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News Release

GRADUATE RESEARCH CENTER OF THE SOUTHWEST  
SOUTHWEST CENTER FOR ADVANCED STUDIES

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RELEASE

- Mason City Globe-Gazette
- Iowa Falls Citizen
- Webster City Freeman-Journal
- Fort Dodge Messenger and Chronicle
- Boone News Republican
- Ames Tribune
- Marshalltown Times Republican
- Des Moines Register and Tribune
- Waterloo Courier

EDS: FYI - Four astrogeodetic deflection stations were used in obtaining data for the computer calculations mentioned in this story. These stations were not related to towns in the authors' report. By plotting, the four stations appear to have been near Rockwell City, Des Moines (Adelphi), Oelwein (Buck Creek), and Garner. Suggest local checks on this point, if there is a Coast and Geodetic Survey office nearby. Whether the stations are permanent is not known to me

--Al Mitchell

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IOWA HAS "MOUNTAIN RIDGE" -- ON A GRAVITY MAP

EDITOR'S NOTE: (Use if desired) The story about Iowa's "invisible mountains" was a release from more than 170 scientific papers by 220 authors, presented Sept. 1-3 at the Fifth Western National meeting of the American Geophysical Union in Dallas. Al Mitchell, a former Iowa newsman and technical writer in Iowa City, Des Moines, Mason City, Ames and Cedar Rapids, was press officer for the Texas meeting. He is now an eight-year Texan, and Director of Information for the Graduate Research Center of the Southwest, a non-profit research institution that specializes in scientific education beyond the doctor's degree.

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DALLAS --

The September nights ought to be crisp and cool on that 4,000 foot "mountain ridge" in north central Iowa.

That's what you might think if you looked casually at a contour map shown here last week (9-2-65) by two visiting geologists. Especially if you looked at the map under a Texas sun, nearly 100 degrees' worth, while standing on the flat blacklands that stretch north from Dallas.

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You might wonder whether snow in the pass at Blairsburg (should it be called Blair's Peak?) ever stops the sports fans when Webster City plays Iowa Falls. Highway 20 could be tough to drive, from one valley to the other.

The highest point in a 50-mile wide mountain ridge from northeast Kansas to Lake Superior seems to be in northeast Hamilton county, if you compare the contour map and a road map of Iowa.

Of course, it's a little hard to see how Highways 20 and 69 can follow section-line courses to their junction at Blairsburg, if the hill country was really there. It's also hard to see how the young Iowa river could climb squarely across the ridge from Dows toward Popejoy, and then spill down again to pass Alden.

The "mountains" aren't really there. Here's the explanation.

The scientists were showing and talking about a ridge of unusually strong gravity -- what keeps you on the ground.

Their contour map simply looks like a Great Smokies ridge had been moved to a northeast-southwest line that runs across the Wright-Franklin-Hamilton-Hardin county junction.

What Donald A. Rice and Curtis W. Thorson were explaining here is "Geodetic Anomalies Associated with the Mid-Continent Gravity High." Their scientific paper under that title was given at the Fifth Western Meeting of the American Geophysical Union in Dallas. More than 400 scientists exchanged views at the meeting, which ran three days -- and included the first public discussions of the Mariner IV picture-taking flight to Mars by the leading experimenters.

Both Rice and Thorson are with the U. S. Coast and Geodetic Survey. They reported that there's quite a bit more gravitational pull along a 500-mile ridge from Kansas to Lake Superior than you'd expect. The disturbance is about what would be caused by presence of a mountain range standing 4,000 feet above the nearby country, and nearly a mile above sea level.

Blairsburg and Williams, near a "peak", and Dows and Popejoy, down a "slope" are not really mile high cities. But they fall within the greatest anomaly contour of the whole system -- where the gravity disturbance is most severe.

Data for the report given here came from observations over recent years, during the course of the USC&GS area coverage program. The

contours were drawn from computer calculations for 42 points, spread evenly over one square degree. Location of the one-degree rectangle is 42 to 43 degrees north, 93 to 94 degrees west. This geographic box runs very nearly on Highway 30 from Ogden past Marshalltown; north to near Greene, west near Sheffield and Belmond to near Renwick, and south between Webster City and Fort Dodge to near Ogden.

Highway 20 runs east-west near the center of the one-degree area and the "peak" of the gravity high is near its junction with Highway 69 at Blairsburg. In future years, when Interstate 35 goes north through the same country, the ridge will cut across it just west of Williams -- assuming no changes in gravity.

With no wish to be uncomplimentary about the Hawkeye state and the whole region of the gravity high, the scientists describe it as "quite unremarkable topography; local relief does not usually exceed 100 meters." That means it's hard to find a hill as high as 400 feet.

Was Meredith Willson commenting on an effect of gravity in the "Music Man?" He described Iowans as so "by-gum stubborn we can stand touching noses for a week at a time (and never see eye to eye)." The second contour on the gravity map starts from Ridgeport (appropriate) north of Boone and stretches across Highway 3 nearly to Willson's home town of Mason City -- which became "River City" in the musical show.

What causes all this gravity disturbance, that looks like mountains on a contour map? Best reasoning, geologists say, is there must be unusually dense rock or possible lava flows deep under the Iowa soil. The probable location is at Pre-Cambrian depth. Age of Pre-Cambrian materials may be as much as 4.5 billion years. Pre-Cambrian eras began that far back, and lasted 3.9 billion years. Earth residents were algae and fungi. Fishes, reptiles, mammals and man came along much later.