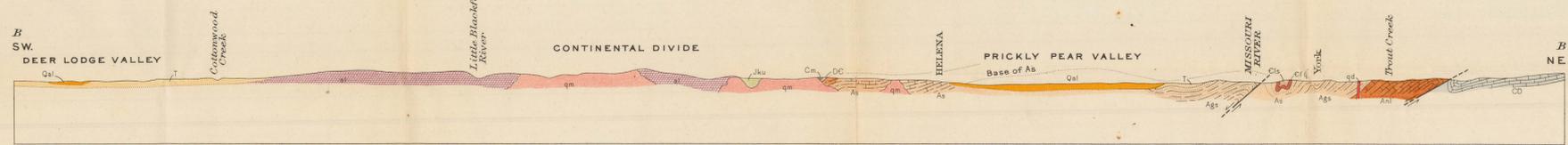
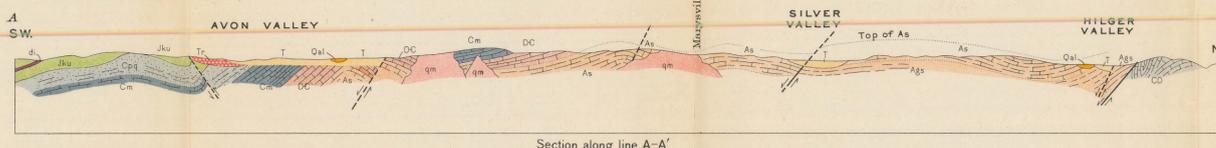


EXPLANATION		
SEDIMENTARY ROCKS		
Qal	Alluvium	QUATERNARY
Ggd	Glacial drift	TERTIARY
T	Chiefly clay, sand, and gravel with some volcanic tuffs and flows	JURASSIC AND CRETACEOUS
UNCONFORMITY		
Jku	Undifferentiated shale, sandstone, and limestone	JURASSIC AND CRETACEOUS
Cpq	Phosphoria formation (Permian) and Quadrant quartzite (Pennsylvanian)	CARBONIFEROUS
Om	Madison limestone (Cambrian included in Garnet Range)	CARBONIFEROUS AND DEVONIAN
Cls	Chiefly limestone with some shale	CAMBRIAN
Cfq	Flathead quartzite	CAMBRIAN
As	Marsh shale, Helena limestone, Empire shale, and Spokane shale	ALGONKIAN
Ags	Greyson shale	ALGONKIAN
Anl	Newland limestone	ALGONKIAN
IGNEOUS ROCKS		
B	Basalt	
Wg	Andesite of White Gulch	TERTIARY
Tr	Rhyolite (Chiefly flows)	TERTIARY
Tda	Dacite (Chiefly flows)	TERTIARY
qd	Quartz diorite dikes and stocks of York-Confederate Gulch area	TERTIARY
ap	Aplite	TERTIARY
qm	Quartz monzonite, including granodiorite and quartz diorite	TERTIARY
al	Andesite and latite (Chiefly flows)	TERTIARY
di	Diorite and gabbro (Dikes and sills)	TERTIARY
Fault (Downthrow) $\times 25^\circ$ Strike and dip		

Base from U. S. Geological Survey maps of Helena, Fort Logan, and Great Falls quadrangles

Geology by J. T. Pardee and Russell Gibson with additions from Joseph Barrell, W. H. Weed, R. W. Stone, Adolph Knopf, and Henry G. Ferguson



GEOLOGIC MAP AND SECTIONS OF GREATER HELENA MINING DISTRICT, MONTANA



1933