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Illustrations of plant microfossils from the Morrison Formation

III. Plant microfossils from the Recapture Member

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by R.H. Tschudy, B.D. Tschudy, and S.D. Van Loenen

The purpose of this report is to make available photographs of the palynomorphs found in a sample from the Recapture Member of the Morrison Formation. This report is part of continuing efforts to provide biostratigraphical data from critical rock sequences of the Morrison Formation (see Tschudy, Tschudy, Van Loenen, and Doher, 1981, and Tschudy, Tschudy, and Van Loenen, 1981).

The photographs are primarily for laboratory reference, to be used only as a guide to the recognition and preliminary identifications of pollen and spores from the Morrison Formation. The present report concerns a single sample from the Recapture Member. See figure 1, showing Morrison Formation members. This report is to be followed by a report on the Salt Wash Member. No new genera or species are described, nor have attempts been made to bring the nomenclature up-to-date. This report is not intended as a formal taxonomic documentation and treatment.

The spores and pollen illustrated on Plates 1-3 were obtained from the following locality: USGS Paleobotany Locality No. D4930-B SE1/4SE1/4 sec. 1, T. 15 N., R. 16 W., Pinedale quadrangle, McKinley Co., New Mexico; carbonaceous shaly claystone 3.5 ft. (1.1 m) below possible contact with Westwater Canyon Member, in Recapture Member of the Morrison Formation, Upper Jurassic. Collected by M.W. Green and J.F. Robertson, Field No. P16R72h.

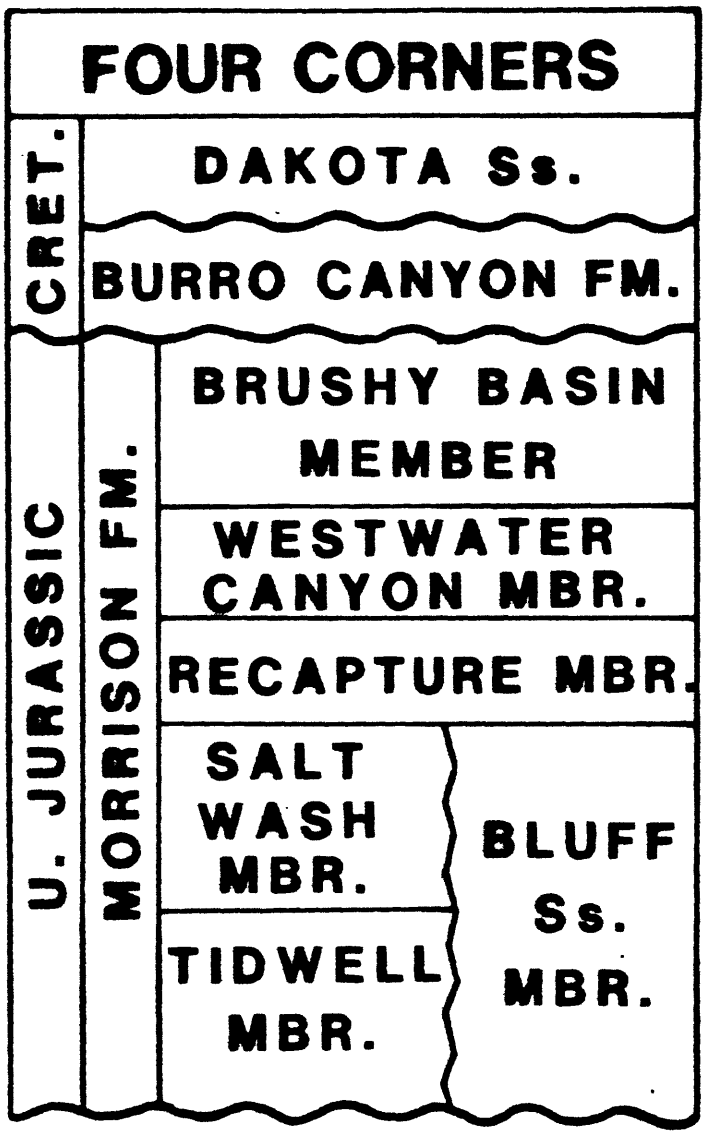

Figure 1. Chart showing nomenclature of the Morrison Formation in the Four Corners area, New Mexico. From Peterson and Turner-Peterson, 1987.

The geographic position of this locality is shown on the accompanying map, figure 2. The palynomorphs found at this locality are shown on plates 1-3.

All specimens illustrated in this report are preserved on slides deposited in the paleobotanical collections of the U.S. Geological Survey, Denver, Colo. The specimens may be located on the slides by the mechanical stage coordinates given in the plate explanations. In order that others may convert their mechanical stage readings to those recorded for the specimens included in this report, the coordinates for the center point of a 1 x 3-inch standard microscope slide are 108.0 x 12.3 mm. The method of accurately locating the center of a standard microscope slide has been described by R.H. Tschudy (1966, p. D78). With the slide label to the left, the vertical coordinates decrease toward the near edge of the slide, and the horizontal coordinates decrease toward the right edge of the slide.

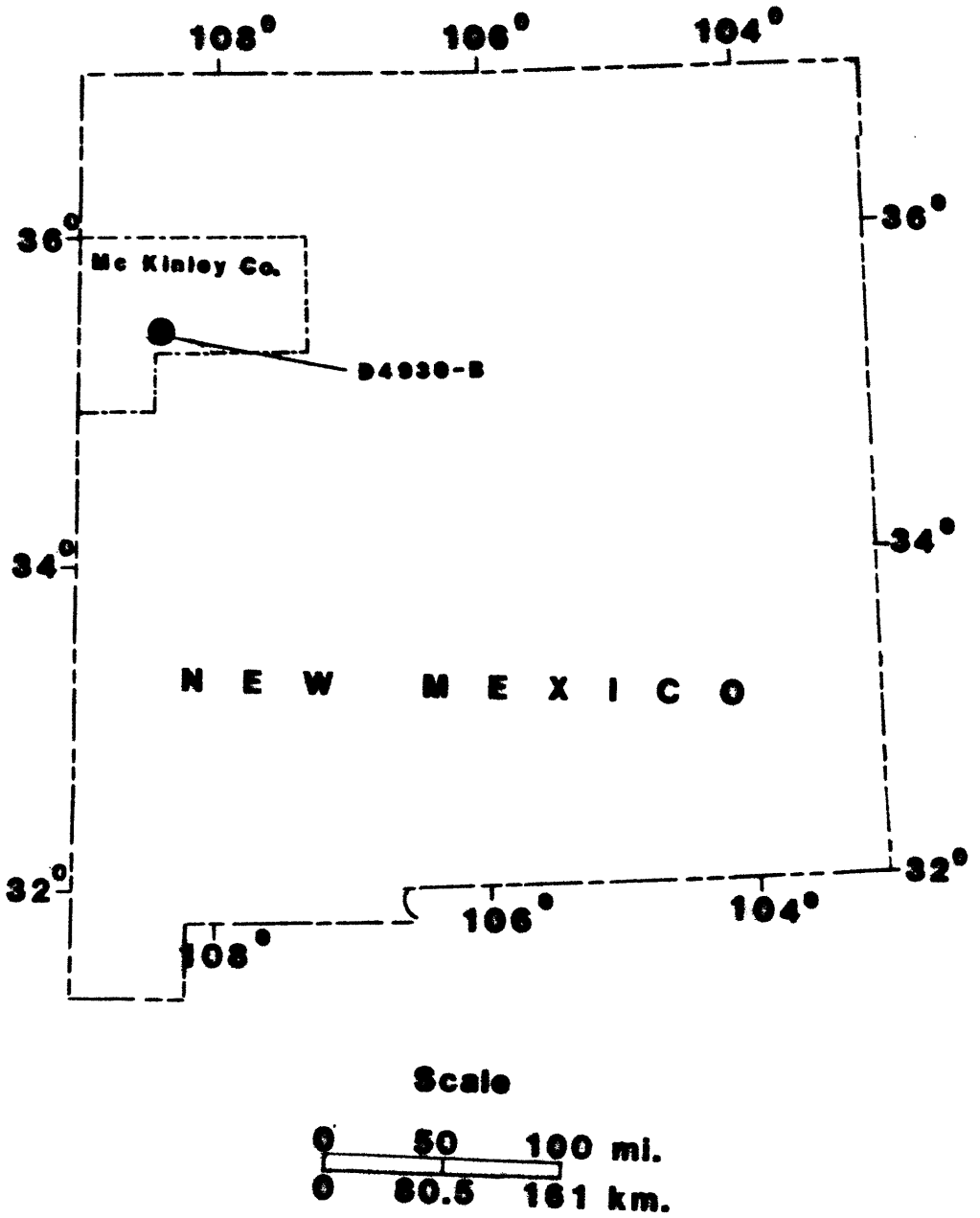

Figure 2 - map showing Recapture Member sample locality

Plate 1

[Magnification X 1000]

FIGURE 1. Cyathidites minor Couper, 1953. Sample D4930-B, slide 5, coordinates 99.3 x 19.1.

2. Gleicheniidites senonicus Ross, 1949. Sample D4930-B, slide 5, coordinates 101.7 x 17.8.

3. Trilete spore--undetermined. Sample D4930-B, slide 7, coordinates 92.4 x 8.6.

4. Polycingulatisporites reduncus (Bolkhovitina) Playford and Dettmann, 1965. Sample D4930-B, slide 7, coordinates 112.3 x 12.2.

5. Pristinuspollenites microsaccus (Couper) B. Tschudy, 1973. Sample D4930-B, slide 7, coordinates 84.8 x 15.4.

6. Bisaccate pollen--undetermined. Sample D4930-B, slide 7, coordinates 93.8 x 10.5.

7. Protoconiferus cf, P. funarius (Bolkhovitina) Bolkhovitina 1956. Sample D4930-B, slide 5, coordinates 90.6 x 19.2.

8. Protoconiferus cf. P. funarius (Bolkhovitina) Bolkhovitina, 1956. Sample D4930-B, slide 7, 82.8 x 21.5.

9. Alisporites grandis (Cookson) Dettmann, 1963. Sample D4930-B, slide 7, coordinates 81.9 x 3.1.

Plate 2
[Magnification X 1000]

FIGURE 1. *Pseudowalchia ovalis* Pocock, 1970. Sample D4930-B, slide 7, coordinates 110.0 x 13.0.

2. *Pseudowalchia ovalis* Pocock, 1970. Sample D4930-B, slide 7, coordinates 107.0 x 18.2.

3. *Alisporites* sp. Sample D4930-B, slide 5, coordinates 115.8 x 18.4.

4. Bisaccate pollen--undetermined. Sample D4930-B, slide 7, coordinates 99.7 x 13.2.

5. *Vitreisporites pallidus* (Reissinger) Nilsson, 1958. Sample D4930-B, slide 5, coordinates 87.3 x 20.0.

6. *Protopicea exilioides* (Bolkhovitina) Pocock, 1970. Sample D4930-B, slide 5, coordinates 105.7 x 6.0.

7. Bisaccate pollen--undetermined. Sample D4930-B, slide 6, coordinates 109.8 x 22.3.

8. Bisaccate pollen--undetermined. Sample D4930-B, slide 7, coordinates 102.0 x 4.2.

9. *Podocarpidites* sp. Sample D4930-B, slide 7, coordinates 82.3 x 21.1.

10. *Pityosporites* cf. *P. nigraeformis* (Bolkhovitina) Pocock, 1970. Sample D4930-B, slide 7, 81.0 x 11.3.

11. Bisaccate pollen--undetermined. Sample D4930-B, slide 7, coordinates 83.0 x 12.2.

12. *Pityosporites nigraeformis* (Bolkhovitina) Pocock, 1970. Sample D4930-B, slide 7, coordinates 82.0 x 4.2.

13. *Pityosporites* cf. *P. nigraeformis* (Bolkhovitina) Pocock, 1970. Sample D4930-B, slide 5, 114.8 x 8.8.

Plate 3
[Magnification X 1000]

Figure 1. Exesipollenites scabratus (Couper) Pocock, 1970. Sample D4930-B, slide 5, coordinates 114.8 x 12.1.

2. Undetermined. Sample D4930-B, slide 5, coordinates 88.2 x 19.2.

3. Callialasporites dampieri (Balme) Sukh Dev, 1961. Sample D4930-B, slide 5, coordinates 115.8 x 10.5.

4. Callialasporites dampieri (Balme) Sukh Dev, 1961. Sample D4930-B, slide 7, coordinates 100.0 x 18.6.

5. Callialasporites sp. Sample D4930-B, slide 5, coordinates 89.8 x 10.5

6. Callialasporites cf. C. dampieri (Balme) Sukh Dev, 1961. Sample D4930-B, slide 5, coordinates 95.0 x 13.9.

7. Corollina itunensis (Pocock) Cornet & Traverse, 1975. Sample D4930-B, slide 5, coordinates 93.3 x 2.2.

8. Corollina itunensis (Pocock) Cornet & Traverse, 1975. Sample D4930-B, slide 5, coordinates 93.0 x 10.4.

9. Corollina sp. Sample D4930-B, slide 5, coordinates 116.2 x 7.3.

10. Callialasporites trilobatus (Balme) Sukh Dev, 1961. Sample D4930-B, slide 7, coordinates 82.7 x 16.0.

11. Ginkgocycadophytus nitidus (Balme) de Jersey, 1962. Sample D4930-B, slide 5, coordinates 89.7 x 20.5.

12. Eucommiidites sp. Sample D4930-B, slide 7, coordinates 112.5 x 19.7.

13. Cycadopites sp. Sample D4930-B, slide 7, coordinates 83.6 x 19.3.

14. Equisetosporites sp. Sample D4930-B, slide 5, coordinates 107.6 x 19.7.

15. Equisetosporites sp. Sample D4930-B, slide 7, coordinates 97.0 x 18.0.

16. Monosulcate--undetermined. Sample D4930-B, slide 5, coordinates 103.4 x 20.8.

17. Ginkgocycadophytus nitidus (Balme) de Jersey, 1962. Sample D4930-B, slide 5, coordinates 94.7 x 19.2.

18. Eucommiidites troedssonii Erdtman, 1948. Sample D4930-B, slide 5, coordinates 104.0 x 21.6.

19. Ginkgocycadophytus sp. Sample D4930-B, slide 5, coordinates 112.5 x 9.4.

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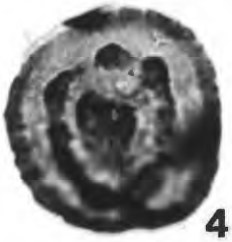

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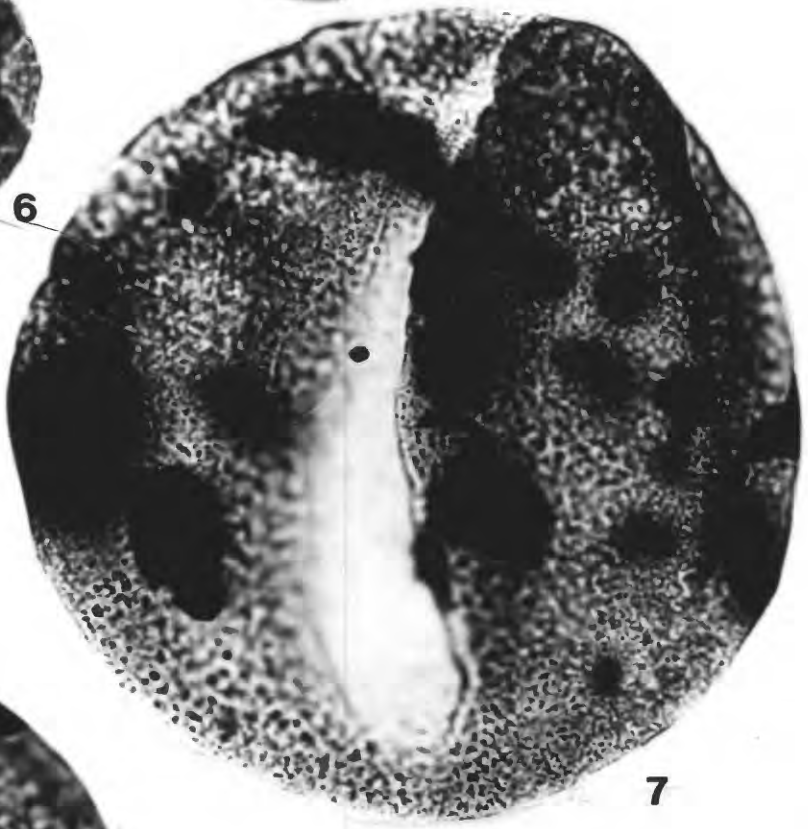

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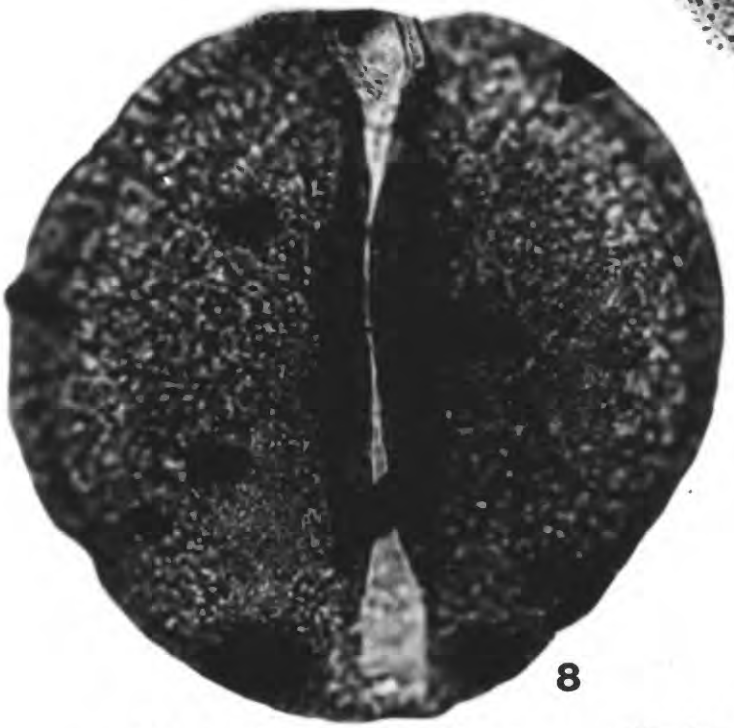

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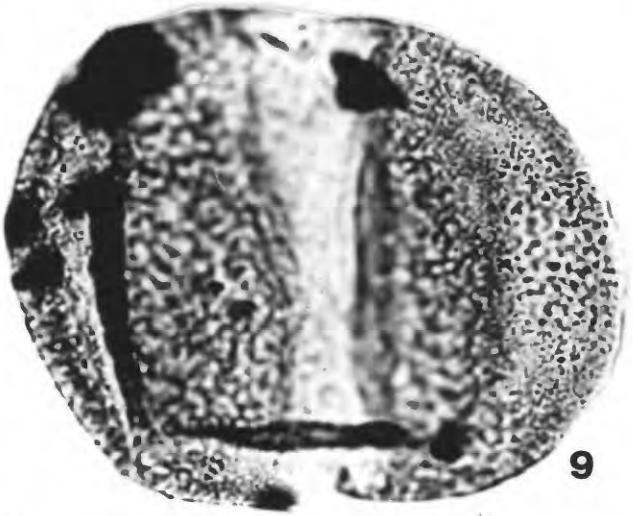

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Recapture Member Plate 1

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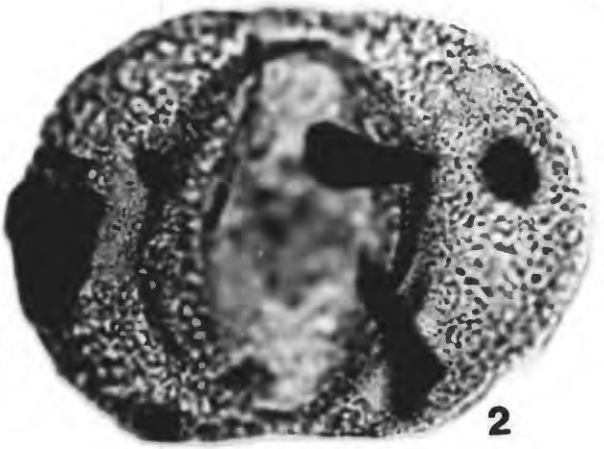
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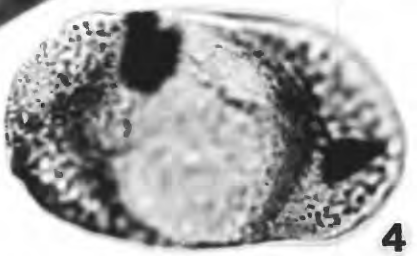
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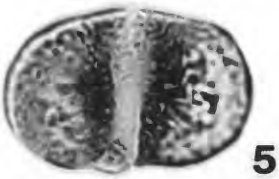
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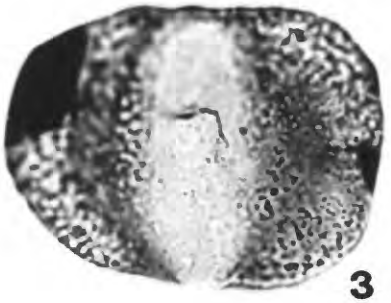
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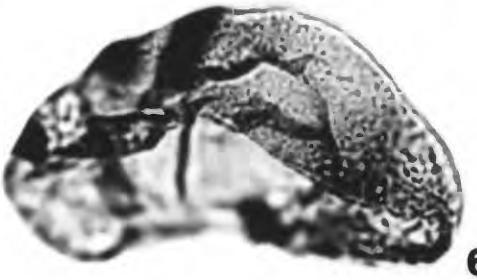
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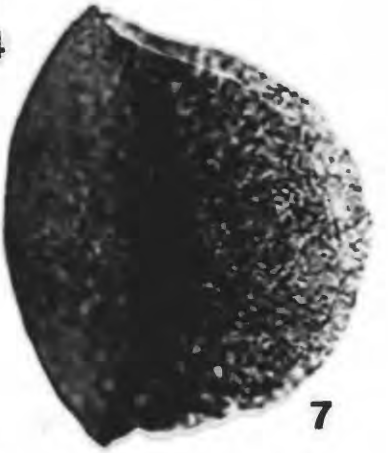
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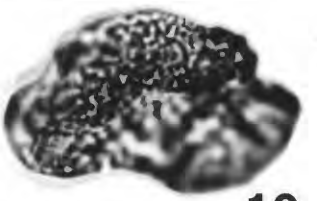
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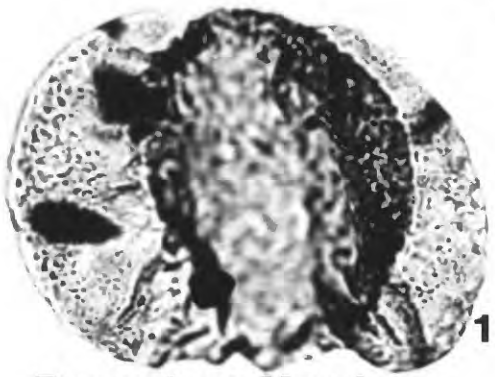
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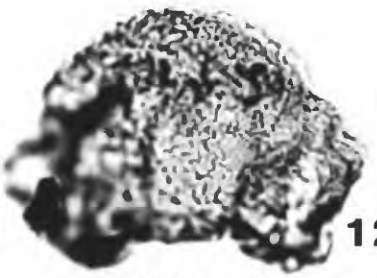
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Recapture Member **Plate 2**

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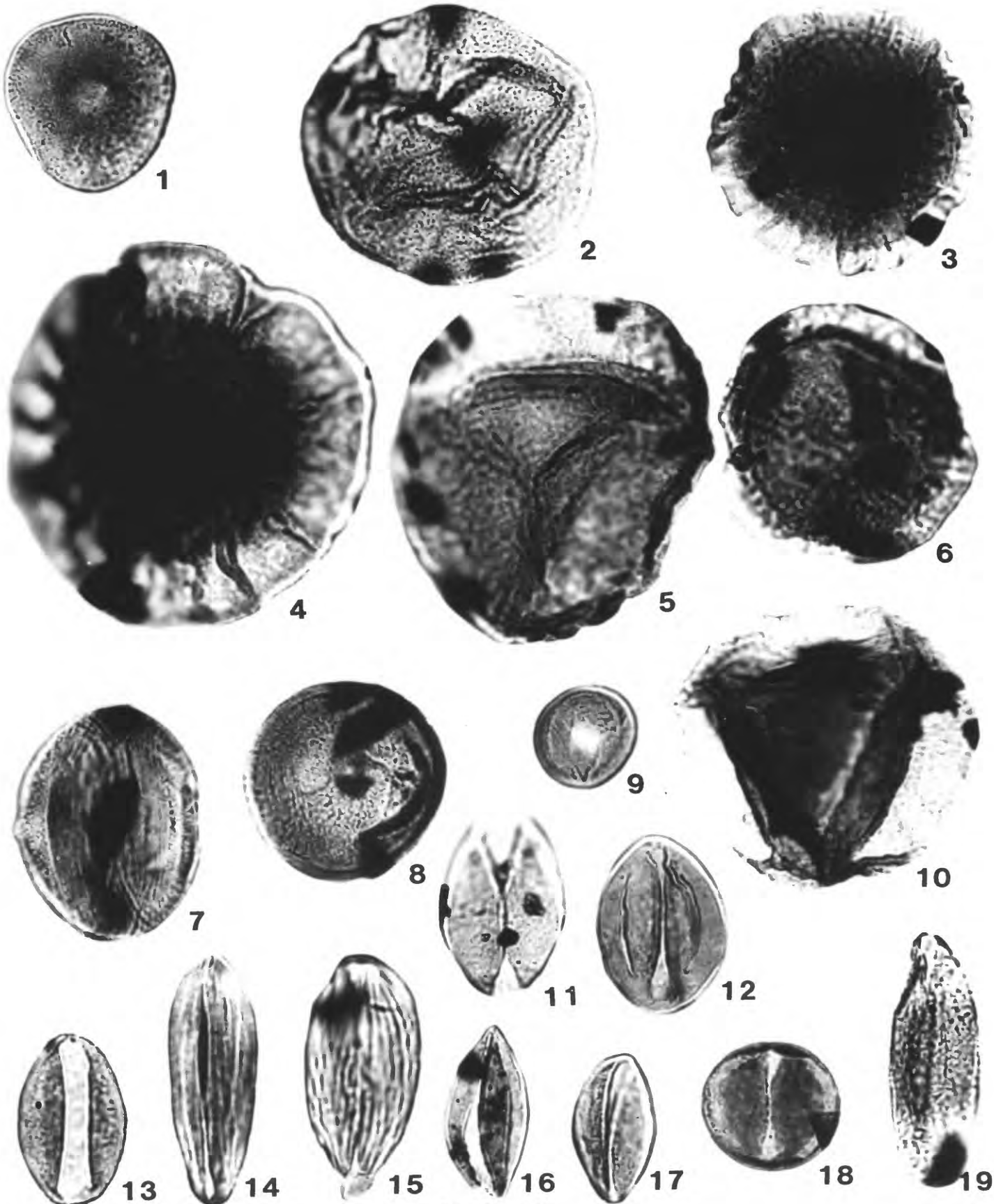

Recapture Member

Plate 3

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