# Nomenclatural history of Upper Desmoinesian through Lower Virgilian (Pennsylvanian) strata in Kansas

(This chart illustrates the correlative intent of each publication. It is not representative of unit thickness.) Zeller ([1968] 2018) is the current nomenclature accepted by the Kansas Geological Survey.

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Swallow (1866)	Haworth and Kirk (1894)	Haworth (1896)	Haworth (1898)	Adams et al. (1903)	Adams et al. (1904)	Schrader and Haworth (1906)		9; faunal divisions) nd Bennett (1909)	Hinds and Greene (1915)	compiled by Moore (1932 KS, MO, IA Nebra	•	Moore (193	_,	Moore (1936, Kansas) Pierce and Courtier (1937; Breezy Hill Ls.) Jewett (1941, 1945; mbrs. of Marmaton) Oakes and Jewett (1943, Oklahoma, in RED)	Moore (1948) Moore et al. (1951) Searight et al. (1953, Excello Shale, in RED)		ewett (1959) et al. (1965, in <mark>RED</mark> )	accepted by the Ka	Classification nsas Geological Survey 968] 2018)	Heckel and Watney (2002; Pleas., Oborny et al. (2017, L Watney and Heckel (19	ane Shale Interval)	Jrps.)
Eastern Kansas	Southeastern Kansas and Adjacent Areas	Southeastern Kansas	Southeastern Kansas	Southeastern Kansas	Southeastern Kansas Iola Quadrangle	Southeastern Kansas Independence Quadrangle	جره <sup>OS</sup> Fau Divi	nal &	ou <sup>R</sup> orn. Member (	yo <sup>uQ</sup> o <sup>rn.</sup> Member Mem	nber se <sup>ries</sup> Group	? Formation	Member 4	Seit <sup>eS</sup> Go <sup>UR</sup> Formation Member S	age GOUNDORP. Formation Member G	age Gloribald. Lo	ormation Member ಳ	tage Groupbard.	ition Member	Southern KS Northern KS Member	Formation Subgrand	iage
	Shale	Shale	Lecompton shales and Elgin sandstone	Kanwaka shales	undefined	Elgin sandstone (base of Kanwaka shales)	Shw.	G Kanwaka shale	Kanwaka shale	Kanwaka Kanwak shale Kerefo under	(7	Kanwaka shale	Stull shale Clay Creek Is. Jackson Pk. sh. Kereford Is.	Kanwaka Shale Clay Creek Ls. Jackson Pk. Sh. Kereford Ls.	Kanwaka Shale Stull Shale Clay Creek Ls. Jackson Pk. Sh. Kereford Ls.		Kanwaka Shale Stull Shale Clay Creek Ls. Jackson Pk. Sh. Kereford Ls.	a d Kan	Jackson Pk. Sh.  Kereford Ls.	Stull Shale Clay Creek Limestone Jackson Park Shale Kereford Limestone	Kanwaka Shale	
	Burlington Ls. or Sh. Garnett limestone Ls.	Oread Limestone Shale Limestone	Limestone Shale Deal Limestone	Oread limestone	undefined	Oread limestone (Painterhood )		Oread limestone	Oread limestone	Leaveny	er shale vorth ls. ville sh.	Oread limestone	Heumader sh. Plattsmouth Is. Heebner shale Leavenworth Is. Snyderville sh.	Oread Limestone Heumader Sh. Plattsmouth Ls. Heebner Shale Leavenworth Ls. Snyderville Sh.	Oread Limestone Heumader Sh. Plattsmouth Ls. Heebner Shale Leavenworth Ls. Snyderville Sh.		Oread imestone Heumader Sh. Plattsmouth Ls. Heebner Shale Leavenworth Ls. Snyderville Sh.	Shawr Ground Over	Leavenworth Ls Snyderville Sh.	Heumader Shale Plattsmouth Limestone Heebner Shale Leavenworth Limestone Snyderville Shale	Oread Limestone R	an Stage
Wellrock series	Le Roy shales	Lawrence shales	Douglas formatic	Le Roy shales	undefined	Buxton formation [interbeds of shale, sand, and limestone]	Douglas Stage		Lawrence shale latan ls.	Lawrence Lawr shale shale latan ls. lata	Virgil Douglas Grp.	Haskell Is. Stranger Fm. Hardesty shale	undefined	Lawrence Formation  Lawrence Formation  Lawrence Formation  Ireland Ss.  Robbins Shale  Robbins Shale  Westphalia Ls.  Tonganoxie Ss.  latan Limestone	Lawrence Formation  Lawrence Formation  Stranger Formation  Stranger Formation  Amazonia Ls. Ireland Ss.  Robbins Shale  Haskell Ls.  Vinland Shale  Westphalia Ls.  Tonganoxie Ss.  latan Limestone	Virgilian ilas Grou	awrence ormation  Toronto Ls. unnamed sh. Amazonia Ls. Ireland Ss.  Robbins Shale  Haskell Ls.  Vinland Shale  Westphalia Ls.  Tonganoxie Ss.  latan Limestone	Virgilian Star Douglas Group Strai Form	Robbins Shale  Haskell Ls.  Vinland Shale  Westphalia Ls.  Tonganoxie Ss.	Little Pawnee Shale Haskell Limestone	Lawrence Formation  Cass Limestone  Stranger Formation	VIEGIIIA
							Se	Le Roy shale	Weston shale	Weston shale Weston	n shale	Weston shale		Weston Shale	Weston Shale	Gro	Weston Shale		Weston Shale	Kitaki Ls. Gretna Shale	South Bend Limestone	
	Carlyle limestone	Garnett limestone (?) or lola limestone	lola limestone	Stanton limestone or Iola limestone	Piqua limestone	Piqua limestone		Stanton limestone	Stanton limestone	Stanton limestone Stone Meade	ke shale er ls. a shale	Stanton limestone	South Bend Is. Rock Lake shale Stoner limestone Eudora shale Meadow Is. Linwood shale	Stanton Limestone Stanton Limestone Stanton Captain Creek Ls.	Stanton Limestone  Stanton Limestone  Stouth Bend Ls.  Rock Lake Shale Stoner Ls.  Eudora Shale Captain Ck. Ls.		Stanton mestone Stanton mestone Stanton Captain Ck. Ls.	Stan Limes		Little Kaw Limestone Rock Lake Shale 3 beds Stoner Ls. Eudora Shale 2 beds Captain Creek Ls.	Stanton Limestone Qn Q Q Q Q	
	Leroy shales	Thayer shales, Lane shales	Vilas shales	undefined	Vilas shales	Vilas shales	res	Vilas shale	Vilas shale	Vilas shale Vilas s	shale	Vilas shale	Naish limestone undefined	Vilas Shale	Vilas Shale	nsin	Vilas Shale	nsin	Vilas Shale	Vilas Shale	ansi	
	Carlyle limestone	Garnett or Iola or Carlyle limestone	Earlton limestone	Stanton limestone	Allen limestone	Allen limestone	easn	Allen limestone	Plattsburg limestone	Plattsburg Platts limes		Plattsburg limestone	Spring Hill Is. Hickory Creek sh. Merriam Is.	Plattsburg Limestone Spring Hill Ls. Hickory Creek Sh. Merriam Ls.	Plattsburg Limestone Spring Hill Ls. Hickory Creek Sh. Merriam Ls.		attsburg mestone Spring Hill Ls. Hickory Creek Sh. Merriam Ls.	Platts Limes		Spring Hill Limestone L. Hickory Creek Shale Merriam Limestone	Plattsburg Limestone	
Stanton limestone series: Stanton limestone; shales;	Shale	Thayer shales	Lane shales	Lane shales	Concreto shale	Concreto shale (with coal lentil)	Coal M	Lane shale	Lane shale (with Farley member)	Lane shale (with Farley member)	ne Pans	Bon. Springs sh. Wyandotte	Farley limestone	Bonner Springs Shale  Farley Limestone  Wyandotte Island Creek Sh.	Bonner Springs Shale Farley Limestone Wyandotte Island Creek Sh.	nbgroup	Bonner Springs Shale Farley Limestone Island Creek Sh.	dnoabdn Wyan	Farley Limestone dotte Island Creek Sh.	Bonner Springs Shale Upper Farley Limestone Middle Farley Shale Lower Farley Limestone Island Creek Shale	Lane Shale dnouf	
sandstones; coal	Iola limestone	lola limestone	Earlton limestone or lola limestone	Earlton limestone or Iola limestone	lola limestone	lola limestone	lpper ige	lola limestone	lola limestone	lola limestone		limestone	Argentine Is.  Quindaro shale  Frishie Is.	Limestone Argentine Ls. Quindaro Sh. Frisbie I s	Limestone Argentine Ls. Quindaro Sh. Frishie I s.	arah Sı	mestone Argentine Ls. Quindaro Sh. Frishie Ls.	arah Si	Argentine Ls.  Quindaro Sh.  Frisbie Ls.	Argentine Limestone Quindaro Shale Frisbie Limestone	Wyandotte Limestone	de
	Chanute shale	Thayer shales	Thayer shales or Vilas shales	Chanute shales or Vilas shales	sh ale sh ale nudefined	Chanute shales (upper part)	U awatomie Sta	E Chanute shales	Chanute sh. with Raytown and Cement City limestone beds	Chanute shales Cement	Series ty Group	Lane shale lola limestone Chanute shale Drum	undefined Raytown Is. Muncie Creek sh. Paola limestone incl. Cottage Gr. ss. & Thayer coal Corbin City Is. Cement City Is.	Lane Shale Raytown Ls.   Iola Limestone   Muncie Creek Sh.   Paola Limestone	Lane Shale Raytown Ls. Raytown Ls. Paola Limestone Cottage Grove Ss. Noxie Sandstone Drum Limestone Cement/Dewey	Chai Group	Lane Shale Raytown Ls. Limestone Muncie Creek Sh. Paola Limestone Cottage Grove Ss. Noxie Sandstone Drum Corbin City Ls. mestone Cement City Ls.		Estone Shale Raytown Ls. Muncie Creek Sh Paola Limestone Cottage Grove Ss Noxie Sandstone M Corbin City Ls.	Liberty Memorial Sh Raytown Limestone Muncie Creek Shale Paola Limestone	Chanute Shale Dewey	issourian Stac
	Evia limastona	Line out on a (common malou)	otto Indonendence le	Drum limostono	Chan	Drum formation	Pott	D. Drum Is	or Dring	la l	ssou	limestone	Quivira shale	Quivira Shale .	Quivira Shale	y Gr	Quivira Shale	urian ty Gr inn Su	Quivira Shale	Quivira Shale  Nellie Bly Formatic	Limestone Supplies Limestone	Σ
	Erie limestone	Limestone (upper mbr.) Shale	Independence Is.  Cherryvale shales	Drum limestone  Cherryvale shales	<u>undefined</u> undefined	Drum formation  Cherryvale shale	ries	D Diuliis.	O Drum Is. Cherryvale shale	Cherryvale shale	Kar   Mi	Cherryvale	Dekalb Is. Wea shale Block Is.	Westerville Limestone Wea Shale Block Limestone	Cherryvale Shale Wea Shale Block Limestone	ISSOU AS Cit	Westerville Ls.	issou Sha Cherr Sha Cherr Sha Cherr	le Wea Shale Block Limestone	mid. flaggy Ls. Wea Shale  Block Limestone	Cherryvale Formation	
	Erie limestone	Limestone (upper mbr.)	Independence Is.		Dennis Is.	Dennis Is.	Se	Dennis Is.	Winterset Is.	Winterset Is.		Dennis Is.	Fontana shale Winterset Is. Stark shale	Fontana Shale  Dennis Winterset Ls. Stark Shale	Dennis Winterset Ls. Stark Shale		Pennis Stark Shale Stark Shale	W Der	nis Fontana Shale  Winterset Ls.  Stark Shale	Fontana Shale Winterset Limestone Stark Shale	Dennis Limestone	
		Shale	င်း Cherryvale shales	Galesburg shales (?)	Galesburg shale	Galesburg shale		Galesburg shale	Galesburg shale	Galesburg shale		Galesburg shale	Canville Is. incl. Cedar Bluff coal incl. Dodds Creek ss.	Calesburg incl. Cedar Bluff Coal Shale Shale incl. Dodds Creek Ss.	Limestone Canville Ls.  Galesburg Shale Dodds Creek Ss.	<u>a</u> Ga	mestone Canville Ls.  ialesburg Shale Dodds Creek Ss.	Limes  Gales Sh	Canville Ls.	Canville Limestone	Limestone and	
	Erie limestone	Limestone (mid. mbr.)	.할 Mound Valley limestone	Dennis limestone	Mound Valley limestone	Mound Valley limestone		Mound Valley limestone	Bethany Falls limestone	Bethany Falls limestone	dno		Bethany Falls limestone	Bethany Falls Swope Limestone	Bethany Falls Swope Limestone	) gro	Bethany Falls Swope Limestone	swo	Bethany Falls	Mound Valley Ls. Ladore Sh. Galest	ourg Shale   lbqnS	
		Shale	Mound Valley	Galesburg shales	Q Ladore shale	S S		Ladore	Ladore	Ladore	5 uc		Hushpuckney sh. Middle Creek Is.	Limestone Hushpuckney Sh. Middle Creek Ls.	Limestone Hushpuckney Sh. Middle Creek Ls.		imestone Hushpuckney Sh. Middle Creek Ls.	S Lime		Bethany Falls Ls デッ Hushpuckney Sh Widdle Creek Ls.	Swope Limestone	
Marais de Cygnes coal	Erie limestone	Altamont (?) or Bethany Falls Is.	Shale Limestone	Hertha limestone	Hertha Is.	formati		shale Bethany Falls Is.	shale Hertha Is.	shale Hertha Is.		Swope	Elm Branch sh. Sniabar Iimestone	Ladore Shale Hertha Limestone	Ladore Shale Sniabar Limestone	Brons	Ladore Shale Sniabar Limestone	Brons	Ladore Shale Sniabar Limestone	Elm Branch		
series						offeyville f		·				limestone	Mound City shale Critzer Is.	"black shale" Critzer Limestone	Hertha Limestone  Hertha Limestone  Mound City Shale  Critzer Limestone		imestone Mound City Shale Critzer Limestone	Her	tone Mound City Shale Critzer Limestone	Mound City Shale Guthrie Mountain Sh. Guthrie Mountain Sh. Critzer	Limestone	
						Ladore-Dudley shale						Ladore shale	Schubert Ck. Is. undefined	Form		nton Jp	Tacket "Bourbon Flags" prmation	Tac Form.		Flags Limestone  Mantey Shale  Exline Limestone	Formation on b	
	Shale		Upper Pleasanton	Dudley shales	Dudley shales			Pleasanton shales	ation	Dudley shale	ourbo		undefined e and sandstone	Checkerboard "Checkerboard ?"  Seminole	Pleasanton Group "sandstone black/gray shale and flaggy limestone"	ص ص	Checkerboard Limestone Seminole South Mound Sh.	φ <u>σ</u>	kerboard Limestone South Mound Sh	Checkerboard South Mound Limestone Shale	Healer G	
		shales	shales shales						orm		B 80	, ,	earing black shale	Formation Dawson Coal "blk. sh. near base"	Hepler Sandstone ( largely absent in subsurface)		ormation Hepler Sandstone	Form		"Hepler" coal bed  Glenpool Is. bed	Formation	
	shales	leasanton :	ution leasanton				ge	В	undefined	ation		Dudley shale	undefined	Memorial Shale coal near base	Memorial Shale		Holdenville Shale		Holdenville Shale	Nuyaka Creek black shale Sni Mills Limestone Mbr. Dawson coal Memoria	Lost Branch Formation	
	Limestone		orma	Upper Is.		Upper Is.	res 1 Sta	Coffeyville limestone	leasa	Lenapah limestone		Lenapah limestone	undefined	Lenapah Limestone	Lenapah Limestone		Lenapah imestone Idenbro Ls. Perry Farm Shale	Lena Limes	tone Ferry Farm Shale		Lenapah Limestone	
Bethany Falls	Shale		Altamont limestone	Parsons limestone	Parsons limestone	Parsons Shale	easu nator I	Walnut shale		Nowata shale	d	Nowata shale	undefined	Nowata Shale Worland Ls.  Worland Ls.  Worland Ls.	Norfleet Ls.  Nowata Shale Walter John. Ss.  Worland Ls	ພ  ⊃ ├─	Worland Ls	O Nowata	Worland Ls	Walter John Sandstone	ata Shale	tage
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	Shale		Lwr. Pleas. sh.	Bandera shales	Bandera shales	Bandera shales	er Coa Ma Ser	-		Bandera shale	Serie	Bandera shale	undefined	Bandera Shale Bandera Quarry Ss.  Laberdie Ls.	Bandera Shale Bandera Quarry Ss.  Laberdie Ls.	aton Band	ndera Shale Bandera Quarry Ss.  Laberdie Ls.	Bander Bander	Bandera Quarry Ss. Mulberry coa Laberdie Ls.	Bandera Quarry Ss. unanmed Is. Bande Mulberry coal Laberdie Limestone	era Shale	inesi
Pawnee limestone series		Pawnee limestone	Pawnee limestone	Pawnee limestone	Pawnee limestone	Pawnee limestone	Lowe	Pawnee limestone		Pawnee limestone	Marma	Pawnee limestone	undefined	Pawnee Limestone Pawnee Anna Shale	Pawnee Limestone Panna Shale		Pawnee imestone Pawnee Anna Shale	Marm Paw Limes	Mine Creek Sh.	Mine Creek Shale	Pawnee D D D	Desmo
		Shale	Labette shale	Labette shale	Labette shale	Labette shale		Labette shale	Labette shale	Labette shale	)es V	Labette shale	undefined	Labette Shale Warrensburg or Englevale Ss.  Higginsville Ls.	Labette Shale Englevale Ss. Higginsville Ls.	Lab	pette Shale Englevale Ss. Higginsville Ls.	Labette	Englevale 33.	Lavington soci	te Shale	
Fort Scott coal series/ls.	Oswego Shale Limestone	Oswego Limestone limestone Limestone	Oswego limestone	Fort Scott limestone	Fort Scott limestone	Fort Scott limestone		A Fort Scott limestone	Fort Scott limestone	Fort Scott limestone		Fort Scott limestone	undefined	Fort Scott Limestone Little Osage Sh.	Fort Scott Limestone Little Osage Sh.  Blackjack Creek	Fo	fort Scott limestone	Fort Lime:	Scott Little Osage Sh.	Little Osage nodular limestones Summit coal Shale Morgan School shale	Fort Scott Limestone	
							tg.		Ë	Ĕ				Limestone   Mulky coal bed	Limestone  Excello Shale		Limestone	<u> </u>	Limestone	Biackjack Cleek Lifflestoffe		
Fort Scott marble series	Shale; Swallow lime- stone; shale; Colum-	Cherokee shales	Cherokee shales	Cherokee shales	Cherokee shales	Cherokee shales	okee S	Cherokee shales	undefined	Cherokee o shales	Cherokee	Cherokee shales	undefined	Breezy Hill Ls. Cherokee Shale	Cherokee Group Mulky coal bed Breezy Hill Ls.		kee Group Breezy Hill Ls.		Mulky coa Breezy Hill Ls.		•	
Lower coal series	bus sandstone; shale	Situics		Sidies	Situres	Sindles	Cherc	Situres	Cherc	Cher	Che Che	) sitales			Atokan Stage Morrowan Stage		okan Stage rowan Stage		n Stage van Stage	Atokan : Morrowar		
Lower Carboniferous	Galena limestone	Mississippian	Mississippian or sub-Carboniferous	Mississippian series	Boone formation	Boone limestone								Mississippian System	Mississippian System	Mississi	sippian System	Mississip	oian System	Mississippia	n System	

## Data prior to 1908:

All data and interpretations prior to 1908 were originally compiled by Schrader (1908); we have retained the correlations of that work.

## Formal vs informal:

Prior to the 1930s, lithostratigraphic designations were written in lowercase. We retain the use of lowercase lithostratigraphic designations for those works to maintain authenticity. This use is not representative of informal status. However, lowercased lithostratigraphic units after Moore (1932) do denote informal status (e.g., Glenpool Is. bed).

## Definition of the Galesburg Shale:

A discrepancy exists between Moore (1932) and Moore (1936) regarding the definition of the Galesburg Shale within the Bronson Group. Moore (1932) originally placed the upper contact of the Galesburg Shale at the base of the Canville Limestone. Moore (1936) indicates that previous interpretations included the Stark Shale within the Galesburg Shale interval. We therefore illustrate the interpretation of Moore (1936) for the Galesburg interval within the Moore (1932) column. Within this same column, we have included lithostratigraphic terms that were originally established in Oklahoma and later adopted for use in Kansas. Moore (1932; 1936, p. 72–74) reports that the basal sandstone (i.e., Hepler) within the Bourbon Formation (1936)/Group (1932) was locally absent and that a black shale exists near the base of this unit. Moore (1936) defined the base of the Bourbon Formation at a regional disconformity. This disconformity was later correlated into Oklahoma to a disconformity at the top of the Lenapah Limestone Formation by Oakes and Jewett (1943).

# Definition of the Lansing Group:

Published discrepancies exist regarding the historic discussion of the Lansing Group. The current definition for the Kansas City and Lansing Groups boundary was attributed by Newell (1935, p. 17) and Moore (1948, p. 2,033) to Moore (1932). In reviewing the 1932 work it is clear that the Kansas City and Lansing Groups boundary was established at a much lower stratigraphic position in that work than its current definition (see Moore, 1932, pg. 47, 92, 97, etc.). We find that Moore (1936, p. 44) was the first to use the current definition. Oddly enough, the systematic review of the unit by Moore (1936, p. 124) refers to the reference by Newell (1935) in the prior year, which referenced Moore (1932). We therefore conclude that this circular logic was a personal communication between these authors and its perceived inclusion within the 1932 field guide was an error. With these observations, we attribute the current Upper Kansas City Group's boundary definition to Moore (1936).

Moore (1948) modified the spelling of Peedee to read as Pedee.



# The University of Kansas

blk. sh.	black shale						
Bon. Springs	Bonner Springs						
Cement/Dewey	Cement City Limestone/Dewey Limeston						
Ck.	Creek						
Cottage Gr.	Cottage Grove						
Fm./Form.	Formation						
Grp./Grps.	Group/Groups						
IA	Iowa						
incl.	includes						
Jackson Pk.	Jackson Park						
K.C.	Kansas City						
KS	Kansas						
ls./Ls.	limestone/Limestone						
lwr./Lwr.	lower/Lower						
mbr./mbrs./Mbr.	member/members/Member						
mid./Mid.	middle/Middle						
Miss.	Mississippian						
MO	Missouri						
Pleas.	Pleasanton						
Shw.	Shawnee						
sh./Sh.	shale/Shale						
ss./Ss.	sandstone/Sandstone						
Stg.	Stage						
Subgrp.	Subgroup						
Upr. Sibley coal	Upper Sibley coal						
Victoria Junct.	Victoria Junction						
Walter John.	Walter Johnson						

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