DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

OPEN-FILE REPORT
78-546

BASE BY THE U.S. GEOLOGICAL SURVEY, 1967

GEOLOGY MAPPED 1970–1977

SCALE 1:24 000

CONTOUR INTERVAL 40 FEET
DOTTED LINES REPRESENT 20-FOOT CONTOURS
DATUM IS MEAN SEA LEVEL

UTM GRID AND 1967 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

QUADRANGLE LOCATION

CORRELATION OF MAP UNITS

Unit	Epoch	Period
Qal, Ql	Holocene	QUATERNARY
Qt_1, Qt_2, Qg_1, Qg_2	Pleistocene	QUATERNARY
Unconformity		
Tcrd, Tcrp, Tca, Tcap, Tct	Eocene	TERTIARY
Unconformity		
Ki		CRETACEOUS
Unconformity		
Pw_8	Upper(?) Permian	PERMIAN
Pw_7, $PIPw_6$	Lower Permian	PERMIAN
IPw_5, IPw_4	Upper Pennsylvanian	PENNSYLVANIAN
IPw_3, IPw_2, IPw_1	Middle Pennsylvanian	PENNSYLVANIAN
Thrust fault		
Dm		DEVONIAN

- Contact--Short dash between units in the Wood River Formation
- Fault--Dashed where approximately located; dotted where concealed. U, upthrown; D, downthrown side. Arrows show relative movement
- Thrust fault, dashed where approximately located. Sawteeth on upper plate
- Overturned thrust fault, sawteeth in direction of dip; bar on side of tectonically higher plate
- Anticline
- Overturned anticline
- Syncline
- Overturned syncline
- Strike and dip of beds
- Strike of vertical beds
- Strike and dip of overturned beds
- Horizontal beds
- Strike and dip of fracture cleavage
- Strike of vertical fracture cleavage
- Strike and dip of flow banding
- Contact metamorphosed rock
- Shattered rock
- Spring

DESCRIPTION OF MAP UNITS

Qal ALLUVIAL DEPOSITS - Includes unconsolidated silt, sand and gravel along rivers and tributary streams, alluvial fans, and talus (Holocene).

Ql LANDSLIDE DEPOSITS - Unconsolidated landslide deposits (Holocene).

Qt_1 LOW TERRACE DEPOSITS - Includes terraces 10 to 20 feet above recent stream deposits in the Big Wood River Valley and tributary streams (Holocene).

Qt_2 HIGH TERRACE DEPOSITS - Sand and gravel in eroded valley side terraces 30 to 40 feet above recent stream deposits in the Big Wood River Valley (Pleistocene).

Qg_1 GLACIAL OUTWASH - Characterized by abundant float of large rounded white quartzite boulders exotic to the Wood River Valley. Deposits are localized on the east side of the Wood River graben in the vicinity of Ohio Gulch (Pleistocene).

Qg_2 GLACIAL OUTWASH - Characterized by abundant float of large rounded white quartzite boulders exotic to the Wood River Valley. Occurs in erosion remnants 200 to 400 feet above present stream drainages (Pleistocene).

CHALLIS VOLCANICS (EOCENE)

Tcrd RHYODACITE AND DACITE - Gray or pinkish-gray porphyritic thick flows with prominent phenocrysts of plagioclase, biotite, hornblende as much as 6 mm long and some with minor quartz or augite in an aphanitic or glassy groundmass. Includes some undifferentiated crystal tuff and breccia. Tops of flows commonly amygdaloidal and silicified or filled with chalcedony.

Tcrp RHYODACITE AND DACITE PYROCLASTICS - Agglomerate, crystal tuff, and breccia of rhyodacite and dacite.

Tca PYROXENE ANDESITE - Dark-gray porphyritic rock with an aphanitic groundmass. Phenocrysts of plagioclase, pyroxene, and amphibole 1- to 2-mm long in a microcrystalline groundmass with a pilotaxitic texture. Locally the andesite is highly altered to celadonite.

Tcap ANDESITE PYROCLASTICS - Consists of agglomerate, lapilli-tuff, fine ash that is commonly silicified, and breccias of andesitic composition.

Tct TUFF - White or light greenish-gray epiclastic tuff beds and lenses interbedded mostly in pyroxene andesite flows. The beds are poorly consolidated and are susceptible to plastic flow.

INTRUSIVE ROCKS (CRETACEOUS)

Ki HYPABYSSAL INTRUSIVE ROCKS - Highly altered light-brown to white felsite dike containing abundant calcite veinlets.

WOOD RIVER FORMATION

Pw_8 UNIT 8 (LATE(?) PERMIAN) - Gray, reddish-gray, dark-gray siltite, siltstone, sandy limestone, and quartzite. Weathers dark brown to reddish-brown. Contains thin black shale beds with abundant worm tracks identified by Bill Morgan (written commun., 1977) as Scalarituba. Beds are 2-1/2 to 45 cm thick. The thickness of the unit is estimated to be 1770 m. This unit has not been dated but is considered to be Late(?) Permian because of its position above Unit 7.

Pw_7 UNIT 7 (EARLY PERMIAN) - Banded dark-gray chert, siltite, and gray sandy limestone in beds 2- to 5-cm thick. Coarse crinoidal limestone widespread near top of unit. Measured section is 525 m thick. Age is Wolfcampian and Leonardian(?) (Hall, Batchelder, and Douglass, 1974). Thin sections from limestone at the top of the unit contain nodosariids. Bernard Mamet of the University of Montreal (oral commun. to Betty Skipp, 1975) said the assemblage looks post-Carboniferous, possibly Late Permian or Early Triassic.

$PIPw_6$ UNIT 6 (EARLY PERMIAN AND LATE PENNSYLVANIAN) - Chiefly gray and light-brown, fine-grained calcareous sandstone and sandy limestone that weathers dark brown, and lessor fine-grained quartzite and bioclastic limestone. Crossbedding, convolute structures, and load casts are common in the limy sandstones. Douglass (in Hall, Batchelder, and Douglass, 1974) on the basis of fusulinid identifications reports that the upper part is Wolfcampian (Early Permian) and the lower part is Virgilian (Late Pennsylvanian). The thickness is 1740 m.

IPw_5 UNIT 5 (LATE PENNSYLVANIAN) - Predominantly thick-bedded to massive, fine grained, light-brown quartzite with some interbedded fine-grained limy quartzite, calcareous sandstone, and sandy limestone. The quartzite is characteristically shattered to approximately equidimensional blocks 2 to 5 cm on a side. Douglass (in Hall, Batchelder, and Douglass, 1974) reports the age as Virgilian (Late Pennsylvanian). The thickness is 165 m.

IPw_4 UNIT 4 (LATE PENNSYLVANIAN) - Light- to medium gray, fine-grained calcareous sandstone, sandy limestone, and micritic limestone that weathers dark brown to grayish-brown. Cross-bedding is present locally. The age is Virgilian (Late Pennsylvanian) on the basis of fusulinid determinations by Douglass (in Hall, Batchelder, and Douglass, 1974). The thickness is 212 m.

IPw_3 UNIT 3 (MIDDLE PENNSYLVANIAN) - Thin-bedded, pink and gray shaly limestone and medium- to thick-bedded bluish-gray limestone. The unit is Des Moinesian (Middle Pennsylvanian) (Hall, Batchelder, and Douglass, 1974). The unit is 220 m thick.

IPw_2 UNIT 2 (MIDDLE PENNSYLVANIAN) - Medium to thick-bedded, fine-grained, bluish gray limestone, locally bleached and recrystallized to white marble. Contains abundant crinoidal debris, bryozoa and brachiopod fragments, and sparse fusulinids. W. J. Sando, J. T. Dutro, Jr., and R. C. Douglass (written commun., 1971) report a Des Moinesian age. The unit is 15 m thick.

IPw_1 UNIT 1 (HAILEY CONGLOMERATE MEMBER, MIDDLE PENNSYLVANIAN) - Consists chiefly of conglomerate with rounded clasts of chert, fine-grained quartzite, and locally silty limestone and interbeds of gray and greenish-gray quartzite and brown, silty limestone. Bostwick (1955) reports an early Des Moinesian age. The thickness is 120 m in a measured section 4.3 km east of Bellevue. Most exposures of the Hailey Conglomerate in the Wood River area are boudins in the Wood River thrust fault zone. Named the Hailey Conglomerate Member of the Wood River Formation by Thomasson (1959).

Dm MILLIGEN FORMATION (DEVONIAN) - Consists predominantly of interbedded dark-gray siliceous argillite, fine-grained quartzite, siltite, and micritic limestone and some brown silty dolomite, limestone, dark-gray chert, and grit. The upper part contains more limestone, silty dolomite, and siltite, and the lower part dark-gray argillite, fine-grained quartzite, and micritic limestone. Conodonts in limestone in the upper part of the formation are early Frasnian (early Late Devonian) and conodonts from micritic limestone near the middle of the formation are Eifelian (early Middle Devonian)(Sandberg, Hall, Batchelder, and Axelsen, 1975). The formation is estimated to be 1200 m thick.

References cited

Bostwick, D. A., 1955, Stratigraphy of the Wood River Formation, south-central Idaho: Jour. Paleontology, v. 29, p. 941-951.
Hall, W. E., Batchelder, J. N., and Douglass, R. C., 1974, Stratigraphic section of the Wood River Formation, Blaine County, Idaho: U.S. Geol. Survey Jour. Research, v. 2, no. 1, p. 89-95.
Sandberg, C. A., Hall, W. E., Batchelder, J. N., and Axelsen, Claus, 1975, Stratigraphy, conodont dating, and paleontologic interpretation of the type Milligen Formation (Devonian), Wood River Area, Idaho: U.S. Geol. Survey Jour. Research, v. 3, no. 6, p. 707-720.
Thomasson, M. R., 1959, Late Paleozoic stratigraphy and paleotectonics of central and eastern Idaho: Wisconsin Univ., Madison, Ph.D. thesis. 255 p.

This report is preliminary and has not been edited or reviewed for conformity with Geological Survey standards and nomenclature.

PRELIMINARY GEOLOGIC MAP OF THE HAILEY 7 1/2-MINUTE QUADRANGLE, IDAHO

BY

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