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Fig. 1	Coccolithus tritus n. sp. Holotype A 604 225 [A 810], $15000 \times$ , distal view, Red Bluff Fm., 4' above base, Alabama.
Fig. 2	Coccolithus crater n. sp. Holotype A 809 004 [A 808], $15000 \times$ , distal view, Marianna Ls., 9' above base, Alabama.
Fig. 3	Coccolithus primalis n. sp. Holotype J 506 377 [A 809], $15000 \times$ , distal view, JOIDES Hole 5, 374' below top, Blake Plateau, W Atlantic.
Fig. 4	Ericsonia bireticulata n. sp. Paratype JS 1847 026 [A 812], $15000 \times$ , proximal view, Cipero Fm., Trinidad.
Fig. 5	<i>Ericsonia bireticulata</i> n. sp. Holotype JS 147 301 [A 811], $15000 \times$ , distal view, Cipero Fm., Trinidad.
Fig. 6	Ericsonia fenestrata (DEFLANDRE & FERT) STRADNER. Hypotype JS 1847 624 [A 813], 15000×, distal view, Cipero Fm., Trinidad.

# Plate I

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Fig. 1	Ericsonia pauciperforata n. sp. Holotype A 608 157 [A 814], $15000 \times$ , distal view, Red Bluff Fm., 8' above base, Alabama.
Fig. 2	<i>Ericsonia quadriperforata</i> n. sp. Holotype J 515 234 [A 815], $15000 \times$ , distal view, JOIDES Hole 5, 589'11" below top, Blake Plateau, W Atlantic.
Fig. 3	Ericsonia subdisticha (ROTH & HAY) ROTH. Hypotype J 515 374 [A 816], $15000 \times$ , distal view, JOIDES Hole 5, 589'11" below top, Blake Plateau, W Atlantic.
Fig. 4	Ericsonia subdisticha (ROTH & HAY) ROTH. Hypotype N1 247 [A 817], $15000 \times$ , proximal view, Latdorf Clay, Well Hankensbüttel Süd 32, 267–276 m, Northern Germany.
Fig. 5	Cruciplacolithus flavius n. sp. Paratype J 503 229 [A 819], 15000×, proximal view, JOIDES Hole 5, 484' below top, Blake Plateau, W Atlantic.
Fig. 6	Cruciplacolithus flavius n. sp. Holotype J 504 107 [A 818], 15000×, distal view, JOIDES Hole 5, 445' below top, Blake Plateau, W Atlantic.

Plate II







PETER HANS ROTH: Oligocene Calcareous Nannoplankton Biostratigraphy PLATE II







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- Fig. 1 Cruciplacolithus quader n. sp. Holotype J 504 101 [A 820], 15000 ×, distal view, JOIDES Hole 5, 445' below top, Blake Plateau, W Atlantic.
- Fig. 2 Sollasites tardus n. sp. Paratype J 510 471 [A 822], 15000 ×, proximal view, JOIDES Hole 5, 248' below top, Blake Plateau, W Atlantic.
- Fig. 3 Sollasites tardus n. sp. Holotype J 505 427 [A 821], 15000 ×, distal view, JOIDES Hole 5, 410' below top, Blake Plateau, W Atlantic.
- Fig. 4 Reticulofenestra alabamensis n. sp. Holotype A 600 360 [A 823], 15000 × distal view, Red Bluff Fm., base, Alabama.
- Fig. 5 Reticulofenestra alabamensis n. sp. Paratype A 600 257 [A 824], 15000 ×, proximal view, Red Bluff Fm., base, Alabama.
- Fig. 6 Reticulofenestra bisecta (HAY, MOHLER & WADE) n. comb. Hypotype J6-397-12-7 [A 825], 5200×, proximal view. (In the upper and lower left Sphenolithus predistentus BRAMLETTE & WILCOXON.) JOIDES Hole 6, 397' below top, Blake Plateau, W Atlantic.







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### **Plate IV**

Fig. 1	Reticulofenestra gabrielae n. sp. Holotype A 613 110 [A 827], $15000 \times$ , broken coccosphere, Red Bluff Fm., 13' above base, Alabama.
Fig. 2	Reticulofenestra danica (BLACK) n. comb. Hypotype J 512 389 [A 826], $10000 \times$ , distal view JOIDES Hole 5, 730' below top, Blake Plateau, W Atlantic.
Fig. 3	Reticulofenestra hesslandii (HAQ) n. comb. Hypotype A 600 470 [A 830], $15000 \times$ , proximal view, Red Bluff Fm., base, Alabama.
Fig. 4	Reticulofenestra hesslandii (HAQ) n. comb. Hypotype A 815 110 [A 823], $10000 \times$ , coccosphere, Marianna Ls., 15' above base, Alabama.
Fig. 5	Reticulofenestra hesslandii (HAQ) n. comb. Hypotype A 600 406 [A 829], $10000 \times$ , (A) specimen in the lower left, distal view, (B) specimen in the upper right, proximal view, Red Bluff Fm., basa, Alabama.

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#### Plate V

- Fig. 1Reticulofenestra pectinata n. sp. Holotype A 613 664 [A 835], 15000 ×, distal view,<br/>Red Bluff Fm., 13' above base, Alabama.
- Fig. 2 Reticulofenestra inclinata n. sp. Holotype J 503 480 [A 831], 15000 ×, JOIDES Hole 5, 484' below top, Blake Plateau, W Atlantic.
- Fig. 3 Reticulofenestra minuta n. sp. Holotype A 610 130 [A 833], 15000 ×, distal view, Red Bluff Fm., 10' from base, Alabama.
- Fig. 4 Reticulofenestra minuta n. sp. Paratype J 504 136 [A 834], 15000 ×, proximal view JOIDES Hole 5, 445' below top, Blake Plateau, W Atlantic.
- Fig. 5 Reticulofenestra laevis ROTH & HAY. Hypotype A 100 280 [A 832], 15000 ×, distal view, Byram Fm., unnamed Clay Mb., Alabama.
- Fig. 6 Cyclococcolithus floridanus (ROTH & HAY) n. comb. Hypotype J3-397-12-11 [A 840], 10000×, distal view, JOIDES Hole 3, 397' below top, Blake Plateau, W Atlantic.







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	Plate VI
Fig. 1	Cyclococcolithus arabellus n. sp. Holotype A 613 443 [A 836], $15000 \times$ , distal view, Red Bluff Fm., 13' above base, Alabama.
Fig. 2	Cyclococcolithus arabellus n. sp. Paratype J 507 264 [A 837], $15000 \times$ , distal view, JOIDES Hole 5, $337'11''$ below top, Blake Plateau, W Atlantic.
Fig. 3	Cyclococcolithus ciperoensis n. sp. Holotype ETH 291 A-399 [A 838], $10000 \times$ , proximal view, Cipero Fm., Trinidad.
Fig. 4	Cyclococcolithus lunulus n. sp. Holotype J 518 099 [A 841], $6000 \times$ , distal view, JOIDES Hole 5, $460'5^{1/2''}$ below top, Blake Plateau, W Atlantic.
Fig. 5	Cyclococcolithus kingi n. sp. Paratype A 606 025 [A 43], $10000 \times$ , proximal view, Red Bluff Fm., 6' above base, Alabama.
Fig. 6	Cyclococcolithus ciperoensis n. sp. Paratype ETH 291A-510 [A 839], $12000 \times$ , distal view, Cipero Fm., Trinidad.



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## Plate VII

Fig. 1	Cyclococcolithus kingi n. sp. Holotype A 815 022 [A 842], $10000 \times$ , distal view, Marianna Ls., 15' from base, Alabama.
Fig. 2	Ilselithina fusa n. sp. Paratype A 600 162 [A 845], $15000 \times$ , proximal view, Red Bluff Fm., base, Alabama.
Fig. 3	Ilselithina fusa n. sp. Holotype A 608 372 [A 844], $15000 \times$ , distal view, Red Bluff Fm., 8' above base, Alabama.
Fig. 4	Coronocyclus serratus HAY, MOHLER & WADE. Hypotype J 3-4222-20-11 [A 846], $10000 \times$ , distal view, JOIDES Hole 3, 422' below top, Blake Plateau, W Atlantic.
Fig. 5	Blackites incompetuus n. sp. Holotype A 610 358 [A 850], $5000 \times$ , side view, Red Bluff Fm., 10' above base, Alabama.
Fig. 6	Blackites amplus ROTH & HAY. Hypotype J 503 189 [A 849], $6000 \times$ , distal view, JOIDES Hole 5, 484' below top, Blake Plateau, W Atlantic.

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# Plate VIII

Fig. 1	Blackites incompettus n. sp. Paratype A 610 266 [A 852], $5000 \times$ , side view, Red Bluff Fm., 10' above base, Alabama.
Fig. 2	Blackites incompettus n. sp. Paratype A 610 105 [A 851], $10000 \times$ , side view, Red Bluff Fm., 10' above base, Alabama.
Fig. 3	Bramletteius variabilis n. sp. Holotype A 608 432 [A 854], $15000 \times$ , side view Red Bluff Fm., 8' above base, Alabama.
Fig. 4	Blackites spinulus (LEVIN) n. comb. Hypotype A 600 271 [A 853], $5000 \times$ , side view, Red Bluff Fm., base, Alabama.
Fig. 5	Bramletteius variabilis n. sp. Paratype A 608 420 [A 855], $15000 \times$ , side view, Red Bluff Fm., 8' above base, Alabama.
Fig. 6	Rhabdosphaera vitrea (DEFLANDRE) BRAMLETTE & SULLIVAN. Hypotype A 608 189 [A 848], 10000×, side view, Red Bluff Fm., 8' above base.

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# **Plate IX**

Fig. 1	Rhabdosphaera vitrea (DEFLANDRE) BRAMLETTE & SULLIVAN. Hypotype A 6000 296 [A 847], 10000 ×, side view, Red Bluff Fm., base, Alabama.
Fig. 2	Pontosphaera alta n. sp. Paratype A 613 386 [A 857], $5000 \times$ , proximal view, Red Bluff Fm., 13' above base, Alabama.
Fig. 3	Pontosphaera alta n. sp. Holotype A 613 138 [A 856], $5000 \times$ , proximal view, Red Bluff Fm., 13' above base, Alabama.
Fig. 4	Pontosphaera crucifera n. sp. Holotype A 613 652 [A 858], 15000 ×, proximal view, Red Bluff Fm., 13' above base, Alabama.
Fig. 5	Pontosphaera crucifera n. sp. Paratype A 613 643 [A 859], $15000 \times$ , distal view, Red Bluff Fm., 13' above base, Alabama.
Fig. 6	Pantosphaera rigida n. sp. Holotype JS 1847 445 [A 860], 15000×, distal view, Cipero Fm., Trinidad.





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Fig. 1	Pontosphaera rigida n. sp. Paratype JS 1847 576 [A 861], 15000×, proximal view, Cipero Fm., Trinidad.
Fig. 2	Helicopontosphaera compacta (BRAMLETTE & WILCOXON) n. comb. Hypotype JS 1847 490 [A 862], $10000 \times$ , proximal view, Cipero Fm., Trinidad.
Fig. 3	Helicopontosphaera truncata (BRAMLETTE & WILCOXON) n. comb. Hypotype JS 20 008 [A 866], $10000 \times$ , convex side, Cipero Fm., Trinidad.
Fig. 4	Helicopontosphaera compacta (BRAMLETTE & WILCOXON) n. comb. Hypotype JS 1847 502 [A 863], $10000 \times$ , concave side, Cipero Fm., Trinidad.
Fig. 5	Helicopontosphaera reticulata (BRAMLETTE & WILCOXON) n. comb. Hypotype JS 1066 047 [A 865], $10000 \times$ , convex side, Oceanic Fm., Barbados.
Fig. 6	Helicopontosphaera intermedia (MARTINI) HAY & MOHLER. Hypotype JS 20 462 [A 864], $10000 \times$ , convex side, Cipero Fm., Trinidad.

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Plate X

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## Plate XI

Fig. 1	Cepekiella elongata n. sp. Holotype A 613 574 [A 867], $15000 \times$ , distal view, Red Bluff Fm., 13' above base, Alabama.
Fig. 2	Cepekiella elongata n. sp. Paratype ETH 68-30-806 [A 868], $15000 \times$ , proximal view, Silberberg Fm., near Helmstedt, Northern Germany.
Fig. 3	Cepekiella hayi (STRADNER) n. comb. Hypotype ETH 68-70-855 [A 869], distal view, Silberberg Fm., Silberberg, Northern Germany.
Fig. 4	Discoturbella moori n. sp. Holotype A 608 297 [A 870], $10000 \times$ , side view, Red Bluff Fm., 8' above base, Alabama.
Fig. 5	Holodiscolithus solidus (DEFLANDRE) n. comb. Hypotype A 608 343 [A 873], $15000 \times$ , distal view, Red Bluff Fm., 8' above base, Alabama.
Fig. 6	Holodiscolithus macroporus (DEFLANDRE) n. comb. Hypotype A 600 088 [A 872], $15000 \times$ , distal view, Red Bluff Fm., base, Alabama.

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### **Plate XII**

Fig. 1	Zygosphaera brytika n. sp. Holotype A 608 088 [A 871], $15000 \times$ , distal view, Red Bluff Fm., 8' above base, Alabama.
Fig. 2	Clathrolithus minutus DEFLANDRE. Hypotype A 809 098 [A 874], $10000 \times$ , distal view, Marianna Ls., 9' above base, Alabama.
Fig. 3	Discoaster rufus n. sp. Holotype J3-397-7-6 [A 875], $8600 \times$ , JOIDES Hole 3, 397' below top, Blake Plateau, W Atlantic.
Fig. 4	Discoaster tani nodifer BRAMLETTE & RIEDEL. Hypotype A 800046 [A 876], $5000 \times$ , base of Marianna Ls., Alabama.
Fig. 5	Discoaster trinus STRADNER. Hypotype J3-475-9-1 [A 877], $4800 \times$ , JOIDES Hole 3, 475' below top, Blake Plateau, W Atlantic.
Fig. 6	Discoaster woodringi BRAMLETTE & RIEDEL. Hypotype J 301 003 [A 878], $5000 \times$ , JOIDES Hole 3, 270' below top, Blake Plateau, W Atlantic.















# Plate XIII

Fig. 1	Lithostromation perdurum DEFLANDRE. Hypotype J 509 209 [A 879], $5000 \times$ , JOIDES Hole 5, 260'2" below top, Blake Plateau, W Atlantic.		
Fig. 2	Lithostromation perdurum DEFLANDRE. Hypotype A 800 072 [A 880], $5000 \times$ , base of Marianna Ls., Alabama.		
Fig. 3	Sphenolithus distentus (MARTINI) BRAMLETTE & WILCOXON. Hypotype J 3-422-20-10 [A 888], 3850 ×, JOIDES Hole 3, 422' below top, Blake Plateau, W Atlantic.		
Fig. 4	Sphenolithus ciperoensis BRAMLETTE & WILCOXON. Hypotype J3-270-18-2 [A 885], 10300 ×, JOIDES Hole 3, 270' below top, Blake Plateau, W Atlantic.		
Fig. 5	Sphenolithus belemnos BRAMLETTE & WILCOXON. Hypotype JS 267* 083 [A 883], 6000 ×, Cipero Fm., Trinidad.		
Fig. 6	Sphenolithus belemnos BRAMLETTE & WILCOXON. Hypotype J3-270-18-8 [A 882] 6800 ×, JOIDES Hole 3, 270' below top, Blake Plateau, W Atlantic.		
Fig. 7	Sphenolithus distentus (MARTINI) BRAMLETTE & WILCOXON. Hypotype J3-397-13-3 [A 887], 6800 ×, JOIDES Hole 3, 397' below top, Blake Plateau, W Atlantic.		

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- Fig. 1 Sphenolithus ciperoensis BRAMLETTE & WILCOXON. Hypotype JS 267\* 070 [A 886], 5000×, Cipero Fm., Trinidad.
  Fig. 2 Sphenolithus ciperoensis BRAMLETTE & WILCOXON. Hypotype J3-306-16-7 [A 884], 10000×, JOIDES Hole 3, 306' below top, B lake Plateau, W Atlantic.
- Fig. 3 Sphenolithus moriformis (BRÖNNIMANN & STRADNER) BRAMLETTE & WILCOXON, Hypotype J 3-475-11-1 [A 889], 9000 ×, JOIDES Hole 3, 475' below top, B lake Plateau, W Atlantic.
- Fig. 4 Sphenolithus moriformis (BRÖNNIMANN & STRADNER) BRAMLETTE & WILCOXON. Hypotype J3-381-20-5 [A 890], 9500×, JOIDES Hole 3, 381' below top, Blake Plateau, W Atlantic.
- Fig. 5 Sphenolithus tribulosus n. sp. Holotype A 608 504 [A 891], 10000×, Red Bluff Fm., 8' above base, Alabama.
- Fig. 6 Triquetrorhabdulus carinatus MARTINI. Hypotype Bo 291 A 458 [A 881], 10000×, Cipero Fm., Trinidad.
- Fig. 7, 8
  Sphenolithus tribulosus n. sp. Paratype A 613-Lool A + B, 1750 ×, (7)A, long axis 45° to crossed nicols, [A 892], (8) B, long axis 0° to crossed nicols [A 893]; Red Bluff Fm., 13' above base, Alabama.



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