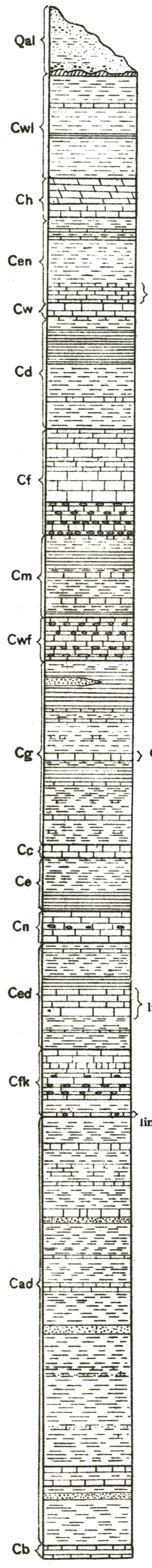
STATE GEOLOGICAL SURVEY OF KANSAS
IN COOPERATION WITH
UNITED STATES GEOLOGICAL SURVEY

RECONNAISSANCE GEOLOGIC MAP OF COWLEY, COUNTY, KANSAS

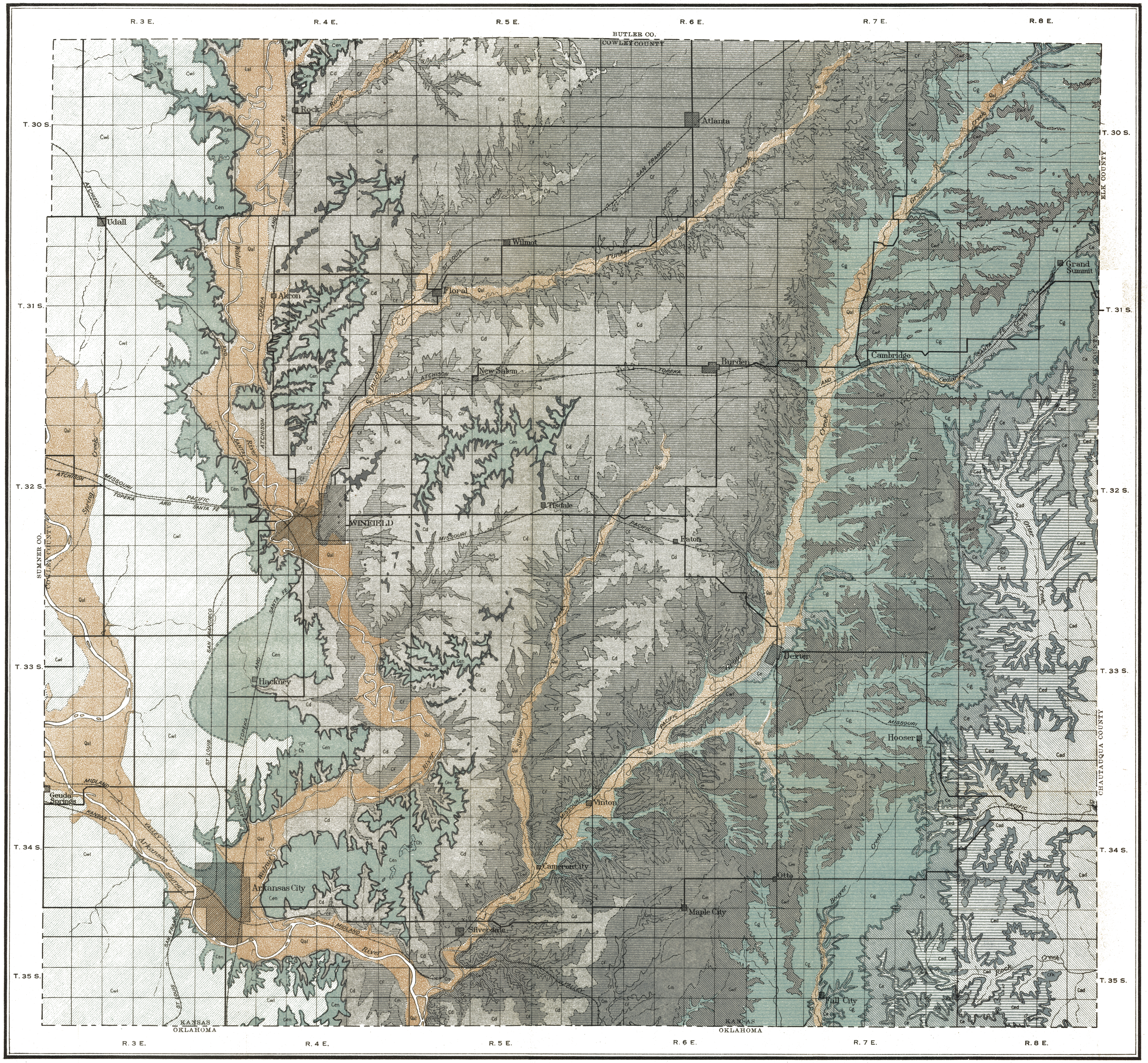
BULLETIN 12 PLATE I

GENERALIZED SECTION OF ROCKS EXPOSED



Symbol	Formation	Member	Group	System
Qal	Alluvium *0-50 feet*		*Recent*	QUATERNARY
Cwl	Wellington formation *80 feet* *(Top not exposed)*		*Sumner group*	PERMIAN
Ch	Herington limestone *30 feet*			
Cen	Enterprise shale *65 feet*	Luta limestone member 20 feet		
Cw	Winfield limestone *10 feet*		*Chase group*	
Cd	Doyle shale *85 feet*			
Cf	Fort Riley limestone *55 feet* Florence flint *11-35 feet*			
Cm	Matfield shale *62 feet*			
Cwf	Wreford limestone *33 feet*			
Cg	Garrison shale *140 feet*	Crouse limestone member 6 feet	*Council Grove group*	
Cc	Cottonwood limestone *10 feet*			
Ce	Eskridge shale *40 feet*		*Wabaunsee group*	PENNSYLVANIAN
Cn	Neva limestone *25 feet*			
Ced	Elmdale shale *80 feet*	Red Eagle limestone member 20 feet		
Cfk	Foraker limestone *50 feet*	Americus ? limestone member 4 feet		
Cad	Admire shale *265 feet* Emporia limestone *15 feet* Willard shale *45 feet*			
Cb	Burlingame limestone *10 feet*			

Limestone	Limestone and chert	Dolomite
Shale	Limy shale, or shale with thin beds of shaly limestone	Sandy shale
Red shale	Sandstone	Gypsum


R. 3 E.
R. 4 E.
R. 5 E.
R. 6 E.
R. 7 E.
R. 8 E.
T. 30 S.
T. 31 S.
T. 32 S.
T. 33 S.
T. 34 S.
T. 35 S.
BUTLER CO.
COWLEY COUNTY
ELK COUNTY
COWLEY COUNTY
CHAUTAUQUA COUNTY
SUMNER CO.
COWLEY COUNTY
KANSAS
OKLAHOMA
Rock
Atlanta
Udall
Wilmot
Floral
Akron
Grand Summit
New Salem
Burden
Cambridge
Tisdale
WINFIELD
Paton
Dexter
Hackney
Hooser
Geuda Springs
Vinton
Cameron City
Otto
Arkansas City
Maple City
Silverdale
Fall City
Rock Creek
Timber Creek
Grouse Creek
Cedar Creek
Dutch Creek
Silver Creek
Spring Creek
Otter Creek
Beaver Creek
Walnut River
Arkansas River
ATCHISON TOPEKA AND SANTA FE
ST LOUIS SAN FRANCISCO
MISSOURI PACIFIC
MIDLAND VALLEY
KANSAS SOUTHERN
Qal
Cwl
Ch
Cen
Cd
Cf
Cm
Cwf
Cg
Ce
Cn
Ced
Cfk
Cad
Cb

EXPLANATION

Symbol	Name	Group	Series	System
Qal	Alluvium		*Recent*	QUATERNARY
Cwl	Wellington formation	*Sumner group*	*Permian*	CARBONIFEROUS
Ch	Herington limestone			
Cen	Enterprise shale including Luta limestone member at base			
Cw	Winfield limestone	*Chase group*		
Cd	Doyle shale			
Cf	Fort Riley limestone and Florence flint			
Cm	Matfield shale			
Cwf	Wreford limestone			
Cg	Garrison shale	*Council Grove group*		
Cc	Cottonwood limestone			
Ce	Eskridge shale	*Wabaunsee group*	*Pennsylvanian*	
Cn	Neva limestone			
Ced	Elmdale shale			
Cfk	Foraker limestone			
Cad	Admire shale, Emporia limestone, and Willard shale			
Cb	Burlingame limestone			

⚒ Limestone quarry
⚒ Gravel pit

Dashed boundary lines location uncertain
— Highway

Base from maps of U. S. Postal Routes and Soil Maps, U. S. Department of Agriculture Bureau of Soils. Main roads from maps of County Engineer.

Scale ½ inch = 1 mile
0 1 2 3 4 5 Miles

WILLIAMS & HEINTZ CO, WASH. D.C.

Geology compiled by N. W. Bass from detailed maps of The Empire Gas and Fuel Co., The Trees Oil Co., The Carter Oil Co., The Tidal Oil Co., The Phillips Petroleum Co., and from field reconnaissance mapping