Buckboard to iPad:  
A Tribute to South Mountain Mappers and Their Methods
South Mountain Mapping:

1894 - Harpers Ferry Folio, Keith

1938 - Frederick County Map, Jonas and Stose

1941 - Washington County Map, Cloos

1996 - Harpers Ferry Quad, Southworth and Brezinski

2015 - Digital Mapping, Kavage Adams
FREDERICK COUNTY - MGS

Jonas and Stose, 1938

1:62,500 ≈ 700 mi^2
Fig. 22. Section of Weverton quartzite in South Mountain in bluff on north side of Potomac River east of Weverton. The structure is interpreted as an overturned isoclinal syncline enclosing conglomeratic quartzite of the upper part of the Weverton in the center of the fold.
WASHINGTON COUNTY - MGS

1:62,500 ≈ 500 mi²

Cloos, 1941

I can't endure sitting still any longer. I want an existence where I can move around freely... I want to be a geologist!

SOUTH Mtn, USA

JOHNS HOPKINS 1931 ➔ GERMANY
Figure 10. South Mountain Anticline Viewed from U. S. 340 across Potomac River. Distance from limb to limb at base approximately 2,000 feet. Top limb almost a dip slope, west limb overturned, cleavage gentler than bedding, both dip east (see also Figure 23).

Figure 21. Plan Table Map of Potomac River Gorge at Waverly. Difference in elevation on south side is 470 feet (compare Fig. 10).
1:24,000 ≈ 50 mi²

HARPERS FERRY QUAD - USGS

Southworth and Brezinski, 1996
Weverton Formation (Lower Cambrian) (Keith, 1894; King, 1950)

Owens Creek Member (Brezinski, 1992)—Dusky-blue (5PB 3/2) to dark-gray (N3) quartz-pebble conglomerate and greenish-gray (5G 6/1) quartz-pebble conglomeratic quartzite, metasiltstone, and interbedded quartzite. Poorly sorted, medium to thick bedded, graded, and cross-bedded. Contains local accumulations of magnetite, heavy minerals, red jasper, red quartz, and phylite clasts. Pebbles commonly are 0.4 in. in diameter. Top of unit is a sharp contact occurring at top of quartz-pebble conglomeratic quartzite; bottom of unit is gradational with the metasiltstone of the Maryland Heights Member. Thickness is 105 ft on Short Hill-South Mountain and 90 to 150 ft on Blue Ridge-Elk Ridge.

Maryland Heights Member (Brezinski, 1992)—Interbedded, dark-greenish-gray (5GY 4/1) metasiltstone and dusky-blue (5PB 3/2) to greenish-gray (5G 6/1), very coarse grained to granular quartzite. Quartzite beds vary from 16 to 32 ft in thickness. Total thickness ranges from 160 to 480 ft.

Buzzard Knob Member (Brezinski, 1992)—Light-gray (N7) to medium-light-gray (N6), medium- to fine-grained, well-sorted, graded, and crossbedded quartzite. Massive to thick bedded at base and top. Middle part is thin bedded and contains light-gray (N7) phylilitic metagraywacke and metasiltstone. Lower part is locally arkosic and overlies conglomerate and phylite of the Loudoun Formation, metabasalt of the Catoctin Formation, or locally, hornblende gneiss. Total thickness ranges from 130 to 160 ft.
blue = current 1:24,000 GIS Maryland Height member (Cwm)
blue = current 1:24,000 GIS
Maryland Height member (Cwm)
Previously unmapped transverse fault \( \approx 100 \text{m offset} \)

Cwm

Cwb

Clc

Change location of Loudoun Fm. (Clc) \( \approx 150 \text{m} \)

blue = current 1:24,000 GIS

green = 2015 digital mapping

Previously unmapped transverse fault
\( \approx 100 \text{m offset} \)
Thanks:
Maryland Geological Survey
The Adams Boys
Nathan Hale’s Hazardous Tales