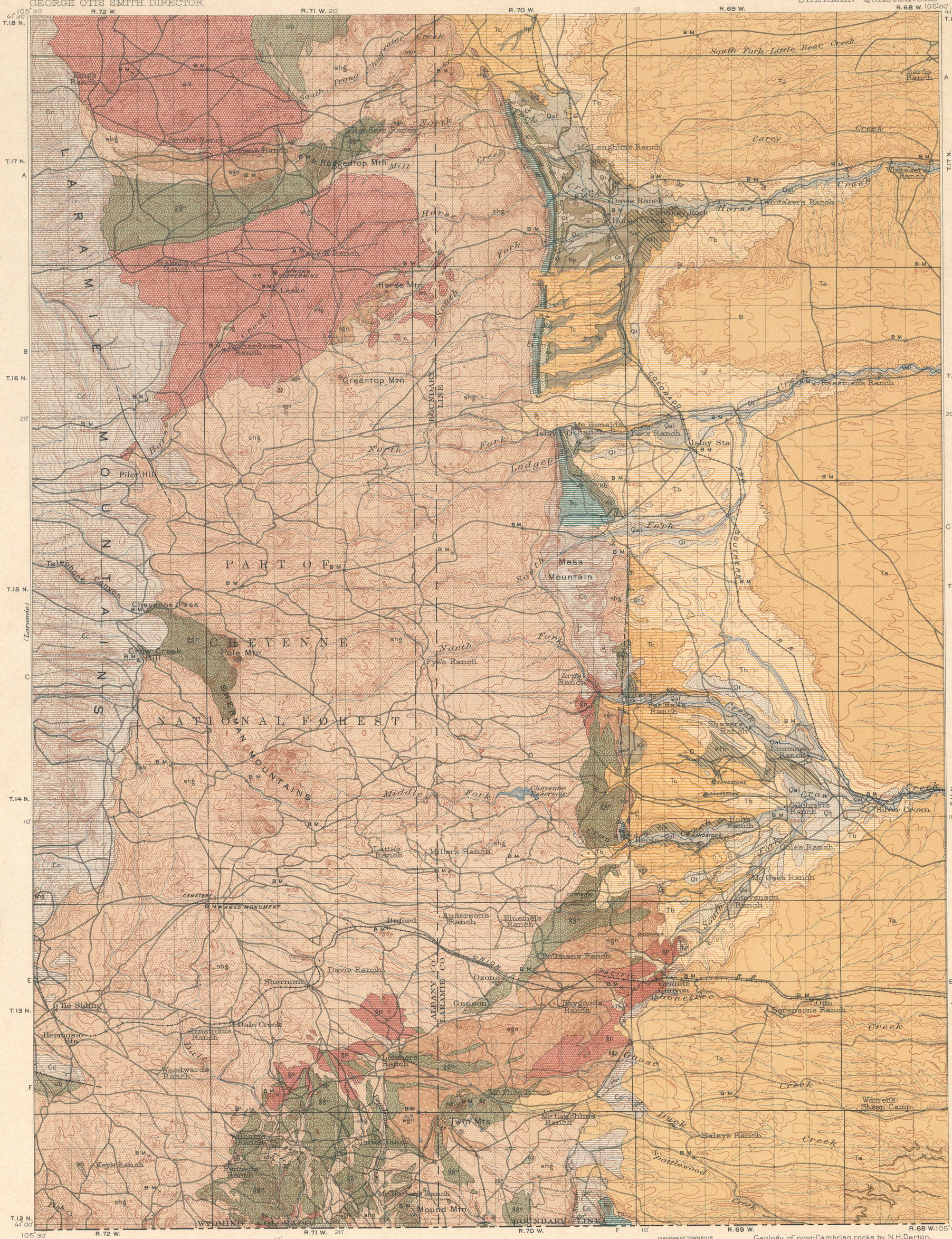
U.S. GEOLOGICAL SURVEY
GEORGE OTIS SMITH, DIRECTOR

AREAL GEOLOGY

WYOMING
SHERMAN QUADRANGLE



E.M. Douglas, Geographer in charge.
Topography by T.M. Bannon.
Triangulation by R.H. Chapman.
Surveyed in 1903.

APPROXIMATE MEAN DECLINATION 1903.

Scale $\frac{1}{125000}$

Contour interval 50 feet.
Datum is mean sea level.
Edition of Sept. 1909.

DIAGRAM OF TOWNSHIP

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

Geology of post-Cambrian rocks by N.H. Darton, assisted by C.E. Siebenthal.
Geology of pre-Cambrian rocks by Eliot Blackwelder.
Surveyed in 1905-1908.

LEGEND

SEDIMENTARY ROCKS

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

QUATERNARY

- *Recent* — Qal — **Alluvium** *(only the larger areas shown)*
- *Pleistocene* — Qt — **Higher terrace deposits** *(not everywhere distinguishable from local products of disintegration)*

TERTIARY

- *Miocene* — Ta — **Arikaree formation** *(sand, gravel, bowlders, coarse sandstone, and a lens of limestone, ls)*

UNCONFORMITY

- *Oligocene, White River group* — Tb — **Brule clay** *(mostly pale-buff, massive, hard, sandy clay)*
- Tc — **Chadron sandstone** *(mostly coarse, hard, brown, massive sandstone)*

UNCONFORMITY

CRETACEOUS

- *Upper Cretaceous, Montana group* — Kfh — **Fox Hills sandstone** *(soft, gray, massive sandstone with gray shale)*
- Kp — **Pierre shale** *(dark shale grading up into sandstone)*
- *Upper Cretaceous, Colorado group* — Kn — **Niobrara limestone** *(chalky and impure in upper portion)*
- Kb — **Benton shale** *(gray shale with concretions near top and sandstone in lower part)*
- Kc — **Cloverly formation** *(hard, massive gray to brown sandstone with purple to gray shale in middle)*

CRETACEOUS OR JURASSIC

- Km — **Morrison formation** *(massive, light greenish-gray to maroon shale and thin limestone)*

JURASSIC

- Js — **Sundance formation** *(buff, slabby sandstone and gray, sandy shale)*

UNCONFORMITY

TRIASSIC OR PERMIAN?

- Ic — **Chugwater formation** *(red, sandy shale and sandstone with thin limestones and thick beds of gypsum)*

UNCONFORMITY?

CARBONIFEROUS

- *Pennsylvanian* — Cc — **Casper formation** *(limestone and red and gray sandstone)*

IGNEOUS ROCKS

(Areas of igneous rocks are shown by patterns of triangles and rhombs; metamorphism is indicated by hachures)

PRE-CAMBRIAN

- shg — **Sherman granite** *(coarse pink granite penetrated by numerous dikes)*
- as — **Anorthosite** *(gray anorthosite and diorite)*
- gp — **Granite porphyry** *(gray quartz-feldspar-hornblende porphyries)*
- ob — **Older basic intrusives** *(dark diorite, gabbro, syenite, and granodiorite, some gneissic; only the larger masses shown)*
- sgo — **Granite gneiss** *(coarse, grayish-pink, biotite gneiss, and fine, pink, muscovite gneiss)*
- sgn — **Schist and gneiss** *(schistose basic and acidic lavas, with, doubtfully sedimentary schists)*

Faults

Concealed faults *(covered by later deposits)*

Strike and dip of stratified rocks
Strike of vertical strata

Mines and quarries