

## CONFIGURATION OF THE PRECAMBRIAN SURFACE OF COLORADO

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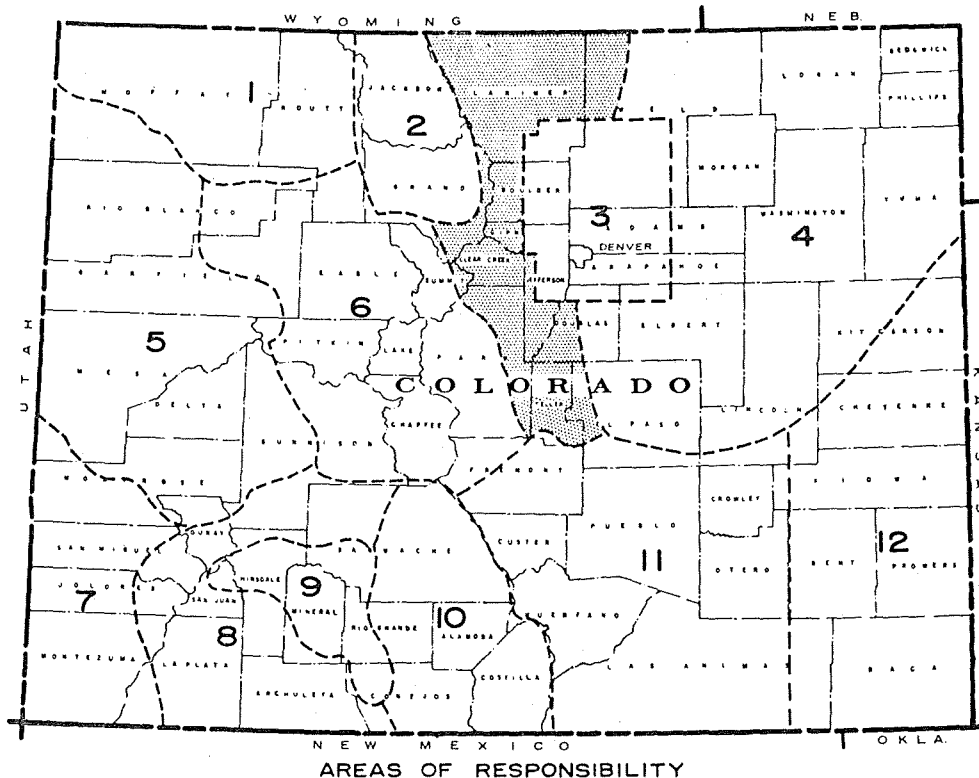
### GENERAL DISCUSSION

The purpose of the map is to show a relatively detailed configuration of the Precambrian crystalline rock surface of the state of Colorado. Topography developed on this surface by successive geologic events serves to reflect major uplifts and depressions of the basement. It also depicts the influence of such large scale structures on the overlying sedimentary rocks.

The project was initiated by the Research Committee in March 1967. Existing regional maps such as the Basement Map of North

America (1967) and the recently published Basement Rock Map of the United States (1968) served as useful guides and references. Committee members chose areas of the state based on their experience and interest in which to compile as much information as possible on the Precambrian datum points.

Each area of the state was compiled by the individuals indicated on the index map (Fig. 1). All compiling was done at a scale of 1:250,000 using Army Map Service topographic maps as bases. Compiled maps were reduced to a scale of 1:500,000 for submittal to the publisher.



- AREAS OF RESPONSIBILITY**
- |                |                                 |   |                               |
|----------------|---------------------------------|---|-------------------------------|
| 1. L. Manion   | 4. H. C. Bemis & J. D. Meinsohn | 7. G. H. Faister, W. F. Robertson & D. Bettenhausen | 10. R. Glanzman               |
| 2. J. Behrendt | 5. R. S. Bryson & R. Holt       | 8. R. C. Robeck                                     | 11. R. C. Lewis & D. E. Wilde |
| 3. J. D. Haun  | 6. R. H. DeVoto & F. Peal       | 9. Editor (P. W. Lipman; oral communication)        | 12. J. C. MacLachlan          |

Fig. 1. Index map showing areas of responsibility for the compilation of the Precambrian surface of Colorado.

A completed map at this scale is available from the R. M. A. G. for a nominal reproduction cost. Further reduction was made to the scale of this report map to make possible the inclusion of the map in a regular issue of *The Mountain Geologist*.

In order to produce a reasonably complete map of the Precambrian surface it was necessary to resort to an indirect approach in some areas. The number of wells drilled into Precambrian rocks in the deeper basins of the state is minimal. For these situations, higher, more extensively penetrated horizons were first contoured, after which, the depth to the Precambrian surface was calculated from isopach maps of the intervening interval. Both the Precambrian tests and the projected control points were then utilized in contouring the low-

er surface. In some cases more than one step was involved in the extrapolation. For example, in southeastern Colorado the top of the Mississippian and the top of the Arbuckle were contoured, and two isopach maps were successively used to project downward. Locally, in this area, the Shawnee Group was also used for one higher level of contouring. In other areas the top of the Dakota Group (or "J" sandstone) was the preliminary surface contoured and an isopach map between this and the Precambrian was used. By incorporating geophysical data in some areas, further refinement of the Precambrian surface was possible. The bibliography at the end of the text reflects the published information consulted in this project, but much unpublished material has also been incorporated. No attempt has been made to

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distinguish the varying degrees of reliability on the maps, but it should be understood that areas with less well control are interpretive and subject to change. The wells shown on the map are those which either reached the Precambrian surface, or were bottomed so close as to constitute reasonable control.

The Research Committee is grateful to the many individuals and companies who provided advice and help for the project. Thomas L. Thompson coordinated the efforts of the compilers in the early stages of the project. Thanks are due the R.M.A.G. Board members for the years 1967, 1968, and 1969; especially John N. Stoddard, John C. Harms, and John R. Donnell, who were Board representatives for the Research Committee.

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During the compilation stage, Ted L. Strickland of the Rocky Mountain Well Log Service Company very generously made available well logs in eastern Colorado for the use of the project. The help of these, and other people not specifically mentioned made possible the completion of this undertaking.

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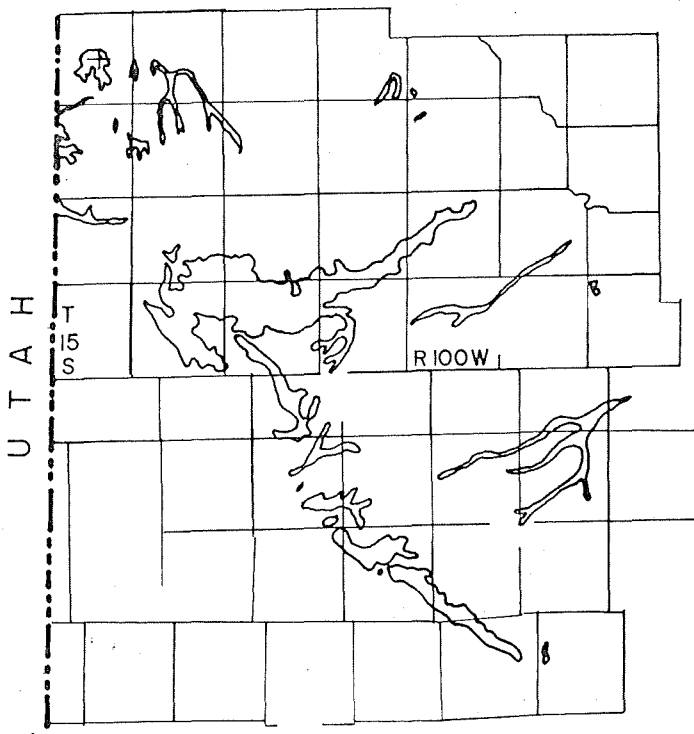
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Errata for Plate I



Precambrian outcrop area  
on Uncompahgre Uplift