# DEPARTMENT OF THE INTERIOR, UNITED STATES GEOLOGICAL SURVEY, PROFESSIONAL PAPER 61: GLACIATION OF THE UINTA AND WASATCH MOUNTAINS

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### WALLACE W. ATWOOD

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### DEPARTMENT OF THE INTERIOR UNITED STATES GEOLOGICAL SURVEY

GEORGE OTIS SMITH, DIRECTOR

PROFESSIONAL PAPER 61

### GLACIATION

OF THE

### UINTA AND WASATCH MOUNTAINS

BY

WALLACE W. ATWOOD



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# GLACIATION OF THE UINTA AND WASATCH MOUNTAINS.

By WALLACE W. ATWOOD.

#### GLACIATION OF THE UINTA MOUNTAINS.

#### LOCATION AND EXTENT OF AREA.

The Uinta Mountains are located in the northeastern portion of Utah and consist of a single range of peaks extending in a general east-west direction. If the crest line this range were continued westward it would cross the Wasatch Range nearly at a right angle and reach the great Bonneville basin a few miles south of Salt Lake City. These two mountain ranges therefore stand nearly at right angles to each other, and yet are separated by a distance of not more than 10 miles. (See fig. 1.)

more than 10 miles. (See fig. 1.)

The portion of the Uinta Mountains examined for evidence of ancient glaciation extends from the west end of the range, in longitude 111° 15′ E. to longitude 109° 40′. Farther east the range descends in elevation and the topographic map of this portion of the mountains exhibits no indications of ice action. The areai extent of the region studied is somewhat over 2,500 square miles. It includes the east-central portion of the Coalville (Utah-Wyo, undarangle, all of the Hayden Peak and Gilbert Peak (Utah-Wyo,) quadrangles, the greater portion of the Marsh Peak (Utah-Wyo,) quadrangle, and some adjoining territory north and south of these quadrangles.

#### TOPOGRAPHIC RELATIONS.

The Uinta Mountains rise somewhat gradually above the plateau countries to the north and south and reach their maximum elevation in the central portion of the range, where the highest peaks stand 13,400 to 13,525 feet above sea level. The maximum elevation of the mountains above the surrounding country is about 7,000 feet. From the high central portion of the range the crest line descends gently both to the east and to the west. At the west end the descent is rather abrupt, but toward the east the range becomes irregular in form and ill defined, so that it is not easily distinguished from the bordering plateaus and mesas, and thus gradually fades out.

The range is widest in its central portion, where it measures, in a north-south line, fully 35 miles. To the east and west of the central portion the decrease in width is very noticeable. To the west the narrowing is symmetrical, and the terminus of the range is lobate in form, being sharply defined at the north and south by the valleys of Weber and Provo rivers, respectively. To the east the narrowing is not so pronounced nor so symmetrical, and this feature of the range, together with its general flattening out in this direction, accounts in part for its less conspicuous eastern terminus. The length of the range, as defined by the Fortieth Parallel Survey, is about 150 miles.<sup>2</sup> This report is concerned with the western 85 miles of the mountains.