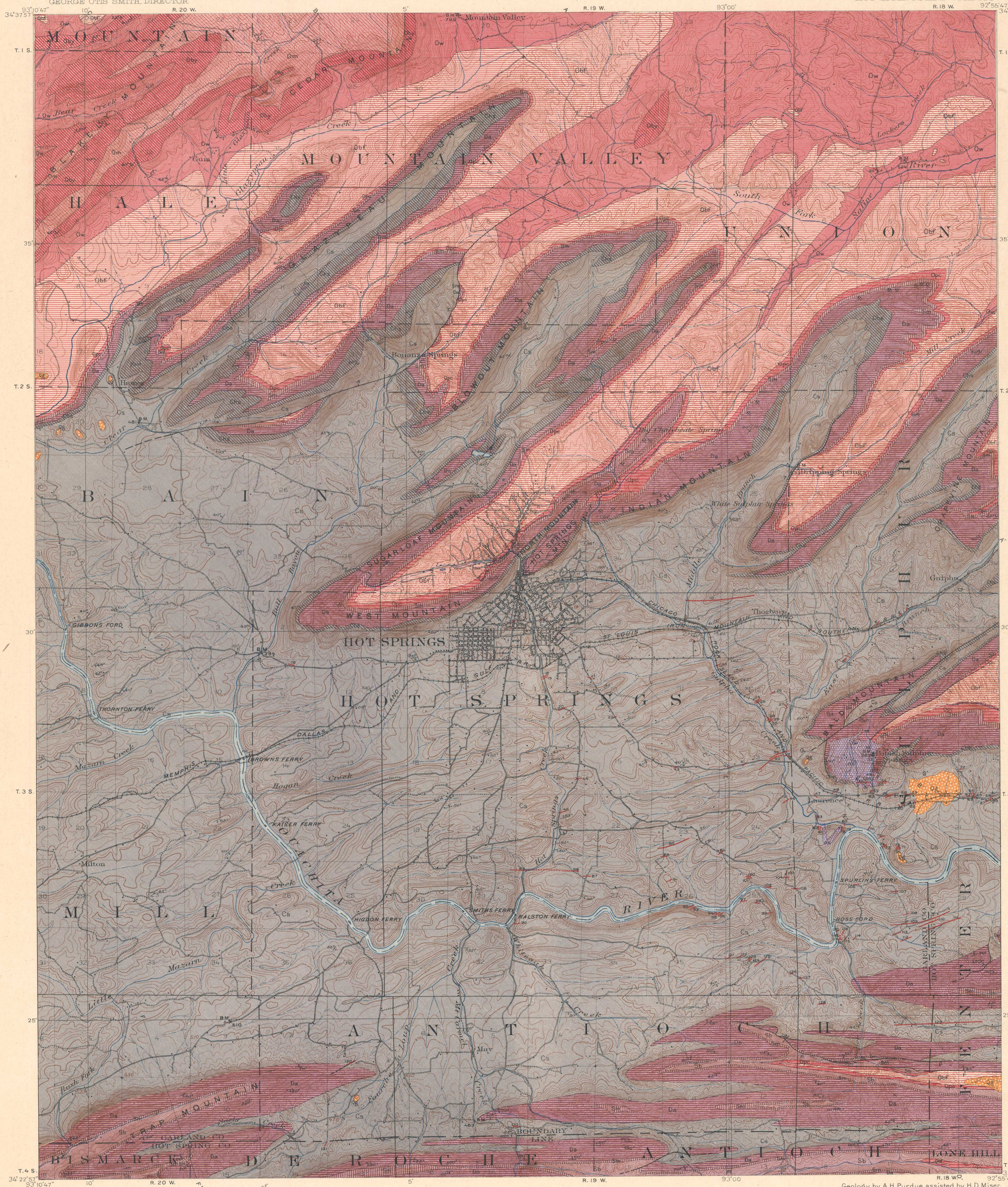
DEPARTMENT OF THE INTERIOR
ALBERT B. FALL, SECRETARY
U.S. GEOLOGICAL SURVEY
GEORGE OTIS SMITH, DIRECTOR

AREAL GEOLOGY

ARKANSAS
HOT SPRINGS AND VICINITY



EXPLANATION

SEDIMENTARY ROCKS

(Areas of subaqueous deposits are shown by patterns of parallel lines; subaerial deposits by patterns of dots and circles)

TERTIARY OR QUATERNARY

Og — Terrace gravel and wash
(coarse gravel and sand on hills and in an elevated valley)

UNCONFORMITY

CARBONIFEROUS — *Mississippian*

Cs — Stanley shale
(black fissile clay shale and hard compact blue sandstone)

Chs — Hot Springs sandstone
(hard quartzitic, laminated gray sandstone, with heavy-bedded conglomerate at base)

UNCONFORMITY

DEVONIAN

Da — Arkansas novaculite
(upper half mainly thin-bedded novaculite and black shale; lower half massive novaculite)

UNCONFORMITY?

SILURIAN

Sm — Missouri Mountain shale
(clay shale, generally dark greenish drab to black, but red in many places)

UNCONFORMITY?

Sb — Blaylock sandstone
(fine-grained gray to green sandstone and dark-colored fissile shale; present only in Mountains along southern border of quadrangle)

UNCONFORMITY?

ORDOVICIAN

Upper? Ordovician

Opc — Polk Creek shale
(black graptolite shale in which graptolites are abundant)

Middle Ordovician

Obf — Bigfork chert
(thin-bedded gray to black chert, much sheltered, and black shale)

Lower Ordovician

Ow — Womble shale
(clay shale in alternating black and green layers and thin lenses of bluish-black limestone)

Oby — Blakely sandstone
(gray and bluish-black sandstone and clay shale in alternating green and black layers)

UNCONFORMITY?

Om — Mazarn shale
(black and green shale in alternating layers, containing beds of thin gray sandstone and bluish-black limestone)

IGNEOUS ROCKS

(Areas of igneous rocks are shown by patterns of triangles and rhombs)

CRETACEOUS

ns — Nephelite syenite
(igneous stock or irregular intrusive mass which cuts Carboniferous and older rocks)

Dikes and sills of porphyritic rocks
(rock types are given in list on back of map)

Faults

Overthrust side of thrust faults

Strike and dip of stratified rocks

Strike of vertical strata

Strike and dip of overturned strata

Novaculite oilstone quarries (mostly abandoned)

Economic data: *Oilstones may be obtained from* Da; *fire and pottery clays from* Da, Cs, Oby, Ow, Om, *and* Sm; *clay and shale for brick from* Cs; *road material from* Obf *and* Da; *building stone for rough masonry from* Chs, Sb, *limestone in* Ow, *and igneous rocks; building sand in small quantities from alluvium along streams; slate from* Opc, Da, *and* Cs; *silica for polishing powder and pottery from* Da; *tripoli for polishing powder from* Da; *iron and manganese ores in* Da. *Springs are most numerous in areas of* Obf, Da, *and* Chs, *but the hot springs of Hot Springs issue from* Cs. *Most of the soils of the quadrangle are rocky and adapted only to forest; soils of parts of* Cs, Obf, Om, *and* Ow *are suitable for general farming; the igneous rocks at Potash Sulphur Springs have rich soil suitable for farming and fruit culture; the best soil for farm land is the scanty alluvium along streams.*

List of dike and sill rocks on back of map

Jno. H. Renshawe, Topographer in charge.
Triangulation by Geo. T. Hawkins.
Topography by Robert Muldrow.
Surveyed in 1896.
Partial revision in 1910-1911 by C. L. Sadler and F. B. Barrett.

TRUE NORTH
MAGNETIC NORTH
6°
APPROXIMATE MEAN DECLINATION, 1921

Scale $\frac{1}{62500}$

1 ½ 0 1 2 3 4 Miles

1 ½ 0 1 2 3 4 5 Kilometers

Contour interval 20 feet.
Datum is mean sea level.
Edition of Feb. 1922

Geology by A. H. Purdue assisted by H. D. Miser.
Surveyed in 1909 to 1911.