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Geol. Survey

STATE OF ILLINOIS
WILLIAM G. STRATTON, *Governor*
DEPARTMENT OF REGISTRATION AND EDUCATION
VERA M. BINKS, *Director*



UNPUBLISHED REPORTS ON OPEN FILE

IV. STRATIGRAPHY AND AREAL GEOLOGY

Lois Kent

DIVISION OF THE
ILLINOIS STATE GEOLOGICAL SURVEY
JOHN C. FRYE, *Chief* URBANA

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ILLINOIS GEOLOGICAL
SURVEY LIBRARY.

FOREWORD

The Illinois State Geological Survey has accumulated through the years many unpublished technical reports and maps. Although most major research projects are designed for eventual publication of results, some brief reports on specialized subjects, local areas, or problems of limited interest have been prepared for specific purposes and were not intended for publication. Other more extensive reports were not published when they were timely because of insufficient printing funds. These various unpublished reports and maps contain a wealth of information on the geology and mineral resources of Illinois, and it has been the policy of the Geological Survey to make them available to persons who visit the Survey. As the number of such items in the files has increased, it has become difficult for representatives of industry and other interested persons to learn what reports are available.

This circular listing unpublished reports on stratigraphy and areal geology is the fourth of a series. Other circulars in the series are:

201 - I. Mineral Fuels

209 - II. Industrial Minerals

210 - III. Groundwater Geology and Geophysics

Because there is only one copy of most of the listed items, they cannot be lent, but must be consulted in the Survey's Mineral Resource Records Division. The reports are open for public inspection, and the information is available for use by anyone; if data from them are included in written documents, the source must be cited.

John C. Frye

UNPUBLISHED REPORTS ON
OPEN FILE
IV. STRATIGRAPHY AND AREAL GEOLOGY

by
Lois S. Kent

ABSTRACT

Ninety-nine unpublished manuscripts dealing with stratigraphy and areal geology are listed with brief annotations. They are on open file in the Mineral Resource Records Division of the Illinois Geological Survey and are available for examination but not for loan.

The following list includes only those manuscripts on open file that are of greatest interest to the public. They are listed alphabetically by author and chronologically under each author. Manuscripts with a limited area of interest are not listed but are available for reference.

Approximately 140,000 well logs also are open to the public in the Mineral Resource Records Division.

REPORTS ON STRATIGRAPHY AND AREAL GEOLOGY

Allen (VTA-1): Petrography of the weathered zones of glacial deposits, 1931.
(44 p., 5 pls.)

Abstract published Geol. Soc. America Bull., v. 41, no. 1, p. 85, 1930. Petrographic study of weathering profiles above glacial drift under different drainage conditions; mineralogical and textural changes in different horizons of profiles. One sample studied was from Kansan drift in Jefferson County, Iowa; the rest from Illinoian or Early Wisconsin drift from Illinois.

Ball (JRB-1): Geology of the Carlinville quadrangle, 1945. (605 p.)
Partially published as Illinois State Geol. Survey Bull. 77, 1952. Manuscript was revised and condensed for publication, and nomenclature, classification, and correlation of the geological formations were brought up to date as of July 1, 1951. Manuscript contains many original descriptions of outcrops; a more detailed discussion of structure.

Bandy (JCB-1): Geology of the McKinley pool, Washington County, Ill., 1950.
(24 p., 3 pls.)
Master's thesis. Briefly discusses subsurface stratigraphy of Silurian, Devonian, Mississippian, and Pennsylvanian formations; structure; and production. Basic material from electric logs and drill records, verified by correlation with known units in nearby wells. 4 structure maps, 3 isopach maps, 3 cross sections.

Bassett (CFB-2): Devonian formations of the Alto Pass, Ill., quadrangle, 1924.
(37 p., 2 pls.)
Master's thesis. Descriptions of formations, their lithology and attitude; generalized and detailed sections, faunal lists, and correlation. Photo-

graphs of outcrops. Brief discussion of economic resources. Areal map showing Devonian formations only.

Bevan (ACB-2): Geology and mineral resources of the Oregon quadrangle, 1929. (384 p., 46 pls.)

Physiography, general geology; detailed Cambrian - Ordovician stratigraphy and outcrop sections. Most exposed rocks are of Ordovician age. Structural geology; geologic history. Quadrangle is largely covered by Illinoian drift and fluvio-glacial deposits of Wisconsin age. Detailed sections of drift and fluvio-glacial deposits. Economic resources. An appendix contains records of deep wells in and near the Oregon quadrangle.

Bierschenk (WHB-1): Groundwater resources of southern Crawford County, Ill., 1953. (55 p., 7 pls.)

Master's thesis. Summary and evaluation of geologic conditions controlling occurrence of groundwater for water flooding or domestic supplies. General stratigraphic succession and classification of formations, based primarily on well logs. Only glacial deposits and Pennsylvanian strata are exposed in area. Bedrock surface map, areal geologic map, graphic logs and cross sections of wells, groundwater contour map.

Blatchley, R. S., see Savage (TES-11)

Boos (CMB-1): Geology of the Dongola quadrangle, 1921. (53 p.)

Master's thesis. Physiographic history and relation of topography to geologic structure in the area. Descriptions of formations, lithology, exposures, topographic expression; some characteristic fossils of Devonian Chattanooga (Mountain Glen) black shale; of all formations of the Mississippian sequence in southern Illinois; Ripley sands of Cretaceous, and patches of Lafayette gravel.

Bray, R. H., see Grim (REG-20)

Buhle (MBB-1): Groundwater supplies in the vicinity of the tri-cities, Davenport, Iowa, Rock Island and Moline, Ill., 1935. (80 p., 19 pls.)

Master's thesis (State Univ. of Iowa). Based on logs of 23 wells. Descriptions of Cambrian-Pennsylvanian formations and their water supplies, with partial logs quoted to show typical lithology. Contour maps showing surfaces of Eau Claire, Galesville, Franconia, St. Lawrence - Lodi, Jordan, Prairie Du Chien, St. Peter, Galena, Maquoketa, Niagaran formations. Isopach map of St. Peter sandstone. Appendix includes all available deep well logs of area.

Buschbach (TCB-1): Lithology and distribution of the Chouteau limestone in Illinois, 1951. (37 p., 3 pls.)

Master's thesis. Partly published in Trans. Ill. Acad. Sci., v. 45, p. 100-115, 1952; reprinted in Illinois Geol. Survey Circ. 183, pp. 108-115, 1953. In addition to the material published this manuscript includes four measured sections from outcrops, two from Jersey County, Ill., two from nearby areas in Missouri; and several additional illustrations, among them columnar sections through outcrops of the Chouteau limestone, a correlation chart, and a geologic cross section of the formation across Illinois.

Cady, G. H., see also McClintock (PM-3)

- (GHC-11): The New Richmond sandstone of northern Illinois, 1915. (19 p.) Abstract published *Trans. Ill. Acad. Sci.*, v. 9, 1916. New Richmond sandstone outcrops along Franklin Creek and underlies a considerable area in central-northern Illinois north of Illinois River (LaSalle, Bureau, Lee counties). New Richmond resembles St. Peter strongly but lies below it; it is an important aquifer. Report gives detailed descriptions of cuttings from Ill. Zinc Co. well at Peru, Ill., beginning near base of St. Peter and continuing to below base of New Richmond sandstone. Table shows thickness of Paleozoic formations down to and including New Richmond sandstone, as determined by drilling in central-northern Illinois.
- (GHC-6): Geology and mineral resources of the West Frankfort and Galatia quadrangles, 1923. (217 p.)
(Original about 1917, revision 1923) Physiography; subsurface stratigraphy of Ordovician-Pennsylvanian strata, primarily of Pennsylvanian formations; stratigraphy of exposed Pennsylvanian formations including distribution and outcrops, descriptions of distinctive horizons, measured sections, well logs. Occurrence and character of Quaternary deposits; geologic history and structure; economic resources. Accompanying maps show coal structure, glacial deposits, coal mines, and geologic sections.
- (GHC-12): Geology of the Sparta region, Randolph County, 1928. (107 p., 2 pls.)
Occurrence and character of Pennsylvanian strata, including sections from outcrops and coal mines, and records from oil and gas wells. Changes in formations due to progressive overlap of Pennsylvanian series on Mississippian rocks to north and west make correlation difficult. Geologic history and mineral resources, principally coal, and some oil and limestone. Maps show rock and coal outcrops, oil and gas well locations, and structure on No. 6 coal.
- (GHC-18): Stratigraphic relation as a criterion for the classification of the Pennsylvanian system in Illinois, 1928. (93 p.)
Discussion of varieties of stratigraphic contact with illustrations from Pennsylvanian of Illinois; their significance and value as criteria for subdivision; history and basis of classifications of Pennsylvanian in Illinois. Suggestions for further study in stratigraphy, sedimentation, and paleontology, as an aid to forming a permanent classification of the Pennsylvanian system in Illinois.
- (GHC-29): An alternative interpretation of Pennsylvanian stratigraphy in the Eastern Interior Province, 1933. (11 p.)
Abstract, *Geol. Soc. America Proc.* 1933, p. 71, June 1934. Disputes interpretation of cyclothems as cyclical repetition of uplift conditions resulting in unconformity.
- (GHC-33): I. Coal stripping possibilities in western and northern Illinois and in southeast Shelby County, 1936. (149 p.) II. Stratigraphic succession of Pennsylvanian strata in western Illinois, by H. R. Wanless and G. H. Cady, 1936. (92 p.)

I. Extract published as Circ. 19 to accompany 14 maps issued as blue-line prints. Brief history of strip mining in area; geography and glacial geology; general geology of coal-bearing strata. Geologic occurrence, geographic distribution and position of outcrop, physical and chemical characteristics, stripping possibilities and recommendations discussed for coals Nos. 1, 2, 4, 5, and 6, Kerton Creek coal, and the Trowbridge coal in Shelby County.

II. Detailed description of typical lithologic characteristics of beds which have diagnostic value in correlation of coals. Descriptions of the 18-cyclothem units identified in western Illinois, which include all strata known in western Illinois. Precise localities where good exposures can be seen are given.

Carlton (JLC-1): Geology of the Bartelso oil field, Clinton County, Illinois, 1940. (51 p., 4 pls.)

Master's thesis (University of Chicago). Brief general descriptions of subsurface and outcropping formations, in terms of occurrence, lithology, and thickness. Driller's log of Devonian discovery well. Structure, including maps showing contours on top of Herrin (No. 6) coal, on base of Golconda limestone, and on top of Devonian producing horizon. History of development, production statistics, drilling methods, oil and water analyses. Field produces from Cypress sandstone and from the top of the Devonian limestone.

Cohee (GVC-1): A regional lithologic study of the Hanover and Brereton limestones (Pennsylvanian), 1932. (53 p., 9 pls.)

Master's thesis. Studies of insoluble residues and etched surfaces of samples from Hanover and Brereton limestones. Some regional characteristics and some local characteristics brought to light by this study may be used in correlation. Correlation table, photographs, maps showing areal distribution of lithologic characteristics and thickness of Hanover and Brereton limestones.

Collingwood (DMC-9): Geology of Jersey-Green counties and adjacent area, 1922-1923. (138 p.)

Mostly published as Report of Investigations 30 (1933), but contains some unpublished data on oil possibilities of minor structures, a section on Pennsylvanian strata including measured sections and fuller discussion of geologic history and structures. Brief discussions of clay, coal, limestone and other resources.

Cox (BBC-2): Geology and mineral resources of the Quincy and Liberty quadrangles, 1929. (114 p.)

Physiography; brief descriptions of Cambrian-Devonian subsurface strata. Table showing rocks reported in deep wells. More detailed stratigraphy of Mississippian formations, including lithology, thickness, distribution, some sections from wells, outcrops, paleontology, stratigraphic relations, correlations; numerous measured sections; mechanical analyses of a few samples. Sample set descriptions from four wells (20 p.). Cross sections.

- Dutton (CED-2): Sedimentation study of Cretaceous-Tertiary sands of southern Illinois, 1928. (29 p., 5 pls.)
Master's thesis. Mechanical and heavy mineral analyses and interpretation of their value for correlation.
- Dyni (JRD-2): Post-depositional history of the Cypress sandstone near Golconda, Illinois, 1955. (39 p., 5 pls.)
Master's thesis. Petrographic study of Cypress sandstone to define post-depositional events which have modified or altered the sandstone. Five plates of photomicrographs.
- Ekblaw (GEE-4): The problem of the drift of the Kaskaskia basin in southern Illinois, 1922. (34 p.)
Bachelor's thesis. Review of literature and summary of previous work in area; criteria used in differentiating various drift sheets; topography; stratigraphy and measured sections of glacial deposits; summary of previously suggested hypotheses as to origin of ridges, author's hypotheses.
- (GEE-5): Stratigraphy of the Paleozoic rocks along the Mississippi River between Alton and Warsaw, Illinois, 1923. (54 p.)
Master's thesis. Descriptions of formations from Jefferson City limestone of Ordovician age up through the Ste. Genevieve limestone of Mississippian age, with brief notes on the Pennsylvanian rocks. Descriptions include for each formation distribution of outcrops, tabulated lists of fossils and localities where they were found. Brief summary of structural features and geologic history.
- (GEE-20): Report on locality near Milford, Illinois at which a mastodon tooth was found, 1928. (4 p.)
Description of mastodon tooth and of geologic situation in which it was found. One page report from F. C. Baker, University of Illinois, Mus. Nat. Hist., on identification of mollusks found with tooth.
- (GEE-40): Observations in Chicago Avenue water tunnel in Chicago, 1929. (3 p.)
See also Taylor (DOT-1) Brief descriptions of Silurian shale and dolomite exposed in tunnel, and of structural features, including a graben, joints, fractures, and small faults.
- (GEE-113): Provisional sequence and correlation of events and stages in the history of Lake Chicago, 1932. (9 p.)
Summary of relationships between position of glaciers, source and route of drainage, positions of moraines, and elevation of lake at different stages in the history of area.
- (GEE-109): Report on examination of geological situation of mastodon skeleton discovered near Lowell, Illinois, 1934. (3 p.)
Brief notes on discovery and geology of deposits in which skeleton was found.
- (GEE-203): Geologic aspects of the mastodon skeleton found near Easton, Illinois, 1943. (4 p.)
Description of skull and tusks and of deposits in which they were found.

- Elder (SGE-1): Geology of the Glenwood formation, 1936. (143 p., 16 pls.; 196 p. of appendices giving measured sections and well logs.)
Partially published in Trans. Ill. Acad. Sci., v. 29, no. 2, pp. 164-166, December 1936. Doctor's dissertation (Northwestern University). Detailed study of Glenwood formation, comprising all beds between St. Peter and Platteville, to determine its geographic extent, thickness, lithologic characteristics, lateral and vertical variations, relations to other formations, and petrographic characteristics, and to interpret the history of its deposition. Work was concentrated in Illinois but also covered parts of Wisconsin, Minnesota, Iowa, and Missouri. Methods used included binocular microscopic examination of well cuttings; study of insoluble residues of calcareous or dolomitic samples; sieving analyses and heavy mineral analyses.
- Fisher (RFF-1): Bedrock topography of the Arlington Heights, Evanston, Highland Park, Park Ridge, and Wheeling, Illinois quadrangles, 1941. (10 p., 5 pls.)
Master's thesis. Brief text accompanying contour map (5 quadrangle sheets) showing topography of bedrock surface under the glacial drift. Source of data; present surface topography; bedrock topography and distribution of preglacial valleys; relation to regional preglacial drainage.
- Frye (JCF-1): Additional studies on the history of Mississippi Valley drainage, 1938. (39 p., 1 pl.)
Ph. D. thesis (State Univ. of Iowa). Study of buried channels of the Mississippi River in Illinois and Iowa, based on earth resistivity surveys in conjunction with well data, bedrock outcrops, and surface features. Descriptions of buried valleys and physiographic interpretation. Abstract published Iowa Univ. Studies, v. 2, 1938, Aims Prog. Res. no. 69, p. 122-125, 1941.
- Gore (DJG-1): Differentiation of the Peorian loess in the Peoria area, 1952. (21 p.)
Master's thesis. Mechanical and heavy mineral analyses, and interpretation of source and origin of this composite loess.
- Gregg (WNG-1): The depth of the bedrock surface in the lower Embarrass Valley, indicated by earth resistivity, 1949. (36 p., 13 pls.)
Master's thesis. Determination of altitude of bedrock surface by means of electrical earth resistivity data. Study of variations and patterns as related to outcrops and well logs. Very brief discussion of Pennsylvanian and Pleistocene stratigraphy; few well logs showing Pennsylvanian strata.
- Gries, J. P., see also Leighton (MML 252) and Powers (WEP 5)
- (JPG-1): Subsurface stratigraphy of the Geneva, Barrington, Elgin, and Wheaton quadrangles, 1937. (48 p.)
Brief descriptions of formations penetrated by deep wells: thickness, lithology and color, stratigraphic relations, correlation. List of wells studied. Structure, geologic history (pre-Cambrian through Ordovician, post-Silurian - preglacial). Discussion of possible water-bearing formations.
- Grim (REG-20): Weathering of loess in Illinois, (by Bray, Grim, and Leighton), 1936. (27 p., 6 pls.)

Abstract published Geol. Soc. America, Proc., 1936, p. 76. Discussion of mineralogical, textural, and chemical changes taking place in loess under present day conditions of weathering. Diagrams show vertical distribution and abundance of mineral constituents in different stages of weathering. Tables give detailed descriptions of sections studied and analytical data and mineral identifications for all fractions of horizons studied.

Grote (BG-1a): Tar Springs sandstone in southeastern Illinois, 1949-1950. (59 p., 24 pls.)

Ph. D. thesis (original and revision). Detailed study of occurrence and character of Tar Springs sandstone, including lithology, porosity, permeability, sieve analyses, heavy minerals, grain characteristics. Interprets sedimentary history and structural, lithologic, and oil production relationships. 3 cross sections, 1 isopach map, 1 sandstone percentage map, map showing structure on top of Tar Springs sandstone, and 8 fence diagrams.

Hathaway (JCH-1): Roundness and sphericity of the St. Peter sandstone from Ottawa, Illinois, 1952. (13 p., 13 pls. of histograms and graphs)

Master's thesis. Methods of study; relationships between sphericity and roundness of sand grains and size grades; value of results in indicating source of material and local subdivisions of the formation.

Heinz (DMH-1): Weathering of fossils in limestones, 1953. (19 p., 1 pl. histograms, 10 pls. photographs.)

Master's thesis. Study to determine measureable differences in rate of solution of various fossils in limestones of Upper Mississippi Valley region. Laboratory tests determined (1) rates of solution of fossil fragments, and (2) relative solubility of various parts of individual fossils by etching plane surfaces.

Herbert (PH-1): Stratigraphy of the Decorah formation in western Illinois, 1949. (154 p., 19 pls.)

Ph. D. thesis (University of Chicago). Distribution, thickness, lithology, and stratigraphic relations of the formation and its members. Discussion of outcrops, logs of borings, and outcrop sections. Seventeen text figures, 10 pl. photographs, 5 cross sections, 4 isopach maps.

Hoover (WFH-1): Study of correlation value of insoluble residues of Ste. Genevieve limestones at selected localities in Illinois and adjacent states, 1939. (108 p., 43 pls.)

Ph. D. thesis. Abstract published University of Illinois, Urbana, Illinois, 1939. (11 p.) Oil and Gas Journal, v. 47, no. 46, p. 152, March 17, 1949. Localities and sections from which samples were taken; method of sample collection; preparation of insoluble residues; mechanical analyses of residues. Criteria for recognition of zones; correlation between residue zones and lithologic zones; value of residue zones in subsurface correlation. Eight pls. photomicrographs of residues; 13 pls. showing constituents of coarse fraction and total residue make-up. Correlation chart.

Huner (JH-1): Subsurface stratigraphy of the Devonian of western Illinois, 1934. (19 p., 7 pls.)

Bachelor's honors thesis. Correlations of Wapsipinicon and Cedar Valley formations on basis of well cuttings and their insoluble residues and driller's logs. Two cross sections.

Krey (FFK-2): Dongola quadrangle report, 1922. (96 p.) See Illinois Geol. Survey Rept. Inv. 60 for areal geologic map.

Brief description of physiography and unexposed Ordovician, Silurian, and Devonian strata, as determined from well logs and exposures in adjacent areas. More detailed descriptions of Devonian black shale (Mountain Glen), Mississippian, Cretaceous, Tertiary (?), and Pleistocene. Deals mainly with Mississippian strata, giving thicknesses of formations and general descriptions of lithology, descriptions and locations of exposures, including some sections, fossils, and correlation. Structure, geologic history, mineral resources. Structure map shows contours on base of Cypress sandstone and on top of Mountain Glen shale.

Krumbein (WCK-1): A preliminary study of pebbles in till, 1929. (17 p.)

Quantitative study of pebbles in Illinoian till. Study of range in size in relation to kinds of pebbles. Charts show distribution of normal and erratic pebbles by kinds of rock and by sizes; of fresh and weathered surfaces by sizes of pebbles; and of rounded and fragmental pebbles by sizes.

(WCK-3): Mechanical analysis of related samples of glacial tills, 1932. (77 p., 12 pls.)

Doctor's dissertation (University of Chicago). Chapter II published in Jour. Sedimentary Petrology, v. 2, no. 3, p. 140-149, December, 1932. Chapter IV published Jour. Geology, v. 41, no. 4, p. 382-408, 1933. Describes technique for mechanical analysis of tills, method of statistical treatment of data, and summarizes historical background of similar studies.

(WCK-5): Vermont, Beardstown, Manito, and Chandlerville quadrangles, 1932-1933. (35 p.)

Ten brief reports on Mississippian, Pennsylvanian, and Pleistocene deposits of parts of these four quadrangles. Some sections; 5 accompanying maps.

1. Vermont and Beardstown quadrangles: the Illinoian moraine.
2. Vermont quadrangle: the loesses.
3. Beardstown quadrangle: the Isabel sandstone channel.
4. Vermont quadrangle: pre-Illinoian drift.
5. Beardstown quadrangle: pre-Illinoian drift.
6. Manito quadrangle: Penn. cyclothem in northwestern part.
7. Beardstown quadrangle: bedrock (Miss.-Penn. systems)
8. Beardstown quadrangle: Pleistocene features.
9. Beardstown quadrangle: Illinois River valley.
10. Chandlerville quadrangle: Penn. cyclothem in northwestern part.

Lamar (JEL-6): Description of Cretaceous and Tertiary sediments along Illinois Central Railroad cut-off north of Metropolis, Massac County, Illinois, 1926. (5 p., 2 pl.)

Abstract published Geol. Soc. America Bull., v. 39, p. 203-204, 1928. Includes 19 pages field notes, photographs, results of sieve analyses, scale drawings of sections exposed in cuts.

- (JEL-4): Methods of procedure for and uses of mechanical analyses of consolidated and unconsolidated sedimentary rocks, 1927. (48 p.)
Suggestions from the work of the Illinois Geological Survey laboratory on the mechanical analysis of consolidated sedimentary rocks, evaluation of suitability of rocks to sedimentary analysis, methods of sampling materials, methods of disintegration, and uses of these and other mechanical analyses for correlation purposes, for detailed information on lithology of sediments, and for engineering purposes.
- (JEL-46): Cretaceous, Tertiary, and Quaternary deposits of extreme southern Illinois, 1927. (17 p., 6 pls.)
Largely published in Am. Assoc. Petroleum Geologists Bull., v. 14, no. 7, p. 845-866, 1930. Abstract published in Geol. Soc. America Bull., v. 39, 1928. Includes also a few sections, some descriptions, and photographs not published.
- (JEL-38): Heavy minerals in the Chester sandstones in Hardin and adjacent counties, 1928. (12 p.)
Study of possible value for correlation of heavy minerals in Chester sandstones. Heavy mineral percentages based on grain counts of samples. (30 pages of laboratory sheets showing heavy mineral determinations included with report.)
- (JEL-50): General physiography and geology of extreme southern Illinois, 1929. (6 p., 1 pl.)
General distribution of lowlands, thickness and character of fill, suitability of materials for levee construction.
- (JEL-109): Occurrence of Kimmswick limestone south of Thebes, (by Lamar and Shrode), 1949. (3 p., 4 pls.)
Brief description of outcrops accompanied by sketch map and three cross sections.
- Langer (MFL-1): Subsurface study of the Beech Creek "Barlow" limestone in south-central Illinois, 1955. (42 p.)
Master's thesis. Study of stratigraphic variations of Beech Creek "Barlow" limestone to establish criteria for its subsurface recognition and correlation. Based on electric logs and microscopic sample studies of rotary well cuttings from Jefferson, Wayne, Franklin, and Hamilton counties, and on studies of outcrops in surrounding areas. Lithology, thickness and distribution, correlation, paleontology, interpretation of environmental conditions. Maps show lithologic variations (color, silt, and quartz sand content, and presence of inclusions.).
- Leggette (RML-1): Report on an investigation of the Pleistocene of southern Illinois, 1925. (26 p., 12 pls.)
Report based on a summer's work as field assistant to Paul MacClintock, 1925. Results of study and mapping of thin drift border of Illinoian age in southern Illinois, and in parts of Kentucky and Missouri. Descriptions of pre-Illinoian post-Tertiary deposits and of Illinoian deposits, with locations and descriptions of exposures; erratics outside drift border; Pleistocene fossils. Results of mapping shown on 12 quadrangle sheets.

Leighton, M. M., see also Grim (REG-20).

- (MML-48): Glacial Lake Illinois and the question of post-Early Wisconsin diastrophism in northeastern Illinois, 1927. (12 p.)
Presented at National Acad. Sci. meeting, Oct. 1927. Abstract published Geol. Soc. America Bull., v. 39, p. 215, 1928. Describes the existence in early Wisconsin time of a glacial lake in the valley of Illinois River and its tributaries. The lake was dammed at Peoria by valley-train outwash of the Bloomington ice sheet and extended up the valley to varying distances, the farthest known point being Joliet. Three lines of evidence show the geologic record of this lake: 1) torrential deltas at widely scattered points along the Illinois River Valley and its tributaries; 2) lake silts and evenly bedded sands; 3) hanging stream channels.
- (MML-252): Geology and mineral resources of the Barrington, Elgin, and Geneva quadrangles, (by Leighton, Powers, MacClintock, and Workman), 1931. (207 p., 11 pls., 57 photographs and drawings, 128 p. appendix)
Barrington quadrangle by Paul MacClintock. Elgin and Geneva quadrangles by M. M. Leighton and W. E. Powers. Subsurface geology by L. E. Workman. See also Gries (JPG-1). Physiography; character and distribution of subsurface formations (Cambrian and Ordovician), and of exposed formations (Ordovician); character of bedrock surface. Detailed stratigraphy of deposits of Pleistocene age: distribution, exposures, topography, composition, interrelationships of the different Wisconsin drifts, lake, outwash, and other deposits. Geologic history; economic resources. Appendix contains well logs of deep wells, descriptions of gravel pits, 2 analyses of well and spring water, and a glossary of geologic terms. Accompanying maps show bedrock surface, glacial geology, relief and drainage, well locations, sand and gravel pits and quarries.
- (MML-187): Some major aspects of the glacial history of Illinois, 1941. (36 p.)
Presented at the Geol. Symposium of the Univ. of Chicago, Sept. 26, 1941, on the occasion of its Fiftieth Anniv. Celebration. Abstract published Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 2027-2028, 1941. Summarizes results of studies of glacial history of the State carried on during the first 40 years of this century, and points out problems needing further study. Gives generalized succession of all Pleistocene deposits in Illinois, and emphasizes lines of evidence used in determining succession. Includes detailed sections for eastern Illinois, southwestern Illinois, central Illinois, and for the lower Illinois Valley area.
- (MML-231): Outline of the Late Cenozoic history of southern Illinois, (by Leighton and Willman), 1948. (39 p.)
Abstract published Geol. Soc. America, Bull., v. 59, no. 12, p. 1335, 1948. Presented before the G. S. A. meeting in New York, 1948. Deals primarily with area at head of Coastal Plain Province common to Illinois, Missouri, Kentucky, and Indiana, but also includes studies along Mississippi, Wabash, and Ohio River valleys. Discusses evidence for disagreement with Fisk's 1944 work in regard to: 1) age of Lafayette-type gravels; 2) origin and age

of erosional surfaces and date of intrenchment of major valleys; 3) major factors in alluviation of Mississippi River valley and tributaries; 4) age of Prairie terrace; 5) distribution and origin of loess.

(MML-241): Newly discovered extension of the Labradorean ice-sheet into eastern Iowa during the Tazewell substage of the Wisconsin stage, (by Leighton and Shaffer), 1949. (21 p., 5 pls.)

Abstract published Geol. Soc. America Bull., v. 60, no. 12, pt. 2, p. 1904, 1949. Brief historical review. Evidence presented to show that a narrow lobe of the Labradorean ice sheet crossed the Mississippi River from Illinois into Iowa between Clinton and Princeton, Iowa, during the Tazewell substage; that the ice lobe blocked the Mississippi drainage and formed a large temporary lake to the north; and that the outlet for the lake was the Goose Lake channel west of Clinton. Detailed descriptions of exposures and auger borings. Partially included in and superceded by Shaffer, P. R., Geol. Soc. America Bull., v. 65, p. 443-456, and Illinois Geol. Survey Rept. Inv. 174.

MacClintock, Paul, see also Leighton (MML-252) and Leggette (RML-1)

(PM-2): Geology and mineral resources of the Barrington quadrangle, 1921. (101 p., 5 pls., 26 photographs and sketches, 16 p. appendix)

See also (MML-252) Topography; brief descriptions of Cambrian, Ordovician, and Silurian formations; detailed description of glaciation in the Barrington quadrangle with distribution, occurrence, character, and relationships of different glacial deposits, and evidence of interglacial intervals. Economic resources. Appendix contains well records and analyses of mineral content of well water. Accompanying maps show glacial geology, relief, bedrock surface, and cross sections.

(PM-6): The well-drained soil profile on the Illinoian till sheet, between 1927-1930(?) (15 p.)

Definitions of horizons developed in the upper part of a till sheet during weathering under well-drained conditions. Describes horizons recognized, their general character, processes operating in formation of each, and results in terms of stage to which each weathering process has progressed. Detailed measured sections and their locations given as examples.

(PM-3): Geology and mineral resources of the Buda quadrangle, 1934-1935. (156 p., 35 p. appendix, 62 photographs and sketches)

Original manuscript written by Paul MacClintock, pre-1926. Introductory section and Pleistocene stratigraphy revised by P. MacClintock, 1934-1935. Pennsylvanian stratigraphy by J. M. Weller, ca. 1935. Coal by G. H. Cady, ca. 1935. (See also Circ. 3) Physiography; detailed stratigraphy of Pennsylvanian rocks, including distribution and character of cyclothems and their constituent members and some measured sections. Detailed stratigraphy of Illinoian glacial, Sangamon interglacial, Iowan loess, and Wisconsin glacial deposits, including pebble analyses of till and numerous sections from auger borings and exposures. Structure; geologic history, especially of Pleistocene; economic resources. Accompanying maps show outcrops, glacial geology, and areal geology (preliminary).

- Millington (BRM-1): Geology of the Grays Lake and Waukegan quadrangles, 1934. (57 p., 58 photographs)
See also Powers (WEP-5) Glacial history of northeastern Illinois with descriptions of topography and of different types of glacial deposits identified in the Grays Lake and Waukegan quadrangles. Accompanying field sheets and 5 cross sections.
- Needham (CEN-3): Contributions to the subsurface geology of northern Illinois, with special reference to the New Richmond formation, 1932. (140 p., 4 pls.)
Doctor's thesis (Northwestern University). Detailed study of Cambro-Ordovician rocks of northern Illinois, and minor areas in Iowa, Wisconsin, and Minnesota. Study based on examination of well cuttings, insoluble residues, heavy minerals, mechanical analyses, and thin sections. Includes review of earlier work, summaries of diagnostic characters for each formation, section on historical geology. Diagrammatic section from Monmouth to Kankakee shows percentage of chert, sand, silt, and clay, and soluble material in logs. 3 structure sections.
- Newton (WAN-2): Areal geology of Effingham, Shelby, and Fayette counties: results of 1937 field season, 1937. (26 p., appendix 10 p.)
Follow-up on work published in Rept. Inv. 45. Report on additional field work to determine stratigraphic sequence within these three counties and to correlate it with adjoining area to east (described in Rept. Inv. 45), and particularly to identify "Omega" limestone. Location and descriptions of outcrops and general descriptions of cyclothems exposed (LaSalle, Cohn, Lower Bogota, Upper Bogota, Newton, Omega-Greenup, Crinoidal - Maroon, Watson, and Shumway). Evidence for correlations. Appendix gives locations of cyclothems exposed and lists limestone and coal samples collected during 1937 field season.
- Otto (GHO-1): An interpretation of the glacial stratigraphy of the city of Chicago, 1942. (116 p., 11 pls.)
Doctor's thesis (University of Chicago). Study based largely on subsurface data provided by private engineering companies, the Chicago Department of Subways and Super-highways, Sanitary District of Chicago, and other agencies. Report includes much detailed information from borings; develops methods of correlation of lithologically similar till sheets by use of high grade engineering test boring information; studies variations in water content and compressive strength of tills, mode of deposition of soft tills; describes glacial stratigraphy of region with attention to engineering problems encountered in different strata. Ten maps show bases of different till sheets in area and one of lacustrine sediments.
- Palmer (JEP-1): Geology of an area near Rosiclare, Hardin and Pope counties, Illinois, 1956. (51 p., 2 pls.)
Master's thesis. Stratigraphy of exposed formations of the Meramec and Chester series of Mississippian age and of the Caseyville group of Pennsylvanian age, including outcrops, lithologic character, characteristic fossils, and stratigraphic relationships. Brief notes on general character of

Pleistocene and Recent surficial deposits and on two outcrops of intrusive igneous breccia. Structural geology; economic resources.

Poor (RSP-2 and 4): Geology and mineral resources of the Galesburg quadrangle, 1927, revised 1935. Revision also covers Monmouth quadrangle. (Original 130 p., 28 pls. photographs; revision 108 p., and 11 p. well logs, 15 pls.)

Physiography; stratigraphy of Cambrian, Ordovician, Silurian, Devonian, Mississippian, Pennsylvanian, and Pleistocene age; structure, geologic history, economic geology. Pre-Mississippian stratigraphy treated briefly in original and based on well records. Log of one deep well at Galesburg included. Sections on pre-Pennsylvanian stratigraphy and geologic history are omitted in revision. Revision deals in considerable detail with formations of Mississippian and Pleistocene age; gives locations and detailed descriptions of many measured sections in both Galesburg and Monmouth quadrangles. Cyclothems named and described in detail. Economic resources include coal and clay. Accompanying maps show outcrops and drift, coal and well log data, cyclothem distribution, and columnar sections.

Powers, W. E., see also Leighton (MML-252)

(WEP-5): Glacial geology of the Grays Lake and Waukegan quadrangles, 1947. (29 p.)

See also Millington (BRM-1) Incomplete manuscript. History of geologic studies in the area; discussion of drainage and land forms. Includes photographs, summaries of well log data, results of acid solubility tests and sieve analyses of tills; field maps.

Raasch (GOR-5): Zonal range of Croixan trilobite genera in the Upper Mississippi Valley, 1950. (35 mimeographed p., 4 pl.)

Cambrian subcommittee memorandum No. V, Committee on Stratigraphy, National Research Council. Discussion of vertical range of trilobite genera and zonal division of type Croixan in Upper Cambrian sequence of the Upper Mississippi Valley. Slow net accumulation of sediments, rapid evolution of most trilobite stocks, and periodic interruptions of deposition have made possible the division of the type Croixan succession into 7 stages and 37 zones. Discusses characteristics of individual stages and zones. Plates show progressive westward overlap of subfaunal zones IV-IX of the Conaspis zone in Upper Mississippi Valley; sedimentary relations of the Franconia formation; zonal range of Croixan trilobite genera; relationships of faunal zones in the Dresbach from the Mississippi River across the Wisconsin arch.

(GOR-10): Clear Creek fauna, sec. 19, T. 14 S., R. 1 W., Alexander County, Illinois, 1951. (2 p.)

Faunal list giving preliminary identification of Devonian fossils from this one locality and notes on their occurrence elsewhere.

Randall (ADR-1): Glacial geology and groundwater possibilities in southern LaSalle and eastern Putnam counties, Illinois, 1955. (158 p., 4 pls.)

Master's thesis. Study of bedrock topography and its relation to glacial aquifers; glacial geology includes areal relationships, correlation and history; groundwater discussion covers possibilities of glacial deposits and bedrock. Appendix includes Pleistocene geologic sections and well records. Plates show bedrock topography, groundwater possibilities, cross section of glacial deposits, and outcrop section.

Rich, J. L., see Savage (TES-11)

Root (TBR-1): Glacial geology of the lower Illinois River valley, 1936. (304 p., 5 pl.)

Results of detailed geologic mapping in the lower Illinois Valley and adjacent strips 1 to 2 miles wide, from Peoria to the river's mouth. Detailed stratigraphy of glacial deposits from silts and sands of early Kansan age or older to late Wisconsin alluvial materials. Contains many measured sections of representative exposures; distribution, description and character, age and origin, fossils of each type and age deposit. Accompanying maps show glacial geology and locations of measured sections on topographic quadrangle sheets.

Savage (TES-11): Geology of the Hardinville, Sumner, Birds, and Vincennes quadrangle, (by Savage, Rich, and Blatchley), 1916(?). (168 p.)

Physiography, stratigraphy, well logs. Brief statements on stratigraphy of Ordovician, Silurian, Devonian, and Mississippian formations based on well log data; more detailed stratigraphy of oil-producing Mississippian formations and some Pennsylvanian. Stratigraphy of exposed Pennsylvanian formations: generalized section, detailed sections; locations of outcrops and sections; lists of fossils from certain beds at specific localities. Description of Pleistocene deposits, including well logs and sections, and of loess, dune sand, and alluvium. Geologic structure, especially subsurface as determined from oil-well data; geologic history. Mineral resources. Accompanying maps (chiefly field sheets) give oil well data, outcrops, water well data, and generalized columnar section.

(TES-3): Geology and economic resources of the Jonesboro quadrangle, 1920. (187 p., 3 pls., 11 photographs)

Physiography; stratigraphy; geologic history; structure; economic resources. Report deals mainly with stratigraphy of Ordovician, Silurian, Devonian, and Mississippian rocks, with general descriptions and extent of each formation, outcrops, detailed sections, fossil lists and correlation. One deep well log. Brief descriptions of Eocene (?) and Pliocene (?) sands, clays, gravels, and of Pleistocene glacial outwash deposits. Accompanied by outcrop maps, geologic map, and structure map. See Illinois Geol. Survey Rept. Inv. 60 for areal geology map.

(TES-4): Geology and mineral resources of the Avon and Canton quadrangles, 1921(?). (40 p.)

Parts not published in Illinois Geol. Survey Bull. 38. Stratigraphy of Ordovician, Silurian, Devonian, Mississippian strata from subsurface data. Stratigraphy of Pleistocene deposits, including well logs and detailed sections; structure; geologic history.

(TES-2): Geology and mineral resources of the Vermont quadrangle, 1922 (?), revised 1928. (157 p., 3 pls., 16 photographs, 58 p. well logs)
Original and two revisions of about equal length; third revision of Chapter I. Physiography; stratigraphy of Ordovician, Silurian, Devonian, and Mississippian strata (from well records), and of Mississippian, Pennsylvanian, and Pleistocene strata. Includes many measured sections of Pennsylvanian and Pleistocene formations. Structure; geologic history; mineral resources. Accompanying columnar section of Carbondale and Pottsville strata, diagrammatic correlation of well logs; outcrop and structure map.

Scott (HWS-1): The fauna of the Galena limestone of northwestern Illinois, 1931. (23 p.)

Master's thesis. Abstract published Geol. Soc. America Bull., v. 44, pt. 1, p. 209, 1933. Correlation of Galena dolomite of northwestern Illinois and Kimmswick limestone of eastern Missouri. List of fossils from Galena-Platteville from vicinity of Oregon, Ogle County, Illinois. Discussion of paleoecology or fossil communities of Galena times.

Searight (WVS-1): Geology and mineral resources of the Beardstown quadrangle, 1925-1929. (296 p., 28 p. well logs, 47 misc. illustrations, mostly text figures and photographs.)

Brief descriptions of stratigraphy of Ordovician, Silurian, Devonian, and Mississippian strata from well data. More detailed stratigraphy of exposed Mississippian and Pennsylvanian rocks with measured sections, lithology, fossils, stratigraphic relations. Bedrock topography. Descriptions of Pleistocene deposits, including distribution, topographic position, thickness, lithologic character, measured sections, pebble counts, and fossils. Geologic history. Economic resources. Accompanying field sheets show areal geology, well log and outcrop data, and coal data.

Shaffer, P. R., see Leighton (MML-241)

Shrode, R. S., see Lamar (JEL-109)

Smith (MHS-1): Structure contour map of the pre-Pennsylvanian surface in Illinois, 1941. (25 p., 2 pls.)

Master's thesis. Structure contour map based on elevations of 900 datum points obtained from well logs; brief geologic history, areal geologic map showing distribution of pre-Pennsylvanian rocks; discussion of structural features.

Taylor (DOT-1): A new shale in the Chicago area and its stratigraphic position, 1929. (30 p.)

Master's thesis. Studies made during construction of the Chicago Avenue Tunnel, water aqueduct for Chicago's water supply. Detailed descriptions of rocks and structures observed during construction of the tunnel. Studies of a graben, much faulted and jointed, and a newly exposed post-Port Byron, Niagaran shale in the tunnel. See also Ekblaw (GEE-40).

Templeton (JST-1): Geology of part of the Woosung quadrangle (part of Sterling quadrangle, 1946), 1939. (156 p., 1 pl.)

Ph. D. thesis. Physiography, brief stratigraphy of unexposed Cambrian and Ordovician rocks; more detailed stratigraphy of exposed rocks of Ordovician, Silurian, and Pleistocene age; structural and historical geology. Stratigraphy of exposed rocks includes for each formation and member distribution and outcrops, thickness and lithology, paleontology and faunal zones, stratigraphic relations, topographic expression, correlation, and subdivisions. Geologic map shows Ordovician, Silurian, and Pleistocene deposits.

Utterbach (DDU-1): Silurian limestones of northeastern Illinois, 1932. (42 p., 6 pl.)

Master's thesis. Outlines structural and stratigraphic relations in this part of the State. Based on laboratory study of carefully collected specimens, consisting of preliminary microscopic inspection, mineral separation and analysis, and thin section study. Describes exposures and lithology of each formation and shows on maps locations and elevations of important exposures. Areal geology map also shows anticlinal axes.

Wanless, H. R., see also Cady (GHC-33)

(HRW-4): Geology and mineral resources of the Havana quadrangle, 1930. (428 p., 139 pls.)

Parts A and B. Physiography, geologic history, stratigraphy of Ordovician, Silurian, Devonian, Mississippian, Pennsylvanian, and Pleistocene systems. Extensive treatment of Pennsylvanian and Pleistocene includes many outcrop sections, cross sections, photographs, and maps showing areal distribution of various features; eight structure maps. Economic resources. Map shows areas underlain by coal; gives stripping and mining possibilities. Appendix contains well logs, outcrop levels, five clay analyses, fossil identifications. Part C. Preliminary outline of report covered more fully in parts A and B, 1927. (66 p.)

(HRW-12): Stratigraphy of the Caseyville and Tradewater groups of Illinois, 1952. (84 p.)

Chapter for C. B. Read's manuscript on David White's report on the Lower Pennsylvanian flora of Illinois. History of stratigraphic investigations in Eastern Interior Basin; correlation of major divisions of Pennsylvanian strata in Illinois, Indiana, and western Kentucky; classification of strata. Description of strata in (1) southern Illinois, western Kentucky, and southern Indiana, and (2) in western Illinois, giving general sequence of groups, formations, and named members for each of the two areas. For each formation, lithology, a detailed measured section, thickness, and correlation are given.

Weller, J. M., see also MacClintock (PM-3)

(JMW-1): Geology of the Campbell Hill quadrangle, Illinois, 1920. (69 p.)

Physiography, stratigraphy, structure, geologic history, economic resources. Stratigraphy includes for each formation of the Upper Chester (Menard limestone through Kinkaid limestone) and for the Pottsville, Carbondale, and McLeansboro formations of the Pennsylvanian discussions of the name

and type locality, distribution and thickness, lithologic characters, and stratigraphic relations. Illinoian drift, valley fill, loess, and alluvium are described. Accompanying maps show surficial geology, areal geology, relief, structure Campbell Hill gas field (as of 10/1/1919). See Illinois Geol. Survey Rept. Inv. 59, pl. III, for preliminary geologic map.

(JMW-9): Upper Pennsylvanian succession in the Illinois Coal Basin, 1937. (5 p.)

Abstract published in Geol. Soc. America Proc. 1937, p. 329, June 1938. Summarizes distinguishing characteristics of each of 13 cyclothems recognized in southeastern Illinois.

Weller (SW-2): Geology of parts of St. Clair, Monroe, and Randolph counties, Illinois, 1914±. (260 p.)

Brief description of structure and stratigraphy of Ordovician formations (Plattin, Kimmswick, and Fernvale limestones, and Maquoketa shale). Main part of report deals with stratigraphy of Mississippian strata. Detailed descriptions of all Mississippian formations of area, including lithology, thickness, distribution and exact location of outcrops, measured sections, paleontology, historical review, correlation and discussion of the differences between Weller and Ulrich over the Chester.

(SW-3): Stratigraphic and faunal succession of the Chester Group in Illinois and Kentucky, 1915. (59 p.)

Historical review. Summary of Ulrich's classification and of Weller's classification of the Chester. Discussion of relations of Ste. Genevieve limestone, sub-Cypress Chester beds of Engelmann, correlation of upper Ohara, Cypress and Aux Vases sandstones, lower Chester of Union County, Illinois, post-Cypress sandstone in southeastern Illinois, Okaw formation in Kentucky; Tar Springs sandstone, Tribune limestone, Menard limestone, Palestine sandstone, and Clore limestone.

(SW-7): Stratigraphic and faunal succession in the Chester group of Illinois, 1917. (182 p.)

Detailed stratigraphy of Chester group in southern Illinois. Comparison and correlation of Pope County and Randolph County sections. Formations described are: Aux Vases, Renault, Yankeetown, Paint Creek, Ruma, Cypress, Okaw, Golconda, Hardinsburg, Glen Dean, Tar Springs, Menard, Palestine, and Clore. For each formation report discusses name, lithologic characters, distribution and thickness, topographic expression, stratigraphic relations, and paleontologic characteristics. Includes measured sections, outcrops, fossil lists.

(SW-8): Chester group of Pope and Johnson counties, Illinois, 1922-1924±. (117 p.)

Comparison of stratigraphy of Chester in Hardin County, in Johnson and Pope counties, and in Randolph and Jackson counties. Formations described are: Renault, Bethel, Paint Creek, Cypress, Golconda, Hardinsburg, Glen Dean, Tar Springs, Vienna, Waltersburg, Menard, Palestine, Clore, Degonia, and Kinkaid. For each formation the following are discussed: distribution,

lithology, thickness, stratigraphic relations, paleontology, correlation. A few measured sections are included.

Willman, H. B., see also Leighton (MML-231)

(HBW-1): An attempt to correlate the Pennsylvanian sandstones of the Havana quadrangle by the composition and structure of their grains, 1928. (31 p., 5 pl.)

Master's thesis. Brief description of stratigraphy of Pennsylvanian in Havana quadrangle; general lithology of sandstone members; generalized columnar section; localities from which samples were collected. Outline of procedure: (1) preliminary macroscopic examination; (2) mechanical analyses to determine grain size and shape; (3) mineral analyses, consisting of study of light and heavy fractions, the distinguishing characteristics of mineral species, and percentages present. Pyramidal diagrams show size analyses.

(HBW-4): General geology and mineral resources of the Illinois Deep Waterway from Chicago to Peoria, 1931. (257 p.)

Ph. D. thesis. Brief descriptions, based on well data and some outcrops, of occurrence and character of exposed and unexposed strata from pre-Cambrian granite (penetrated in one deep well) through Mississippian formations. More detailed stratigraphy of Pennsylvanian and Pleistocene formations. Section on Pennsylvanian includes discussion of classification, distribution and outcrops, well logs and measured sections, stratigraphic relations and correlation for each formation and some members. More than half this report is devoted to discussion of mineral resources.

(HBW-10): Mastodon locality at Mattoon, Illinois, 1950. (2 p.)

Description of locality at Mattoon where parts of a mastodon jaw were found. Examination made by D. F. Hoffmeister and H. B. Willman. Brief notes give location, material exposed, physiography, paleontology, and interpretation of geologic history of immediate area.

Workman, L. E., see also Leighton (MML-252)

(LEW-8): Geology of McLean County, Illinois, 1928. (14 p.)

Generalized columnar section based on logs of two deep wells. Brief descriptions of Cambrian-Pennsylvanian and Pleistocene formations, based on well logs and general information from surrounding areas.

(LEW-16): Devonian and Silurian in Crawford County, Illinois, 1929. (3 p., 1 pl.)

Summary description of sample cuttings from Devonian and Silurian limestones from the bottom of the Sweetland Creek to the top of the Maquoketa.

(LEW-21): Devonian rocks on the west end of Rock Island, 1931. (13 p., 2 pls.)

Geologic section of rocks cropping out in cliff and uncovered in excavations for canal on west end of Rock Island. Descriptions of the section, laboratory study of samples, photographs, graphic section. Rocks exposed are lower Davenport, Independence, and Otis formations of the Wapsipinicon stage of Devonian and some Pottsville sediments of the Pennsylvanian series.

- (LEW-27): Insoluble residues from Silurian rocks in the Joliet-Wilmington region, 1933. (48 p., 11 pls.)
Study of physical characters of insoluble residues from Silurian rocks in the Joliet-Wilmington region. Includes detailed description of rock samples and of insoluble residues. Graphic representations of the proportions of total residues, proportions of coarser residues, abbreviated summaries, and divisions and correlations for each set of samples representing a single outcrop.
- (LEW-37): Subsurface geology of the Carbondale region, 1938. (6 p.)
Summary of general geologic relationships in area and brief descriptions of formations from Cambrian up through Mississippian.
- (LEW-42): Subsurface geology of central Illinois, 1951. (15 p., 41 pls.)
Summary of subsurface geology of central Illinois from pre-Cambrian rocks to post-Pennsylvanian bedrock surface. Variations in extent, thickness, and lithology of formations, particularly of oil-bearing formations. Numerous maps show areal geology, structure contours, thickness and correlation of formations; cross sections. Talks given before Illinois Geological Society, Olney, 1949, and State Geol. Survey Staff, 1950. (Pls. from lantern slides)



CIRCULAR 220

ILLINOIS STATE GEOLOGICAL SURVEY

URBANA

