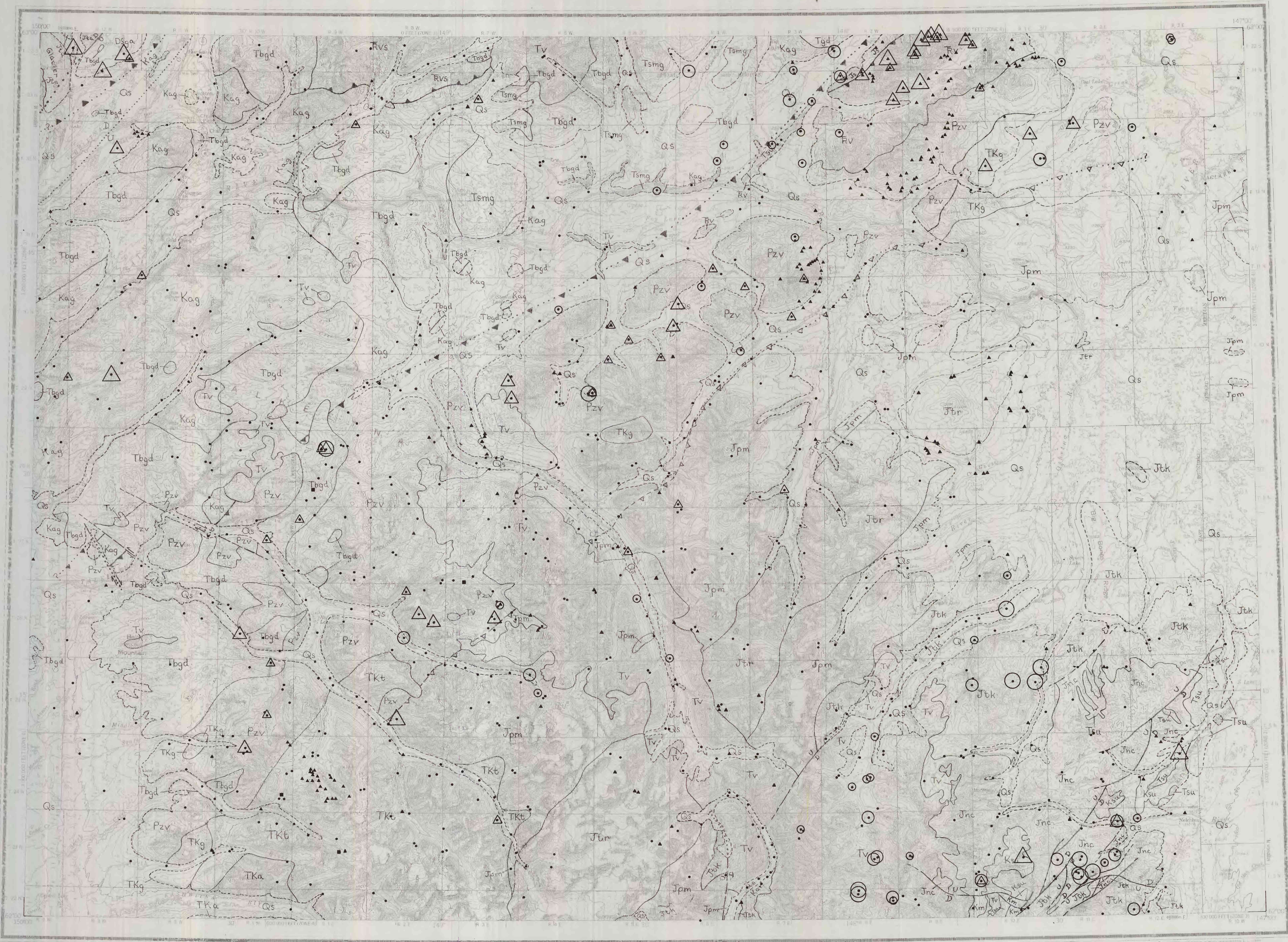


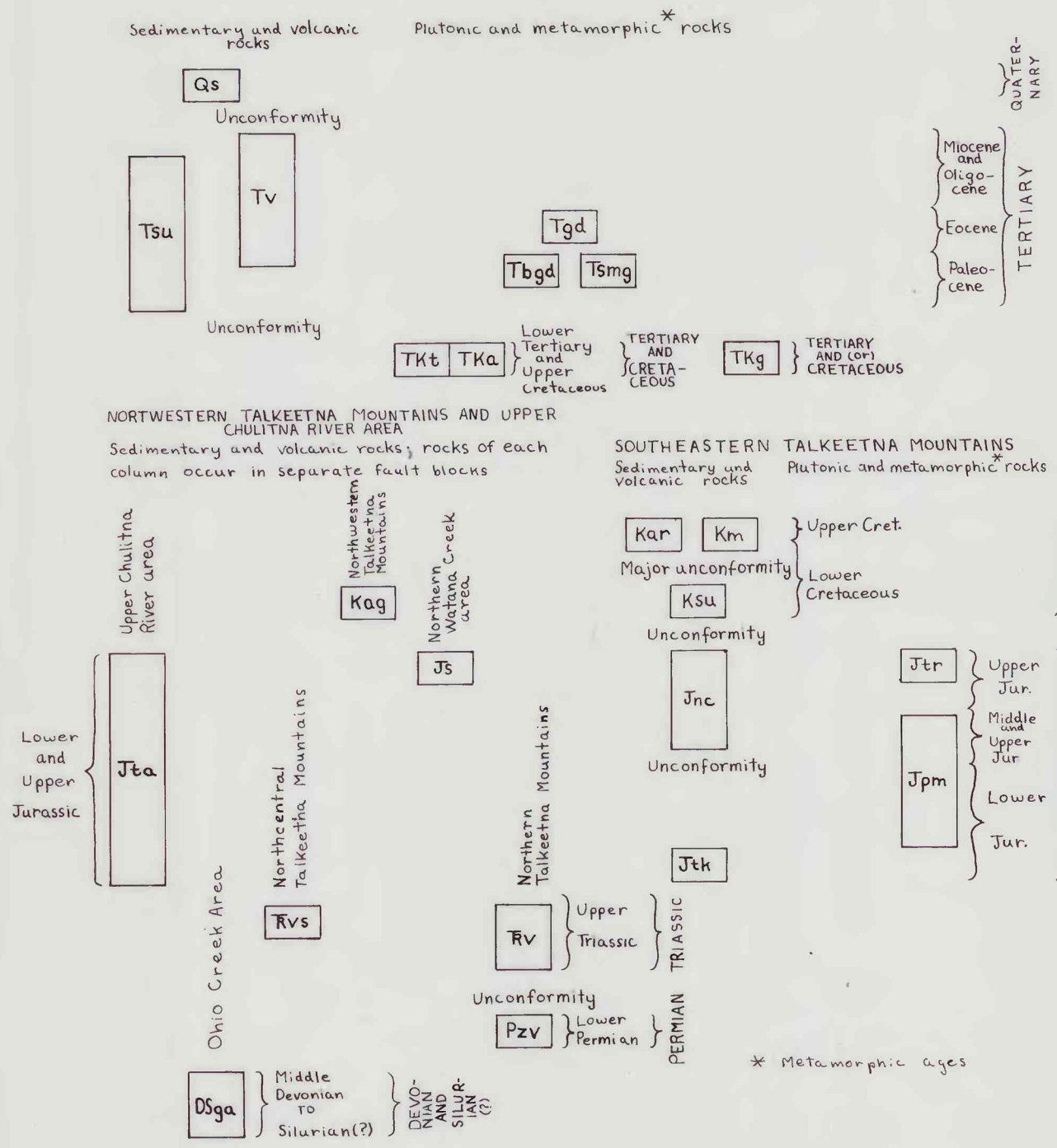
Folio of the TALKEETNA MOUNTAINS Quadrangle, Alaska



Base map from U.S. Geological Survey, 1:250,000
Talkeetna Mountains Quadrangle, Alaska, 1955

CORRELATION OF MAP UNITS

Geology generalized after Csejty and others, 1978



DESCRIPTION OF MAP UNITS

- Qs SURFICIAL DEPOSITS, UNDIFFERENTIATED (Quaternary).
- Tv VOLCANIC ROCKS, UNDIFFERENTIATED (Paleocene to Pleistocene) (Felsic and mafic subaerial volcanic rocks and related shallow intrusions).
- Tsu TERTIARY SEGMENTARY ROCKS, UNDIFFERENTIATED (Paleocene to Miocene)--Terrestrial, mostly fluvialite strata with a few lignite interbeds.
- Tgd GRANODIORITE (Eocene).
- Tbgd BIOTITE AND HORNBLENDE GRANODIORITE (Paleocene, in part early Eocene).
- Tsmg SCHIST, MIGMATITE, AND GRANITE (Paleocene intrusive and metamorphic ages)--Migmatitic border zone of biotite and hornblende granodiorite.
- TKt TONALITE (Upper Cretaceous and lower Paleocene).
- TKa ADAMELITE (Upper Cretaceous and lower Paleocene).
- Tkg GRANITIC ROCKS, UNDIFFERENTIATED (Cretaceous and (or) Tertiary).
- Kar ARKOSE RIDGE FORMATION (Lower and (or) Upper Cretaceous).
- Ks MYANUSKA FORMATION (Lower and Upper Cretaceous).
- Ksu SEDIMENTARY ROCKS, UNDIFFERENTIATED (Lower Cretaceous)--shallow marine sequence of calcareous sandstone, claystone, and massive clastic limestone.
- Kag ARGILLITE AND LITHIC GRAYWACKE (Lower Cretaceous)--intercalated, marine, flyschlike sequence.
- Jb SEDIMENTARY AND VOLCANIC ROCKS, UNDIFFERENTIATED (Upper Jurassic)--marine sequence of argillite, graywacke, conglomerate, and andesitic to latitic felspar porphyry dikes and intercalated flows.
- Jtr TRONDHJEMITE (Upper Jurassic).
- Jnc JURASSIC SEDIMENTARY ROCKS, UNDIFFERENTIATED (Middle and Upper Jurassic)--includes Naknek and Chitino Formations, and Tuxedni Group.
- Jta CRYSTAL TUFF, ARGILLITE, CHERT, GRAYWACKE, AND LIMESTONE (Lower to Upper Jurassic)--shallow to moderately deep marine, intercalated sequence.
- Jpm PLUTONIC AND METAMORPHIC ROCKS, UNDIFFERENTIATED (Lower to Upper Jurassic)--Mainly quartz diorite, granodiorite, amphibolite, and greenschist.
- Jtk TALKEETNA FORMATION (Lower Jurassic).
- Jks METASALT AND SLATE (Upper Triassic)--intercalated, shallow-water marine sequence.
- Jbv BASALTIC METAVOLCANIC ROCKS (Upper Triassic)--Mainly shallow water marine metabasalt flows.
- Pzv BASALTIC AND ANDESITIC METAVOLCANIC ROCKS (Pennsylvanian(?) and Early Permian)--Metamorphosed marine sequence of inter-layered basaltic to andesitic flows, tuffs, coarse volcanoclastic rocks, and subordinate mudstone and limestone.
- TSa GRAYWACKE, ARGILLITE, SHALE, AND LIMESTONE (Siliurian?) to Middle Devonian--intercalated marine sequence, probably continental margin deposits.

EXPLANATION OF GEOLOGIC MAP SYMBOLS

- Contact, approximately located
- Approximate contact of surficial deposits
- Fault
- Long dashed where approximately located, short dashed where inferred; dotted where concealed. U indicates upthrown side where direction of displacement is known. Arrows indicate relative lateral movement
- Thrust fault
- Long dashed where approximately located, dotted where concealed. Teeth indicate upthrown side.
- Approximate axis of intense shear zone of variable width, possibly marking a thrust fault
- Dotted where concealed; teeth indicate possible upthrown side of postulated thrust

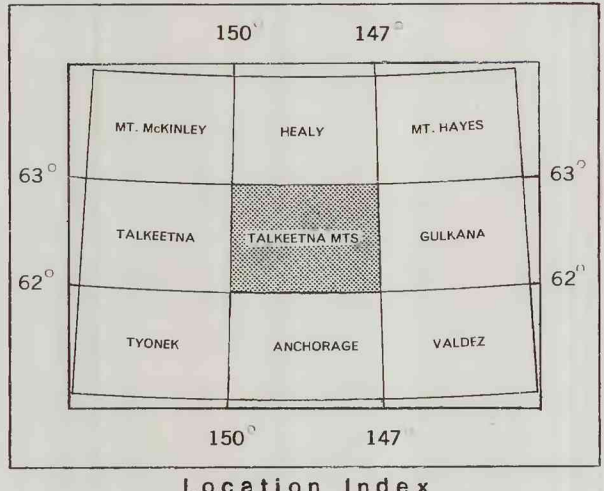
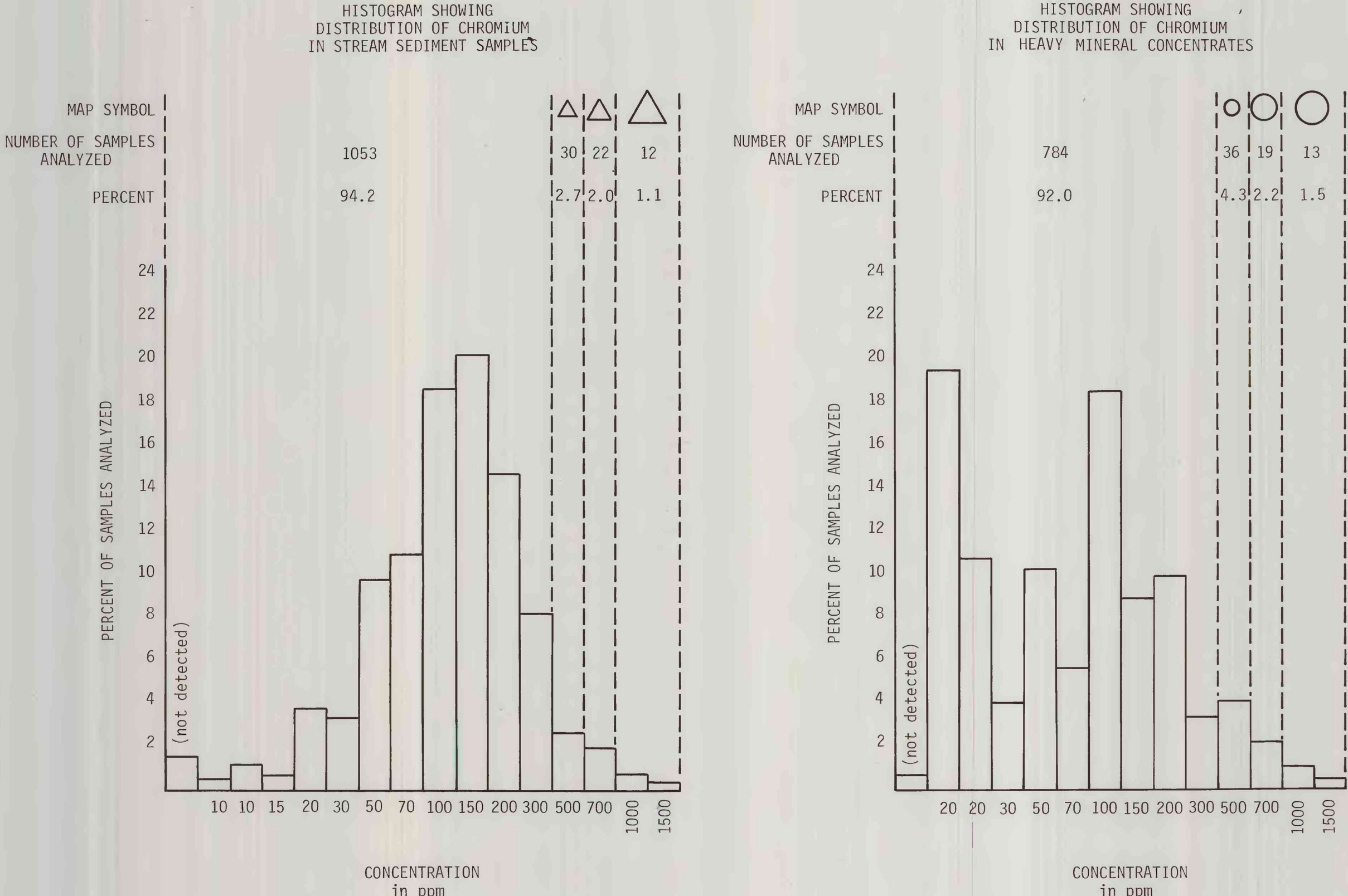
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EXPLANATION OF GEOCHEMICAL MAP SYMBOLS

- Location of stream sediment sample
- Location of heavy mineral concentrate sample
- Location of both stream sediment and heavy mineral concentrate sample
- Stream sediment sample with possibly significant chromium value. Increase in symbol size indicates higher analytical value as shown on histogram.
- Heavy mineral concentrate sample with possibly significant chromium value. Increase in symbol size indicates higher analytical value as shown on histogram.

IN the course of U.S. Geological Survey investigations of the Talkeetna Mountains quadrangle, 1118 stream sediment, 852 heavy mineral concentrate, and 501 rock samples were collected. All of these samples were analyzed for up to 30 elements by a six-step semi-quantitative spectrographic method (Grimes and Marranzino, 1968). Most of the stream sediment and rock samples were also analyzed for up to 4 elements by atomic absorption spectrophotometry, as described by Ward and others (1969). The present map shows the sample collection sites of 1117 stream sediment samples and 852 heavy mineral concentrates which were analyzed for chromium by the spectrographic method. Complete analytical data plus location maps, station coordinates, and discussion of sampling and analytical procedures for samples from sites shown on the present map are published in a report by Miller and others (1978).

Concentration of metals in geochemical samples varies for different lithologies and in different areas. Because of this, as well as variability introduced from other sources such as sampling practice, analytical variance, and degree of chemical weathering, it is impossible to select a specific analytical level above which values might indicate the presence of chromium deposits. For this reason, the analytical values have been grouped into ranges (see histograms), each range being represented by a different symbol on the map. Higher values may indicate a greater likelihood of chromium deposits, but confidence levels are low for "single-element" anomalies and for results which are not supported by neighboring values.

MAP SHOWING GEOCHEMICAL DISTRIBUTION AND ABUNDANCE OF CHROMIUM IN STREAM SEDIMENTS
AND HEAVY MINERAL CONCENTRATES, TALKEETNA MOUNTAINS QUADRANGLE, ALASKA

by
R. J. Miller, G. C. Curtin, and Béla Csejty, Jr.
1978

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