GEOLOGISTS WHO HAVE CONTRIBUTED INFORMATION FOR SPECIFIC AREAS

can be followed for several miles. In the region included in the restored section, sandstone units S1, S2, S3, and S4 are uncon-

from place to place owing to lateral variations in both formations.

and locally the contact is a slight angular unconformity. At

conglomeratic sandstone that rests disconformably on claystone

part of the Lakota generally weathers to more vivid colors than

pebbles of chert and quartzite.

two formations.

claystone in the Morrison and is sandy or locally contains rounded

Where the Lakota overlies the Unkpapa sandstone, an uncon-

formity can generally be seen between sandstone beds of the

contacts may be slight angular unconformities.

with that used previously in the Black Hills.

sandstone of the Unkpapa.

STRATIGRAPHIC RELATIONS

Unkpapa sandstone.-The Unkpapa sandstone has a maximum

thickness of about 250 feet in the Angostura Reservoir and

Cascade Springs quadrangles. It thins westward, and in the Flint

Hill and Minnekahta quadrangles pinches out under the Morrison

formation. Most of the Unkpapa consists of massively bedded

friable well-sorted fine-grained sandstone banded and mottled

shades of gray, red, and purple. A few feet of maroon siltstone

overlies the sandstone locally in the thickest sections. At places

siltstone or sandstone at the top of the formation grades upward

into gray carbonaceous claystone assigned to the Lakota forma-

tion; where the carbonaceous claystone beds are absent, sandstone

at the base of the Lakota rests unconformably on siltstone or

Morrison formation. - The Morrison formation ranges in thickness

from about 70 to 120 feet in most parts of the area shown by the

restored section, although locally it is somewhat thicker or

thinner, and in parts of the Clifton, Dewey, and Storm Hill quad-

Two main units can be recognized at many places. The lower

unit ranges in thickness from about 60 to 80 feet and consists of

greenish-gray and grayish-red calcareous claystone interbedded

with gray silty limestone and marl and some light-gray calcareous

rangles it was entirely removed by post-Morrison erosion.

formable on the underlying beds over large areas, and locally the Angostura Reservoir quadrangle... J. J. Connor Burdock quadrangle... R. W. Schnabel The sandstone bodies designated S4 are markedly linear in Carlile quadrangle... M. H. Bergendahl plan view and apparently filled channels in the upper part of the Cascade Springs quadrangle... E. V. Post Clifton quadrangle....N. P. Cuppels The stratigraphic relations at the Lakota-Morrison contact vary Dewey quadrangle.. D. A. Brobst Edgemont quadrangle..J. D. Ryan In general, the contact is placed at the base of the first carbo-Edgemont NE. quadrangle... G. B. Gott and R. W. Schnabel naceous or sandstone bed above typical calcareous claystone and Fanny Peak quadrangle..D. A. Brobst limestone of the Morrison. In parts of the Storm Hill, Clifton and Flint Hill quadrangle. Henry BellIII and E. V. Post Dewey quadrangles the Lakota truncates the Morrison formation Hot Springs quadrangle... D. E. Wolcott and C. E. Price Jewel Cave S W. quadrangle.. W. A. Braddock other places the basal part of the Lakota is a thick, locally Minnekahta quadrangle...V. R. Wilmarth Storm Hill quadrangle G. A. Izett and R. C. Vickers of the Morrison. At a few places the Lakota lacks a thick basal Strawberry Hill quadrangle.... R. E. Davis and G. A. Izett sandstone or is not carbonaceous, and no obvious physical break T. L. Creek quadrangle...C. S. Robinson separates the formations. At these places claystone in the basal Other areas.... ...W. J. Mapel, C. L. Pillmore,

> Correlations in the quadrangles listed above based on geologic mapping at the scales of 1:7 200 and 1:12 000; correlations in other areas based on tracing selected beds between stratigraphic sections mostly about half a mile apart.

and K. M. Waagé.

DIAGRAMMATIC RESTORED SECTION OF THE INYAN KARA GROUP, MORRISON FORMATION, AND UNKPAPA SANDSTONE ON THE WESTERN SIDE OF THE BLACK HILLS, WYOMING AND SOUTH DAKOTA

Symbols show stratigraphic distribution

of mined deposits

S₁ to S₆

Correlated sandstone units

(?) shows tentative correlation

Sundance formation

CORRELATION TABLE

Sundance formation

R. 3 E. R. 4 E. R. 5 E. R. 6 E.

Sundance formation

MAP SHOWING LINE OF SECTION

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