUM CLUB.—D. Barnard, Leader; James Faulkner, Treas.

STUDENTS' GOVERNMENT.

EXECUTIVE.—J. L. Pierce, Pres.; A. E. Barnes, Sec.; W. Mackay, Marshal.

JUDICIARY.—F. P. Dobson, Chief Justice; J. R. Mann and D. E. Barnard, Associate Justices: F. E. Wright, Prosecuting Attorney.

LEGISLATIVE.— George Kenower, President of Senate; C. Weston, Secretary of Senate.

UNIVERSITY UNIFORMS.

Under the authority of the act of incorporation, the Trustees have prescribed that all the male students, after their first term, shall wear the University uniform. The University cap is to be worn from the first. This uniform consists of a suit of cadet grey mixed cloth, of the same color and quality as that worn at West Point, and manufactured by the same establishment. Students can procure them ready-made on their arrival here. The University cap is of dark blue cloth, and is ornamented in front with the initials I. I. U. surrounded with a silver wreath. Students will always wear their uniforms on parade, but in their rooms and at recitations may wear other clothing.

FINE ART GALLERY.

Citizens of Champaign and Urbana have contributed over $2,000 for casts in plaster and plastique of some of the most celebrated, ancient and modern statuary, to be selected this summer in Rome, Florence, Paris, London, and other great art centers. The collection will also include a large number of busts of celebrated men, and copies of architectural and other sculptures. The University already has a large collection of valuable pictures, portraits and photographs, of large size, of famous places, paintings and buildings, which will be increased by new purchases to be made in Europe. A beautiful hall nearly 60 by 80 feet has been set apart to receive these collections. The value of the fine arts in general education, and in their reactive influence on the useful arts, is just beginning to be appreciated in this country.

PERIODICALS IN THE LIBRARY.

Agricultural and Horticultural—American Agriculturist, Chemische Ackersmann, Cultivator and Country Gentleman, California Journal, Journal d'Agriculture, Michigan Farmer, New England Farmer, Northwestern Farmer, National Live Stock Journal, Prairie Farmer, Rural New Yorker, Rock River Farmer, Southern Cultivator, Viehsucht, Western Agriculturist, Western Rural, Willamette Farmer, Gardeners' Monthly, Horticulturist, Revue Horticole, Farmers' Home Journal. *Engineering*—American Builder, Le Moniteur des Architects, Manufacturer and Builder, Mining Journal — London, Railroad Gazette, Railway Review, Scientific American, The Builder — London, The Work-

shop, Van Nostrand's Eclectic Engineering Magazine. *Scientific*—American Chemist, American Journal of Science, American Naturalist, Annalen der Physic, British Microscopic Journal, British Journal of Science, Comptes Rendus, Geological Magazine — London, Journal of the Franklin Institute, Nature, Polytechnishe Journal, Philosophical Magazine — London, Popular Science Monthly, Journal of Chemistry, Revue Scientifique. *Literary*—Edinburgh Review, London Quarterly, The Nation, North American Review, North British Review, Revue des Deux Mondes, Scribner's Magazine, Revue Politique et Literaire. *Philological*—Archiv fuer Studium der Neueren Sprachen und Literatur. *News*—Champaign County Gazette, Centralia Sentinel, Illinois State Journal, Illinois Staats Zeitung.

CALENDAR FOR 1874.

Baccalaureate Address in University Chapel	June 7
Third Term Examinations commence	June 5
Examinations for Admission, and Closing of Third Term	June 9
Class Day	June 8
Society Addresses	June 9
Commencement Day, Wednesday	June 10

Vacation of Fourteen Weeks.

Examinations for Admission	September 16
First or Fall Term begins	September 17
First Term Examinations begin	December 21
Closing of the First Term	December 23

Vacation of Two Weeks.

FOR 1875.

Examinations for Admission to Advanced Classes	January 5
Opening of the Second or Winter Term	January 6
Anniversary Day	March 11
Second Term Examinations begin	March 22
Second Term closes	March 24
Third or Spring Term begins	March 25
Third Term Examinations commence	June 3
Baccalaureate Sermon in University Chapel	June 6
Class Day	June 7
Competitive Speaking; Society Addresses	June 8
Commencement Way, Wednesday	June 9

Vacation of Fourteen Weeks.

EXPENSES.

The Tuition is free in all the University classes.

The Matriculation Fee entitles the Student to membership in the University until he completes his studies, and must be paid before he enters. Amount	$10 00
The Term Fee for Incidental Expenses is, per Student	5 00
Room rent in a University Dormitory, each Student per term	4 00

All bills due the University *must be paid, and the receipt* of the Treasurer *shown* to the Regent *before the Student can enter* the classes.

The following are the estimated maximum and minimum annual expenses, exclusive of books and clothing, of a residence for thirty-six weeks at the University:

	Max.	Min.
Term Fees and Room Rent for each student	$27 00	$27 00
Table board in boarding houses and clubs	144 00	72 00
Fuel and light	15 00	10 00
Washing, at 75 cents per dozen	27 00	13 50
Total annual amount	$213 00	$122 50
Board and room in private houses, per week	$6 00	$4 00

COURSES OF STUDY RECOMMENDED BY THE FACULTY OF THE UNIVERSITY.

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EXPLANATIONS.

The following are the Courses arranged for the schools of the University, as stated upon page 20. Students who are to graduate in a school must follow closely, and in the proper order, the studies assigned to them. Those studies of a course which are collateral are separated from each other by semicolons, which are reserved for that purpose. Where two or more studies are taken up consecutively, the time devoted to each is indicated by the proper number, followed by w. for weeks. For each study not otherwise marked, the student is expected to be in prompt and regular attendance in the proper University Class Room, during one assigned hour each school day. Variations from this are indicated by placing after the study simply a numeral stating the number of hours per week required. For "Special Exercises" the time cannot be given.

COURSE 0; THE ELECTIVE COURSE.

(Refer to page 19, under "FREEDOM IN CHOICE OF STUDIES.")

COURSE 1; SCHOOL OF MILITARY SCIENCE.

First Year.

1. School of the company. Bayonet fencing. 2. Battalion and skirmish drill. Bayonet fencing. 3. Brigade and division evolutions. Target practice, and theoretical instruction on firearms,

Second Year.

1. Mllitary administration. Reports and returns. Army regulations and military laws. Sword fencing. 2. Mahan's outpost and picket duty. Sword fencing. 3. Art of war. Strategy and grand tactics. Organization of armies.

Third Year.

1. Artillery practice. Drill at the cannon. Field artillery. 2. Military engineering. Cavalry tactics—theoretical. 3. Military fortifications. Field and permanent bridges and roads. Military history and statistics.

COURSE 12; SCHOOL OF COMMERCE.

First Year.

1. Book-keeping by single and double entry. Theory of mercantile accounts, and the several principal and auxiliary books. Penmanship. Commercial calculations; English or German; Mathematics, Chemistry or History. 2. Partnership accounts. Commission and shipping. Farm books. Business forms and papers. Notes, drafts, exchange, endorsements. Bills of lading. Accounts current. Account sales. Inventories, invoices, etc. Commercial correspondence; English or German; Mathematics or Chemistry. 3. Banking. Brokerage. Railway accounts; Political Economy or Commercial Law; English, German or Mathematics.

COURSE 2; SCHOOL OF AGRICULTURE.

First Year.

1. Plane Geometry; Chemistry; English or Latin; History, 2. 2. Botany; Chemistry; English or Latin; History, 2. 3. Botany; Chemical Laboratory Practice, 10; English or Latin.

Second Year.

1. Farm Surveying, 10, 7w. Soils, 7w; Cryptogamic Botany; French or Analytiatl Cemistry, 10. 2. Chemistry of Soils and Manures, 2; Farm Mapping, 6; Zoology; French or Analytical Chemistry, 10. 3. Drainage, 6w. Mechanical Treatment of Soils, 5w; Entomology; French, or Analytical Chemistry, 10.

Third Year.

1. Orchard Fruits; Anatomy and Physiology; German or History. 2. Animal Husbandry; Geology; German or History. 3. Agricultural Book-keeping; Rural Law and Economy; German or History.

Fourth Year.

1. Dairy Farming and Farm Manufactures; Mental Philosophy or Constitutional History; History of English and American Literature. 2. Veterinary Surgery; Physical Geography and Meteorology; Rural Architecture. 3. Landscape Gardening; Geology of Illinois or Political Economy; History of Philosophy or Logic.

COURSE 3; SCHOOL OF HORTICULTURE.

First Year.

1. Plane Geometry; Chemistry; English or Latin; History, 2. 2. Botany; Chemistry; English or Latin; History, 2. 3. Botany; Chemical Laboratory Practice, 10; English or Latin.

Second Year.

1. Farm Surveying, 10, 7w. Soils, 7w.; Cryptogamic Botany; French or Analytical Chemistry, 10. 2. Chemistry of Soils and Manures, 2; Farm Mapping, 6; Zoology; French or Analytical Chemistry, 10. 3. Drainage, 6w. Mechanical Treatment of Soils, 5w; Entomology; French or Analytical Chemistry, 10.

Third Year.

1. Orchard Fruits; Anatomy and Physiology; German or History. 2. Propagation of Plants; Geology, German or History. 3. Small Fruits and Vegetables; Rural Law and Economy; German or History.

Fourth Year.

1. Green Houses; Mental Philosophy or Constitutional History; History of English and American Literature. 2. Garden Architecture; Physical Geography and Meteorology; History of Civilization. 3. Landscape Gardening; Geology of Illinois, or Political Economy; History of Philosophy or Logic.

COURSE 4; MECHANICAL ENGINEERING.

First Year.

1. Advanced Algebra; Drawing, 10w; Descriptive Geometry, 4w; English or French; History, 2. 2. Advanced Geometry; Free-hand Drawing, 10; English or French; History, 2. 3. Plane and Spherical Trigonometry; Botany, 10; English or French, History, 2.

Second Year.

1. Designing and Drawing, 10, Advanced Descriptive Geometry and Drawing; German or French. 2. Shop Practice and Drawing, 10; Analytical Geometry; German or French. 3. Shop Practice, 10; Calculus; German or French.

Third Year.

1. Principles of Mechanism; Calculus; Principles of Chemistry; Vacation Journal and Memoir. 2. Analytical Mechanics; Physics; Shades, Shadows and Perspective, 10. 3. Analytical Mechanics, 3; Descriptive Astronomy, 4; Physics; Chemical Laboratory Practice, 10.

Fourth Year.

1. Resistance of Materials, and Hydraulics; Thermodynamics and Pneumatics. Trusses; Geology of Mental Philosophy; Vacation Journal and Memoir. 2. Prime Movers; Millwork; Finished Machine Drawings, 10; History of Civilization; Experimental Physics, 2. 3. Millwork and Machines; Designs and Estimates, 10; Political Economy; Thesis.

COURSE 5; SCHOOL OF CIVIL ENGINEERING.

First Year.

1. Advanced Algebra; Drawing, 10w. Descriptive Geometry, 4w, 10; English or French; History, 2. 2. Advanced Geometry; Free hand Drawing, 10; English or French; History, 2. 3. Plane and Spherical Trigonometry; Free-hand drawing, 10; English or French; History, 2.

Second Year.

1. Land Surveying and Drawing, 10; Higher Descriptive Geometry and Drawing; French or German. 2. Typographical and Right-line Drawing, 10; Analytical Geometry; French or German. 3. Topographical Surveying and Drawing, 10; Calculus; French or German.

Third Year.

1. Railroad Surveying and Drawing; 10; Calculus; Principles of Chemistry; Vacation Journal. 2. Analytical Mechanics; Physics; Shades, Shadows and Perspective, 10. 3. Analytical Mechanics, 3; Descriptive Astronomy, 4; Physics; Chemical Laboratory Practice, 10.

Fourth Year.

1. Resistance of Materials, Hydraulics; Practical Astronomy, Geodesy, Trusses; Geology or Mental Philosophy; Vacation Journal and Memoir. 2. Bridge Construction; Finished Engineering Drawings, 10; History of Civilization. 3. Stone Work, 8; Architectural Drawing 8; Political Economy; Thesis.

COURSE 6; SCHOOL OF MINING ENGINEERING.

First Year.

1. Advanced Algebra; Descriptive Geometry and Drawing, 10; English or French; History. 2. Advanced Geometry; Free-hand Drawing, 10; English or French; History, 2. 3. Plane and Spherical Trigonometry; Free-hand Drawing, 10; English or French; History, 2.

Second Year.

1. Surveying and Drawing, 10; Advanced Descriptive Geometry; German. 2. Topographical and Right-line Drawing, 10; Analytical Geometry; German. 3. Topographical Surveying and Drawing, 10; Calculus; German.

Third Year.

1. Railroad Surveying and Drawing, 10; Calculus; Principles of Chemistry; Vacation Journal and Memoir. 2. Analytical Mechanics; Physics; Chemical Laboratory Practice, 10. 3. Mineralogy and Crystallography; Physics; Descriptive Astronomy, 4; Chemical Laboratory Practice, 10.

Fourth Year.

1. Hydraulics, 1; Practical Astronomy and Geodesy, 8; Chemical Laboratory Practice; 10; Geology or Mental Philosophy; Vacation Journal and Memoir. 2. Assaying; Mining Engineering; Metallurgy. 3. Mining Drawings, 10; Metallurgy; Geology of Mining Districts; Thesis.

COURSE 7; SCHOOL OF ARCHITECTURE.

First Year.

1. Advanced Algebra, 5; Projection Drawing, 10; English or French, 5; Shop Practice, 10; Lectures on U. S. History 2 hours per week. 2. Advanced Geometry, 10; Free-hand Drawing, 10; English or French, 5; Shop Practice, 10. 3. Trigonometry, 5; Free-hand Drawing, 10; English or French, 5; Shop Practice, 10.

Second Year.

1. Elements of Construction, 10; Descriptive Geometry, 10; Surveying and Levelling, 5; German, 5. 2. Advanced Shop Practice, 10; Analytical Geometry, 5; Water-color Painting, 10; German, 5. 3. History of Architecture, Preliminary, 5: Calculus, 5; Architectural Drawing, 10; German, 5.

Third Year.

1. History of Architecture, 5; Calculus, 5; Architectural Drawing, 10; Chemistry, 5. 2. History of Architecture, 5; Shades, Shadows and Perspective, 10; Physics, 5. 3. History of Architecture, 5; Architectural Designing, 10; Physics, 5.

Fourth Year.

1. Strength of Materials; Trusses, 5; Estimates, 5; Architectural Designing, 10; Geology or Mental Philosophy, 5. 2. Bridges, 5; Heating and Ventilation, 2; Specifications, Agreements, etc., 3; Architectural Designing, 10. 3. Stone Work, 10; Æsthetics of Architecture, 5; Thesis.

COURSE 8; SCHOOL OF NATURAL HISTORY.

First Year.

1. Inorganic Chemistry; Geometry; English or Latin; Chemical Physics, 2. 2. Botany; Algebra; English or Latin. 3. Advanced Botany; Trigonometry; English or Latin.

Second Year.

1. Cryptogamic Botany; Anatomy and Physiology; French. 2. Zoology; French; Drawing, 10, or Laboratory Practice, 10. 3. Special Entomology; French; Drawing, 10, or Laboratory Practice, 10.

Third Year.

1. Mineralogy; Ancient History; German. 2. Geology; Medieval History; German. 3. Lithological Geology; Modern History, or Drawing, 6, and Descriptive Astronomy, 4; German.

Fourth Year.

1. History of Geology; Comparative Anatomy; Mental Philosophy. 2. Meteorology and Physical Geography; Physics; History of Civilization. 3. Geology of Illinois; Excursions; Political Economy; Physics; Logic.

COURSE 9; SCHOOL OF CHEMISTRY.

First Year.

1. Inorganic Chemistry; Geometry; English; Chemical Physics, 2. 2. Organic Chemistry; Laboratory Practice, 10; Algebra; English. 3. Crystallography and Mineralogy; Laboratory Practice, 10; Trigonometry; English.

Second Year.

1. Determinative Mineralogy; Analytical Chemistry, 10; Anatomy and Physiology, or Advanced Algebra; German. 2. Analytical Chemistry, 10; Botany; Analytical Geometry; German. 3. Analytical Chemistry, 10; Advanced Botany; Entomology or Calculus; German.

Third Year.

1. Practical Chemistry, 10; Comparative Anatomy; Vegetable Physiology; French. 2. Practical Chemistry, 10; Physics; Medieval History; French. 3. Practical Chemistry, 10; Physics; Modern History; French.

Fourth Year.

1. Chemical Researches, 10; Geology; Mental Philosophy. 2. Chemical Researches, 10; Geology; History of Civilization. 3. Thesis, 10; Geology of Illinois; Political Economy.

COURSE 10; SCHOOL OF ENGLISH AND MODERN LANGUAGES.

First Year.

1. Advanced Grammar; Geometry; Chemistry; History, 2. 2. American Authors; Algebra; Free-hand Drawing, 10, or Chemistry; History, 2. 3. British Authors; Trigonometry or Chemistry; Botany or Book-keeping.

Second Year.

1. Rhetoric; French; Advanced Algebra, or Descriptive Geometry, or Anatomy and Physiology. 2. English Classics; French; Analytical Geometry or Zoology. 3. English Classics; French; Calculus, or Mineralogy and Entomology.

Third Year.

1. English Classics; German; Ancient History and Drawing, or Anatomy and Physiology. 2. English Classics; German; Medieval History or Geology. 3. Æsthetics and Criticism; German; Modern History or Geology.

Fourth Year.

1. Mental Science, Constitutional History or Geology; Practical Astronomy. 2. Moral Philosophy, 3; Logic, 2; History of Civilization and the Arts; Physical Geography or Physics. 3. History of Philosophy; Logic; Political Economy; Constitutional Law or Physics.

COURSE 11; SCHOOL OF ANCIENT LANGUAGES AND LITERATURE.

First Year.

1. Cicero de Amicitia and Prose Composition; Geometry; Anabasis—4th Book, and Prose Composition. 2. Livy and Roman History; Prose Composition; Algebra; Herodotus and Prose Composition, or Chemistry. 3. Horace—Odes, Prosody, Roman History; Trigonometry or Chemistry; Thucydides or Botany.

Second Year.

1. Horace—Satires and Ars Poetica; Descriptive Geometry or Advanced Algebra, or Anatomy and Physiology; Iliad and Greek Prosody. 2. Juvenal; Analytical Geometry or Zoology: Iliad. 3. Quintilian; Calculus or Mineralogy and Entomology; Demosthenes de Corona.

Third Year.

1. Cicero de Officiis; Ancient History, or Comparative Anatomy and Physiology; Selections from Greek Tragedy. 2. Tacitus; Medieval History or Geology; Xenophon's Memorabilia. 3. Tacitus; Modern History or Geology; Plato and Grecian Philosophy.

Fourth Year.

1. Mental Science; Constitutional History or Geology; Practical Astronomy. 2. Moral Philosophy; Logic, 2; History of Civilization and the Arts; Physical Geography or Physics. 3. History of Philosophy; Logic; Political Economy; Constitutional Law or Physics.

EXERCISES OF COMMENCEMENT DAY,

WEDNESDAY, JUNE 10, 1874.

PROGRAMME.

MUSIC—*University Band.*
PRAYER.
MUSIC—*Quartette.*
ORATION—Language.....J. L. Pierce, Champaign.
THESIS—Hot Air Engines.....C. A. Smith, Mt. Vernon, Ind.
ORATION—Friendship.....E. L. Drewry, Mason.
THESIS—Railway Bridge at Peoria.....*H. C. Estep, Rantoul.
MUSIC—*Duet.*
ORATION—Success.....H. S. Reynolds, Urbana.
THESIS—Our Railway System.....J. P. Campbell, McLeansboro.
ORATION—The Farmers' Movement.....H. Eaton, Philo.
THESIS—Wagon Bridge, Peoria.....*G. Story, Chicago.
ESSAY—The Sculptor.....Miss Alice Cheever, Champaign.
MUSIC—*String Band.*
THESIS—Nitrogen Determinations.....C. P. Jeffers, Lyndon.
ORATION—Despotism of Ideas.....C. W. Foster, Champaign.
THESIS—Timber in Engineering.....I. O. Baker, Oaktown, Ind.
ORATION—Farming.....G. Gabriel, Constantinople, Turkey.
MUSIC—*Solo*—Miss Maggie E. Stewart.
THESIS—The Drill-Hall Roof Truss.....W. Watts, Watts.
ORATION—Community of Nations.....W. W. Wharry, Sycamore.
THESIS—Nitrous Acid in Plants.....P. Gennadius, Athens, Greece.
ESSAY—Self Superintendence.....Miss F. A. Potter, Champaign.
MUSIC—*Opera Chorus.*
PRESENTATION OF CERTIFICATES.
MUSIC—*Parting Class Song.*
BENEDICTION.

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* Excused.

GRADUATING CLASS OF 1874.

	Name.	Residence.	Course.	Av'ge stand'g.
1	Alice Cheever	Champaign, Ill.	Literature and Science	95
2	F. Adelia Potter	" "	" "	94
3	Ira O. Baker	Oaktown, Ind.	Civil Engineering	93
4	John P. Campbell	McLeansboro, Ill.	Literature and Science	91
5	Ebenezer S. Drewry	Mason, Ill.	" "	82
6	Harvey C. Estep	Rantoul, Ill.	Civil Engineering	88
7	William C. Ells	Champaign, Ill.	" "	87
8	Panijiottis Gennadius	Athens, Greece	Agricultural	96
9	Gregory Gabriel	Armenia, Asia Minor	"	90
10	Charles P. Jeffers	Lyndon, Ill	Chemical	98
11	Andrew T. Morrow	Jonesboro', Ind.	Civil Engineering	91
12	John L. Pierce	Champaign, Ill.	Literature and Science	91
13	William Pickrell	Mechanicsburg, Ill.	Agricultural	87
14	E. Newland Porterfield	Champaign, Ill.	Mechanical Engineering	84
15	Henry S. Reynolds	"	Agricultural	94
16	Charles A. Smith	Mt. Vernon, Ind.	Mechanical Engineering	93
17	George Story	Chicago, Ill.	Civil Engineering	95
18	William Watts	Watts Station, Ill.	Architecture	89
19	W. W. Wharry	Sycamore, Ill	Agricultural and Military	95
	Average standing			91

Captain's commissions in the Illinois Militia were conferred by Gov. J. L. Beveridge upon the members of the Military Class graduating with full honors:

Capt. W. W. Wharry, 1874, of Sycamore, Ill.
Capt. R. O. Wood, 1872, of Bunker Hill, Ill.

CERTIFICATES OF STANDING

For completing partial Courses were granted to the following members:

	Name.	Term.	Residence.	Course.	Av'ge standing.
1	Mary C. Burgess	1 year, 4 mos.	Tonica, Ill	Literature and Science	94
2	Agnes Chapman	1 year	Richmond, Ind.	" "	82
3	Emma Van Horn	2 "	Champaign, Ill.	" "	94
4	Abel Bliss, Jr.	1 "	Joliet, Ill	Civil Engineering	84
5	Horatio C. Cate	1 year, 9 mos.	Hamilton, Ill	Literature and Science	81
6	Warren B. Dunlap	1 year	Champaign, Ill.	Civil Engineering	76
7	Nathaniel M. Fox	1 "	Hainesville, Ill.	Literature and Science	79
8	Charles W. Groves	2 years, 4 mos.	Champaign, Ill.	Commercial	87
9	Willis R. Gardner	2 years	"	"	70
10	Samuel M. Proudfit	2 years, 9 mos.	McLeansboro, Ill.	Literature and Science	89
11	Abram R. Rutan	1 " 9 "	Dwight, Ill	Commercial	85
12	Herbert Wheeler	1 " 4 "	Yellowhead, Ill.	Literature and Science	93
	Average standing				84½

MEETINGS OF THE BOARD OF TRUSTEES.

SEPTEMBER 23, 1873.

The Board of Trustees met at the University, at 4 o'clock, P. M.

The President, Mr. Cobb, in the chair.

Present—Messrs. Brown, Boyd, Blackburn, Gardner, Salim, and Mason.

Absent—Gov. Beveridge, Messrs. Pickrell, Slade, and Reynolds.

Dr. Gregory, the Regent, informally addressed the Board in regard to his connection with the University. He cheerfully accepted the conditions of the new law, believing that the duties of Regent of the University and President of the Board should be separated. He regretted that complete freedom in choice of studies had been changed by the law, regarding the change to be contrary to the spirit of American Institutions. He stated that some 400 students were present in the University, expecting the number would be increased to 500 before the close of the term; that the reputation of the University was not merely local, but equal to that of some of the leading institutions of the Old World.

By vote of the Board, Dr. Gregory was requested to reduce his remarks to writing, for publication.

Mr. Cobb replied that it was expected and desired that the Regent would be present at all meetings of the Board, etc.

The reading of the minutes of the last meeting was dispensed with.

The following bills were audited and allowed:

Bills presented for payment, September 4, 1873.

	CURRENT EXPENSES.		
1	H. K. Vickroy	Expenses Horticultural Dept., August	$235 73
2	H. K. Vickroy	Work on experimental farm	14 17
17	Trevett & Green	Tube, whistle and pipe	12 95
3	E. L. Lawrence	Experimental stock farm, Aug.	259 79
5	Sabin Bros	Tile	24 33
6	Carpenter dept.	Work for stock farm	1 20
7	Mechanical dept.	Work new University building	3 42
.....	Furstenburg	Books	4 00
8	Enterprise Coal Co.	Coal	28 00
10	E. Snyder	Petty expenses, Aug.	15 87
9	F. A. Parsons	Salary, Aug.	50 00
11	Champaign Gazette	Advertising and printing	34 50
16	E. Lynch	Wages as watchman on new building	50 25
12	Publishers "Nation"	Advertising	7 12
13	W. S. Chase	As janitor, librarian, meteorol. observ., Aug. '73	14 90
15	Pay roll	Work on grounds	310 69
14	C. I. Hays	Salary, Aug. 31	50 00
	STATE APPROPRIATIONS.		
.....	Field, Leiter & Co.	Carpet	69 09
.....	Rutan Heating Co.	Iron base	36 00
.....	S. W. Shattuck	Service as Supt.	75 00
.....	The Sherman & Hand Mantle Co.	Mantle	76 50
.....	J. Davis Wilder	Slating blackboard	180 48

Mr. Gardner reported the work on sidewalks completed, presenting bill of $110. The report was accepted and bill allowed.

An additional appropriation of $30 was made for the purchase of gymnastic apparatus.

The Board then adjourned, to meet at the Duane House, at 7:30 o'clock P. M.

EVENING SESSION.

Board re-assembled at 8 o'clock.

The President read a statement, recommending the acceptance of the same, of Mr. J. M. Van Osdel, Esq., in regard to the completion of the new University building, which the contractor, Mr. S. H. Gehlman, wishes accepted and settlement made.

He also read the report of the Arbitrating Committee, consisting of Messrs. J. H. Rice, A. Grannis, J. Dickerson, awarding the amount of $858 65 to the contractor, S. H. Gehlman, for extra work done on the new building.

On motion, Mr. S. H. Gehlman was allowed to remove the nails from the new building, but no other material.

The following, presented by Mr. Brown, was accepted:

WHEREAS, the Architect (Mr. Van Osdell) of the new University building has this day reported to this Board that the said building has been completed, according to contract:

Resolved, That a warrant be drawn in favor of the contractor for the balance due him on his contract, viz: $3,328 85, less the amount of unsettled claims of N. Diedrich & Co. and S. Thomas, viz: $1,736 20.

AND WHEREAS, a matter of difference between this Board and the said contractor, in relation to extra work done on said building, has been referred to arbitration, and the arbitrators have decided that the Board pay to said contractor the further sum of $858 65:

Resolved, That the warrant drawn, as by the first resolution, include also said additional sum of $858 65.

Prof. S. W. Shattuck was appointed Business Agent and Book-keeper, at a compensation of $65 00 per month, with authority to employ assistance, and to provide for the teaching of the book-keeping classes.

The reports of Prof. Shattuck were read and approved:

HON. EMERY COBB, *President of the Board of Trustees of the I. I. U.:*

SIR—I have the honor to make the following report, as superintendent of construction:

Since the last meeting of the Board, the work on the building has been pushed rapidly forward, more so, in some respects, than is good for it. The attention of the architect was drawn to the matter at his visit on the 17th inst. Your attention is called to the action of Mr. Gehlman in placing extra locks on some six of the doors, thus marring the building and causing great inconvenience to the University. He has refused to repair the roof or replace the broken glass of the building, though it was understood, until recently, that he would. I have caused a portion of the glass to be put in.

Mr. Gehlman has removed a large portion of the refuse lumber from the grounds, though such a course is contrary to the contract, as I understand it.

The work on the heating apparatus is going on satisfactorily, under the circumstances. It is expected that we will be able to start up steam by the last of this week, though there will be some delay in the full completion of the apparatus, on account of the condition of the building.

The fence on south side of Green street has been moved to the proposed line, and the sidewalk made. Further provision for a walk from the street railroad to Green street seems necessary; also a plank walk from Green street to the building. Considerable work has been done on the grounds, cutting weeds, plowing, grading, etc.

Respectfully submitted.

S. W. SHATTUCK.

To the Board of Trustees of the Illinois Industrial University:

MESSRS—I beg leave to make the following report, as Superintendent of Operations at the building:

The sewer and drains from the building have been completed for the amount assigned to the purpose, I believe, though it is a little difficult to determine their exact cost.

The drive to the building is nearly completed, the walk on the street started, some preparatory work for fence done.

Unless otherwise ordered, the present gate will be used on the new line and stiles made on each side. Only students labor and University teams are being used, since Sept. 1st, except men building the walk. Some fifty windows have been cleaned, the carpets partly made, the supply pipe for the water closets, etc., put in.

The work on the heating apparatus is well along, though some delay comes from all the flooring not being down, and a change of radiators in the library made necessary by the particular use of the room. To which party the cost of this change is chargeable, is an open question. The amount, I am told, will be about $100. The gas fixtures are mostly in. The library cases are nearly completed.

It is proposed to commence the transfer of books on Monday next; will commence at that time also, or sooner, to transfer the furniture, etc.

Most of the seating and some furniture for tht chapel has been received; the setters are being put together.

After a long delay on the part of the Yale Stock Company, a sufficient number of superior locks for the building have been furnished. The carpenter work and painting have been much delayed by the lack of flooring.

Fastenings for the basement windows are required, many persons entering the building throug them, unless a watch is kept.

Respectfully submitted,

S. W. SHATTUCK.

To the Board of Trustees of the Illinois Industrial University:

MESSRS—I have the honor to make the following report, as Regent, *pro tem.*:

Under the authority granted at your meeting, Aug. 14, the annual examination questions of the University have been printed, and copies with circular letter sent to County Superintendents.

The University, and the time of beginning of its next academic year, has been advertised in the leading agricultural papers of the west, and in some of the leading general papers of the country, at an expense of some less than $100.

The necessary cleaning and whitewashing, with repairs of the old University building, have been made. The cleaning of the new building is not yet complete.

The green-house has been repaired and arranged so that the florist will room in it the coming year—this was thought quite desirable.

On Sept. 18 the moving of the furniture, library, etc., to the new building was commenced and continued until completed, except during the interruption caused by Mr. Gehlman in locking up the building.

With the concurrence of the President of the Board, I recommend the appointment of Mr. A. C. Swartz, as tutor in the College of Engineering, at $40 dollars per month; Mr. P. Gennadius, as tutor in French, at $40; Mr. J. D Crawford, as Instructor in Ancient Languages, at $75 per month. The above named gentlemen are on the ground doing duty in the several positions named. Attention is asked to the communication of Mr. Lawrence.

On the 12th inst. Dr. Gregory returned to the Univeisity relieving me of the duties of Regent, *pro tem.*

Respectfully submitted,

S. W. SHATTUCK.

Mr. Lawrence was directed to take the necessary steps to have the hedge taken care of.

The following resolution was passed:

Resolved, That an account of $225 for arbitration fees be allowed, one-half to be collected of Mr. H. Gehlman, by his consent.

Mr. Blackburn moved that an Executive Committee of three members be appointed, as provided in the by-laws, was carried.

The President, Messrs. Bowen, and Gardner were appointed.

Dr. Gregory's bill of purchases in Europe was allowed, to be charged to proper funds, and also to send money to pay for apparatus ordered by him in Paris.

The following was passed:

Resolved, That it is inexpedient to put up a room in the old building for recitations of the class in chemistry, on account of the extra expense of providing means of heating, and also of inconvenience to students, and that the room heretofore assigned for agriculture be used by the Professor of Chemistry for his recitations.

The purchase of Devon Bull, Prairie Farmer, was declined.

The President was asked to call the Executive Committee, when needed.

The Board adjourned, to meet at the time of the next meeting of the Agricultural Society, in December next.

DECEMBER 10, 1873.

The Board met at the new University building, at 8 o'clock, P. M.

Present—Governor Beveridge, Messrs. Cobb, Blackburn, Gardner, Pickrell and Sabin; also, the Regent, Dr. Gregory: the Treasurer, J. W. Bunn; and the Corresponding Secretary, W. C. Flagg.

On motion of Mr. Blackburn, a resolution, passed at a previous meeting, in regard to recitation room for chemistry, was rescinded.

The Corresponding Secretary made a verbal report in regard to agricultural lectures in the State during the winter, recommending some, and asking for an appropriation of $200.

On motion, it was

Resolved, That Professors be detailed as lecturers for the Farmers Meetings, at Warsaw and Woodstock, this winter, if found desirable: *Provided, however*, no expenses to the University are incurred.

Treasurer, J. W. Bunn, made his report showing the receipts and expenditures to the present time, also, the probable receipts and expenditures to March 1, 1874—recommending utmost economy.

On motion of Mr. Pickrell, the Treasurer was authorized to make arrangements with attorneys for prosecuting bonds of Putnam county.

Adjourned to 9 o'clock, A. M.

DECEMBER 11, 1873.

Board assembled at 9 o'clock, A. M.

On recommendation of Dr. Gregory, Professor Robinson was authorized to visit the Physical Laboratories of the East, to make purchases for the laboratory of the University, in concurrence with the regent, and report to the next meeting of the Board.

The following bills, presented for payment, were audited and allowed:

1	H. K. Vickroy	Expense, August, 1873	$235 73
2	Hort. Department	Work on Experimental Farm	14 17
3	J. L. Lawrence	Farm expense August, 1873	259 79
4	E. L. Lawrence	Salary, August, 1873	100 00
5	Sabin Bros	Tile	24 33
6	Carpenter Dept	Work for farm	1 20
7	Mechanical Dept	" new University building	3 42
8	Enterprise Coal Co	2 cars coal	28 00
9	T. A. Parsons	Salary, August, 1873	50 00
10	E. Snyder	Petty expense to date	15 87
11	Champaign Gazette	Printing and advertising	34 50
12	Publishers Nation	Advertising	7 12
13	W. S. Chase	Services Janitor and Librarian	14 90
14	Chas. I. Hays	Salary, August, 1873	50 00
15	Labor pay-roll	Work on grounds	310 69
16	E Lynch	Watching new building	45 50
17	Trevett and Green	Hardware	12 95
18	H. Furstenberg	Books	4 00
19	S. W. Shattuck	Whitewashing and cleaning old building	126 11
20	J. M. Gregory	Salary, September, 1873	333 33
21	J. P. Slade	Expense to meeting	18 20
22	S. H. Gehlman	Extra work on New Building	56 80
23	R. B. Mason	Expense to meeting	23 00

24	J. J. Byrd	Expense to meeting	$25 60
25	A. M. Brown	" "	25 50
26	D. D. Sabin	" "	20 50
27	A. Blackburn	" "	37 50
28	T. P. Cady	Constructing sidewalk	31 50
29	Thos. Nolan	Lumber for sidewalk	78 50
30	Jno. Muller	Painting and glazing greenhouse	14 00
31	J. G. Smith	Mason work on greenhouse	6 00
32	John Paton	Cleaning and repairing 350 muskets	24 50
33	E. Snyder	Petty expense September, 1873	7 00
34	W. S. Maxwell	Glass and paint	10 35
35	S. W. Shattuck	Whitewashing and cleaning old building	19 20
36	Students labor pay-roll	Work on grounds	245 12
37	A. P. S. Sterart	Salary, September, 1873	166 66
38	S. W. Robinson	" " "	166 66
39	S. W. Shattuck	" " "	166 66
40	T. J. Purrill	" " "	166 66
41	E. Snyder	" " "	166 66
42	D. C. Taft	" " "	166 66
43	J. P. Webb	" " "	166 66
44	T. W. Prentice	" " "	100 00
45	W. C. Flagg	" August and September, 1873	83 33
46	N. C. Picker	" September, 1873	100 00
47	J. D. Crawford	" " "	75 00
48	A. C. Swartz	" " "	40 00
49	C. E. Patchin	" " "	40 00
50	J. C. Pickard	On account of salary	40 00
51	P. Gennadius	Salary, September, 1873	40 00
52	C. I. Hays	" " "	50 00
53	F. A. Parsons	" " "	50 00
54	J. M. Gregory	Purchases for Library, in Europe	135 90
55	H. R. Vickroy	Expense, September, 1873	119 80
56	M. A. Scovell	Salary, September, 1873	13 33
57	A. E. Barnes	" " "	13 33
58	E. L. Lawrence	Farm expense, September, 1873	306 50
59	W. and L. E. Gourley	Repairs of Eng. Inst	47 25
60	Enterprise Coal Co	16 cars coal	224 00
61	Illinois Central Railroad	Freight donation, August	255 19
62	Fuller & Fuller	Glass	13 88
63	Jas. H. Rice	Services on Arbit. Committee	100 00
64	A. Grannis	" " "	100 00
65	J. Dickerson	" " "	25 00
66	J. C. Pickard	Balance salary, September, 1873	126 66
67	J. R. Shawhan	Salary, September, 1873	9 50
68	Student's Labor pay-roll	September, 1873	108 37
69	J. M. Gregory	Salary, October, 1873	333 33
70	A. P. S. Stuart	" " "	166 66
71	S. W. Robinson	" " "	166 66
72	S. W. Shattuck	" " "	166 66
73	T. J. Burrill	" " "	166 66
74	E. Snyder	" " "	166 66
75	D. C. Taft	" " "	166 66
76	J. P. Webb	" " "	166 66
77	F. W. Prentice	" " "	100 00
78	J. C. Pickard	" " "	166 66
79	N. C. Ricker	" " "	100 00
80	J. D. Crawford	" " "	75 00
81	C. E. Patchen	" " "	40 00
82	A. C. Swartz	" " "	40 00
83	P. Gennadius	" " "	40 00
84	M. A. Scovell	" " "	20 00
85	A. E. Barnes	" " "	20 00
86	T. R. Shawhan	" " "	11 00
87	W. T. Chase	" " "	27 00
88	F. Witt	Band instrument	15 00
89	Publishers "Student."	20 copies	3 00
90	Jno. Muller	Painting	1 25
91	Wm. Watts	Services engineer	16 22
92	John Glover	Gymnastic apparatus	50 00
93	C. I. Hays	Petty expense in greenhouse	1 10
94	F. Cook	Painting meteorological apparatus	2 50
95	National Live Stock Journal	Advertising	3 90
96	Chicago Advertising Agency	"	54 41
97	M. Rix	Cleaning old building	3 00
98	J. M. Wharton	Repairs in green-house	1 25
99	E. Lynch	Janitor's service, Oct. '73	31 00
100	A. C. Scribner	" " "	31 00
101	E. A. Robinson	Services as tutor	16 10
102	S. W. Shattuck	Business Agent, salary	65 00
103	Babock Manufacturing Company	Twelve charges for Extinguisher	10 00
104	M. E. Lapham	Lumber	128 44
105	C. I. Hays	Salary, Oct. '73	50 00
106	Dodson & Hodges	Hardware	33 13
107	S. W. Shattuck	Petty expense, Oct. '73	18 25

108	E. V. Peterson	Sundry stationery	5 9
109	Kankakee Times	Advertising	3 0
110	S. J. Surdam & Co	Carpenter's hardware	18 5
111	S. W. Robinson	Settlement for vacation work	14 1
112	E. Cobb	Expenses to meetings	39 8
113	E. L. Lawrence	Farm expense, Oct. '73	376 7
114	Hall, Kimbark & Co	Joiner's hardware	29 9
115	H. K. Vickroy	Expense Horticultural Dep't, Oct. '73	163 5
116	Students' Labor Pay Roll	October, '73	287 3
117	J. Paton	Work in Armory	12 2
118	Enterprise Coal Co	18 cars coal	201 0
119	W. C. Flagg	Salary, Sept. and Oct. '73	83 3
120	J. M. Gregory	Salary, Nov. '73	333 3
121	A. P. S. Stuart	" " "	166 6
122	S. W. Robinson	" " "	166 6
123	S. W. Shattuck	" " "	166 6
124	T. J. Burrill	" " "	166 6
125	E. Snyder	" " "	166 6
126	D. C. Taft	" " "	166 6
127	J. C. Pickard	" " "	166 6
128	J. B. Webb	" " "	166 6
129	N. C. Ricker	" " "	100 0
130	F. W. Prentice	" " "	100 0
131	J. D. Crawford	" " "	75 0
132	C. E. Patchen	" " "	40 0
133	A. C. Swartz	" " "	40 0
134	P. Gennadius	" " "	40 0
135	M. A. Scovell	" " "	20 0
136	A. E. Barnes	" " "	20 0
137	W. S. Chase	" " "	24 0
138	G. R. Shawhan	" " "	10 5
139	E. A. Robinson	" " "	18 9
140	I. C. R. R. Company	Advanced Freight, Oct. '73	19 8
141	G. W. Flynn & Co	Binding	19 8
142	Fuller & Fuller	Window glass	15 0
143	H. W. Williams & Son	Labels	5 4
144	Champaign Times	Advertising	2 5
145	Little & Davies	Sundry hardware	12 5
146	E. L. Lawrence	Farm expense, Nov. '73	261 4
147	H. K. Vickroy	Horticultural expense, Nov. '73	172 7
148	S. W. Shattuck	Salary, Business Agent, Nov. '73	65 0
149	C. I. Hays	Salary, Nov. '73	50 0
150	J. Weeks	Moving safe and pianos	8 7
151	W. M. & J. F. Olcott	Coal	189 8
152	A. Snidecker	Castings	44 2
153	J. B. Webb	Expenses Eng. Dep't	6 5
154	Champaign Gazette	Printing circulars	7 0
155	Carbondale Coal Co	3 cars coal	40 8
156	W. S. Maxwell	Glass and putty	24 2
157	Fuller & Fuller	Glass for cabinet cases	123 1
158	Champaign Gazette	Advertising	2 2
159	Crane Bros. Manufacturing Co	Packing	4 1
160	E. Lynch	Salary, Janitor, Nov. '73	30 0
161	A. C. Scribner	" " "	30 0
162	Wm. Watts	" Engineer "	35 0
163	Trevett & Green	Sundry hardware	73 6
164	Dodson & Hodges	" "	29 1
165	E. F. Gehlman	Bricks and mortar	8 4
166	I. C. R. R. Co	Freight, Oct. '73	803 7
167	S. W. Shattuck	Sundry expenses	24 8
168	Carpenter Department	Work for other departments	62 4
169	Thomas Nolan	Lumber for sidewalk	11 0
170	John Muller	Glazing	4 9
171	Champaign Gas Co	Gas from April to December 1, 1873	178 0
172	Mechanical Department	Work for other departments	268 6
173	Students' Labor Pay Roll	Nov. '73	330 1
174	J. H. Pickrell	Expense to meetings	17 1
175	W. C. Flagg	Salary, Nov. '73	41 6
176		Cancelled	
177	Student's' Labor Pay Roll	Nov. '73	39 8
178	D. W. Kaufman	Roof on dry-house	25 0
179	D. D. Sabin	Expense to meeting	23 4
180	A. Blackburn	" "	21 5
181	H. Mahlman	Chemicals and apparatus	1,072 8
182	James R. Scott	Expense to meeting	20 0

An amount of $25 for roof on Dry-house allowed, if found a proper bill against the University.

The eport of the Business Agent was received and accepted.

A bill of R. Peacock, for sundry lumber, was referred to Mr. D. Gardner for report at next meeting; and so was also the recommendation of Mr. Lawrence, the Farm Superintendent, in regard to exchange of 40 acres of University lands.

The following bills were audited, and warrants ordered to be drawn on the State appropriation for furnishing building:

C. N. Ricker, $267 31, for drawing tables. J. Davis Wilder, $60 43, for blackboard.

The statements of the Mechanical and Carpenter shops were read and approved.

Mr. Cobb, chairman of the committee to report on the employment of a Professor of Agriculture, reported that for this year instruction in the various branches of learning bearing on agriculture had been provided for, and that the services of a Professor will be secured as soon as possible.

A committee consisting of the Regent, Architect and Business Agent, was directed to inquire into certain damages caused to the University building by the overflowing of tanks, chargeable to the company furnishing the steam heating apparatus.

Adjourned to meet at the call of the President.

E. SNYDER,
Recording Secretary.

DEDICATORY EXERCISES

HELD IN THE AUDITORIUM OF THE NEW BUILDING, AT 1 O'CLOCK, P. M., DEC. 10, 1873.

MUSIC ..... By the University Band.
PRAYER.
SINGING—UNIVERSITY ANTHEM ..... University Choir.
(The words and music of this anthem were written for the Inauguration, in 1868.)
HISTORICAL ADDRESS—1867-1873. ..... By the Regent.
SINGING—DEDICATION ODE ..... University Choir.
ADDRESS ..... By Gov. J. L. Beveridge.
SINGING—SOLO ..... By Miss M. E. Stuart.
ADDRESS ..... By Gen. John Eaton, of Washington, U. S. Com. of Education.
SINGING—SOLO ..... By Miss Kincaid.
ADDRESSES ..... By Prof. J. B. Turner, Dr. Rich'd Edwards, Gen. M. Brayman, and others.
MUSIC ..... By the University Band.
BENEDICTION.

["*Ode*," *written for the occasion.*]

LEARNING AND LABOR.

Down the line of struggling ages,
Swells the cry for truth and light,
Wrung from bosoms of the peoples,
Dimly yearning for the right.
Toiling millions, bravely bearing
All the burdens of the day,
Supplicate the ear all-hearing,
For to labor is to pray.

Down the line of ages flaming,
Glow the kindling fires of thought;
Flashing 'neath the stroke of hammers,
Light, as well as iron, is wrought.
And the mighty schools of labor,
With their problems deep and stern,
Educate the toiling peoples,
For to labor is to learn.

Thus the Father's wisdom giveth
Answer, from the prayer outwrought:
From the furrowed fields of labor
Come the harvest sheaves of thought;
And from out the lines of ages,
Gleams the truth of Christly birth—
Learning, incarnate in labor,
Shall regenerate the earth.

Then to labor and to learning
Let us consecrate these halls:
Lo! they come as God's strong angels
Bringing light and breaking thralls;
Kindling in us hopes supernal
Of a glorious coming time,
When the love and might eternal
Shall work out God's will sublime.

THE UNIVERSITY.

ADDRESS BY DR. J. M. GREGORY, REGENT.

To-day this University, with its banner flung to the breeze, formally enters the new house munificently provided for it by the State. To-day, and here, in the presence of some of the highest officers of the State and of this assemblage of the citizens, representing every section of the commonwealth and nearly every class of its people, we are to dedicate this grand edifice for the high uses for which it has been constructed. It fits well the occasion to retrace briefly the pathway now become historic, by which the University has marched to this happy hour. History drives the baggage train of human progress, and brings forward all the spoils gathered upon the battle fields of the past. Institutions, like men and nations, grow wiser and richer by treasuring up whatever is valuable in their past experience. At the dawn of each new epoch there comes the demand for the historian and the prophet—the one to record the past, the other to forecast the future. It is assigned to me, to-day, to serve as historian, to rehearse to you the history of the University; and since we have no inspired prophets in these days, it may be allowed me to show the trend of the history whose progress I am to trace, and thus give to all the means to forecast for themselves the probable future which lies yet veiled before us. It is not a mere bald statement of facts. such as may be gathered from our annual catologue and the proceedings of the Board of Trustees, to which you are here invited. These may be necessary, as the bones are necessary to the body; but they constitute not the real history of the University. The day and this presence invite us to grander and more comprehensive views and statements. At the centre and base of all true institutions lie ideas. Such an institution is but the incarnation of ideas; it exists for them, and its history is but the record of their development, progress and products. More than all others, this Industrial University is the embodiment of certain great ideas. It has been nourished, shaped and inspired by them; and to-day it challenges the judgment of mankind of its fidelity to them. To recite its history without a reference to these grand constructive ideas which lend that history its interest and significance, would be as if I should present you Webster's dictionary as a grand compendium of English literature, because that all the words of that literature are contained in it. Let us indeed carefully note the facts—these are necessary; but let us also interrogate and interpret these facts, for this is also necessary.

Many of us still remember the grand and masterly address which the Hon. Newton Bateman, the able and eloquent Superintendent of Public Instruction, delivered in yonder chapel at our inauguration. That address, on record in the first volume of our annual reports, retraces the story of the public movements which gave rise to this University, with such fullness and clearness that it leaves little need to re-write that part of our history. A few facts quoted chiefly from that address will amply serve the present occasion. Where, and in whose brain, was born the idea of an Industrial University, may not now be known. The first enunciator in this State, and I believe in this country, was Prof. J. B. Turner, and no one, I may add, did more to give it currency and to gain it success. The first important organized movement made in its behalf was the convention at Granville, in this State, 1851. Out of this convention and its successors sprang, in 1853, a memorial to the General Assembly of the State, asking that Assembly to memorialize Congress—

"To appropriate to each State in the Union an amount of public lands, not less in value than $500,000, for the liberal endowment of a system of Industrial Universities, one in each State of the Union, for the more liberal and practical education of our industrial classes, in their various pursuits, for the production of knowledge and literature needful to those pursuits, and developing, to the fullest and most perfect extent, the resources of our soils and our arts, the virtue and intelligence of our people, and the true glory of our common country."

"Scarcely was the ink of that memorial dry," says Dr. Bateman, "when it was presented, in due form, to the Legislature of the State, then in session. The reception it there met with was worthy alike of its commanding importance and of the forecast and statesmanship of a great commonwealth. Instead of being laughed down the wind as the wild fancy of some dreaming enthusiast, or shuffled off to some unsympathizing committee, there to sleep the sleep that knows no waking, or bartered away, by intrigue, for some wretched mess of local or political pottage—instead of this, that General Assembly *made way* for the grand message of the people, as the lords and commons made way for the king! Acknowledging the majesty of its presence, and the exceeding glory of which it was prophetic."

The Legislature promptly responded by passing a series of joint resolutions, of which I report here only the main one. After a preamble, opening with this broad and grand statement:

WHEREAS, the spirit and progress of this age and country demand the culture of the highest order of intellectual attainment and theoretic and industrial science; and whereas, it is impossible that our commerce and prosperity will continue to increase without calling into requisition all the elements of internal thrift arising from the labors of the farmer, the mechanic and the manufacturer, by every fostering effort within the reach of the government; it was

Resolved, That our Senators in Congress be instructed and our Representatives be requested to use their best exertions to procure the passage of a law by Congress, donating to each State in the Union an amount of public lands, not less in value than $500,000, for the liberal endowment of a system of Industrial Universities, one in each State of the Union, to co-operate with each other and with the Smithsonian Institution at Washington, for the more liberal and practical education of our industrial classes and their teachers—a liberal and varied education, adapted to the manifold wants of an enterprising people, and a provision for such educational faculties, being in manifest occurrence with the intimations of the popular will, it urgently demands the mutual efforts of our national strength.

The press of the country, and especially the agricultural press, hailed with warm approval these resolutions, and the magnificent conceptions they contained. Its grandeur was then, at least no objection against, but a powerful argument for, the proposed Industrial University. No one then rebuked its friends and advocates with such words as "your plans are too broad;" "your views are too grand, too comprehensive, too magnificent." There was no talk of cutting it down to a simple technical school of agriculture, and the mechanic arts. The very grandeur of the purpose in view was its best argument and chief claim to the public regard. Its magnificence was in keeping with the greatness of the mighty national and humanitarian interests involved, and this very grandeur of thought lent inspiration to its advocates, and rendered them resistless against all opposition. The agitation was now transferred to the floors of Congress, where, for nearly two years, the great debate went on. The result, though slow coming, was sure, and in July, 1862, the law of Congress was approved by President Lincoln, giving nearly 10,000,000 acres of the public domain to be apportioned among the States, for—

"The endowment, support and maintenance of at least one College, whose leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches as are related to agriculture and the mechanic arts, in such manner as the Legislature of the States may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life."

Note the grand scope and comprehension of the terms of this law, "The liberal and practical education of the industrial classes in the several pursuits and professions in life," and to this grand end the "leading object" of the institution must be to teach such branches of learning as are related to agriculture and the mechanic arts, without excluding other classical and scientific studies, and including military tactics. What terms could outline more broadly the Industrial University? Every clause breathes something of the grandeur of the bold conception. The State of Illinois received from this grant scrip for 480,000 acres of land for the purpose defined in the act just quoted. With the acceptance of this grant there arose a new agitation in the State. This time it related to the disposition of the grant and the plan for the proposed University. The representatives of the existing colleges asked that the funds and the work of the proposed institution be entrusted to them. But the old and steadfast advocates of an Industrial University soon negatived this claim, and insisted that the great idea of their first memorial should be carried out. Next came a contest for the location. Many counties naturally coveted to become the permanent home of an institution whose plans as expounded by its most prominent and warmest friends were so magnificient and far-reaching, and whose prospective endowment it was generally believed would prove ample for those plans. I cannot now notice the incidents of this contest, but we may certainly conclude that it was no narrow view of the character of the coming institution which inspired the people of this and other counties of such unprecedented liberality to secure the location of the institution in their midst. If I am reminded at this point that Champaign county now seems desirous of repudiating its pledges as if repenting her too trustful generosity, I must here avow my firm faith that such is not the fact. The majority of the supervisors, acting under what seems to me bad and injudicious counsel, and not dreaming of the harm that might come of their action, have declined to levy the interest tax as a means to bring the question of the validity of the bonds before the courts, but the most intelligent men of the county protest that the people will oppose repudiation. They made their pledge in good faith and see no reason to reject their bargain. The expressions already heard from them give ample reason to believe that their sentiments have not been rightly understood. When it can again be fairly submitted to them with a restatement of the arguments before used, they will, I must believe, again and with even larger majorities, reaffirm their former decision and testify their desire to retain the location of the institution here in its first home. In February, 1867, the State law was passed for the organization of the new University. It is said that the draft of this law was from the same able pen whose eloquent sentences had so long led and inspired the columns of the friends of industrial education. Certainly it embodied the same magnificent conceptions which had so often filled their minds. Adopting the language in part of the law of Congress, it added emphasis by requiring to be taught "in the most thorough manner" the branches of learning relating to agriculture and the mechanic arts.

The name chosen for thenew institution by the General Assembly, "The Illinois Industrial University," was in itself a proof of the grandeur of the ideas of its founders. Whoever will read the discussions of the day

will see that this name was not chosen as a mere advertising device. It was no mean effort to befool the people and attract public patronage by a high sounding and pretentious title. The man who wrote the bill knew full well the meaning of the words he used, and his writings and speeches have everywhere shown that his conception of a University was neither narrow nor niggardly. In another place he once declared there was room for only four such Universities on this continent. If, as we are bound to suppose, the members of the General Assembly knew the import of the law that they were enacting, and the immense public excitement under which it was enacted forbids any other conclusion, they deliberately chartered a University not of the classical sort, but of the new industrial sort.

The law was approved the last day of February, and on the 12th day of March the new Board of Trustees assembled at Springfield. Just one week previous to this meeting a letter from one of the trustees reached me at my home, in another State, asking me, much to my surprise, to allow my name to be presented as a candidate for the regency of the proposed institution. I knew nothing of the struggles that had been going on, and nothing of the plans of the University, except the brief statements of the letter that the funds of the institution would allow its development on the largest scale. But, though a stranger to Illinois and its people, I was no stranger to the great ideas of industrial education, and yielding to the urgent request of my correspondent, I gave a somewhat hasty consent to his wishes, but with little expectation of an election and still less desire for it. The next week a letter announced to me the result, and entreated me not to decline the post offered me till the writer could see and explain the plans of the Trustees. I withheld my decision till I could come to Chicago and thence to Champaign to learn the prospects of the institution and the views of the Trustees.

Only one opinion was expressed to me by all whom I met, whether in Champaign or Chicago. All seemed to have the same view. And this was expressed by the Trustees residing in and near Champaign in the strong assertion that the institution was to be "the grandest University on the American continent." Without accepting fully the too enthusiastic expressions of these gentlemen and other citizens, I saw that the broad and generous views prevailing in the public mind would allow the developement of an institution such as I knew an Industrial University must be to command success. Urged by prominent citizens, I at length accepted the task before whose grandeur stronger hearts and brains than mine might have paused in modesty if not in dread. Having accepted, I entered at once upon my great work. The most careful inquiries were made afresh into the intention of the laws, both of Congress and of the State; into the wishes of the friends of the enterprise, and into the views of the Board of Trustees. A careful estimate was also made of the probable resources of the University, and the educational condition of the State. In all these lay the limiting conditions of which must give shape to the enterprise. Under the wise and constant advice of other members of the "committee on faculty and courses of study," I prepared the first formal report on the plan of the University, and presented this report to the Trustees at their second meeting, held May 9, at which I met them for the first time. I shall venture to quote briefly from this report to show the view that then prevailed, not only in my own mind but also in the minds of the Trustees, who, immediately after the reading, unanimously voted its publication "as embodying the aims

and designs of this Institution." It was believed to embody mainly also the ideas and wishes of the most intelligent friends of industrial education — the current belief and expectation, indeed, of the people of the State. To test the public mind and invite criticism, 3,000 copies were printed and scattered widely among all classes of citizens. I do not now recall that for many months any adverse criticism was offered, while the commendatory letters from all classes gave assurance that the plan, grand as it now seems, was no grander than the public sentiment. The report discussing the aims of the Congressional grant says:

"Congress sought to extend still wider the benefits of science and liberal culture. They wished to establish other seats of learning, equally great and equally powerful, which should send scholars of high scientific attainments and broad and liberal culture, to the farms and workshops of the country.

"And, finally, as it was not the object of the Industrial colleges to educate simply the sons of farmers and mechanics, so it was not their design to teach the mere manual arts of agriculture and manufacture. The college course cannot replace the apprenticeship in the shop or on the farm; and if it could, a hundred such Universities as this could not train to their various trades the future farmers and mechanics of this State. Some practice should, if possible, accompany the study of the several arts, but the aim of this practice must be to insure the thorough comprehension of the principles involved. To teach the millions their trades, however desirable, is beyond our power. To so teach the few who will come and patiently complete their course, that they shall be thorough masters of practical science, and able in their turn to teach others, this is the worthy and attainable end of the University.

"The committee profoundly appreciate and commend the far-reaching wisdom and beneficence of these aims of the congressional grant, and would seek to carry them out to the very letter. They have discussed thus fully the intent of the congressional enactment, in order to brush aside the false impressions which may have gained currency, and to bring out into clearer relief this grand idea of the Industrial University, as it lies involved in both State and National statutes—a true University, organized in the interest of the industrial, rather than the professional pursuits, and differing from other Universities in that its departments are technological rather than professional—schools of agriculture and art, rather than schools of medicine and law.

"This broad idea of the Industrial University proceeds upon the two fundamental assumptions: First, that the agricultural and mechanical arts are the peers of any others in their dignity, importance and scientific scope; and, second, that the thorough mastery of these arts, and of the sciences applicable to them, requires an education different in kind, but as systematic and complete as that required for the comprehension of the learned professions. It thus avoids the folly of offering as leaders of progress in the splendid industries of the nineteenth century, men of meager attainments and stinted culture, and steers clear also of that other and absurder folly of supposing that mere common-school boys, without any thorough discipline, can successfully master and apply the complicated sciences which enter into and explain the manifold processes of modern agriculture and mechanical art.

"And besides all this, it should be reflected that half the public value of a body of educated and scientific agriculturists and mechanics will be lost, if they lack the literary culture which will enable them to communicate, through the press or by public speech, their knowledge and discoveries; or if they are wanting in that thorough discipline which will make them active and competent investigators and inventors, long after their school days are over.

"Let the State open wide, then, this Pierian fount of learning. Let her bid freely all her sons to the full and unfailing flow; those whose thirst or whose needs are little to what they require; those whose thirst and whose capacities are large to drink their fill. Let the University be made worthy the great State whose name it bears; worthy the grand and splendid industries it seeks to promote; and worthy of the great century in which we live."

The following enumeration of the departments of the institution proposed by the report will not only show how broad the idea then prevailing of the character of the coming University, but it furnishes a curious proof of how little all the latter discussions and criticisms have been able to change the fundamental plan. Except in the substitution of the term colleges and schools for those of departments and courses, the scheme almost exactly describes the University as it exists to-day.

I. The Agricultural Department, embracing:
   1. The course in agriculture proper.
   2. The course in horticulture and landscape gardening.

II. The Polytechnic Department, embracing:
   1. The course of mechanical sciences and art.
   2. The course of civil engineering.
   3. The course in mining and metallurgy.
   4. The course in architecture and fine arts.

III. The Military Department, embracing:
   1. The course in military engineering.
   2. The course in military tactics.

IV. Department of Chemistry and Natural Sciences.

V. The Department of Trade and Commerce.

VI. The Department of General Science and Literature.

I have prepared this statement of the great ideas of an Industrial University, which originally prevailed in this State and in accordance with which the University was organized, not for any controversial purpose, but as a principal and fundamental fact in the history I am asked to relate. Neither myself nor the Board of Trustees are to be credited with or held responsible for the grandeur and magnificence of this plan. It lies clearly conceived in the memorial of the old convention at Granville with its demand for $500,000 worth of public lands to serve as an endowment. It was reiterated in the joint resolutions of the Legislature and was affirmed anew in the grant of Congress and the law of the State. If any one seeks a controversy with the trustees of the University, for the magnificence of their plan, it is not against the trustees, but against the farmers of Illinois, against their great conventions, like that of Granville, against that most eloquent and most trusted champion of the cause of agriculture and industrial education, our good Prof. Turner; nay, more, against the Legislature of the State which enacted the law creating this institution and prescribing the name and character. As well complain of the honest hen which from an eagle's eggs hatched eaglets, as to complain of the Board of Trustees, who, under the law, which prescribed a University, organized *this* University. Trustees who, under such a law and with such ideas and inspirations before them, should they have done differently, would have richly deserved the censure they would most certainly have received.

It was not unknown to the trustees that there was another class of industrial schools, after which they might have planned this, like the special agricultural and technical schools in Europe; but it was also known to them that the best experience and judgment of Europe was not in favor of these narrow, special schools, standing isolate and alone. The late Baron Liebig, who did more for agricultural education than any other man in Europe, urged with increasing energy the union of the technical schools with the universities, as organic departments of the same; and when one day I asked him where I should find the best agricultural colleges, he advised me to go to the agricultural departments of the Universities of Halle, and Jena and Bonn.

It should also be remembered that it was not an agricultural college that the board of trustees were set to organize and support, but an institution for the "liberal and practical education of the laboring classes in the several pursuits and professions in life." It was not to be one whit more an agricultural college than it was to be a mechanical college. It was to be both; and "to teach in the most thorough manner the branches of learning relating to agriculture and the mechanical arts and military tactics without excluding other scientific and classical studies."

What man of sense and of sufficient education to understand the meaning of this law, would have done otherwise than these trustees did do? What language could have been used to indicate with more clearness and certainty that the institution proposed was not a simple technical school, but a full industrial university?

I cannot forbear to notice here the extraordinary assertion made, the last summer, by Dr. McCosh, President of Princeton College, that "in all Germany there are only six agricultural colleges, and I can testify from personal visitation that some of them are very feeble institutions." In 1851, Prof. Hitchcock enumerated 352 agricultural schools in Europe, of which twenty-two were of the superior sort which we call colleges, though never thus called in Europe. Nine of these colleges and large

numbers of the intermediate schools were in the several German States. I know that they have not diminished in numbers or in rank and influence since Prof. Hitchcock's time. When was it then, that Dr. McCosh could find only six, and these in a feeble condition? What shall we think of such a statement, made by such a man, and made to justify himself for having interfered to prevent any further appropriations by Congress for agricultural education. The assertion is as false as the purpose for which it was made is illiberal and mean. Can it be that the President of Princeton fears the rivalry of these new and growing institutions?

Over against this bold and baseless assertion of this learned Scotchman, I venture to place my own assertion, also the result of personal observation, that the agricultural schools of Europe of all grades, are yearly multiplying. It may be true that separate agricultural schools are not increasing, but agricultural colleges as departments of Polytechnic and other Universities, are steadily increasing in numbers and influence though fluctuating and varying in prosperity as all other institutions fluctuate; certainly not more. Equally extraordinary and baseless is that other assertion of this most extraordinary doctor, that he "could show that in no country in the world has agriculture been much benefited by mere agricultural schools." To this assertion I oppose the assertion of Baron Liebig, made to myself, that "the success of agricultural schools in Germany has been immense;" that in Hesse, in particular, "the value of land had been enhanced 300 per cent. by the improved cultivation taught by the agricultural schools." In France, thousands of acres of land worn out by the exhausting tillage of a thousand years, and sometimes abandoned as worthless, have been recovered by the applications and cultures taught by the agricultural colleges of France. I do not know how far Dr. McCosh's influence prevailed with Congress to prevent the appropriation of some further portion of public lands to support Industrial Schools; but if it was by such assertions as these that his influence was exerted, his course deserves the severest reprobation, and his success is as deplorable as his spirit was illiberal and unpatriotic. I can neither suppress, nor calmly endure the conviction that this immense public domain yet remaining unsold, is to become, piece by piece, the prey of speculators and speculating schemes; and that through mistaken or mischievous views, our national Congress will fritter away the opportunity to make nobly effective and fruitful its legislation of 1862, missing the noblest chance ever offered to any government to provide for the higher and most careful education of the people.

Let us tell Dr. McCosh and all who share his opinion, that the figures show—

1st. That no grant of land for education ever made in this country, has been so productive as this for Industrial Colleges.

2d. That no institutions of higher education in this country have ever grown more rapidly in numbers of students and in public esteem.

3d. That in spite of all the disadvantages of an adverse influence from some of the old institutions and their Presidents, and from the lack of any well established public demand for this kind of education, the number of students of agriculture and the mechanic arts compare favorably with those in the schools of theology and law. We shall cheerfully place these new colleges in comparison with any equal number of old colleges of equal age and means.

But another criticism nearer home, has questioned the wisdom of organizing the University on so broad a plan.

1st. Because it is feared that it will exceed the resources provided, and prevent the performance of the special technical work, required, and,

2d. That it will attract to its more liberal and literary course, the students who are expected to study agricultural or mechanical sciences.

To the first objection we reply that the organization is not only no broader than is required by the laws of Congress and the State, but no broader than the successful teaching of the sciences related to agriculture and the mechanic arts requires. And further, it was believed that the proper income of the University would fully meet, for many years at least, all the requirements of the University. Nothing has ever yet been asked or received from the Legislature for simple current expenditures, except for such purposes as were not strictly a part of the University work, such as the expenses of an Experiment Station, the experiments in forest planting and the Farmers' Institutes, and agricultural lecture courses abroad. The State has simply been asked to provide those buildings which it was required by the act of Congress to do, and to provide such apparatus and books as were needed as an outfit. If the interest can be collected on its endowment funds, the University can carry on for years still all the departments it has organized without asking from the State one dollar more than it undertook to pay when it accepted the grant. Let this assertion be carefully marked; and let no man base any complaint against the grandeur of our plan on the plea that it exceeds the resources of the University.

To the other objection that the University will attract to its literary courses, those who came to study practical sciences, I reply: I am firm in my own faith, that when we place classical studies and scientific studies, side by side, in the same catalogue, with the same facilities of instruction, and with the same social influences around them, science will not go to the wall. In my inaugural I announced such a belief, and the six years that have passed here have proved that I was no false prophet. The danger has been, not that classical and literary studies should attract students from scientific and technical studies, but that these latter should crowd out all others. I knew full well the attraction which the beauty and novelty of natural sciences, fairly exhibited, would exert over the minds of the young, an attraction intensified by the knowledge of the practical value of these sciences in the affairs of the world. In a country like ours, whose physical aspect and resources are so commanding,—among a people like ours whose love of the practical and useful has been nourished by every circumstance in their national fortunes; in a country like this, in which the sciences and useful arts are making such unprecedented progress, and winning such magnificent rewards, these studies are in no danger of being neglected. He who fears the result of a fair competition between scientific and classical studies, confesses his disbelief, in the equal value of the former, or his distrust of the good sense of the young men of our country. The University organization adds to the facilities for technical education, while it detracts nothing from the interest of such education.

To return from this long, but not needless digression. Such as we have described it was the grand idea blazoned upon the banners of the University, as in 1867 it began its march. Whatever it may hereafter become; however much, under the pressure of misfortune or neglect, it may hereafter vary or contract its plans, we here, to-day, put it boldly

on record that, at the outset, the University was true to the grand ideas of the early friends and champions of industrial education, true to the laws of Congress and of the General Assembly, true to the best experience and judgment of the ablest educators of both continents, and true to the great interest with which it stood charged. History will record that it was not from any inconsiderate ambition of the Regent, nor from the thoughtless complaisance of its first Board of Trustees that so grand an institution was planned, but from the simple and hearty obedience of both Regent and Trustees, to the public will and the public law.

It is not necessary that I rehearse the work of the ten short months of preparation between the location of the University, the 9th of May, 1867, and the opening of the first term, the 2d day of March, 1868. The published reports of the proceedings of the Board of Trustees have already made that work historic. But no history will ever tell the unofficial toil and thought which the inauguration of such an institution must ever cost.

The Legislature of 1869 appropriated for the Horticultural department $22,000, which was expended in the building of a house and barn on the Horticultural grounds, a gardener's house, a greenhouse, in the purchase of teams, tools, and necessary stock and seeds, and in fencing, hedges and drainage. An appropriation of $25,000 was at the same time made for the Agricultural Department, which gave to the stock farm its large and excellent barn, with teams, tools, fences, hedges and fine stock. Besides these appropriations, $10,000 were given for library and cabinets, and $5,000 for the Chemical Department. These timely and useful appropriations gave the University facilities for its work, and helped to place it at once on high vantage ground.

In 1871 it had become evident that a new building would soon be needed to accommodate the increasing number of students. The Mechanical Department had also outgrown the capacity of the little shop in which it had begun its practical operations. An appeal was again made to the General Assembly, and appropriations were made of $25,000 for the Mechanical and Military Building, and $75,000 to begin the erection of this main building. Besides this there were appropriated $3,000 per annum, for two years, for agricultural experiments and institutes; $1,750 for horticultural experiments, especially in forest planting; $5,000 for the industrial library and cabinet, and $5,500 for the chemical department. The expenditure of these appropriations added to the University new and most valuable apparatus and attractions. The noble mechanical building, with its great variety of machinery for working in wood, iron and brass, placed our College, for mechanical engineers, civil engineers and architects, abreast with, if not in advance of, any other on the continent. The Horticultural Department took a large step forward, and the artificial forests now growing at the eastern extremity of the experimental farm were begun. The library received large additions of the most valuable books in the several departments of sciences, agriculture and in the useful arts. The Chemical Laboratory was reinforced with some of the best apparatus manufactured in Europe, and the University was enabled to stretch forth its hands in a helping way to the agriculture of the State, by courses of lectures delivered at several series of farmers' institutes. But the chief part of the appropriation was designed for the commencement of this building, the main house and center, henceforth, of our school work. The plans

of the building were prepared by J. M. Van Osdel, architect, though the general arrangement of the rooms was suggested by members of the University Faculty. Like all true buildings, the growth was from within outward. The interior of the edifice was planned first, and planned for its great uses. The shell that was to enclose it took shape afterwards, and hence we believe it to be unrivaled in the commodiousness of its apartments and arrangements. Ground was broken for the building in June, 1872, and some part of the substructure was laid, but the formal laying of the corner-stone did not take place till the 13th of September. The leading addresses on that occasion were delivered by Prof. J. B. Turner and Hon. N. Bateman, and I venture to reproduce here some brief extracts to show what still was the interior ideal history which was moving parallel with, and leading character and inspiration to the exterior history of visible acts and shapes. Says Prof. Turner:

"For the first time I came to this Universty last winter to see for myself. I did not find any one of the Professors or Teachers either omniscient or omnipotent; nor yet angels walking the earth with sublime grandeur, with wings at their shoulders all plumed and ready for the skies. From the newspaper accounts I had previously read of them, I hardly expected this. But I found (or at least I fancied that I had found) good, honest-hearted, intelligent men, prosecuting a great, arduous and difficult public work—new in its ends and aims, and untried in its modes and methods—with a patience, a zeal, and a self-devotion worthy of their great cause; and when I have said that, I have said enough in praise of any set of mortal men that ever lived. I found, also, a corps of most courteous and well-behaved pupils, well worthy of their teachers. They frankly told me (what it is easy to see in any similar institution under the sun) that they had made mistakes, and were striving to correct them; and expected to make more and correct them, too. What more or better did any man expect, who knew anything about the newness, the difficulties, and the natural and artificial obstacles of the great enterprise in which they are engaged? It will probably take a thousand years for a single one of these great free States to learn to endow and manage these Industrial Universities, in the best possible manner. But what of that? Shall we never attempt to learn the greatest of all possible arts, the preparing of our American youth for a true American life, because our art is difficult and our lesson a long one? I shall soon die; you shall soon die; we all shall soon die; but these institutions will live—live still to learn their art and their duty, and to bless their race, long after the oak has grown and fallen again and rotted over our graves. Here, then, is my tripple joy. I come here again to-day to cast off and abjure all my former prejudices and prepossessions—if prejudices and prepossessions they were—and to bury them beneath the corner stone of this new and beautiful edifice, now rising to our view. What greater joy can any man have than when he finds things better even than he had dared to hope.

"This institution will still need, in the future as in the past, a magnanimous patience within, and a magnanimous forebearance from without its walls; our little and censorious criticisms can neither destroy nor aid it. Thank God, it has already, even though beyond our former hope, become too big for any such result.

"It must now live! It ought to live! And it will live! The fly that can annoy the elephant cannot devour him, even though he may continue to keep him in an unseemingly wagging of his tail. Do the best it can, this institution will not and cannot do all we desire, for at least a round hundred years to come; though it may, and it can, and it will, do a good work to-day, to-morrow and forever."

The Chicago fire caused a failure of the appropriation expected to be made at the adjourned session in 1872 for the completion of the main building. To meet the emergency, and to save the State and the University from great loss, the trustees determined to borrow temporarily from the endowment fund, the $60,000 of the Champaign county donation which had been placed in that fund, and to expend the same in finishing the work. They trusted that a wise and just legislature would recognize the emergency created by the failure in promised appropriations, and would reimburse the impaired endowment. In 1873 the petition was accordingly presented, but owing to causes whose history must be told elsewhere, the appropriation was made only for the $15,000 found necessary to complete the building, leaving the University crippled in its annual resources by the loss of this part of its endowment. The legislature also made appropriations amounting to $29,550 for heating, furnishing, etc., and the further sums of $1,500 for experiments, and $3,000 per annum for taxes on the lands located in Minnesota and Nebraska. The act of 1873, also for the first time, modified the fundamental law of the University, reducing its Board of Trustees from 32 to 11 members, and making a requirement in regard to studies which I may notice further on.

Such is the history of the legislation concerning the University, and of the State appropriations for its establishment. These, though not always as large as were asked and needed, have been as liberal as the legislature have judged it possible to make, and have evinced an appreciation of the character and claims of the University which gives good hope for the future. Illinois will never fall behind other States in the support of its institutions, till the character of her people shall have lost that spirit of enterprise which has drawn upon them the eyes of the civilized world.

Let us now retrace our steps for a few minutes to look at the history of the University under another aspect—the history of its work. And if in the recital of this part of its history, I shall find occasion to speak of the opposition it has encountered, it shall be with the calm impartiality of the historian, and not with the irritation of a partisan. If at any time I have felt the soreness of wounded feelings, that time has passed away. Working now for the great cause of industrial education —a cause which in my growing esteem of it is too grand to admit any mere personal consideration to interfere with our devotion—I will not belittle it by any personal controversies, nor shape my cause to catch or avoid personal criticism. Having no longer, if I once had, any personal motive to detain me here, left nearly alone, a part of my family exiled, and perhaps permanently by their inability to endure the climate, my own health not a little shaken by the labors of the past, I know no reason for swerving the least from such frank, plain, truth-telling statements as may help the institution whose prosperity I seek, and the great cause whose principles are to me as God's truths. Freely pardoning every word uttered against myself, I shall not care to notice any spoken against the University, except so far as to disarm them of their power to injure it unjustly.

Whatever be the animus of the critics, whether simply anxious to see their views prevail, or alarmed by their fears that the institution shall suffer harm or defeat, or prompted by less worthy motives of personal bitterness, let it be all the same to us. We are in the midst of a great conflict—the battle of the ages. We belong to the charging squadrons. It matters but little whether mere spectators of the fight like the order of our march or not. We cannot even pause to pay heed to the movements of our comrades in other ranks. The cry, onward, is ringing in our ears, and humanity bids every man do his best. It is victory, and not excuses, that we seek. We are not culprits asking for our lives, but soldiers contending for our country and our cause.

On the 2d day of March, 1868, the proper work of the University was begun. About fifty young men appeared in the classes, and their number was increased in a few days to seventy-five. They were all in the elementary grades, and were set at such studies as would soonest prepare them for their proper scientific and technical studies. The labor system was also put in operation, and all students required to go out two hours each day for work upon the grounds and gardens.

Besides the Regent, there were only two Professors, Geo. W. Atherton, now Professor of History in Rutger College, N. J., and Wm. M. Baker whose labors on earth have ceased. In the month of April last, while the spring flowers were yet blooming, we laid his mortal remains away in the grave which he believed to be but the portal to a better world. A genuine worker, and a noble, christian man, history will embalm his memory among those who toiled faithfully for the good of the

University and of mankind. Besides these, T. J. Burrill, now Professor of Botany and Horticulture, assisted in the work of instruction. From year to year the number of students and teachers steadily increased, till the last annual catalogue showed a total attendance for the year of 402 students and a roll of 19 instructors, besides the foremen and Superintendents. The attendance during the current term shows the same rapid and steady growth, and is largely in excess of any former term. But the mere record of numbers is not the grand central and fundamental history we are attempting to recite. It is the conformity of the facts to the great ideas I have so fully exhibited which the country will wish to know. Who are these students, and what are they studying? The yearly reports furnish the answers to these questions. Time forbids me to read from all. The last report published, that for 1871–72, tells us that the 381 students of that year were from sixty-nine counties of Illinois, from 12 other States, and from three foreign countries; 68 were in the agricultural course, 11 in the horticultural, 45 in civil engineering, 33 in the mechanical, 3 in mining, 4 in architecture, 14 in the commercial, 14 in the special course for chemists, 15 in military, 84 in elective courses, 44 in literature and science, and 45 were unassigned. These last were chiefly ladies. The analysis has not yet been completed for the last year, but it will show an increased number in the agricultural, horticultural, mechanical, and engineering departments. But we do not even by this analysis touch the last answer to our question and reveal the true spirit of our history.

There is something in an institution of learning greater than its courses of study, grander and more potential even than its colleges and classes. It is the spirit that fills and animates it. The last great question which ought to be asked here, and concerning this University by the agriculturists, by the mechanics and manufacturers, and by the friends of industrial education, is not simply how many have you studying this or that study? or, what do you teach these students? but what is the general bent, what are the life and spirit and breath—what are the organized temper, tone and trend of the University itself? I will not take up your time to answer at length all these questions, because I have already trespassed beyond my hour; but I wish here, to-day, in the presence of the Governor of the State of Illinois—of the Board of Trustees of this University—of the President and gentlemen of the State Horticultural Society—of the members of our Board of County Supervisors—of the literary gentlemen visiting us from other institutions, and of our fellow-citizens of all classes, to testify as one who has no private purpose of any kind to attain, and only one wish to gratify—the wish for the prosperity and well-being of the University—to testify that in its several classes and courses, in its various studies and teachings, in the body of its membership, its teachers and its students of both sexes, this University stands, in its aims, ideas and animating spirit, a whole hemisphere apart from the general aim, and spirit and tendency of the old institutions which this was organized not to supplant, but to supplement rather, by the addition of that kind of education which the nineteenth century demands for mankind—that century around whose brow lies as a coronal of light the magnificent circle of sciences which, if not born within its years, have come to their larger maturity of growth here—a century equally venerable and glorious for the progress of knowledge and for the achievements of its more than magic art—a century whose industrial arts, led and guided by science,

work with all the power that science, conspiring with the forces of nature and of man, can exert for the good of mankind.

I believe the motto yonder on our walls, "Learning and Labor," expresses in the fewest terms possible, and in a glorious manner, the great central thought—the pulse-beating heart, the very brain center of this institution of learning.

I should give, if the room would permit, the facts in the case that would fully assure you, as they have assured those who are working here—my colleagues and myself—that yearly, steadily, now this very hour of our triumph and our joy, more than at any one hour since the first student form darkened our doors, the spirit of scientific industry and education rules in our midst, fills our halls, haunts every lecture room, breathes in every recitation, and does its rich and beneficent work. If our rolls are not filled as much as you and we desire with hundreds rather than scores of the young agriculturists and mechanics of the State, the fault is not ours, nor that of the institution. Give us your warm-handed, warm-hearted aid, rather than the cold and careless criticisms which have too often been the greeting of the agricultural press to the agricultural colleges of America, and we will fill to the overflow these magnificent halls, and demonstrate to the wide world the value of this education of and for the industries. I had designed a fuller discussion of this part of my subject, but others have claims upon the time, and I must leave to other occasions the explanation of the great obstacles which have opposed, and do still oppose, though with lessening power, the progress of industrial education.

Gentlemen, your hopes will never be disappointed, so far as they are based on the fundamental conceptions of the grandeur and scientific character of these arts which you are prosecuting, and to promote which these institutions were built. A late writer has stated as a fact of history that the steady progress of education has wheeled into the rank of the learned profession one after another of human employments. Three hundred years ago there was one learned profession, and only one, that of clergyman and priest as Rome calls him. The physician was a mere barber who cupped and bled, and who still in European lands uses as the sign of his calling the bowl which he used in his avocation as a blood-letter. The physician moved in time into the ranks of the learned professions. In the progress of the wants of mankind, in the growth of cities and states, the simple scribes and servitors of the courts also wheeled into line as another learned profession—that of law. In the growth of modern railroads and telegraphs came another—that of engineering. And others will follow.

Steadily as science has flung abroad her influence into the houses and shops and employments of men, she has bidden man to go up higher—bidden him to leave his lower toil and tasks to the harnessed forces of nature—bidden him use steel for muscle and steam for nerve force, and work with his brain as well as his hands. Onward and still onward must this movement urge its resistless way till all the great employments of men shall become learned professions, and all arts become scientific and noble.

There is no mockery—there is no lurking sarcasm—there is no humbug in yonder motto written in this great auditorium where we meet daily to worship God, and ask His blessing on our efforts. There is a prophecy in it grand as science and its future, grand as the God of science, who was the first Worker—the great Author of both learning and labor—a

prophecy of the coming time when you and I shall lay our heads under the sod, and leave to younger hands to clasp and bear onward down the march of time the banner upon which we have written that motto, till they plant it in the culmination of history over the crowned humanity of free, enlightened and regenerated man.

The work which we have roughly outlined will be accomplished, and in the end God will not leave on this earth one single one of the necessary employments of mankind, or of womankind, unredeemed from that old, clinging curse which reduced labor to ignorant, sweating toil—will not leave a single avocation necessary to the maintenance or civilization of mankind, which shall not demand and receive its own share of all that guiding and glorifying light that He has written in the starry skies above, in the petals of flowers beneath, and on this whole framework of things—not a machine, but a book. And labor thus linked to learning become the mightiest education of the soul, working out the problems of truth in the laboratory of God, shall reinterpret this mighty divine volume of worlds, out of which shall come grander conceptions of the author than ever yet swept through the heart of the wildest dreamer, or penetrated the brain of the profoundest theologian.

Some of those who are here to-day—the youngest of you, perhaps, that hear my words—shall come here on other anniversary occasions, and attend dedications of yet other halls that a great and liberal State, mindful of its own civilization, its own grand central, commanding position—the key-stone of the continent—shall consecrate to this great work. Gray-haired and sage, you will recall the memories of this day—you will look still in fancy on this meeting, and think on the predictions this day made in your hearing—that there lie in these two words, Learning and Labor, the clasped hands of the marriage tie, the sworn oaths of love and mutual service, between the Brain of man—God's Senate Chamber on the earth—and the Hand of man, God's vicegerent on the earth of noblest work and worship.

ADDRESS BY HIS EXCELLENCY, GOVERNOR BEVERIDGE.

The Illinois Industrial University is not Harvard nor Yale; is not Cambridge nor Oxford; it ante-dates not, with the former, beyond the birthday of the Nation; it goes not backward, with the latter, into the dim undefined ages of the past. Unlike them, it has no long line of professors, authors, divines, jurists, scientists, philosophers, historians, poets, statesmen, heroes, bishops and kings, for its alumnic. Unlike them, painting and sculpture have not graced its walls with the likenesses and forms of great and distinguished men, living and dead. Unlike them, it has not gathered power from the accumulated influences of ages and centuries. It wears not the gray hairs of years, but the flaxen hairs of childhood. It has not the sombre face of age, but the sweet smile of youth. It has not the stillness of the evening, but the energies and activities of the morning. It has not the glow of sunset, but it is encircled with the radience of the rising God of day. And

may we not hope—may we not confidently hope—may we not predict—and I wish to-day I might speak with the spirit of prophesy and utter its fulfillment—that the Illinois Industrial University, with its farm, its buildings, its new temple, its capacious auditorium, its geological room, its library, its laboratory, its horticultural and agricultural departments; with all its facilities for learning and pursuing the sciences; nurtured by the State, blest with the care of a wise and judicious Board of Trustees; cherished by an intelligent and christian Faculty; guarded, cared for and protected by the people; it may grow in power and widen in influence, so that in the years to come, it will stand side by side, and in front line of the institutions of learning in this land, and in the old world; that from these halls may go out statesmen equal to Sumner and Pitt, historians equal to Bancroft and Macauley, jurists surpassing Story and Bacon, heroes rivaling Nelson and Washington, farmers and mechanics, traders and commercial men, and the wives of all these men, such as were unknown to any of the ages of the past, in our country or in Europe. If this be prophecy—I see but one thing in the way of its fulfillment—and that is Champaign county. If this be the coming greatness of the Illinois Industrial University, I see but one shadow to that greatness, and that is the Honorable Board of Supervisors of Champaign county. Now, I do not feel like Moses—standing upon holy ground, but I feel that I tread upon very delicate ground. I do not come here to impugn the motives of any man or citizen of this county or of this State; but while I commend and applaud the members of the Board of Supervisors of this county who stood by the pledges made by the county, I deprecate the action of those who did not stand by the former pledges of Champaign county. I shall talk candidly and fairly, without impugning the motives of any one, or censuring any citizen of this county.

To state the case: When this institution was seeking a location, this county was very anxious to secure that location. For that purpose it voluntarily, freely, without compulsion, without force, without fraud, without menace, voted bonds to the amount, I believe, of $200,000. Of these bonds this Industrial University now holds $115,000, the interest of which is $11,500 per annum. This interest is a part of the fund by which the institution is carried on from year to year. Now, whether this county can legally or not avoid the payment of the interest on the bonds, I am not prepared to discuss. It is said, I know, that Livingston county made void its bonds. My own opinion is that Champaign county is legally bound to pay its bonds, every dollar and cent, with interest thereon, according to the contract. But passing by the question of legality, *morally*, Champaign county is bound to pay these bonds. You cannot avoid it—you voted the bonds for a certain purpose—you have received the consideration—you have located in your county, this institution, with its buildings, with all its appliances for learning, to accommodate the State, more particularly Champaign county and the counties immediately surrounding: you have received the consideration, and you cannot morally repudiate the contract.

Now, I take this position: that no individual, no municipality or organized community, no State, no nation, can afford to repudiate its solemn obligations. A man, through inability or misfortune, may not be able to meet his contracts and pay his debts; but a man who, through dishonesty or flat refusal fails to pay his debts, is marked by his neighbors. The county that is abundantly able to pay all its obligations,

like Champaign county, if it refuses to pay these solemn obligations, will be marked by all the other counties of the State; and if a State should refuse to meet its obligations, it would be marked, as Mississippi has for years been marked, by all the States in the Union; and if the United States of America should refuse to meet its obligations, it would be marked by all the nations of the world—and justly so too.

Suppose you do—what then? If the interest on these bonds is not met, or some provision made by the county, this institution must necessarily, about the 1st of next May, close its doors; and I fear if it closes its doors, then, they will be closed forever. I am not prepared to recommend to the Legislature an appropriation of $11,500 to meet the payment of this interest; and, unless the Legislature does come to the support of the institution, it must necessarily close its doors in May for the want of funds. Suppose you go further, and avoid payment of the bonds in the end; the matter is taken into the courts—one, two or three years elapse before the matter is ended. Long before that time the grass will grow all over the walks around the institution; long before that time, you will not see a single student walking up and down our streets; you will not have a single professor of this institution living in your midst; The Illinois Industrial University, located at Champaign, will be among the things that were; never to be resurrected by the State of Illinois. If you should ultimately avoid payment of these bonds, then by the terms of the contract and the nature of the case, by the conditions upon which the endowment was given to the State, it becomes the duty of the State to make that endowment good to raise by taxation, $115,000 and the interest thereon, which the people of Champaign county solemnly promised to pay Do you think when that time comes the Legislature of Illinois will have any great liking or desire to levy such a tax for Champaign county? Do you think they will be willing to put their hands in the pockets of the people, and take this amount out of their taxes, and turn it over for your benefit and your good? | No. | My impression is, that they will locate the institution among a people who will appreciate the gifts and honors of the State.

Now, I am a friend of Industrial Universities; I am a friend of the Illinois Industrial University; I am a friend, I think, of the people of Champaign county. I wish to aid in the support of this Industrial University. I wish to help the good people of Champaign county, but, if they won't help themselves, what can they expect of me? What can they expect from me? What can you expect from anybody? I could not, consistently, as the Executive of this State, recommend to the Legislature an appropriation to meet the payment of this interest, much less to make an appropriation of $150,000 to help you out of this difficulty. All I could recommend, would be for them to make good the endowment, and then leave it to the wisdom and conscience of the Legislature to put their money where they pleased.

But, I have hopes, and I am going to say it, not only here, but officially—that the good people of Champaign county do not approve of their board of supervisors. I have hopes, and I am going to say it here, and say it officially, that when the people of Champaign county have a chance at the ballot-box, they will repudiate that action and stand by their solemn pledges.

Now I wish to say to my good friends who have taken an opposite course in the board of supervisors, I don't ask you to come down — I don't want you to come down. If you think you are in the right, stand

by it, and let the people be the judges who are in the right, and who in he wrong. You are the representatives of the people, and if you are satsfied the people are not pleased with your action, it is your duty, and t is no coming down to correct that action, and place yourselves and his county right, before the people of the State. If, as Professor Turner said, in his eloquent address, you have made a mistake, correct it; and if you make more mistakes, correct them again. It is more honorable to correct mistakes than to stand by them forever, and go mad hrough life.

I thank you for your kind attention, and will say no more.

ADDRESS BY GEN. JOHN EATON.

COMMISSIONER OF EDUCATION.

The architecture of educational buildings is an interesting study in tself. How the visitor feels the contrast between the taste and fitness of the University at Rome, designed by Michael Angelo, and the rudeness and uncomfortableness of the old college at Geneva, as the abode of student life! How have halls of learning affected the very health and vigor of thought, as well as of the body, of generations of students! How have they become sacred, too, as associated with the training of the eminent leaders in human affairs! As a traveler in Bologna, in passing through the old University, is attracted by the representation of coats-of-arms of each of the thousands of alumni from different countries, who have become distinguished in some of the walks of life, what a history is revived around him! How much was formed in germ on the spot where he stands! Turning to the old medical lecture room, the very chairs and halls proclaim the experiments that gave galvanism to mankind. What inspirations are these triumphs of genius to those who afterwards frequent the same haunts!

Thoughts like these might fitly occupy and instruct us on the occasion of the dedication of this new building. What minds, what characters are to be here formed, and what primary forces here set in motion for the welfare of the people! And in the far future, what pilgrimages are to be made hither in commemoration of these associations! But the number of students to be attracted hither, and the eminence which they shall attain among the great benefactors of mankind, must be determined by the correctness of the direction and the ampleness of means given to the University, the eminence and skill of its instructors, and the completeness of the aid furnished them. How fully will its curriculum, the study, practice and training here afforded, cover the entire welfare of society, discriminating in favor of what is beneficial and against what is deleterious?

In answering this question, there are many courses open, each of which would have the support and co-operation of certain elements in society, and certain influences among educators. In rendering an answer, it has evidently been remembered that the Institution is sustained by the commonwealth; that it is for all the people, and has taken to

itself the style of Industrial University, as not excluding any courses of instruction and knowledge they may require, and that it is specially considerate of the industries of the State. Illinois having adopted a system of education at public expense, which reaches the home of every child within its borders, and offers in every centre of population instruction fitted to qualify each of them for all the common pursuits of life, here crowns that system with a circle of the highest opportunities within its gift. What shall this be? Certainly no partial, one-sided or perverted theory will answer. Your commonwealth—as the civil organization into which all your citizens have entered, and through which only they are able to reach all their interests—needs science, needs art, needs every form of culture, and must furnish for them an opportunity, a chance, a scope—nay, must stimulate, encourage and sustain them. This, moreover, the commonwealth does not for itself, as an abstraction, nor for itself alone, as represented in its officers, but for all the people and all their interests, by whom, through whom and for whom it is so conducted. In a sense, this University is the agency by which science is to be fostered, new fields explored, new applications of industry tested —by which, too, the diffusion of all knowledge is to be promoted, and by which all the people are to be inspired to a higher intelligence and virtue. Necessarily, as many as will must be fitly aided in their general culture, while large and reasonable opportunity is furnished for special preparation for service in the arts and trade.

Who could study the position of your University, the sources from which its means have come, or the methods by which it is conducted, without finding in it a beautiful expression of what American educational forces may be? As the nation had set apart a fixed section of land in each township for its common schools, so it contributed from its domain the first endowment for establishing the superior instruction here imparted, and appropriately and scrupulously refuses to interfere with its administration. Thus, then, you have at once the benefit of a powerful inspiration to local action and to a large and national patriotism; and the commonwealth, by this aid stimulated to effort, takes up the full responsibility, confides it to a board of trust and control, and places the instruction here to be imparted in proper relation to the other schools—elementary, secondary and superior—among you, so as to benefit them all, and to be benefited by all—the State proposing to supplement by the amplest means what the nation has done. In religion the culture now to be imparted here, is non-sectarian, but not unchristian; in political, while not partisan, it is not without patriotism; a part of the civil organization, it is not in antagonism with institutions of any grade that may be established and conducted by the different branches of the church.

This harmony of educational forces, to which there is so distinct a tendency in our country, relieves us of evils which are elsewhere encountered. Looking over the history of the world, studying carefully the facts before me, I confess I see in it special advantages. I should become uneasy if there was such action by the civil organization as to preclude the free action of the church, and I should be equally alarmed to see such exclusive control by the church as to forbid this action by the State. With us civilization has made such rapid strides, because here it has been possible to harmonize so many elements, to lay under contribution such a variety and diversity of forces. I am among those who believe that we cannot afford to spare or exclude any social, civil,

intellectual or moral elements, calculated to promote the welfare of the individual or community. The institutions of learning exactly of this character are of more recent date in our country; indeed, perhaps in the world. In a sense, they have been declared to be consecrated to a new education, new however, only in making active in the education of our day, principles which have, in some form, been known and adopted by education in other centuries. Yet the establishment of this class of institutions was with us an experiment, which some have apparently sought to embarrass with antagonisms, but which the greater number of the thoughtfulest statesmen have sought to make successful.

Of the thirty-seven State institutions benefited by what is known as the national agricultural grant, I consider this among the most successful in its administration. Honoring all, moreover, who have contributed of their skill and wisdom to these results, I cannot fail to observe how largely they are due to the ability, character, and attainments of your chief administrative officer. I seem to see how certain portions of his experience have served to fit him specially to do this work with success, scholarly in tastes and pursuits, devout according to his conscience, and honoring the same in others familiar with that State system of education in which a similar experiment had been proceeding successfully, he was thus, as it were, in training for the work here undertaken. I need not call to your minds how easy, at different points in the progress of this institution, it would have been for a one-sided character—a man of crotchety ideas, or one unacquainted with affairs or with the conditions and sympathies of all the classes of persons, and interests and subjects to be here harmonized, in the means and methods employed and the results attained—how easy it would have been for such a man to place this University in the rear instead of in the front rank of the institutions of this class, in spite of the greatness of your State, the largeness of its population, the abundance of its wealth and the general prevalence of education among your people. To-day you commemorate another forward step. From the hour when this great scheme was projected, one element after another of the conditions for its success has been settled, principles and methods have been taken up, examined and rejected or adopted by its managers; the people have been informed and have given the sanction of their approval; and more and more, there is freer and freer play for that organization, instruction and training, which would be suggested by the nature of science and its relations to the welfare of a state, with the present conditions and future conditions of yours. These efforts neither commenced too soon, nor have advanced too rapidly.

New settlements at first reap the fruits of other civilizations. The early settlers of Massachusetts Bay, undoubtedly, had a larger proportion of thoroughly educated men than has ever obtained either there or elsewhere in our country. Illinois, for a period, gathered chiefly the fruits of high culture carried on elsewhere; but for a considerable time the training of your sons and daughters has depended upon the facilities for education furnished them at home. Whatever advantages or disadvantages, therefore, may be derived from other sources, it is fair, perhaps, to bring the means for higher instruction furnished by the State into view, in comparison with the population and its interests.

On a soil of great productiveness, 635 feet above the sea, located in the interior of the Continent, yet surrounded, touched or intersected by water channels, promotive of intercourse with mankind, having an area

of 55,410 square miles, already sustaining a population of 2,539,000, possessed of an aggregate wealth of $2,121,681,579, or an average of $835 34 to the individual; it is known, according to the report of your able State Superintendent for 1872, that of a school population of 882,693 it has 662,049 under instruction, and an average total attendance of 329,799, or an average total absence of the school population from the schools of 552,894; that, according to the census of 1870, there were 133,581 persons ten years old and over, who could not write; and that out of an adult population of 1,171,499, there were 44,775 males and 60,944 females who could not write, or a total of 105,719 illiterate adults; so that the percentage of adult male illiterates to the adult male population was 7.16; that of the adult female illiteracy to the adult female population 11.16; and the percentage of total adult illiterates to the adult population was more than nine in every hundred. Our appreciation of what the commonwealth is doing for the education of its children cannot blind us to the fact that of 133,584 illiterates, ten years old and over, only 42,989 are foreigners, and that 90,595 are natives. We cannot pause to dwell on these instructive figures, showing so clearly that already your State has reached that maturity in which its own native population is yielding a large illiteracy in spite of the magnificent efforts for education. None can appreciate better than your own able and earnest educators the fact that the common schools of Illinois, notwithstanding their great excellencies, have much more to accomplish before even elementary instruction will become universal. Unfortunately for any judgment that we may form in regard to what is being accomplished for the secondary and higher instruction of the people, we have as yet no adequate record. But some suggestive facts, however, may be called to mind. Looking over the reports of the institution for superior instruction in the State, we find the total number of students classed in what is known as collegiate departments to be 2,074, of whom 388 were students in the Industrial University. I do not know the exact statement of the number that completed the collegiate course, nor can we ascertain how many of the sons and daughters of Illinois are receiving this training elsewhere, or how many may, at great odds, secure the same attainments outside of college halls. There are doubtless very few educators managing these courses of superior training who would not advance them; who would not have them require more and accomplish more. According to the census, we may be perhaps safe in saying that at least 54,000 become 21 years of age, annually, in Illinois. If now the average age of students who complete this course of instruction is 21, and if one-fourth who enter these classes complete the courses, there would be 518 graduates annually, about one in every hundred of the population of that age. What Illinoisan would be satisfied with this amount of products in higher training?—satisfied that there should be furnished annually only this limited number, to renew the supply of the several learned professors, and meet the increasing demand for college-trained teachers, and men and women of thoroughly disciplined minds well stored with information in the different pursuits of life? Let it be understood here that I do not suggest that all who are to be benefitted by science or by advanced learning must be trained in these courses of study. The subdivision of attainments, responsibilities and pursuits is most cordially admitted; nor is it demanded that in each pursuit every person should be trained to perfection in its respective details; some must pursue science more and practice less—some, practice more and study less; but in every

pursuit all the truths of science fitted to contribute to its advancement and highest success should be known by a sufficient number to communicate the benefit of their knowledge to all. Am I understood? Let me be more specific. I do not mean that every farmer should graduate at the Industrial University in chemistry, but that a sufficient number should understand chemistry, as applied to agriculture, to diffuse its practice and doctrines among all the farmers of the State. I do not mean that every one who builds or buys a house should obtain a diploma in architecture, but that there should be a sufficient number of experts in the application of science to architecture to make it certain that every house, every home in the commonwealth is constructed in accordance with the essential principles of lighting, heating, ventilation, health and taste.

Nor do I say that these provisions should be made by the State for the purpose of hindering the success of educational institutions under other auspices. Indeed, even where all the resources of institutions conducted for profit, or by benevolence, or at public expense, have been taxed to their utmost, the result is in danger of being inadequate to the end. Moreover, in the management of superior education, there are, in the past and present, certain indications of limitation. True, there is nothing either in the nature of the action by the State or church or science to restrict culture; all studies may find free scope under the auspices of either; yet the condition of resources or the objects proposed may enforce the prominence of specialties.

The church or the science that establishes a college, however much it may exalt general culture or be ready to impart special training, by its very nature cannot ignore that instruction essential to the perpetuity of its own doctrines. The State, while it charters and protects, and so far aids these independent ecclesiastical and scientific institutions, finds, at its hand, great experiments, either in the development of new principles or the application of old ones, so intimately and closely related to the welfare of the people, that as the sole organization directed exclusively by them all and for them all, cannot divest itself of the obligations to prosecute them until they yield up their fruits for the public good. Great cost and ample means are required. Again, what farmer could bear the expense of all experiments relating to that vast industry, or why should any one do this, when every dollar invested in agricultural pursuits in the State is equally interested? What engineer, what town, what city, could afford to work out all the problems required in engineering? And yet how many Dixon disasters would you consent to have, before the principles of bridge building were sufficiently known and practiced to render impossible such a catastrophe? But we are pressing these suggestions as if the present demands were not to be increased, whereas, Illinois is only passing from its civil childhood. Massachusetts, of most sterile soil, has already nearly 187 inhabitants to every square mile. It is easy to see that Illinois, at her present rate of progress, will soon attain the same density of population, or a total of 10,353,000 inhabitants. Suppose that the same average wealth should prevail then as now, (and if the forces at command are wisely used it should be greater,) the total wealth of the community will amount to the enormous sum of $8,648,138,000, or more than one-fourth the total wealth of the whole Union in 1870. It is for this future that your educators must prepare. Already we notice a growing conviction that the proportion of educated men to the whole population, in some

of the older portions of the country, is decreasing. Reasonable foresight would require, in all the interests of society, that the motives and conditions of culture should be so modified that the power of reason and truths of science should steadily increase their ascendency over the baser social and civil forces.

We boast that we are approaching an age of pre-eminent excellence in virtue—an age surpassing all past ages in progress; that we are leading the world in the application of equity and reason to statesmanship and the conduct of government. Peculiarly separated from other powers, and so free from their interference, we have been calling to them to adopt principles of reason, of arbitration, of equity, in their intercourse. We call "halt" to barbarism, and oppose it in every direction and point to our free institutions for the imitation of mankind. More and more they inquire for the facts. Indeed, we find, in Europe especially, a growing indisposition to make war the first instead of the last resort. Where formerly statesmanship took account of the resources of countries only to determine whether one could be victorious over the other in the shock of battle, now we find it turning its attention to the social and industrial conditions of the people. National policies are intrusted less and less to the air castles of theory, and are brought nearer to the hard-pan of statistics. It is no longer beneath kings and princes to promote the intelligence, skill and virtue of the humblest laborer. Finding in the figures a ready indication of how the balance of trade is turning, whether the comforts or dis-comforts of life are increasing, legislation and administration are laid under contribution to devise ways and means. The new thought, or inquiry, or necessity, turns them to the school, college, university—to every place where the young are gathered for training; newer courses of study are introduced, or old courses modified, or better aids are furnished; at any rate, no expense is spared to train and fit a generation to overcome the evils that may be threatened. Is Prussia humbled by the first Napoleon? She quietly turns her attention to rearing a generation that shall bear her banners triumphantly against whatever French force may oppose her. Does England find the commodities dependent on the skill of her artizans losing their supremacy in the market of the world? She turns her attention to the multiplication and improvement of technical instruction. Is Austria beaten at Sadowa? She does not attempt, petulantly and foolishly, to renew the struggle, and bring on other disasters, but accepts the lesson of experience, and turns all her energies to the internal development of her resources, first and foremost pushing elementary instruction into every dark corner of the realm, and offering a reward for all the higher efforts of mind, so that learning and science may be stimulated to the most rapid progress. Shall we, as a people, shall our institutions, shall your commonwealth, be less wise in applying the great lessons most emphatically taught by the current experience of the civilized world? Your reply is a most emphatic "no," by all that has been done in furnishing this Institution with its present facilities. What we see here to-day, is the best possible assurance of what is to be done in the future. God speed your efforts. Teach here the highest rectitude, the noblest patriotism. Gather here the best instructors in the classics and mathematics, and in the physical sciences. Carry on here to settlement the great problems in which the several industries of your people are interested. Add the history and illustrations in the arts and trades, and enrich the sons and daughters of the State, who may come here for

instruction, with the best training and amplest information that can qualify them to go forth as benefactors of the race, as almoners of the treasurers of knowledge here gathered for the benefit of all the people.

Mr. FELLOWS, being called upon, spoke as follows:

A very eminent clergyman was once preaching upon the subject, "The world, the flesh, and the devil." He said that he would pass over the world, touch lightly upon the flesh, and pass on to the end of his subject. Now, I know that you want the benediction and the amen. I am not going to detain you from the full and complete realization of your wishes. I came here this afternoon as a stranger to the most of you—not to some around you. I came here as a consistent friend of industrial education. In my own State, for years, I have been battling for it, and while not oblivious to the claims of so-called higher education—while not forgetting that in any complete or rounded course of study for the development of the full manhood there must be the humanities as well as the industries of life included—yet in behalf of my own institution, and I hope I can say it, in behalf of every college, classical or otherwise, in this great and glorious State of the West and the Union—I can extend the hand of cordial friendship to the Illinois Industrial University, and bid it God-speed.

There are about 9,000,000 of workers, I suppose, in these United States—men working with their hands. There are, according to the last census, about 1,500,000 of laborers in our midst, and it has been computed—but I will not go over the reasons for the result—that if these were to receive the barest rudiments of a common school education, and were to earn in their present condition one dollar per day for their labor, they would, by the knowledge of these rudiments, be able to earn $1 25 per day. If this be so—and the generalization has been of the widest character, and the results I believe are truthful and right—if this is the case—if these 1,500,000 were to receive a common school education, they would add to the productive value of the United States, year by year, $116,000,000. That is twice the amount paid for the support of public schools in the United States. Take this great army of eight millions of toilers in our midst, and five millions of them are farmers; yet until recently there has been no opportunity given this grand band of artisans for education in their specific work. Let those who have received instruction in the common schools of the country receive the additional instruction imparted in this and kindred institutions, and year by year $500,000,000 would be added to the productive value of the United States; and yet in face of these there are persons talking of the cost of education, and we have been dwelling for a few moments under the baleful shadow of repudiation—that shadow which will soon be lifted, and the full sunlight pour in upon our souls.

I will close with a single reference to the motto we see above us. It is not learning *or* labor. That was the motto of the old civilization, by which a few men were put over the shoulders of the toiling masses, and remitted the millions to become hewers of wood and drawers of water. It is not learning *above* labor, for that has been the motto of the nineteenth century until very recently; but as that motto had its day, and must now give place to the motto presented here—the motto which the

ever living God teaches to his children upon earth, and what God hath joined together let no man—no Board of Trustees—put asunder.

Now, young gentlemen, one word to you, and to you, young ladies: It is not out of the way that young ladies are admitted to the Illinois Industrial University. What have they to do with labor? They have a great deal to do with it. Sir Richard Steele said that to look upon a beautiful woman was a liberal education in itself. You have abundance of such sources of a liberal education here, and I hope they will be increased, for these fair daughters are soon to become the fair wives of these artisans, and farmers, and other professional men; for remember this, that three-fourths of all the men in positions of trust and eminence in church and state, at the bar and by the bedside of sickness, in the United States, have come from the ranks of farmers; three-fourths of the women that grace and gladden their households come also from the farmers' homes.

Now to you, young men: these young ladies will take care of themselves. Realize the end for which this Illinois Industrial University is established. Let the rest of us take care of lawyers and theologians and others in the learned professions; but do you take care that those professions, which are the basis of life—which lie at the very foundation of the stability, the prosperity and the glory of this country—that they suffer no harm at your hands; and I trust, as the years onward roll, you will go back to the farms; you will go back to the workshops, you will go with the culture of the brain, with the culture of the heart, with the culture of the cunning hand, and bear ever before you this inspiring motto, "Learning and Labor," and God bless you in your efforts to realize the ends at which you are aiming.

Mr. WINES, Secretary of the State Board of Charities, then said:

I give you notice that I shall say nothing of much consequence, but I never hear a story without trying to match it; and Dr. Fellows told us such a capital story that I shall have to speak of a sermon once delivered by an eloquent Baptist preacher, upon the text "Adam, where art thou?" He divided his subject as follows: *First*, All men are somewhere. *Second*, Some men are where they hadn't oughter be. *Third*, Some men, if they don't look out, will be where they will not want to be; and *Fourth*, A few remarks, by way of exhortation, upon infant baptism. Now, Mr. Chairman and Gentlemen, I do not know whether I am where I ought to be or not; I know I am where I am very glad to be; but if I should detain you much longer, I am afraid you will put me where I do not want to be.

I remember an implied warning contained in a sermon preached when I was a boy at college, by an old negro preacher. You know the negroes are very fond of dreams, in fact, their religious experience they make to assume the form of a dream. He said, "My bredring and sistering: Last night I dreamed a dream; and I dreamed dat I had de berry identical ladder dat Jacob went up to saw de Lord on, and by de help of faith, I mounted away up de top, and it was too short; so I took it down, and I spliced it; an, by de help of faith, I mounted away up to de top a second time, and it was too short de second time. I took it down again and put on a smashing big splice, an, by de help of faith I mounted away up to de top a third time, an it was too short de third time. Fo I spread my wings, an I give an almighty jump, an I got the tarnationest fall dat ebber you see on God's yearth.

Mr. President and Gentlemen, I am a little afraid that will be the fall of some of the Supervisors of Champaign County. I can only say in all seriousness, that I value your worthy Regent highly. I honor him for his ability, courage, fidelity and perseverance in the face of obstacles, whose magnitude, no one but him can fully realize. When he spoke to-day, he drove a nail in a sure place, and the Governor clinched it. I am glad to be here, and I hope the Industrial University will go onward and upward, conquering and to conquer.

EIGHTH ANNUAL MEETING BOARD OF TRUSTEES.

URBANA, ILLINOIS, *March* 10, 1874.

The Board met at 5 o'clock P. M. in the new University parlor.

Present—Messrs. Blackburn, Cobb, Gardner, Pickrell, and Sabin—7.

Absent—Governor Beveridge, Messrs. Reynolds, Mason, Slade, Byrd, and Brown.

No quorum being present, the Board adjourned to meet at 8:30 A. M.

SECOND DAY'S SESSION.

The Board assembled at 8:30 A. M., took a recess of thirty minutes attending the chapel exercises.

At 9 o'clock the Board re-assembled in the University parlor, President Cobb in the chair.

The Scriptures were read and prayer offered by the Regent, Doctor Gregory.

The roll being called, the following members answered to their names:

Messrs. Blackburn, Brown, Cobb, Gardner, Pickrell, Slade, and Sabin.

Absent—Gov. Beveridge, Messrs. Reynolds, Mason, and Byrd.

The Secretary read letters from Gov. Beveridge and Gen. Mason, regretting their inability to attend this meeting.

On motion, the general order of business was set aside, and the subject of heating apparatus in the new University building, respecting the full acceptance thereof, and paying in full of account of Messrs. Crane, Breed & Co., the contractors, was taken up.

The business agent read his report on the subject, as follows:

STATEMENT IN REGARD TO THE STEAM HEATING APPARATUS IN THE NEW UNIVERSITY BUILDING.

HON. EMORY COBB, *President of Board of Trustees:*

About three weeks ago, I was requested by Crane, Breed & Co. to accept, on the part of the University, the apparatus. I replied that I did not feel authorized to do so, but would lay the matter before the Board of Trustees at their next meeting. A representative of the firm, Mr. Abbott, is present, and will, I suppose, present a request for settlement.

I enclose herewith the contract and the specifications drawn by Mr. Van. Osdell, also several bills for extra work and extra fittings that were needed.

The question of damage to the building from overflow of water tanks, and the repairs of a coil, should be considered in settlement.

Respectfully,

S. W. SHATTUCK, *Business Agent.*

The members of the Faculty were called upon to give their opinion on the working condition and general satisfaction of the heating apparatus. Mr. Abbott, the representative of the firm of Messrs. Crane, Breed & Co. not being present, the business was laid over until 2 P. M.

The reading of the minutes of last meeting was dispensed with, they having been printed and published.

The President, Hon. Emory Cobb, then read his report.

To the Board of Trustees of the Illinois Industrial University:

As your Chairman I have been at a loss to know what you might expect of me at this time in the shape of a report. I have, however, concluded that a brief statement of our financial condition might be interesting and acceptable.

At our July meeting, you will remember, we made estimates of our current income and expenditures from that date to March 1, 1874, as follows:

Income, including amount on hand	$26,644 93
Expenses	24,163 33
Leaving an estimated balance of	$2,481 60

This estimate did not include the Agricultural, Horticultural or Mechanical Departments. To these several departments we appropriated their current earnings.

The treasurer reports on hand March 1, $2,048 08. By reference to the book-keepers statement, we find that—

The Mechanical Department, including the Carpenter Shop, has credit for	$3,067 91
And are charged	2,911 38
Leaving a balance in their favor of	$156 53
The Agricultural Department has credit for	$4,534 27
And is charged with	3,560 62
Leaving balance of	$973 65
The Horticultural Department has credit for	$1,074 71
And is charged	2,060 86
Making balance against Department of	$986 15
Experimental farm has credit for	$324 17
And is charged	169 79
Leaving balance of	$154 38

These results are gratifying, and are mainly due to the hearty co-operation of the Regent, Faculty, and the heads of the various departments in assisting the Trustees in their efforts to establish as economical an administration of affairs as might be consistent with the objects and aims of the University.

I herewith present a communication (marked Exhibit A) from Mr. J. O. Cunningham, attorney, giving information in regard to the suits that are now pending against the University. He desires some instructions in regard to them at this meeting of the Board.

Our endowment fund remains the same as at our July meeting, it having been impossible to exchange any of our county bonds, as suggested in section 7 of the law approved May 7, 1873.

In this connection I will state that the litigation which has taken place in regard to the validity of our Putnam and Kankakee county bonds, has thus far been favorable, and we now expect to realize the full face of our coupons as soon as the respective counties make arrangements for their payment.

Our Champaign county coupons due May 1, we are assured, will be paid when due. Our lands in Nebraska and Minnesota should perhaps be placed in the market. Our records of 1872 contain a full report in relation to them.

The taxes for this year are provided for by State appropriation, approved April 27, 1873 Our 160 tract east of Urbana has been rented for the coming year at $3 per acre.

I have a communication from Prof. Robinson (marked Exhibit B) referring in detail to the wants and management of the Mechanical Department. I heartily concur in the recommendations and hope we may be able to make the appropriations called for at the expense, if found necessary, of some departments whose aims do not bear so directly upon industrial pursuits.

The report of our Business Agent is herewith presented, which covers the current business relations of the University and the State appropriation account.

The treasurer will furnish us during the present session with an estimate of income from this time to September first, and I recommend that appropriations for current expenses be made up to that date

The re-employment of Head Farmer, Superintendent of Horticultural Farm, and Mr. Hays, now in charge of Green House and University grounds, will require your attention.

I recommend that Prof. Shattuck be retained as Business Agent upon the same terms as at present.

The committee appointed at our July meeting to report a curriculum in keeping with certain resolutions presented by J. P. Reynolds, and adopted, have not yet reported. We hope they will do so at this session, so that any changes they may recommend may be published in our annual catalogue and take effect at the commencement of next University year.

The Regent will doubtless recommend the engagement of a professor of Agriculture for the coming year. I am of the opinion that such a professor should be engaged, and that steps should be taken at once to that end.

All of which is respectfully submitted.

EMORY COBB.

The report was accepted and ordered to be spread on the minutes of the Board.

The Regent, Dr. Gregory, then read his report, as follows:

To the Trustees of the Illinois Industrial University:

GENTLEMEN: The occurrence of your annual meeting imposes upon me again the duty of presenting you my annual report of the condition and wants of the University. The year just closing is in many respects the most eventful, as well as the most prosperous in the history of the Institution. The completion and occupancy of our new main building are of themselves sufficient to make the year memorable. The change in our organic law reducing the Board of Trustees from thirty two to eleven members will be looked to as the starting point of a new era in our affairs, and the other changes made by this law must affect to some extent the character and future of the University. Let us hope it will prove only the beginning of a larger prosperity, and of a wider usefulness. The foundations already laid in the hard labors of the first period ought to give us as their fruits a steadily increasing growth and a firm and increasing progress.

ATTENDANCE.

The attendance for the several terms since your annual meeting is as follows:

Spring term, 1873—Gentlemen	236
" " " Ladies	40
Fall term, 1873—Gentlemen	276
" " " Ladies	80
During the current term—Gentlemen	219
" " " Ladies	50

The attendance of the Fall term was in advance of that of any former term of the Institution. The financial crisis which occurred during the autumn, affecting the business of the whole country, largely diminished the expected attendance of the present term, and will probably continue to affect us till the close of the present year. But there are causes in operation which promise to increase largely the attendance, especially of the students of agriculture.

The members belonging to the several Colleges and Schools for the past year have been as follows:

COLLEGE OF AGRICULTURE:	
School of Agriculture	53
School of Horticulture	9
	62
COLLEGE OF ENGINEERING:	
School of Mechanical Engineering	25
School of Civil Engineering	49
School of Architecture	6
School of Mining	3
	83
COLLEGE OF NATURAL SCIENCES:	
School of Chemistry	25
School of Natural History	4
	29
COLLEGE OF LITERATURE, SCIENCE AND ARTS	68
School of Commerce	14
School of Military Science	55
Eclectic courses	150

The number of female students has increased to nearly 100, mostly enrolled in the last named course.

Drawing....(M. Matchen)	132
Book-keeping....(Snyd.)	83
Military Tactics....(Snyd.)	34

FACULTY

The changes in the Faculty during the past year are already known to you. Death took from our number, in the spring, Prof. Wm. M. Baker, one of the original instructors, and in the loss of whom the University suffered bereavement of one of its warmest friends and ablest teachers. The discontinuance of the chair of Languages, dismissed from our ranks Prof. J. F. Carey, a gentleman to whose ability as a scholar and fidelity as an instructor I can bear the most emphatic testimony. Some, also, of the assistants of last year have been replaced by others for the current year. To fill the places left vacant by the removal of two full Professors only one has been added, Prof J. C, Pickard, who succeeds Prof. Baker in the chair of English Literature. The entire number of Professors, Instructors and Assistants now employed: One Regent, eight full Professors, four Instructors in charge of departments, one Lecturer on Veterinary Science and Animal Husbandry, nine Assistants—making in all twenty-three Teachers and Assistants.

Besides these the students have had the benefit of a course of lectures from Prof. Sanborn Jenney, of Williams College, Mass., and many are taking a course of lessons in Elocution from Miss Bryant, of Bloomington.

The work done in the several practical departments will be presented in detail by the reports from the chief officers in those departments, which I herewith transmit.

THE HORTICULTURAL DEPARTMENT.

The report of Prof. Burrill, Professor of Horticulture, shows a very satisfactory condition of things in his department. Both the class and field work in Horticulture are such as must commend themselves to your approval. The investigations made by himself and his students, with the microscopes, are leading to results as interesting as they are important. The reports of Mr. Vickroy on the or-

chards, the small fruit plantations, and the forest plantations are full of interesting and valuable facts and suggestions. The usual amount of grafting, etc., for practice, has been performed by the students, and the experiments with apple grafts may help to settle some vexed questions in that branch of horticulture. Some experiments made by Mr. Hays, who has charge of the green-house, will also repay attention.

THE AGRICULTURAL DEPARTMENT.

The Stock Farm.—The report of Mr. E. L. Lawrence, the Head Farmer, exhibits a very satisfactory condition of the affairs of his department. Notwithstanding the almost entire destruction of the corn crop by a violent hail storm, his balance sheet exhibits a net profit of $97 85. The loss on the corn crop cannot be estimated at less than $500. I recommend to your favorable attention Mr. Lawrence's request for another short-horn cow or heifer, and for suitable swine pens.

The Experimental Farm has been under the charge of Hon. W. C. Flagg, whose report will be laid before you in its due order. To favor the economy demanded of us by the temporary diminution of our funds, it has been suggested that both the stock and experimental farms may be united under the care of one man. An additional argument for this union, in the fact that this would enable us to bring to the lower barn the fine stock, and thus make them more available for the instruction in stock husbandry. I cannot for the reasons named withhold my approval of the proposed union, if it can be carried out under such regulations as will secure the great objects we have had steadily in view.

It has been falsely asserted that it is the design of the Trustees to lessen the extent of our farming operations and even to sell off fine stock. I mention this only to give it a public contradiction, and to reiterate my own judgment, at least, that the very extent of these operations adds value to our experiments, and lends to our Agricultural Department a dignity and importance which are essential to its highest success. As this department shall increase in numbers the extent of our farms will be of great value in the opportunities they will afford for observation and practice in different classes of cultures.

THE MECHANICAL DEPARTMENT.

The report of Prof. Robinson, which I herewith transmit to you, exhibits the work of his department and offers some suggestions and estimates, which I cordially commend to your attention. The law of Congress, which gave the same prominence to mechanical arts and agriculture, can only be met by a full support of this Mechanical Department. It is the opinion of many of the best men of the State that this one of the most useful of the several branches of the University, and this, like the Agricultural Department, must necessarily entail considerable expense if well maintained. It ought to be held steadily in mind, both by the Trustees and by the people of the State, that scientific education, and especially when it is carried out in its application to the arts, will entail expenses unknown to ordinary plans of education.

To cut off these expenses, and to shut up these practical departments, would at once change the character of the institution from that of a school of practical learning and applied science, to a simple institution of ordinary education, different from others, perhaps, in the fact that its instruments of culture are scientific rather than literary studies.

We cannot well overestimate the influence this School of Mechanical Engineering is calculated to exert on the manufacturing interests of the State. The great World's Fair held last year in Vienna was a most magnificient testimony to the Polytechnic Schools of Europe, and one may safely predict that the great International Exhibition, to be held in Philadelphia in 1876, will teach us some lessons in this respect which will not be easily forgotton.

THE SCHOOL OF CIVIL ENGINEERING.

The work of this department, as shown by the report of Prof. J. B. Webb has been carried on with increasing success. The number of applications for this school is steadily increasing, and though you have heretofore provided a full supply of transits, levels, compasses, chains, etc., the numbers who now require field practice occasions a demand for additional instruments.

THE SCHOOL OF ARCHITECTURE AND DRAWING.

There has been a marked increase in the number of proper students in Architecture, and the classes in both free-hand and projection drawing show a gratifying increase of attention to these most useful and practical branches of the study. Their importance to all the useful arts and to all industrial education demands a reinforcement of the teaching force by the employment of an assistant thoroughly acquainted not only with all the principles of the art but also with all the methods of teaching, both in copying and desigus.

SCHOOL OF CHEMISTRY.

A report frsm Prof. Stuart shows that the whole number of students instructed in that department during the year was 114. The Laboratory now occupied is altogether too small for the large classes to be instructed, and the question will soon force iiself on your consideration to provide other and spacious quarters.

SCHOOL OF MILITARY TACTICS.

This school has remained under the charge of Prof. Snyder, who was commissioned last autumn as Colonel; and Captains' Commissions were conferred on several of the class of 1873. It has cost some constant care to keep in full force our drill, but we have the satisfaction of reporting that the laws of Congress and of the State have been fully complied with, in the the instruction in Militaty Tactics.

Other departments need not be mentioned in detail. The work of instruction has gone on in all of them in a satisfactory manner, and the University is steadily working its way to higher efficiency and to wider usefulness.

ART COLLECTION.

A movement has been set on foot to obtain for the University a collection of fine casts of some of the great master pieces of scripture, and nearly $2, 000 is already subscribed for this purpose by citizens of Urbana and Champaign. The value of this collection, not only as a means of general culture of the taste and practical judgment, but as a direct and important aid to the practical instruction in several

departments, and especially in those of architecture and drawing. I need not add anything to show the exceeding value, on more general grounds, of such a collection as that here proposed. The fine arts have played too important a part in the history of civilization to require any new defence of their utility or power. The University will derive from the presence of such a collection, advantages and renown of no small extent.

I respectfully ask that the large hall just above the library be set apart for the Art collections already gathered and to be hereafter received; and such appropriation as you may deem suitable be made for the fitting up of a room and framing and mounting of pictures, etc., and for freights on the same.

CONGRESSIONAL INVESTIGATION.

A notice has reached us of an investigation, ordered by Congress, in the condition and work of the colleges founded under the grant of Congress for industrial education. This seems to me a most favorable opportunity to lay before Congress and the country the true character and extent of the work the University is doing, and I am confident that this investigation will serve to establish on a firmer basis this great national interest of industrial education. I respectfully recommend that authority be given to return full answers to the inquiries addressed to us.

THE INTERNATIONAL EXHIBITION.

It is expected that a large space will be given in the buildings of the coming International Exhibition, to be held in Philadelphia in 1876, to the educational institutions of the country. In the late World's Fair, at Vienna, the exhibition of educational institutions and their work was one of the most imposing parts of the show. The German educational department occupied one entire large building. The Austrian department was nearly equally large; while France and Belgium made exhibitions of no mean proportions. It will be a matter of proper national concern to make, at this our first great International Fair, a full exhibit of its educational work.

I call the attention of the Trustees thus early to this matter that it may be decided whether this Institution will participate in the exhibition, and if such participation is determined on, that early application may be made for the space we may require.

THE LIBRARY AND CABINETS.

The library, now numbering ..... volumes, continues to be one of our most useful and powerful agencies of instruction. The constant and abundant use of the books necessarily wears out many of the bindings, and in time the books themselves, requiring a considerable annual expenditure for repairs, and for replacing books used up. Besides this, there is a constant demand from our several scientific departments for the new books which record the new advances in science and art. Nothing has contributed more than its library to the high success and growing reputation of the University. No stronger attraction exists to draw and retain students here. The maintenance and steady increase of this library ought to be an object of prime concern. I trust that the state of our finances will soon enable us to restore to this use the entire income from matriculation fees.

THE LITERARY SOCIETIES.

I am happy to call your attention to the progress that has been made during the year by the voluntary literary and scientific associations of the students. These associations are four in number, embracing the Philomathian, the Adelphic, the Scientific, and the Alethenai, the last of which is composed entirely of ladies. During the present winter these several societies have fitted up the halls, that you provided them, with an elegance and good taste and at a liberal expense, from their own means, which must certainly command your warm appreciation.

The Adelphic society ask you to cause a partition to be erected to cut off a portion of the unused passage next their room to afford them a committee and library room, as the other societies are provided with such rooms. I cordially commend the application as reasonable and desirable.

RECOMMENDATIONS.

It has seemed best to gather together in one place the several recommendations for the improvement of the University.

1st. In regard to the Faculty.

It has been the steady purpose to fill the vacancy in the chair of agriculture at the earliest moment. The proper work of this Chair has been efficiently performed by the several Professors whose departments were connate. So that, in fact, no one of the schools in the University has had more labor bestowed upon it. But the increased number of agricultural students, and that grand uprising among the agricultural classes of our country which must give a new impulse to agricultural education, as it brings new power and responsibilities to farmers themselves, demands that this department of our work shall be promptly and largely reinforced. I hope to see not less than two hundred and fifty students of agricultural science within our halls the coming year, for whose thorough instruction the most ample provision will be needed. Besides the Veterinarian and the Prof. of Horticulture, there will be needed a man thoroughly familiar with Agricultural Chemistry, as well as with the theory and practice of Agriculture, and a separate laboratory will be needed for his use, such as is provided at all the Agricultural Colleges of Europe. If assistants shall be needed we can doubtless obtain them from among our own advanced students or graduates from this department.

I also recommend the employment of a lady instructor of the highest attainments and of large experience, who may in some sense stand as a preceptress to the female students. The number of these students has steadily increased till over eighty appear on our roll. They are from all parts of the State and are admitted to all the classes of the University. But their best interests demand that there shall be in the Faculty a woman of high character and culture, who shall be specially charged with their oversight. If a lady can be found who can properly open and direct the studies in the School of Domestic Economy, her employment will be of double use and value.

In this connection, I wish to repeat the recommendation, that at the earliest day practicable, you provide fully for a School of Domestic Economy and such other schools as the wants of our female students demand.

2d. The Practice Departments.

It has been found that in these departments in which the University is obliged to furnish tools, apparatus, materials or models for the use of the students there occurs a constant loss from ordinary wear and waste and from occasional breakages. This loss, though small in the separate items, is large in the aggregates, and would in a few years leave us almost destitute of the means of instruction which have been provided at such great cost. The Faculty have had this matter under frequent consideration, and they concur in recommending that some regular charge shall be made in all of those departments where the University is required to provide instruments or materials for the students' use. Such a charge has been made from the outset in the Chemical Laboratory, where each student on entering deposits $12, from which is deducted the cost of all chemicals and apparatus which he does not return. The same rule should be applied to the Physical Laboratory, to the Engineering instruments, to the Shop practice, to the several Draughting departments. These small payments would not be burdensome to the student and would help to keep up in full measure and in good condition the apparatus of instruction for succeeding students. When it is remembered that we afford, free of charge, instruction which, at the Stevens Institute, and Massachusetts School of Technology, and other similar institutions, costs the student from $150 to $200 a year, these small charges will not seem unreasonable.

The Mechanical Department will also require, as heretofore, a small appropriation to cover the expense of material and instruction in Shop practice. This practice has been very wisely made a part of the course in Mechanical Engineering, and must be provided for. It is mentioned here for the purpose of calling your attention to the fact that, while you justly ask the shops to pay their own way in all proper work done by the students, there is a proper demand for an appropriation to meet this Shop practice, which, simply because it is made carefully educational, cannot be made at the same time remunerative.

The labor in the wood working shop is not so intimately connected with any mechanical study as that in the machine shop; yet it is sufficiently important to demand some further efforts to give it a more regular and practical character. Our former plan of a foreman, who should at the same time be a partner in the business, having failed, the shop has been for the past year under the direction of the Instructor in Architecture and his Assistant. It seems desirable that some more instruction shall be given to the beginners than we have thus far been able to afford. If your funds will not allow any appropriation for this purpose I suggest that a class may be authorized, to be formed at the expense of those who shall receive the instruction, with some small charge for use of tools and materials. A single term spent under close and competent instruction would enable the diligent student thereafter to do remunerative work.

BUILDINGS AND GROUNDS.

The condition of the grounds around the new building will demand your attention. The want of funds may not allow the full plans prepared for these grounds to be carried at once into effect, but I earnestly recommend that whatever shall be done shall be carefully conformed to those plans. In no other way can we secure ourselves from expensive changes, and reach at last the best results. We have already the trees on the ground or in nursery for the planting, and shall need but a limited appropriation to complete the walks to the northwest corner, and the drives to the west entrance and around the building, and to smooth and seed the lawn and to transplant the trees and shrubbery.

Besides the ordinary summer cleaning and repairs, some painting should be done to preserve from injury some of the frame buildings, as the Veterinary building and the wood work of the old University. The old gardener's house and small dormitory building near the new University building, also, will soon require re-painting, and it could be done cheaper now than when the boards shall become quite bare.

The small observatory building ought to be removed to higher ground near the main building, both for safety and use.

ANNUAL MEETINGS.

The recent changes in the laws affecting the University, renders still more inconvenient the time of the annual meeting. It occurs neither at the close of the academic year or at that of the financial year. It does not come even at the close or beginning of a term. If designed to come in time for the employment of managers of the farms, or to decide upon their policy for the year, it is too late. If intended to prepare for the coming college year, it is too early. The statistics presented at this time, made up as they are from parts of two academic years, are neither complete in themselves nor will they agree with any of the other reports we are required by law to make. Chosen at first by accident, it has been perpetuated simply because the Board have not found time to change it. I now respectfully suggest the inquiry whether you may not now, by resolution, declare your meeting, which will occur in Commencement week, in June, your next annual meeting, and from that time hold your annual meetings at that period of the year.

DUTIES OF REGENT.

But we also request the attention of the Board to the importance of clearly defining the duties, powers and responsibilities of the Regent under the new law. Formerly the Regent was the recognized executive head of the Institution, and all its employees, of whatever rank or character, were under his supervision, and looked to him for instruction, when not fully instructed by resolution of the Board itself. It is for the Board now to determine whether anything in the new law changes this relation, and to determine clearly the exact nature and extent of the functions of the Regency. I ask this less for myself than for the interests of the Institution, and to avoid trespassing upon the authority of any other officer of either the Board or of the University.

In offering for your consideration these amendments, I have sought to do simply my duty, without a thought of controling your action or directing your policy. And if, on any former occasion, I have in any instance used any undue effort in urging the adoption of any measure whatever, I trust posterity, at least, will attribute it to my all-absorbing zeal for the best interests of the University, and not from any overweening fondness for my own opinion. But the best opinions always prevail, whoever may suggest it, that in the successful result we may all have reason to rejoice.

Before the report was finished, the Board took a recess until 1:30 o'clock P. M.

AFTERNOON SESSION.

The Board re-assembled at 1:30 o'clock P. M.

The Regent, Dr. Gregory, concluded his report.

The report was accepted, and ordered to be spread on the records.

The subject of the heating apparatus was taken up.

Mr. Abbott was introduced, and made statements in regard to the work and completeness of the apparatus, asking the acceptance of the same, and payment of the 20 per cent. retained of the contract price, offering bonds, and rectifying any imperfection which may be chargeable to the firm by contract.

The Board took a recess to examine and inspect the heating apparatus.

On returning, Mr. Gardner was appointed a committee to adjust a question of hedge fence on the south line of the University lands and those of Mr. Percival.

J. W. Bunn, Esq., Treasurer, presented his report:

JOHN W. BUNN, ESQ., TREASURER,
In account with the Illinois Industrial University:

		DR.	
1873.	March 1..	To balance	$5,667 87
	Aug. 31..	" interest on Sangamon county bonds	2,250 00
	" 31..	" " Champaign county bonds	11,500 00
	" 31..	" " Morgan county bonds	2,500 00
	" 31..	" " Pike county bonds	3,000 00
	" 31..	" " Chicago water bonds	875 00
	" 31..	" " Ill. State 6 per cent. bonds	930 00
	" 31..	" amount received from chemical dept	1,447 68
	" 31..	" " " " horticultural dept	995 96
	" 31..	" " " " farm sales	2,795 41
	" 31..	" " " " fees	1,869 00
	" 31..	" " " " mechanical dept	847 64
	" 31..	" " " " carpenter dept	300 39
	" 31..	" " " " collection for last year	276 68
	" 31..	" " " " fuel for students	164 47
	" 31..	" " " " Ill. Central Railroad donations	469 71
	" 31..	" " " " rent	310 00
	" 31..	" " " on account of lands sold	757 00
	" 31..	" " " for stationery and printing	20 15
	" 31..	" " " from State for taxes	2,660 49
	" 31..	" " " from experimental farm	750 00
			$40,387 45
		CR.	
1873.	Aug. 31..	By Board expense	$1,006 65
	" 31..	" amount paid for salaries	13,149 09
	" 31..	" " " fuel and lights	904 82
	" 31..	" " " stationery, printing and advertising	378 03
	" 31..	" " " buildings and grounds	466 09
	" 31..	" " " incidental expenses	513 30
	" 31..	" " " mechanical department	1,394 29
	" 31..	" " " carpenter shop	886 18
	" 31..	" " " horticultural department	2,802 21
	" 31..	" " " agricultural department	4,261 18
	" 31..	" " " chemical department	233 91
	" 31..	" " " library and cabinet	610 21
	" 31..	" " " military and gymnasium	67 05
	" 31..	" " " new University building and grounds	1,137 42
	" 31..	" " " taxes on lands, Neb. and Minn	2,660 49
	" 31..	" " " agricultural experiments	343 80
	" 31..	" " of balance	9,572 73
			$40,387 45

JOHN W. BUNN, ESQ., TREASURER,
In account with Illinois Industrial University:

DR.

1873. Sept. 1..	To balance	$9,572 73
1874. Feb. 28..	" interest on Sangamon county bonds	2,250 00
" 28..	" " Ill. 6 per cent. bonds	930 00
" 28..	" " Chicago water bonds	875 00
" 28..	" amount received from horticultural department	796 85
" 28..	" " " " mechanical department	1,282 54
" 28..	" " " " agricultural department	2,404 00
" 28..	" " " " carpenter department	1,728 92
" 28..	" " " " farm sales	995 06
" 28..	" " " " experimental farm	324 17
" 28..	" " " " fees	5,535 67
" 28..	" " " on account of lands sold	2,372 15
" 28..	" " " for Ill. Central Railroad donations	1,863 24
" 28..	" " " rents	656 00
" 28..	" " " fuel for students	668 98
" 28..	" " " buildings and grounds	30 00
" 28..	" " " collections for last year	22 90
		$32,308 28

CR.

1874. Feb. 28..	By Board expense	$272 25
" 28..	" amount paid salaries	14,175 20
" 28..	" " " fuel and lights	3,164 74
" 28..	" " " stationery, printing and advertising	270 60
" 28..	" " " buildings and grounds	1,667 96
" 28..	" " " incidental expenses	917 49
" 28..	" " " mechanical department	1,393 05
" 28..	" " " carpenter shop	1,393 24
" 28..	" " " horticultural department	1,664 64
" 28..	" " " agricultural department	2,214 07
" 28..	" " " chemical department	1,159 53
" 28..	" " " library and cabinet	706 15
" 28..	" " " military department and gymnasium	202 64
" 28..	" " " new University building and grounds	949 75
" 28..	" " " agricultural experiments	108 89
" 28..	" balance	2,048 08
		$32,308 28

URBANA, ILL., *March* 13, 1874.

J. W. BUNN,
Treasurer.

The report was accepted, and referred to a committee, consisting of Messrs. Gardner and Sabin, for audit.

The Regent and Executive Committee were instructed to answer a certain number of questions received from the Senate Committee on Agricultural and Mechanical Colleges.

Mr. Pickrell offered the following resolution:

Resolved, That the Head Farmer, by and with the advice of the Executive Committee, be authorized to purchase an additional Short Horn heifer or cow; and that an amount sufficient to pay for said Short Horn cow or heifer, be appropriated out of such funds as may accrue from the sale of surplus thoroughbred stock, now on hand.

The Regent and Executive Committee were instructed to open correspondence with view to employ a Professor of Agriculture, and a lady principal for the next academic year. The hall over the Library was assigned for the Art collections and Models.

The Board took a recess until three o'clock P. M., to witness the drill of the University Battalion.

The Board re-assembled at 5:15 P. M. The Faculty were directed to lay before the Executive Committee a schedule of charges and fees, proposed charge for use and waste of material and tools in the different practical departments.

The Faculty was also directed to submit to the June meeting of this Board plans, etc., in regard to representation of this University at the Centennial Exhibition.

Mr. Pickrell offered the following resolution:

Resolved, That the necessary light and heating, for one night only in a week, be furnished free of expense for the meetings of the Scientific, Philomatheum, Adelphic and Alethenai Societies, provided that the same be held on Fridays. Carried.

The petition of the Adelphic society to fit the small hall for a committee room, was granted and $50 appropriated for the purpose.

The question in regard to the duties and powers of the Regent was referred to a Committee of three, to be appointed by the President.

The question of the time of annual and quarterly Board meetings was referred to the Regent and Mr. Slade for a report at this meeting.

Board adjourned to 8 P. M.

The Board re-assembled at 8 P. M. and took a recess to attend Aniversary Exercises.

Met again at ten.

Mr. Gardner, Chairman of Auditing Committee, made the following report:

183	John Paton	Work in Armory	$8 00
184	Ill. Cent. R. R. Co.	Adv. Frt., Nov. 1873	13 00
185	George Buckley	Reporting Dedic. Exercises	15 00
186	Cyrus Bower	Wages, Fireman, Dec., 1873	35 00
187	Edward Lynch	" Janitor, "	31 00
188	A. C. Scribner	" Janitor, "	31 00
189	Students' Labor Pay Roll	December, 1873	190 21
190	H. K Vickroy	Salary, December, 1873	100 00
191	E. S. Lawrence	" "	100 00
192	J. M. Gregory	" "	333 33
193	A. P. S. Stuart	" "	166 66
194	S. W. Robinson	" "	166 66
195	T. J. Burrill	" "	166 66
196	S. W. Shattuck	" "	166 66
197	E. Snyder	" "	166 66
198	D. C Taft	" "	166 66
199	J. Burkill Bebb	" "	166 66
200	J. C. Pickard	" "	166 66
201	N. Clifford Ricker	" "	100 00
202	F. W. Prentice	" "	100 00
203	J. D. Crawford	" "	75 00
204	A. C. Swartz	" "	40 00
205	Charlotte E. Patchen	" "	40 00
206	P. Gennadius	" "	40 00
207	M. A. Scovell	" "	20 00
208	A. E. Barnes	" "	20 00
209	W. S. Chase	" "	26 00
210	G. R. Shawhan	" "	10 50
211	E. A. Robinson	" "	10 50
212	W. W. Whurry	Salary, Fall Term	25 00
213	D. E. Barnard	Salary, Fall Term	25 00
214	Fuller & Fuller	Frt. on Models from Europe	20 25
215	Sherwood School Furn. Co	Crayons	7 61
216	S. W. Shattuck	Business Agent and Book-keep., sal., Dec.	65 00
217	C. B. Whitmore	One doz. pails	2 75
218	John Miller	Painting	2 25
219	S. C. Garwood	Duster and dust-pan	3 40
220	Reed Reed	Printing 3,000 circulars	38 00
221	W C. Flagg	Salary, December	41 66
222	Beidler & Co	Lumber	35 93
223	Champaign Gas Co	Bill, December, 1873	51 60
224	John Paton	Repairing and cleaning muskets	13 85
225	Locke & Saxton	50 lbs. brass	6 25
226	Chas. I. Hayes	Salary, December, 1873	50 00
227	E. S. Lawrence	Exp. Farm, December, 1873	142 54
228	Agricultural Dep't	Hay and pasturage	36 22
229	" "	Hauling coal, to date	219 89
230	" "	Train work	17 75
231	J. M. Gregory	Salary, January, 1874	333 33
232	A. P. S. Stuart	" "	166 66
233	T. J. Burrill	" "	166 66
234	S. W. Robinson	" "	166 66
235	S. W. Shattuck	" "	166 66
236	E. Snyder	" "	166 66
237	D. C. Taft	" "	166 66
238	J. B. Webb	" "	166 66
239	J. C. Pickard	" "	166 66
240	N. C. Ricker	" "	100 00
241	F. W. Prentice	" "	100 00

242	J. D. Crawford	Salary, January, 1874	$100 00
243	A. C. Swartz	" "	40 00
244	Charlotte E. Patchen	" "	40 00
245	P. Gennadius	" "	40 00
246	M. A. Scovell	" "	20 00
247	A. E. Barnes	" "	20 00
248	W. S. Chase	" "	26 00
249	G. R. Shawhan	" "	11 50
250	E. A. Robinson	" "	11 90
251	I. B. & W. R. R.	Frt. on flower pots	2 25
252	Students' Labor Pay Roll	Winter vacation	296 44
253	Alex A. Ulrich & Co	Hardware	29 66
254	Fuller & Fuller	Glass	18 38
255	Adams, Blackmer & Lyon	Printing	5 00
256	R. Peacock & Co	Lumber	17 70
257	Larrabee & North.	Hardware	51 80
258	Oehbright & Co	Frt. on chem. app. from Europe	55 93
259	M. E. Lapham & Co	Lumber	2 94
260	H. Swannell	Stationery and printing	6 48
261	S. W. Robinson	Sundry expenses	4 10
262	S. F. Allen	Herd books	20 25
263	Ed., "Student."	Copies, Oct., Nov., Dec	6 60
264	S. W. Shattuck	Salary, January, 1874	65 00
265	E. S. Lawrence	" "	100 00
268	H. A. Mann	" "	38 00
269	Cyrus Bowen	" "	35 00
270	A. C. Scribner	" "	31 00
271	A. J. Bicknell &Co	Periodicals, 1874	76 41
272	Hallock, Holmes & Co	Rubber tubing, etc	44 28
273	Larrabee & North	Hardware	47 50
274	W. C. Flagg	Salary, January, 1874	41 66
275	J. W. Bunn	Salary, as Treasurer, one year	500 00
276	H. K. Vickroy	Exp. January, 1874	27 25
277	Hadley Bros	Music books for band	5 25
278	H. H. Tyndale	Surveyor's compass	25 00
279	Joseph McCorkle	4 coil door springs	3 00
280	C. P. Jeffers	Salary, January, 1874	7 00
281	Champaign Gas Co.	Bill, January, 1874	50 80
282	Enterprise Coal Co	Six cars coal	96 00
283	Hosford & Spear	One doz. spittoons, pitchers, etc	8 65
284	Carbondale Coal Co	Nine cars coal	122 40
285	F. G. Lunsden	Gas fixtures	31 50
286	H. K. Vickroy	Exp. Hort. Dept. December, 1873	28 35
287	John Muller	Glazing	4 65
288	E. L. Lawrence	Farm exp. June	107 58
289	Walker Bros	Walnut lumber	7 44
290	B. D. Abbott	Cymbals for band	10 00
291	Champaign Gazette	Printing	5 50
292	E. A. Robinson	Petty expenses and material furnished	9 85
293	I. C. R. R. Co	Advanced freight	50 90
294	D. & J. B. Brown	Check book	8 50
295	L. Tucker & Son	Subscription to Country Gentleman	3 00
296	Illinois Staats Zeitung	Subscription, 1874	2 00
297	G. W. Flynn & Co	1,500 programmes	15 80
298	Students' Labor Pay Roll	January, 1874	299 95
299	Myron S. Hall	Eng. level, rod, etc	100 00
300	J. M. Gregory	Salary, February, 1874	333 37
301	A. P. S. Stuart	" "	166 74
302	S. W. Robinson	" "	166 74
303	T. J. Burrill	" "	166 74
304	S. W. Shattuck	" "	166 74
305	E. Snyder	" "	166 74
306	D. C. Taft	" "	166 74
307	J. B. Webb	" "	166 74
308	J. C. Pickard	" "	166 66
309	N. C. Ricker	" "	100 00
310	F. W. Prentice	" "	100 00
311	J. D. Crawford	" "	75 00
312	A. C. Swartz	" "	40 00
313	Charlotte E. Patchen	" "	40 00
314	P. Gennadius	" "	40 00
315	M. A. Scovell	" "	20 00
316	A. E. Barnes	" "	20 00
317	C. P. Jeffers	" "	20 00
318	W. S. Chase	" "	24 00
319	G. R. Shawhan	" "	11 50
320	E. A. Robinson	" "	14 00
321	W. C. Flagg	" "	41 74
322	S. W. Shattuck	" "	65 00
323	H S. Reynolds	" "	15 00
324	J. P. Campbell	" "	15 00
325	E. L. Lawrence	" "	100 00
326	H. Vickroy	" "	100 00
327	C. J. Hays	" "	50 00

328	Hosford and Spear	Lantern	$1 25
329	Agricultural Department	Hauling coal	84 00
330	Nicolet & Schoff	Two reams letter paper	13 50
331	E. R. Peterson	Stationery	10 50
332	Horticultural Department	Hauling lumber	7 22
333	M. E. Lapham & Co	Lumber	137 97
334	Larrabee & North	Hardware	4 67
335	David Weeks	Gravel and sand	81 15
336	Horticultural Department	Work for other Departments	100 50
337	Sabin Bros	Hard coal	5 85
338	Wm. Price	Paints, oils, etc	9 75
339	S. W. Shattuck	Petty expenses	30 28
340	E. L Lawrence	Work on Experimental Farm	94 72
341	Dodson Hodges	Hardware	37 37
342	Fuel and lights	Furnished Mechanical Department	288 70
343	Trevett & Green	Hardware	37 30
344	Ill. Cent. R. R. Don	Freight, Nov., Dec., Jan	638 30
345	E. L. Lawrence	Farm expenses	327 10
346	F. Brown	Repairs of chimney	4 00
347	Cyrus Bowen	Salary, Foreman, Feb., 1873	31 00
348	H. A. Mann	Salary, Janitor, Feb., 1874	40 00
349	A. C. Scribner	" " "	31 00
350	Ill. Cent. R. R. Co	Advanced freight, Feb. 1874	80 55
351	Ill. Cent. R. R. Don	Freight for Feb., 1874,	166 01
352	U. S. Patent Office	Binding reports	30 00
353	Students' Labor Pay Roll	February, 1874	297 03
354	W. S. Maxwell	Glass, putty, etc	9 55
355	Champaign Gas Co	Gas, Feb., 1874	48 40
356	A Snediker	Castings	124 43
357	Manspeaker & Camp	Soap and mop-sticks	1 70
358	Enterprise Coal Co	Five cars coal	56 00
359	A. E. Blake	Work in orchards	2 40
360	H. K. Vickroy	Expense Feb., 1874, Hort. Dept	27 25
361	H. A. Mann	Hanging curtains	9 00
362	C. I. Hays	Expense Green-house	1 00
363	Carpenters' Department	Work to date for other Depts	177 72
364	Mechanical Department	" " " "	285 48
365	E. Snyder	320 lbs. hard coal	2 18
366	Carpenters' Department	Book case	23 22
367	Carpenters' Department	Wash stands, etc	49 00

REPORT OF AUDITING COMMITTEE.

The Committee to whom was referred the Treasurer's account beg leave to report that we have examined the Treasurer's boook and compared the same with the Secretary's, and the vouchers on file, and find they agree and are correct

Also find vouchers paid on file from No. one (1) to three hundred and ten (310), inclusive ; and also from one (1) to three hundred and sixty-seven (367) inclusive,

We find orders issued for the year returned and canceled amounting to $61, 074 92.

All of which is respectfully submitted.

Signed, D. GARDNER,
D. D. SABIN.

The Treasurer then submitted Estimate of Income for the current year, which was adopted, and the following appropriations from the current fund made from the term from March 1, to August 31, 1874 :

Regent's Salary	$2, 000 00
Eight Professors	8, 000 00
Instructor in Architecture	600 00
Instructor in Language—History	300 00
Assistant in Chemistry	180 00
Assistant Veterinary	400 00
Assistant in Free-hand Drawing	160 00
Assistants in Engineering, Architecture, Mathematics, French, Botany, etc	600 00
Librarians	200 00
Secretary and Treasurer	500 00
Business Agent and Book-keeping	400 00
Janitors and Firemen	600 00
	$13, 940 00
Horticultural department	250 00
Mechanical Shops Institution (one term)	200 00
Board Expense	250 00
Building and Grounds	800 00
Fuel	100 00
Stationery and Printing	450 00

Incidental expenses	200 00
Military Department and Gymnasium	125 00
Chemical Department	300 00
Library and Cabinet	600 00
Carpenter shop for Mat. and Inst	400 00
	$17,615 00

Anticipated Receipts for fiscal year, beginning March 1, 1874.

Interest on Sangamon County bonds	$4,500 00
" Champaign County bonds	11,500 00
" Morgan County bonds	2,500 00
" Illinois State 6 per cent. bonds	1,860 00
" Chicago Water bonds	1,750 00
" Pike County	3,000 00
	$25,110 00
On account of land interest	3,000 00
Rent	480 00
Fees	6,000 00
From Farm	1,000 00
Bills receivable	500 00
Balance on hand March 1, 1874	$38,133 00

Adjourned to 8:30 A. M.

THIRD DAY'S SESSION.

The Board assembled at 8:30 o'clock A. M.

Present—Messrs. Blackburn, Brown, Cobb, Gardner, Pickrell, Sabin, and Slade.

Absent—Gov. Beveridge, Messrs Byrd, Mason and Reynolds.

The minutes of the preceding day were read and adopted.

Mr. Gardner was given full powers to attend to certain law suits now pending against the University.

President Cobb's report was taken up for action on the suggestions contained therein.

Mr. Pickrell was authorized, when visiting Gage county, Nebraska, to obtain such information as he might deem useful in relation to the University lands, and to report to the board.

Judge Brown offered the following resolution:

WHEREAS we recognize fully the importance of furnishing practical instruction in the Mechanical Shops; therefore,

Resolved, That a sum not exceeding $500 for the year shall be included in the appropriation for furnishing material, etc., necessary to enable the Professor in this department to finish the instruction demanded: *Provided*, that a reasonable fee may be exacted from the students who avail themselves of this instruction to pay for breakage and wear of tools used by them.

Judge Brown offered the following resolutions, which were adopted:

Resolved, That for the sake of convenience and economy the following changes be made in the management and cultivation of the Horticultural and Experimental farm, to-wit:

1. All the land in said farm not occupied by the orchards, gardens, nurseries and ornamental and tree plantations of the Horticultural Department, together with the teams, wagons and farming implements, shall be placed under the control of the head farmer, who shall reside in the residence belonging to said department.

2. The orchards, gardens nurseries, ornamental and tree plantations, including green house and grounds around old building, shall be under the full control of the Professor of Horticulture, who shall be authorized at all times to call upon the farmer to perform all team-work that may be needed in the cultivation and management of his department.

He shall also have power, with the concurrence of the Regent and Mr. D. Gardner, and within the limits of the appropriations that may be made, to employ such assistance as he may need in the cultivation and care of the trees, shrubs, gardens, etc.

The Professor of Horticulture shall also be authorized to select such space in the barn as he may need for grafting, and storage of tools, seeds, plants and horticultural products.

3. The farmer is directed to make such preparations as may be necessary, in order to transfer the blooded stock from the Stock Farm to the Experimental Farm—this to be done in time for the fall term of the University. He shall also make preparation and sow grass at the proper season on all the land on said farm, not now appropriated to horticultural and experimental purposes.

4. The services of Mr. Vickroy, as manager of the orchards and gardens, are dispensed with.

Resolved, That Mr. Lawrence be employed as Head Farmer, at the rate of $1,200 per year, and the use of a house and perquisites as heretofore; but as it is more convenient, the annual employment of the head farmer will take place at the December meeting.

Prof. S. W. Shattuck was continued as Business Agent and Bookkeeper till the June meeting of the Board.

The Committee on Courses of Study made the following report, which was adopted:

To the Honorable Board of Trustees Illinois Industrial University:

The law upon which your committee was ordered to report and suggest the mode of application, reads as follows:

"All pupils attending the University shall be taught and shall study such branches of learning as are related to Agriculture and the Mechanic Arts, and as are adapted to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life, without excluding other scientific and classical studies, and including for all male students, military tactics."

The question for your committee seems to be—

(1.) What are the branches of learning related to Agriculture and the Mechanic Arts?

(2.) What branches of learning are adapted to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life? and,

(3.) How far shall these studies be made compulsory or required of every student?

1. In answer to the first, we class Mathematics, the Natural Sciences—Organic and Inorganic; Bookkeeping and Accounts, and all the technical studies required in Agricultural, Horticultural and Mechanical Arts. The list, therefore, should be somewhat as follows:

Book-keeping; Physics, with the various sub-divisions and applications; Chemistry; Mineralogy; Geology; Meteorology; Physical Geography; Anatomy and Physiology, Human and Comparative; Botany; Zoology; Entomology; Algebra; Geometry, Descriptive and Analytical; Trigonometry; Calculus; Drawing, Free-hand and Perspective; Surveying and Engineering; Astronomy; Mining and Metallurgy; Analytical and Applied Mechanics; Architecture; Agricultural Chemistry; Origin and Treatment of Soils; Culture of Plants and Seeds; Treatment, etc., of Domestic Animals; Veterinary Surgery and Art; Farm Products and Manufactures; Construction and use of Machines; Carpentery and Joinery; Models and Patterns; Roads and Rail Roads; Bridges; Military Science; Rural Law and Economy, etc.

2. In the second class there should be included not only the studies just named, but a good deal more. This bespeaks liberal culture, and seems to require it with the same emphasis as practical learning. Liberal education applied to the industrial arts ought to permit, at least, sufficient study of history to enable students to know the industrial progress of mankind, nations and classes, language and literature—at least as embraced in English, French and German, must have a prominent place—for no one can pretend to liberal education who does not know well, and cannot use well his mother-tongue; while in French and German are found some of the best investigations of Science and the best literature of modern agriculture and mechanics.

To these we add all studies relating to Manufactures and Commerce, Political Economy and laws having special bearing upon the industrial classes. This list will therefore embrace all studies in General History, Ancient History, Medieval History, Modern History, History of United States, Constitutional History, and History of Civilization; studies in English, French and German Language and Literature, Political Economy, Constitutional and International Law.

In deciding the question of compelling students to pursue certain studies as indicated by the law, your committee advise that the present rule of the University requiring each one to take three studies, unless excused by the Faculty for cause, be retained, and that the further requirement be made of the selection of at least one of these three from the first list given above; further, in case but one is thus chosen from the first list, the next be taken from the second list, leaving in either event the students free to choose the third from anything taught in the University. This would necessitate no change in the present suggested courses of study, but might modify considerably the studies actually pursued by individual students.

It is the opinion of your committee that the adoption of the above recommendations would fully meet the letter and the spirit of the law, and would tend to fix the University upon a firm and proper foundation, thereby permanently securing its advantages to the interests of those for whom it was founded. This rule should equally apply to and be enforced upon the female students of the University.

Your committee would further recommend that all applicants for admission to the University be required to pass a satisfactory examination in those branches ordinarily taught in the common schools throughout the State.

A. M. BROWN,
J. P. SLADE,
W. C. FLAGG. } *Committee.*

An appropriation of $113 was made for printing and advertising.

An appropriation of $120 was made for salary due to Miss Mary E. Gregory, for services in 1872 and 1873.

Mr. Gardner made a report on unpaid bills, referred to him at last meeting, for roofing drill hall, to R. M. Combe, $75, and a lumber bill due to Mr. R. Peacock. Report accepted, and Mr. Gardner given power to settle the bills, if correct.

An account of Mr. Gehlman was referred to Mr. Gardner to adjust. ($150 appropriated.)

Adjourned to 2:30, P. M.

AFTERNOON SESSION.

Board re-assembled at 3 o'clock P. M.

Head farmer Lawrence was authorized to build some pens at the lower barn, using as much as possible of the material on hand.

Mr. Blackburn offered the following resolution:

WHEREAS, the wants of the University, arising out of its growth and success without a corresponding increase of means, makes economy and retrenchment a necessity; therefore,

Resolved, That from the close of the current University year a general reduction of expenses, as near as may be on the scale of 20 per cent., be adopted, and on that scale the annual salary of the respective professors be fixed at sixteen hundred dollars, and the pay of teachers and assistants, as a rule, be correspondingly reduced.

Consideration postponed till June meeting.

The President appointed, as a committee to report on the duties and powers of Regent, at the Board meeting in June, Messrs. Pickrell, Sabin and Gardner.

An account of $62, for accrued fees, etc., on law suits, was allowed.

Prof. Webb's request for purchase of Eng. Inst., was laid on the table.

Dr. Gregory made the following report, in regard to the quarterly meetings:

We recommend that the Board hold quarterly meeting as follows:
The second Tuesday of March.
Tuesday of commencement week.
The second Tuesday of September.
Tuesday of the week preceding the close of the fall term in December.

J. M. GREGORY,
JAS. P. SLADE,
Committee.

Carried.

Mr. Slade offered the following resolution:

Resolved, That the experiments on the experimental farm be carried on the coming year by Mr. E. S. Lawrence, head farmer, under the direction of W. C. Flagg.

Carried.

The Board then proceeded to the election of officers: Mr. Emery Cobb was elected President; Mr. W. C. Flagg, Corresponding Secretary; and Prof. E. Snyder, Recording Secretary.

The President, Messrs. Gardner and Pickrell, were nominated Executive Committee.

The following resolution, offered by Mr. Blackburn, was passed:

Resolved, That the Board have seen, with great satisfaction, the evidence of growth and improvement in the University since the occupancy of the new building, and would specially commend the public spirit, liberality and taste manifested by the several societies in fitting up and furnishing their respective society rooms; and that we congratulate the Regent and Faculty on the evidence of permanent prosperity and success apparent.

The following motion was laid on the table:

"That the course of studies in the University may, beyond question, conform to the requirements of law. *Resolved*, That the Faculty be directed to provide for instruction in algebra, from the first lessons, without charge to the students."

Mr. Pickrell offered the following resolution, which was carried:

WHEREAS, the firm of Crane, Breed & Co. were to have completed the heating apparatus for the new building by the first day of October, 1873; and whereas, such apparatus was not so completed at that time; therefore,

Resolved, That we waive the time of completion of said heating apparatus, and pay Crane, Breed & Co., as per agreement, up to the 80 per cent. which was to have been paid on completion, in consideration that the said firm extend the time of testing the apparatus from the 1st day of March, 1874, to the 22d day of December, 1874, it being understood that the said company make their bond for performance of contract good, up to that time, either by giving new security or obtaining the consent of their present securities to this arrangement.

Mr. Abbott accepted the proposition.

To the Board of Trustees of the Illinois Industrial University:

We accept your proposition for the testing and payment of the heating apparatus, put in by us, with the time of test limited to the fourth Tuesday of next December—we to furnish a fireman to fire and take care of said apparatus for a sum not exceeding twelve dollars per week.

Respectfully, etc.,

CRANE, BREED & CO.

BY J. K. ABBOTT.

The Regent was authorized to expend an amount, not to exceed $75, or the fitting up of the room assigned to the art collection.

Adjourned.

REPORT OF CORRRESPONDING SECRETARY.

I would respectfully report that since the last annual meeting, the Fifth Annual Report has been received and distributed. Under the impression that it would be better to have a larger number of the reports bound in muslin, I asked that half of the edition be so bound. The Sixth Annual Report is now in the hands of the binder, but I have succeeded in getting a dozen advance copies for the use of members of the Board. One half of that edition it is expected will be bound in muslin.

Applications were made from several points for more of the conventions for farmers or agricultural institutes, such as we have been successfully carrying on for the last five years; but the determination of the Board that, in the present condition of the finances of the University, it would be unwise to spend money in this direction, has prevented the doing anything in this direction. I regret it exceedingly; for knowing the great need of agricultural education among the farmers of our State, often attended by an utter ignorance of the want, I had regarded, and still regard this "picket duty" of our officers and professors, as one of their most useful functions. I hope that the Board of Trustees will take a similar view of it, and with renewed means will again undertake this outside work, and not desert it, when the Boards of Agriculture and Agricultural Colleges of our sister States, often stimulated by our example and convinced of the usefulness of these meetings, have so generally adopted a similar system. In case the Board will permit, I would suggest that the amount derived from experimental crops be appropriated to paying expenses of winter meetings.

EXPERIMENTS.

For a similar reason the amount to be expended in experimentation was small, and but few, and those nearly all of the least expensive kind of experiments, could be tried. For better economy of animal and manual labor and oversight, Mr. Vickroy was put in the immediate charge of the experimental farm, in accordance with the action of the Executive Committee March 12th and May 13th, 1873. Mr. Vickroy thereby receives an addition of $200 to his salary and labor; and it was agreed between him and myself that there should be charged against the field experiments as follows: man and team of two horses, 30 cents per hour; man and horse, 22½ cents per hour; man, 15 cents per hour.

Economy being the first necessity, I determined to plant only corn and potatoes, and continue such experiments with corn as could not be discontinued without losing the benefit of the experiments of the two previous years. Most important of which was the

EXPERIMENT WITH COMPARATIVE FERTILITY OF ADJOINING PLATS

The season of 1873 was quite unfavorable, the spring being late, the grounds in some places wet and packed by water and rains. Whilst the

yield was better than in 1871, it fell far short in quality or quantity of that of 1872. The corn with which our experiments were made for the most part came up badly; the corn was soft and the results of less value than can be desired.

The small plats were plowed May 14th and 15th 8 inches deep; harrowed May 22d, planted May 24th; harrowed with Thomas harrow, June 6th, and cultivated with double shovel plow, June 21st, July 1st, July 12th, and July 17th. The yield was as follows:

North.

	A	B	C	D	E	F	
12½	62	63	62	62	64	64	Hills.
	176	195	186	221	175	170	Stalks.
	133	139	142	140	144	128	Ears.
	72	72	73	70	81	64	Weight of ears.
12	128	127	128	128	128	127	
	388	383	395	381	377	392	
	303	308	310	319	322	342	
	132	195	179	165	134	173	
11	126	126	126	127	126	128	
	337	358	377	356	351	344	
	291	316	318	309	305	322	
	163	198	185	189	182	188	
10	126	127	126	126	123	127	
	386	382	372	381	379	350	
	325	344	344	340	328	305	
	182	*219	212	192	201	157	
9	127	128	128	128	126	125	
	361	384	361	382	382	350	
	308	363	331	318	335	318	
	197	212	189	195	215	170	
8	126	128	126	125	128	128	
	352	392	406	388	373	375	
	301	332	329	334	287	236	
	174	201	192	203	190	139	
7	127	125	128	126	126	128	
	389	382	388	369	371	384	
	294	317	328	301	315	308	
	167	197	188	189	183	163	
6	126	125	126	128	123	127	
	392	398	391	361	380	372	
	293	329	321	303	332	355	
	172	203	193	191	200	165	
5	124	128	127	128	125	124	
	365	371	386	401	358	350	
	296	314	321	325	300	284	
	128	184	137	185	153	150	
4	124	128	127	128	122	124	
	338	391	367	374	360	337	
	293	283	293	292	269	289	
	154	179	138	*128	134	157	
3	124	125	128	128	127	110	
	343	356	363	379	356	342	
	276	272	284	294	282	288	
	143	158	147	161	151	164	
2	123	127	128	126	127	111	
	375	379	384	368	387	369	
	296	294	311	308	319	263	
	156	159	133	164	149	156	
1	125	124	124	125	124	116	
	354	358	356	378	381	324	
	278	287	288	316	303	284	
	134	158	169	180	169	155	

TOTALS.

	No. of hills.	No. stalks.	No. of ears.	Weight of ears.
A plats	1,168	4,556	3,687	1,974
B "	1,581	4,729	3,898	2,335
C "	1,584	4,632	3,920	2,135
D "	1,585	4,739	3,899	2,212
E "	1,569	4,630	3,741	2,142
F "	1,539	4,399	3,822	2,001
Totals	9,436	27,685	22,967	12,799
Average per tier	1,571	4,614.17	3,827.83	3,133.17
" " plat	125.68	369.13	306.22	169.32
1 plat	738	2,151	1,756	965
2 "	742	2,202	1,791	917
3 "	742	2,139	1,696	924
4 "	753	2,167	1,719	899
5 "	756	2,131	1,840	937
6 "	755	2,294	1,933	1,124
7 "	760	2,283	1,863	1,087
8 "	760	2,286	1,819	1,099
9 "	762	2,220	1,973	1,178
10 "	755	2,250	1,986	1,163
11 "	759	2,123	1,861	1,105
12 "	766	2,316	1,904	978
12½ "	377	1,123	826	432
Totals	9,426	27,685	22,967	12,799
Average per tier	754.08	2,212.08	1,837.36	1,023.92
" " plat	125.68			

1. Of 9,600 hills planted, 9,426 matured, or about 1.8 per cent. only failed; rather more than in 1872, and much less than in 1871.

2. Of stalks, instead of 38,400, which these hills would have produced with an average of 4 stalks to the hill, there were 27,685, less by 28 per cent. than would have been produced, against 6 per cent. in 1872, and 22 per cent. in 1871.

3. These 27,685 stalks produced 22,967 ears, over 17 per cent. being barren, against 12 per cent. in 1872, and 43 per cent. in 1871.

4. The ears weighed .56 of a pound each, against .5 in 1872, and .33 in 1871.

5. The "C" plats produced the greatest number of ears, but those of the "B" plats weighed the most. The "A" plats yielded least both by number and weight, but judging from previous years, there must have been some extraordinary cause for this. Of the cross tiers, No. 9 produced the greatest weight of ears, and No. 4 the least of the whole plats. Plat B, 10, gave the heaviest yield, and D, 4, the lightest. Comparing:

Maximum plat, 1871, was	A, 11.	Minimum	C, 4.
" " 1872	C, 6.	"	F, 4.
" " 1873	B, 10.	"	D, 4.

The most and least productive parts of the field are pretty well indicated by the three years' experiments. Probably the results of 1871 and 1873 are the most reliable because the climatic conditions were more unfavorable than in 1872; at any rate they agree well with one another.

6. The yield was 48.38 bushels per acre against 21.33 bushels in 1871, and 66 in 1872. Tabulating, we get the following totals:

	Hills, No.	*Stalks, No.*	*Ears, No.*	*Ears, Wt.*
1871	8,936	29,631	16,746	5,600
1872	9,489	36,128	31,669	17,319
1873	9,426	27,685	22,967	12,799

The crop of 1871 was small—first, because of the small number of ears in proportion to the stalks, and next, because of the light weight of the ears. The crop of 1873 was smaller than that of 1872, almost in the same ratio as its number of stalks and ears was less. The weight of ears was nearly the same.

COMMON AND FREQUENT CULTIVATION.

Plat No. 1, south of the road, and immediately east of the barn, was cultivated in corn, to repeat the experiment, in common and frequent cultivation made last year.

This was plowed June 6th, and planted June 14th. It was cultivated with double-shovel plow, July 1st, 9th, 17th, 22d, 28th and 30th; in the rows having frequent cultivation, and July 1st, 17th and 28th, in those having less frequent cultivation. The results are given in the following table:

	Pounds.
Four rows, cultivated 3 times	229.60
" " " 6 "	292.60
" " " 3 "	259.70
" " " 6 "	329.70
" " " 3 "	331.80
" " " 6 "	329.70
" " " 3 "	315.00
" " " 6 "	299.60
" " " 3 "	276.50
" " " 6 "	269.50
" " " 3 "	261.80
" " " 6 "	305.80
" " " 3 "	276.50
" " " 6 "	284.90
" " " 3 "	291.90
" " " 6 " only 3 rows	211.40
Averages of rows cultivated 6 times	263.97
" " " 3 "	243.88

The increase by frequent cultivation was a trifle over 8 per cent. Last year it was somewhat over 5 per cent.

CORN IN HILLS AND DRILLS AT DIFFERENT DISTANCES.

These experiments were repeated but no positive data were arrived at. The unfavorable season made great differences on different parts of the field, and a part of the weights on that part of the field considered to be most even in quality were lost.

VARIETIES OF CORN.

The varieties of corn were planted on plat No. 2 north, on ground plowed 8 inches deep May 22d and 27th, harrowed May 30th, and planted June 6th. The field was harrowed with the Thomas Harrow June 6th, and cultivated with the double shovel plow June 24th, July 10th and July 28th. The yield, such as it was, is given in the following table:

Varieties of Corn.	Quality of corn.	Bushels per acre
Arcola	Medium.	44.
Butler county	Medium.	35.1
Cooley's Early	Medium.	37.1
Davidson's Ohio	Very soft.	5.2
Early Small White	Very soft.	4.1
Early White	Medium.	25.5
Mammoth White	Very soft.	5.5
Warder	Medium.	21.4
White, (large)	Medium.	26.1
White River	Medium.	30.
Banker No. 1	Medium.	20.5
Banker No. 2	Medium.	40.2
Chester County	Medium.	22 8
Early Premium	Very good.	25.8
Fayette County	Very good.	39.4
Goltra	Soft	18.1
H. C. Baufman	Very good.	31.5
Lancaster County	Medium.	20.5
Mammoth Red	Medium.	27.5
McElvery	Very good.	25.1
Mixed Ten	Soft.	11.
Ohio Premium	Very good.	37.1
Pickle	Soft.	15.4
Powell's Early	Very good.	30.8
Reeves	Soft.	16.2
Roderick	Very good.	27.5
Thomas	Soft.	7.
Unknown	Very good.	24.
Master	Medium.	22.5
Large Strauder	Good.	24.5
Little Strauder	Good.	12.
Roan	Soft.	25.
Black Purple	Soft	27 1
St. Charles	Very soft.	7.5

EXPERIMENTS IN DEEP AND SHALLOW PREPARATION OF GROUND.

Plat No. 3 south was again devoted to testing different depths of preparation of ground. It was plowed June 16th and 17th, planted June 18th, and cultivated with double shovel plow July 15th, 25th, 30th and 31st, with the following results:

Eight rows harrowed				199 50
"	plowed 2	inches		284 70
"	" 4	"		339 50
"	" 6	"		372 40
"	" 8	"		312 90
"	" 10	"		219 80
"	" 10	"	and subsoiled	560 00
"	" 10	"	and trenched	413 00

The result as last year, only more decidedly is in favor of deep plowing.

Experiments not yet quite completed in feeding cattle have been made by Mr. Lawrence during the winter and paid for out of the products of the experimental farm. They will duly appear in the forthcoming report.

The changes in the management of the experimental farm for the coming year render it desirable that the Board should indicate the manner in which the experiments shall be fixed upon and carried out in future.

Respectfully submitted,

W. C. FLAGG,

Corresponding Sec'y.

EXPERIMENTS IN FEEDING.

MADE BY E. L. LAWRENCE, 1873–4.

Date of weighing.	1	2	3	4	5	6	7*a*	8*b*	9*c*	10*d*	11*e*	12*e*	13*f*	14*g*	15
1873. Nov. 17	1,120	1,100	1,200	1,150	1,290	1,110	1,290	1,130	1,090	1,190	1,050	1,180	.....	.....	...
" 24	1,090	1,120	1,220	1,150	1,320	1,110	1,240	1,130	1,090	1,140	1,050	1,200	.....	.....	...
Dec. 1	1,130	1,110	1,250	1,180	1,330	1,140	1,220	1,150	1,090	1,130	1,060	1,210	.....	.....	...
" 8	1,120	1,140	1,230	1,170	1,350	1,160	1,270	1,170	1,130	1,160	1,090	1,240	.....	.....	...
" 15	1,130	1,140	1,260	1,160	1,340	1,150	1,260	1,180	1,120	1,180	1,080	1,260	.....	.....	...
" 22	1,150	1,190	1,270	1,160	1,350	1,170	1,230	1,220	1,150	1,200	1,120	1,250	.....	.....	...
" 29	1,160	1,190	1,250	1,180	1,370	1,170	1,240	1,210	1,130	1,220	1,110	1,260	.....	.....	...
1874. Jan. 5	1,170	1,180	1,250	1,220	1,380	1,190	1,270	1,230	1,150	1,230	1,120	1,270	.....	.....	...
" 12	1,180	1,170	1,260	1,230	1,400	1,250	1,310	1,250	1,190	1,260	1,100	1,270	.....	.....	...
" 19	1,200	1,240	1,300	1,270	1,410	1,240	1,300	1,270	1,200	1,270	1,140	1,290	.....	.....	...
" 26	1,200	1,210	1,260	1,240	1,440	1,270	1,330	1,270	1,230	1,300	1,160	1,310	.....	.....	...
Feb. 2	1,210	1,220	1,300	1,260	1,430	1,260	1,320	1,280	1,200	1,300	1,190	1,310	.....	.....	...
" 9	1,210	1,240	1,290	1,290	1,470	1,280	1,340	1,280	1,230	1,320	1,170	1,320	.....	.....	...
" 16	1,210	1,220	1,300	1,270	1,470	1,270	1,330	1,300	1,240	1,320	1,190	1,310	.....	.....	...
" 23	1,210	1,220	1,330	1,270	1,480	1,320	1,350	1,310	1,260	1,350	1,250	1,360	.....	.....	...
Mar. 2	1,210	1,300	1,360	1,330	1,510	1,280	1,320	1,310	1,250	1,340	1,190	1,330	.....	.....	...
" 9	1,240	1,270	1,380	1,290	1,460	1,330	1,340	1,300	1,260	1,340	1,240	1,380	.....	.....	...
" 16	1,280	1,330	1,360	1,360	1,555	1,360	1,420	1,340	1,270	1,380	1,260	1,410	.....	.....	...
1873. April 23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	620	.....	...
Sept. 13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,120	.....	...
1874. June 10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,550	.....	..
1873. July 31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C'vd	...
Aug. 2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	90	...
" 9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C'v
" 23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Sept. 1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	150	1
Oct. 1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	230	1
Nov. 1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	300	2
Dec. 1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	360	3
Jan. 1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	430	4
Feb. 1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	510	4
Mar. 1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	580	5
" 18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	620	6
Gain.	160	230	160	210	260	240	130	210	180	190	210	230	....	.....	...

Nos. 1–12, two years old and past.
Nos. 1–6 were fed with 20 other steers in an open lot, 24 lbs. of corn in the ear to each daily.

a Fed in stable, 12 lbs. meal, 15 lbs. beets, 10 lbs. hay chaffed—after February 1, 24 lbs. of corn yard.
b Fed in stable, 24 lbs. corn in ear, 10 lbs. chaffed hay.
c Fed in the stable, 16 lbs. corn in ear, 15 lbs. beets, 10 lbs. chaffed hay.
d Fed in the stable, 18 lbs. meal, 10 lbs. chaffed hay.
e Fed in a shed, 10 by 30, 24 lbs. corn in the ear, 10 lbs. chaffed hay.
f A very poor three year old—fed with cattle, in yard, Nov. 17 to May 10.
g Calves—both sucked same cow, to Feb. 10, were then weaned, and fed meal, beets and chaffe hay—Hereford grade.
h Calves—both sucked same cow, to Feb. 10, were then weaned, and fed meal, beets and chaffe hay—Short Horn grade.

REMARKS.

Average gain of steers in yard 210 lbs.
Average in stable, 177½ lbs.
Average in shed, 220 lbs.
Assuming 15 lbs. beets and 6 lbs. meal to be equal in feeding value, the 12 steers required 10 lbs. of meal, and the 2 calves 4 35 lbs. to make 1 lb. of increased weight.

REARING AND FEEDING CATTLE.

BY E. L. LAWRENCE.

Science is now defined as "truth ascertained—that which is known." According to this definition, it can scarcely be said that we have any such thing as agricultural science. There are latent truths, but have they been ascertained? Are they capable of demonstration? Is it not a fact that when some man advances a theory with a supposed proof of correctness, by experiment and practice, that some other man equally well informed, will advance some other theory equally well sustained, disproving the former supposed facts?

At this time throughout the civilized world are men of thought, more than at any time in the world's history, striving to ascertain these latent truths, that it may no longer be said that "there is science in everything but farming."

Corn and grass fed to cattle will produce beef. Corn fed to hogs will produce pork. But how much of each, and what formula to follow, to give the best results, taking into the account climate, age, breeds, etc., is a thing in a great measure unknown.

It is these variations of circumstances and conditions that seem to multiply themselves in every experiment that lie in the way of definite conclusions. But as the necessities of the case seem to be goading us on, and the time is already here when something more than mere physical force is necessary to succeed, we are forced to face these difficulties, and my faith is that this thinking age will overcome them.

For the past two years, under the direction of your honored President, Mr. Flagg, I have been making some experiments in feeding cattle on the farm of the Illinois Industrial University, at Champaign.

At the final weighing of the cattle in the first experiment, I found myself ready to throw away my former theories and carefully look for reasons on which to found new ones. And the further I go the more I realize the difficulties of the undertaking.

There are several points that seem to be settled, as far as they go, or might be conclusive were conditions always the same:

1st. Cattle will gain more when fed on meal than when fed on corn—that is, the same amount fed of each. But a steer will eat much more of corn in the ear without danger than of meal, and corn not masticated makes the very best food for hogs that follow the cattle.

2d. Cattle will gain more on meal cooked (same amount) than on raw meal. But they relish the raw meal best, and are always used to corn in the ear, (that is common steers that we pick up,) and lose nothing in accustoming themselves to its use, and the expenses of cooking are not small.

3d. Cattle will consume less, waste less, and gain more when fed in the barn, than when fed out of doors, exposed to the cold rains and changes of weather. But a wild steer loses from 50 to 100 lbs. in becoming accustomed to the stable, and shrinks much more when shipped to market than one fed out of doors. And again, "out-doors" is cheaper, and there is much more of it in Illinois than there is of barn-room.

4th. Were I to feed to make the most gains, and keep cattle most healthy without regard to cost, I would feed on cut hay and meal, rye

meal first, and corn and oats mixed next. But feed and beef must be high, and labor cheap, to make this pay when feeding for market.

In Illinois, cattle are to be fed on pasture and corn, both the grain and stock; but little hay can be fed when near a hay market.

In order to give a reason for some of the theories I may advance, I have thought best to rehearse some of the experiments that have been made and published. Although the results were published, and conditions, etc., given so plain that any practical feeder could understand and draw conclusions, yet from editorial remarks it is plain that in one instance the object of the experiment was not understood, and in another the critic was determined not to see.

The first experiment commenced November 25, 1872. Fourteen steers were selected from a lot of 48. They were short-horn grade, and two years old past at the time, and to appearances an even lot. The aim was to give the same amount of feed to each, 15 lbs. corn meal, 18 lbs. corn in the ear, and one bushel of carrots being considered equivalents. Two steers fed on corn meal steamed, with cut corn stalks, fed in the stable, gained in 105 days 155 lbs.—74.100 of a pound per day each. Not very encouraging. They never ate their mess well, and much had to be thrown out. When turned into the yard the 10th of March, and fed corn in the ear with the rest of the stock, (32 head in all, 16 having been sold,) they made 180 lbs. in 36 days, or 2.50 per day. In the first feeding the first steer gained 100 lbs, and the second 55 lbs. In the second feeding, the first gained 75 lbs., and the second 105 lbs. The whole time, the first 175 and the second 160 lbs., nearly equal. The second steer, though a good one, was always wild in the barn, and never made himself at home in the stall. The third steer was fed the same, except for five weeks at the commencement he had once a day half a bushel of carrots in place of 7½ lbs. of meal. He made in 105 days 130 lbs., or 1.24 lbs. per day. When turned out he made 95 lbs. in 36 days, or 2.64 lbs. per day. This steer was quiet, and had all he would eat, but often left a part of the cooked feed. I should have stated that the stabled cattle were out in the yard and shed from five to six hours per day, and had stalks and straw while out.

With the fourth steer, raw meal, carrots five weeks, and stalks, made 185 lbs. in the first feeding, 1.76 lbs. per day; in the second 30 lbs or .83 lbs. per day. It will be seen that when the gain in the first increases the second decreases, and *vice versa.*

Five and six were fed on dry meal and stalks, and made in the first feeding 245 lbs. (the two) 1.16 lbs. per day each; second feeding 125 lbs. (the two) 1.60 lbs. per day each. This was better than Nos. 1 and 2, but not so good as Nos. 3 and 4, where carrots were fed.

Nos. 7 and 8 were fed the same out and in doors, except the cutting of the fodder; that is on corn in the ear and stalks. They each made 150 lbs., 1.46 lbs. per day each. When turned in the yard one made 65 lbs. and the other 45 lbs., average 1.53 lbs. each per day.

Nos. 9 and 10 were fed meal in the shed, and made 375 lbs., 1.78 lbs. average per day. When turned out they made 65 lbs. or .90 lbs. per day, thus making the best gain in the first instance and the poorest in second, except one. The conclusion must be that they went from good feed to that not so good.

No. 11 was sold before the experiment was completed.

Nos. 12, 13 and 14 were fed in the lot and made an average gain of 126 lbs., 1.20 lbs. per day, and in the last 36 days made an average of 52 lbs., 1.44 lbs. per day.

It will be seen that all except those fed meal in the shed and No. 4, meal in the barn made a better gain in March and April than during the winter months. At the final weighing the weather was warm and cattle carried much more water than in cold weather, and thus would have shrunk more in handling.

Those cattle were bought the April previous for $31 per head, and sold April 15, for $5 50 per hundred, and brought $75 95 per head, at the barn.

The experiment last winter continued 119 days, from November 17, to March 16, two weeks longer than the first part of the experiment of the previous year.

Six steers fed 24 lbs. corn in the ear, in the yard, and clover hay, gained respectively 160, 230, 160, 210, 260 and 240 lbs., an averge of 210 lbs. or 1.76 lbs. per day. This was about the same average gain as the best, or those fed meal in the shed in the former experiment.

One steer, the 7th of the lot, fed in the barn had 12 lbs. of corn meal, 15 lbs. sugar beets and 10 lbs. cut or chaffed clover hay to February 2. He gained 30 lbs. in this time (11 weeks), the feed was changed to corn in the ear—24 lbs. He made 100 lbs. in the remaining 6 weeks. He did not eat well of the meal and beets but was hearty when fed corn.

The 8th steer was fed corn in the ear in the barn, and gained 210 lbs., 1.76 lbs. per day, the same as those fed in the yard averaged.

The 9th steer was fed 16 lbs. ear corn and 15 lbs. beets to February 2, then 24 lbs. corn, and gained 180 lbs., 1.51 lbs. per day.

The 10th was fed 18 lbs. meal and 10 lbs. clover as before and gained 190 lbs., 1.59 lbs. per day. The four in the barn gained an average of 177½ lbs.

The 11th and 12th were fed the same feed of corn in the ear, 24 lbs. and 10 lbs. clover in an open shed and averaged 220 lbs. 1.85 lbs. per day. This was the best average made in the two years.

Had the amount fed been guaged by the amount of meal each steer would eat instead, of the amount of corn, the result would have been different. The corn was always eaten, the meal not always.

For convenience the following tables are inserted:

FIRST EXPERIMENT 1872 AND 1873.

	First Part.	Gain in 105 days.		Second part—Gain in 36 days.	
1.	Cooked meal and stalks	100 lbs.		75 lbs.	Corn in yard.
2.	" "	55 "		105 "	"
3.	" " with carrots	130 "		95 "	"
4.	Raw meal and stalks with carrots	185 "	In barn—Average 124 lbs.	30 "	"
5.	Raw meal and stalks	125 "		70 "	"
6.	" "	120 "		45 "	"
7.	Ear corn and stalks	150 "		65 "	"
8.	" "	150 "		45 "	"
9.	Meal and corn fodder	205 "	In shed—Average 187 lbs.	40 "	"
10.	" "	170 "		15 "	"
11.	Sold				"
12.	Corn and fodder	115 lbs.	In yard—Average 127 lbs.	60 lbs.	"
13.	" "	145 "		30 "	"
14.	" "	121 "		65 "	"

SECOND EXPERIMENT 1873 AND 1874.

	Gain in 119 days.	
1. Corn and clover in yard	160 lbs.	
2. " "	230 "	
3. " "	160 "	Av. 210 lbs.
4. " "	210 "	
5. " "	260 "	
6. " "	240 "	
7. Meal, beets and clover in the barn	130* "	
8. Corn and clover in the barn	210 "	Av. 177½ lbs
9. Corn, beets and clover in the barn	180 "	
10. Corn meal and clover in the barn	190 "	
11. Corn and clover in the shed	210 "	Av. 220 lbs.
12. " "	230 "	

* Feed changed after 11 weeks to Corn.

J. S. Wright, Esq., of Champaign, a successful feeder, kindly furnished me the weights and gains of 77 steers, fed 120 days. The average was 1.57 lbs. per day, 11-100 of a pound less than the twelve fed on the University farm.

The cattle fed the winters of '72 and '73 were fed on corn of the crop of '72, which was very large and hard, and yielded over 70 bushels to the acre. That fed in '73 and '74 was the crop of '73, was light and chaffy. The cattle consumed more and gained more on the soft corn. Those fed in the yard, in the first instance, made 1.19 lbs per day, while those fed the last winter made 1.77 lbs. per day. The first consumed 18 and the last 24 lbs. of corn per day. Of course hogs that follow the cattle will do best where hard corn is fed.

It has been thought by some that these gains, on the whole, were small; yet I have seen no one who has been able to prove it. Some have made 4 lbs. per day on a young bull, for two, three or four months, but this has no bearing on this case. Others have fed cattle that gained "very fast," but how much they could not tell, while others have made no gains at all, and some have actually lost. Cattle taken from good pasture in the fall, and fed on dry feed through the winter, make considerable dead weight and but little live weight. And this is in a measure reversed in going from dry feed to grass. The actual growth seems to be made in the summer: that is, growth of bone.

These cattle were weighed every Monday morning, after the morning feed, and before watering. I will give the weights of one steer, as kept. No 10: fed meal in the barn; weight before going into the barn, 1190; one week from this, 1140—loss 50 lbs.; next, 1130—loss 10 lbs. Now commences the gain: 1160, 1180, 1200, 1220, 1230, 1260, 1270, 1300, 1300, 1320, 1320, 1330, 1340, 1380; gain, 100 lbs., loss, 60 lbs.; gain from lowest point 250 lbs. Had the object been to make the most gain possible, the steer could have been shrunk 100 lbs. before putting up, but he was taken from good pasture.

It should also be understood that cattle were thrifty and fat when put up. Had they been thin, those in the stall would have gone far ahead of those in the yard. Fat is the best protection against cold. I leave you to judge whether it is the cheapest.

To show the gains a poor animal will make, a steer was purchased April 23, 1873, and weighed 620 lbs.—a three year old, all the rest were twos. He was kept 13½ months, and gained 960 lbs.; weighed when sold, June 10, 1550 lbs., making for 412 days a gain of 2.33 lbs. per day. This steer had same pasture as the rest, and same feed as those fed in the yard.

The cattle cost 4c. per pound when bought, (about $33 per head), and sold in Chicago, June 11th, for $6 40 per hundred, which at that price was a very good one.

There is still another chapter in this experiment:

Two grade calves were kept on one cow, and fed what meal and beets they would eat till six months old, then weaned—one six months and one day, the other lacked nine days of six months. The elder weighed 510 lbs., the younger 480 lbs. The first a Hereford grade, the second a Short Horn grade. They were weaned Feb. 1st. March 18th the first had gained 110 lbs, the second 100 lbs., weighing 620 and 580. With common keep these calves would not have gained a pound in this time, immediately after weaning. They were turned to grass the 1st of May, and not fed after that. Pasture has been very poor the past season, yet these calves are fat now, and fit for beef. Ten 65-1000 lbs. of meal, or its equivalent in beets, was required to make one pound of growth or increased weight with the twelve steers, and 4.50 lbs. same to make one pound with the calves, or less than 43 per cent. of the amount required with the more mature cattle. Time once was when it was thought we must have matured animals to feed profitably. It was said a young animal will grow, but not fatten well. Cattle were thought to be like the man's cider—all it wanted was age. With the improved breeds this is changed, and it is found that while an animal is growing is the time to fatten him, be he a steer or a pig. There is no trouble in making good steers weigh 1300 to 1400 lbs., at two years of age; and my belief is, that there is more money in making this weight at this age than in keeping them till three or four years old. The nimble sixpence and the slow shilling is understood. I have practiced this in feeding pigs for some time; that is, push them as fast as possible till they bring the best price, then sell—let the weight be 100 or 200 lbs or more. This is my platform in the care of stock designed for slaughter.

I have had some experience with mill feed, bran and shorts, and often buy these as a cheaper feed than corn. This year sold oats for 48 cents, and paid $16 a ton for bran. For young and growing stock, or for milch cows, I prefer bran to almost any feed. Scarcely a year has passed in a dozen years that I have not laid in a few tons of bran. Because it is light does not lessen its value. A pound of bran weighs as much as a pound of meal; and because it is bulky, it is for that reason more valuable. If a heavier feed is desired, mix shorts. I believe a ton of bran is worth as much as a ton of oats, and it is much cheaper. Analysis shows (so I am informed, not being a chemist), that the outer surface of the kernal possesses more of nutriment; just the thing for growing animals. I would advise any raiser of stock to try bran and shorts.

The way nature has designed for young animals to get their sustenance is best of all; yet it has been shown that poor milk, or that not rich in butter-making qualities, is as good or better for calves than the richer milk, only that more is required; this being so, milk may be set and skimmed without material detriment; but, I would say, by all means keep them thriving; never let the hair stand in the wrong direction. I practice feeding meal, or any kind of roots, beets, carrots, Swedes, etc., to the calves as soon as they will eat. Pumpkins are also first-rate; slice and put in the calf's mouth at first; he will soon learn what they are for.

I think every year of my farming experience, and I have managed a

farm since my fourteenth year, has shown me more and more the importance of having an abundance of grass land, especially for pasture. You have undoubtedly heard the story of the man who applied to the blacksmith to have a butcher knife made. He said, "make it large, you may make it very large." When he had reached the street, turning back, he said: "You may make that knife a little larger." So I would say, you need not fear to have too much pasture, and again have a little more pasture!

In a new country it is years before the farmers learn the advantages of having good pastures. Wheat, corn and oats—oats, corn and wheat, is the rule. When these have nearly accomplished our ruin we begin to realize the importance of the grasses.

A word more about pastures. I like but one pasture; that is, I would prefer not to change pastures as often as has been recommended. Steers, when turned to a new pasture, raise head and tail, have a good run, and seem to think the year of jubilee has come. If they do not run, they spend too much force in traveling and spying out the new things. There is nothing like the same thing from day day, when that is good. Again, I prefer no ponds or streams in a pasture. With one hundred steers in a pasture, one season's difference in gains will pay for a wind mill and tank. For similar reasons, I prefer no shade in pastures for cattle that are preparing for the butcher. Where there are ponds or groves cattle will congregate during the heat of the day, and spend time in fighting the flies, standing in the water or in the shade, that ought to be improved in grazing. Again, flies are worse in brushy, weedy pastures, such as have creeks, etc., than in the clear open lot with nothing but grass. These ideas, although somewhat new, are to my mind susceptible of proof, and I have come to the adoption of them after close observation and actual trial. A clean pasture, with timothy, clover, blue grass, and perhaps a little prairie grass—with these you have varieties, and grasses for the different seasons of the year.

My thoughts in this paper have rambled too much, as they have been written during brief intervals from pressing duties.

Then let us sum up the matter: Give the young animal the best of keep till he is turned to pasture, at the age of from eight to twelve months. Never allow him to lose the fat that is on him when born. The calf fat will become natural if not once lost. From this time (eight to twelve months of age) depend more on grass and less on corn. A poor steer feed corn from this to the first of June next, will consume nine-tenths of what he will bring at that time, with the present price of corn.

After careful investigation I have come to the conclusion that the best way to feed cattle in Southern and Central Illinois, is the way practiced by most feeders, of feeding stock corn from the field, and allowing hogs to follow. A wind break is desirable, a good straw stack is invaluable, and a place to lie out of the snow and mud is indispensable.

If cattle are kept fit for market at any time, the farmer need not suffer a loss by being forced to sell at a certain time, on an overstocked market. There has been no time in the last dozen years that there has not been a fair margin of profit to the judicious cattle raiser and feeder. And statistics show that there will be as good or better profit for some time to come, to the feeder who has, first of all, a good breed of cattle, and last but surest of all, a little more and better pasture.

MEETINGS OF EXECUTIVE COMMITTEE.

URBANA, ILL., *April* 22, 1874.

The Executive Committee of the Board of Trustees of the Illinois Industrial University met at 4 o'clock, P. M.

Present—Messrs. Cobb and Gardner.

Absent—Mr. Pickrell.

The business agent's report of expenditures to date was received.

The bills presented for payment were then audited and allowed.

Authority was given for having the annual catalogue printed; also the usual circular to county superintendents, and the business agent was instructed to obtain the lowest satisfactory bids on same.

The Committee then proceeded to look over certain reports called for by a committee of the United States Senate, and made out from the different departments of the University, approved same after inspection, and ordered them to be copied and forwarded.

It was decided to hold the commencement exercises for 1874 on Wednesday, June the 10th, 1874.

Authority was given to the Regent to purchase certain books for the library, and $20 appropriated for the purpose.

The following bills were audited and allowed.

List of warrants drawn and unaudited bills.

368	J. H. Pickrell	Expense to meeting	$15 65
369	A. M. Brown	" "	21 00
370	D. D. Sabin	" "	23 80
371	J. P. Slade	" "	22 25
372	A. Blackburn	" "	23 10
373	E. Cobb	" "	31 95
374		Salary	
375	R. B. Combs	Balance for roofing drill hall	75 00
376	G. W. Flynn	Printing briefs of suits	42 10
377	E. F. Whitcomb	Transcripts of suits	20 05
378	W. S. Wingard	Hall clock	24 00
379	G. E. Hessell	Patent blacking for accoutrements	2 25
380	Editors' "Illini"	Advertising and printing circulars	113 00
381	Henry Dunlap	Copying 20 pieces music for band	5 75
382	J. Paton	Repairing muskets, cleaning, etc	9 70
383	R. M. Walker	Repairs of band instruments	1 95
384	to 414, inclusive	Salaries	
415	E. S. Lawrence	Expense, March, 1874	480 02
516	Pearl Shepard	11½ days' work	11 06
417	W. S. Chase	Work in library	3 00
418	C. I. Hays	Expense in greenhouse	3 85
419	John Muller	Glazing	13 10
420	M. Parks	5 days' work	7 50
421	Fuller & Fuller	Glass	19 73
422	Little & Davis	Repairs on furnace	2 25
423	E. V. Peterson	Second-hand piano stool	2 00

List of warrants drawn and unaudited bills.—Continued.

424	R. S. Wilbur	Hauling 6 cars coal	$24 00
425	Sarrabee & Worth	Hardware	6 70
426	H. W. Sawyer	Repairing University piano	14 50
427	Students' labor pay-roll	March, 1874	290 74
428	Champaign Gas Co	Gas for March, 1874	56 40
440	James Faulkner	Salary, April, 1874	20 00
439	Geo. R. Shawhan	" "	20 00
436	E. V. Peterson	Stationery and moulding	27 95
435	E. S. Lawrence	Sawing lumber	2 00
434	H. A. Munn	Extra work on curtains	9 00
433	Fuller & Fuller	Glass	20 26
432	R. S. Mitchell	Work on case	32 00
431	J. W. Bunn	Attorneys' fees	20 00
430	S. W. Shattuck	Petty expenses, March, 1874	12 70
429	I. Sawhead	Repairing drain	1 00
437	C. L. Hays	Salary, April	70 00
438	E. S. Lawrence	" "	100 00
439	G. R. Shawborn	" for April, 1874	20 00
440	Jas. Faulkner	" " "	20 00
441	J. M. Gregory	" " "	333 33
442	A. P. S. Stuart	" " "	166 66
443	S. W. Robinson	" " "	166 66
444	F. J. Russell	" " "	166 66
445	S. W. Shattuck	" " "	166 66
446	E. Snyder	" " "	166 66
447	H. C. Taft	" " "	166 66
448	J. B. Webb	" " "	166 66
449	J. C. Pickard	" " "	166 66
450	N. C. Ricker	" " "	100 00
451	F. W. Prentice	" " "	100 00
452	J. D. Crawford	" " "	75 00
453	A. C. Swartz	" " "	40 00
454	Charlotte E. Patchen	" " "	40 00
455	P. Gennadius	" " "	40 00
456	M. A. Scovell	" " "	20 00
457	C. P. Jeffers	" " "	20 00
458	A. E. Barnes	" " "	20 00
459	E. A. Robinson	" " "	15 40
460	S. W. Shattuck	" " "	65 00
461	W. C. Flagg	" " "	41 66
462	H. A. Mann	" " "	40 00
463	A. C. Scribner	" " "	30 00
464	E. H. McAllister	Postage to date	16 13

E. COBB,
President.

E. SNYDER,
Rec. Secretary.

JUNE 9, 1874.

The Board met at 4 P. M.

Present—Gov. Beveridge, Messrs. Cobb, Gardner, Pickrell, Brown, and Bird.

Absent—Messrs. Blackburn, Mason, Slade, Sabin, and Reynolds.

Reading of the minutes of the previous meeting was deferred for the present.

Dr. Gregory made a partial report.

It was ordered that certificates be granted to the following students, in pursuance to recommendation of the faculty:

William Pickrell, W. W. Wharry, Emma VanHorn, Mary C. Burgess, Herbert Wheeler, Agnes Chapman, Abel Bliss, H. C. Cate, F. Adelia Potter, C. A. Smith, A. T. Morrow, Alice Cheever, J. P. Campbell, J. O. Baker, J. S. Pierce, C. P. Jeffers, C. W. Groves, H. C. Estep, E. S. Dreury, W. R. Gardner, Warren B. Dunlap, Abram R. Rutan, P. Gennadius, H. S. Reynolds, Geo. Story, Wm. Watts, E. Newland Porterfield, W. C. Ells, S. M. Proudfit, W. R. Pierce, and N. M. Fox.

The following resolution, offered by Mr. Blackburn, was carried:

WHEREAS, the interests of the University seem to require the appointment of a teacher of Agricultural Chemistry,

Resolved, That the Regent, the President of the Board, and Mr. Gardner be a committee with authority to find a suitable man for the place.

Miss B. H. James was appointed instructor in designing wood-carving, without salary, she to collect her own fees, and the University to furnish rooms, etc. Mr. J. D. Crawford was appointed instructor in ancient languages, with a salary of $750, and librarian with an additional salary of $250 for the next academical year.

The Regent and Recording Secretary were granted leave of absence for the summer vacation of 1874.

Adjourned till to-morrow at 8 o'clock.

JUNE 10, 1874.

Board met, pursuant to adjournment, and adjourned to witness the Commencement exercises.

Re-assembled at 2 P. M.

Letters, from Messrs. Sabin, Slade, Blackburn, and Mason, expressing regret at being unable to attend this meeting.

The Board took a recess to witness the drill of the University Battalion.

Re-assembled at 4:30 P. M.

The minutes of last meeting were read and adopted.

Mr. N. C. Ricker was appointed assistant professor of architecture.

The subject of instruction in Veterinary Surgery was referred to the Regent and Executive Committee.

It was resolved that Miss Lou. C. Allen be appointed an instructor in the University for the year beginning Sept. 1st, 1874 at $1,200 a year, the sphere of instruction and title to be fixed at a future meeting of the Board.

Prof. T. J. Burrill gave a verbal report on the condition of the Horticultural Department, work done on orchards, grounds, etc., during spring term, and programme of work to be done during summer vacation.

Prof. Burrill was allowed a compensation of $50 per month for the next three months, for superintending work on the Horticultural Department and University grounds, in absence of foreman.

The following resolution was passed -

Resolved, That after the first day of September next no professor or instructor shall be employed to perform additional labor other than that of his professorship or department, at an increased salary; and that each professor and instructor shall be required to perform all duties pertaining to the department which he has in charge, without additional compensation for any part thereof, because of extra time required in term time or vacation.

Mr. Pickrell made the following report of University lands in Gage county, Nebraska:

To the Board of Trustees of the Illinois Industrial University:

The undersigned begs leave to report that on the 17th and 18th days of April, 1874, being in Beatrice, Gage county, Nebraska, that he took the liberty to employ A. J. Pittwud, the county surveyor of said county, and visited and looked over the lands belonging to the Illinois Industrial University.

The prairie fires having burned the grass very closely, we were enabled to find every corner that we looked for without the aid of compass and chain, the government having planted stones at all sec-

tion corners and at all quarter-section corners on the section lines. We were consequently enabled to take a general look at a brisk pony trot, and in the two days spent made as careful an examination of these lands as desirable, unless a map showing the water courses, draws, breaks, etc., had been the object.

The land is all high, rolling prairie, situated—as shown by the plat herewith presented—mostly on the breaks of Wild Cat, Hetten and Ayer's creeks in the Southeast portion of the county. There are some improvements adjoining and some in sight of the lands, the settlers for the most part being on homesteads. Upon enquiry, the price asked for adjacent unimproved lands was found to vary from $5 to $10 per acre, with occasional sales from $4 to $6 per acre.

After a careful consideration I would recommend that the lands be put upon the market, advertised at least, in the local press of Beatrice and prices fixed at $6 per acre where one 80 acre tract was taken, and $5 per acre where tracts of 160 acres or more would be taken by one party.

Although a choice "80" or "quarter" might be worth more than the general average of the lands, but sales even at the best will cause the other lands adjoining to be sought at equally good prices, with a small portion (say one-fourth) paid on the purchase, would recommend as long a time, being given at 87., payable semi-annually, as the party might desire by paying promptly.

I would also recommend that some good local agent be appointed to make sales, and give general information to those who might apply.

Respectfully submitted,

J. H. PICKRELL.

The report was accepted and recommendations adopted.

An amount of $14 for expenses incurred by Mr. Pickrell for the inspection of these lands was allowed.

One hundred dollars from the Library fund for the purchase of sundry books to complete files, and two hundred dollars from the Chemical fund to purchase apparatus for the Agricultural Chemical Laboratory, were placed in the hands of Dr. Gregory.

Twenty-five dollars were appropriated for fitting the room for the Art collection, chargeable to Library Cabinet.

The following communication from Prof. Robinson was referred to Mr. Gardner and the Business Agent, with power to act:

TO HON. EMORY COBB, *President of Board and Board of Trustees:*

GENTLEMEN—I believe that for the vacation now at hand it will be best for the Machine Shop and Pattern Shop of the Mechanical Department to be continued in running operation for the following reasons, viz:

1. We have been doing for the past few months a considerable amount of work for outside parties, so that the shop has more than paid expenses. Orders for work are still coming in. To stop work for three months will, I think, really kill this trade.
2. The Champaign Iron Works lately burned down, having been the only machine works in the two towns doing job work, not only gives us a better prospect for business, but the shop is needed.
3. The photograph trimmer orders are continually coming in and need attending to almost daily.

I expect to remain in town during the entire summer, and can give personal attention to the interest of the department in running the shop. The foreman, Mr. E. A. Robinson, will also remain here and can take immediate charge of the work.

I have no preference as to how the shop be carried on, whether by the University or by myself, aided by the foreman.

If the latter plan be preferred, I would be willing to pay a reasonable rent, say $20 per month if five hands, including foreman and fireman are employed, or $25 for a greater number of hands.

I would respectfully ask that the Machine Shop and Pattern Shop be allowed to continue in operation by some plan as might be thought best.

Sincerely your obedient servant,

June 9, 1874. S. W. ROBINSON.

The following resolutions were passed:

Resolved, That hereafter and until otherwise directed, the Professor of Chemistry shall deliver his lectures and hear his recitations in the rooms provided for this purpose in the new building.

Resolved, also, That the other professors shall have free access to all cabinet specimens in the Chemical Department, and to the use of such apparatus in said department as they need in teaching their respective classes, when not in use by the Professor of Chemistry.

Resolved, further, That the Professor of Chemistry will be expected to make such analyses and furnish such chemicals as other professors may ask for and the Regent order.

The Business Agent submitted his report, which was received.

The bills presented for payment were audited and allowed.

The report of Business Agent was then taken up by items, and acted upon as follows:

465	Crane, Breed & Co	Salary, April	$40 00
466	D. S. Covert	Hardware	7 08
467	E. S. Lawrence	Work on University grounds	16 20
468	S. J. Surdam	Hardware	11 40
469	Enterprise Coal Co	5 cars coal	70 00
470	Halleck, Holmes & Co	Tubing and leather	10 40
471	S. W. Shattuck	Petty expenses, April, 1874	19 00
472	L., B. and W. R. R.	Freight	1 00
473	Sabin Bros.	Timothy seed	6 35
474	Champaign Gas Co	Lights, April	26 80
475	E. S. Lawrence	Farm expense	317 65
476	F. I. Mann	Music and copying for Band	5 25
477	Ill. Cent. R. R.	Advanced freight	26 60
478	Fuller & Fuller	Glass and plaster Paris	31 71
479	E. N. McAllister	For postage to date	9 00
480	John Muller	Glazing, etc	1 00
481	Culver, Page, Hoyne & Co	Paper	7 75
482	Joseph McCorkle	Hardware	1 60
483	Students' labor pay roll	April	388 99
484	Trevett & Green	Hardware	25 16
512	Enterprise Coal Co	4 cars coal	50 00
513	Fuller & Fuller	Glass	15 34
514	A. and J. Bicknell & Co	Periodicals	8 10
515	Kankakee	Planing Mill Co	19 00
516	Edward Lynch		10 00
517	R. S. Wilber	Hauling 5 cars coal	20 00
518	Adams, Blackmer & Lyon	Lot of covers	5 00
519	Hovey & Co	Seeds	5 10
520	Nat. Green & Co	Oil, chimneys, etc. (old account)	4 10
542	E. Z. Gill	⅔ cords wood	3 75
543	S. M. Avery	5,000 sweet potato plants	15 00
544	Students' pay-roll	May, 1874	397 39
545	T. J. Burrill	⅔ cords wood	3 75
546	J. W. Flynn & Co	Ruling paper	2 50
547	Cairo Box and Basket Co	100 boxes	5 00
548	Locke & Saxton	Copper	3 00
549	W. F. Pratt	Repairs on roof, building	38 00
550	John Fisher	245 flower pots	13 01
551	A. M. Coffeen	Books	1 85
552	R. S. Mitchel	Painting and glazing cabinet cases	48 89
553	John Miller	Glazing, etc	8 00
554	Larrabee & North	Brass pipes	4 00
555	J. W. McClugher	Lumber	15 19
556	James M. Rolfe	Repairing sewer	6 00
557	Enterprise Coal Co	2 cars coal	26 00
558	E. S. Lawrence	Farm expenses, May	344 92
559	F. W. Christern	Periodicals	183 93
560	Trevett & Green	Piping, etc	9 25
561	J. Paton	Repairs and cleaning muskets	6 65
562	D. E. Barnard	Instruction in Gymnasium	15 00
563	Dodson & Hodges	Hardware	16 57
564	Champaign Gas Co	Light for May	17 20
565	S. W. Shattuck	Petty expenses for May	33 03
566	J. H. Pickrell	Expense to meeting	14 00
567	A. M. Brown	" "	25 50
568	J. H. Pickrell	" "	6 75
569	J. J. Bird	" "	27 40
570	E. Cobb	" "	18 50
571	E. F. Gehlmann	Settlement of building account	130 00

Prof. Shattuck was instructed to have the coal bin in the new University and the coal house at the old building repaired.

The purchase of coal was referred to Mr. Gardner and the business agent, with power to act. The business agent was authorized to have the old building cleaned up, and $300 was appropriated for that purpose; also, to have the old machine shop prepared for occupancy with an appropriation of $200; also, to continue the sidewalk to Green street, with an appropriation of $100; all chargeable to buildings and grounds.

Mr. R. H. Hannah, in charge of Green House, will be expected to room in the old building and take charge of same.

The subject of work in Carpenter Shops was referred to Mr. Gardner and the business agent.

An amount of $100 was transferred from the appropriation for fuel and lights and added to the appropriation for stationery and printing.

The account for printing the University Catalogues, with $224 50, was audited and allowed.

Prof. S. W. Shattuck was employed as business agent for the next three months, at $60 per month.

E. COBB, *President.*

E. SNYDER, *Recording Secretary.*

URBANA, ILL., *August* 11, 1874.

The Executive committee of the Board of Trustees of the Illinois Industrial University met at — o'clock A. M., upon call of the Chairman.

Present—Messrs. Cobb, Gardner and Pickrell.

Prof. S. W. Shattuck was appointed Secretary *pro tem.*

The Business Agent made his usual report of the expenditures to date, from current funds and State appropriations, making also recommendations on certain matters of University business, which were acted upon in detail, as follows:

Authority was granted to the Business Agent to have a certain number of books in the University library re-bound and repaired.

Mr. Gardner and the Business Agent were appointed a committee, with authority to take what action was necessary, to put the "Old University Building" in good condition.

Mr. A. C. Swartz was appointed Tutor in Mathematics and Architecture, at a salary of $600 for the academical year, from September 1st, 1874, to July 1st, 1875.

The Chairman of the Committee and Mr. Gardner were appointed a committee to consider and decide upon the applications for a position in the Chemical Department of the University.

An application from Mayor Miller for a position in the Agricultural Department was referred to Mr. Cobb for action.

A request from Prof. T. J. Burrill, asking for authority to have certain repairs made at the Green-house, and purchase some seeds and plants, was granted, and a sum of $50 appropriated for the purpose.

The Business Agent was instructed to make certain purchases of tools for the Educational classes in the Machine Shops, and for the necessary material for the Commercial Department of these shops within the limits of the appropriations and earnings up to September 1st, 1874.

The following bills and accounts presented for payment were audited and allowed:

572	Fuller & Fuller	Freight on case from Bremen	$15 75
573	E. V. Peterson	Photo cards and books	13 10
574	John Mulier	Glazing	7 60
575	C. I. Hays	Salary to June 15	25 00
576	R. S. Mitchell	Glazing	1 75
577	A. C. Scribner	Salary as Janitor	11 00
578	C. W. Anderson	20 yards plastering	7 00
579	A. Snideker	Castings	48 78
580	H. W. Mann & Co	Half bushel apple seed	5 00
581	Editors "Illini"	132 copies "Illini"	7 20
582	J. F. Mitchell	Painting	1 25
583	G. Deuerlich	Periodicals	88 94
584	Students' Pay Roll	June 1st to 9th, 1874	119 41
585	J. Paton	Cleaning and repairing muskets	12 60
586	Kimbark Bros. & Co	One grindstone	8 57
587	H. K. Vickroy	4,000 sweet potato plants	10 80
588	E. L. Lawrence	Farm expense, June	1,811 08

589	H. A. Mann	Janitor's salary, June	40 00
590	Champaign Gas Co	Gas bill, June	6 00
591	E. L. Lawrence	Salary, June	100 00
592	Students' Pay Roll	June 1st to 30th	333 98
593	F. A. Parsons	Salary, June	35 47
594	I. B. & W. R. R. Co	Freight on cases from Europe	101 64
595	W. C. Flagg	Salary, June and July	83 33
596	A. Snideker	Castings	58 70
597	Cleveland Screw and Tap Co	Hardware	4 05
598	Enterprise Coal and Coke Co	One car coal	7 00
599	Crane Bros. Manufacturing Co	Hardware	96
600	Larrabee & North	Hardware	8 65
601	Webster, Davies & Co	Lumber	67 28
602	Hatch, Holbrook & Co	Lumber	6 36
603	H. A. Mann	Salary as Janitor, July	40 00
604	E. L. Lawrence	Salary for July	100 00
605	Students' Pay Roll	July	561 17
606	Kimbark Bros. & Co	Hardware	28 72
607	J. W. Keys	Painting	2 00
608	E. L. Lawrence	Farm expense, July	569 24
609	Fuller & Fuller	Glass	8 65
610	Thomas Nolan	Lumber	37 60
611	E. A. McAllister	Postage	14 39
612	S. W. Shattuck	Petty expenses	31 37

The matter of sales of University lands was referred to Mr. Gardner, with power to act. (See Board meeting of June 9th, 1874, report of Mr. Pickrell.)

Bills presented for audit were considered and allowed.

Adjourned.

EMORY COBB, *President.*

S. W. SHATTUCK, *Secretary, pro tem.*

RECEIPTS AND EXPENDITURES.

RECEIPTS.

1873. Sept. 1	To balance	$9,572 73
1874. Feb. 28	" interest on Sangamon County bonds	4,500 00
Aug. 31	" " Champaign County bonds	11,500 00
" 31	" " Morgan County bonds	2,500 00
" 31	" " Putnam County bonds	2,600 00
" 31	" " Pike County bonds	3,000 00
" 31	" " Illinois 6 per cent. bonds	1,860 00
" 31	" " Chicago water bonds	1,750 00
" 31	" amount received from Agricultural Department	7,300 61
" 31	" " " " Horticultural "	2,434 08
" 31	" " " " Mechanical "	3,364 83
" 31	" " " " Carpenter "	2,943 97
" 31	" " " " fees and room rents	7,317 67
" 31	" " " " fuel and light	1,149 11
" 31	" " " " lands and rents	4,885 43
" 31	" " " " Illinois Central R. R donation	2,375 98
" 31	" " " " Chemical Department	489 92
" 31	" " " " State for experiments on farm	750 00
" 31	" " " " " taxes on lands in Minnesota	2,542 29
" 31	" " " " sundries	783 01
		$73,619 63

EXPENDITURES.

1874. Aug. 31	By amount paid for board expense	$488 15
" 31	" " " salaries	27,731 01
" 31	" " " fuel and lights	3,802 21
" 31	" " " stationery ond printing	733 30
" 31	" " " buildings and grounds	2,928 32
" 31	" " " incidental expense	1,205 95
" 31	" " " Mechanical department	3,351 51
" 31	" " " Carpenter "	2,650 54
" 31	" " " Horticultural "	3,052 08
" 31	" " " Agricultural "	7,764 42
" 31	" " " Chemical "	1,214 60
" 31	" " " library and cabinet	1,305 38
" 31	" " " military and gymnasium	318 40
" 31	" " " new University building grounds	949 75
" 31	" " " taxes on University lands in Minn. and Neb.	2,542 29
" 31	" " " sundries	863 97
" 31	" balance	12,717 75
		$73,619 63

Statement of State Appropriations from Aug. 31, 1873, *to Aug.* 31, 1874.

	Appropriated	Drawn.	Unexpended.
New University building	$15,000 00	$14,685 60	$314 40
Heating apparatus	18,000 00	14,326 90	3,673 10
Fitting and furnishing	7,350 00	7,219 02	130 98
Taxes on lands	6,000 00	5,202 78	797 22
Agricultural experiments	1,500 00	1,500 00	750 00
Gas fixtures	1,200 00	1,200 00	.....
Physical laboratory	3,000 00	2,909 31	90 69

Statement of Endowment Fund August 31, 1874.

Securities.	Amount.
Champaign County 10 per cent. bonds	$115,000 00
Sangamon " 9 " "	50,000 00
Morgan " 10 " "	25,000 00
Pike " 10 " "	30,000 00
Kankakee " 10 " "	30,000 00
Putmam " 10 " "	13,000 00
Chicago water 7 per cent. bonds	25,000 00
Illinois State 6 " "	31,000 00
	$319,000 00

Three hundred and nineteen thousand dollars invested as above, and an uninvested balance of one hundred and seventy-eight dollars and eighty-seven cents ($178 87) on hand.

List of Warrants, Nos. 1 *to* 310, *inclusive, drawn from March* 1 *to August* 31, 1873.

RECAPITULATION.

Board expense	$1 006 65
Salaries	13, 149 09
Fuel and light	904 82
Stationery and printing	378 03
Building, repairing and grounds	466 09
Incidental expense	513 30
Mechanical department	1, 394 29
Carpenter department	886 18
Horticultural department	2, 802 21
Agricultural department	4, 261 18
Chemical department	233 91
Library and cabinet	610 21
New University building	1, 137 42
Military department and gymnasium	67 05
Experiments and lectures—State appropriation	343 80
Taxes on lands—State appropriation	2, 660 49
Total	$30, 814 72

LIST OF WARRANTS.

No	Date.	To whom.	For what.	Amount.
	1873.			
1	March 12..	J. P. Reynolds	Expense to meeting	$5 50
2	" 12..	M. C. Goltra	" "	17 00
3	" 12..	W. C. Flagg	Salary	125 00
4	" 12..	D. Johnson	Expense to meeting	14 50
5	" 12..	A. M. Brown	" "	27 50
6	" 12..	James R. Scott	" "	23 50
7	" 12..	B. Pullen	" "	15 50
8	" 12..	O. B. Galusha	" "	10 30
9	" 12..	S. Edwards	" "	13 00
10	" 12..	J. P Slade	" "	20 30
11	" 12..	J. M. Pearson	" "	24 60
12	" 12..	O. Huse	" "	17 00
13	" 12..	J. J. Bird	" "	22 00
14	" 12..	A. Blackburn	" "	21 00
15	" 12..	P. R. Wright	" "	23 95
16	" 12..	A. S. Proctor	" "	14 80
17	" 12..	R. B. Mason	" "	12 00
18	" 12..	A. E. Smith	" "	24 10
20	" 12..	C. Hartwell	" "	12 25
21	" 12..	L. E. Lawrence	" "	22 15
19	" 12..	—— McMurray	" "	11 00

List of Warrants—Continued.

No.	Date.	To whom.	For what.	Amount.
22	March 14..	J. H. Garrett	Labor in carpenter shop	$21 2
23	" 15..	N. C. Ricker	Salary to date	125 0
24	" 14..	E. L. Lawrence	Balance on salary for last year	480 0
25	" 14..	A. Patter	Books	4 5
26	" 14..	A. B. Russell	Collection of specimens	53 5
26½	" 17..	F. B. Haller	Expense to meeting	11 0
27	" 18..	A. E. Barnes	Assistant in chemical laboratory	16 5
28	" 18..	M. A. Scovell	" " "	16 5
29	" 18..	G. R. Shawhan	Teaching winter term	22 0
30	" 18..	J. P. Campbell	" " "	22 0
31	" 18..	Dr. T. W. Prentice	Salary account	100 0
32	" 18..	Prof. W. M. Baker	Salary for Feb. and to March 18, inc	266 6
33	" 20..	R. H. Miller	3 cords wood	12 7
34	" 20..	Leggatt Bros	Books for library	123 8
35	" 20..	Wm. Price	Paints and oils	9 5
36	" 20..	Fuller & Fuller	Oils, etc	73 6
37	" 20..	Sabin Bros	Coal	8 2
38	" 20..	Geo. Ely	Repairing wagon and harness	4 5
39	" 20..	Dr. J. M. Gregory	Salary for March	333 3
40	" 20..	Dr. J. M. Gregory	Traveling expenses to Springfield	31 1
41	" 20..	Enterprise Coal Co	1 car coal $1421	20 0
42	" 20..	James J. H. Gregory	Seeds	4 0
43	" 20..	Alex. C. Rittenhouse	Matriculation fee refunded	10 0
44	" 20..	Prof. T. J. Burrill	Sundry expenses	48 0
45	" 20..	Prof. J. B. Webb	" "	31 5
46	" 20..	Roughton, Tillotson & Co	Castings	17 3
47	" 20..	W. S. Maxwell	Lampblack, etc	7
48	" 20..	H. Swannell	Glass	3 8
49	" 20..	A. Campbell	Blacksmithing	6 0
50	" 20..	C. B. Whitmore	Candles and matches	2 2
51	" 20..	Prof. E. Snyder	Incidental expenses	8 2
52	" 20..	Trevett & Green	Hardware	48 0
53	" 20..	Joseph McCircle	"	1 5
54	" 20..	L. L. Vest & Co	Coal	11 0
55	" 20..	W. B. Keen, Cook & Co	Books	78 5
56	" 20..	Flinn & Cunningham	Binding	6 2
57	" 20..	Geo. Scroggs	Printing	22 7
58	" 20..	A. J. Bicknell & Co	Periodicals	61 5
59	" 20..	Dr. J. M. Gregory	Salary for April	333 3
60	" 20..	Dr. J. M. Gregory	Nursery stock	39 6
61	" 20..	Doane House	Hotel bill of legislative com	31 2
62	" 20..	I. I. McAllister	Coal	92 5
63	" 20..	N. C. Goltra	Expenses to meeting	14 3
64	" 20..	L. E. Lawrence	" "	24 0
65	" 20..	A. G. Walker	Services as engineering tutor	92 0
66	" 31..	Prof. Wm. M. Baker	Salary from March 18 to date	66 6
67	" 31..	" A. P. Stewart	" for March, 1873	166 6
68	" 31..	" S. W. Robinson	" " "	166 6
69	" 31..	" T. J. Burrill	" " "	166 6
70	" 31..	" S. W. Shattuck	" " "	166 6
71	" 31..	" E. Snyder	" " "	166 6
72	" 31..	" D. C. Taft	" " "	166 6
73	" 31..	" J. F. Carey	" " "	166 6
74	" 31..	" J. B. Webb	" " "	166 6
75	" 31..	" C. W. Silver	" " "	70 0
76	" 31..	" E. L. Steel	" " "	60 0
77	" 31..	" C. W. Rolfe	" " "	40 0
78	" 31..	" Charlotte E. Patchen	" " "	40 0
79	" 31..	" P. Gennadius	" " "	40 0
80	" 31..	" H. K. Vickroy	" " "	83 3
81	" 31..	E. L. Lawrence	" " "	100 0
82	" 31..	D. A. Stedman	" " "	85 0
83	" 31..	Dr. F. W. Prentice	" " "	75 0
84	" 31..	A. H. Bailey	Watching new University building	49 0
85	April 1..	E. L. Lawrence	Farm expense for March	210 8
86	" 1..	Hosford & Spear	Lamp globe, mirror, etc	7 2
87	" 1..	Enterprise Coal Co	3 cars coal	45 0
88	" 1..	W. L Card	Salary account	58 3
89	" 4..	H. K. Vickroy	Pay roll horticultural department	34 0
90	" 7..	Business Agent	Student labor pay roll, March	446 5
91	" 8..	Business Agent	" " " balance March	74 9
92	" 28..	Business Agent	Postage and stamps	8 9
93	" 30..	Prof. A. P. S. Stuart	Salary for April, 1873	166 6
94	" 30..	" S. W. Robinson	" " "	166 6
95	" 30..	" T. J. Burrill	" " "	166 6
96	" 30..	" S. W. Shattuck	" " "	166 6
97	" 30..	" E. Snyder	" " "	166 6
98	" 30..	" D. C. Taft	" " "	166 6
99	" 30..	" J. T. Carey	" " "	166 6

List of Warrants—Continued.

No.	Date.	To whom.	For what.	Amount.
100	April 30..	Prof. J. B. Webb	Salary for April, 1873	$166 66
101	" 30..	Dr. F. W. Prentice	On account, salary for April, 1873	75 00
102	" 30..	C. W. Silver	Salary for April, 1873	70 00
103	" 30..	E. L. Steel	On account, salary for April, 1873	60 00
104	" 30..	C. W. Rolfe	Salary for April, 1873	40 00
105	" 30..	P. Gennadius	" " "	40 00
106	" 30..	Charlotte E. Patchen	" " "	0 00
107	" 30..	W. S. Card	" " "	125 00
108	" 30..	E. L. Lawrence	" " "	100 00
109	April 30....	H. K. Vickroy	Salary for April, 1873	83 33
110	" 30....	C. I. Hays,	" "	70 00
111	May 5....	Business Agent	Students labor pay roll	609 66
112	" 5....	E. L. Lawrence	Expense to meeting	24 00
113	" 5....	E. L. Lawrence	Purchase of cattle, and farm expense	1,359 75
114	" 5....	D. A. Stedman	On account of maximum salary	200 00
115	" 5....	H. K. Vickroy	B'rd of Managers and Ex. Mar. and Apr.	53 52
116	" 13....	Fred Johnson	Blacksmith, tools for Mechan. Dept.	24 50
117	" 13....	M. C. Goltra	Expense to meeting	14 60
118	" 13....	A. M. Brown	" "	23 75
119	" 13....	Emory Cobb	" (4) "	59 20
120	" 13....	E. L. Lawrence	" "	24 00
121	" 13....	D. A. Stedman	On acc. maximum salary, bal. last year	304 37
122	" 13....	D. A. Stedman	Balance of minimum salary to date	65 17
123	" 13....	H. K. Vickroy	Maximum salary in full	336 81
124	" 13....	W. M. Baker	Salary in full to date of death	181 60
125	" 13....	Mr. Bennett	Trees for Arboretum	7 20
126	" 13....	W. S. Card	Petty expenses for April	2 91
127	" 13....	I. I. McAllister	Hauling coal	19 00
128	" 13....	V. W. Codington	Assistance in taking Carp. inventory	1 05
129	" 13....	A. J. Knapp	Belting, etc., for shops	8 66
130	" 13....	E. A. Robinson	Petty expenses for April	9 02
131	" 13....	Champaign Gas Co	From Oct. 1872 to Mar. 1873, inclusive	157 60
132	" 13....	A. B. & L. Publishing Co	Stationery and binding reports	38 90
133	" 13....	D. H. Young	Work in Regent's office	13 75
134	" 13....	Elwanger & Barry	Strawberry and other plants	31 25
135	" 13....	Isidor Bush	Vines and plants	54 00
136	" 13....	Crane Bros. Mfg. Co	Castings and crucibles	9 00
137	" 13....	James Green	Apparatus	8 90
138	" 13....	W. C. Flagg	Lecturing expenses	11 30
139	" 13....	Hussey, Wells & Co	Steel for shops	8 63
140	" 13....	Jacob Buch	Tallow for engine	1 24
141	" 13....	I. S. Hubbard	18¾ lbs. rod iron for shops	1 13
142	" 13....	A. Sneidueker	Castings for shops	30 32
143	" 13....	Larrabee & North	Steel wire for shops	2 00
144	" 13....	J. L. Wagner & Son	Sand paper	5 00
145	" 13....	Sabin Bro's.	Grass seed	24 50
146	" 13....	Flynn & Cunningham	Printing land ciuculars	5 25
147	" 13....	Robert Douglas' Sons	Pear seeds	2 75
148	" 13....	Alex. A. Ulrich & Co	10 Ext. table slides	18 50
149	" 13....	I. I. McAllistetr	Soft coal	11 00
150	" 13....	Dodson & Hodges	Hardware	35 05
151	" 13....	J. Davis Wilder	Slating blackboards and models	35 12
152	" 13....	Enterprise Coal Co	6 cars coal	90 00
153	" 13....	John Fisher	Flower pots	5 82
154	" 13....	Mr. Vass	Cord wood	4 50
155	" 13....	H. Pedicord	Freight on tiles	11 80
156	" 13....	The Horticulturalist	3 years subscription	7 00
157	" 13....	Prof. J. B. Webb	For observ. Meteorological instruments	8 75
158	" 13....	The Student	For copies sent to members of Board	21 60
159	" 13....	E. Snyder	Petty expenses for March and April	40 40
160	" 13....	W. L. Card	Postage Stamps	4 00
161	" 13....	Carl Schuman	Chemical and mining apparatus	233 91
162	" 13....	Dr. E. L. Hull	Expenses and services lecturing	50 00
163	" 13....	S. P. Percival	One horse	130 00
164	" 27....	Dr. J. M. Gregory	Salary for May, 1873	333 33
165	" 27....	Prof. A. P. S. Stewart	" "	166 66
166	" 27....	" S. W. Robinson	" "	166 66
167	" 27....	" I. J. Burrill	" "	166 66
168	" 27....	" S. W. Shattuck	" "	166 66
169	" 27....	" E. Snyder	" "	166 66
170	" 27....	" D. C. Taft	" "	166 66
171	" 27....	" J. F. Carey	" "	166 66
172	" 27....	" J. A. Webb	" "	166 66
173	" 27....	Dr. T. W. Prentice	On account salary for May, 1873	75 00
174	" 27....	C. W. Silver	Salary for May, 1873	70 00
175	" 27....	E. L. Steel	" "	60 00
176	" 27....	C. W Rolfe	" "	40 00
177	" 27....	P. Gennadius	" "	40 00

List of Warrants—Continued.

No.	Date.	To whom.	For what.	Amount.
178	" 27....	Miss Charlatte E. Patchen...	" "	$40 00
179	" 27....	W. L. Card	" "	125 00
180	" 27....	E. L. Lawrence.....	" "	100 00
181	" 27....	H. K. Vickroy.....	" "	100 00
182	" 27....	C. I. Hays	" "	70 00
183	" 27....	George Burton.....	One horse.....	110 00
184	June 5....	L. W. Lawrence.....	Expense to meeting.....	24 00
185	" 5....	J. H. Pickrell.....	" "	16 10
186	" 5	Dr. F. W. Prentice	Balance of salary	325 00
187	" 6....	E. L. Steel.....	" "	60 00
188	" 6....	Charlotte E. Patchen	" "	20 00
189	" 6....	Prof. A. P. S. Stewart.....	Salary June, July and August.....	500 00
190	" 6....	S. W. Robinson.....	" " "	500 00
191	" 6....	E. L. Lawrence.....	Farm expense May, 1873.....	232 16
192	" 6....	T. J. Burrill.....	Salary June, July and August.....	500 00
193	" 6	S. W. Shattuck	" " "	500 00
194	" 6....	E. Snyder	" " "	500 00
195	" 6....	D. C. Taft.....	" " "	500 00
196	" 6....	J. F. Carey.....	" " "	500 00
197	" 6....	J. B. Webb.....	" " "	500 00
198	" 6....	C. W. Silver	Salary for June.....	70 00
199	" 6....	W. L. Card	Balance of salary	29 16
200	" 6....	Sabin Bros.....	Tile	27 30
201	" 6....	H. Swannell	Sundry Mdse	13 60
202	" 6....	E. V. Peterson.....	"	16 80
203	" 6....	C. W. Rolfe.....	Salary June, 1873.....	40 00
204	" 6....	Halsted & Co.....	Advertising proposals	12 00
205	" 6....	Larrabee & North	Machine screws	3 15
206	" 6....	Mens' Pay Roll.....	For May, 1873, to date	140 86
207	" 6....	H. K. Vickroy.....	Boarding men for May.....	48 99
208	" 6....	Illinois Central Railroad.....	Advance freight.....	1 40
209	" 6....	Inter Ocean Co	Advertising proposals	19 20
210	" 6....	F. W. Christian.....	Periodicals	2 18
211	" 6....	Enterprise Coal Co	7 cars coal	105 00
212	" 6....	Keen, Cook & Co	Books	1 02
213	" 6....	A. P. S. Stewart	Assts. in laboratory.....	33 00
214	" 6....	Students' Labor Pay Roll....	May, 1873, to date.....	488 30
215	" 6....	Geo. Lamberger	Team work.....	54 00
216	" 6	S. W. Robinson	Hardware.....	18 58
217	June 6	S. W. Shattuck.....	Petty expenses	25 55
218	" 6....	Trevett & Green.....	Hardware	69 63
219	" 6....	Samuel Edwards.....	Expense to May and June meeting.....	31 55
220	" 6....	Dept. Interch'g.....	Work in April and May.....	210 85
221	" 6....	H. K. Vickroy.....	Balance salary, March and April.....	33 34
222	" 7....	John Mann	Services as superintendent New B.....	54 00
223	" 7....	S. W. Robinson.....	Overcharges refunded.....	31 85
224	" 7....	J. M. Gregory.....	Salary, June, 1873.....	333 33
225	" 9....	I. C. R. R. Co	Freights, March and April	343 57
226	" 11....	Taxes on Lands.....	In Neb. and Minn. per J. W. Bunn.....	2,660 49
227	" 15....	E. L. Lawrence.....	Expense to meeting.....	7 55
228	" 15....	Samuel Edwards.....	" "	9 35
229	" 15....	E. Cobb.....	" "	12 30
230	" 15....	S. W. Shattuck.....	" "	12 75
231	" 16....	A. D. White.....	" to Comm. Address	46 30
232	" 19....	Flynn & Cunningham.....	Printing 2,000 catalogues.....	250 00
233	" 19....	S. W. Shattuck	Express *obtaining specimens of soils*.....	17 80
234	" 19....	Edward Lynch.....	15 days' night watching at new building.	15 00
235	" 19....	Culver, Page, Hoyne & Co ...	Stationery	12 88
236	" 30....	E. L. Lawrence.....	Salary for July, 1873.....	100 00
237	" 30....	A. J. Bucknell & Co.....	Periodicals	30 66
238	" 30	S. W. Shattuck.....	Traveling Expenses to Chicago.....	12 55
239	" 30....	E. L. Lawrence.....	Farm Expenses June, 1873.....	231 85
240	" 30....	H. K. Vickroy.....	Expenses Horticultural Department.....	392 85
241	" 30....	H. K. Vickroy.....	Salary, June, 1873.....	100 00
242	" 30....	Labor Pay Roll	June, 1873.....	372 56
243	" 30....	J. F. Tanny & Co.....	Cutting steel die.....	12 00
244	" 30....	J. M. Gregory.....	Salary, July, 1873.....	333 33
245	" 30....	Geo. Story.....	Work on grounds.....	6 75
246	" 30....	I. C. R. R.	Freights for June, 1873.....	23 57
247	" 30....	Hort. Dept.....	Work on experiments.....	137 97
248	July 11....	J. P. Slade.....	Expense to meeting.....	18 75
249	" 11....	A. M. Brown.....	" "	24 00
250	" 11....	D. D. Sabin.....	" "	23 80
251	" 11....	Alexander Blackburn.....	" "	18 75
252	" 11....	Emory Cobb.....	" "	5 80
253	" 11....	W. C. Flagg.....	Salary to date.....	166 66
254	" 11....	S. M. Marble.....	Salt.....	2 75
255	" 12....	Sabin Bros.....	Drain Tile.....	65

List of Warrants—Continued.

No.	Date.	To whom.	For what.	Amount.
256	July 12....	P. M. Frisby	Books	5 13
257	" 12....	G. E. Hessell	Harness	22 90
258	" 12....	S. W. Shattuck	Petty expenses	9 75
259	" 12....	Geo. Knapp & Co.	Advertising, Missouri Republican	15 75
260	" 12....	G. W. Keys	Painting blackboards	2 00
561	" 12....	Cairo Box and Basket Co.	Material for boxes	5 55
262	" 12....	Inter-Ocean Pub. Co.	Record book	8 00
263	" 12....	A. Sneidecker	Castings	19 56
264	" 12....	E. A. Robinson	Petty expenses	4 15
265	" 12....	Champaign Gazette	Printing	4 70
266	" 12....	C. B. Smith	Attorney's fees, contract	10 00
267	" 12....	S. W. Robinson	Petty expenses	3 35
268	" 12....	E. V. Peterson	Blank books for inventory	3 00
269	" 12....	Nicolett & Schoff	Printing circulars	4 50
270	" 12....	Wm. Price	Paints, glass and putty	11 03
271	" 12....	E. Snyder	Petty expenses, June to date	20 10
272	" 12....	H. S. Maxwell	Paint and brown color	5 40
273	" 12....	Trevett & Green	Hardware and roof repairs	33 05
274	" 12....	Dodson & Hodges	Hardware	11 37
275	" 12....	Doane House	Expenses for teaming	31 25
276	" 12....	John Munn	Services as superintendent to date	33 00
277	" 12....	Mechanical Dept.	Work for other departments	10 40
278	" 12....	Carpenter Dept.	" " "	76 45
269	Aug. 14....	C. I. Hays	Salary, July, 1873	50 00
280	" 14....	W. S Chase	Services, janitor and librarian	10 00
281	" 14....	F. A. Parsons	Salary, July, 1873	50 00
282	" 14....	E. L. Lawrence	Farm exp., July, '73, cattle purchased	1,246 55
283	" 15....	Enterprise Coal Co.	2 cars nut coal	13 00
284	" 15....	Editors' Student	126 copies paper	17 90
285	" 15....	Waters & Pancake	Oak lumber	14 31
286	" 15....	Keen, Cook & Co.	Books	1 27
287	" 15....	E. V Peterson	Stationery	1 25
288	" 15....	Trevett & Green	Roof repairs	6 30
289	" 15....	George Immel	Fruit drier	15 00
290	" 15....	I. C. R. R. Donation	Freight for July 1873	102 57
291	" 15....	I. C. R. R Co.	Advanced freight	9 70
292	" 15....	Hort. Dept.	Labor for Experimental Farm	60 90
293	" 15....	H. K. Vickroy	Expense, July, 1873	283 72
294	" 15....	E. Snyder	Petty expenses	22 19
295	" 15....	S. W. Shattuck	Labor Pay Roll, July, 1873	248 70
296	" 15....	Dodson & Hodges	Rope and tin tubes for bell	3 12
297	" 15....	N. E. Williams	Sewer pipes	405 20
298	" 15....	Budler & Son	Lumber	73 71
299	" 15....	H. S. Leland	Board expense	22 50
300	" 15....	J. M. Gregory	Salary, August, 1873	333 33
301	" 15....	E L Lawrence	" July, 1873	100 00
302	" 15....	R. B. Combs	Roof repairs and painting	75 00
303	" 15....	Jas. P Slade	Expense to meeting	21 80
304	" 15....	D. D. Sabin	" "	35 45
305	" 15....	A. M. Brown	" "	25 50
306	" 15....	J. J. Byrd	" "	27 40
307	" 15....	Emery Cobb	" "	24 50
308	" 15....	D. Gardner	" "	21 30
309	" 15....	R. B. Mason	" "	5 00
310	" 15....	A. Blackburn	" "	18 57
				$30,814 72

Thirty thousand eight hundred and fourteen dollars and seventy-two cents drawn from treasury on warrants as specified.

E. SNYDER,
Recording Secretary.

URBANA, ILLINOIS, *September* 1, 1873.

STATISTICAL TABLES.

Area and Improved Acres in the United States, 1870.

	Area—square miles.	Improved land—acres.	Acres improved to each square mile.
Alabama	50,722	5,062,204	99.8
Arkansas	52,198	1,859,821	35.6
California	188,981	6,218,133	32.9
Connecticut	4,750	1,646,752	346.6
Delaware	2,120	608,115	329.3
Florida	59,268	736,172	12.4
Georgia	58,000	6,831,856	117.7
Illinois	55,410	19,329,952	348.8
Indiana	33,809	10,104,279	298.8
Iowa	55,045	9,396,467	170.7
Kansas	81,318	1,971,003	24.2
Kentucky	37,680	8,103,850	215.0
Louisiana	41,346	2,045,640	49.4
Maine	35,000	2,917,793	83.3
Maryland	11,124	2,914,007	261.9
Massachusetts	7,800	1,736,221	222.5
Michigan	56,451	5,096,939	108.0
Minnesota	83,531	2,322,102	27.7
Mississippi	47,156	4,209,146	89.2
Missouri	65,350	9,130,615	139.7
Nebraska	75,995	647,031	8.5
Nevada	104,125	92,644	.8
New Hampshire	9,280	2,334,487	251.5
New Jersey	8,320	1,976,474	237.5
New York	47,000	15,627,206	332.4
North Carolina	50,704	5,258,742	103.7
Ohio	39,764	14,469,133	362.0
Oregon	95,274	1,116,290	11.7
Pennsylvania	46,000	11,515,965	250.3
Rhode Island	1,306	289,030	221.3
South Carolina	34,000	3,010,539	80.8
Tennessee	45,600	6,843,278	150.0
Texas	274,356	2,964,836	10.8
Vermont	10,212	3,073,257	300.9
Virginia	38,348	8,165,040	212.9
West Virginia	23,000	2,580,254	112.1
Wisconsin	53,924	5,899,343	109.4
	3,603,884	188,194,616	52.2

Classification of States, According to Acres, per Square Mile in Cultivation.

360 acres and over	Ohio	1
320 " "	Connecticut, Delaware, Illinois, New York	4
280 " "	Indiana, Vermont	2
240 " "	Maryland, New Hampshire, Pennsylvania	3
200 " "	Kentucky, Massachusetts, New Jersey, Rhode Island, Virginia	5
160 " "	Iowa	1
120 " "	Missouri, Tennessee	2
80 " "	Alabama, Georgia, Maine, Michigan, Mississippi, North Carolina, South Carolina, West Virginia, Wisconsin	9
40 " "	Louisana	1
Under 40 acres	Arkansas, California, Florida, Kansas, Minnessota, Nebraska, Nevada, Oregon, Texas	9

Comparative View of the Counties, Population, Density of Population, Increase in Density of Population, Improved Acres, Value of Products per Acre, etc.

Counties.	Square miles, area.	Population in 1870.	Density to square mile.	Population in 1860.	Density to square mile.	Increase to square mile.
Adams	828	56,362	68.0	41,323	49.9	18.1
Alexander	226	10,564	46.7	4,707	20.8	15.9
Bond	378	13,152	34.7	9,815	25.9	8.8
Boone	288	12,942	44.9	11,678	40.5	4.4
Brown	296	12,205	41.2	9,936	33.5	7.7
Bureau	867	32,415	37.3	26,426	30.4	6.9
Calhoun	255	6,562	21.4	5,144	20.1	1.3
Carroll	446	16,705	35.2	11,733	24.0	11.2
Cass	379	11,580	30.5	11,325	29.8	.7
Champaign	1,008	32,737	32.3	14,629	13.5	18.8
Christian	709	20,363	28.7	10,492	14.8	13.9
Clark	509	18,719	36.7	14,987	29.4	7.3
Clay	468	15,875	33.9	9,336	19 9	4.0
Clinton	489	16,285	33.3	10,941	22 3	11.0
Coles	523	25,235	48.2	14,203	27.1	21.1
Cook	982	349,966	356·2	144,954	146.4	209.8
Crawford	435	13,889	31.9	11,551	28.8	3.1
Cumberland	350	12,223	34.9	8,311	23.7	11.2
DeKalb	648	23,265	35.9	19,086	29.4	6.5
DeWitt	405	14,768	36.4	10,820	26.7	9.7
Douglas	408	13,484	33.0	7,140	17.5	15.5
DuPage	338	16,685	49.3	14,701	43.4	5.9
Edgar	631	21,450	33.9	16,925	26.8	7.1
Edwards	233	7,565	32.4	5,454	23.4	9.0
Effingham	486	15,653	32.2	7,816	16.0	16.0
Fayette	720	19,638	27.2	11,189	15.5	11.7
Ford	480	9,103	18.9	1,979	4.1	14.8
Franklin	422	12,652	29.9	9,393	22.2	7.7
Fulton	878	38,291	43.6	33,338	37.8	5.8
Gallatin	326	11,134	34.1	8,055	24.7	9.4
Greene	546	20,277	37.1	16,093	29.4	7.7
Grundy	432	14,938	34.5	10,379	24.0	10.5
Hamilton	431	13,014	30.1	9,915	23 0	7.1
Hancock	773	35,935	46.4	29,061	37.5	8.9
Hardin	176	5,113	29.0	3,759	21.3	7.7
Henderson	386	12,582	32.6	9,501	25.4	7.2
Henry	828	35,506	42.8	20,660	24.9	17.9
Iroquois	1,132	25,782	22.7	12,325	10.9	11.8
Jackson	582	19,634	33.7	9,589	16.4	17.3
Jasper	506	11,234	20.2	8,364	16.5	3.7
Jefferson	574	17,864	31.1	12,965	22.4	8.7
Jersey	365	15,054	41.2	12,051	33.0	8.2
Jo Daviess	609	27,820	45.5	27,325	44.8	.7
Johnson	336	11,248	33.4	9,342	27.8	5 6
Kane	540	39,091	72 3	30,062	55.6	16.7
Kankakee	695	24,352	34.9	15,412	22.1	12.8
Kendall	334	12,399	38 2	13,074	40.3	.....
Knox	720	39,522	54.8	28,663	39.0	15.8
Lake	478	21,014	43.8	18,257	36.7	7.1
LaSalle	1,152	60,792	52.7	48,332	41.9	10.8
Lawrence	365	12,533	34 3	9,214	26.8	7.5
Lee	736	27,171	36.9	17,651	23.9	13 0
Livingston	1,026	31,471	30 6	11,637	11.3	19.3
Logan	618	23,053	37.3	14,272	23.0	14.3
McDonough	577	26,481	45.9	13,738	23 8	22.1
McHenry	864	32,726	37 8	24,602	28.8	9.0
McLean	748	4,131	59.0	31,251	41.7	17.3
Macon	576	20,622	25 8	12,739	22.0	3 8
Macoupin	387	16,956	43.8	13,437	35 7	8.1
Madison	560	16,184	28 9	10,931	19.5	9.4
Marion	242	9,581	35 3	6,213	25.6	9.7
Marshall	576	26,509	46.0	20,069	34 8	11.2
Mason	624	23,762	38 1	22,089	35 4	2.7
Massac	1,154	53,988	46 7	28,772	24.9	21.8
Menard	314	11,735	37 3	9,584	35.2	2.1
Mercer	548	18,769	34.2	15,042	27.4	6.8
Monroe	381	12,982	34.0	12,832	33.6	.4
Montgomery	702	25,314	36.0	13,979	19.9	16.1
Morgan	564	28,463	50.4	22,112	39.0	11.4
Moultrie	331	10,385	31.3	6,385	19.3	12.0
Ogle	758	27,492	36 2	22,888	30.2	6.0
Peoria	618	47,540	76.9	36,601	59.2	17.7
Perry	444	13,723	30.9	9,552	21.5	9.4
Piatt	442	10,953	24.7	6,127	13.9	10 8

Comparative View of Counties—Continued.

COUNTIES.	Square miles, area.	Population in 1870.	Density to square mile.	Population in 1860.	Density to square mile.	Increase to square mile.
Pike	795	30,768	38.7	27,249	34.2	4.5
Pope	362	11,437	31.6	6,742	18 6	15.0
Pulaski	187	8,752	46.8	3,943	21.1	25.7
Putnam	168	6,280	37.4	5,587	33.2	4.2
Randolph	577	20,859	36.1	17,205	29 8	6.3
Richland	361	12,803	35.4	9,711	26.9	8.5
Rock Island	436	29,783	38.3	21,005	48.1	20.2
St. Clair	379	12,714	33.5	9.331	24.6	8.9
Saline	868	46,352	53.4	32,274	27.1	16.3
Sangamon	426	17.419	40.9	14,684	34.4	6.5
Schuyler	251	10,530	41.9	9,069	36.1	5.8
Scott	776	25,476	32.8	14,613	18.8	14.0
Shelby	288	10,751	37.3	9,004	31.2	5.9
Stark	665	51,068	76.7	37,694	56.6	20.1
Stephenson	567	30,608	53.9	25,112	44.2	9.7
Tazewell	626	27,903	44.5	21,470	34.3	10.2
Union	398	16,518	41.5	11,181	28.1	13.4
Vermilion	1,008	30,388	30.1	19,800	19.6	10.5
Wabash	218	8,841	40.5	7,313	33.5	7.0
Warren	540	23,174	42.9	18,336	33.9	9.0
Washington	556	17,599	31.6	13,731	24.6	7.0
Wayne	720	19,758	27.4	12,223	16.9	10.5
White	500	16,846	33.6	12,403	24.8	8.8
Whiteside	697	27,503	39.4	18,737	26.8	12.6
Will	852	43,013	50.5	29,321	34.4	16.1
Williamson	432	17,329	40.1	12,205	28.2	11.9
Winnebago	540	29,301	54.2	24,491	45.3	8.9
Woodford	527	18,956	35.9	13.282	25.2	10.7
Totals	55,872	2,539,891	45.47	1,711,951	30.64	14.83

Counties arranged according to area.

Counties of 1,100 or more square miles.	Iroquois, LaSalle, McLean	3
" 1,000 " " "	Champaign, Livingston, Vermilion	3
" 900 " " "	Cook	1
" 800 " " "	Adams, Bureau, Fulton, Henry, Macoupin, Sangamon, Will	7
" 700 " " "	Christian, Fayette, Hancock, Knox, Lee, Madison, Montgomery, Ogle, Pike, Shelby, Wayne	11
" 600 " " "	DeKalb, Edgar, JoDaviess, Kankakee, Logan, McHenry, Peoria, St. Clair, Tazewell, Whiteside	10
" 500 " " "	Clark, Coles, Green, Jackson, Jasper, Jefferson, Kane, Macon, Marion, Mason, McDonough, Mercer, Morgan, Randolph, Stephenson, Warren, Washington, White, Winnebago, Woodford	20
" 400 " " "	Carroll, Clay, Clinton, Crawford, DeWitt, Douglas, Effingham, Ford, Franklin, Grundy, Hamilton, Lake, Perry, Piatt, Rock Island, Schuyler, Williamson	17
" 300 " " "	Bond, Cass, Cumberland, DuPage, Gallatin, Henderson, Jersey, Johnson, Kendall, Lawrence, Marshall, Menard, Monroe, Moultrie, Pope, Richland, Saline, Union	18
" 200 " " "	Alexander, Boone, Brown, Calhoun, Edwards, Massac, Scott, Stark, Wabash	9
" 100 " " "	Hardin, Pulaski, Putnam	3
Average area, 547.76 square miles		102

Classification by Population, 1870.

Over 70,000....	Cook	1
30,000 to 70,000.	LaSalle	1
50,000 to 60,000.	Adams, McLean, St. Clair	3
40,000 to 50,000.	Madison, Peoria, Sangamon, Will	4
30,000 to 40,000.	Bureau, Champaign, Fulton, Hancock, Henry, Kane, Knox, Livingston, Macoupin, Pike, Stephenson, Vermilion	12
20,000 to 30,000.	Christian, Coles, DeKalb, Edgar, Iroquois, JoDaviess, Kankakee, Lake, Lee, Logan, Macon, Marion, McDonough, McHenry, Montgomery, Morgan, Ogle, Randolph, Rock Island, Shelby, Tazewell, Warren, Whiteside, Winnebago....	24
10,000 to 20,000.	Alexander, Bond, Boone, Brown, Carroll, Clark, Clay, Clinton, Crawford, Cumberland, DeWitt, Douglas, DuPage, Effingham, Fayette, Franklin, Gallatin, Greene, Grundy, Hamilton, Henderson, Jackson, Jasper, Jefferson, Jersey, Johnson, Kendall, Lawrence, Marshall, Mason, Menard, Mercer, Monroe, Perry, Piatt, Pope, Richland, Saline, Schuyler, Scott, Stark, Union, Washington, Wayne, White, Williamson, Woodford	47
Under 10,000...	Calhoun, Cass, Edwards, Ford, Hardin, Massac, Moultrie, Pulaski, Putnam, Wabash	10
		102

Classification by Population to the square mile, 1870.

Over 80..	Cook	1
70 to 80..	Kane, Peoria, St. Clair	3
60 to 70..	Adams, Rock Island	2
50 to 60..	Knox, LaSalle, Madison, Morgan, Sangamon, Stephenson, Will, Winnebago	8
40 to 50..	Alexander, Boone, Bureau, Coles, DuPage, Fulton, Hancock, Henry, Jersey, Jo Daviess, Lake, Macon, Marshall, McDonough, McLean, Pulaski, Schuyler, Scott, Tazewell, Union, Warren	21
30 to 40..	Bond, Bureau, Carroll, Champaign, Clark, Clay, Clinton, Crawford, Cumberland, DeKalb, DeWitt, Douglas, Edgar, Edwards, Effingham, Franklin, Gallatin, Greene, Grundy, Hamilton, Henderson, Jackson, Jefferson, Johnston, Kankakee, Kendall, Lawrence, Lee, Livingston, Logan, Macoupin, Marion, Massac, McHenry, Menard, Mercer, Monroe, Montgomery, Moultrie, Ogle, Perry, Pike, Pope, Putnam, Randolph, Richland, Saline, Shelby, Stark, Vermilion, Wabash, Washington, White, Whiteside, Williamson, Woodford	56
20 to 30..	Calhoun, Cass, Christian, Fayette, Hardin, Iroquois, Jasper, Mason, Piatt, Wayne	10
10 to 20..	Ford	1
		102

Increase in Density of Population, 1860-70.

1..	Less than 1 per cent., Cass, Jo Daviess, Kendall, Monroe	4
2..	1-5 per cent., Boone, Calhoun, Clay, Crawford, Jasper, Marion, McHenry, Menard, Pike, Putnam	10
3..	5-10 per cent., Bond, Brown, Bureau, Clark, DeKalb, DeWitt, DuPage, Edgar, Edwards, Franklin, Fulton, Gallatin, Greene, Hamilton, Hancock, Hardin, Henderson, Jefferson, Jersey, Johnston, Lake, Lawrence, Macoupin, Marshall, Mason, Massac, Mercer, Ogle, Perry, Randolph, Richland, Saline, Schuyler, Scott, Stark, Stephenson, Wabash, Warren, Washington, White, Winnebago	41
4..	10-15 per cent., Carroll, Christian, Clinton, Cumberland, Fayette, Ford, Grundy, Iroquois, Kankakee, LaSalle, Lee, Logan, McDonough, Morgan, Moultrie, Piatt, Pope, Shelby, Tazewell, Vermilion, Wayne, Whiteside, Williamson, Woodford	25
5..	15-20 per cent., Adams, Alexander, Champaign, Douglass, Effingham, Henry, Jackson, Kane, Knox, Livingston, Madison, Montgomery, Peoria, Sangamon, Will	15
	20-25 per cent., Coles, Macon, McLean, Rock Island, St. Clair	5
6..	25-30 per cent., Pulaski	1
7..	209 per cent., Cook	1
		102

Agricultural Improvement and Production, 1870.

Counties.	Area square miles.	Improved acres.	Acres improved to section.	Value of farm products, including betterments and addition to stock.	Products per acre.
Adams	828	287,926	347.8	$4,654,440	16.16
Alexander	226	13,836	61.2	268,950	19.04
Bond	378	145,045	383.7	1,454,850	10.03
Boone	288	137,307	476.7	1,270,276	9.25
Brown	296	57,062	192.6	460,981	8.07
Bureau	867	398,611	459.7	3,936,439	9.87
Calhoun	255	37,684	147.7	626,364	16.61
Carroll	446	186,864	418.9	2,672,966	14.31
Cass	379	92,902	271.5	1,071,951	11.53
Champaign	1,008	419,368	416.0	4,505,875	10.74
Christian	709	241,472	333.5	2,195,504	9.09
Clark	509	118,594	234.3	1,259,976	8.06
Clay	468	146,922	313.5	1,175,541	9.09
Clinton	489	150,177	307.1	1,524,284	10.14
Coles	523	208,337	398.3	2,169,192	10.41
Cook	982	348,824	355.1	4,033,256	11.56
Crawford	435	105,505	242.7	1,157,358	10.97
Cumberland	350	75,342	215.2	519,013	6.88
DeKalb	648	334,502	516.2	2,903,762	8.68
DeWitt	405	168,539	416.1	1,990,119	11.80
Douglas	408	147,633	361.8	1,180,055	7.99
DuPage	338	164,874	487.7	1,708,512	10.36
Edgar	631	265,458	420.6	2,368,421	8.91
Edwards	233	58,912	252.8	642,221	10.90
Effingham	486	120,343	251.7	1,379,455	11.46
Fayette	720	187,196	259.9	2,115,593	11.30
Ford	480	141,228	294.2	1,001,129	7.08
Franklin	422	80,749	191.3	1,099,576	13.61
Fulton	878	228,132	259.8	3,092,067	13.51
Gallatin	326	49,572	152.0	665,821	13.43
Greene	546	175,408	321.2	2,507,350	14.29
Grundy	432	193,999	449.0	1,043,965	5.38
Hamilton	431	88,996	206.4	1,131,953	12.71
Hancock	773	311,517	404.2	2,611,161	8.38
Hardin	176	28,117	159.7	235,462	8.37
Henderson	386	140,954	365.1	2,717,950	19.28
Henry	828	265,904	321.1	2,959,687	11.13
Iroquois	1,132	322,510	284.9	1,578,845	4.88
Jackson	582	78,548	134.9	1,208,989	15.39
Jasper	506	90,867	179.5	733,027	8.06
Jefferson	574	118,951	207.2	1,100,632	9.25
Jersey	365	94,147	257.9	1,445,440	15.35
Jo Daviess	609	156,517	258.6	2,538,195	16.21
Johnson	336	57,820	172.0	736,634	12.74
Kane	540	240,120	444.6	2,632,137	10.95
Kankakee	696	312,182	448.5	1,970,196	6.31
Kendall	324	164,004	506.1	1,490,171	9.08
Knox	720	330,829	459.4	3,929,613	11.87
Lake	478	207,779	434.6	2,265,727	10.90
LaSalle	1,152	533,724	463.3	5,503,502	10.30
Lawrence	365	87,893	240.6	969,491	11.03
Lee	736	322,212	424.0	3,001,570	9.31
Livingston	1,026	377,505	367.9	1,981,993	5.25
Logan	618	321,709	520.5	3,623,501	11.26
Macon	577	265,259	355.7	2,808,166	13.19
Macoupin	864	291,059	336.8	2,459,466	8.45
Madison	748	257,032	343.6	3,727,065	14.50
Marion	576	173,081	300.4	1,563,486	9.03
Marshall	387	166,057	429.0	1,615,758	9.12
Mason	560	209,453	374.0	2,304,803	11.00
Massac	242	25,151	103.9	345,947	13.75
McDonough	576	261,635	454.2	2,294,082	8.76
McHenry	624	230,566	369.4	3,294,277	14.28
McLean	1,154	494,978	428.8	4,860,895	9.82
Menard	314	134,173	427.3	2,277,395	16.67
Mercer	548	222,809	406.5	2,848,387	12.78
Monroe	381	92,810	243.5	1,407,966	15.17
Montgomery	702	276,682	394.1	2,493,642	9.01
Morgan	564	293,450	520.3	4,482,892	15.27
Moultrie	331	144,220	438.7	1,732,864	12.01
Ogle	758	316,883	418.0	3,442,692	10.86

Agricultural Improvement, etc.—Continued.

Counties.	Area square miles.	Improved acres.	Acres improved to section.	Value of farm products, including betterments and addition to stock.	Products per acre.
Peoria	618	170,729	276.2	1,671,970	9.72
Perry	444	93,754	211.1	958,420	10.22
Piatt	442	94,454	213.6	1,089,661	11.53
Pike	795	233,785	293.9	3,118,376	13.38
Pope	362	55,980	154.6	657,723	11.74
Pulaski	187	13,319	71.2	330,712	24.83
Putnam	168	37,271	221.8	466,554	12.51
Randolph	577	140,764	243.9	2,270,199	16.12
Richland	361	75,079	207.9	733,924	9.77
Rock Island	436	155,214	356.0	1,787,283	11.45
Saline	379	72,309	190.7	671,036	9.28
Sangamon	868	421,748	485.8	4,557,711	10.80
Schuyler	426	96,195	225.2	1,250.491	13.00
Scott	251	85,331	340.0	1,126.237	13.19
Shelby	776	310,179	399.7	2,911,557	9.38
Stark	288	138,129	479.5	1,596,615	11.56
St. Clair	665	231,117	347.5	3,302,620	14 28
Stephenson	567	254,857	449.4	3,136,474	12.30
Tazewell	626	229,126	366 0	2,320,048	10.12
Union	398	75,832	190.5	1,295,237	17.08
Vermilion	1,008	360,251	357.3	3,426,816	9.51
Wabash	21	54,063	248.0	730,464	13.50
Warren	540	266,187	492.9	3,794,801	14.25
Washington	556	177,592	319.5	1,859,140	10.48
Wayne	720	147,352	204.6	2,105,082	14.26
White	500	92,398	184.7	1,192,005	12.90
Whiteside	697	289,809	415.8	3,085,329	10.64
Will	852	419,442	492.3	3,965,271	9.45
Williamson	432	128,448	297.3	1,706,997	13 29
Winnebago	540	241,373	446 9	2,513,513	10.41
Woodford	527	225,504	427.9	2,288,375	10.14
	55,872	19,329,952	345.9	$210,860,585	$10.90

Counties arranged according to the number of acres, per section of 640 *acres, in cultivation—Census* 1870.

480 acres and over..	DeKalb, DuPage, Kendall, Logan, Morgan, Sangamon, Warren, Will	8
400 acres and over..	Boone, Bureau, Carroll, Champaign, DeWitt, Edgar, Hancock, Grundy, Kane, Kankakee, Knox, Lake, LaSalle, Lee, Marshall, McDonough, McLean, Menard, Mercer, Moultrie, Ogle, Stark, Stephenson, Whiteside, Winnebago, Woodford	26
320 acres and over..	Adams, Bond, Christian, Coles, Cook, Douglas, Greene, Henderson, Henry, Livingston, Macon, Macoupin, Madison, Mason, McHenry, Montgomery, Rock Island, Scott, Shelby, St. Clair, Tazewell, Vermilion	22
240 acres and over..	Cass, Clay, Clinton, Crawford, Edwards, Effiingham, Fayette, Ford, Fulton, Iroquois, Jersey, Jo Daviess, Lawrence, Marion, Monroe, Peoria, Pike, Randolph, Wabash, Washington, Williamson	21
160 acres and over..	Brown, Clark, Cumberland, Franklin, Hamilton, Jasper, Jefferson, Johnson, Perry, Piatt, Putnam, Richland, Saline, Schuyler, Union, Wayne, White..	17
80 acres and over...	Calhoun, Gallatin, Hardin, Jackson, Massac, Pope	6
Under 80 acres.	Alexander? Pulaski?	2

Counties arranged according to farm products, per acre, cultivated 1870.

$20 and over	Pulaski?	1
$18 and over	Alexander? Henderson	2
$16 and over	Adams, Calhoun, Jo Daviess, Menard, Randolph, Union	6
$14 and over	Carroll, Greene, Jackson, Jersey, Madison, McHenry, Monroe, Morgan, St. Clair, Warren, Wayne	11
$12 and over	Franklin, Fulton, Gallatin, Hamilton, Johnson, Macon, Massac, Mercer, Moultrie, Pike, Putnam, Schuyler, Scott, Stephenson, Wabash, White, Williamson	17
$10 and over	Bond, Cass, Champaign, Clinton, Coles, Cook, Crawford, DeWitt, DuPage, Edwards, Effingham, Fayette, Henry, Kane, Knox, Lake, LaSalle, Lawrence, Logan, Mason, Ogle, Perry, Piatt, Pope, Rock Island, Sangamon, Stark, Tazewell, Washington, Whiteside, Winnebago, Woodford	32
$8 and over	Boone, Brown, Bureau, Christian, Clark, Clay, DeKalb, Edgar, Hancock, Hardin, Jasper, Jefferson, Kendall, Lee, Macoupin, Marion, Marshall, McDonough, McLean, Montgomery, Peoria, Richland, Saline, Shelby, Vermilion, Will	26
$6 and over	Cumberland, Douglas, Ford, Kankakee	4
$4 and over	Grundy, Iroquois, Livingston	3

Annual enumeration of the Live Stock of Illinois, for twenty years, as made by the Assessors, and published in the Auditor's Report.

Year.	Horses.	Cattle.	Mules and Asses.	Sheep.	Swine.
1854	352, 828	1, 042, 210	15, 348	743, 119	1, 901, 362
1855	395, 692	1, 175, 838	19, 528	811, 827	1, 689, 537
1856	407, 736	1, 169, 855	22, 885	786, 433	1, 596, 903
1857	467, 531	1, 351, 209	28, 822	760, 602	1, 893, 585
1858	513, 030	1, 422, 249	31, 881	760, 793	1, 908, 603
1859	532, 247	1, 337, 565	32, 692	647, 337	1. 725, 828
1860	590, 963	1, 425, 978	36, 371	584, 430	1, 530, 256
1861	625, 242	1, 428, 362	39, 278	731, 379	2, 196, 581
1862	664, 194	1, 603, 949	41, 038	913, 024	2, 601, 395
1863	652, 500	1, 684, 892	40, 675	1, 206, 625	2, 506, 138
1864	723, 751	1, 370, 783	39, 197	1, 606, 144	1, 044, 844
1865	793, 259	1, 568, 280	48, 058	2, 165, 972	2, 743, 005
1866	792, 751	1, 435, 769	62, 706	2, 415, 080	2, 007, 500
1867	828, 628	1, 464, 866	72, 954	2, 550, 850	2, 581, 481
1868	853, 851	1, 518, 524	84, 886	2, 332, 945	2, 292, 822
1869	874, 237	1, 584, 445	88, 046	1, 957, 564	2, 036, 304
1870	875, 009	1, 578, 015	83, 546	1, 434, 236	2, 220, 651
1871	880, 254	1, 611, 348	85, 570	1, 073, 497	3, 938, 749
1872	882, 250	1, 684, 029	88, 250	1, 010, 475	3, 292, 165
1873	930. 947	2, 014, 801	98, 316	1, 092, 080	3, 560, 083

Acres cultivated, as returned by Assessors, and published in the Reports of the Auditor and of the State Board of Equalization, in Wheat, Corn, and other field products.

Year.	Acres--Wheat	Acres—Corn.	Acres—Other field products
1861	2, 546, 409	4, 212, 696	1, 105, 148
1862	2, 447, 103	4, 014, 077	1, 245, 735
1863	2, 243, 885	3, 949, 285	1, 350, 434
1864	1, 978, 588	3, 970, 218	1, 535, 236
1865	1, 761, 268	4, 340, 111	1, 531, 164
1866	1, 829, 737	4, 789, 353	1, 632, 285
1867	2, 083, 189	4, 725, 386	1, 568, 665
1868	2, 506, 199	5, 106, 199	1, 794, 611
1869	2, 456, 632	5, 367, 364	2, 017, 073
1870	2, 035, 537	6, 262, 963	2, 387, 120
1871	2. 004, 392	6, 923, 076	2, 470, 049
1872	2, 093, 308	7, 087, 040	.....

Assessed value of Manufactured Articles and Railroad Property, from Auditor's Reports, and Reports of the Board of Equalization.

Year.	Manufactured Articles.	Railroad Property.
1854	$734, 207	.....
1855	884, 951	.....
1856	1, 064, 766	$6, 639, 220
1857	1, 296, 758	7, 529, 703
1858	1, 495, 984	9, 131, 475
1859	1, 209, 231	11, 758, 695
1860	1, 364, 551	12, 085, 472
1861	1, 111, 127	11, 243, 722
1862	1, 034, 702	11, 326, 595
1863	1, 247, 597	11, 525, 555
1864	1, 563, 852	12, 285, 640
1865	1, 929, 072	13, 911, 303
1866	1, 975, 053	14, 707, 097
1867	2, 263, 336	15, 451, 500
1868	1, 968, 740	14, 189, 931
1869	1, 912, 403	15, 847, 726
1870	2, 092, 973	19, 242, 141
1871	2, 367, 178	23, 556, 126
1872	2, 434, 820	24, 384, 428

Value of Manufacturing and Mining Products, Census 1870.

Counties.	Population 1870.	Value of manufact'd products.	Val. per capita	Value of mined products.	Per capita	Leading products.
Adams	56, 362	$5, 818, 291	$103	.....	.....	Flour, tobacco
Alexander	10, 564	744, 815	70	.....	.....	" lumber
Bond	13, 152	182, 937	13	.....	.....	" .....
Boone	12, 942	588, 275	45	.....	.....	" .....
Brown	12, 205	251, 647	20	.....	.....	" .....
Bureau	32, 415	634, 891	19	$85, 687	$2.64	" .....
Calhoun	6, 562	106, 913	16	.....	.....	" .....
Carroll	16, 705	469, 456	28	.....	.....	" .....
Cass	11, 580	293, 252	25	.....	.....	" paper
Champaign	32, 737	1, 290, 478	39	.....	.....	" .....
Christian	20, 363	934, 019	45	1, 789	.89	" .....
Clark	18, 719	432, 713	23	.....	.....	" .....
Clay	15, 875	272, 478	17	.....	.....	" .....
Clinton	16, 285	796, 545	48	17, 000	1.05	" .....
Coles	25, 235	1, 079, 445	42	.....	.....	" .....
Cook	349, 966	92, 518, 742	264	.....	.....	Meat, lum., clothi'g
Crawford	13, 889	263, 385	19	.....	.....	Lumber
Cumberland	12, 223	230, 773	14	.....	.....	" .....
DeKalb	23, 265	660, 265	28	.....	.....	Agricultural imp..
DeWitt	14, 768	404, 941	27	.....	.....	Wagons, etc.
Douglas	13, 484	138, 947	10	.....	.....	.....
DuPage	16, 685	632, 902	37	3, 665	.22	Cheese
Edgar	21, 450	760, 388	35	.....	.....	Flour, lumber
Edwards	7, 565	70, 748	9	.....	.....	.....
Effingham	15, 653	547, 920	35	.....	.....	Flour
Fayette	19, 638	726, 650	37	.....	.....	" .....
Ford	9, 103	91, 547	10	.....	.....	.....
Franklin	12, 652	100, 632	8	.....	.....	Flour
Fulton	38, 291	1, 286, 689	33	77, 900	2.03	" agricul. imp.
Gallatin	11, 134	288, 333	25	25, 200	2.26	" .....
Greene	20, 277	573, 868	28	.....	.....	" .....
Grundy	14, 938	278, 598	18	146, 900	9.83	" liquors
Hamilton	13, 014	322, 660	24	.....	.....	" .....
Hancock	35, 935	1, 244, 846	37	88, 702	2.46	" woolen goods.
Hardin	5, 113	27, 775	5	.....	.....	.....
Henderson	12, 582	618, 100	49	40, 000	3.17	Liquors, flour
Henry	35, 566	903, 075	25	158, 315	4.45	Flour, sash, etc.
Iroquois	25, 782	804, 857	31	.....	.....	Distilled liquors...
Jackson	19, 634	603, 015	30	419, 500	21.36	Coal, lumber
Jasper	11, 234	154, 567	13	.....	.....	Lumber, flour

Value of Manufacturing and Mining Products—Continued.

COUNTIES.	Population 1870.	Value of manufact'd products.	Val. per capita	Value of mined products.	Per capita	Loading products.
Jefferson	17,864	334,922	18	.....	.....	Flour
Jersey	15,054	686,094	45	385,166	25.58	Stone, flour
Jo Daviess	27,820	1,252,515	45	73,302	2.63	Lead, woolens
Johnson	11,248	126,635	11	.....	.....	.....
Kane	39,091	4,693,397	114	.....	.....	Cars, watches
Kankakee	24,352	735,639	30	.....	.....	Sash, etc., flour
Kendall	12,399	411,080	33	.....	.....	Agricul. imp., paper
Knox	39,522	2 835,937	71	196,845	4.98	Flour, agricul. imp.
Lake	21,014	692,928	32	.....	.....	" .....
La Salle	60,792	2,690,152	44	395,535	6.50	" coal
Lawrence	12,533	205,073	16	.....	.....	" .....
Lee	27,171	2,066,295	76	.....	.....	" .....
Livingston	31,471	465,963	14	157,995	5.02	" .....
Logan	23,053	937,026	40	51,000	2.21	" .....
Macon	26,481	1,559,629	58	.....	.....	" agricul. imp.
Macoupin	32,726	1,681,591	44	21,000	.64	" .....
Madison	44,131	4,794,490	108	331,802	7.51	" tobacco
Marion	20,622	935,046	44	.....	.....	R.R. machin'y, flour
Marshall	16,956	1,303,502	86	56,040	3.30	Liquors, flour
Mason	16,184	545,678	33	.....	.....	Flour
Massac	9,581	437,582	45	.....	.....	Lumber, flour
McDonough	26,509	473,974	17	165,200	6.23	Flour
McHenry	23,762	698,199	29	.....	.....	" cheese
McLean	53,988	3,367,647	62	202,925	3.75	" machinery
Menard	11,735	578,735	48	44,720	3.81	" .....
Mercer	18,769	250,527	13	28,325	1.51	" .....
Monroe	12,982	737,720	56	.....	.....	" .....
Montgomery	25,314	1,641,842	64	54,000	2.13	" machinery
Morgan	28,463	1,287,441	45	.....	.....	" woolens
Moultrie	10,385	161,127	15	.....	.....	" .....
Ogle	27,492	442,741	16	.....	.....	" .....
Peoria	47,540	8,844,493	186	12,000	.25	" liquors
Perry	13,723	235,337	17	330,249	24.06	Coal
Piatt	10,953	44,284	4	.....	.....	.....
Pike	30,768	1,415,577	45	.....	.....	Flour, tobacco
Pope	11,437	171,468	15	.....	.....	Flour
Pulaski	8,752	544,447	62	.....	.....	Lumber
Putnam	6,280	134,146	21	.....	.....	Flour
Randolph	20,859	1,846,130	88	22,000	1.05	" .....
Richland	12,803	520,313	40	.....	.....	" .....
Rock Island	29,783	5,002,443	161	356,770	11.97	Agricul. imp., flour
Saline	12,714	175,493	13	.....	.....	Flour
Sangamon	46,352	1,806,286	33	450,000	9.72	" coal
Schuyler	17,419	578,057	33	21,450	1.23	Woolens, lumber
Scott	10,530	330,121	31	5,950	.56	Flour
Shelby	25,476	722,473	28	19,675	.77	" .....
Stark	10,751	222,990	20	27,868	2.59	" .....
St. Clair	51,068	7,985,410	156	1,381,045	27.04	" coal
Stephenson	30,608	734,051	24	.....	.....	" agricul. imp.
Tazewell	27,903	1,958,718	70	11,661	.41	Liquors, flour
Union	16,518	878,876	53	.....	.....	Flour, lumber
Vermilion	30,388	727,137	23	189,180	6.22	" coal
Wabash	8,841	418,185	47	.....	.....	" lumber
Warren	23,174	740,089	31	34,079	1.47	Agricul. imp., flour
Washington	17,599	1,835,322	14	.....	.....	Flour
Wayne	19,758	1,139,811	57	.....	.....	" lumber
White	16,846	509,047	30	.....	.....	" .....
Whiteside	27,503	1,846,085	67	.....	.....	Liquors, flour
Will	43,013	2,565,907	59	855,990	19.90	Stone, coal, flour
Williamson	17,329	356,885	20	3,200	.18	Flour
Winnebago	29,301	3,063,346	104	2,500	.08	Agricul. imp., flour
Woodford	18,956	486,250	25	15,000	.79	Flour
Total	$2,539,891	$205,620,672	$80	$5,968,201	$2.74	

Counties arranged according to the value of Manufactured Products, per capita.

$100 or over....	Adams, Cook, Kane, Madison, Peoria, Rock Island, St. Clair, Winnebago.....	8
80 or over....	Marshall, Randolph.....	2
60 or over....	Alexander, Knox, Lee, McLean, Montgomery, Pulaski, Tazewell, Whiteside....	8
40 or over....	Boone, Christian, Clinton, Coles, Henderson, Jersey, Jo Daviess, LaSalle, Logan, Macon, Macoupin, Marion, Massac, Menard, Monroe, Morgan, Pike, Richland, Union, Wabash, Wayne, Will.....	22
20 or over....	Brown, Carroll, Cass, Champaign, Clark, DeKalb, DeWitt, DuPage, Edgar, Effingham, Fayette, Fulton, Gallatin, Greene, Hamilton, Hancock, Henry, Iroquois, Jackson, Kankakee, Kendall, Lake, Mason, McHenry, Putnam, Sangamon, Schuyler, Scott, Shelby, Stark, Stephenson, Vermilion, Warren, White, Williamson, Woodford.....	36
Under $20.....	Bond, Bureau, Calhoun, Clay, Crawford, Cumberland, Douglas, Edwards, Ford, Franklin, Grundy, Hardin, Jasper, Jefferson, Johnson, Lawrence, Livingston, McDonough, Mercer, Moultrie, Ogle, Perry, Piatt, Pope, Saline, Washington..	26

Total Wealth, Census 1870.

COUNTIES.	Square miles.	Population, 1870.	Valuation, 1870.	Per section.	Per capita.
Adams	828	56, 362	$50, 748, 596	$61, 290	$900
Alexander	226	10, 564	6, 212, 829	27, 932	588
Bond	378	13, 152	9, 706, 196	25, 677	749
Boone	288	12, 942	11, 700, 000	40, 625	904
Brown	296	12, 205	6, 727, 024	22, 726	551
Bureau	867	32, 415	25, 000, 000	28, 835	771
Calhoun	255	6, 562	2, 593, 216	10, 169	395
Carroll	446	16, 705	12, 265, 000	27, 500	734
Cass	379	11, 580	10, 901, 844	28, 764	941
Champaign	1, 008	32, 737	22, 719, 680	22, 539	602
Christian	709	20, 363	17, 800, 332	25, 106	874
Clark	509	18, 719	10, 367, 636	20, 349	553
Clay	468	15, 875	9, 043, 612	19, 324	569
Clinton	489	16, 285	10, 507, 676	21, 488	645
Coles	523	25, 235	17, 642, 432	33, 733	698
Cook	982	349, 966	575, 000, 000	585, 540	1, 643
Crawford	435	13, 889	6, 899, 724	15, 861	496
Cumberland	350	12, 223	6, 389, 756	18, 256	522
DeKalb	648	23, 265	23, 769, 785	36, 681	1, 021
DeWitt	405	14, 768	10, 026, 668	24, 757	678
Douglas	408	13, 484	9, 393, 804	23, 024	695
DuPage	338	16, 685	10, 500, 000	31, 005	629
Edgar	631	21, 450	17, 338, 040	27, 486	808
Edwards	233	7, 565	4, 694, 288	20, 147	620
Effingham	486	15, 653	9, 366, 308	19, 272	598
Fayette	720	19, 638	10, 732, 132	14, 905	541
Ford	480	9, 103	8, 563, 736	17, 862	940
Franklin	422	12, 652	4, 858, 756	11, 501	384
Fulton	878	38, 291	26, 070, 096	29, 578	683
Gallatin	326	11, 134	4, 940, 056	15, 153	443
Greene	546	20, 277	15, 724, 516	28, 800	776
Grundy	432	14, 938	10, 628, 165	24, 593	711
Hamilton	431	13, 014	4, 821, 792	11, 185	370
Hancock	773	35, 935	23, 956, 008	30, 979	666
Hardin	176	5, 113	1, 688, 572	9, 594	330
Henderson	386	12, 582	9, 247, 374	23, 956	734
Henry	828	35, 506	30, 000, 000	36, 231	844
Iroquois	1, 132	25, 782	12, 462. 687	11, 009	483
Jackson	582	19, 634	12, 559, 880	21, 580	639
Jasper	506	11, 234	5, 706, 832	11, 278	508
Jefferson	574	17, 864	11, 391, 676	19, 846	637
Jersey	365	15, 054	11, 891, 272	32, 578	790
JoDaviess	609	27, 820	11, 796, 560	19, 370	420
Johnson	336	11, 248	3, 922, 632	11, 674	348
Kane	540	39, 091	22, 890, 389	60, 908	841
Kankakee	696	24, 352	14, 068, 480	20, 213	577
Kendall	324	12, 399	10, 801, 080	33, 336	871
Knox	720	39, 522	26, 094, 620	36, 242	660
Lake	478	21, 014	18, 930, 128	39, 602	900
LaSalle	1, 152	60, 792	42, 972, 474	37, 302	706

Total Wealth—Continued.

Counties.	Square miles.	Population, 1870.	Valuation, 1870.	Per section.	Per capita.
Lawrence	365	12,533	$7,391,080	$20,249	$589
Lee	736	27,171	12,398,156?	16,845?	456?
Livingston	1,026	31,471	19,178,415	18,692	609
Logan	618	23,053	19,133,108	30,959	829
Macon	577	26 481	20,456,232	35,452	772
Macoupin	864	32,726	27,541,624	31,876	841
Madison	748	44,131	40,745,328	54,472	923
Marion	576	20,622	14,798,036	25,690	717
Marshall	387	16,956	15,498,090	40,046	914
Mason	560	16,184	13,759,592	24,570	850
Massac	242	9,581	3,268,424	13,505	341
McDonough	576	26,509	20,466,036	35,531	772
McHenry	624	23,762	14,464,748	23,180	608
McLean	1,154	53,988	44,926,108	38,930	832
Menard	314	11,735	9,376,840	29,858	799
Mercer	548	18,769	19,909,852	26,331	1,060
Monroe	381	12,982	7,217,260	18,942	555
Montgomery	702	25,314	17,779,564	25,327	702
Morgan	564	28,462	29,885,996	52,989	1,049
Moultrie	331	10,385	7,296,464	13,740	703
Ogle	758	27,492	23,685,654	31,247	861
Peoria	618	47,540	47,039,994	76,116	989
Perry	444	13,723	7,536,748	16,974	549
Piatt	442	10,953	10,363,636	23,447	946
Pike	795	30,768	21,097,652	26,536	685
Pope	362	11,437	4,286,392	14,603	374
Pulaski	187	8,752	2,627,296	14,049	390
Putnam	168	6,280	5,488,875	32,671	874
Randolph	577	20,859	13,831,636	23,971	663
Richland	361	12,803	7,856,268	21,762	613
Rock Island	436	29,783	12,548,601?	28,781?	454?
Saline	379	12,714	4,118,104	10,865	323
Sangamon	868	46,352	51,133,532	58,909	1,103
Schuyler	426	17,419	10,275,584	24,121	589
Scott	251	10,530	6,483,364	25,830	615
Shelby	776	25,476	18,146,580	23,565	712
Stark	288	10,751	7,795,364	27,067	725
St. Clair	665	51,068	37,622,084	56,436	736
Stephenson	567	30,608	25,054,272	44,187	818
Tazewell	626	27,903	23,165,560	37,005	830
Union	398	16,518	6,733,348	16,917	407
Vermilion	1,008	30,388	26,426,852	26,217	869
Wabash	218	8,841	4,328,972	19,857	480
Warren	540	23,174	5,187,544?	9,606?	223?
Washington	556	17,599	12,319,788	22,157	700
Wayne	720	19,758	9,528,420	13,233	482
White	500	16,846	7,603,116	17,206	451
Whiteside	697	27,503	18,845,560	27,038	685
Will	852	43,013	28,516,120	33,469	663
Williamson	432	17,329	5,560,293	12,871	320
Winnebago	540	29,301	23,175,720	42,918	790
Woodford	527	18,956	3,881,548?	7,365?	204?
	55,872	2,539,891	$2,121,680,579	$37,973	835

Counties arranged according to the total wealth per section.

Over $60,000.	Adams, Cook, Kane, Peoria	4
" 50,000.	Madison, Morgan, Sangamon, St. Clair	4
" 40,000.	Boone, Marshall, Stephenson, Winnebago	4
" 30,000.	Coles, DeKalb, DuPage, Hancock, Henry, Jersey, Kendall, Knox, Lake, LaSalle, Logan, Macon, Macoupin, McDonough, McLean, Ogle, Putnam, Tazewell, Will	19
" 20,000.	Alexander, Bond, Brown, Bureau, Carroll, Cass, Champaign, Christian, Clark, Clinton, DeWitt, Douglas, Edgar, Edwards, Fulton, Greene, Grundy, Henderson, Jackson, Kankakee, Lawrence, Marion, Mason, McHenry, Menard, Mercer, Montgomery, Piatt, Pike, Randolph, Richland, Rock Island(?), Schuyler, Scott, Shelby, Stark, Vermilion, Washington, Whiteside	39
" 10,000.	Calhoun, Clay, Crawford, Cumberland, Effingham, Fayette, Ford, Franklin, Gallatin, Hamilton, Iroquois, Jasper, Jefferson, JoDaviess, Johnson, Lee, Livingston, Massac, Monroe, Moultrie, Perry, Pope, Pulaski, Saline, Union, Wabash, Wayne, White, Williamson	29
" 5,000.	Hardin, Warren(?), Woodford(?)	3

Counties arranged according to wealth per capita.

Over $1,000..	Cook, DeKalb, Mercer(?), Morgan, Sangamon	5
" 900..	Adams, Boone, Cass, Ford, Lake, Madison, Marshall, Peoria, Piatt	9
" 800..	Christian, Edgar, Henry, Kane, Kendall, Logan, Macoupin, Mason, McLean, Ogle, Putnam, Stephenson, Tazewell, Vermilion	14
" 700..	Bond, Bureau, Carroll, Greene, Grundy, Henderson, LaSalle, Macon, Marion, McDonough, Menard, Montgomery, Moultrie, Shelby, Stark, St. Clair, Washington, Winnebago	19
" 600.	Champaign, Clinton, Coles, DeWitt, Douglas, DuPage, Edwards, Fulton, Hancock, Jackson, Jefferson, Knox, Lexington, McHenry, Pike, Randolph, Richland, Scott, Whiteside, Will	20
" 500..	Alexander, Brown, Clark, Clay, Cumberland, Effingham, Fayette, Jasper, Kankakee, Lawrence, Monroe, Perry, Schuyler	13
" 400..	Crawford, Gallatin, Iroquois, JoDaviess, Lee(?), Rock Island(?), Union, Wabash, Wayne, White	10
" 300..	Calhoun, Franklin, Hamilton, Hardin, Johnson, Massac, Pope, Pulaski, Saline, Williamson	10
" 200..	Warren(?), Woodford(?)	2

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