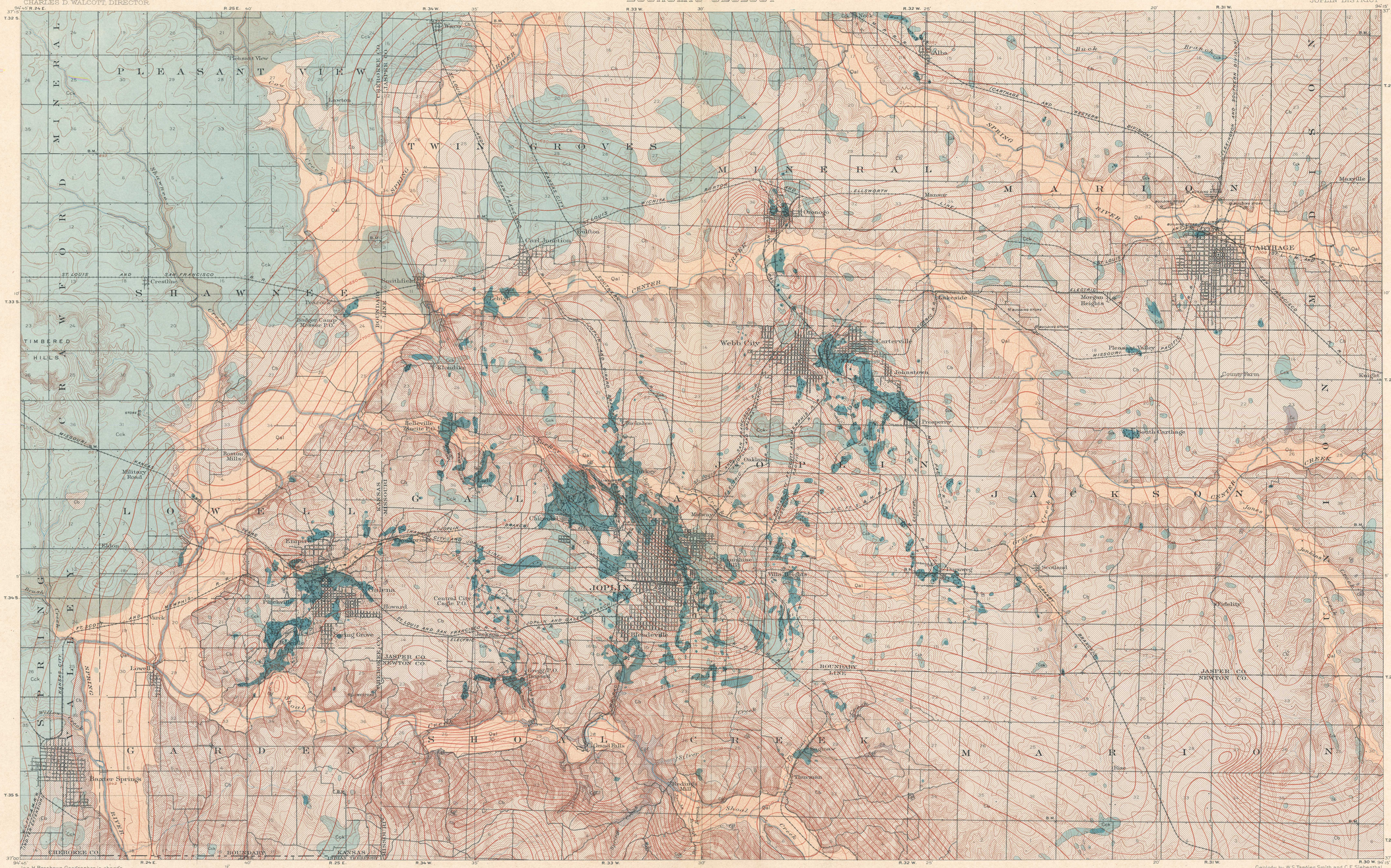
U. S. GEOLOGICAL SURVEY
CHARLES D. WALCOTT, DIRECTOR

ECONOMIC GEOLOGY

MISSOURI-KANSAS
JOPLIN DISTRICT



LEGEND

SEDIMENTARY ROCKS

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

QUATERNARY

Qal — Alluvium *(only the larger deposits represented)*

CARBONIFEROUS

Pennsylvanian

Cck — Cherokee formation *(dark-gray shale and gray to half sandstone)*

UNCONFORMITY

Mississippian

Cc — Carterville formation *(oolite, dark gray shale, and occasional sandstones)*

UNCONFORMITY

Cb, Cgf — Boone formation and Grand Falls chert *(limestone and chert)*

Known productive areas

Zinc and lead *(areas known to have yielded ore in paying quantities)*

- Quarries
- Lead and zinc mines
- Concentration mills
- Mill and shaft
- Mill and shaft connected by tramway

Only mines and mills that were working in 1903 are shown

900 — *Structure contours* *(showing the elevation above sea and the configuration of the surface of the Grand Falls chert; contour interval is 10 feet)*

Jno. H. Renshawe, Geographer in charge.
Control by Geo. T. Hawkins.
Topography by Wm. H. Griffin and Basil Duke.
Surveyed in 1900.

Scale $\frac{1}{62500}$

Contour interval 10 feet.
Datum is mean sea level.

Edition of Dec. 1906.

Geology by W. S. Tangier Smith and C. E. Siebenthal.
Surveyed in 1901, 1902, and 1903.