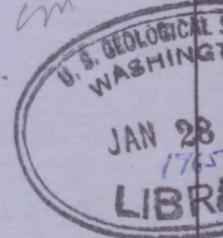


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UNITED STATES
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WASHINGTON 25, D. C.

OPEN-FILE REPORT



Plant and Miscellaneous Microfossils
of the
Pierre Shale

by
Bergeron *clay 1927-*
Estella Leopold and Bernadine Tschudy
U.S. Geological Survey
Denver, Colorado

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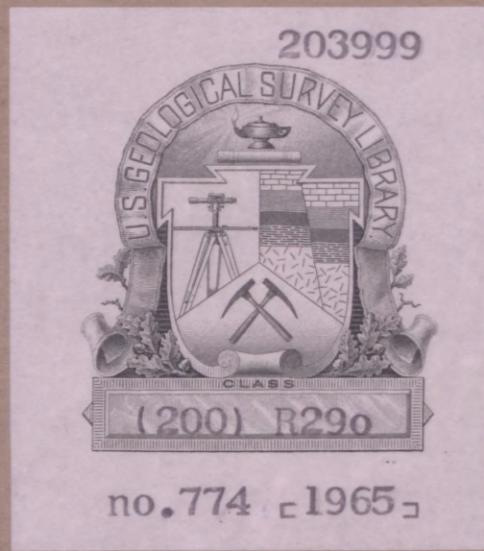
[1965]

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

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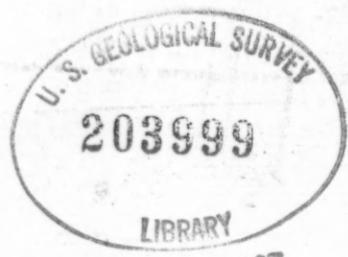
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Plant and Miscellaneous Microfossils
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Pierre Shale

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Estella Leopold and Bernadine Tschudy
U. S. Geological Survey
Denver, Colorado

[1965]



This report is preliminary and has not been edited
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standards on nomenclature

This preliminary report summarizes part of a Survey program to study, in detail, the stratigraphy and paleontology of a nearly complete sequence of Pierre Shale near Redbird, Wyoming. The physical stratigraphy and correlations are being analyzed by James Gill and W. A. Cobban. Various groups of invertebrate fossils are under study by Mr. Cobban, N. F. Sohl, and James Mello. Plant microfossils are the responsibility of Estella Leopold, assisted by Bernadine Tschudy.

The Redbird sequence is exposed in section 23 and 14, T. 38. N., R. 62 W., Niobrara County, Wyoming. Twenty-six samples from the 3,000-foot stratigraphic sequence have been prepared and examined for plant microfossils. Rich assemblages of upper Campanian through lower Maestrichtian (Late Cretaceous) age have been recovered. The enclosed plates show a representative assortment of fossils from this sequence.

Copies of this open-file report and plate enlargements may be obtained for the cost of reproduction from the U. S. Geological Survey Library, Denver Federal Center, Denver, Colo., 80225. Each plate will be approximately 20 x 24 inches, and the figures will be at about X1000.

PLATE 1
EXPLANATION

USGS Paleobotanical locality D1330; 26 samples from sections 23 and 14, T. 38 N., R. 62 W., near Redbird, Niobrara County, Wyoming. Upper Campanian through lower Maestrichtian (Upper Cretaceous).

Figures 1-83: spores of Pteridophyta and (or) Bryophyta

84-90: pollen of Gymnospermae

PLATE 2
EXPLANATION

USGS Paleobotanical locality D1330; 26 samples from sections 23 and 14, T. 38 N., R. 62 W., near Redbird, Niobrara County, Wyoming. Upper Campanian through lower Maestrichtian (Upper Cretaceous).

Figures 91-104: pollen of Gymnospermae

105-114, 117, 119: cysts, spores, and (or) pollen

115, 116, 118, 112-128: pollen of Gymnospermae

129-184: pollen of Angiospermae (no. 161 is probably a modern contaminant)

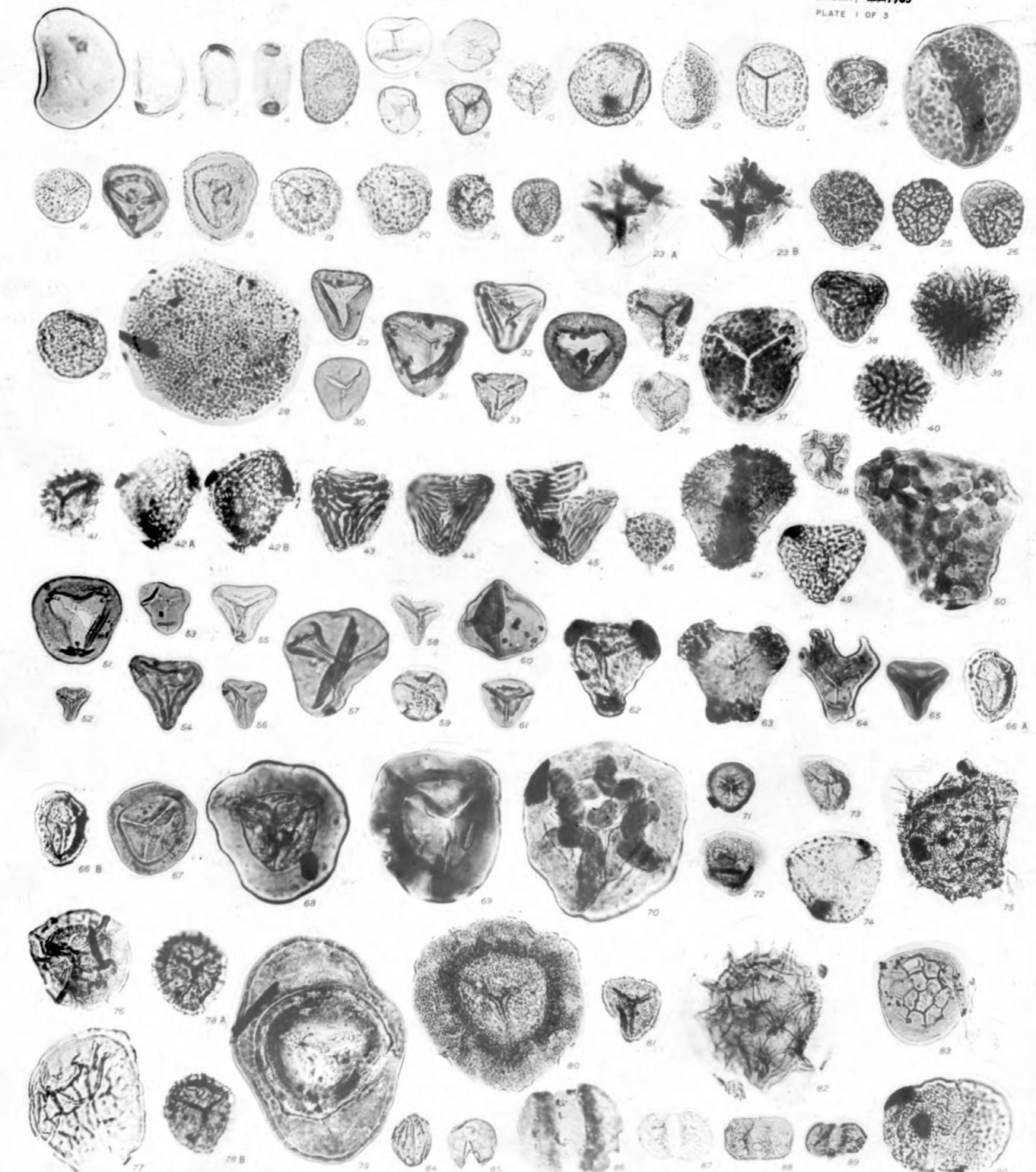
PLATE 3
EXPLANATION

USGS Paleobotanical locality D1330; 26 samples from sections 23 and 14, T. 38 N., R. 62 W., near Redbird, Niobrara County, Wyoming. Upper Campanian through lower Maestrichtian (Upper Cretaceous).

Figures 185-198: Dinoflagellata

199-225: Hystrichosphaeridae and related forms

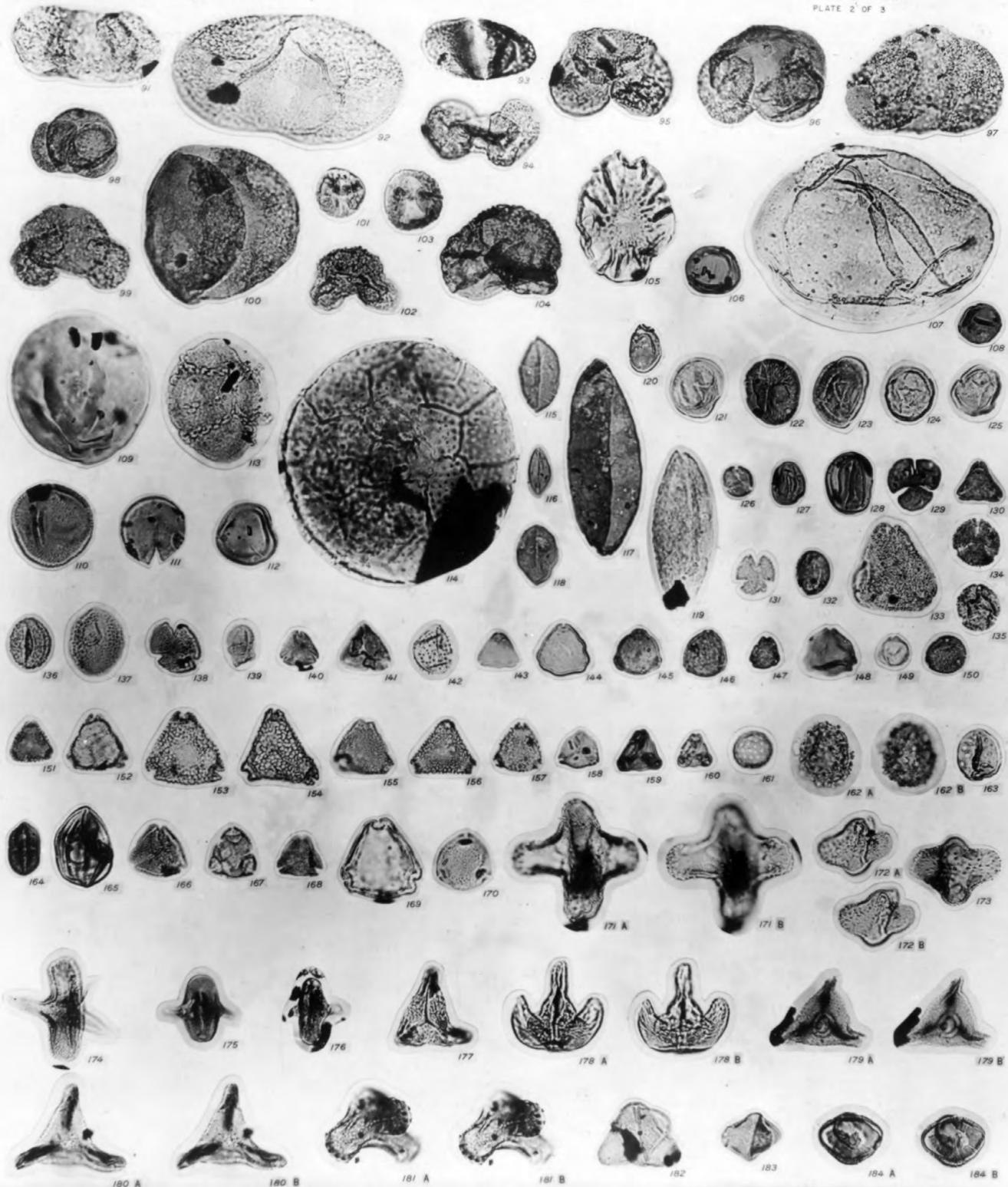
226-238: cysts and (or) algae?



PLANT MICROFOSSILS OF THE PIERRE SHALE

26 samples; upper Campanian through lower Maestrichtian (Upper Cretaceous)
USGS Paleobot. loc. DI330, Niobrara Co., Wyo. (not to be reproduced)

0 10 20 30 40 50 MICRONS

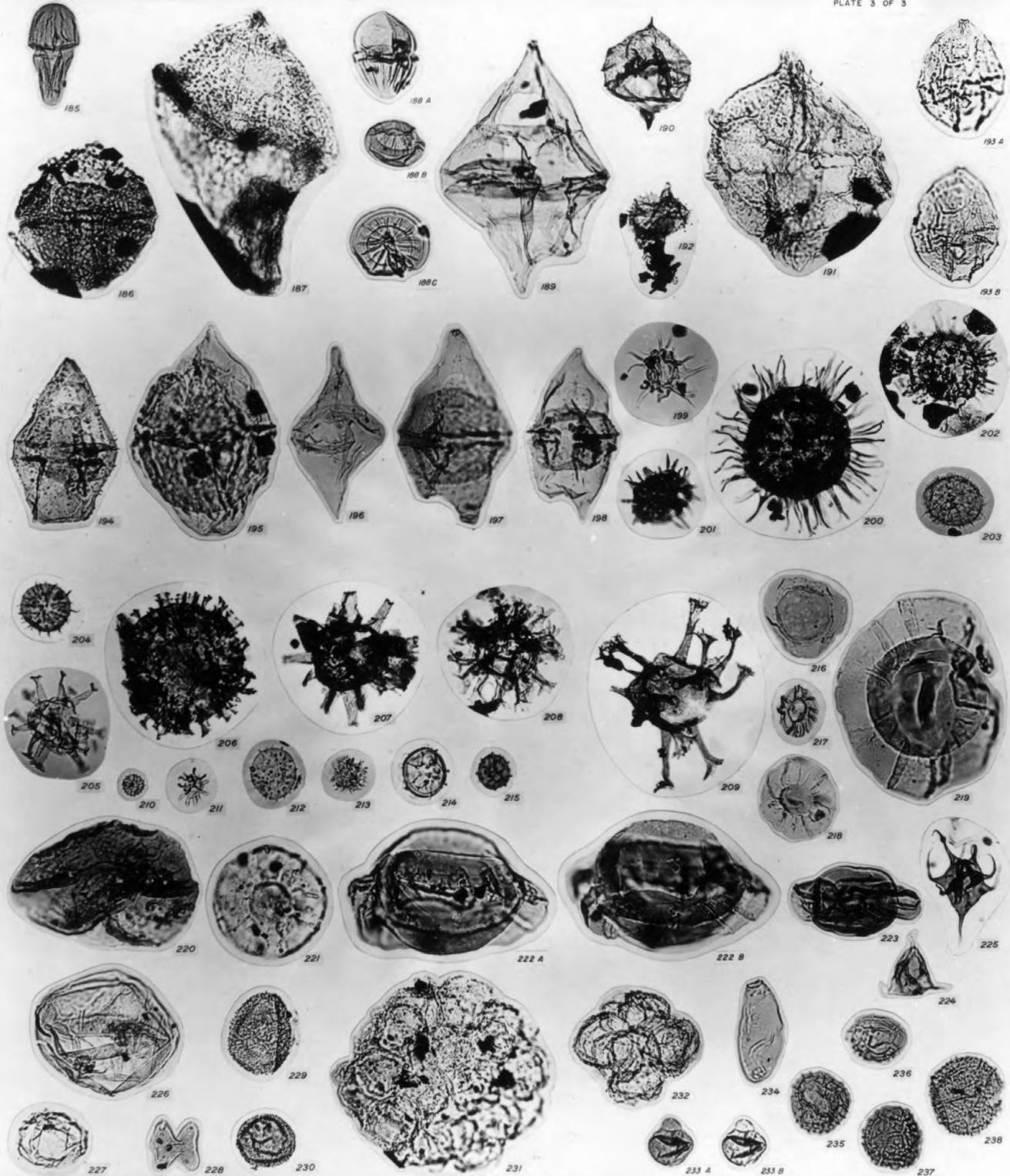


PLANT MICROFOSSILS OF THE PIERRE SHALE

26 samples; upper Campanian through lower Maestrichtian (Upper Cretaceous)

USGS Paleobot. loc. DI330, Niobrara Co., Wyo. (not to be reproduced)

0 10 20 30 40 50 MICRONS



AND MISCELLANEOUS
PLANT MICROFOSSILS OF THE PIERRE SHALE

26 samples; upper Campanian through lower Maestrichtian (Upper Cretaceous)

USGS Paleobot. loc. DI330, Niobrara Co., Wyo. (not to be reproduced)

0 10 20 30 40 50 MICRONS

GEOLOGIC DIVISION
U. S. GEOLOGICAL SURVEY
Washington, D. C.



For release JANUARY 29, 1965

The U. S. Geological Survey is releasing in open files the following reports. Copies are available for consultation in the Geological Survey libraries, 1033 GSA Bldg., Washington, D. C.; Bldg. 25, Federal Center, Denver, Colo.; 345 Middlefield Rd., Menlo Park, Calif.; and in other offices as listed:

1. Plant and miscellaneous microfossils of the Pierre Shale, by Estella Leopold and Bernadine Tschudy. 3 pl., 1 p. text, 3 p. plate explanation. Plate negatives (24" X 30") from which copies can be made at private expense are available in the Library, Bldg. 25, Federal Center, Denver, Colo.
2. Plant microfossils of the Hazard No. 7 coal, Perry County, Kentucky, by Robert M. Kosanke. 1 pl., 1 p. text; 1 p. plate explanation. On file in USGS office, 496 Southland Drive, Lexington, Ky. Plate negative (24" X 30") from which copies can be made at private expense is available in the Library, Bldg. 25, Federal Center, Denver, Colo.
3. Plant and miscellaneous microfossils from the Parachute Creek Member of the Green River Formation, by Robert H. Tschudy. 1 pl., 1 p. text, 1 p. plate explanation. Plate negative (24" X 30") from which copies can be made at private expense is available in the Library, Bldg. 25, Federal Center, Denver, Colo.
4. Preliminary report on the geology of the eastern part of the Red-Buffalo Route of Interstate Highway 70, Summit County, Colorado, by M. H. Bergendahl. 10 p., 1 fig. 468 New Custom House, Denver, Colo.
5. Terrain analysis of the lunar equatorial belt, by John F. McCauley. 44 p., 6 pl., 14 figs., 3 tables. 468 New Custom House, Denver, Colo.; 8102 Federal Office Bldg., Salt Lake City, Utah; 602 Thomas Bldg., Dallas, Tex.; 1031 Bartlett Bldg., Los Angeles, Calif.; 504 Custom House, San Francisco, Calif.; South 157 Howard St., Spokane, Wash.; 108 Skyline Bldg., 508 2nd Ave., Anchorage, Alaska.
6. Surficial geologic map of the Fitchville quadrangle, New London County, Connecticut, by Fred Pessl, Jr. 1 map and explanation (scale 1:24,000), 6 photographs, 6 gravel pit data sheets. Room 1, 270 Dartmouth St., Boston, Mass.; Connecticut Geol. and Natural History Survey, Judd Hall, Wesleyan University, Middletown, Conn. Copies from which reproductions can be made at private expense are available in the Boston office.

* * * * *

The following report is also released in open file and is available for consultation in the Geological Survey libraries at 1033 GSA Bldg., Washington, D.C., and Bldg. 25, Federal Center, Denver, Colorado:

7. The geology of the Tertiary rocks of the central and southern parts of the Rosita quadrangle, Colorado, by Peter L. Siems. 11 p., 1 map, scale 1:24,000.

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