GEOLOGIC MAP OF THE WESTERN BLUE RIDGE, FREDERICK AND WASHINGTON COUNTIES, MARYLAND

by
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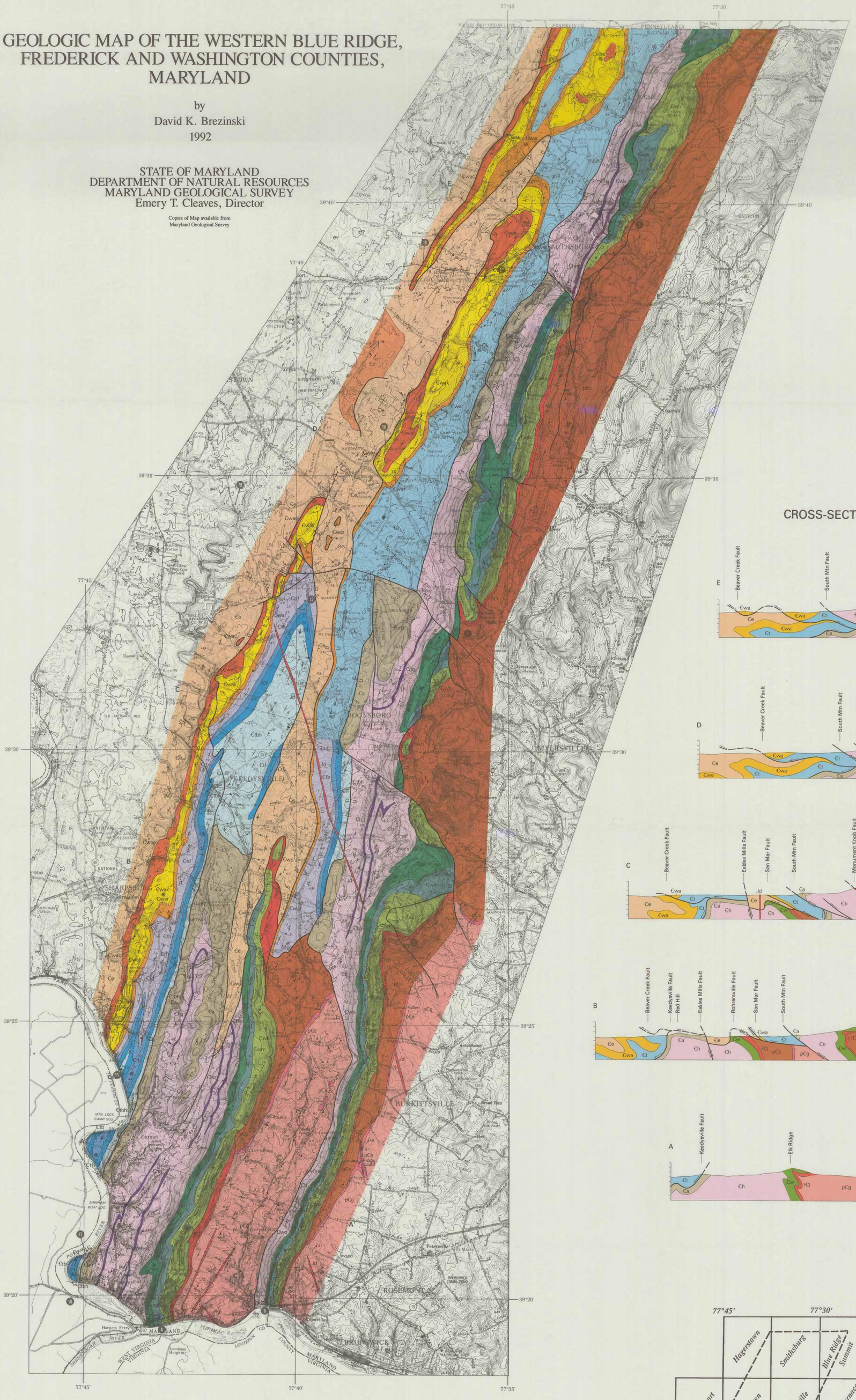
STATE OF MARYLAND
DEPARTMENT OF NATURAL RESOURCES
MARYLAND GEOLOGICAL SURVEY
Emery T. Cleaves, Director

Copies of Map available from
Maryland Geological Survey



CROSS-SECTIONS

EXPLANATION

JURASSIC

Jd — DIABASE DIKE—Dark-gray, fine-grained metabasalt, weathering to a yellowish-brown color.

UPPER CAMBRIAN

Cc — CONOCOCHEAGUE FORMATION—Interbedded, dark-gray, algal limestone, laminated, dolomitic limestone, and tan dolomite. Thickness: 2000–2500 feet

MIDDLE CAMBRIAN

Ce — ELBROOK FORMATION—Interbedded, medium-gray, thinly-bedded limestone, white, mylonitic marble, tan, laminated dolomite, and thin, calcareous shale to shaly dolomite. Thickness: 2000–2500 feet.

LOWER CAMBRIAN

Cwa — WAYNESBORO FORMATION (undivided in cross sections only)

Cwac — CHEWSVILLE MEMBER—Interbedded, maroon shale, mudstone and argillaceous sandstone, light-gray sandstone, and tan, sandy, dolomitic limestone and dolomite. Thickness: 100–150 feet.

Cwak — CAVETOWN MEMBER—Interbedded, medium- to dark-gray, bioturbated dolomite, dolomitic limestone and laminated limestone, with a few thin siliciclastic interval near the middle. Thickness: 500–600 feet.

Cwar — RED RUN MEMBER—Interbedded, light-olive-gray shale, light-gray, fine-grained sandstone, and medium- to dark-gray, sandy, dolomitic limestone. Thickness: 100–125 feet.

Ct — TOMSTOWN FORMATION (where not divided into members)

Ctd — DARGAN MEMBER—Interbedded, dark-gray, bioturbated dolomite, medium- to dark-gray, laminated dolomite, and dark-gray limestone. Thickness: 600–700 feet.

Ctb — BENEVOLA MEMBER—Light-gray, massive, coarse-grained dolomite. Thickness: 60–150 feet.

Ctf — FORT DUNCAN MEMBER—Dark-gray, medium- to thick-bedded, bioturbated dolomite. Thickness: 175–250 feet.

Ctbh — BOLIVAR HEIGHTS MEMBER—Predominately dark-gray, bioturbated and sheared limestone with white, mylonitic marble (Keedysville marble bed) near the base. Thickness: 200–250 feet

Ca — ANTIETAM FORMATION—Interbedded, greenish-black, sandy siltstone and light-brown, fine-grained sandstone in the lower part; medium-bedded, light-brown, fine-grained sandstone in the middle; and medium-gray, vuggy, cross-bedded, coarse-grained sandstone at the top. Thickness: 500–600 feet.

Chq / Ch / Chm — HARPERS FORMATION—Interbedded, dark-greenish-gray to dark-gray, sandy metasiltstone, dark-gray metagraywacke, and thinly bedded, light-gray, quartzose sandstones containing *Skolithos* burrows near the top. Medium-gray, coarse-grained, ferruginous quartzites (Chq) present in middle of formation and light-gray Montalto Member (Chm) in the lower part of the formation near the Pennsylvania State line. Thickness: 2000–3000 feet.

Cw — WEVERTON FORMATION—(undivided in cross section only)

Cwm — OWENS CREEK MEMBER—Medium- to dark-gray, medium-bedded, coarse-grained to conglomeratic metagraywacke. Thickness: 100–150 feet.

Cwm — MARYLAND HEIGHTS MEMBER—Interbedded, dark-greenish-gray, sandy metasiltstone, medium-gray, coarse-grained metagraywacke, and medium-light-gray quartzite. Thickness: 300–500 feet.

Cwb — BUZZARD KNOB MEMBER—Medium-light-gray to light-gray, medium- to coarse-grained, medium-bedded quartzite. Thickness: 125–175 feet.

LOWER CAMBRIAN OR PROTEROZOIC

?Cl — LOUDOUN FORMATION—Dark-gray to grayish-black phyllite, locally containing amygdules, and medium-gray, cross-bedded to massive, polymictic conglomerate. Thickness: 20–100 feet.

PROTEROZOIC

pCc — CATOCTIN FORMATION—Predominately dark-greenish- gray, to greenish-black, fine-grained metabasalt, locally with beds of amygdaloidal basalt, and greenish-gray tuffs. Less commonly medium-gray to moderate-red, porphyritic and flow-banded metarhyolite.

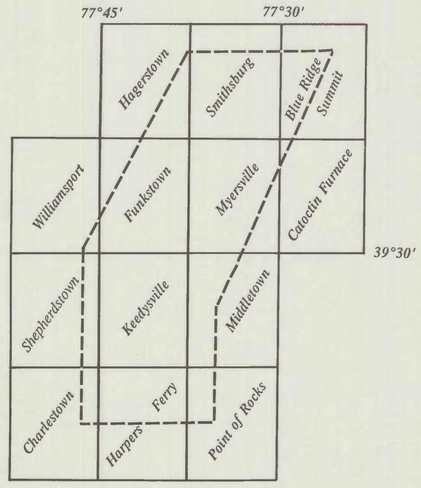
pCs — SWIFT RUN FORMATION—Light-bluish-gray phyllite, light-gray, sandy siltstone, and light-olive-gray, coarse- to very-coarse-grained, arkosic sandstone.

pCg — BASEMENT GNEISS—Massive, light-brownish-gray, to white, coarse-grained, garnet-bearing, granite gneiss, locally mylonitic, and pale pink, very-coarse-grained, augen gneiss. Pervasively cross-cut by dark-greenish-gray, highly cleaved, metabasalt dikes.

(55) Circled numbers are locations of sections described in Appendix.

SYMBOLS

- contact
- strike and dip of bedding
- strike of vertical bedding
- horizontal bedding
- strike and dip of overturned bedding
- bedding rotated more than 180°
- strike and dip of cleavage
- strike of vertical cleavage
- strike and dip of compositional banding in Proterozoic rocks
- bearing and plunge of lineation
- direction of plunge of minor fold
- fault (U and D on the upthrown and downthrown sides).
- fault (showing relative directions of motion).



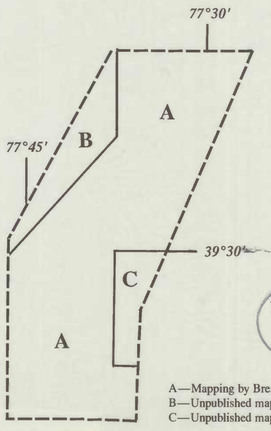
Scale 1:62500

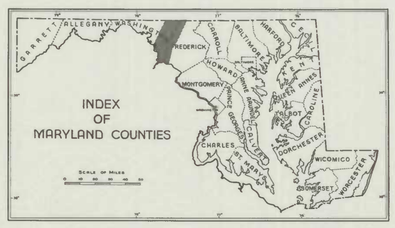
1 1/2 0 1 2 3 4 Miles

1 1/2 0 1 2 3 4 5 Kilometers

Contour interval 20 feet

Datum is mean sea level





A—Mapping by Brezinski 1986–1992
B—Unpublished mapping of parts of the Hagerstown and Funkstown Quadrangles by S. Bell 1988–89.
C—Unpublished mapping by J. Fauth of the Middletown Quadrangle, modified.

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