

Notes to accompany preliminary geologic map of Fairfax, Virginia, and (part) Seneca, Virginia-Maryland quadrangles, by Allan P. Bennison and Charles Milton.

The manuscript map gives a general representation of the areal geology of that part of Virginia included between the Potomac River on the north, parallel of latitude 38°45' on the south, and meridians 77°15'W and 77°30'W on the east and west respectively. It includes the Great Falls of the Potomac, and the towns of Vienna, Herndon, Fairfax, and Manassas. The scale of the map is about two miles to the inch, the contour interval of the topographic base maps is 20 feet. The base maps are rather old, and obsolete as to culture--the Fairfax sheet having been surveyed in 1911-12, and the Seneca sheet in 1907. However, up-to-date topographic sheets, 1:24,000, with contour interval 10 feet, have recently been prepared, and the geological data now available on the old base are accordingly being revised.

The geological formations shown on the preliminary map are included in four major groups, according to age.

The oldest group is the crystalline schists, and contains metamorphosed sedimentary and igneous rocks. The former have been subdivided into the Peters Creek quartzite and the Clifton phyllite, originally sandy and shaly sedimentary rocks respectively. The igneous rocks include a variety of altered volcanic rocks (metabasalt); also amphibolites, serpentines and talc schists. A zone of varying width, interpreted as Peters Creek schist and Clifton phyllite that has been metamorphosed by the volcanic rocks, is indicated on the map.

Granite occurs in the southeast part of the Fairfax quadrangle. It is designated the Occoquan granite, from excellent exposures some miles to the southeast on Occoquan Creek, where it was formerly quarried. It is mapped with the symbol "gr", and is shown with an irregular border zone of granitized schist, with the symbol "sgr". These rocks are deeply weathered, and outcrops are not prominent in this area. The age of these rocks is not known definitely: they are, however, younger than the schists and older than the Triassic rocks.

The next group in age is a series of Triassic intrusive rocks and sedimentary rocks. A line running generally north and south across the map divides the Triassic rocks from the older schists. However, small bodies of Triassic diabase and sedimentary rocks are found surrounded by schist in the east. All of the Triassic igneous rock in this map is termed diabase, and neither an extensive development of syenitic rock, nor a wide contact zone in the sedimentary rocks is indicated. Also, owing to the preliminary character of this map, no representation of the numerous quartzite bodies in the older schists is shown. The differentiation of the Triassic sedimentary rocks into a shaly phase, the Bull Run Shale, and a sandy phase, the Manassas sandstone, is shown.

Finally the map shows two units of late geological age, probably Quaternary; large gravel deposits near the Potomac River, and alluvial fill occupying the youngest terrace level of the larger streams.

The formational unit names used herein have not been officially approved, and may be changed before publication of the map.

OPEN FILE REPORT: This map or illustration is preliminary and has not been edited/reviewed for conformity with Geological Survey standards or nomenclature.