BEDROCK GEOLOGIC MAP

Columbia Quadrangle, Monroe and St. Clair Counties, Illinois

Department of Natural Resources ILLINOIS STATE GEOLOGICAL SURVEY Illinois Geologic Quadrangle Map: IGQ Columbia BG

J.A. Devera (2000)



Graphic Column of the Columbia Quadrangle

or Subgroup	FORMATION	MEMBER and Bed	GRAPHIC COLUMN	THICKNESS (feet)	DESCRIPTION	A. Alluvium, Colluvium, Loess and Till. Grain size fraction ranges from clay to gravel in these deposits. Bottomland		
	Alluvium Undifferentiated Till and Terraces Undifferentiated			0-150	A	bluish laminated and massive clay also present. Bedforms include large scale trough cross beddi bedding, and laminated sediments. Colluvial deposits include clay, silt, sand, and gravel. The gra composed of chert and limestone clasts from the regolith found mainly in stream beds. Loess is to down section, primarily composed of quartzose silt and clay. Upland glacial deposits consist of bl diamicton with a mixture of igneous, metamorphic and local bedrock clasts in a sandy, silty clay.		
	Yankeetown and Renault			0-50	C	B. Sandstone, Shale, Limestone and Coal. Sandstones are tan, ferrugenous medium to coarse grained quartz areni minimal amounts of clay, mica and dark mineral grains. The sandstones are cross bedded to apparent n		
	St. Genevieve Limestone		·····································	0-20	DE	bedded. Shales range from fissile black to gray and hard. Soft gray claystones with carbonized root casts a common below coal beds. Limestones are dark gray to brown gray, argillaceous micrites or lime-mudstor contain large productid, spiney, brachiopods with disarticulated crinoid stems. Coal is bituminous, black vitred secondary calcite infilling along cleats. The basal sandstones are erosional with underlying formations.		
Mammoth Cave Megagroup	St. Louis Limestone	Colonial Coral Zone Chert Breccia Zone Colonial Coral Zone		0-250	F	C. Limestone, sandstone, shale, carbonate conglomerate. This unit is highly variable and lith olog ically diverse y numerous facies changes both vertically and laterally. The limestone is a light gray wackestone to gra containing variable amounts of disarticulated crinoids, brachiopods, and bryozoan fragments, oolites, pell-coated grains. Sandstone beds are greenish gray, fine grained, well sorted, calcite cemented quartz arenites. are greenish to gray claystones but can also be harder fissile gray to dark gray and nonfossiliferous. Lim conglomerate is rare, found only at Hickman Creek Falls it is composed of large rounded black to gray lime-mu clasts, black chert clasts, quartz sand "floating" in the matrix. Other clasts contain ooids, and fossil fragment carbonate conglomerate shows primary sedimentary structures such as prominent cross bedding structure lower contact can be locally erosional and laterally gradational with underlying units.		
	Salem Limestone			0-150	G	D. Sandstone. Consistently composed of the grained, well sorted, sub-rounded, quartz arenite this sat modes of bedding character. The most common bedding characteristic is large scale trough cro apparent massive bedding. Iron staining is common in the cross bedded facies. Trace amounts of t and clay have been found. Cement is dominated by silica with some iron and trace amounts of cal The other type of bedding is rhythmic, laminated with polygonal dessication features and common b type of bedding also contains green shale clasts and dominated by calcareous cement. Trace amou grains occur in the laminated sections. The lower contact is erosional where large trough cross beddi may be transitional with the underlying limestone where this formational is laminated.		
	Warsaw Shale			0-90	Н	E. Limestone and sandstone. Dominated by oolitic grainstones in the upper part, this limestone displays large cross be is light gray to white. It also contains fossil wackestones in minor amounts but is mainly composed of fossil packstone most common allochems are disarticulated crinoids, ooids, and coated fossil grains such as, brachiopod shell frag bryozoan fragments and echinoderm fragments. Down section a calcareous cemented, white to light gray, very fine g well sorted quartz arenite occurs about 18 to 20 feet below the top of the unit. The lower part of this formation is comp gradational facies between wackestones and lime-mudstones of the upper and lower unit respectively.		
	Burlington-Keokuk Limestone			100-150		 F. Limestone and Chert. Light to medium gray lime-mudstone facies with fossil wackestone facies, occur in medium massive beds, chert nodules present with minor amounts of greenish shale. Occasional dolostone be grainstone beds also occur in this formation. The massive lime mudstone beds display conchoidal fracture. gray banded nodular and bedded also fossiliferous in places. This unit contains pelletal packstone facies. In the part of this unit a colonial coral, <i>Acrocyathus flouriformis</i> forms an acme horizon through out the study area development is commonly associated with this formation and is seen as sinkholes, springs dry streams and The basal contact interfingers with the underlying grainstone. G. Limestone and Chert. White to light gray fossiliferous grainstone cycles with laminated lime-mudstone facies. Grain contain oolitic, pelloidal, and fossil fragment allochems. Common fossils include: foraminifera, ostracods, calca algae fragments of bryozoans, echinoderms, rugose corals, and brachiopods. The index fossil <i>Globoendothym</i> is diagnostic of this unit. Chert is seen as thin stringers and egg-like or oblate sphereoid nodules containing fos banding. Some of the egg-like chert nodules spall-off in thin layers. Thin dolostone beds occur through of formation. The contact is gradational with the crinoidal-bryozoan-rich unit below. 		
	Fern Glen Formation			80-130	J	 H. Limestone and Shale. Light gray crinoid-bryozoan packstone in the upper portion of the formation. Yellow dolostor and thin siltstone beds common in this unit. Large spiriferid brachiopod <i>Syringothyris sp.</i> are abundant in th part of the carbonate portion of this formation. These brachiopods are silicified in some of the beds and a preserved. They are a diagnostic character of an acme horizon this unit in the study area. Large derbyid brach are also common through out the formation. Shale and siltstones occur lower and are dark gray to bluis Limestone lenses with profuse fenestrate bryozoans are common within the shaly portion. Calcite and d crystal filled nodules occur in the silty shales. The lower contact gradually becomes dominated by c grainstones of the lower unit. I. Limestone and Chert. Light gray to white crinoidal grainstone dominates the lithology with alternating thin white to light the the back and the profuse for the provide the provident the provide the provide th		
	Joliet Formation			1	8	Subsurface only (described from drill logs, reports, and from exposures in adjacent quadrangles)		
	Kankakee Formation Edgewood			40 - 70	19 K 32	J. Argillaceous cherty limestone, calcareous siltstone, and shale. The limestone is greenish gray, thin bedded, argilla and contains small calcite geodes, and crinoid stems. In places the unit is dominantly thin, irregularly bedde mudstone with cherty, crinoidal wackestone and packstone facies. The siltstones and shales are greeni reddish and usually calcareous. A yellowish dolostone facies may also be present. The lower part of this unconformable with the underlying sediments		
	Maquoketa Formation			·		K. Dolostone and limestone. Light gray to tan, massive beds, light gray chert nodules, and occasionally calcareous silt Lowere in thesection the units becomes more argilaceous and in part glauconitic.		
				110-140	L	L. Calcareous siltstone, mudstone, argillaceous dolostone. The lower part of the formation is calcareous and it grades into bluish green, thin calcareous siltstones interbedded with bluish gray mudstones. The upper part is shaly b to greenish gray, and has interlaminated silts and shales.		
				-	_	M. Limestone, dolomite, minor shales. Yellowish-gray limestone and dolomites with minor red and green shale parting		
	Kimmswick "Trenton"				М			

and is h tan				
s with assive e also es that s with				
el ding stone s and hales stone stone . The The				
is two g and grains ment. This conite nt and				
ls and . The nents, ained, sed of				
o thick s and Chert lower Karst caves.				
tones reous <i>bailei</i> Is and ut this				
beds lower well ppods gray. omite noidal				
t gray ngle.				
eous, , lime h and unit is				
ones. oward ff gray				
as observ end of N imbia Qu St. Louis lumbia C	/ed in the Ca 20 ⁰ W paralle ladrangle. T Limestone h Quadrangle b	hokia ling the I he fault o owever, r ecause o	Dupo ccurs no f loess	
Kimmsw a water v s by the l closure c ng this d ar Sugar upo Fielo n the Wa have beo ntinue to	ick Limeston vell (Schwall Illinois State on an anticlir iscovery, furt Loaf School d in Novemb terloo Field en produced o have active	e (Trento b, 1968). Geologic her mapp . The Oh er, 1928. to 702 fee from the wells.	on) This al ead to oing to io Oil Depth et in	
of Carr C bout thre in the are and Mills ylvanian	Creek, at an o e feet thick b ea are just o stadt Quadra coals west o	old railroa out has no f this angles. T of Carr Ci	id ot been he reek in	
I 11, T.1S estone ur sed for g he quad tone is lo Another s c. This lin nevieve	S., R.10W., is hits quarried gravel, ceme rangle are al ocated in the small abando mestone was and St. Louis	active a are the S nt, and bandoned southeas oned quar s quarried s Limesto	nd alem I. One stern- ry was I for a ones.	
Dupo Ant ern limb c eas to the oduction	icline that co of that structu e north and s	ontain calo ure. The couth of th	cium- ne	
nois, Illin	iois State Ge	eological s	Survey,	
m Produ a and Ke p. 91-95 m Produ a and Ke	ction of the I entucky Geol ction of the I entucky Geol	llinois Ba ogical So llinois Ba ogical So	sın, cieties: sin, cieties:	
ກຣ, p.249	<i>ז</i> -∠51.	A 1		
	, 	Ч .		
	Msl Ms Mw Mbk Mfg Su	- 500 - SL		
	Ou			